

DRILL STEM TEST REPORT

Prepared For: **Bruce Oil Company**

1704 Limestone Rd McPherson KS
67460+6500

ATTN: Bob Peterson

Dixon #1-31

31-8s-12w Osborne, KS

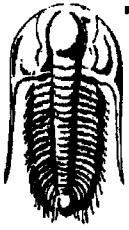
Start Date: 2018.10.28 @ 00:45:00

End Date: 2018.10.28 @ 08:10:30

Job Ticket #: 64789 DST #: 1

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

Printed: 2018.10.30 @ 14:09:53



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bruce Oil Company
1704 Limestone Rd McPherson KS 67460+6500
ATTN: Bob Peterson

31-8s-12w Osborne, KS
Dixon #1-31
Job Ticket: 64789 **DST#: 1**
Test Start: 2018.10.28 @ 00:45:00

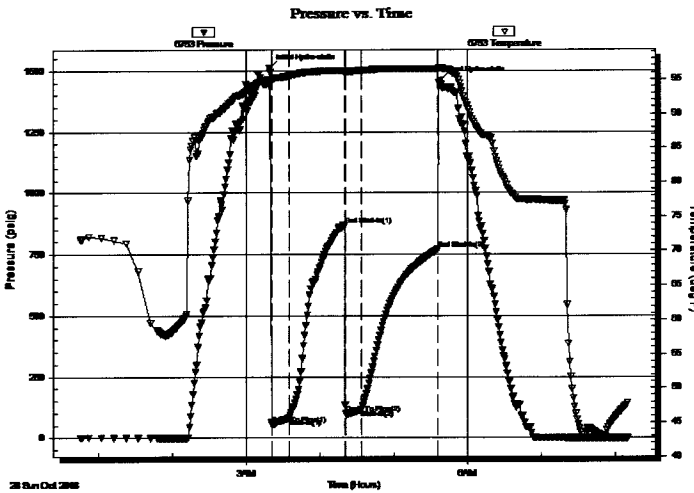
GENERAL INFORMATION:

Formation: **LKC A-C**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:21:00
Time Test Ended: 08:10:30
Interval: **2985.00 ft (KB) To 3040.00 ft (KB) (TVD)**
Total Depth: 3040.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Benny Mulligan / Bra
Unit No: 73
Reference Elevations: 1753.00 ft (KB)
1746.00 ft (CF)
KB to GRVCF: 7.00 ft

Serial #: 6753 **Outside**
Press@RunDepth: 114.53 psig @ 2986.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.10.28 End Date: 2018.10.28 Last Calib.: 2018.10.28
Start Time: 00:45:05 End Time: 08:10:29 Time On Btm: 2018.10.28 @ 03:19:00
Time Off Btm: 2018.10.28 @ 05:38:00

TEST COMMENT: 15-I.F.-BOB 2 mins otal build of 35.55"
30-I.S.I.-No blow
15-F.F.- BOB in 8 mins built to 13.08"
60-F.S.I.- No blow

PRESSURE SUMMARY



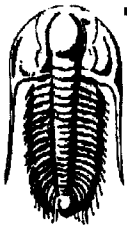
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1512.15	94.94	Initial Hydro-static
2	55.03	94.97	Open To Flow (1)
16	81.28	95.52	Shut-In(1)
61	868.17	96.26	End Shut-In(1)
62	98.99	96.05	Open To Flow (2)
75	114.53	96.31	Shut-In(2)
137	769.55	96.54	End Shut-In(2)
139	1460.84	96.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	OCMW, 15% O , 20% M , 65% W	0.91
128.00	SGWMCO, 5% G, 10% W, 20% M, 65% C	1.81
33.00	MCO, 30% M, 70% O	0.47
0.00	30 feet GIP	0.00

Gas Rates

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



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Bruce Oil Company

31-8s-12w Osborne, KS

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Dixon #1-31

Job Ticket: 64789

DST#: 1

ATTN: Bob Peterson

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Deviated: No Whipstock: ft (KB)

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Time Test Ended: 08:10:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan / Bra

Unit No: 73

Interval: 2985.00 ft (KB) To 3040.00 ft (KB) (TVD)

Reference Elevations: 1753.00 ft (KB)

Total Depth: 3040.00 ft (KB) (TVD)

1746.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 7.00 ft

Serial #: 6771

Inside

Press@RunDepth: psig @ 2986.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.10.28 End Date: 2018.10.28

Last Calib.: 2018.10.28

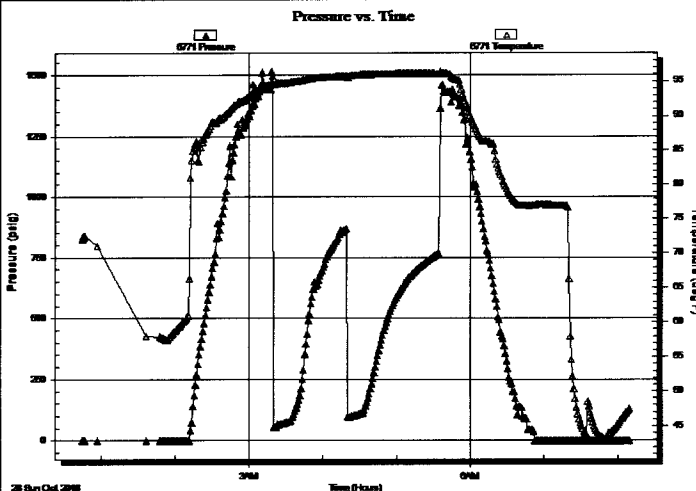
Start Time: 00:45:01 End Time: 08:10:21

Time On Btm:

Time Off Btm:

TEST COMMENT: 15-I.F.-BOB 2 mins otal build of 35.55"
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PRESSURE SUMMARY



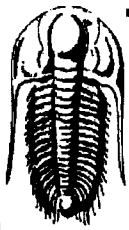
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
64.00	OCMW, 15% O , 20% M, 65% W	0.91
128.00	SGWMCO, 5% G, 10% W, 20% M, 65%	C1.81
33.00	MCO, 30% M, 70% O	0.47
0.00	30 feet GIP	0.00

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Bruce Oil Company

31-8s-12w Osborne, KS

1704 Limestone Rd McPherson KS 67460+6500

Dixon #1-31

Job Ticket: 64789

DST#: 1

ATTN: Bob Peterson

Test Start: 2018.10.28 @ 00:45:00

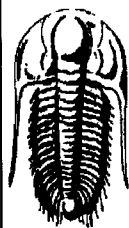
Tool Information

Drill Pipe:	Length: 2986.00 ft	Diameter: 3.82 inches	Volume: 42.33 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 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: 50000.00 lb
			<u>Total Volume: 42.33 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	2985.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	55.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2958.00	
Shut In Tool	5.00			2963.00	
Hydraulic tool	5.00			2968.00	
Jars	5.00			2973.00	
Safety Joint	3.00			2976.00	
Packer	5.00			2981.00	28.00 Bottom Of Top Packer
Packer	4.00			2985.00	
Stubb	1.00			2986.00	
Recorder	0.00	6771	Inside	2986.00	
Recorder	0.00	6753	Outside	2986.00	
Perforations	17.00			3003.00	
Change Over Sub	1.00			3004.00	
Drill Pipe	32.00			3036.00	
Change Over Sub	1.00			3037.00	
Bullnose	3.00			3040.00	55.00 Bottom Packers & Anchor

Total Tool Length: 83.00



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FLUID SUMMARY

Bruce Oil Company

31-8s-12w Osborne, KS

1704 Limestone Rd McPherson KS 67460+6500

Dixon #1-31

Job Ticket: 64789

DST#: 1

ATTN: Bob Peterson

Test Start: 2018.10.28 @ 00:45:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

80000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
64.00	OCMW, 15% O, 20% M, 65% W	0.907
128.00	SGWMCO, 5% G, 10% W, 20% M, 65% O	1.814
33.00	MCO, 30% M, 70% O	0.468
0.00	30 feet GIP	0.000

Total Length: 225.00 ft Total Volume: 3.189 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW, 0.12 @49deg

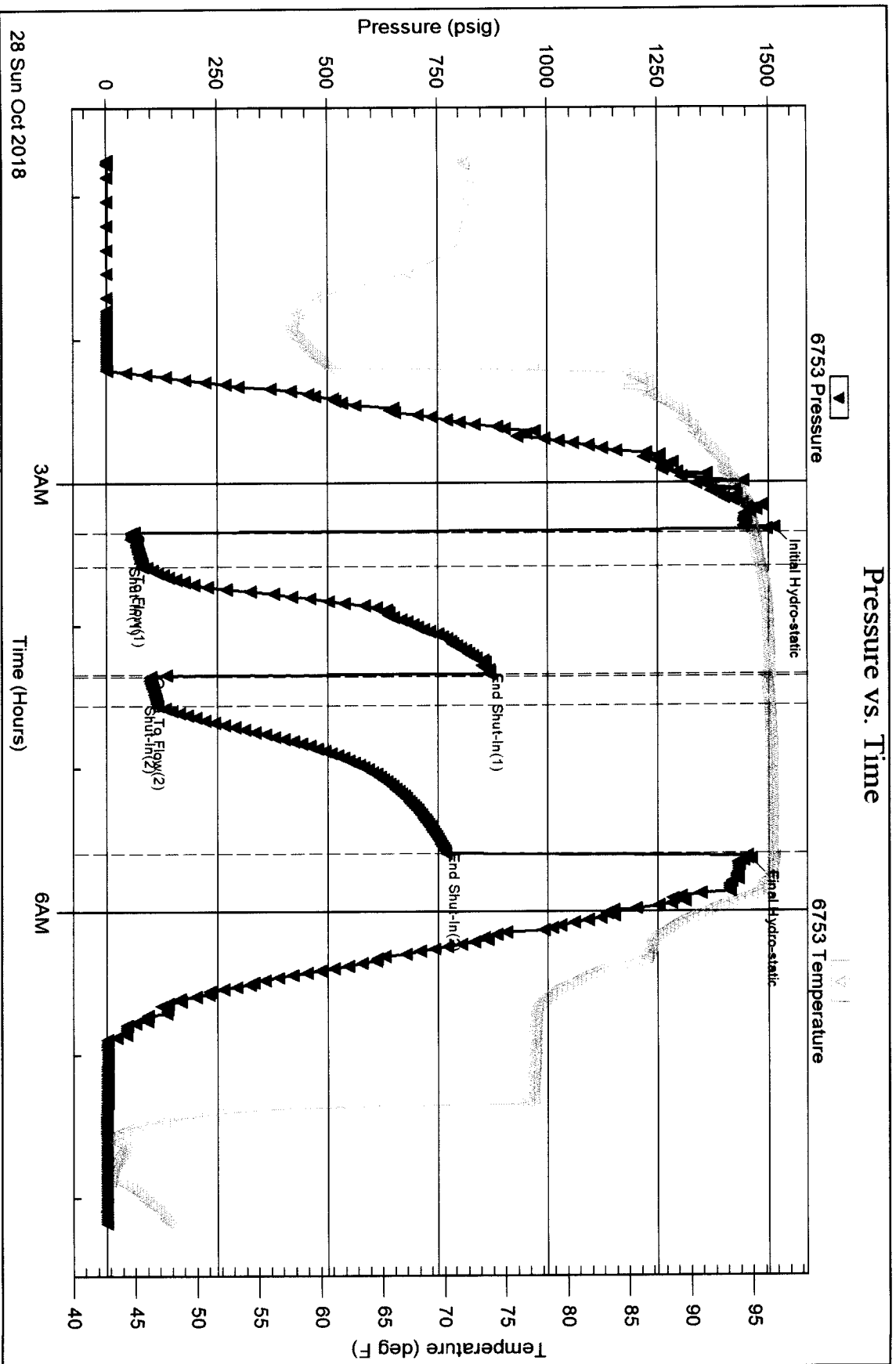
Serial #: 6753

Outside

Bruce Oil Company

Dixon #1-31

DST Test Number: 1



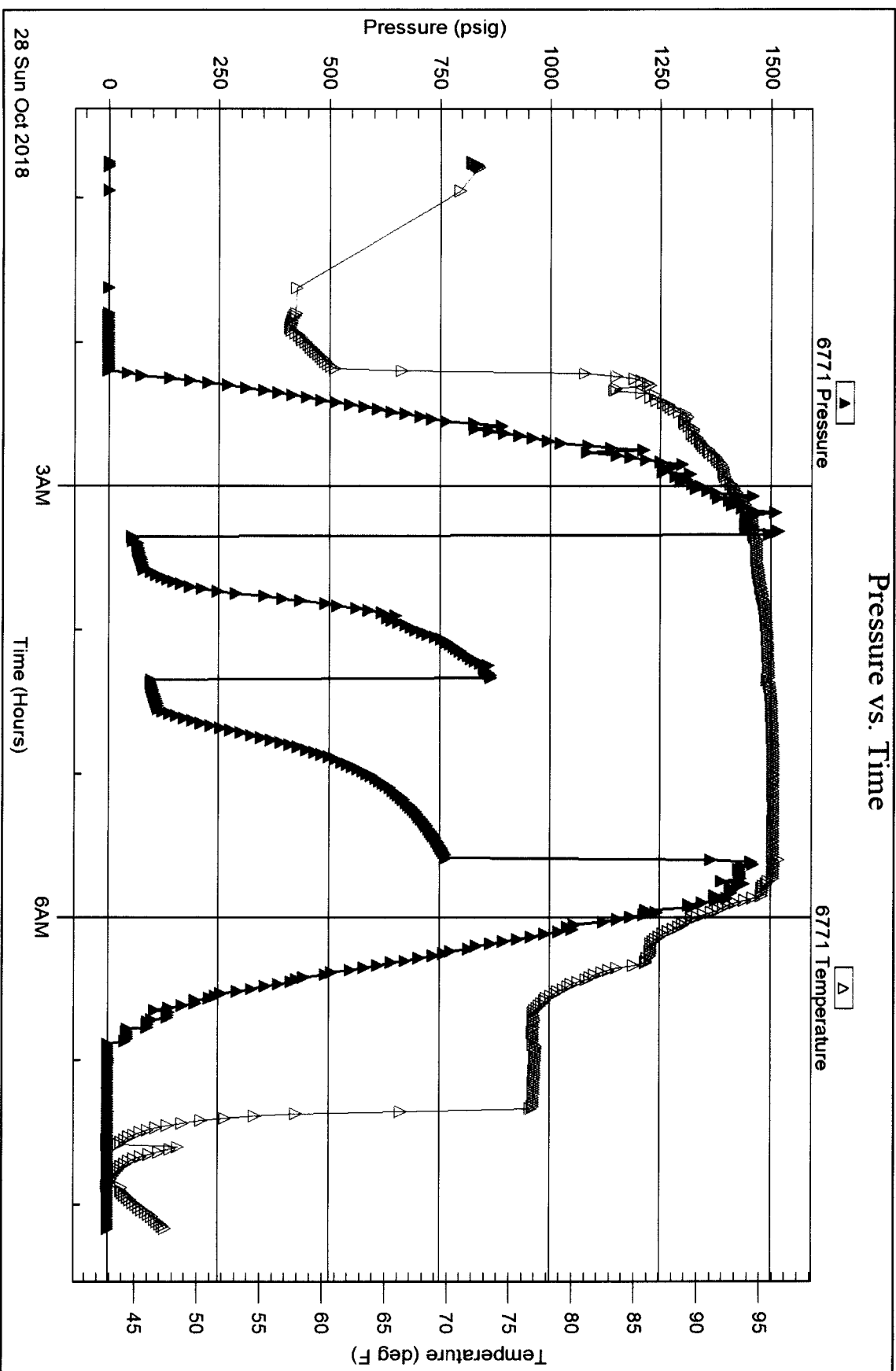
Serial #: 6771

Inside

Bruce Oil Company

Dxon #1-31

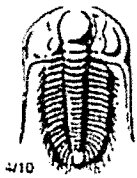
DST Test Number: 1



Tribotite Testing, Inc

Ref. No: 64789

Printed: 2018, 10, 30 @ 14:09:54



TRILOBITE TESTING INC.

1515 Commerce Parkway - Hays, Kansas 67601

Test Ticket

NO. 64789

Well Name & No. Dixon #31 Test No. 1 Date 10-28-2018
 Company Brace Oil Company Elevation 1753 KB 1746 GL
 Address 1704 Limestone RD McPherson KS 67460+6500
 Co. Rep / Geo. Bob Peterson Rig Royal Rig 2
 Location: Sec. 31 Twp 8S Rge. 12W Co. Osborne State KS

Interval Tested 2985-3040 Zone Tested Lansing A-C
 Anchor Length 55' Drill Pipe Run 2986' Mud Wt. 8.6
 Top Packer Depth 2980 Drill Collars Run _____ Vis 58
 Bottom Packer Depth 2985 Wt. Pipe Run _____ WL 8.0
 Total Depth 3040 Chlorides 4300 ppm System LCM 1.5#
 Blow Description I.F. - BOB in 2 mins / built to 35.55"
I.S.I. - no blow
E.F. - BOB in 8 mins / built to 13.08"
F.S.I. - no blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>64</u>	<u>OCMW, 15%O, 20%M, 65%W</u>	<u>15</u>	<u>65</u>	<u>20</u>	<u>0</u>
<u>128</u>	<u>SGW/MCO</u>	<u>5</u>	<u>65</u>	<u>10</u>	<u>20</u>
<u>33</u>	<u>MCO</u>	<u>70</u>	<u>0</u>	<u>30</u>	<u>0</u>
<u>0</u>	<u>30' CIP</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>225</u>	<u></u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Rec Total 225 BHT 97° Gravity 35 API RW 0.12 @ 49 °F Chlorides 5000 ppm

(A) Initial Hydrostatic 1512 Test 1050 T-On Location 00:25
 (B) First Initial Flow 55 Jars 250 T-Started 00:45
 (C) First Final Flow 81 Safety Joint 75 T-Open 03:20
 (D) Initial Shut-In 568 Circ Sub _____ T-Pulled 05:35
 (E) Second Initial Flow 98 Hourly Standby _____ T-Out 08:10
 (F) Second Final Flow 114 Mileage 130 RT 130
 (G) Final Shut-In 769 Sampler _____
 (H) Final Hydrostatic 1460 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 15
 Initial Shut-In 415
 Final Flow 15
 Final Shut-In 60

Sub Total 1505 MP/DST Disc't _____

Sub Total 1505 Total 1505

Approved By _____ Our Representative Bobby McPherson / Brennan 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.