



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-9s-23w Graham,KS

Wendelin-Herman #2-30

Start Date: 2014.01.29 @ 03:36:24

End Date: 2014.01.29 @ 11:21:24

Job Ticket #: 54791 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.02.03 @ 15:05:50

Downing-Nelson Oil Co Inc

Wendelin-Herman #2-30

30-9s-23w Graham,KS

DST # 1

LKC C & D

2014.01.29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

ATTN: Marc Dow ning

Job Ticket: 54791

DST#: 1

Test Start: 2014.01.29 @ 03:36:24

GENERAL INFORMATION:

Formation: **LKC C & D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:02:24

Time Test Ended: 11:21:24

Test Type: Conventional Bottom Hole (Initial)

Tester: Jeff Brow n

Unit No: 67

Interval: 3870.00 ft (KB) To 3910.00 ft (KB) (TVD)

Reference Elevations: 2492.00 ft (KB)

Total Depth: 3910.00 ft (KB) (TVD)

2484.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 6625 Outside

Press@RunDepth: 410.27 psig @ 3874.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.01.29

End Date:

2014.01.29

Last Calib.:

2014.01.29

Start Time: 03:36:25

End Time:

11:20:24

Time On Btm:

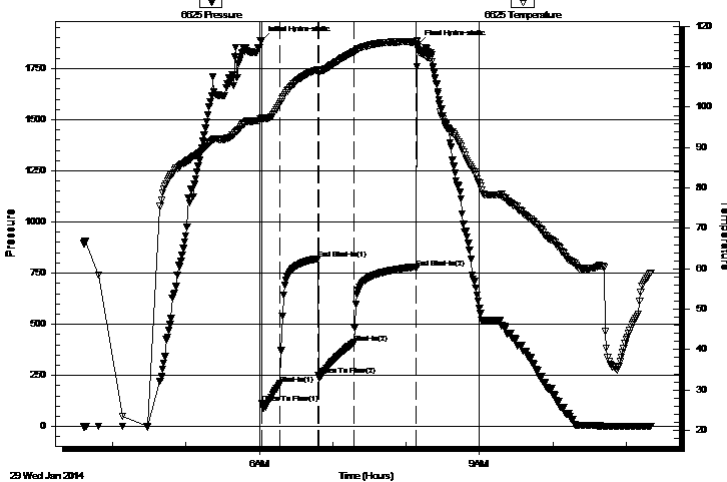
2014.01.29 @ 06:01:54

Time Off Btm:

2014.01.29 @ 08:09:24

TEST COMMENT: IFP=Strong blow BOB in 45 sec
IS=Good blow back BOB in 6 min
FFP=Strong blow BOB in 45 sec
FS=Good blow back BOB in 16 min

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1887.41	97.36	Initial Hydro-static
1	111.88	97.10	Open To Flow (1)
15	208.79	100.82	Shut-In(1)
46	819.31	109.33	End Shut-In(1)
47	250.42	109.02	Open To Flow (2)
76	410.27	113.73	Shut-In(2)
127	775.06	116.12	End Shut-In(2)
128	1866.36	115.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
189.00	GMCO 25%G 20%M 55% O	2.39
897.00	Gassy Oil 40%G 60%O	12.58
0.00	1779-GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

Job Ticket: 54791

DST#: 1

ATTN: Marc Dow ning

Test Start: 2014.01.29 @ 03:36:24

Tool Information

Drill Pipe:	Length: 3854.00 ft	Diameter: 3.80 inches	Volume: 54.06 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: 20000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 69000.00 lb
			<u>Total Volume: 54.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3870.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	40.00 ft			
Tool Length:	60.00 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			3851.00	
Shut In Tool	5.00			3856.00	
Hydraulic tool	5.00			3861.00	
Packer	4.00			3865.00	20.00 Bottom Of Top Packer
Packer	5.00			3870.00	
Stubb	1.00			3871.00	
Perforations	2.00			3873.00	
Change Over Sub	1.00			3874.00	
Recorder	0.00	6625	Outside	3874.00	
Recorder	0.00	8679	Inside	3874.00	
Drill Pipe	31.00			3905.00	
Change Over Sub	1.00			3906.00	
Bullnose	4.00			3910.00	40.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

Job Ticket: 54791

DST#: 1

ATTN: Marc Dow ning

Test Start: 2014.01.29 @ 03:36:24

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1750.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
189.00	GMCO 25%G 20%M 55% O	2.387
897.00	Gassy Oil 40%G 60%O	12.583
0.00	1779-GIP	0.000

Total Length: 1086.00 ft Total Volume: 14.970 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

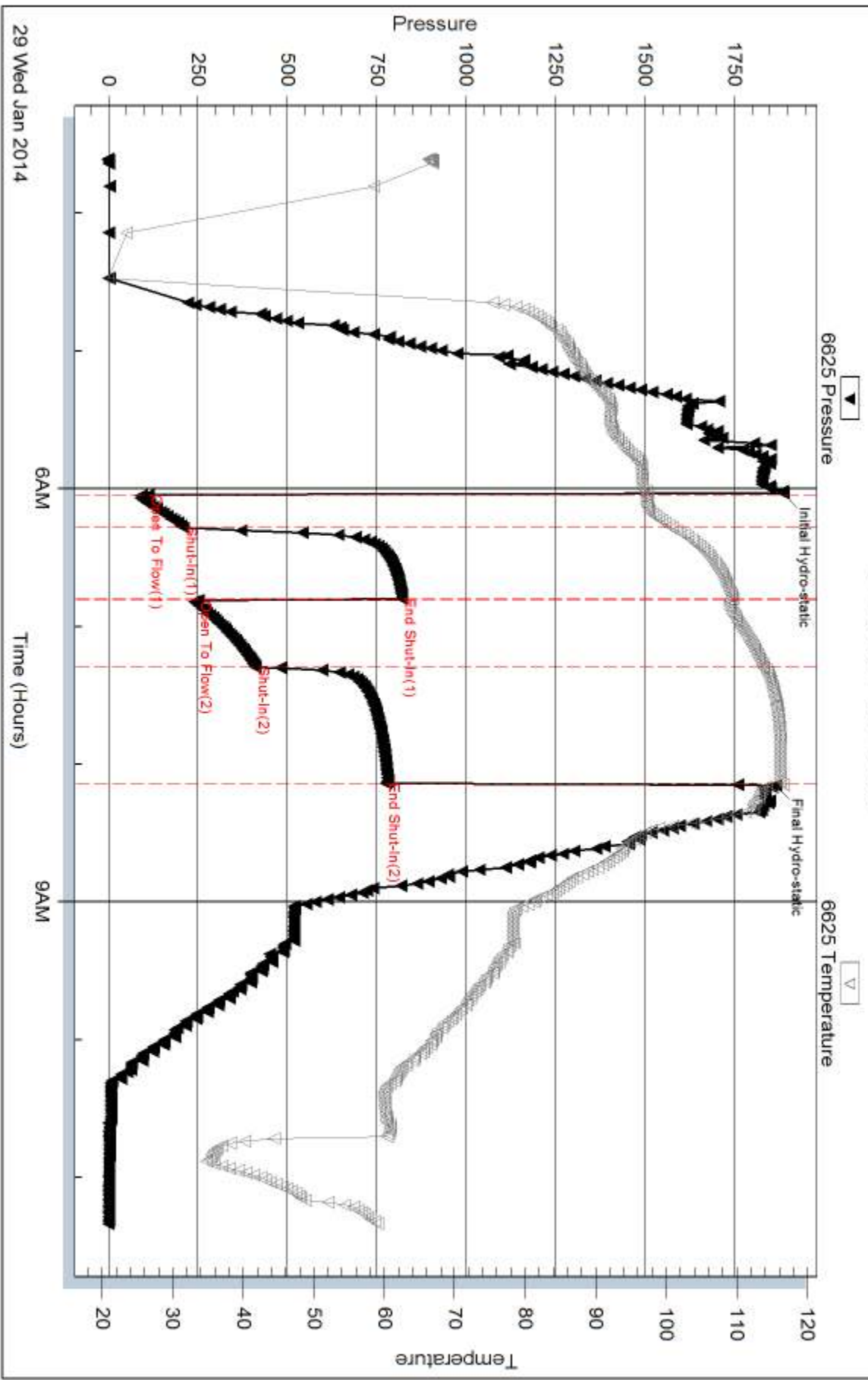
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



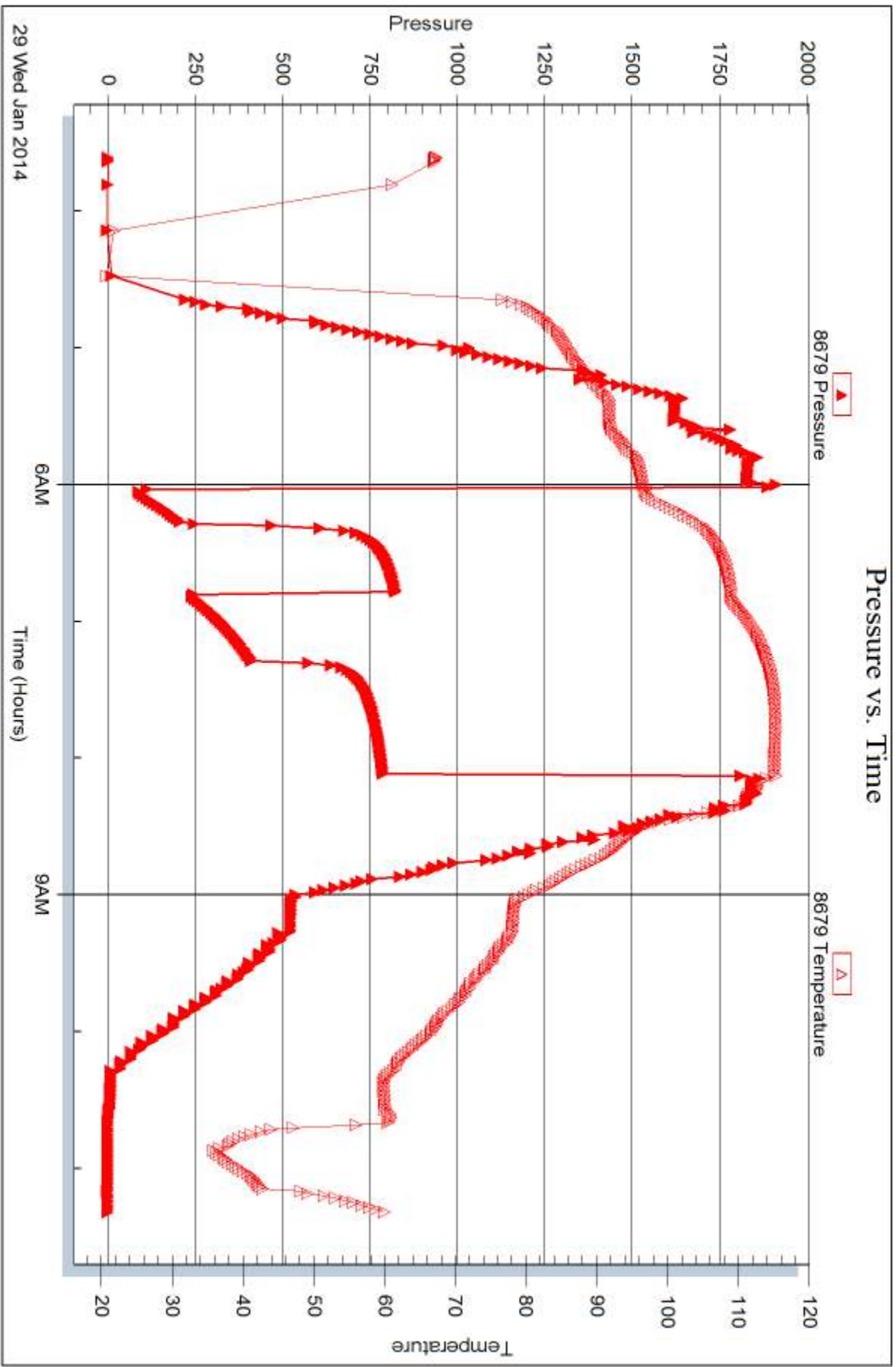
Serial #: 8679

Inside

Dow nrg-Nelson Oil Co Inc

30-95-23w Graham,KS

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 54791

Printed: 2014.02.03 @ 15:05:53



DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co Inc**

PO Box 1019
Hays KS 67601

ATTN: Marc Downing

30-9s-23w Graham,KS

Wendelin-Herman #2-30

Start Date: 2014.01.29 @ 20:21:28

End Date: 2014.01.30 @ 03:10:58

Job Ticket #: 54792 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.02.03 @ 15:05:15

Downing-Nelson Oil Co Inc

Wendelin-Herman #2-30

30-9s-23w Graham,KS

DST # 2

LKC E & F

2014.01.29



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

ATTN: Marc Dow ning

Job Ticket: 54792

DST#: 2

Test Start: 2014.01.29 @ 20:21:28

GENERAL INFORMATION:

Formation: **LKC E & F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:18:28

Time Test Ended: 03:10:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brow n

Unit No: 67

Interval: 3911.00 ft (KB) To 3936.00 ft (KB) (TVD)

Reference Elevations: 2492.00 ft (KB)

Total Depth: 3936.00 ft (KB) (TVD)

2484.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 6625 Outside

Press@RunDepth: 43.50 psig @ 3914.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.01.29

End Date:

2014.01.30

Last Calib.:

2014.01.30

Start Time: 20:21:29

End Time:

03:29:58

Time On Btm:

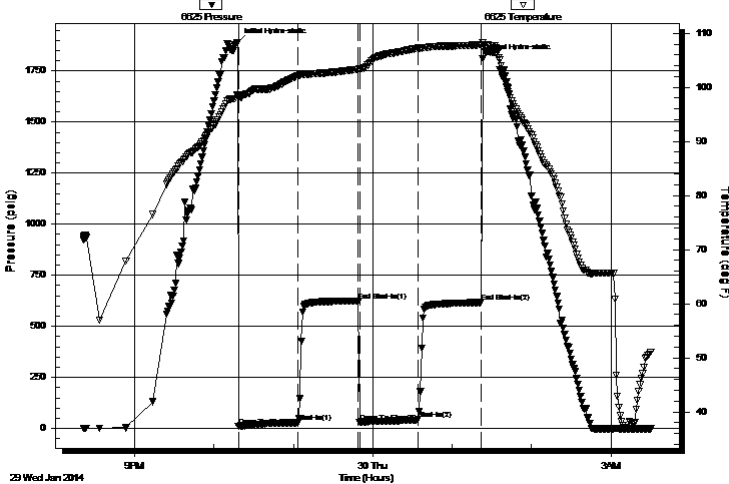
2014.01.29 @ 22:17:58

Time Off Btm:

2014.01.30 @ 01:22:58

TEST COMMENT: IFP=Fair blow built to 5"
IS=Dead no blow back
FFP=Fair blow built to 4"
FS=Dead no blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1889.67	98.60	Initial Hydro-static
1	11.25	98.34	Open To Flow (1)
46	29.36	102.14	Shut-In(1)
91	625.17	103.32	End Shut-In(1)
92	31.74	103.37	Open To Flow (2)
136	43.50	107.30	Shut-In(2)
184	617.25	107.85	End Shut-In(2)
185	1811.90	108.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
68.00	WM with a scum of oil 35%W 65%M	0.69

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

Job Ticket: 54792 **DST#: 2**

ATTN: Marc Dow ning

Test Start: 2014.01.29 @ 20:21:28

GENERAL INFORMATION:

Formation: **LKC E & F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:18:28

Time Test Ended: 03:10:58

Test Type: Conventional Bottom Hole (Reset)

Tester: Jeff Brow n

Unit No: 67

Interval: **3911.00 ft (KB) To 3936.00 ft (KB) (TVD)**

Reference Elevations: 2492.00 ft (KB)

Total Depth: 3936.00 ft (KB) (TVD)

2484.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 8.00 ft

Serial #: 8679

Inside

Press@RunDepth: psig @ 3914.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.01.29 End Date: 2014.01.30

Last Calib.: 2014.01.30

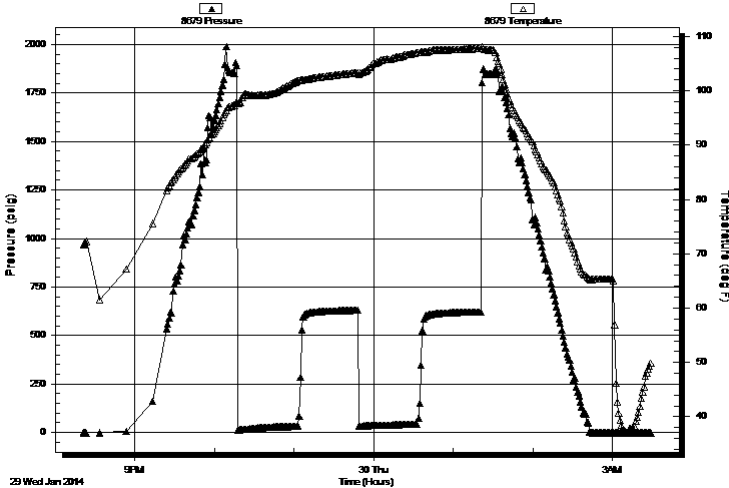
Start Time: 20:21:23 End Time: 03:28:52

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP=Fair blow built to 5"
IS=Dead no blow back
FFP=Fair blow built to 4"
FS=Dead no blow back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
68.00	WM with a scum of oil 35%W 65%M	0.69

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

Job Ticket: 54792

DST#: 2

ATTN: Marc Dow ning

Test Start: 2014.01.29 @ 20:21:28

Tool Information

Drill Pipe:	Length: 3886.00 ft	Diameter: 3.80 inches	Volume: 54.51 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:	20000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	66000.00 lb
			<u>Total Volume: 54.65 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3911.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval betw een Packers:	25.00 ft				
Tool Length:	45.00 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			3892.00	
Shut In Tool	5.00			3897.00	
Hydraulic tool	5.00			3902.00	
Packer	4.00			3906.00	20.00 Bottom Of Top Packer
Packer	5.00			3911.00	
Stubb	1.00			3912.00	
Perforations	2.00			3914.00	
Recorder	0.00	6625	Outside	3914.00	
Recorder	0.00	8679	Inside	3914.00	
Perforations	18.00			3932.00	
Bullnose	4.00			3936.00	25.00 Bottom Packers & Anchor

Total Tool Length: 45.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

Wendelin-Herman #2-30

PO Box 1019
Hays KS 67601

30-9s-23w Graham,KS

Job Ticket: 54792

DST#: 2

ATTN: Marc Dow ning

Test Start: 2014.01.29 @ 20:21:28

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1750.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
68.00	WM with a scum of oil 35%W 65%M	0.690

Total Length: 68.00 ft Total Volume: 0.690 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

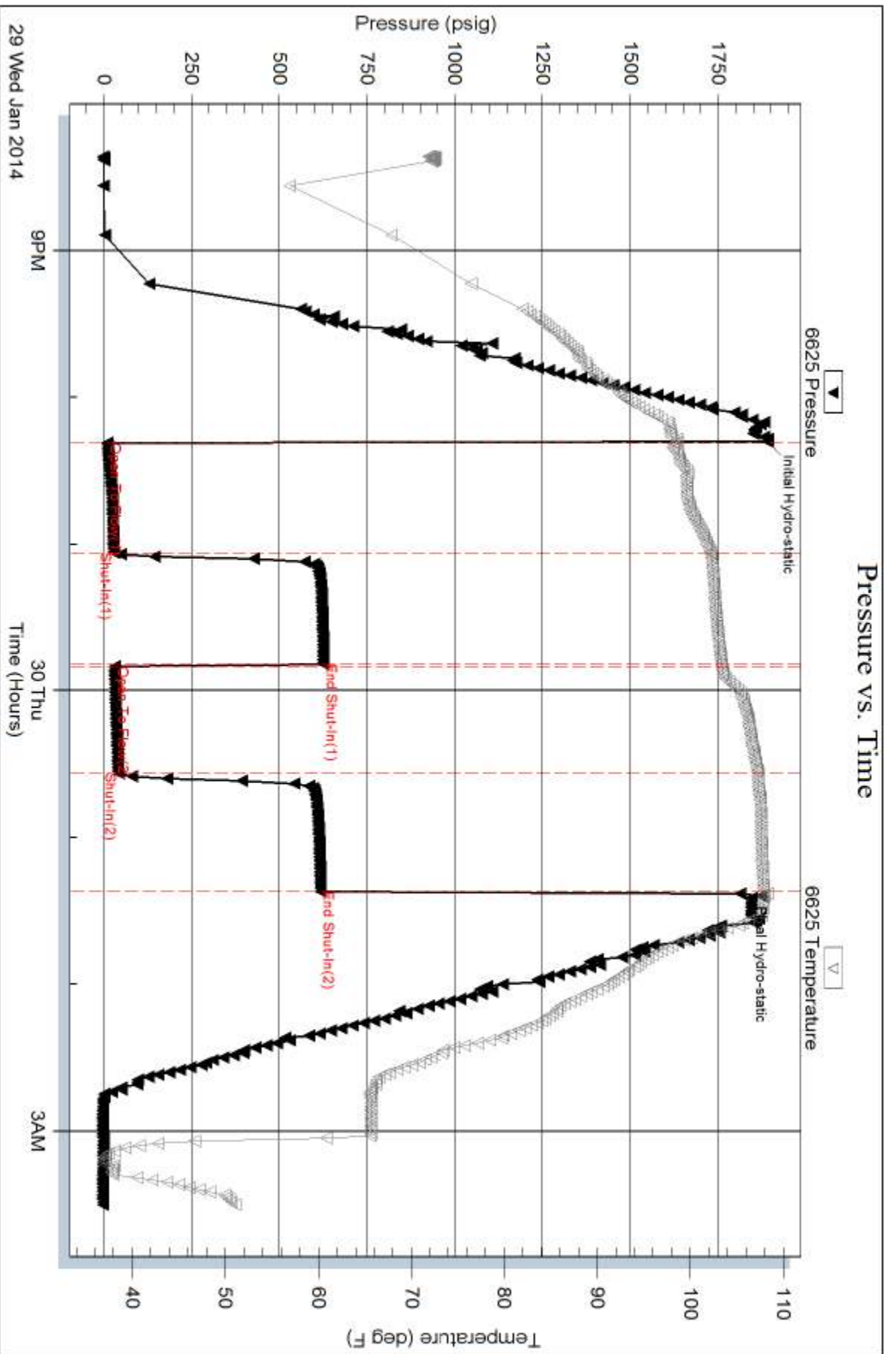
Recovery Comments:

Serial #: 6625

Outside Dow nting-Nelson Oil Co Inc

30-95-23w Graham,KS

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 54792

Printed: 2014.02.03 @ 15:05:18

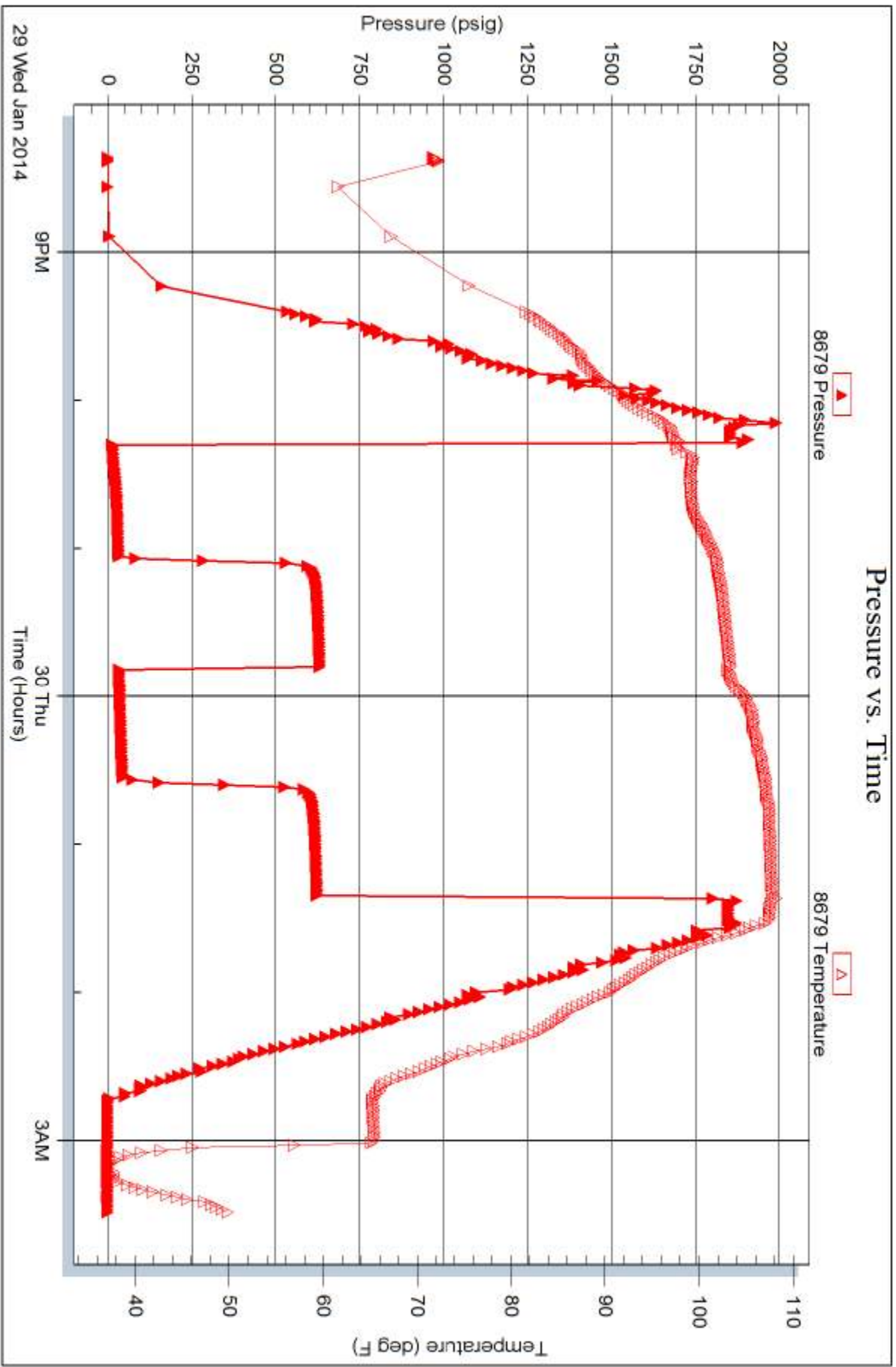
Serial #: 8679

Inside

Dow nrg-Nelson Oil Co Inc

30-95-23w Graham,KS

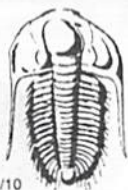
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 54792

Printed: 2014.02.03 @ 15:05:18



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 54791

Well Name & No. Wendelin Herman #2-30 Test No. 1 Date 1-29-14
 Company Downing-Nelson Oil Co INC Elevation 2492 KB 2484 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 30 Twp. 9 S Rge. 23 W Co. Graham State KS

Interval Tested 3870-3910 Zone Tested LANSING - C + D
 Anchor Length 40 Drill Pipe Run 3854 Mud Wt. 8.7
 Top Packer Depth 3845 Drill Collars Run 29 Vis 58
 Bottom Packer Depth 3870 Wt. Pipe Run 0 WL 7.6
 Total Depth 3910 Chlorides 1750 ppm System LCM 2 1/2

Blow Description FF-Strong Blow Bob IN 45 sec
BI-Good Blow Back BOB IN 14 min
FF-Strong Blow Bob IN 45 sec
BI-Good Blow Back Bob IN 14 min

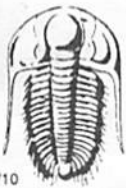
Rec	Feet of	%gas	%oil	%water	%mud
<u>189</u>	<u>6mco</u>	<u>25</u>	<u>55</u>	<u>20</u>	
<u>897</u>	<u>Gassy oil</u>	<u>40</u>	<u>60</u>		
	<u>1779-GIP</u>				

Rec Total 1086 BHT Gravity 34 API RW @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1887 Test 1150 T-On Location 3:00
 (B) First Initial Flow 112 Jars T-Started 3:36
 (C) First Final Flow 209 Safety Joint T-Open 6:09
 (D) Initial Shut-In 819 Circ Sub T-Pulled 8:04
 (E) Second Initial Flow 250 Hourly Standby T-Out 11:21
 (F) Second Final Flow 410 Mileage 110 RT 170.50 Comments _____
 (G) Final Shut-In 775 Sampler _____
 (H) Final Hydrostatic 1866 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 15
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 45
 Sub Total 1320.50
 Total 1320.50
 MP/DST Disc't _____

Approved By _____ Our Representative Jeff Brown

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. 54792

Well Name & No. Wendelin Herman #2-30 Test No. 2 Date 1-29-14
 Company Downing + Nelson Oil Co INC Elevation 2492 KB 2484 GL
 Address PO Box 1019 Hays KS 67601
 Co. Rep / Geo. Marc Downing Rig Discovery #1
 Location: Sec. 30 Twp. 9S Rge. 23W Co. Graham State KS

Interval Tested 3911 - 3936 Zone Tested LKC - E & F
 Anchor Length 25' Drill Pipe Run 3886 Mud Wt. 8.8
 Top Packer Depth 3906 Drill Collars Run 29 Vis 57
 Bottom Packer Depth 3911 Wt. Pipe Run 0 WL 5.2
 Total Depth 3936 Chlorides 2500 ppm System LCM 2

Blow Description FF - Fair Blow Built to 5 IN
1st - Dead NO Blow Back
FF - Fair Blow Built to 4 IN
1st - Dead NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>68</u>	<u>WM with A Scum of oil</u>			<u>35</u>	<u>45</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 68 BHT 108 Gravity _____ API RW 140 @ 52.1° F Chlorides 15,000 ppm
 (A) Initial Hydrostatic 1890 Test 1150 T-On Location 18:48
 (B) First Initial Flow 11 Jars _____ T-Started 20:21
 (C) First Final Flow 29 Safety Joint _____ T-Open 21:59
 (D) Initial Shut-In 6:25 Circ Sub _____ T-Pulled 00:59
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 3:10
 (F) Second Final Flow 44 Mileage 341 Comments Loaded Tool's
 (G) Final Shut-In 6:17 Sampler _____ @ 00:15 on 1-31-14
 (H) Final Hydrostatic 1812 Straddle _____ Ruined Shale Packer _____

Initial Open 45 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 45 Extra Packer _____ Extra Copies _____
 Final Flow 45 Extra Recorder _____ Sub Total 0
 Final Shut-In 45 Day Standby _____ Total 1491
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1491

Approved By _____ Our Representative Jeff Brown

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.