



DRILL STEM TEST REPORT

Prepared For: **DS Langston**

310 W Central Ste 202
Wichita, KS 67202

ATTN: Dave Williams

Reif #31-2

31-18s-10w Rice,KS

Start Date: 2013.10.20 @ 20:43:00

End Date: 2013.10.21 @ 03:14:30

Job Ticket #: 55761 DST #: 1

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

Printed: 2013.10.24 @ 13:45:39

DS Langston
31-18s-10w Rice,KS
Reif #31-2
DST # 1
KC "I-L"
2013.10.20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

DS Langston
 310 W Central Ste 202
 Wichita, KS 67202
 ATTN: Dave Williams

31-18s-10w Rice, KS
Reif #31-2
 Job Ticket: 55761 **DST#: 1**
 Test Start: 2013.10.20 @ 20:43:00

GENERAL INFORMATION:

Formation: **KC "I-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:36:00
 Time Test Ended: 03:14:30
 Interval: **3124.00 ft (KB) To 3220.00 ft (KB) (TVD)**
 Total Depth: 3220.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan L
 Unit No: 67
 Reference Elevations: 1761.00 ft (KB)
 1751.00 ft (CF)
 KB to GR/CF: 10.00 ft

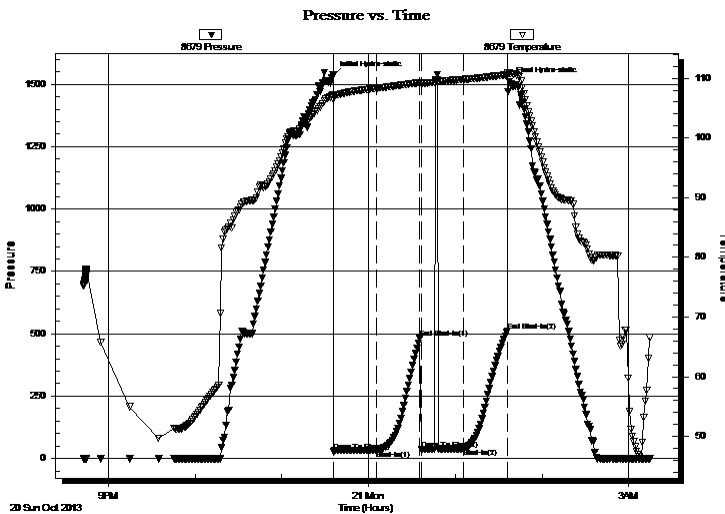
Serial #: 8679

Inside

Press @ RunDepth: 39.20 psig @ 3216.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.10.20 End Date: 2013.10.21 Last Calib.: 2013.10.21
 Start Time: 20:43:01 End Time: 03:14:30 Time On Btm: 2013.10.20 @ 23:35:30
 Time Off Btm: 2013.10.21 @ 01:37:30

TEST COMMENT: 30- IF- Surface blow died in 2 mins
 30- IS- No blow
 30- FF- No blow Flushed tool No blow
 30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1536.63	107.31	Initial Hydro-static
1	28.90	106.39	Open To Flow (1)
30	33.95	108.31	Shut-In(1)
60	483.51	109.26	End Shut-In(1)
61	35.39	109.11	Open To Flow (2)
90	39.20	109.80	Shut-In(2)
121	511.70	110.54	End Shut-In(2)
122	1511.01	110.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mw / oil spots, 100%M	0.27

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

DS Langston
 310 W Central Ste 202
 Wichita, KS 67202
 ATTN: Dave Williams

31-18s-10w Rice, KS
Reif #31-2
 Job Ticket: 55761 **DST#: 1**
 Test Start: 2013.10.20 @ 20:43:00

GENERAL INFORMATION:

Formation: **KC "I-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:36:00
 Time Test Ended: 03:14:30
Interval: 3124.00 ft (KB) To 3220.00 ft (KB) (TVD)
 Total Depth: 3220.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

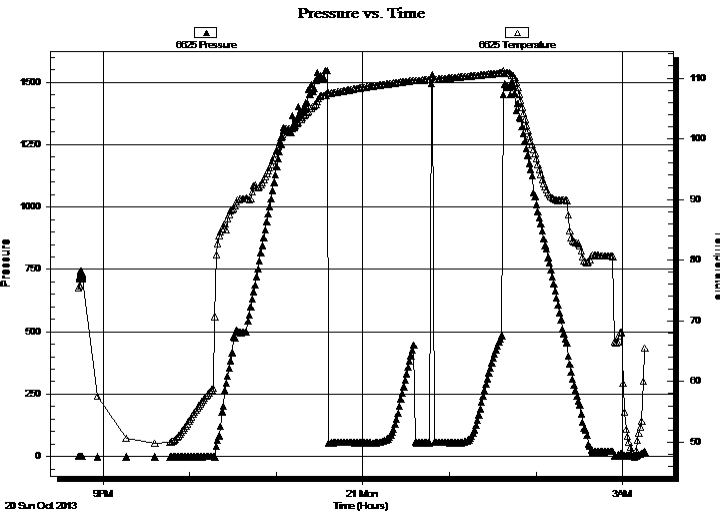
Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan L
 Unit No: 67
 Reference Elevations: 1761.00 ft (KB)
 1751.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 6625 Outside

Press @ Run Depth: psig @ 3216.00 ft (KB)
 Start Date: 2013.10.20 End Date: 2013.10.21
 Start Time: 20:43:01 End Time: 03:15:22

Capacity: 8000.00 psig
 Last Calib.: 2013.10.21
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30- IF- Surface blow died in 2 mins
 30- ISI- No blow
 30- FF- No blow Flushed tool No blow
 30- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mw / oil spots, 100%M	0.27

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice,KS
Reif #31-2
Job Ticket: 55761 **DST#: 1**
Test Start: 2013.10.20 @ 20:43:00

Tool Information

Drill Pipe:	Length: 3106.00 ft	Diameter: 3.75 inches	Volume: 42.43 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	46000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3124.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	96.00 ft				
Tool Length:	123.00 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			3098.00	
Shut In Tool	5.00			3103.00	
Hydraulic tool	5.00			3108.00	
Jars	5.00			3113.00	
Safety Joint	2.00			3115.00	
Packer	5.00			3120.00	27.00 Bottom Of Top Packer
Packer	4.00			3124.00	
Stubb	1.00			3125.00	
Perforations	26.00			3151.00	
Change Over Sub	1.00			3152.00	
Drill Pipe	63.00			3215.00	
Change Over Sub	1.00			3216.00	
Recorder	0.00	6625	Outside	3216.00	
Recorder	0.00	8679	Inside	3216.00	
Bullnose	4.00			3220.00	96.00 Bottom Packers & Anchor

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice,KS
Reif #31-2
Job Ticket: 55761 **DST#: 1**
Test Start: 2013.10.20 @ 20:43:00

Mud and Cushion Information

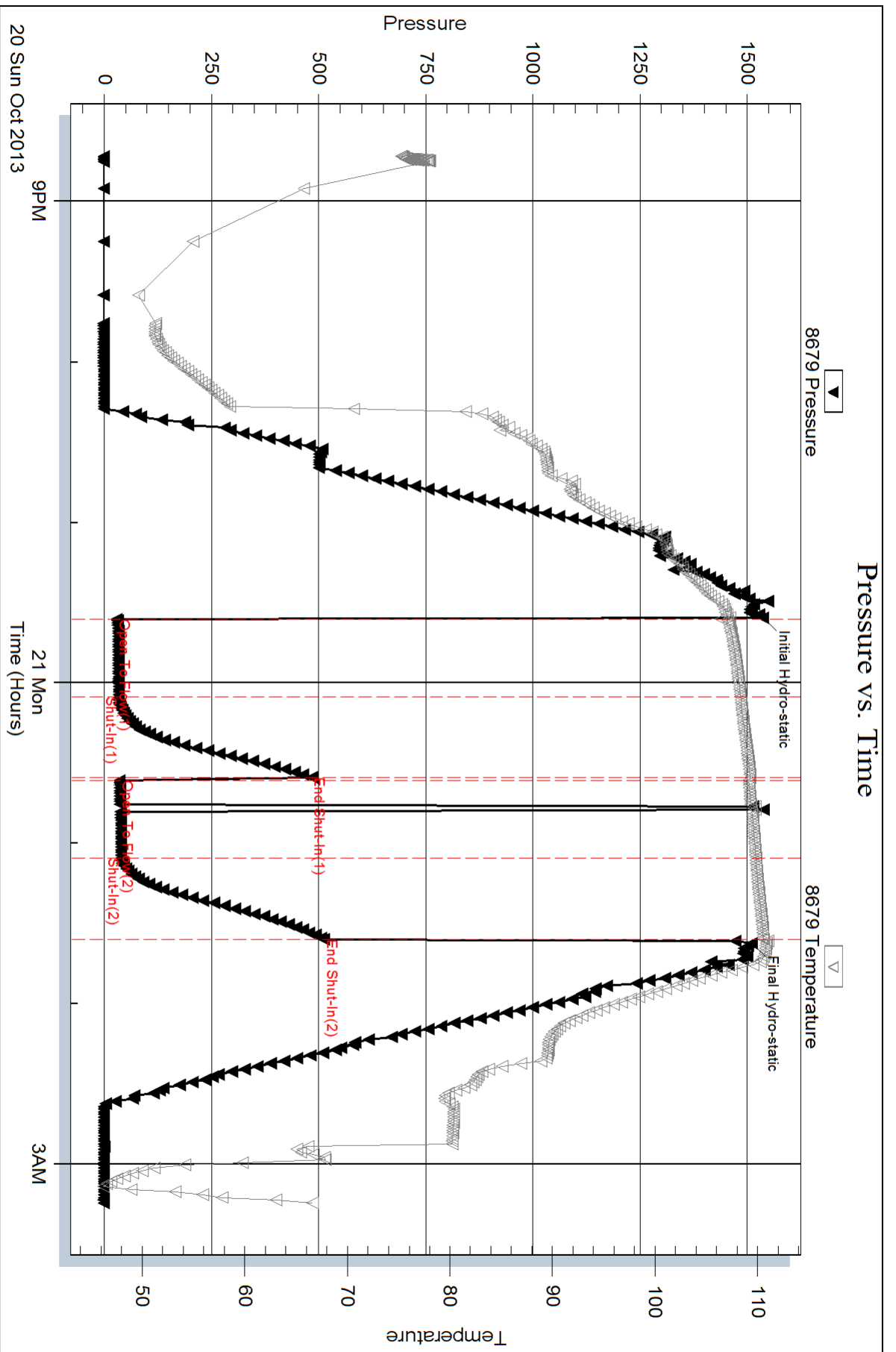
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 9200.00 ppm			
Filter Cake: inches			

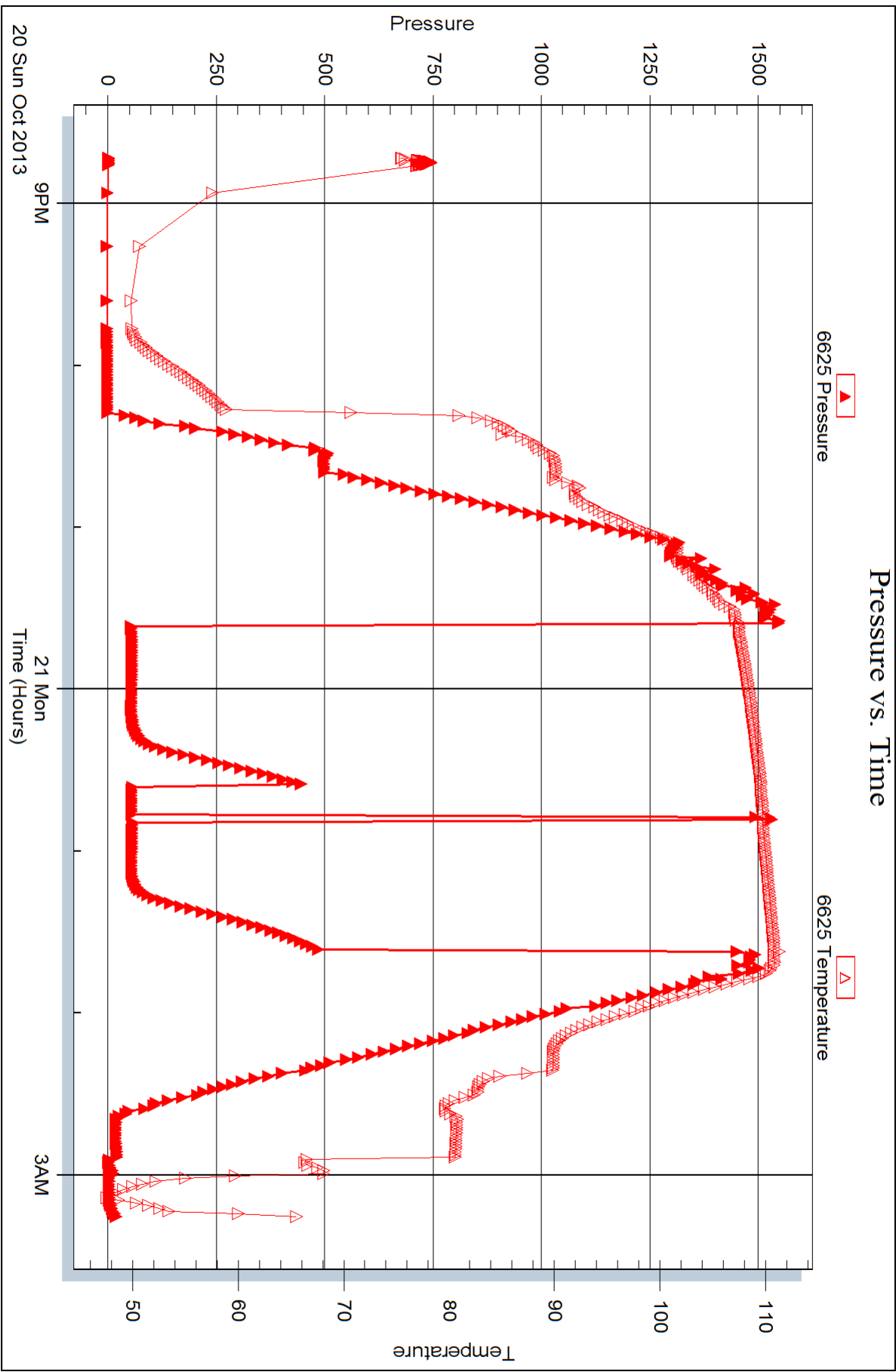
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mw / oil spots, 100%M	0.273

Total Length: 20.00 ft Total Volume: 0.273 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **DS Langston**

310 W Central Ste 202
Wichita, KS 67202

ATTN: Dave Williams

Reif #31-2

31-18s-10w Rice,KS

Start Date: 2013.10.21 @ 13:58:47

End Date: 2013.10.21 @ 20:42:02

Job Ticket #: 52513 DST #: 2

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

Printed: 2013.10.24 @ 13:43:55

DS Langston
31-18s-10w Rice,KS
Reif #31-2
DST # 2
Arbuckle
2013.10.21



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice,KS

Reif #31-2

Job Ticket: 52513

DST#: 2

Test Start: 2013.10.21 @ 13:58:47

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:36:17
 Time Test Ended: 20:42:02
 Interval: **3258.00 ft (KB) To 3295.00 ft (KB) (TVD)**
 Total Depth: 3295.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 45
 Reference Elevations: 1761.00 ft (KB)
 1751.00 ft (CF)
 KB to GR/CF: 10.00 ft

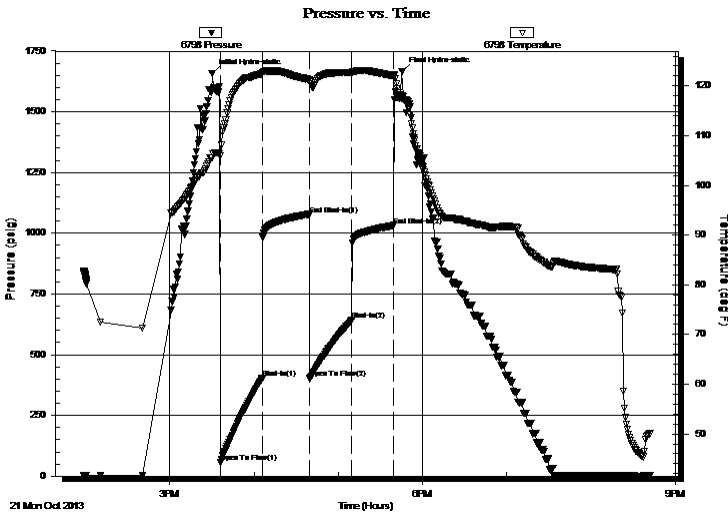
Serial #: 6798

Inside

Press @ Run Depth: 641.74 psig @ 3259.00 ft (KB)
 Start Date: 2013.10.21 End Date: 2013.10.21
 Start Time: 13:58:48 End Time: 20:42:02
 Capacity: 8000.00 psig
 Last Calib.: 2013.10.21
 Time On Btm: 2013.10.21 @ 15:30:17
 Time Off Btm: 2013.10.21 @ 17:45:17

TEST COMMENT: IF: Strong Blow , BOB in 3 minutes
 IS: No Blow Back
 FF: Strong Blow , BOB in 2 1/2 minutes
 FS: No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1657.21	105.60	Initial Hydro-static
6	55.43	105.95	Open To Flow (1)
36	401.95	122.39	Shut-In(1)
69	1077.54	121.29	End Shut-In(1)
70	401.74	120.99	Open To Flow (2)
100	641.74	122.66	Shut-In(2)
129	1031.81	122.04	End Shut-In(2)
135	1666.57	117.95	Final Hydro-static

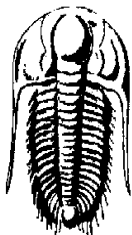
Recovery

Length (ft)	Description	Volume (bbl)
0.00	120 GIP	0.00
252.00	OGCM 10%O 25%G 65%M	3.53
1575.00	Oil	22.09

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice, KS
Reif #31-2
Job Ticket: 52513 **DST#: 2**
Test Start: 2013.10.21 @ 13:58:47

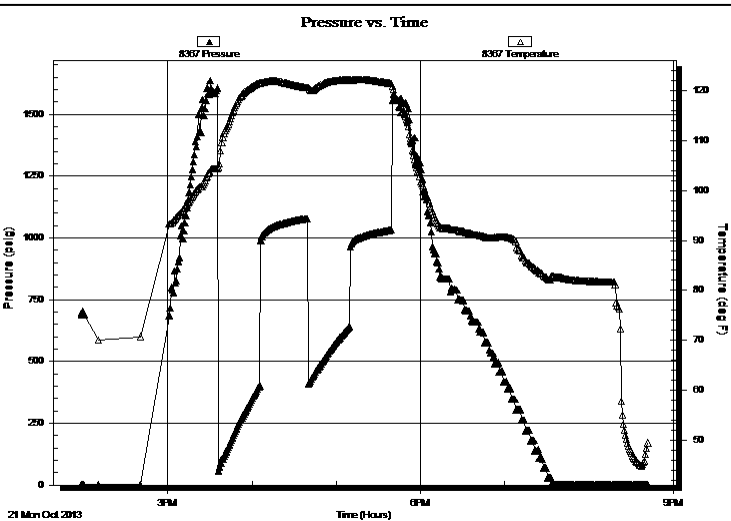
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:36:17
Time Test Ended: 20:42:02
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 45
Interval: 3258.00 ft (KB) To 3295.00 ft (KB) (TVD)
Total Depth: 3295.00 ft (KB) (TVD)
Reference Elevations: 1761.00 ft (KB)
1751.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good
KB to GR/CF: 10.00 ft

Serial #: 8367 Outside

Press @ Run Depth: psig @ 3259.00 ft (KB)
Start Date: 2013.10.21 End Date: 2013.10.21 Capacity: 8000.00 psig
Start Time: 13:58:48 End Time: 20:42:02 Last Calib.: 2013.10.21
Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Strong Blow , BOB in 3 minutes
IS: No Blow Back
FF: Strong Blow , BOB in 2 1/2 minutes
FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
0.00	120 GIP	0.00
252.00	OGCM 10%O 25%G 65%M	3.53
1575.00	Oil	22.09

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice,KS
Reif #31-2
Job Ticket: 52513 **DST#: 2**
Test Start: 2013.10.21 @ 13:58:47

Tool Information

Drill Pipe:	Length: 3262.00 ft	Diameter: 3.80 inches	Volume: 45.76 bbl	Tool Weight:	2100.00 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: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 45.76 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3258.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	37.00 ft				
Tool Length:	63.00 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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Shut In Tool	5.00			3237.00	
Hydraulic tool	5.00			3242.00	
Jars	5.00			3247.00	
Safety Joint	2.00			3249.00	
Packer	5.00			3254.00	26.00 Bottom Of Top Packer
Packer	4.00			3258.00	
Stubb	1.00			3259.00	
Recorder	0.00	6798	Inside	3259.00	
Recorder	0.00	8367	Outside	3259.00	
Perforations	33.00			3292.00	
Bullnose	3.00			3295.00	37.00 Bottom Packers & Anchor

Total Tool Length: 63.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

DS Langston
310 W Central Ste 202
Wichita, KS 67202
ATTN: Dave Williams

31-18s-10w Rice,KS
Reif #31-2
Job Ticket: 52513 **DST#: 2**
Test Start: 2013.10.21 @ 13:58:47

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 37.8 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.58 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 9200.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

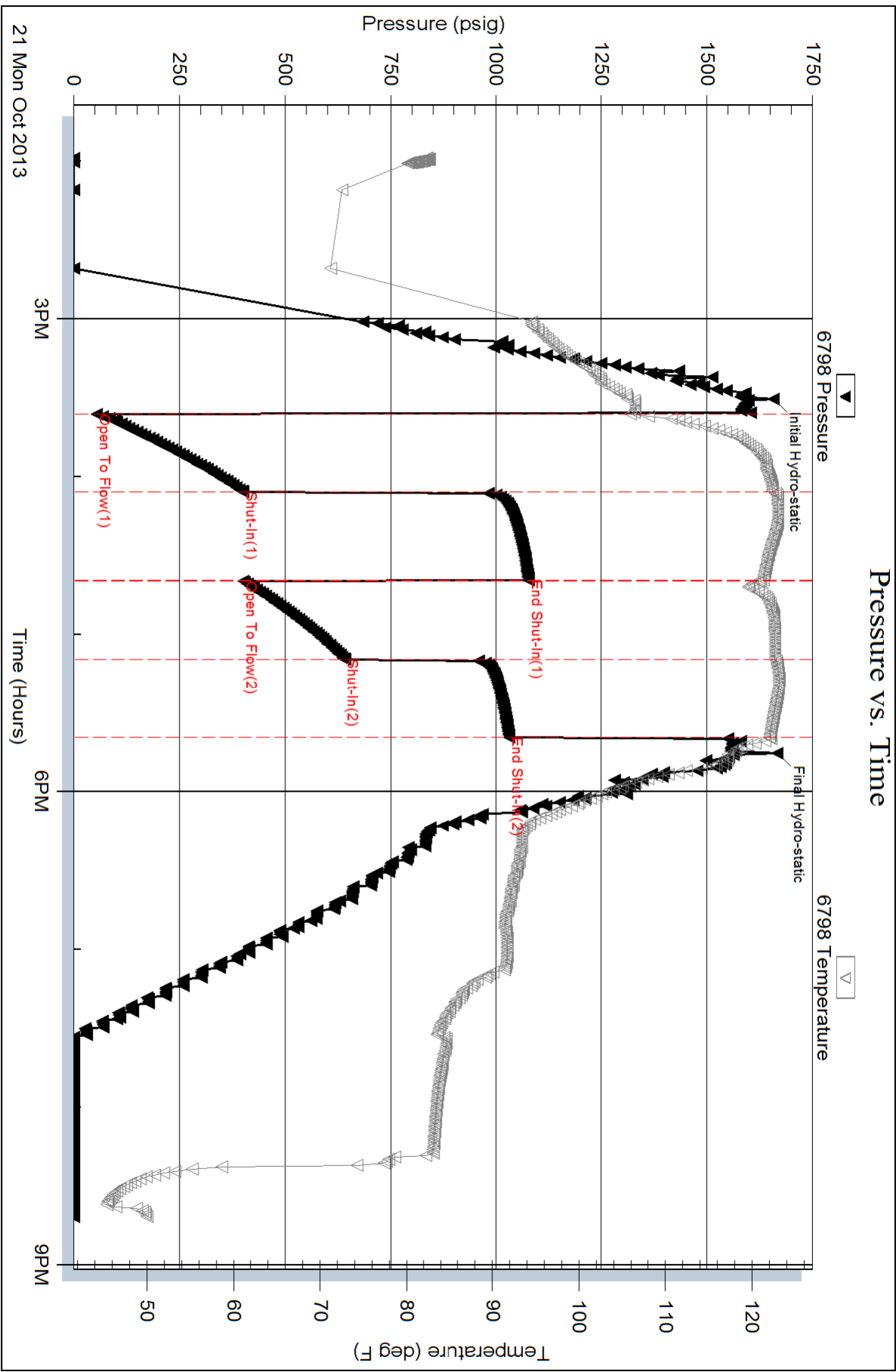
Length ft	Description	Volume bbl
0.00	120 GIP	0.000
252.00	OGCM 10%O 25%G 65%M	3.535
1575.00	Oil	22.093

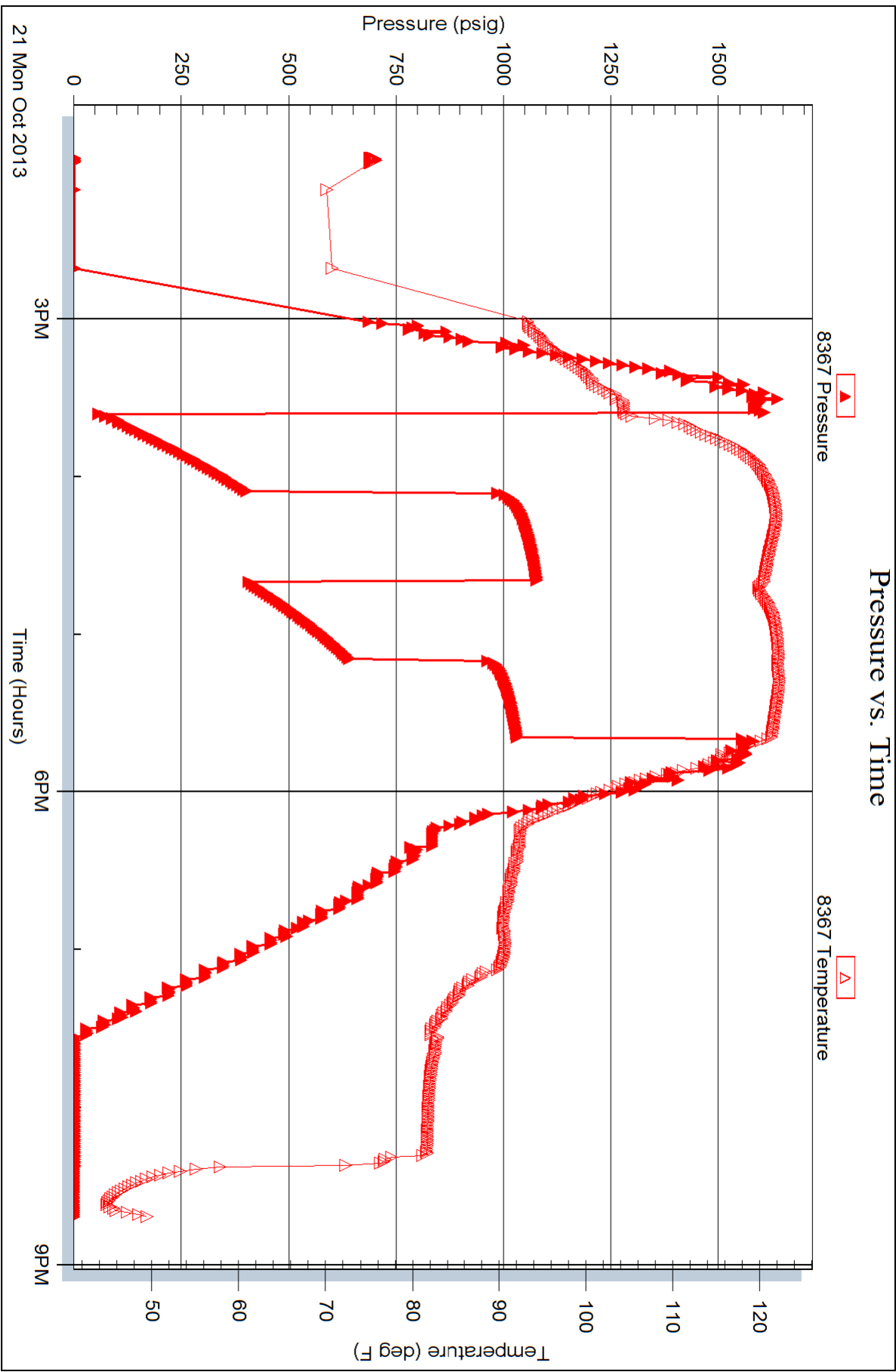
Total Length: 1827.00 ft Total Volume: 25.628 bbl

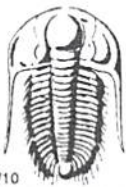
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity Was 36.8 @ 50 degrees







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55761

4/10

Well Name & No. Ref #31-2 Test No. 1 Date 10/20/13
 Company DS Langston Elevation 1761 KB 1757 GL
 Address 310 W. Central Ave 202 Wichita, KS 67202
 Co. Rep / Geo. Dave Williams Rig Southwind #6
 Location: Sec. 31 Twp. 18s Rge. 10w Co. Rice State KS

Interval Tested 3124-3220 Zone Tested KC "I-L"
 Anchor Length 96 Drill Pipe Run 3106 Mud Wt. 9.1
 Top Packer Depth 3119 Drill Collars Run ———— Vis 45
 Bottom Packer Depth 3124 Wt. Pipe Run ———— WL 2.6
 Total Depth 3220 Chlorides 9200 ppm System LCM ————

Blow Description IF - Surface blow died in 2 mins
ISI - No blow
FF - No blow Flushed tool after 10 mins No blow
FSI - No blow

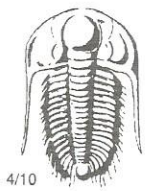
Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>M w/ oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20 BHT 111° Gravity ———— API RW ———— @ ———— °F Chlorides ———— ppm

(A) Initial Hydrostatic <u>1537</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2015</u>
(B) First Initial Flow <u>29</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2043</u>
(C) First Final Flow <u>34</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>2336</u>
(D) Initial Shut-In <u>484</u>	<input type="checkbox"/> Circ Sub <u>————</u>	T-Pulled <u>0136</u>
(E) Second Initial Flow <u>35</u>	<input type="checkbox"/> Hourly Standby <u>————</u>	T-Out <u>0315</u>
(F) Second Final Flow <u>39</u>	<input checked="" type="checkbox"/> Mileage <u>162 RT</u> 217	Comments <u>————</u>
(G) Final Shut-In <u>512</u>	<input type="checkbox"/> Sampler <u>————</u>	<input type="checkbox"/> Ruined Shale Packer <u>————</u>
(H) Final Hydrostatic <u>1511</u>	<input type="checkbox"/> Straddle <u>————</u>	<input type="checkbox"/> Ruined Packer <u>————</u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u>————</u>	<input type="checkbox"/> Extra Copies <u>————</u>
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer <u>————</u>	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder <u>————</u>	Total <u>1692</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby <u>————</u>	MP/DST Disc't <u>————</u>
	<input type="checkbox"/> Accessibility <u>————</u>	
	Sub Total <u>1692</u>	

Approved By ———— Our Representative Brannon L

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. 52513

Well Name & No. REIF 31-2 Test No. 2 Date 10/21/13
 Company DS Langston Elevation 1761 KB 1751 GL
 Address 310 W. Central St 202 Wichita, KS 67202
 Co. Rep / Geo. Dave Williams Rig Southwind 6
 Location: Sec. 31 Twp. 18S Rge. 10W Co. Rice State KS

Interval Tested 3258 - 3295 Zone Tested Arbuckle
 Anchor Length 37 Drill Pipe Run 3262 Mud Wt. 9.1
 Top Packer Depth 3253 Drill Collars Run 0 Vis 50
 Bottom Packer Depth 3258 Wt. Pipe Run 0 WL 7.6
 Total Depth 3295 Chlorides 7300 ppm System LCM

Blow Description IF: Strong Blow, BOB in 3 minutes
ISI: NO Blow Back
FF: Strong Blow, BOB in 2 1/2 minutes
FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>GI P</u>				
<u>1575</u>	<u>Oil</u>				
<u>252</u>	<u>GOCM</u>	<u>25</u>	<u>10</u>		<u>65</u>

Rec Total 1827 BHT 118 Gravity 37.8 API RW NIC @ NIC ° F Chlorides NIC ppm

(A) Initial Hydrostatic <u>1657</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>13:30</u>
(B) First Initial Flow <u>55</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>13:58</u>
(C) First Final Flow <u>402</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>15:36</u>
(D) Initial Shut-In <u>1078</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>17:39</u>
(E) Second Initial Flow <u>402</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>20:42</u>
(F) Second Final Flow <u>642</u>	<input checked="" type="checkbox"/> Mileage <u>(140)</u> 217	Comments
(G) Final Shut-In <u>1032</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1667</u>	<input type="checkbox"/> Straddle	

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 1692
 MP/DST Disc't

Sub Total 1692

Approved By [Signature] 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.