



DRILL STEM TEST REPORT

Prepared For: **Landmark Resources LLC**

1616 S Voss Rd ste 600
Houston, TX 77057

ATTN: Terry McLeod

Ross #1-4

4-17s-34w Scott,KS

Start Date: 2014.12.16 @ 12:25:39

End Date: 2014.12.16 @ 19:52:39

Job Ticket #: 59675 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.19 @ 16:25:28



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59675

DST#: 1

ATTN: Terry McLeod

Test Start: 2014.12.16 @ 12:25:39

GENERAL INFORMATION:

Formation: **Marmaton- Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:34:09

Time Test Ended: 19:52:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Turley

Unit No: 79

Interval: 4458.00 ft (KB) To 4595.00 ft (KB) (TVD)

Reference Elevations: 3141.00 ft (KB)

Total Depth: 4595.00 ft (KB) (TVD)

3131.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8166 Outside

Press@RunDepth: 92.61 psig @ 4463.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.16

End Date:

2014.12.16

Last Calib.:

2014.12.16

Start Time: 12:25:44

End Time:

19:52:38

Time On Btm:

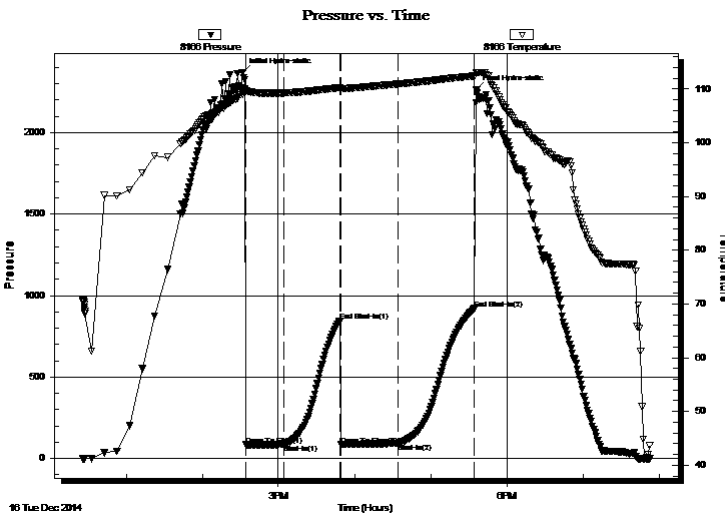
2014.12.16 @ 14:31:39

Time Off Btm:

2014.12.16 @ 17:36:09

TEST COMMENT: IF: 1/4" blow built to 2" in 30 min.
IS: No return.
FF: 1/4" blow built to 3" in 45 min.
FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2368.83	109.03	Initial Hydro-static
3	84.23	109.58	Open To Flow (1)
33	85.81	109.28	Shut-In(1)
77	845.13	110.27	End Shut-In(1)
78	84.67	110.09	Open To Flow (2)
123	92.61	110.95	Shut-In(2)
183	920.23	112.44	End Shut-In(2)
185	2261.99	113.08	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
40.00	ocm 10%o 90%m	0.56
0.00	62 GIP	0.00

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59675

DST#: 1

ATTN: Terry McLeod

Test Start: 2014.12.16 @ 12:25:39

Tool Information

Drill Pipe:	Length: 4444.00 ft	Diameter: 3.80 inches	Volume: 62.34 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 62.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4458.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	141.00 ft			
Tool Length:	159.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Stubb	1.00			4441.00	
Shut In Tool	5.00			4446.00	
Hydraulic tool	5.00			4451.00	
Safety Joint	2.00			4453.00	
Packer	5.00			4458.00	18.00 Bottom Of Top Packer
Packer - Shale	4.00			4462.00	
Stubb	1.00			4463.00	
Recorder	0.00	8373	Inside	4463.00	
Recorder	0.00	8166	Outside	4463.00	
Perforations	3.00			4466.00	
Change Over Sub	1.00			4467.00	
Drill Pipe	126.00			4593.00	
Change Over Sub	1.00			4594.00	
Bullnose	5.00			4599.00	141.00 Anchor Tool

Total Tool Length: 159.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59675

DST#: 1

ATTN: Terry McLeod

Test Start: 2014.12.16 @ 12:25:39

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	ocm 10%o 90%m	0.561
0.00	62 GIP	0.000

Total Length: 40.00 ft Total Volume: 0.561 bbl

Num Fluid Samples: 0

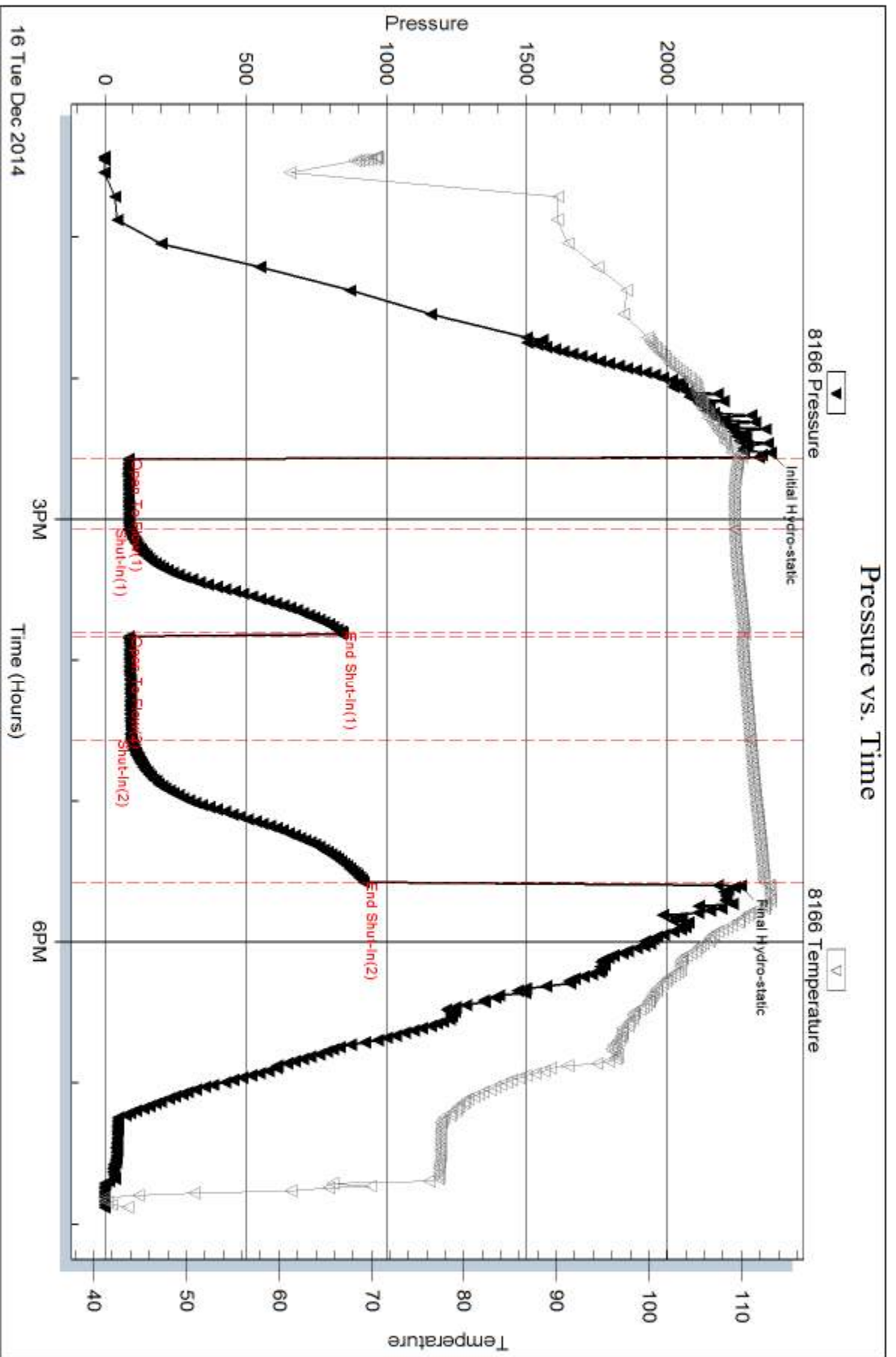
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



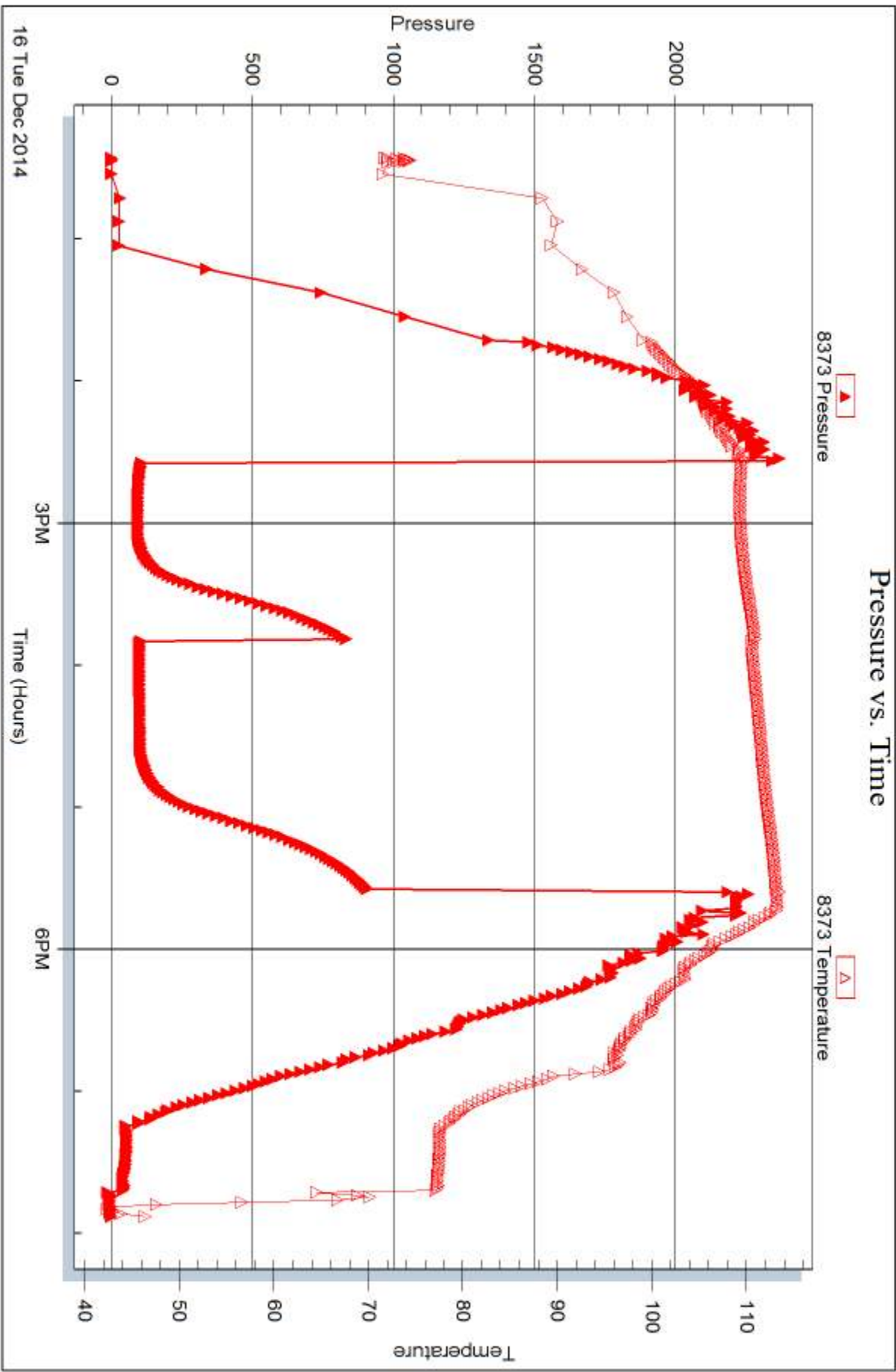
Serial #: 8373

Inside

Landmark Resources LLC

Ross #1-4

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59675

Printed: 2014, 12, 19 @ 16:25:29



DRILL STEM TEST REPORT

Prepared For: **Landmark Resources LLC**

1616 S Voss Rd ste 600
Houston, TX 77057

ATTN: Terry McLeod

Ross #1-4

4-17s-34w Scott,KS

Start Date: 2014.12.18 @ 12:26:46

End Date: 2014.12.18 @ 18:52:46

Job Ticket #: 59676 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.19 @ 16:24:52

Landmark Resources LLC
4-17s-34w Scott,KS
Ross #1-4
DST # 2
Johnson
2014.12.18



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59676

DST#: 2

ATTN: Terry McLeod

Test Start: 2014.12.18 @ 12:26:46

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:26:16

Time Test Ended: 18:52:46

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 79

Interval: 4731.00 ft (KB) To 4757.00 ft (KB) (TVD)

Reference Elevations: 3141.00 ft (KB)

Total Depth: 4906.00 ft (KB) (TVD)

3131.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8166 Outside

Press@RunDepth: 15.10 psig @ 4732.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.18

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time: 12:26:51

End Time:

18:52:45

Time On Btm:

2014.12.18 @ 14:23:46

Time Off Btm:

2014.12.18 @ 16:28:16

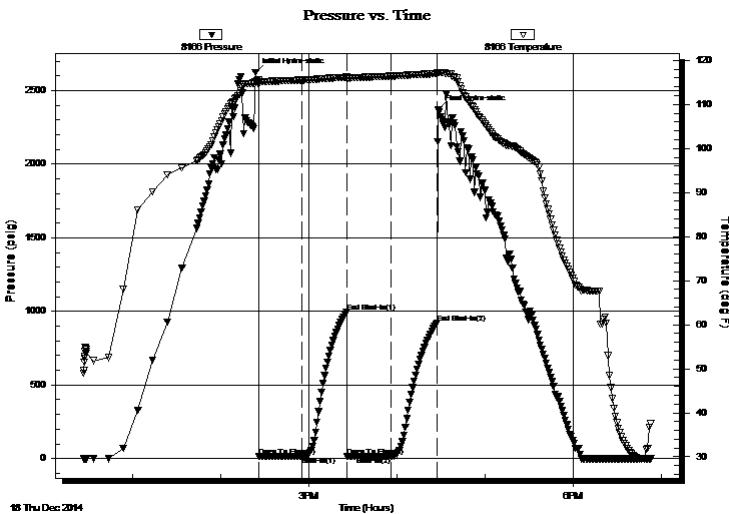
TEST COMMENT: IF: Weak surface blow died in 3 min.

IS: No return.

FF: No blow.

FS: No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2623.56	115.07	Initial Hydro-static
3	15.35	115.01	Open To Flow (1)
32	16.05	115.52	Shut-In(1)
62	994.52	116.18	End Shut-In(1)
63	16.19	115.71	Open To Flow (2)
92	15.10	116.42	Shut-In(2)
124	921.24	116.96	End Shut-In(2)
125	2371.87	117.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59676

DST#: 2

ATTN: Terry McLeod

Test Start: 2014.12.18 @ 12:26:46

Tool Information

Drill Pipe:	Length: 4726.00 ft	Diameter: 3.80 inches	Volume: 66.29 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 66.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 86000.00 lb
Depth to Top Packer:	4731.00 ft			Final 86000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	175.00 ft			
Tool Length:	197.00 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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Stubb	1.00			4710.00	
Shut In Tool	5.00			4715.00	
Hydraulic tool	5.00			4720.00	
Safety Joint	2.00			4722.00	
Packer	5.00			4727.00	22.00 Bottom Of Top Packer
Packer	4.00			4731.00	
Stubb	1.00			4732.00	
Recorder	0.00	8373	Inside	4732.00	
Recorder	0.00	8166	Outside	4732.00	
Perforations	20.00			4752.00	
Blank Off Sub	1.00			4753.00	
Packer - Shale	4.00			4757.00	
Stubb	1.00			4758.00	
Jars	14.00			4772.00	
Change Over Sub	1.00			4773.00	
Drill Pipe	127.00			4900.00	
Recorder	0.00	8360	Below	4900.00	
Change Over Sub	1.00			4901.00	
Bullnose	5.00			4906.00	175.00 Bottom Packers & Anchor

Total Tool Length: 197.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Landmark Resources LLC

4-17s-34w Scott,KS

1616 S Voss Rd ste 600
Houston, TX 77057

Ross #1-4

Job Ticket: 59676

DST#: 2

ATTN: Terry McLeod

Test Start: 2014.12.18 @ 12:26:46

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 7300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.070

Total Length: 5.00 ft Total Volume: 0.070 bbl

Num Fluid Samples: 0

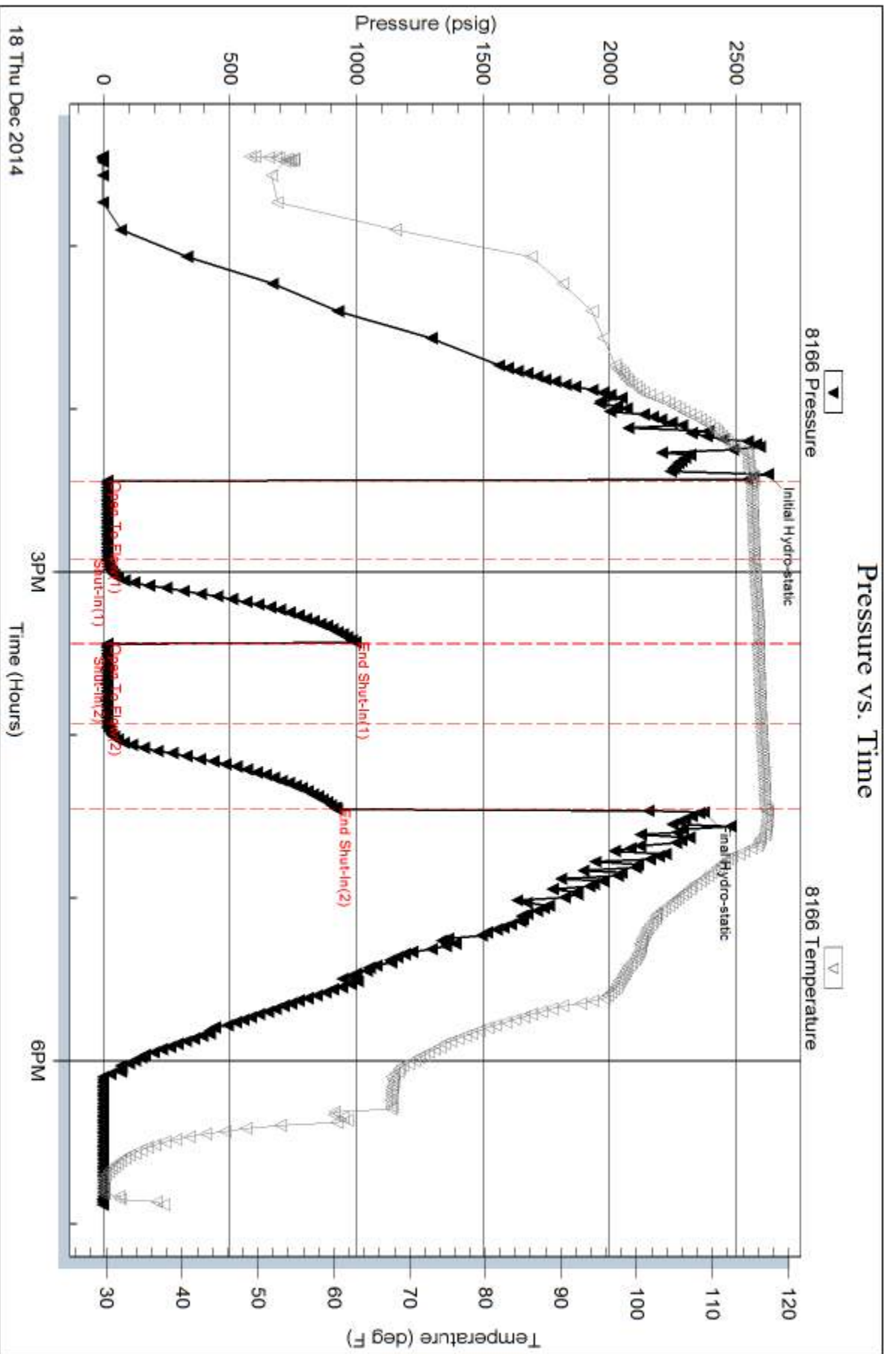
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



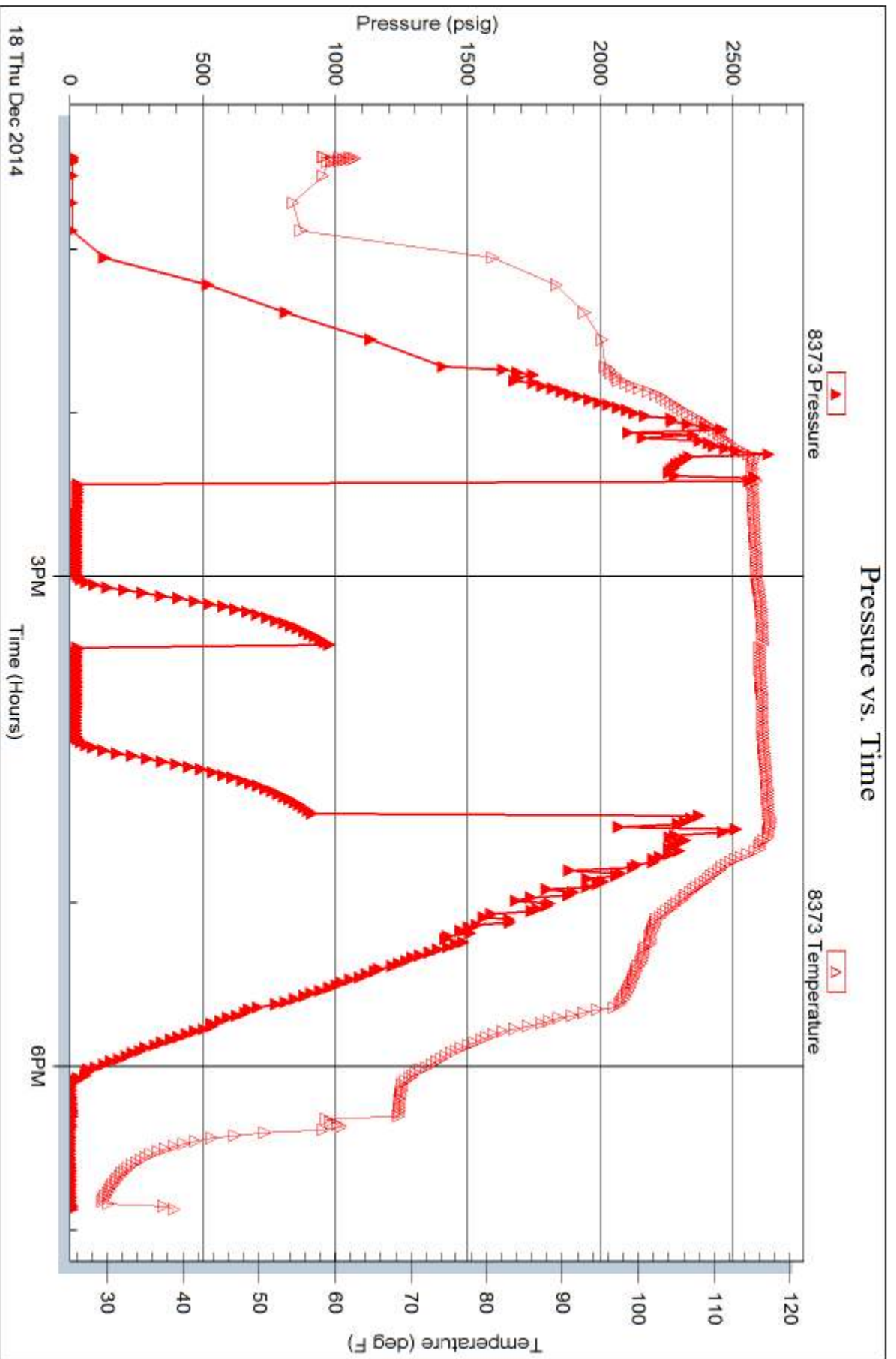
Serial #: 8373

Inside

Landmark Resources LLC

Ross #1-4

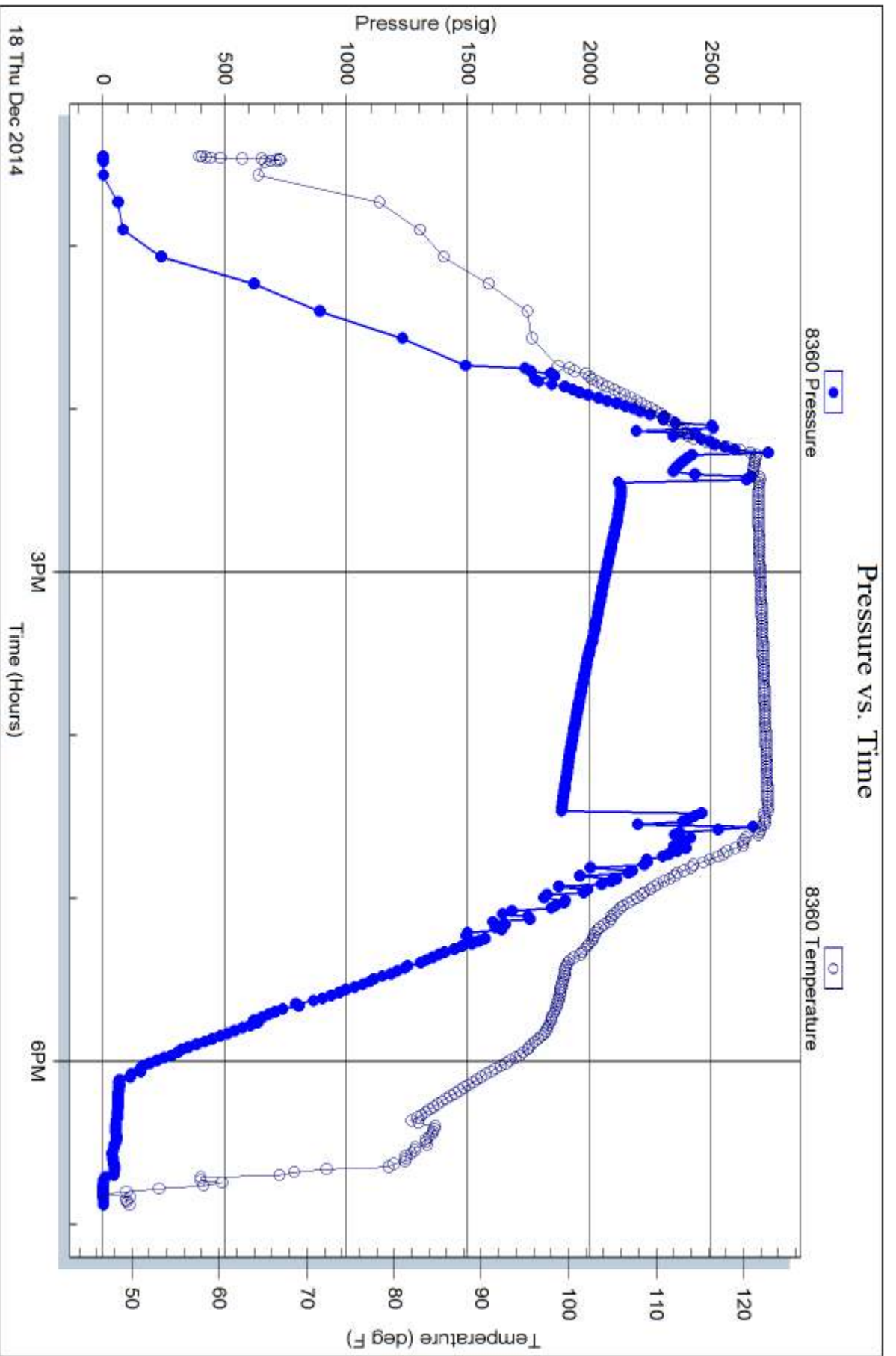
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 59676

Printed: 2014.12.19 @ 16:24:53



18 Thu Dec 2014



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59675

Well Name & No. ROSS 1-4 Test No. 1 Date 12-16-14
 Company Landmarks Resources LLC Elevation 3141 KB 3131 GL
 Address 1416 S. VOSS Rd Ste 600 Houston, TX 77057
 Co. Rep / Geo. Terry McLeod Rig U#1 #1
 Location: Sec. 4 Twp. 17 Rge. 34 Co. Scott State KS

Interval Tested 4458 4595 Zone Tested marmaton - Pawnee
 Anchor Length 137 Drill Pipe Run 4444 Mud Wt. 9.4
 Top Packer Depth 4453 Drill Collars Run — Vis 53
 Bottom Packer Depth 4458 Wt. Pipe Run — WL 8.8
 Total Depth 4595 Chlorides 6100 ppm System LCM 1
 Blow Description IF: 1/4 blow built to 2 in 30 min.
IS: No return.
FF: 1/4 blow built to 3 in 45 min.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
	<u>62 GIP</u>				

Rec Total 40 BHT 112 Gravity — API RW — @ — °F Chlorides — ppm

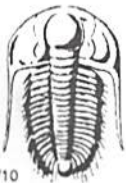
(A) Initial Hydrostatic 2358 Test 1250 T-On Location 11:15
 (B) First Initial Flow 84 Jars — T-Started 12:25
 (C) First Final Flow 85 Safety Joint 75 T-Open 14:34
 (D) Initial Shut-In 845 Circ Sub N/C T-Pulled 17:34
 (E) Second Initial Flow 84 Hourly Standby — T-Out 20:00
 (F) Second Final Flow 92 Mileage 42-X2 65.10 Comments catwalk
 (G) Final Shut-In 920 Sampler — 65.10 is Junk.
 (H) Final Hydrostatic 2261 Straddle —
 Ruined Shale Packer
 Ruined Packer
 Extra Copies

Initial Open 30 Shale Packer 250
 Initial Shut-In 45 Extra Packer —
 Final Flow 45 Extra Recorder —
 Final Shut-In 60 Day Standby —
 Accessibility —
 Sub Total 1705.20 MP/DST Disc't —

Approved By Terry McLeod 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.

☎ 785-650-8399



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59676

Well Name & No. Ross 1-4 Test No. 2 Date 12-18-14
 Company Landmark Resources Elevation 3141 KB 3131 GL
 Address _____
 Co. Rep / Geo. Terry McLeod Rig U91 #1
 Location: Sec. 4 Twp. 17 Rge. 34 Co. Scott State KS

Interval Tested 4731 4757 Zone Tested Johnson
 Anchor Length 26 Drill Pipe Run 4726 Mud Wt. 9.4
 Top Packer Depth 4731 Drill Collars Run — Vis 51
 Bottom Packer Depth 4757 Wt. Pipe Run — WL 8.8
 Total Depth 4966 Chlorides 7300 ppm System LCM 1

Blow Description IF: weak surface blow died in 3 min.
IS: No return.
FF: No blow.
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</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 5 BHT 116 Gravity — API RW — @ — °F Chlorides — ppm
 (A) Initial Hydrostatic Test 1250 T-On Location 11:45
 (B) First Initial Flow Jars _____ T-Started 12:26
 (C) First Final Flow Safety Joint 75 T-Open 14:25
 (D) Initial Shut-In Circ Sub _____ T-Pulled 16:25
 (E) Second Initial Flow Hourly Standby _____ T-Out 18:52
 (F) Second Final Flow Mileage 42 65.10 Comments _____
 (G) Final Shut-In Sampler _____
 (H) Final Hydrostatic Straddle 600 Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 30 Extra Recorder _____ Sub Total 525
 Final Flow 30 Day Standby 1d 15.75h Total 2765.10
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 2240.10

Approved By Terry McLeod 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.