



DRILL STEM TEST REPORT

Prepared For: **Pickrell Drilling Company, Inc.**

100 S. Main STE 505
Wichita, KS 67202

ATTN: Aaron Young

Higgins "K" #3

15-30s-8w Kingman,KS

Start Date: 2015.01.14 @ 00:42:55

End Date: 2015.01.14 @ 12:05:10

Job Ticket #: 57802 DST #: 1

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

Printed: 2015.01.16 @ 16:14:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57802

DST#: 1

ATTN: Aaron Young

Test Start: 2015.01.14 @ 00:42:55

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 04:53:55

Time Test Ended: 12:05:10

Test Type: Conventional Bottom Hole (Initial)

Tester: Matt Smith

Unit No: 53

Interval: 4142.00 ft (KB) To 4173.00 ft (KB) (TVD)

Reference Elevations: 1504.00 ft (KB)

Total Depth: 4173.00 ft (KB) (TVD)

1494.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8671 Outside

Press@RunDepth: 31.62 psig @ 4143.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.14

End Date:

2015.01.14

Last Calib.:

2015.01.14

Start Time: 00:43:00

End Time:

12:05:10

Time On Btm:

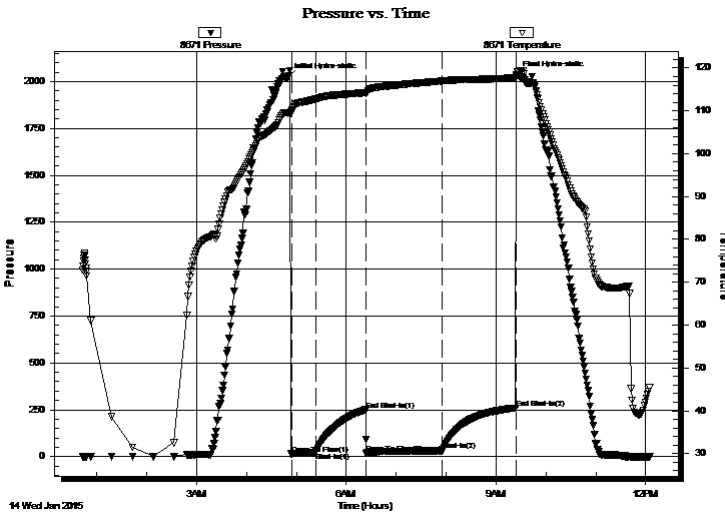
2015.01.14 @ 04:49:40

Time Off Btm:

2015.01.14 @ 09:24:10

TEST COMMENT: IF: Fair to Strong blow . B.O.B. in 5 3/4 mins.
IS: No blow .
FF: Fair to Strong blow . B.O.B. in 4 1/2 mins.
FS: No blow .

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2019.59	109.49	Initial Hydro-static
5	13.92	109.67	Open To Flow (1)
34	22.21	112.78	Shut-In(1)
94	250.04	114.23	End Shut-In(1)
94	19.40	114.09	Open To Flow (2)
186	31.62	116.93	Shut-In(2)
275	259.99	117.71	End Shut-In(2)
275	2032.09	118.52	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
42.00	GOCM 1%g 1%o 98%m	0.59
0.00	702' G.I.P. 100%g	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

Pickrell Drilling Company, Inc.

15-30s-8w Kingman, KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57802

DST#: 1

ATTN: Aaron Young

Test Start: 2015.01.14 @ 00:42:55

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Formation: **Mississippi**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 04:53:55

Time Test Ended: 12:05:10

Test Type: Conventional Bottom Hole (Initial)

Tester: Matt Smith

Unit No: 53

Interval: 4142.00 ft (KB) To 4173.00 ft (KB) (TVD)

Total Depth: 4173.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1504.00 ft (KB)

1494.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8931 Inside

Press@RunDepth: psig @ 4143.00 ft (KB)

Start Date: 2015.01.14

End Date:

2015.01.14

Start Time: 00:42:12

End Time:

11:55:22

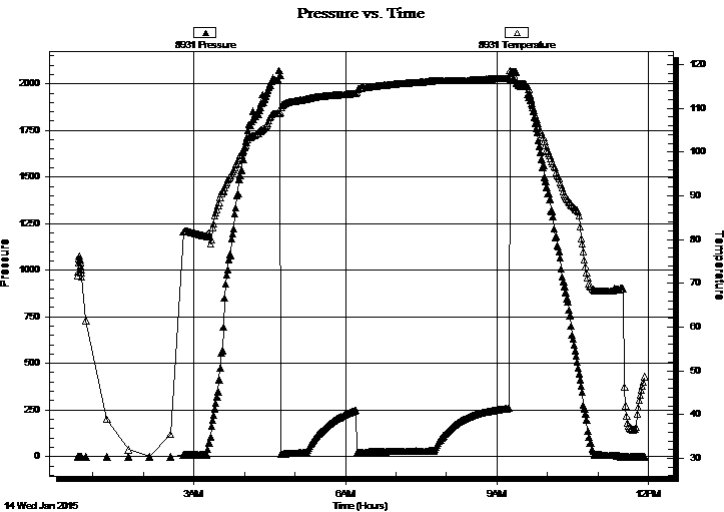
Capacity: 8000.00 psig

Last Calib.: 2015.01.14

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Fair to Strong blow . B.O.B. in 5 3/4 mins.
IS: No blow .
FF: Fair to Strong blow . B.O.B. in 4 1/2 mins.
FS: No blow .



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
42.00	GOCM 1%g 1%o 98%m	0.59
0.00	702' G.I.P. 100%g	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57802

DST#: 1

ATTN: Aaron Young

Test Start: 2015.01.14 @ 00:42:55

Tool Information

Drill Pipe:	Length: 4129.00 ft	Diameter: 3.80 inches	Volume: 57.92 bbl	Tool Weight:	2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	64000.00 lb
			<u>Total Volume: 57.92 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4142.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	31.00 ft				
Tool Length:	59.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Shale Pcker in place of bottom packer.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4115.00	
Shut In Tool	5.00			4120.00	
Hydraulic tool	5.00			4125.00	
Jars	5.00			4130.00	
Safety Joint	3.00			4133.00	
Packer	5.00			4138.00	28.00 Bottom Of Top Packer
Packer	4.00			4142.00	
Stubb	1.00			4143.00	
Recorder	0.00	8931	Inside	4143.00	
Recorder	0.00	8671	Outside	4143.00	
Perforations	27.00			4170.00	
Bullnose	3.00			4173.00	31.00 Bottom Packers & Anchor

Total Tool Length: 59.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57802

DST#: 1

ATTN: Aaron Young

Test Start: 2015.01.14 @ 00:42:55

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:

3000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 8.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
42.00	GOCM 1%g 1%o 98%m	0.589
0.00	702' G.I.P. 100%g	0.000

Total Length: 42.00 ft Total Volume: 0.589 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

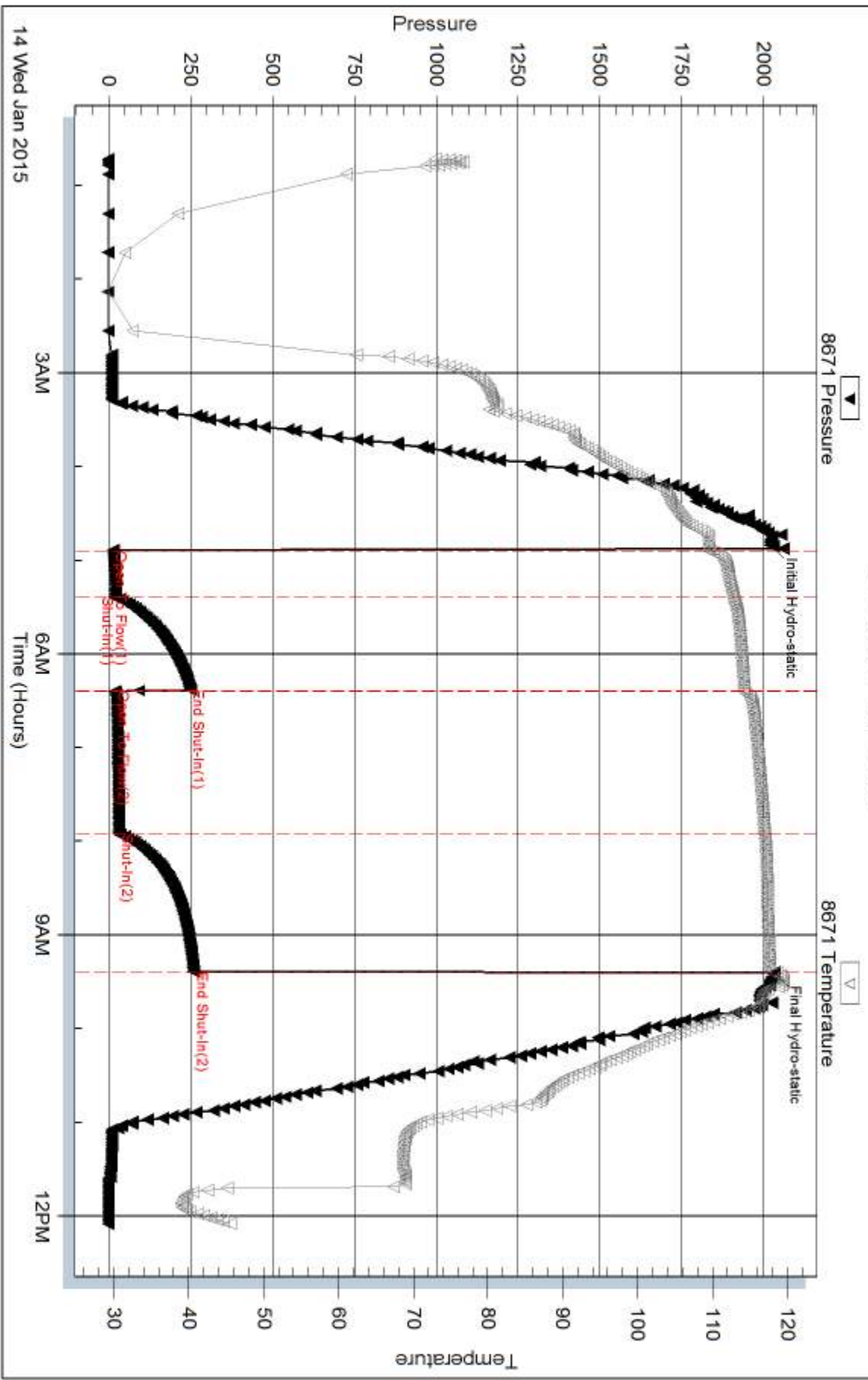
Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



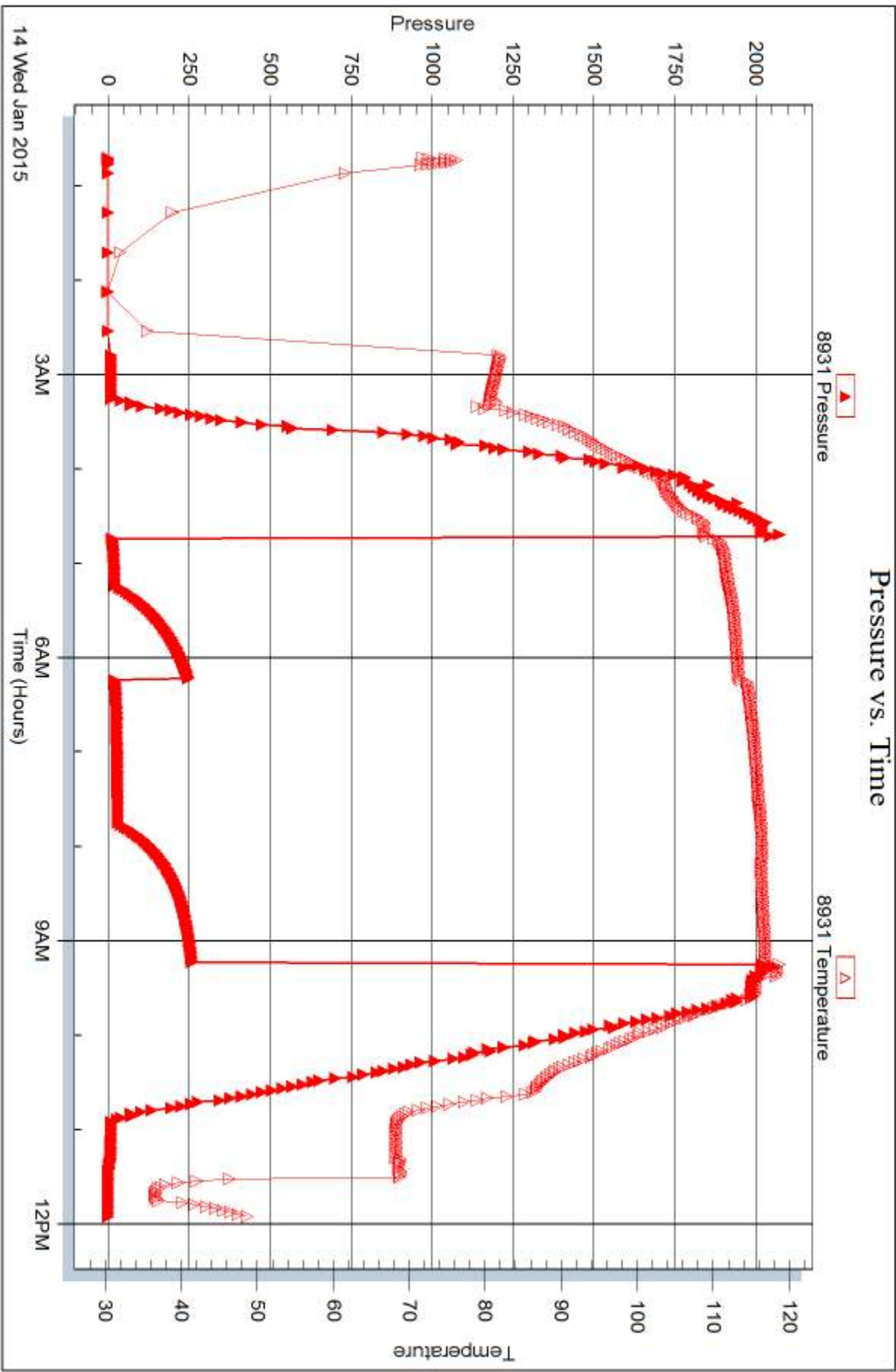
Serial #: 8931

Inside

Pickrell Drilling Company, Inc.

Higgins "K" #3

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 57802

Printed: 2015.01.16 @ 16:14:58



DRILL STEM TEST REPORT

Prepared For: **Pickrell Drilling Company, Inc.**

100 S. Main STE 505
Wichita, KS 67202

ATTN: Aaron Young

Higgins "K" #3

15-30s-8w Kingman,KS

Start Date: 2015.01.14 @ 18:46:23

End Date: 2015.01.15 @ 04:58:23

Job Ticket #: 57803 DST #: 2

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

Printed: 2015.01.16 @ 16:14:25



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57803

DST#: 2

ATTN: Aaron Young

Test Start: 2015.01.14 @ 18:46:23

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: 0.00 ft (KB)

Time Tool Opened: 21:49:23

Time Test Ended: 04:58:23

Test Type: Conventional Bottom Hole (Reset)

Tester: Matt Smith

Unit No: 53

Interval: 4173.00 ft (KB) To 4193.00 ft (KB) (TVD)

Reference Elevations: 1504.00 ft (KB)

Total Depth: 4193.00 ft (KB) (TVD)

1494.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8931

Inside

Press@RunDepth: 35.76 psig @ 4174.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.14

End Date:

2015.01.15

Last Calib.:

2015.01.15

Start Time:

18:46:28

End Time:

04:58:23

Time On Btm:

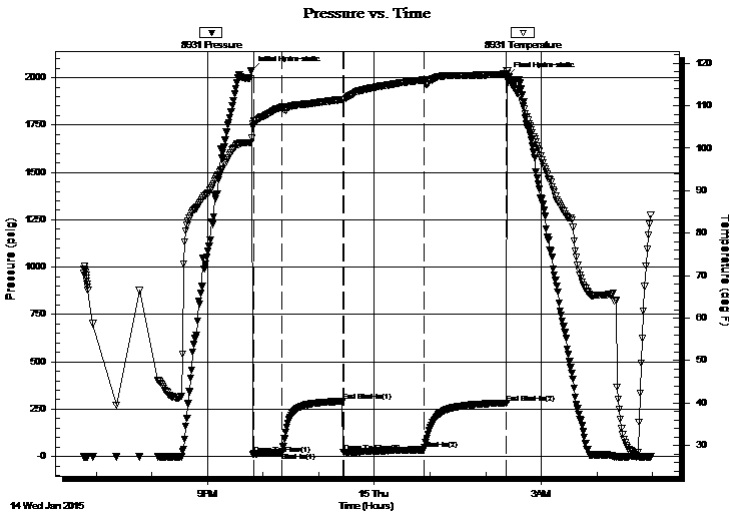
2015.01.14 @ 21:47:53

Time Off Btm:

2015.01.15 @ 02:22:53

TEST COMMENT: IF: Fair to Strong blow . B.O.B. in 5 mins.
IS: Weak blow . Surf., - 1/4", in 30 mins.
FF: Strong blow . Immediate B.O.B.
FS: Weak blow . Surf., - 1/4", after 60 mins.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2036.68	102.33	Initial Hydro-static
2	12.86	105.66	Open To Flow (1)
33	20.53	109.78	Shut-In(1)
98	291.67	111.51	End Shut-In(1)
100	20.18	111.41	Open To Flow (2)
186	35.76	116.08	Shut-In(2)
275	283.00	117.45	End Shut-In(2)
275	2006.69	118.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	OGWCM 3%o 7%g 25%w 65%m	0.90
0.00	1,734' G.I.P. 100%g	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57803

DST#: 2

ATTN: Aaron Young

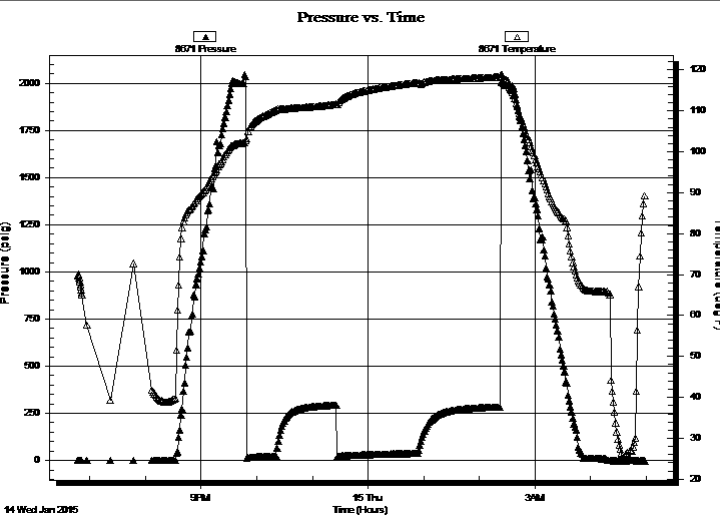
Test Start: 2015.01.14 @ 18:46:23

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: 0.00 ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 21:49:23 Tester: Matt Smith
 Time Test Ended: 04:58:23 Unit No: 53
Interval: 4173.00 ft (KB) To 4193.00 ft (KB) (TVD) Reference Elevations: 1504.00 ft (KB)
 Total Depth: 4193.00 ft (KB) (TVD) 1494.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8671 Outside
 Press@RunDepth: psig @ 4174.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.01.14 End Date: 2015.01.15 Last Calib.: 2015.01.15
 Start Time: 18:46:50 End Time: 04:58:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Fair to Strong blow . B.O.B. in 5 mins.
 IS: Weak blow . Surf., - 1/4", in 30 mins.
 FF: Strong blow . Immediate B.O.B.
 FS: Weak blow . Surf., - 1/4", after 60 mins.



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

Recovery		
Length (ft)	Description	Volume (bbl)
64.00	OGWCM 3%o 7%g 25%w 65%m	0.90
0.00	1,734' G.I.P. 100%g	0.00

* Recovery from multiple tests

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57803

DST#: 2

ATTN: Aaron Young

Test Start: 2015.01.14 @ 18:46:23

Tool Information

Drill Pipe:	Length: 4160.00 ft	Diameter: 3.80 inches	Volume: 58.35 bbl	Tool Weight:	2400.00 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:	60000.00 lb
			<u>Total Volume: 58.35 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	56000.00 lb
Depth to Top Packer:	4173.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	48.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: Shale packer is place of bottom packer.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4146.00	
Shut In Tool	5.00			4151.00	
Hydraulic tool	5.00			4156.00	
Jars	5.00			4161.00	
Safety Joint	3.00			4164.00	
Packer	5.00			4169.00	28.00 Bottom Of Top Packer
Packer	4.00			4173.00	
Stubb	1.00			4174.00	
Recorder	0.00	8931	Inside	4174.00	
Recorder	0.00	8671	Outside	4174.00	
Perforations	16.00			4190.00	
Bullnose	3.00			4193.00	20.00 Bottom Packers & Anchor

Total Tool Length: 48.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Company, Inc.

15-30s-8w Kingman,KS

100 S. Main STE 505
Wichita, KS 67202

Higgins "K" #3

Job Ticket: 57803

DST#: 2

ATTN: Aaron Young

Test Start: 2015.01.14 @ 18:46:23

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:

15000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.08 in³

Gas Cushion Type:

Resistivity: 1.14 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
64.00	OGWCM 3%o 7%g 25%w 65%m	0.898
0.00	1,734' G.I.P. 100%g	0.000

Total Length: 64.00 ft Total Volume: 0.898 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #: none

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is 1.14 @ 28 degrees = 15,000 chlorides.

Serial #: 8931

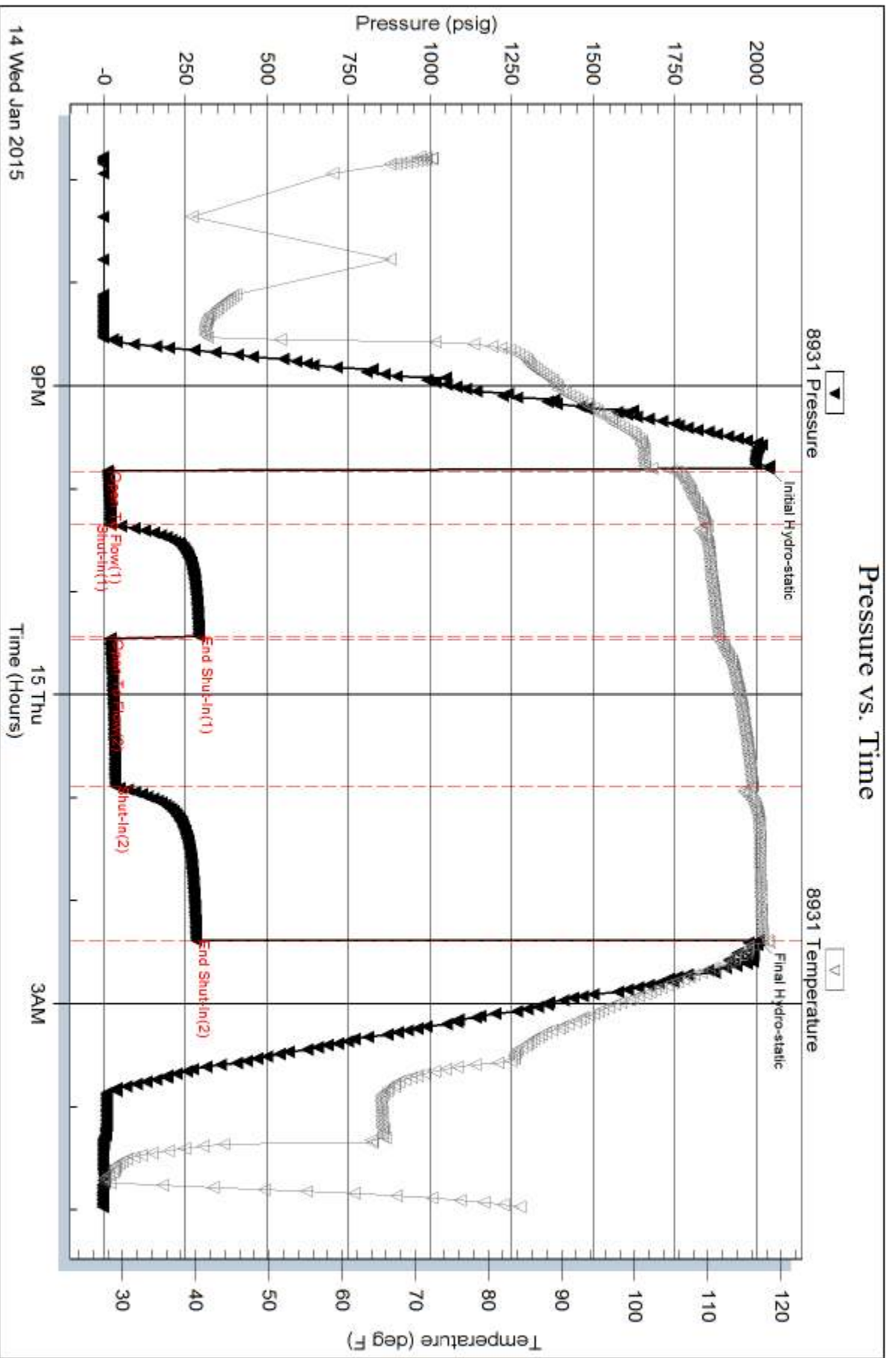
Inside

Pickrell Drilling Company, Inc.

Higgins "K" #3

DST Test Number: 2

Pressure vs. Time

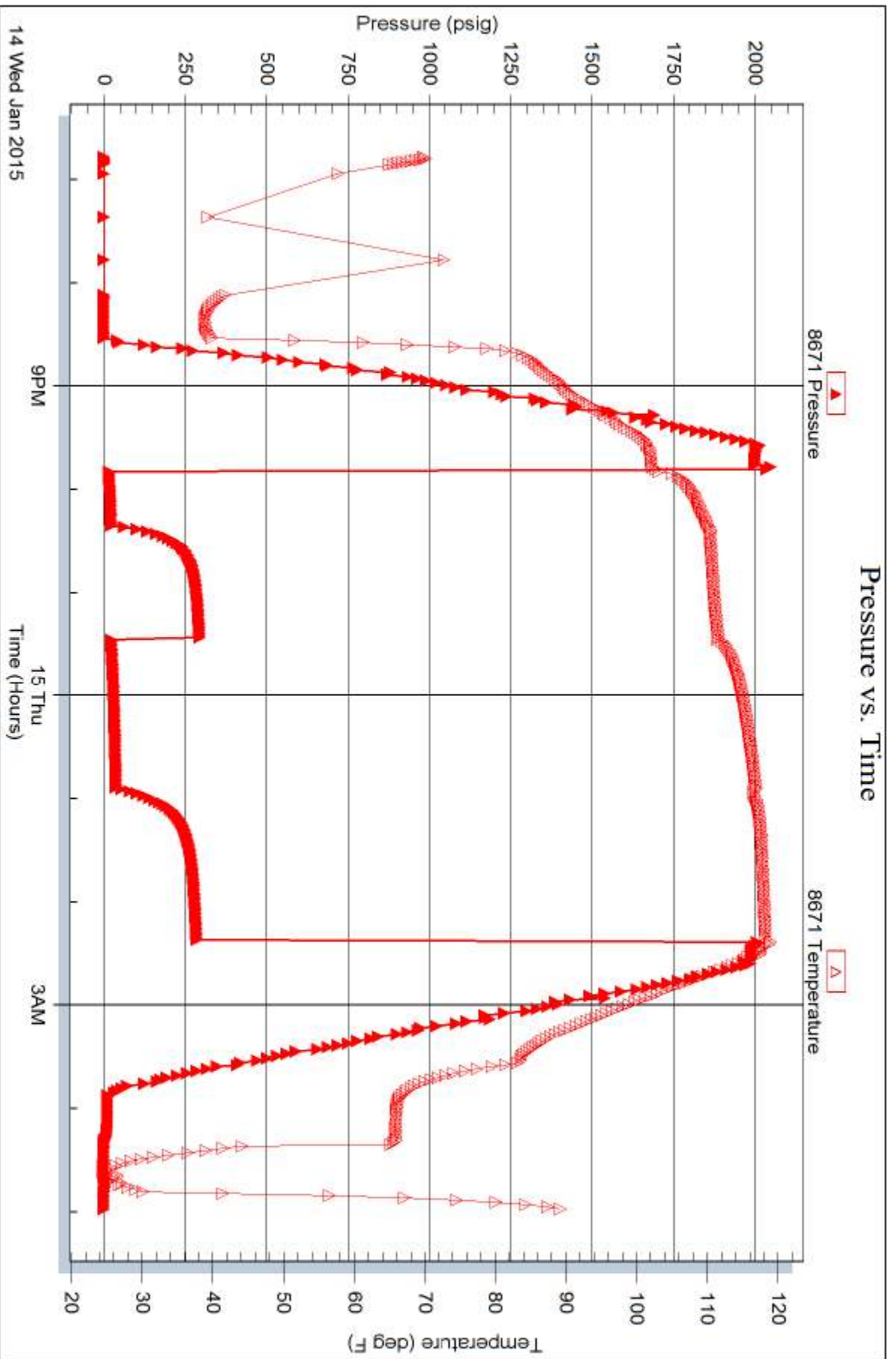


Serial #: 8671

Outside Pickett Drilling Company, Inc.

Higgins "K" #3

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 57802

Well Name & No. Higgins "K" # 3 Test No. 1 Date 01/14/15
 Company Pickrell Drilling Company, Inc. Elevation 1504 KB 1494 GL
 Address 100 S. Main STE 505 Wichita, KS. 67202
 Co. Rep / Geo. AARON Young Rig Pickrell Rig #1
 Location: Sec. 15 Twp. 30s Rge. 8w Co. Kingman State KS.

Interval Tested 4142 - 4173 Zone Tested Mississippi
 Anchor Length 31' Drill Pipe Run 4,129' Mud Wt. 9.4
 Top Packer Depth 4137 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 4142 Wt. Pipe Run 0 WL 9.00
 Total Depth 4173 Chlorides 3000 ppm System LCM TRC - 1/4th

Blow Description IF: Fair to strong blow, B.O.B in 5 3/4 mins.
ISI: No blow.
FF: Fair to strong blow, B.O.B in 4 1/2 mins.
FSI: No blow.

Rec	Feet of	%gas	%oil	%water	%mud
702	G.I.P.	100			
42	GOCm	1	1		98
		%gas	%oil	%water	%mud
		%gas	%oil	%water	%mud
		%gas	%oil	%water	%mud

Rec Total 42' BHT 118° Gravity N.A. API RW N.C @ — °F Chlorides 3000 ppm

(A) Initial Hydrostatic <u>2020</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0015</u>
(B) First Initial Flow <u>14</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0042</u>
(C) First Final Flow <u>22</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0453</u>
(D) Initial Shut-In <u>250</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0924</u>
(E) Second Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Hourly Standby <u>1.5</u> 1.25h 100	T-Out <u>1205</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>(100)</u> 100	Comments <u>BANK @ 1:30 A.M.</u>
(G) Final Shut-In <u>260</u>	<input type="checkbox"/> Sampler	<u>Check over a lot of test time.</u>
(H) Final Hydrostatic <u>2032</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>90</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Total <u>1925</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1925</u>	

Approved By _____ Our Representative Matthew J. Smith
 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. **57803**

4/10

Well Name & No. Higgins "K" #3 Test No. 2 Date 01/14/15
 Company Pickrell Drilling Company, Inc. Elevation 1504 KB 1494 GL
 Address 100 S. Main STE 505 Wichita, KS. 67202
 Co. Rep / Geo. Aaron Young Rig Pickrell Rig #1
 Location: Sec. 15 Twp. 30s Rge. 8w Co. Kingman State KS.

Interval Tested 4173 - 4193 Zone Tested Mississippi
 Anchor Length 20' Drill Pipe Run 4160' Mud Wt. 9.4
 Top Packer Depth 4168 Drill Collars Run 0 Vis 58
 Bottom Packer Depth 4173 Wt. Pipe Run 0 WL 9.1
 Total Depth 4193 Chlorides 3000 ppm System LCM 1#

Blow Description IF: Fair to Strong blow. B.O.B in 5 mins.
ISI: Weak blow. Surface - 1/4" in 30 mins.
FF: Strong blow. Immediate B.O.B.
FSI: Weak blow. Surface - 1/4" after 60 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>1,734</u>	<u>G.I.P.</u>	<u>100</u>			
<u>64</u>	<u>06WCM 06WCM</u>	<u>7</u>	<u>3</u>	<u>25</u>	<u>65</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 64' BHT 117° Gravity N.A. API RW 1.14 @ 28 °F Chlorides 15,000 ppm

(A) Initial Hydrostatic	<u>2037</u>	<input checked="" type="checkbox"/> Test	<u>1150</u>	T-On Location	<u>1836</u>
(B) First Initial Flow	<u>13</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>1846</u>
(C) First Final Flow	<u>21</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>2149</u>
(D) Initial Shut-In	<u>292</u>	<input type="checkbox"/> Circ Sub		T-Pulled	<u>0222</u>
(E) Second Initial Flow	<u>20</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>0458</u>
(F) Second Final Flow	<u>36</u>	<input checked="" type="checkbox"/> Mileage <u>(100)</u>	<u>100</u>	Comments	
(G) Final Shut-In	<u>283</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2007</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	

Initial Open 30
 Initial Shut-In 60
 Final Flow 90
 Final Shut-In 90

Shale Packer 250
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total 1825

Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1825
 MP/DST Disc't

Approved By _____ Our Representative Matthew Smith

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.