



DRILL STEM TEST REPORT

Prepared For: **Outlaw Well Service**

1408 W 42nd
Hays, KS 67601

ATTN: Herb Deines

Johnston #1

24-13s-20w Ellis,KS

Start Date: 2013.10.13 @ 17:12:00

End Date: 2013.10.13 @ 23:04:20

Job Ticket #: 55759 DST #: 1

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

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Outlaw Well Service
 1408 W 42nd
 Hays, KS 67601
 ATTN: Herb Deines

24-13s-20w Ellis, KS
Johnston #1
 Job Ticket: 55759 **DST#: 1**
 Test Start: 2013.10.13 @ 17:12:00

GENERAL INFORMATION:

Formation: **Conglomerate**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:52:00
 Time Test Ended: 23:04:20
 Interval: **3778.00 ft (KB) To 3865.00 ft (KB) (TVD)**
 Total Depth: 3865.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan L
 Unit No: 49
 Reference Elevations: 2147.00 ft (KB)
 2139.00 ft (CF)
 KB to GR/CF: 8.00 ft

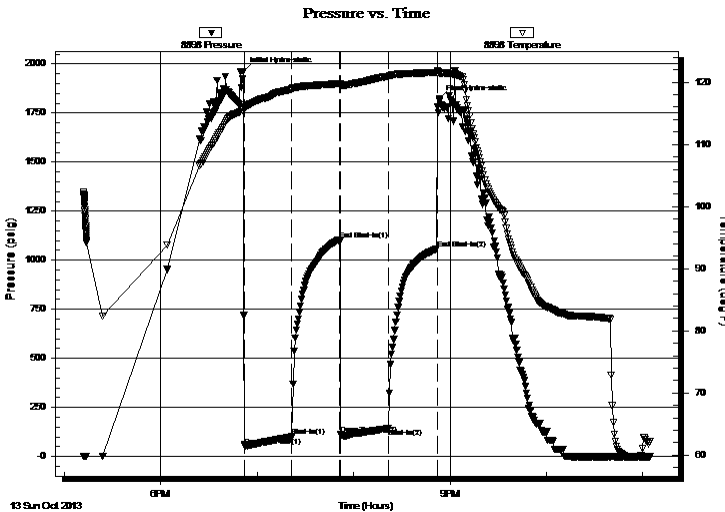
Serial #: 8898

Outside

Press @ Run Depth: 144.13 psig @ 3797.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.10.13 End Date: 2013.10.13 Last Calib.: 2013.10.13
 Start Time: 17:12:01 End Time: 23:04:20 Time On Btm: 2013.10.13 @ 18:51:30
 Time Off Btm: 2013.10.13 @ 20:53:30

TEST COMMENT: 30- IF- BOB 10 mins
 30- IS- Built to 1 1/2"
 30- FF- BOB 19 mins
 30- FSI- Built to 1"

PRESSURE SUMMARY



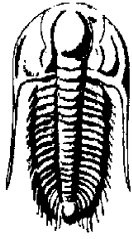
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1962.53	116.10	Initial Hydro-static
1	53.69	115.70	Open To Flow (1)
31	100.37	118.89	Shut-In(1)
60	1105.21	119.77	End Shut-In(1)
61	110.94	119.24	Open To Flow (2)
91	144.13	120.98	Shut-In(2)
121	1058.80	121.57	End Shut-In(2)
122	1820.62	121.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
110.00	GO, 10%G 90%O	1.24
190.00	MO, 50%M 50%O	2.60
0.00	80' GIP	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

Outlaw Well Service
1408 W 42nd
Hays, KS 67601
ATTN: Herb Deines

24-13s-20w Ellis, KS
Johnston #1
Job Ticket: 55759 **DST#: 1**
Test Start: 2013.10.13 @ 17:12:00

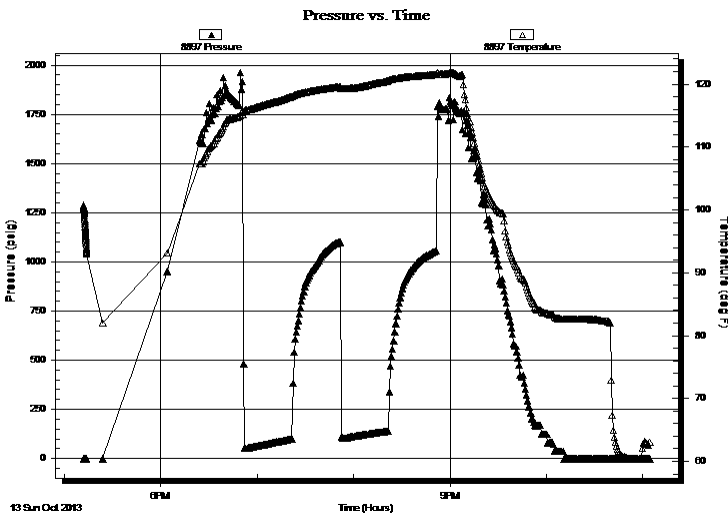
GENERAL INFORMATION:

Formation: **Conglomerate**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 18:52:00 Tester: Brannan L
Time Test Ended: 23:04:20 Unit No: 49
Interval: 3778.00 ft (KB) To 3865.00 ft (KB) (TVD) Reference Elevations: 2147.00 ft (KB)
Total Depth: 3865.00 ft (KB) (TVD) 2139.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 8.00 ft

Serial #: 8897 Inside
Press @ Run Depth: psig @ 3797.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.10.13 End Date: 2013.10.13 Last Calib.: 2013.10.13
Start Time: 17:12:01 End Time: 23:04:20 Time On Btm:
Time Off Btm:

TEST COMMENT: 30- IF- BOB 10 mins
30- IS- Built to 1 1/2"
30- FF- BOB 19 mins
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PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
110.00	GO, 10%G 90%O	1.24
190.00	MO, 50%M 50%O	2.60
0.00	80' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Outlaw Well Service

24-13s-20w Ellis,KS

1408 W 42nd
Hays, KS 67601

Johnston #1

Job Ticket: 55759

DST#: 1

ATTN: Herb Deines

Test Start: 2013.10.13 @ 17:12:00

Tool Information

Drill Pipe:	Length: 3755.00 ft	Diameter: 3.75 inches	Volume: 51.30 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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: 60000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3778.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	87.00 ft			
Tool Length:	114.00 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			3752.00	
Shut In Tool	5.00			3757.00	
Hydraulic tool	5.00			3762.00	
Jars	5.00			3767.00	
Safety Joint	2.00			3769.00	
Packer	5.00			3774.00	27.00 Bottom Of Top Packer
Packer	4.00			3778.00	
Stubb	1.00			3779.00	
Perforations	18.00			3797.00	
Recorder	0.00	8897	Inside	3797.00	
Recorder	0.00	8898	Outside	3797.00	
Change Over Sub	1.00			3798.00	
Drill Pipe	63.00			3861.00	
Change Over Sub	1.00			3862.00	
Bullnose	3.00			3865.00	87.00 Bottom Packers & Anchor

Total Tool Length: 114.00



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FLUID SUMMARY

Outlaw Well Service

24-13s-20w Ellis,KS

1408 W 42nd
Hays, KS 67601

Johnston #1

Job Ticket: 55759

DST#: 1

ATTN: Herb Deines

Test Start: 2013.10.13 @ 17:12:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

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
110.00	GO, 10%G 90%O	1.240
190.00	MO, 50%M 50%O	2.596
0.00	80' GIP	0.000

Total Length: 300.00 ft Total Volume: 3.836 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

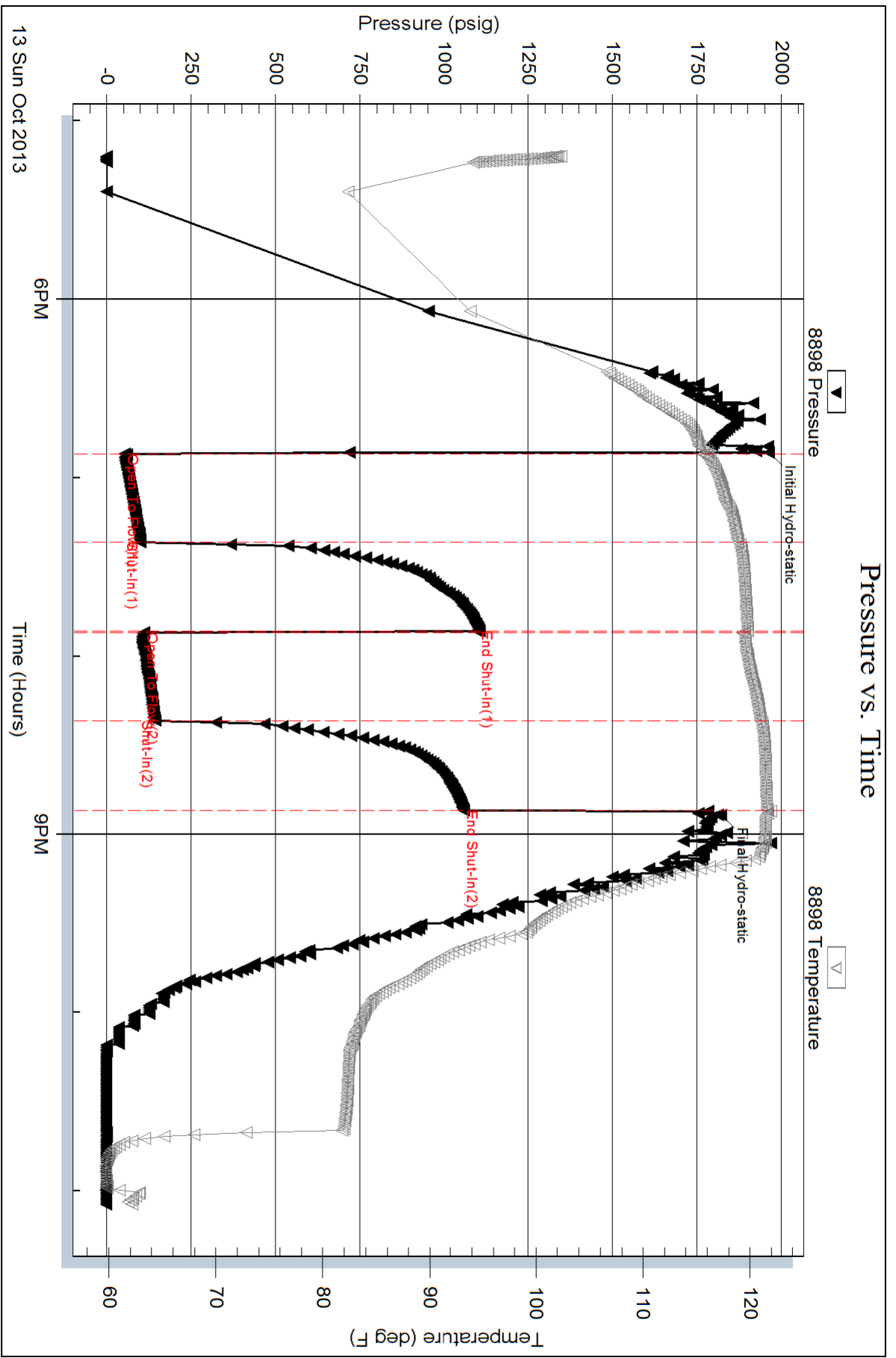
Recovery Comments:

Serial #: 8898

Outside Outlaw Well Service

Johnston #1

DST Test Number: 1



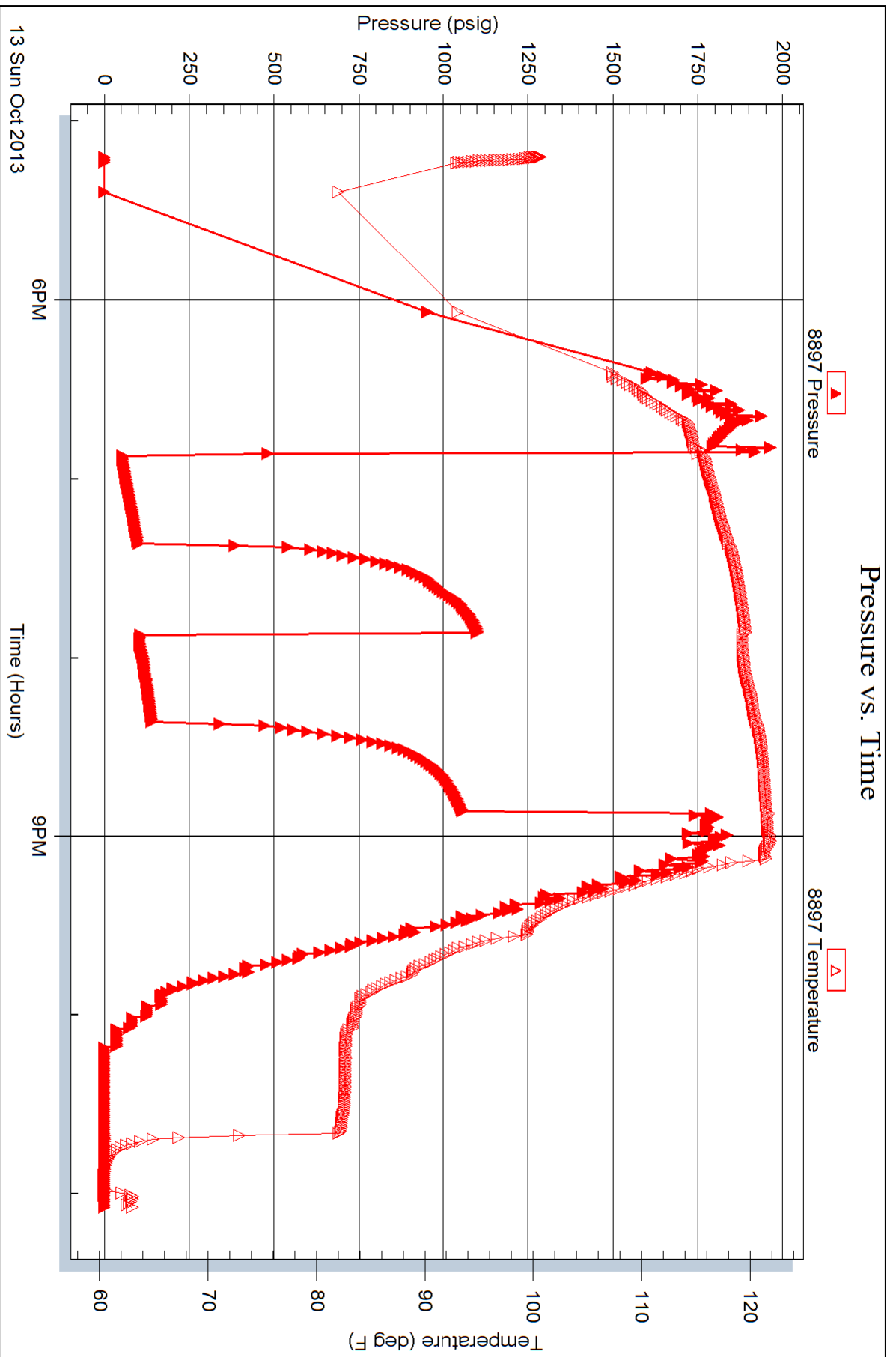
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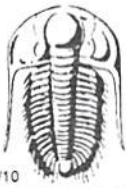
Inside

Outlaw Well Service

Johnston #1

DST Test Number: 1





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55759

Well Name & No. Johnston #1 Test No. 1 Date 10/13/13
 Company Outlaw Well Service Elevation 2147 KB 2139 GL
 Address 1408 W. 42nd Hays, KS 67601
 Co. Rep / Geo. Herb Daines Rig Discovery #4
 Location: Sec. 24 Twp. 13S Rge. 20W Co. Ellis State KS

Interval Tested 3778-3865 Zone Tested Cong
 Anchor Length 87' Drill Pipe Run 3755 Mud Wt. 9.2
 Top Packer Depth 3773 Drill Collars Run 30 Vis 54
 Bottom Packer Depth 3778 Wt. Pipe Run _____ WL 7.6
 Total Depth 3865 Chlorides 3600 ppm System LCM 1#

Blow Description IF-BOB 10mins
ISI-Built to 1.5"
FF-BOB 19mins
FSI-Built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
110	60	10	90		
190	MO		50		50
80	GIP	100			

Rec Total 300' BHT 122° Gravity 30 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1963</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1524</u>
(B) First Initial Flow <u>54</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1712</u>
(C) First Final Flow <u>100</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1852</u>
(D) Initial Shut-In <u>1105</u>	<input type="checkbox"/> Circ Sub <u>_____</u>	T-Pulled <u>2052</u>
(E) Second Initial Flow <u>111</u>	<input type="checkbox"/> Hourly Standby <u>_____</u>	T-Out <u>2305</u>
(F) Second Final Flow <u>144</u>	<input checked="" type="checkbox"/> Mileage <u>38 RT</u> 58.90	Comments <u>_____</u>
(G) Final Shut-In <u>1059</u>	<input type="checkbox"/> Sampler <u>_____</u>	
(H) Final Hydrostatic <u>1821</u>	<input type="checkbox"/> Straddle <u>_____</u>	

Initial Open 30
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 30

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1533.90
 MP/DST Disc't _____
 Sub Total 1533.90

Approved By _____ Our Representative Brannan L

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