



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Planville, KS 67663

ATTN: Marc Downing

20-11s-23w Trego,KS

North Fork Farms #20-1

Start Date: 2014.11.22 @ 20:29:46

End Date: 2014.11.23 @ 06:16:46

Job Ticket #: 58410 DST #: 1

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

Printed: 2014.11.26 @ 15:42:55

H&C Oil Operating Inc.

North Fork Farms #20-1

20-11s-23w Trego,KS

DST # 1

KC "1&J"

2014.11.22



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

ATTN: Marc Downing

Job Ticket: 58410

DST#: 1

Test Start: 2014.11.22 @ 20:29:46

GENERAL INFORMATION:

Formation: **KC "I&J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:12:46
 Time Test Ended: 06:16:46
 Interval: **3892.00 ft (KB) To 3940.00 ft (KB) (TVD)**
 Total Depth: 3940.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan Lonsdale
 Unit No: 62
 Reference Elevations: 2371.00 ft (KB)
 2363.00 ft (CF)
 KB to GR/CF: 8.00 ft

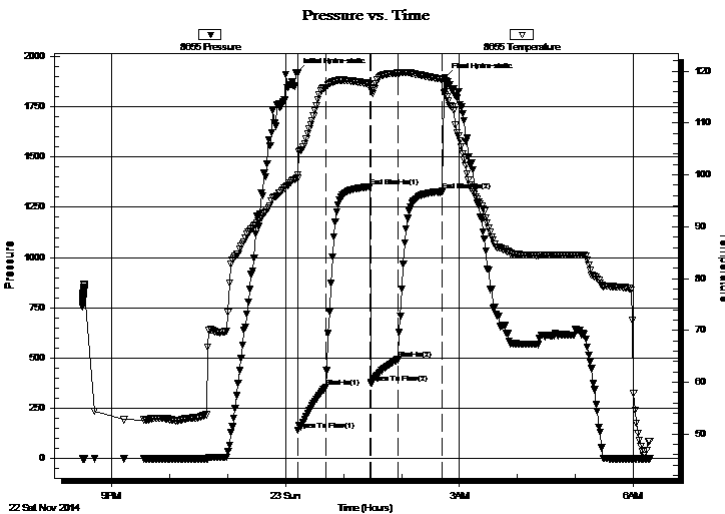
Serial #: 8655

Outside

Press@RunDepth: 493.19 psig @ 3893.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.22 End Date: 2014.11.23 Last Calib.: 2014.11.23
 Start Time: 20:29:47 End Time: 06:16:46 Time On Btm: 2014.11.23 @ 00:11:16
 Time Off Btm: 2014.11.23 @ 02:44:46

TEST COMMENT: 30- IF- BOB 1 min
 45- IS- BOB 16 mins
 30- FF- BOB instantly
 45- FS- BOB 22 mins

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1920.93	99.21	Initial Hydro-static
2	140.09	100.04	Open To Flow (1)
31	354.95	116.91	Shut-In(1)
76	1352.00	117.58	End Shut-In(1)
77	374.63	116.84	Open To Flow (2)
105	493.19	119.65	Shut-In(2)
151	1329.70	118.44	End Shut-In(2)
154	1894.74	116.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1435.00	GO, 20%G 80%O	19.34
0.00	1560' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

Job Ticket: 58410

DST#: 1

ATTN: Marc Downing

Test Start: 2014.11.22 @ 20:29:46

Tool Information

Drill Pipe:	Length: 3854.00 ft	Diameter: 3.75 inches	Volume: 52.65 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3892.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3873.00	
Shut In Tool	5.00			3878.00	
Hydraulic tool	5.00			3883.00	
Packer	5.00			3888.00	20.00 Bottom Of Top Packer
Packer	4.00			3892.00	
Stubb	1.00			3893.00	
Recorder	0.00	8651	Inside	3893.00	
Recorder	0.00	8655	Outside	3893.00	
Perforations	10.00			3903.00	
Change Over Sub	1.00			3904.00	
Drill Pipe	32.00			3936.00	
Change Over Sub	1.00			3937.00	
Bullnose	3.00			3940.00	48.00 Bottom Packers & Anchor

Total Tool Length: 68.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

Job Ticket: 58410

DST#: 1

ATTN: Marc Downing

Test Start: 2014.11.22 @ 20:29:46

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

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
1435.00	GO, 20%G 80%O	19.341
0.00	1560' GIP	0.000

Total Length: 1435.00 ft Total Volume: 19.341 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

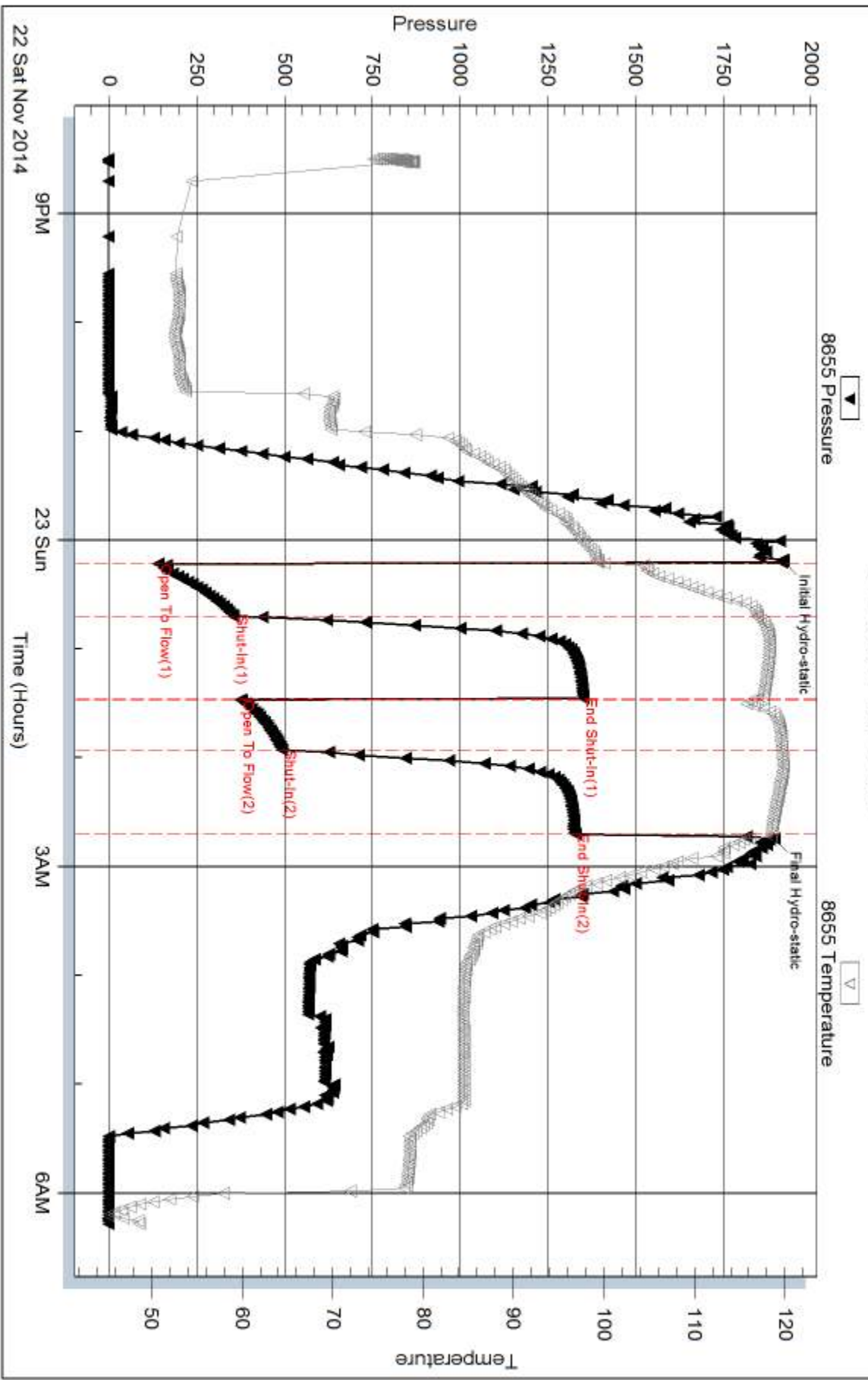
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



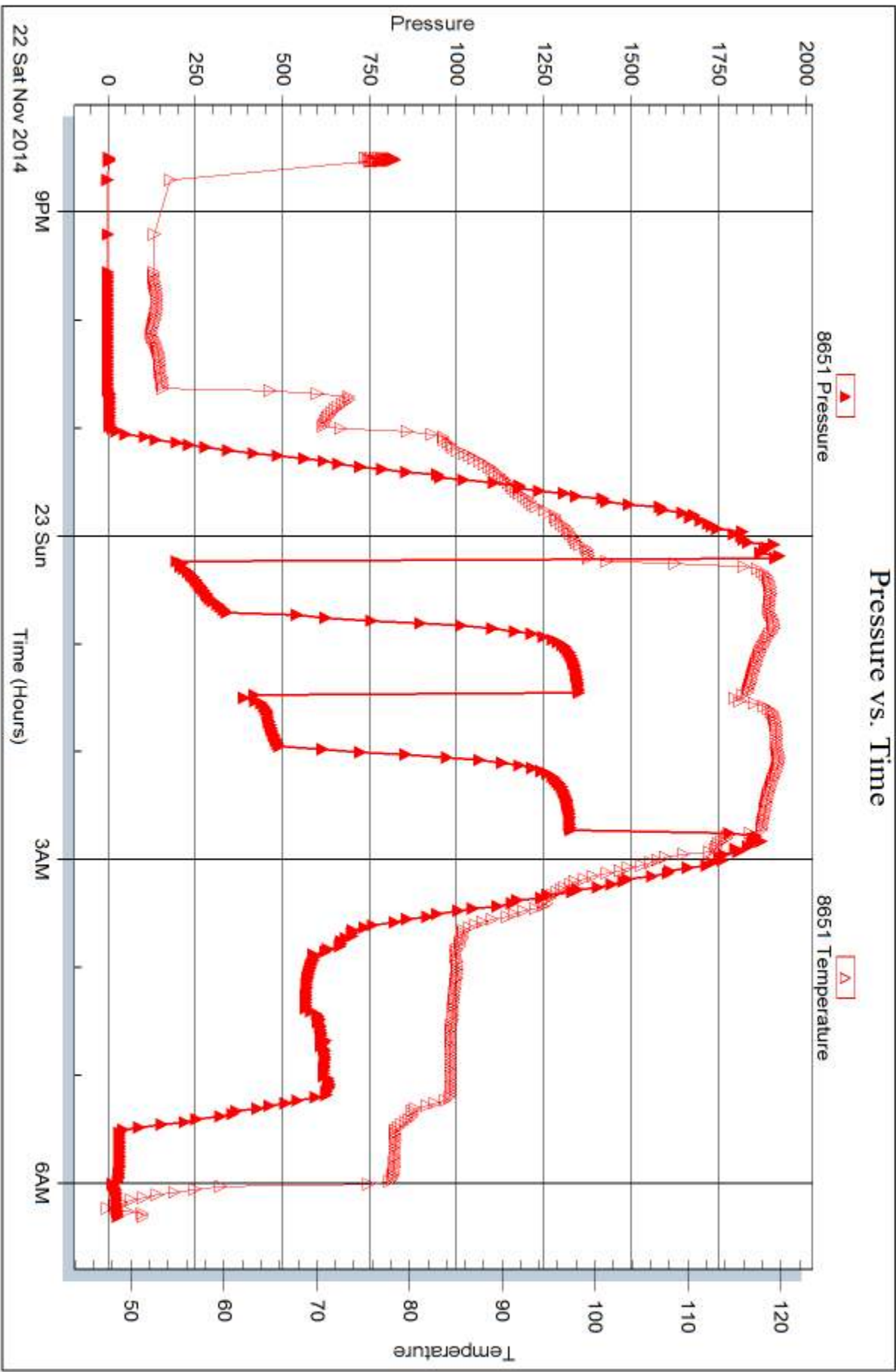
Serial #: 8651

Inside

H&C Oil Operating Inc.

20-11s-23w Trego,KS

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Planville, KS 67663

ATTN: Marc Downing

20-11s-23w Trego,KS

North Fork Farms #20-1

Start Date: 2014.11.26 @ 08:39:04

End Date: 2014.11.26 @ 14:13:34

Job Ticket #: 58414 DST #: 2

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

Printed: 2014.11.26 @ 15:40:52

H&C Oil Operating Inc.

North Fork Farms #20-1

20-11s-23w Trego,KS

DST # 2

Marmaton

2014.11.26



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

ATTN: Marc Downing

Job Ticket: 58414

DST#: 2

Test Start: 2014.11.26 @ 08:39:04

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:20:04

Time Test Ended: 14:13:34

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 62

Interval: 4104.00 ft (KB) To 4152.00 ft (KB) (TVD)

Reference Elevations: 2371.00 ft (KB)

Total Depth: 4152.00 ft (KB) (TVD)

2363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8655 Outside

Press@RunDepth: 25.65 psig @ 4105.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.26

End Date:

2014.11.26

Last Calib.:

2014.11.26

Start Time: 08:39:05

End Time:

14:13:34

Time On Btm:

2014.11.26 @ 10:18:34

Time Off Btm:

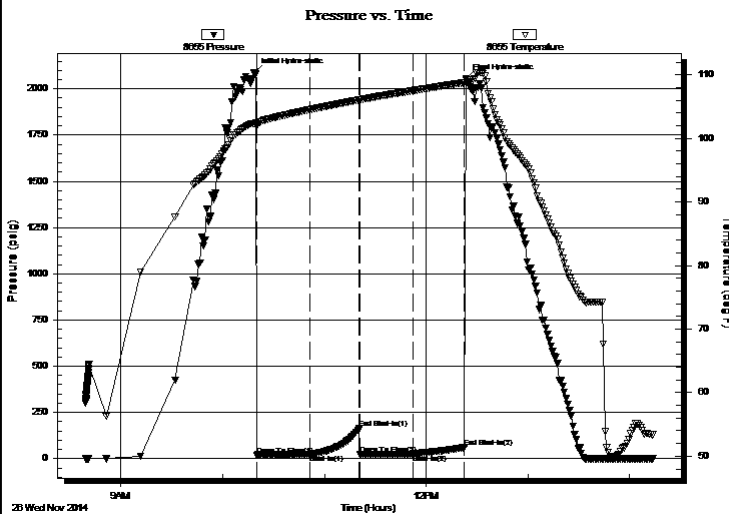
2014.11.26 @ 12:23:34

TEST COMMENT: 30- IF- Built very slow ly to 3/4"

30- IS- No blow

30- FF- No blow

30- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2089.17	102.36	Initial Hydro-static
2	19.81	101.86	Open To Flow (1)
33	21.95	104.54	Shut-In(1)
62	161.92	106.07	End Shut-In(1)
63	22.66	106.07	Open To Flow (2)
94	25.65	107.50	Shut-In(2)
124	60.06	108.76	End Shut-In(2)
125	2056.34	109.28	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

ATTN: Marc Downing

Job Ticket: 58414

DST#: 2

Test Start: 2014.11.26 @ 08:39:04

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:20:04

Time Test Ended: 14:13:34

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 62

Interval: 4104.00 ft (KB) To 4152.00 ft (KB) (TVD)

Reference Elevations: 2371.00 ft (KB)

Total Depth: 4152.00 ft (KB) (TVD)

2363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8651 Inside

Press@RunDepth: psig @ 4105.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.26

End Date:

2014.11.26

Last Calib.:

2014.11.26

Start Time: 08:39:19

End Time:

14:14:48

Time On Btm:

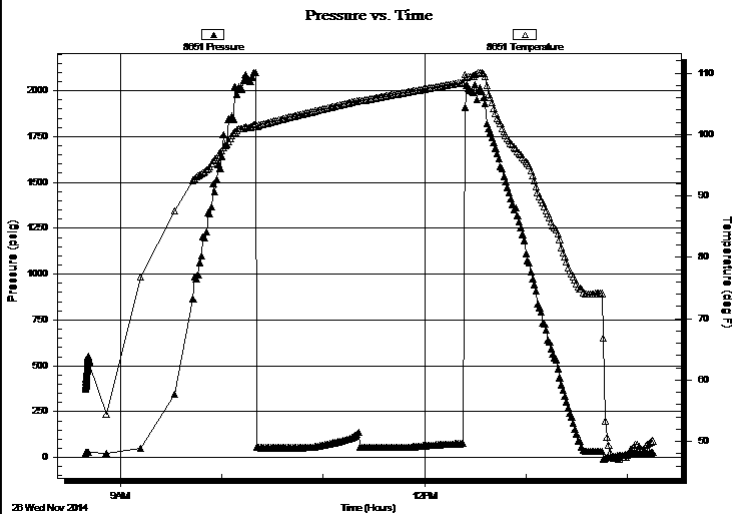
Time Off Btm:

TEST COMMENT: 30- IF- Built very slow ly to 3/4"

30- IS- No blow

30- FF- No blow

30- FS- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego,KS

ATTN: Marc Downing

Job Ticket: 58414

DST#: 2

Test Start: 2014.11.26 @ 08:39:04

Tool Information

Drill Pipe:	Length: 4078.00 ft	Diameter: 3.75 inches	Volume: 55.71 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4104.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	68.00 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			4085.00	
Shut In Tool	5.00			4090.00	
Hydraulic tool	5.00			4095.00	
Packer	5.00			4100.00	20.00 Bottom Of Top Packer
Packer	4.00			4104.00	
Stubb	1.00			4105.00	
Recorder	0.00	8651	Inside	4105.00	
Recorder	0.00	8655	Outside	4105.00	
Perforations	10.00			4115.00	
Change Over Sub	1.00			4116.00	
Drill Pipe	32.00			4148.00	
Change Over Sub	1.00			4149.00	
Bullnose	3.00			4152.00	48.00 Bottom Packers & Anchor

Total Tool Length: 68.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

North Fork Farms #20-1

PO Box 86
Planville, KS 67663

20-11s-23w Trego, KS

Job Ticket: 58414

DST#: 2

ATTN: Marc Downing

Test Start: 2014.11.26 @ 08:39:04

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 8.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 82.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

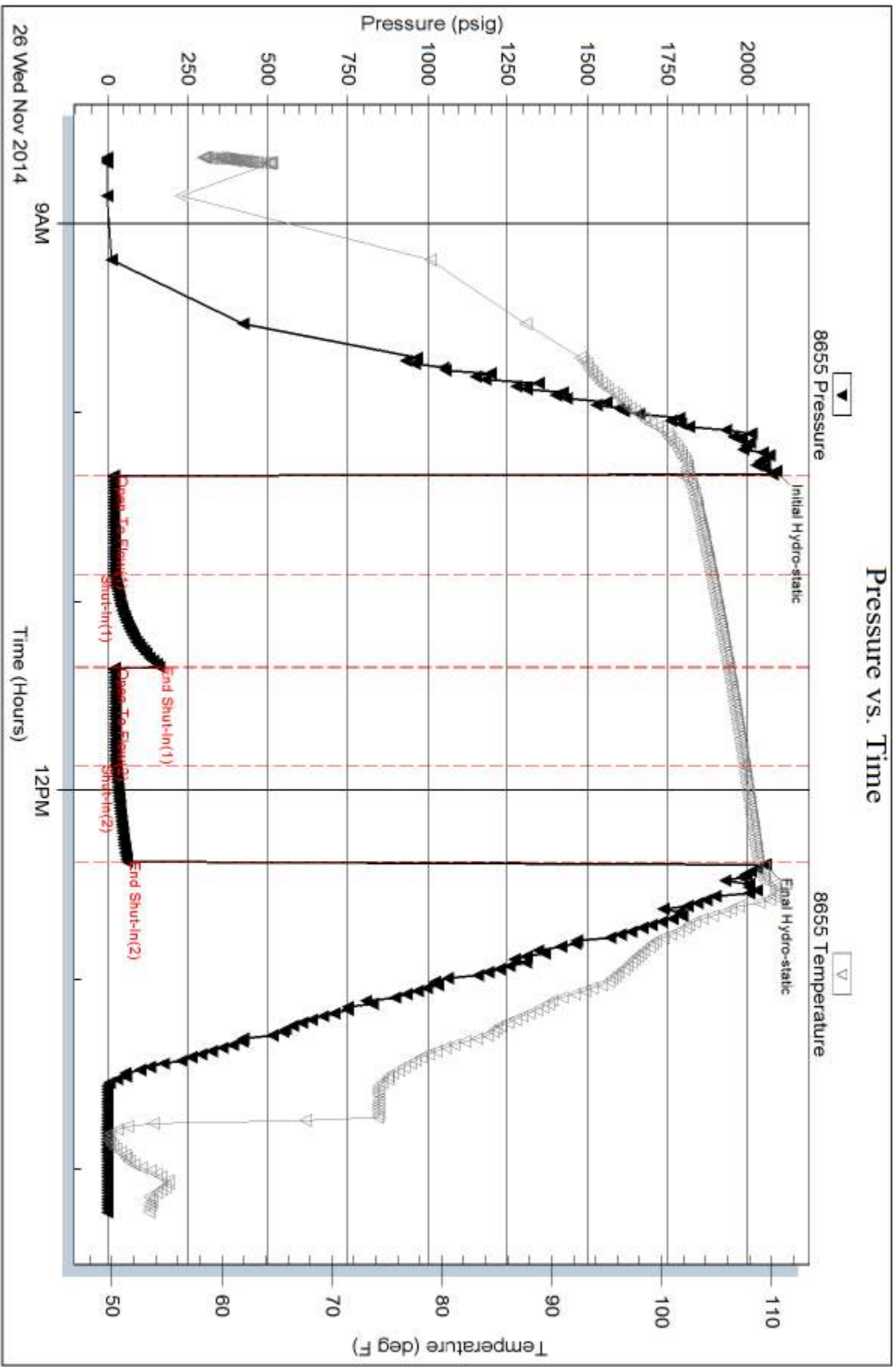
Recovery Comments:

Serial #: 8655

Outside H&C Oil Operating Inc.

20-11-s-23w Trego,KS

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58414

Printed: 2014.11.26 @ 15:40:53

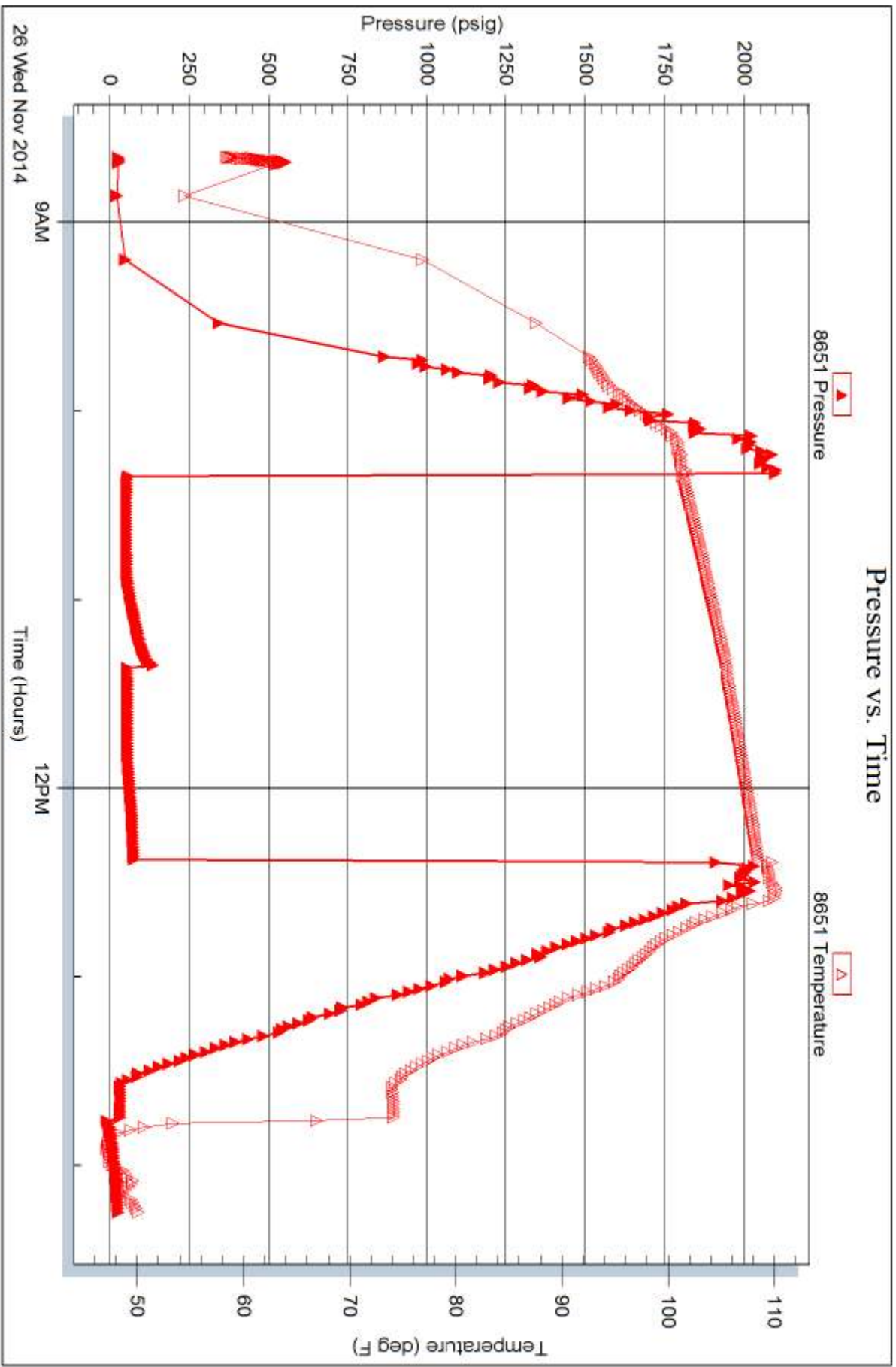
Serial #: 8651

Inside

H&C Oil Operating Inc.

20-11s-23w Trego,KS

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 58414

Printed: 2014.11.26 @ 15:40:53



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58410

Well Name & No. North Fork Farms #20-1 Test No. 1 Date 11/22/14
 Company H+C Oil Operating, Inc. Elevation 2371 KB 2363 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 20 Twp. 11 S Rge. 23 W Co. Trego State KS

Interval Tested 3892-3940 Zone Tested KC "I+J"
 Anchor Length 48' Drill Pipe Run 3854 Mud Wt. 8.9
 Top Packer Depth 3887 Drill Collars Run 30 Vis 51
 Bottom Packer Depth 3892 Wt. Pipe Run _____ WL 8.0
 Total Depth 3940 Chlorides 3000 ppm System LCM 1 1/2"

Blow Description IF- BOB 1min
ISI- BOB 16mins
RF- BOB instantly
FST- BOB 22mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>1435</u>	<u>GC</u>	<u>20</u>	<u>80</u>		
Rec	Feet of <u>1560' GIP</u>	%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 1435' BHT 118° Gravity 36 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1921 Test 1150 T-On Location 2005
 (B) First Initial Flow 140 Jars _____ T-Started 2030
 (C) First Final Flow 355 Safety Joint _____ T-Open 0014 11/23
 (D) Initial Shut-In 1352 Circ Sub 50 T-Pulled 0244
 (E) Second Initial Flow 375 Hourly Standby _____ T-Out 0619
 (F) Second Final Flow 493 Mileage 94 RT x 2 Comments Rig broke down
 (G) Final Shut-In 1330 Sampler _____ 291.40 Loaded tools
 (H) Final Hydrostatic 1895 Straddle _____ 11/23 @ 1430

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 45 Shale Packer _____ Ruined Packer _____
 Final Flow 30 Extra Packer _____ Extra Copies _____
 Final Shut-In 45 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1491.40
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1491.40

Approved By _____ Our Representative Brannan Lonsdale

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.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58414

Well Name & No. North Fork Farms #20-1 Test No. 2 Date 11/26/14
 Company H&C Oil Operations, Inc Elevation 2371 KB 2303 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 20 Twp. 11 S Rge. 23 W Co. Trego State KS

Interval Tested 4104-4152 Zone Tested Marmaton
 Anchor Length 48' Drill Pipe Run 4078 Mud Wt. 8.4
 Top Packer Depth 4099 Drill Collars Run 29 Vis 82
 Bottom Packer Depth 4104 Wt. Pipe Run _____ WL 72
 Total Depth 4152 Chlorides 4,500 ppm System LCM 1#

Blow Description IF - Built very slowly to 3/4"
ISI - No Blow
FF - No Blow
FST - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>M</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 109° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2089 Test 1250 T-On Location 0831
 (B) First Initial Flow 20 Jars _____ T-Started 0839
 (C) First Final Flow 22 Safety Joint _____ T-Open 1021
 (D) Initial Shut-In 162 Circ Sub _____ T-Pulled 1221
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 1415
 (F) Second Final Flow 26 Mileage 94 RT 145.70 Comments _____
 (G) Final Shut-In 60 Sampler _____
 (H) Final Hydrostatic 2056 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 30 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1395.70
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 1395.70

Approved By _____ Our Representative Brannan Lonsdale

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.