



1270611



Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to [kcc-well-logs@kcc.ks.gov](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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# JASPAR COMPANY INC.

Scale 1:240 Imperial

Well Name: GARTRELL #1  
Surface Location: NW NW SW SE Sec. 21 - 6S - 20W  
Bottom Location:  
API: 15-163-24295  
License Number: 34903  
Spud Date: 8/7/2015 Time: 12:15 PM  
Region: ROOKS COUNTY KANSAS  
Drilling Completed: 8/13/2015 Time: 5:15 AM  
Surface Coordinates: 1175' FSL & 2570' FEL  
Bottom Hole Coordinates:  
Ground Elevation: 2222.00ft  
K.B. Elevation: 2230.00ft  
Logged Interval: 3000.00ft To: 3701.00ft  
Total Depth: 3701.00ft  
Formation: LANSING - KANSAS CITY; ARBUCKLE  
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

## OPERATOR

Company: JASPAR COMPANY, INC.  
Address: 1681 LIMESTONE ROAD SOUTH  
P.O. BOX 1120  
HAYS, KS 67601  
Contact Geologist: SHANE VEHIGE  
Contact Phone Nbr: (785) 650-4910  
Well Name: GARTRELL #1  
Location: NW NW SW SE Sec. 21 - 6S - 20W  
API: 15-163-24295  
Pool:  
State: KANSAS  
Field: UNNAMED  
Country: USA

## SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.5554117  
Latitude: 39.5132388  
N/S Co-ord: 1175' FSL  
E/W Co-ord: 2570' FEL

## LOGGED BY



Company: BIG CREEK CONSULTING, INC.  
Address: 1909 MAPLE  
ELLIS, KS 67637

Phone Nbr: (785) 259-3737  
 Logged By: GEOLGIST

Name: JEFF LAWLER

**CONTRACTOR**

Contractor: WW DRILLING, LLC  
 Rig #: 12  
 Rig Type: MUD ROTARY  
 Spud Date: 8/7/2015  
 TD Date: 8/13/2015  
 Rig Release: 8/14/2015

Time: 12:15 PM  
 Time: 5:15 AM  
 Time: 12:00 PM

**ELEVATIONS**

K.B. Elevation: 2230.00ft  
 K.B. to Ground: 8.00ft

Ground Elevation: 2222.00ft

**NOTES**


DUE TO ECONOMICAL RECOVERY ON DST #1 DECISION WAS MADE TO SET 5 1/2" PRODUCTION CASING AND FURTHER EVALUATE ZONES OF INTEREST WITH PERFORATION.

RESPECTFULLY SUBMITTED,  
 JEFF LAWLER

**WELL COMPARISON SHEET**

FORMATION	● GARTRELL #1								☒ BAIRD OIL CO.				● RITCHIE EXPLORATION, INC.				☒ A. SCOTT RITCHIE			
	D&R UNIT #1				SE SW SE NE 21-6-20				SAMMONS #1				NANETTE #2 OWWO				WYRILL FARMS #1			
	KB		GL		KB		2172		KB		2191		KB		2223		KB		2230	
	LOG TOPS	SAMPLE TOPS	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.	LOG	SMPL.		
ANHYDRITE TOP	1840	390	1841	389	1770	402	-12	-13	1794	397	-7	-8	1813	410	-20	-21	1828	402	-12	-13
BASE	1854	376	1853	377	1803	369	+7	+8	1819	372	+4	+5	1846	377	-1	+0	1856	374	+2	+3
TOPEKA	3224	-994	3222	-992	3164	-992	-2	+0	3185	-994	+0	+2	3213	-990	-4	-2	3224	-994	+0	+2
HEEBNER SHALE	3423	-1193	3424	-1194	3363	-1191	-2	-3	3385	-1194	+1	+0	3414	-1191	-2	-3	3426	-1196	+3	+2
TORONTO	3448	-1218	3447	-1217	3386	-1214	-4	-3	3410	-1219	+1	+2	3438	-1215	-3	-2	3450	-1220	+2	+3
LKC	3461	-1231	3460	-1230	3401	-1229	-2	-1	3425	-1234	+3	+4	3451	-1228	-3	-2	3465	-1235	+4	+5
BKC	3661	-1431	3662	-1432	3599	-1427	-4	-5	3620	-1429	-2	-3	3643	-1420	-11	-12	3658	-1428	-3	-4
GORHAM SAND					3630	-1458			3664	-1473							3694	-1464		
ARBUCKLE			3697	-1467	3638	-1466		-1	3683	-1492		+25	3695	-1472		+5	3705	-1475		+8
TOTAL DEPTH	3696	-1466	3701	-1471	3698	-1526	+60	+55	3691	-1500	+34	+29					3785	-1555	+89	+84

**DST #1 TORONTO - LKC A 3420' - 3470'**



**TRILOBITE TESTING, INC.**

Jaspar Co Inc  
 P O Box 1120  
 Hays Ks 67601  
 ATTN: Shane Vehige, Jeff La

**DRILL STEM TEST REPORT**

**21-6s-20w Rooks**

**Gartrell #1**

Job Ticket: 62652      **DST#: 1**

Test Start: 2015.08.11 @ 03:55:11

**GENERAL INFORMATION:**

Formation: **Toronto-LKC A**

Deviated: No      Whipstock:      ft (KB)

Time Tool Opened: 06:00:06

Time Test Ended: 10:09:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 70

Interval: **3420.00 ft (KB) To 3470.00 ft (KB) (TVD)**

Reference Elevations: 2230.00 ft (KB)

Total Depth: 3470.00 ft (KB) (TVD)

2222.00 ft (CF)

Hole Diameter: 7.85 inches      Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8018**      **Inside**

Press@RunDepth: 174.73 psig @ 3434.00 ft (KB)      Capacity: 8000.00 psig

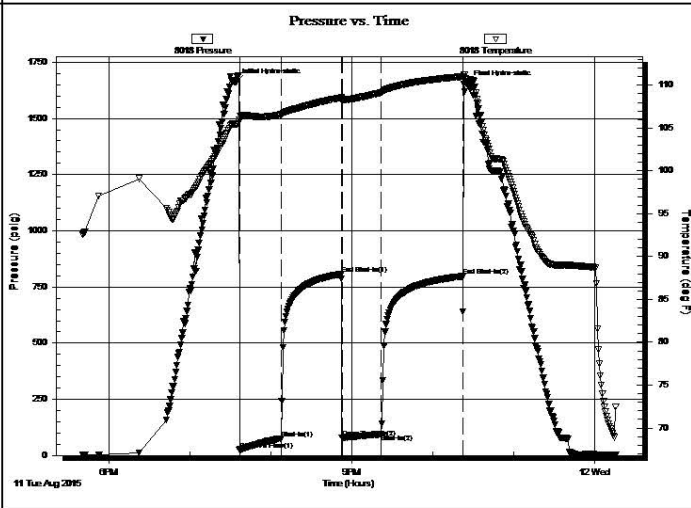
Start Date: 2015.08.11      End Date: 2015.08.11      Last Calib.: 2015.08.11

Start Time: 03:55:11      End Time: 10:09:20      Time On Btm: 2015.08.11 @ 05:57:36

Time Off Btm: 2015.08.11 @ 08:04:06



45-ISIP-no bl  
 30-FFP-no bl 1st 5min, then w k thru-out surface to 2"bl  
 60-FSIP-no bl



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.50	105.49	Initial Hydro-static
3	23.35	105.90	Open To Flow (1)
34	74.36	106.57	Shut-In(1)
79	807.22	108.54	End Shut-In(1)
79	79.70	108.30	Open To Flow (2)
108	95.12	109.14	Shut-In(2)
169	797.44	111.00	End Shut-In(2)
173	1655.11	110.69	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
124.00	MW 20%M80%W	0.65
45.00	Mud w /show of oil	0.63

\* Recovery from multiple tests

**Gas Rates**

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

Trilobite Testing, Inc

Ref. No: 62653

Printed: 2015.08.12 @ 08:10:50

**DST #3 LKC E - F 3524' - 3552'**



**TRILOBITE TESTING, INC**

**DRILL STEM TEST REPORT**

Jaspar Co Inc

1681 Limestone Road South  
 PO Box 1120  
 Hays Ks 67601  
 ATTN: Shane Vehige, Jeff La

**21-6s-20w Rooks**

**Gartrell #1**

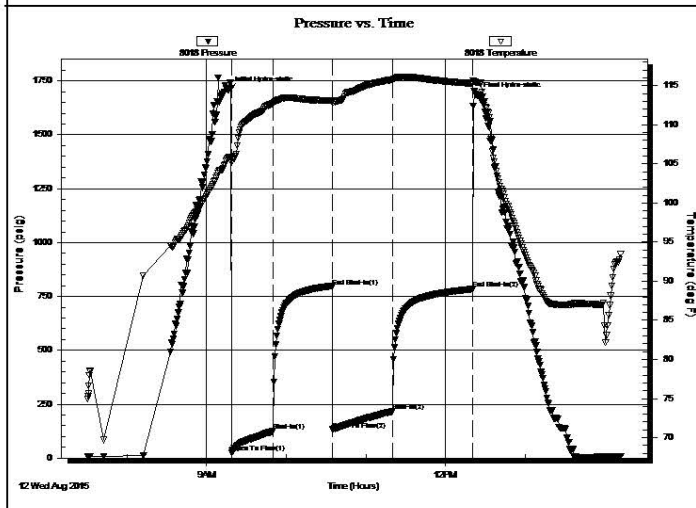
Job Ticket: 62654      **DST#: 3**  
 Test Start: 2015.08.12 @ 07:30:30

**GENERAL INFORMATION:**

Formation: **LKC E-F**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 09:18:40  
 Time Test Ended: 14:11:39  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 70  
 Interval: **3524.00 ft (KB) To 3552.00 ft (KB) (TVD)**  
 Total Depth: 3552.00 ft (KB) (TVD)  
 Reference Elevations: 2230.00 ft (KB)  
 2222.00 ft (CF)  
 Hole Diameter: 7.85 inches Hole Condition: Fair  
 KB to GR/CF: 8.00 ft

**Serial #: 8018**      **Inside**  
 Press@RunDepth: 217.14 psig @ 3530.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2015.08.12      End Date: 2015.08.12      Last Calib.: 2015.08.12  
 Start Time: 07:30:30      End Time: 14:11:39      Time On Btm: 2015.08.12 @ 09:16:40  
 Time Off Btm: 2015.08.12 @ 12:23:39

TEST COMMENT: 30-IFP-w k to strg in 18min  
 45-ISIP-no bl



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1707.43	105.83	Initial Hydro-static
2	25.98	105.16	Open To Flow (1)
34	124.95	112.73	Shut-In(1)
78	794.58	113.07	End Shut-In(1)
78	132.00	112.84	Open To Flow (2)
124	217.14	115.75	Shut-In(2)
184	784.03	115.28	End Shut-In(2)
187	1683.14	115.37	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
240.00	Water	2.27
120.00	MW w /show of oil	1.68
15.00	SOCMW 2%O40%M48%W	0.21

\* Recovery from multiple tests

**Gas Rates**

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

Trilobite Testing, Inc

Ref. No: 62654

Printed: 2015.08.12 @ 14:37:50

**DST #4 ARBUCKLE 3680' - 3701'**

<p><b>TRILOBITE TESTING, INC</b></p>	<b>DRILL STEM TEST REPORT</b>	
	Jaspar Co Inc 1681 Limestone Road South PO Box 1120 Hays Ks 67601 ATTN: Shane Vehige, Jeff La	<b>21-6s-20w Rooks</b>  <b>Gartrell #1</b> Job Ticket: 62655 <b>DST#: 4</b> Test Start: 2015.08.13 @ 09:41:02

**GENERAL INFORMATION:**

Formation: <b>Arbuckle</b>		Test Type: Conventional Bottom Hole (Reset)
Deviated: No Whipstock:      ft (KB)		Tester: Ray Schwager
Time Tool Opened: 11:40:27		Unit No: 70
Time Test Ended: 16:44:41		
<b>Interval: 3680.00 ft (KB) To 3701.00 ft (KB) (TVD)</b>		Reference Elevations: 2230.00 ft (KB)
Total Depth: 3701.00 ft (KB) (TVD)		2222.00 ft (CF)
Hole Diameter: 7.85 inches Hole Condition: Fair		KB to GR/CF: 8.00 ft

<b>Serial #: 8018</b>	<b>Inside</b>				
Press@RunDepth: 19.90 psig @ 3681.00 ft (KB)		Capacity: 8000.00 psig			
Start Date: 2015.08.13	End Date: 2015.08.13	Last Calib.: 2015.08.13			
Start Time: 09:41:02	End Time: 16:44:41	Time On Btm: 2015.08.13 @ 11:38:27			
		Time Off Btm: 2015.08.13 @ 15:16:11			

TEST COMMENT: 45-IFP-surface bl , died in 28min  
60-ISIP-no bl  
45-FFP-no bl  
60-FSIP-no bl





1:240 Imperial

Cored Interval  
DST Interval

1:240 Imperial

0 ROP (min/ft) 5  
 0 Gamma (API) 150  
 6 Cal (in) 16

3060

3070

3080

3090

3100

3110

3120

3130

3140

3150

3160

3170

3180

3190

3200

3210

3220

3230

3240

3250

3260

**1' DRILL TIME THROUGH ANHYDRITE FROM 1810' - 1870'**  
**1' DRILL TIME FROM 3100' - RTD**  
**10' WET/DRY SAMPLES FROM 3150' - RTD**

**GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3100' - RTD**

**8 5/8" SURFACE PIPE SET @ 220' SURVEY 1 dgr.**

**ANHYDRITE TOP 1841' (+389) E-LOG 1840' (+390)**  
**ANHYDRITE BASE 1853' (+377) E-LOG 1854' (+376)**

Lm- Cream Off White, FXLN Fn Grn, heavily fsl mix, some mud supported matrix, chalky & loosely cemented, all w/ poor vis. porosity, vry clean & barren

Sh- Maroon Gray ,gritty & earthy, silty & calcareous, some micaceous Ss, sl shaley

Lm- Cream Tan, FXLN, densely packed fsl fragments, well cemented, XLN porosity, barren, few pcs of fsl gray fresh bedded chert

Lm- Gray Buff, VFXLN, dense, well cemented, high-energy trashy mix w/ densely packed fsl fragments, poor vis. porosity, some chalky in part, some mud supported matrix

Sh- Gray, silty & calcareous

Lm- Gray, Fn Grn, mostly soft mud supported matrix w/ interbedded fusulinids, some w/ XLN matrix, all w/ poor vis. porosity

Ss- Gray Lt Green, Fn Grn, loosely cemented, sub-angular, fairly mature, consolidated & well sorted, micaeous, consistent intergranular porosity, barren

Sh- Gray Maroon, silty & calcareous, argillaceous clumps, gritty & earthy, soft white chalk, Ss- Gray Frosted, Fn Grn, consolidated & well sorted, loosely cemented, consistent intergranular porosity, WK STN, SL SHEEN, NSFO, NO ODR, HALO FLOR. & TR STRM WET CUT

Lm- Gray, FXLN, well cemented, high-energy, sl trashy w/ densely packed fsl fragments, poor vis. porosity

Sh- Maroon Gray, gritty & earthy, few brick red, silty & calcareous

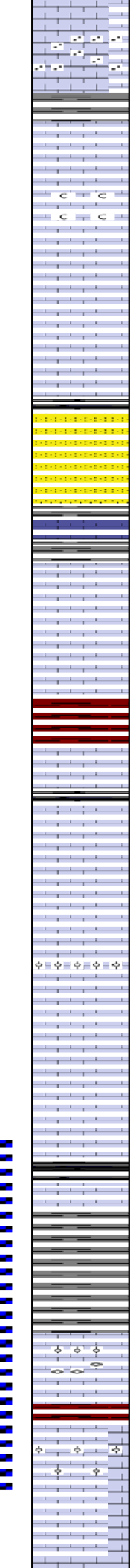
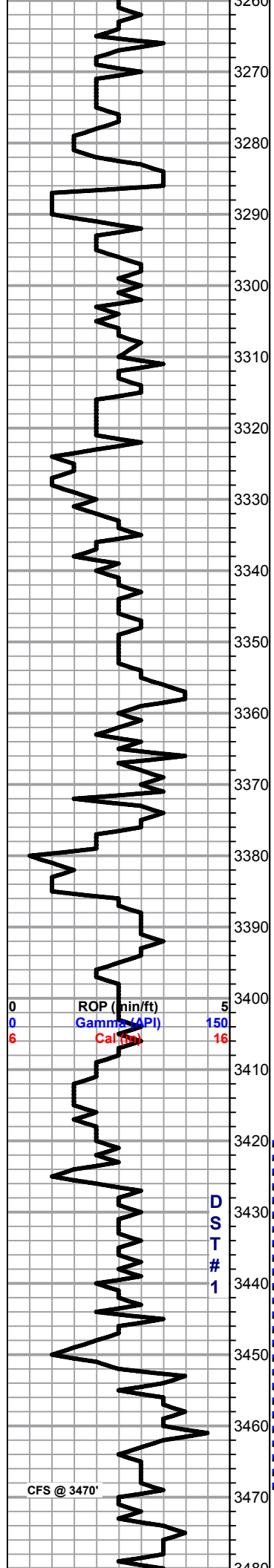
**TOPEKA 3222' (-992) E-LOG 3224' (-994)** Lm- Cream Off White Gray, VF-FXLN, dense, well cemented, sl fsl, mostly tight w/ poor vis. porosity

Lm- Gray, FXLN Fn Grn, dense trashy mix, heavily fsl w/ fusulinids & crinoids, some fragments, some chalky in part & loosely cemented, poor vis. porosity

Lm- Cream Buff, VF-FXLN, dense, well cemented & tight w/ min. vis. porosity

Lm- Cream Off White. Fn Grn. chalky mud supported matrix. looselv cemented &

 -SEVERY.j...



crumbly, some grainy XLN matrix w/ poor vis. porosity

Lm- Lt Gray, Vf Grn, mod. cemented consolidated arenaceous Ls w/ consistent intergranular porosity, barren

Lm- Cream, VFXLN, massive, dense, well cemented, poorly dev. oolitic Ls w/ sctrd clear replacement cementation & reXLN, poor vis. porosity, some loosely cemented & crumbly, much soft white chalk

Lm- Cream Off White, VFXLN Vf Gn, densely packed oolitic biomicrite, cryptoXLN w/o vis. porosity, porcelain like, some chalky mud supported matrix w/o vis. porosity

Sh- Black Maroon, fissile & carbonaceous, gritty & earthy

Ss- Frosted/Lt Gray, Fn Grn, consolidated & well sorted, sub-rounded & mature, consistent intergranular porosity, barren, some argillaceous maroon clay

Lm- Tan, VF-FXLN, mix of cryptoXLN cherty Ls & densely packed oolitic Ls, poorly dev. w/ micro XLN & XLN porosity, some clear replacement cementation, all barren

Lm- A/A w/ sl influx of cherty Ls & fresh bedded fsl chert

Sh- Maroon Gray Lm Green, argillaceous clumps, silty & soft

Lm- Cream Off White, FXLN, fsl, well cemented, sctrd XLN porosity, barren

Sh- Black Lm Green, fissile & carbonaceous, argillaceous clumps

Lm- White Off White, FXLN, massive, mod. well dev. w/ sctrd to mostly consistent fn ppt porosity, few w/ sctrd reXLN, LT BRWN STN, TR FO, GD ODR, SL SULPHURIC, many w/ barren porosity

Lm- Cream Tan, FXLN, massive, semi high-energy fsl mix, poor vis. to sctrd XLN porosity, some sl chalky in part, barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd dev. w/ XLN to sctrd vry fn ppt inter oolite porosity, LT SCTRD STN, TR FO, GD SULPHURIC ODR, much soft white chalk carrying stn also

Lm- Cream Tan, FXLN, sl fsl, some sctrd reXLN, semi-grainy & gritty, well to loosely cemented & crumbly, poor vis. to sctrd-dense XLN porosity, some soft white chalk & chalky mud supported matrix, barren

**HEEBNER 3424' (-1194) E-LOG 3423' (-1193)** Sh- Black Drk Gray, fissile & carbonaceous, silty & soft

Sh- Lt & Drk Gray Maroon, silty & calcareous, some argillaceous clumps, gritty & earthy

**TORONTO 3447' (-1217) E-LOG 3448' (-1218)** Lm- Off White Cream, F-Med XLN, fsl w/ fusulinids & oolites, well dev. w/ mostly consistent inter oolite/fsl ppt porosity, SAT STN, TR FO, FR OILY SHEEN, GD ODR

Lm- Cream Tan, VF-FXLN, fsl A/A, less dev. w/ sctrd XLN to fn ppt inter fsl porosity, less stn A/A, NOSFO, WK ODR

**LKC 3460' (-1230) E-LOG 3461' (-1231)** Lm- Off White, F-Med XLN, mod. well dev. oolitic w/ sctrd ppt inter oolite porosity, SCTRD LT STN, TR FO, FR OILY SHEEN, GD ODR

Lm- Cream Off White, FXLN, sctrd dev. from XLN to vry fn ppt inter fsl porosity, LT SCTRD STN, OILY SHEEN, NSFO, GD ODR

Lm- White Off White, VF-FXLN, dense, well cemented, poorly dev. some chalky in

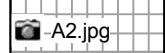
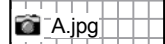


SHORT TRIP  
SURVEY 3/4 dgr.  
STRAP -0.26'

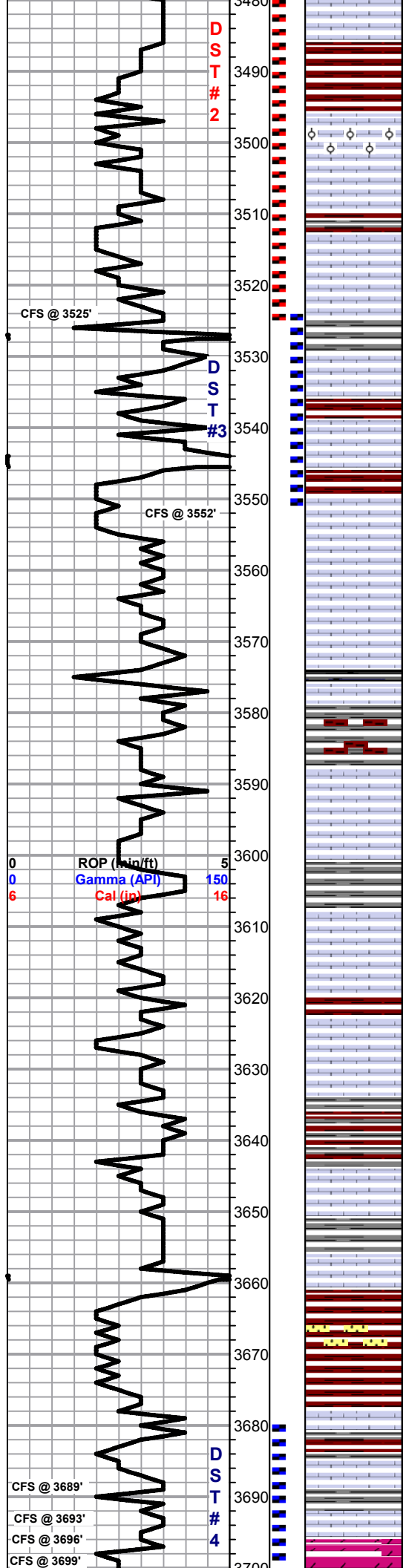
DST #1  
TORONTO- LKC A  
3420' - 3470'  
15-45-15-45

291' TOTAL FLUID  
700' GIP  
124' GMO  
(40G,500, 10M)  
62' CLN OIL  
105' MGO  
(20G,600,20M)

IFP: 62-125#  
FFP: 139-174#  
SIP: 1112-1074#



DST #2 LKC C - D  
3480' - 3525'



part, several pcs of fresh bedded vitreous chert

Sh- Maroon, gritty & earthy

Lm- Cream Tan, VF-Med XLN, mod to well dev. oolitic mix, some mod. dev. off white w/ sctrd XLN & vry fn ppt inter oolite porosity w/ LT SCTRD STN, TR FO, FR OILY SHEEN, & tan VFXLN, vry well cemented, sctrd to dense vry fn ppt inter oolite porosity, SCTRD DRK STN, TR FO, WK-FR OILY SHEEN, ALL W/ FR ODR

Lm- Off White Cream, VF-FXLN, dense, sl fsl, poorly dev. & mostly tight, some soft white chalk, sctrd XLN porosity, barren, micro pyrite inclusions

Lm- Cream Off White, F-Med XLN, mix of poorly dev. & sl fsl w/ sctrd XLN porosity, several pcs of fresh bedded sl fsl lt gray chert, & well dev. oolitic Ls w/ mostly consistent ppt inter oolite porosity, SCTRD DRK STN, TR FO, WK OILY SHEEN, GD ODR

Lm- Off White White, mix of loosely cemented, sl unconsolidated w/ small sediment inclusions w/ dense XLN porosity, barren, & FXLN, mod. dev. oolitic w/ sctrd fn ppt to ppt inter oolite porosity, LT SCTRD STN, TR FO & GSSY BUBBLES IN 2-3 PCS, GD OILY SHEEN, GD ODR, some w/ inter porosity reXLN

Lm- Buff, FXLN, dense, well cemented, sub-sucrosic sl dolomitic Ls w/ consistent vry fn ppt & XLN porosity, throughout, DRK SUB- SAT STN, SFO, STRONG ODR, GD OILY SHEEN

Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ sctrd micro XLN & XLN porosity, vry clean & barren

Lm- Buff, VFXLN, tight cherty Ls w/ sctrd XLN porosity & reXLN & soft white chalk

Sh- Black Maroon, fissile & carbonaceous, dense & semi-waxy

Sh- Gray Maroon, silty & calcareous, argillaceous clumps, gritty & earthy

Lm- Off White Cream, VFXLN, dense, well cemented, mostly tight & poorly dev. w/ poor vis. to micro XLN porosity, barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, sctrd fn ppt & XLN porosity, LT SCTRD STN, SL FLAKEY, NSFO, WK ODR, several pcs of vitreous fresh bedded chert

Sh- Gray Maroon, silty & calcareous, semi-gummy wash, gritty & earthy

Lm- Cream Off White, FXLN Vf Grn, fsl & oolitic, mod. dev. w/ sctrd XLN & fn ppt inter oolite porosity, some sctrd reXLN w/in porosity, LT SCTRD STN, SEMI-FLAKEY, NSFO, FR ODR, grading into tight & chalk mud supported matrix carrying STN A/A

Lm- Tan Cream, FXLN, fsl & sl oolitic, some fusulinids, sctrd XLN & fn ppt inter fsl porosity, interporosity reXLN, SCTRD LT STN, NSFO, FR-MOD ODR, much barren porosity & lesser developed in lower part of bench

Lm- Cream Off White, VFXLN, dense, well cemented, mostly tight w/ poor vis. porosity, some soft white chalk, vry clean & barren, 2 PCS OF OOMOLDIC & FSL W/ FUSULINIDS W/ SCTRD TO SAT STN, NSFO, WK ODR??

Lm- Off White Cream, VF-FXLN, dense, mostly tight w/ por vis. porosity, soft white chalk, 2-4 PCS W/ RARE SCTRD VRY FN INTER OOLITE PPT POROSITY, WK SCTRD STN, NSFO, TR ODR

Lm- White Cream, VF-FXLN, sl fsl, most poorly dev. w/ sctrd micro XLN & XLN porosity, chalky in part

**BKC 3662' (-1432) E-LOG 3661' (-1431)** Sh- Maroon Gray, gritty & earthy, gummy sandy wash & shaley/calcareous Ss, loosely cemented & vry friable, consolidated & well sorted

Lm- Mint Green, VFXLN, dense, well cemented, tight w/ poor vis. porosity

Lm- Tan, VFXLN, massive, fsl & oolitic, poorly dev. w/ min, vis porosity, barren

Sh- Gray Marron, waxy & dense

○ **3693'**- Lm- Off White, VF-FXLN, dense, well cemented, mostly tight w/ sub-rounded qtz. inclusions, poor vis. porosity, SCTRD DRK STN, NSFO, NO ODR

● **3696'**- Dol- Cream Off White, VF-Med XLN, mix from sub-sucrosic w/ consistent XLN

30-45-30-60  
169' TOTAL FLUID  
45' MUD w/ OIL  
SHOW  
124' MW  
(80%W, 20%M)  
IFP: 23-74#  
FFP: 79-95#  
SIP: 807-797#

C.jpg

D.jpg

E.jpg

F.jpg

DST #3 LKC E-F  
3524' - 3552'  
30-45-45-60  
383' TOTAL FLUID  
15' SOCMW  
(2%O, 48%M,  
40%M)  
120' MW w/ OIL  
SHOW  
248' WATER

IFP: 25-124#  
FFP: 132-217#  
SIP: 794-784#

H.jpg

I.jpg

J.jpg

J'.jpg

K.jpg

SHORT TRIP  
CTCH

DST #4  
ARBUCKLE  
3680' - 3701'  
45-60-45-60

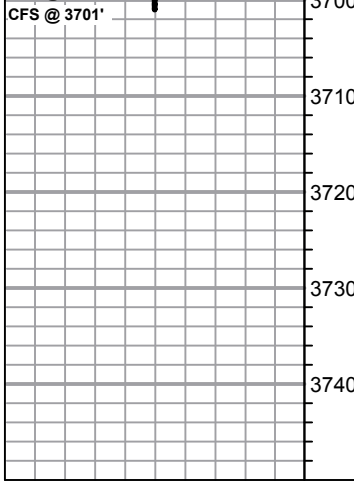
5' HOCM (25%O)

IFP: 23-17#  
FFP: 20-19#  
SIP: 58-38#

3693.jpg

ARBUCK...





porosity to tight w/ micro XLN porosity, all well cemented, few w/ vis. rhombs, all barren

**ARBUCKLE 3697' (-1467)** Dol- Off White Cream, FXLN, subsucrosic, mod. dev. w/ consistent XLN porosity, SAT DRK STN, TR FO, FR ODR

**3701'**- Dol- Off White, FXLN, mod. well dev. w/ consistent XLN & sctrd ppt porosity, several w/ rounded fr grn Qtz. inclusions, SAT DRK STN, SCTRD BLEEDING OIL, HVY OILY SHEEN, GD ODR

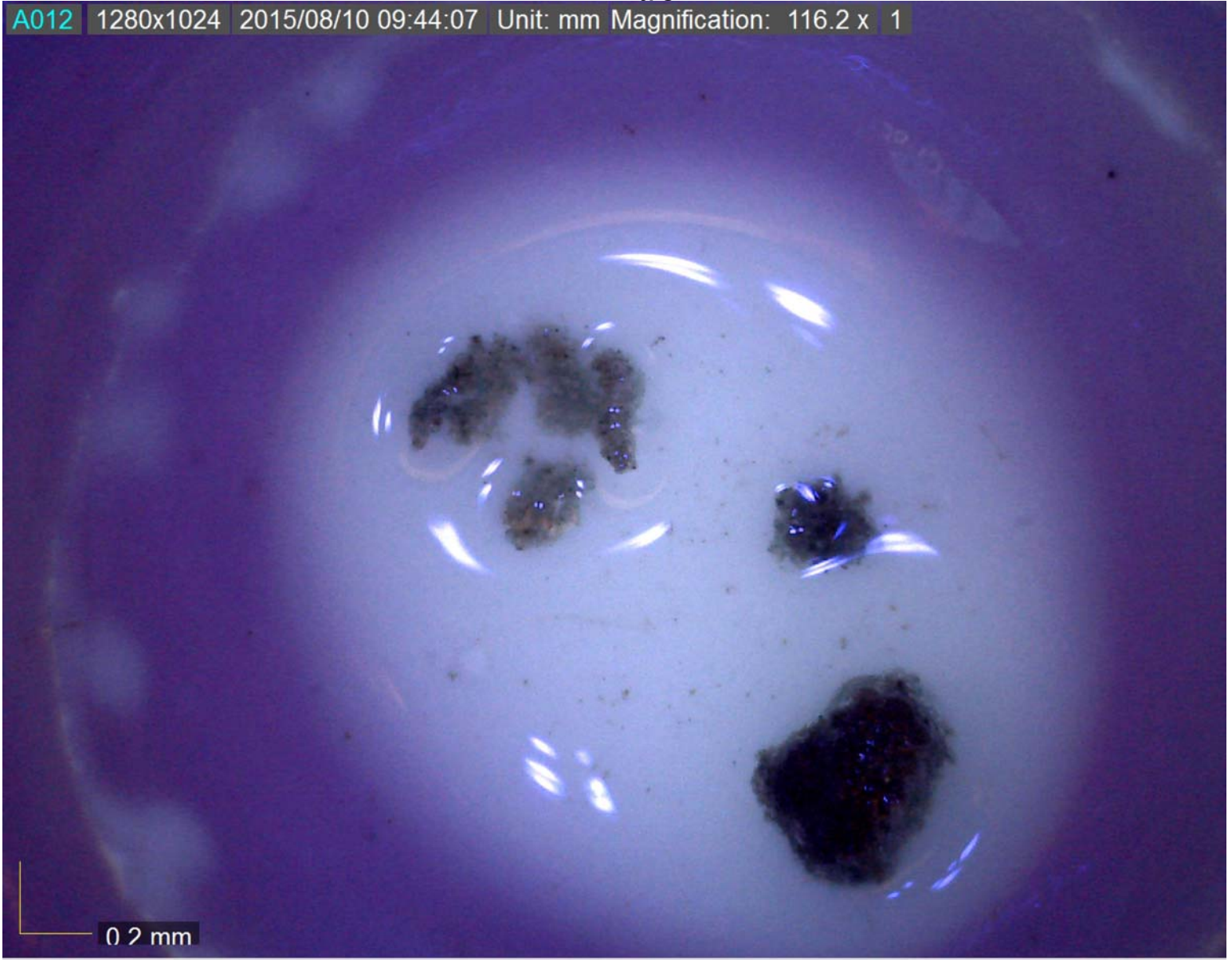
ARBBUC...

AFTER DST #4  
TIH, CTCH  
SURVEY 1/2"  
TOH FOR LOG

**RTD 3701' (-1471) LTD 3696' (-1466) @ 05:15 8/13/2015**

SEVERY.jpg

A012 1280x1024 2015/08/10 09:44:07 Unit: mm Magnification: 116.2 x 1









0.2 mm

PI ATTSMOUTH X 30





TORONTO X 25





0.5 mm

IKC A X 25



0.5 mm

IKC A X 25







0.5 mm

IKC D X 25





0.5 mm

IKC F X 25



0.5 mm

IKCF X 25





0.5 mm

IKC H X 25



0.5 mm





0.5 mm







0.5 mm

IKC K X 30







ARBUCKLE X 25





0.5 mm

ARBUCKLE F X 20



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co Inc**

PO Box 1120  
Hays KS 67601

ATTN: Shane Vehige, Jeff La

### **Gartrell #1**

### **21-6s-20w Rooks,KS**

Start Date: 2015.08.11 @ 03:55:11

End Date: 2015.08.11 @ 10:09:20

Job Ticket #: 62652                      DST #: 1

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

Printed: 2015.08.14 @ 08:56:26



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62652

**DST#: 1**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 03:55:11

## GENERAL INFORMATION:

Formation: **Toronto - LKC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:00:06

Time Test Ended: 10:09:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 70

**Interval: 3420.00 ft (KB) To 3470.00 ft (KB) (TVD)**

Reference Elevations: 2230.00 ft (KB)

Total Depth: 3470.00 ft (KB) (TVD)

2222.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8018**

**Inside**

Press@RunDepth: 174.73 psig @ 3434.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.11

End Date:

2015.08.11

Last Calib.:

2015.08.11

Start Time: 03:55:11

End Time:

10:09:20

Time On Btm:

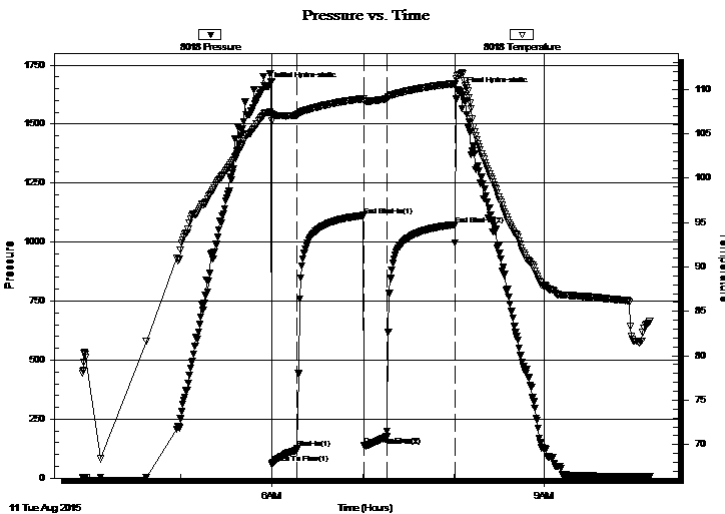
2015.08.11 @ 05:57:36

Time Off Btm:

2015.08.11 @ 08:04:06

**TEST COMMENT:** 15-IFP-w k to strg in 4 min  
45-ISIP-3"bl bk  
15-FFP-w k to strg in 3 1/2 min  
45-FSIP-3" bl bk

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1659.30	107.39	Initial Hydro-static
3	62.46	106.43	Open To Flow (1)
20	125.09	107.10	Shut-In(1)
63	1112.93	108.95	End Shut-In(1)
64	139.85	108.68	Open To Flow (2)
79	174.73	108.94	Shut-In(2)
124	1074.37	110.64	End Shut-In(2)
127	1637.58	111.66	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	700' GIP	0.00
124.00	GMO 40%G10%M50%O	0.65
62.00	CO	0.87
105.00	MGO 20%G20%M60%O	1.47

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62652

**DST#: 1**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 03:55:11

## Tool Information

Drill Pipe:	Length: 3292.00 ft	Diameter: 3.80 inches	Volume: 46.18 bbl	Tool Weight:	2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 46.77 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	3420.00 ft			Final	51000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	71.00 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			3400.00	
Shut In Tool	5.00			3405.00	
Hydraulic tool	5.00			3410.00	
Packer	5.00			3415.00	21.00 Bottom Of Top Packer
Packer	5.00			3420.00	
Stubb	1.00			3421.00	
Perforations	13.00			3434.00	
Recorder	0.00	8018	Inside	3434.00	
Recorder	0.00	8700	Outside	3434.00	
Blank Spacing	33.00			3467.00	
Bullnose	3.00			3470.00	50.00 Bottom Packers & Anchor

**Total Tool Length: 71.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62652

**DST#: 1**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 03:55:11

## 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:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.90 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	700' GIP	0.000
124.00	GMO 40%G10%M50%O	0.646
62.00	CO	0.870
105.00	MGO 20%G20%M60%O	1.473

Total Length: 291.00 ft      Total Volume: 2.989 bbl

Num Fluid Samples: 0

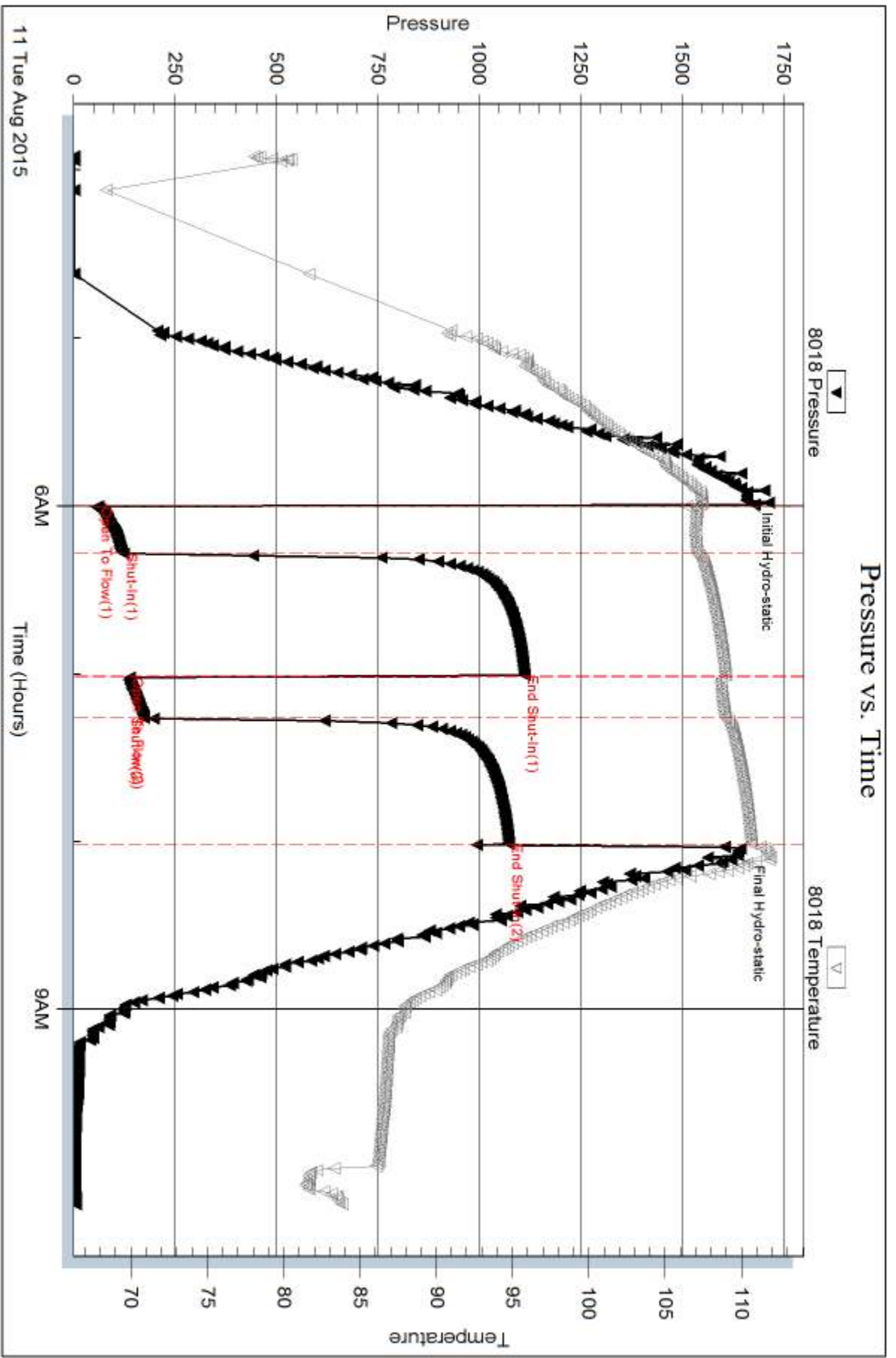
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: slid tool approx 6' to bottom

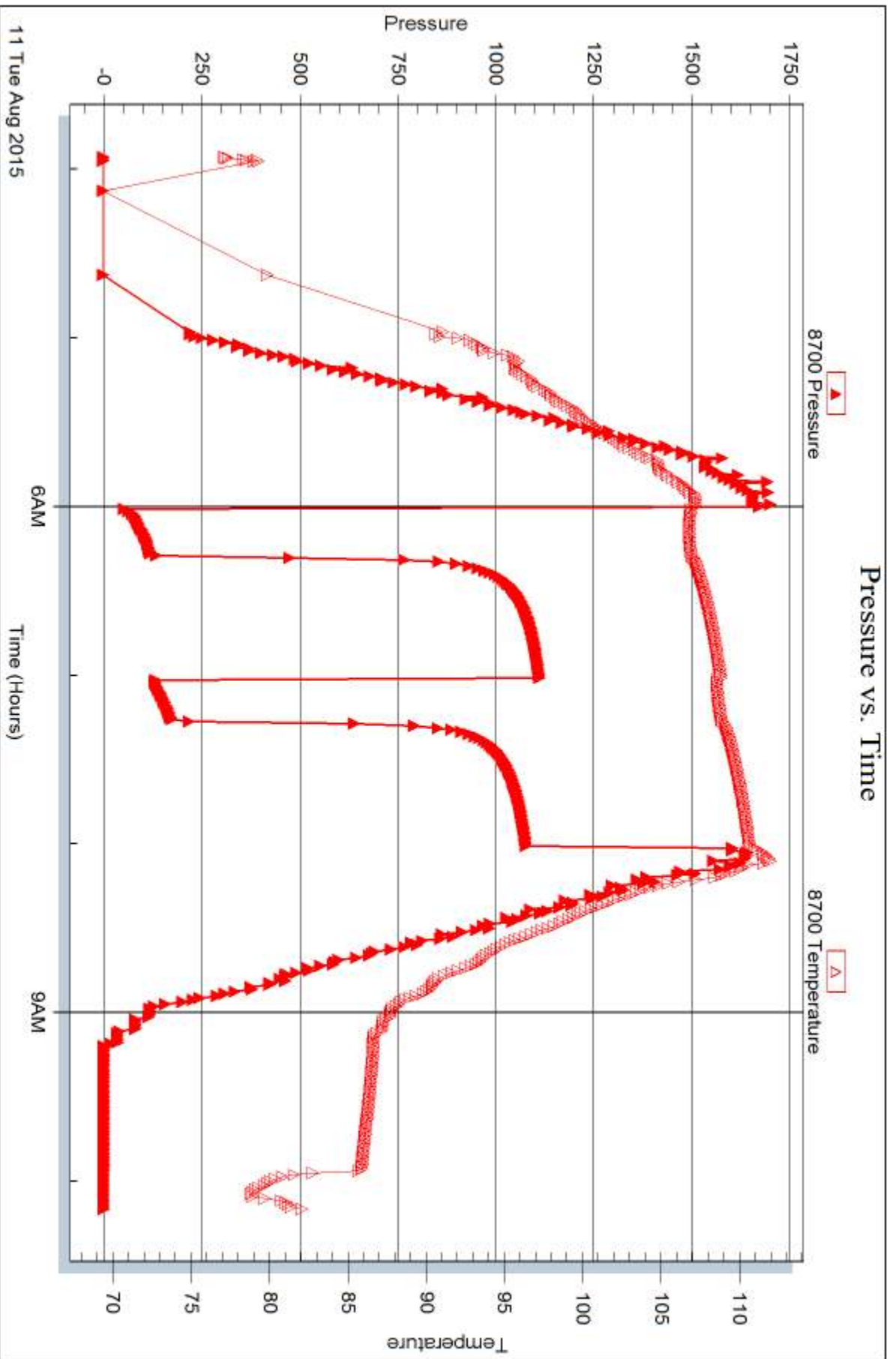


Serial #: 8700

Outside Jasper Co Inc

Garrell #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 62652

Printed: 2015.08.14 @ 08:56:27



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co Inc**

PO Box 1120  
Hays KS 67601

ATTN: Shane Vehige, Jeff La

### **Gartrell #1**

#### **21-6s-20w Rooks,KS**

Start Date: 2015.08.11 @ 17:40:26

End Date: 2015.08.12 @ 00:15:50

Job Ticket #: 62653                      DST #: 2

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

Printed: 2015.08.14 @ 08:56:07



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62653

**DST#: 2**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 17:40:26

## GENERAL INFORMATION:

Formation: **LKC C-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:36:36

Time Test Ended: 00:15:50

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

**Interval: 3480.00 ft (KB) To 3525.00 ft (KB) (TVD)**

Reference Elevations: 2230.00 ft (KB)

Total Depth: 3525.00 ft (KB) (TVD)

2222.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8018**

**Inside**

Press@RunDepth: 95.12 psig @ 3489.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.11

End Date:

2015.08.12

Last Calib.:

2015.08.12

Start Time: 17:40:26

End Time:

00:15:50

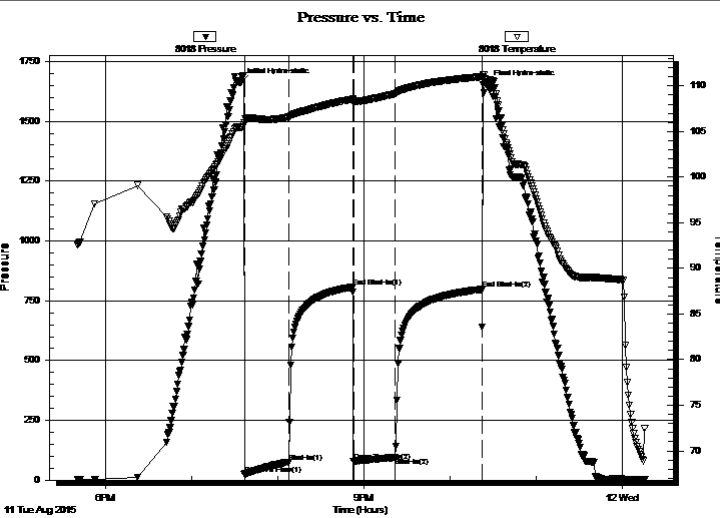
Time On Btm:

2015.08.11 @ 19:33:51

Time Off Btm:

2015.08.11 @ 22:26:05

**TEST COMMENT:** 30-IFP-w k to a fr bl 1/4" to 4 1/2" bl  
45-ISIP-no bl  
30-FFP-no bl 1st 5 min, then w k thru-out surface to 2" bl  
60-FSIP-no bl



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.50	105.49	Initial Hydro-static
3	23.35	105.90	Open To Flow (1)
34	74.36	106.57	Shut-In(1)
79	807.22	108.54	End Shut-In(1)
79	79.70	108.30	Open To Flow (2)
108	95.12	109.14	Shut-In(2)
169	797.44	111.00	End Shut-In(2)
173	1655.11	110.69	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	MW 20% M80% W	0.65
45.00	Mud w/show of oil	0.63

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62653

**DST#: 2**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 17:40:26

## Tool Information

Drill Pipe:	Length: 3351.00 ft	Diameter: 3.80 inches	Volume: 47.01 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 47.60 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3480.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	66.00 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			3460.00	
Shut In Tool	5.00			3465.00	
Hydraulic tool	5.00			3470.00	
Packer	5.00			3475.00	21.00 Bottom Of Top Packer
Packer	5.00			3480.00	
Stubb	1.00			3481.00	
Perforations	8.00			3489.00	
Recorder	0.00	8018	Inside	3489.00	
Recorder	0.00	8700	Outside	3489.00	
Blank Spacing	33.00			3522.00	
Bullnose	3.00			3525.00	45.00 Bottom Packers & Anchor

**Total Tool Length: 66.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62653

**DST#: 2**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.11 @ 17:40:26

## 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:

54000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.91 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	MW 20%M80%W	0.646
45.00	Mud w/show of oil	0.631

Total Length: 169.00 ft      Total Volume: 1.277 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

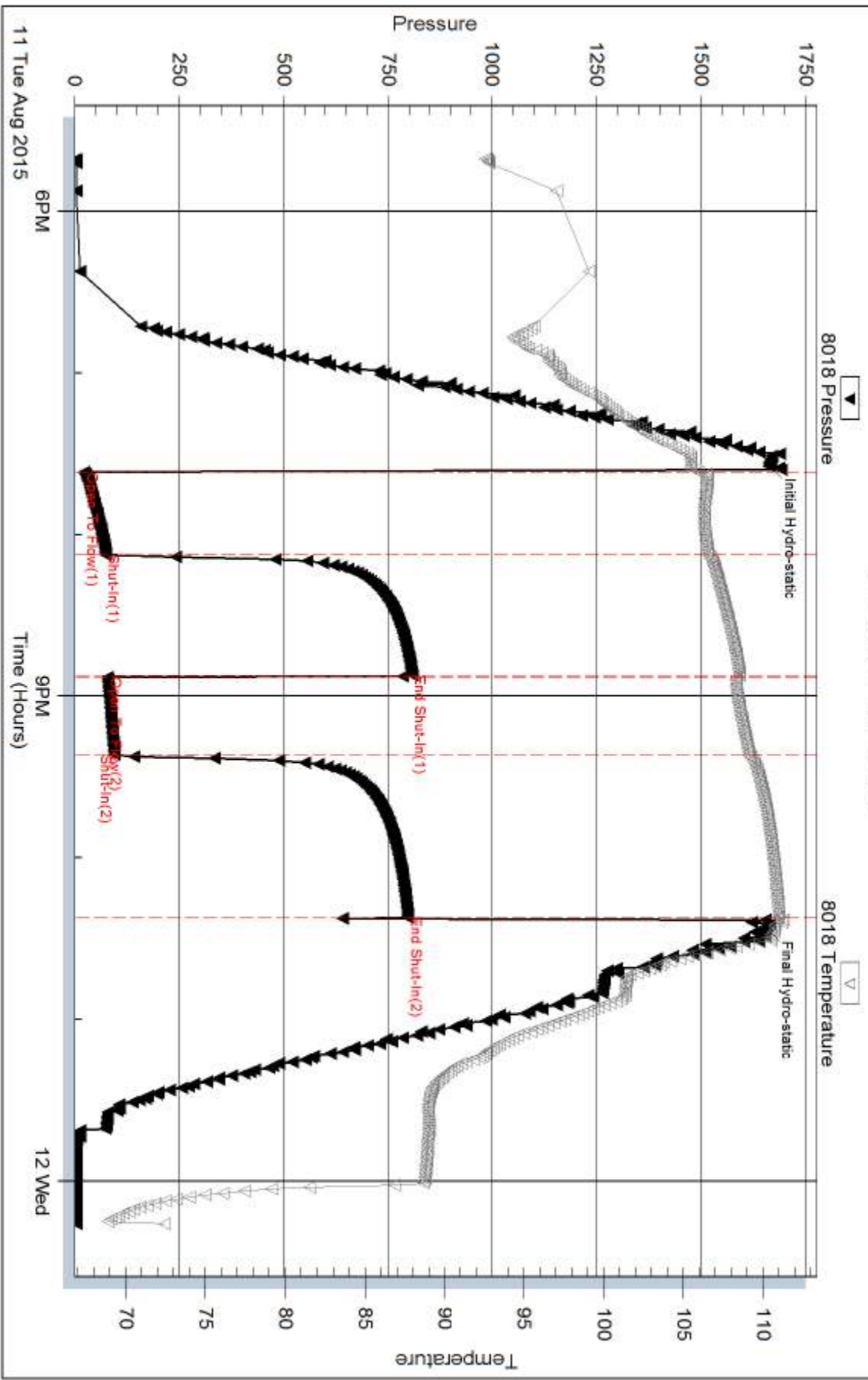
Laboratory Name:

Laboratory Location:

Recovery Comments: slid tool approx 5' to bottom

RW .16@ 60F

### Pressure vs. Time



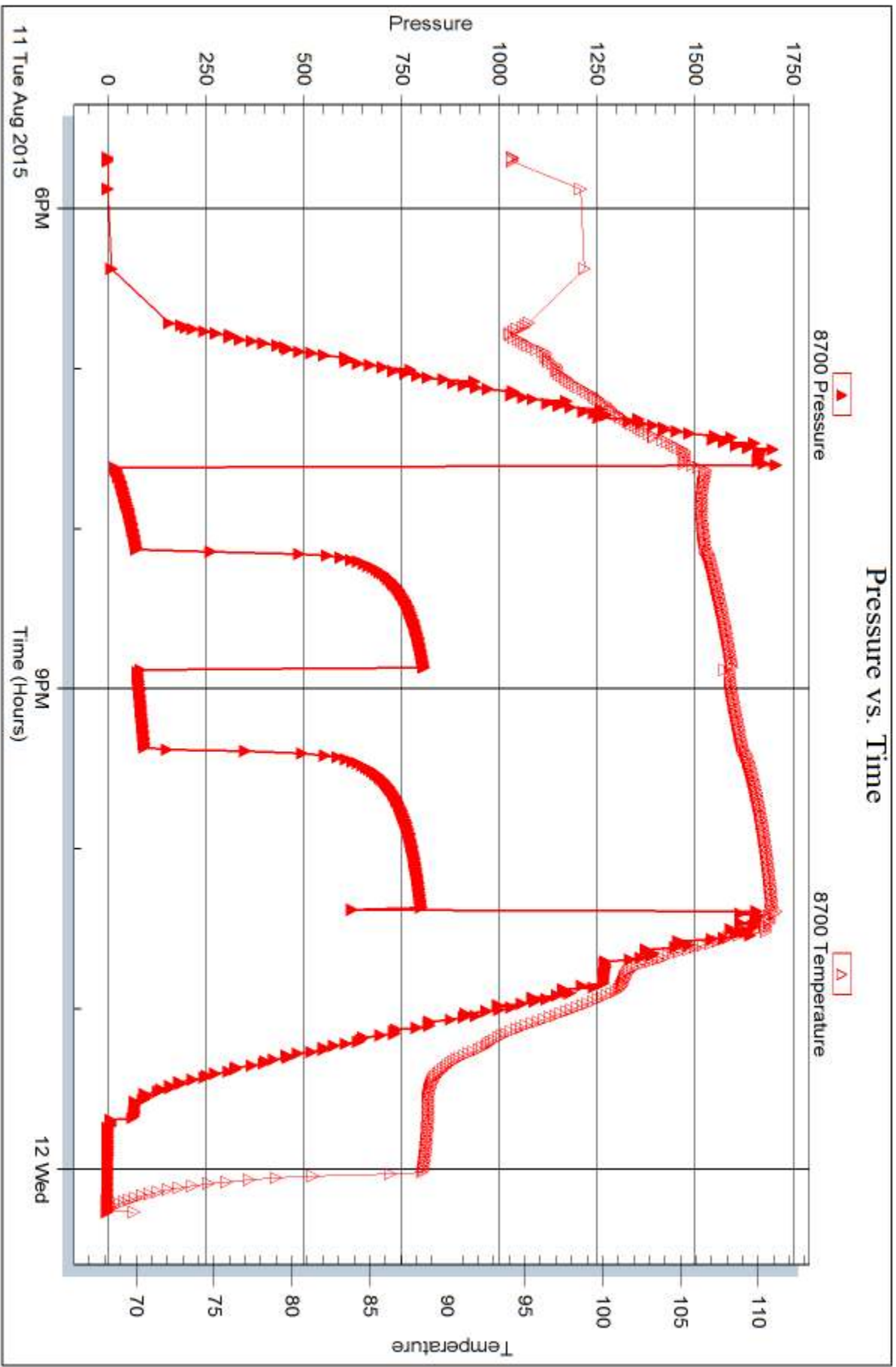


Serial #: 8700

Outside Jasper Co Inc

Gartrell #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62653

Printed: 2015.08.14 @ 08:56:09



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co Inc**

PO Box 1120  
Hays KS 67601

ATTN: Shane Vehige, Jeff La

### **Gartrell #1**

### **21-6s-20w Rooks,KS**

Start Date: 2015.08.12 @ 07:30:30

End Date: 2015.08.12 @ 14:11:39

Job Ticket #: 62654                      DST #: 3

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

Printed: 2015.08.14 @ 08:55:47



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62654

**DST#: 3**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.12 @ 07:30:30

## GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:18:40

Time Test Ended: 14:11:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

**Interval: 3524.00 ft (KB) To 3552.00 ft (KB) (TVD)**

Reference Elevations: 2230.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2222.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8018**

**Inside**

Press@RunDepth: 217.14 psig @ 3530.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.12

End Date:

2015.08.12

Last Calib.:

2015.08.12

Start Time: 07:30:30

End Time:

14:11:39

Time On Btm:

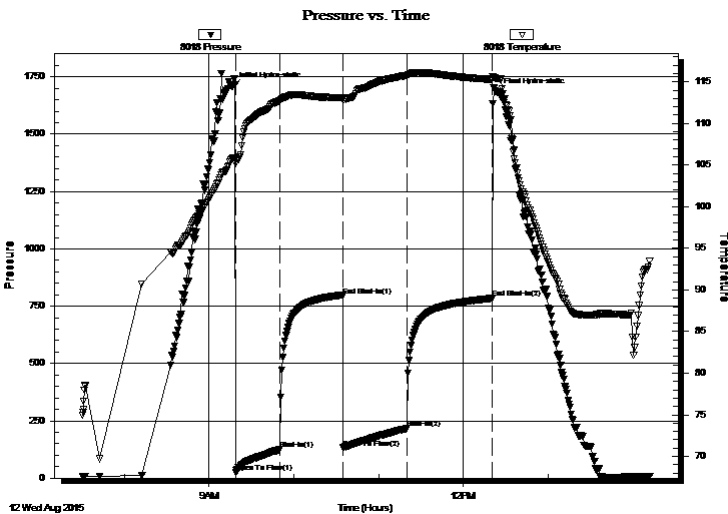
2015.08.12 @ 09:16:40

Time Off Btm:

2015.08.12 @ 12:23:39

**TEST COMMENT:** 30-IFP-w k to strg in 18 min  
45-ISIP-no bl  
30-FFP-w k to strg in 25 min  
45-FSIP-no bl

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1707.43	105.83	Initial Hydro-static
2	25.98	105.16	Open To Flow (1)
34	124.95	112.73	Shut-In(1)
78	794.58	113.07	End Shut-In(1)
78	132.00	112.84	Open To Flow (2)
124	217.14	115.75	Shut-In(2)
184	784.03	115.28	End Shut-In(2)
187	1683.14	115.37	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
240.00	Water	2.27
120.00	MW w/show of oil	1.68
15.00	SOCMW 2%O40%M48%W	0.21

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62654

**DST#: 3**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.12 @ 07:30:30

## Tool Information

Drill Pipe:	Length: 3414.00 ft	Diameter: 3.80 inches	Volume: 47.89 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 48.48 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 61000.00 lb
Depth to Top Packer:	3524.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	49.00 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			3504.00	
Shut In Tool	5.00			3509.00	
Hydraulic tool	5.00			3514.00	
Packer	5.00			3519.00	21.00 Bottom Of Top Packer
Packer	5.00			3524.00	
Stubb	1.00			3525.00	
Perforations	5.00			3530.00	
Recorder	0.00	8018	Inside	3530.00	
Recorder	0.00	8700	Outside	3530.00	
Perforations	19.00			3549.00	
Bullnose	3.00			3552.00	28.00 Bottom Packers & Anchor

**Total Tool Length: 49.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62654

**DST#: 3**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.12 @ 07:30:30

## 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:

77000 ppm

Viscosity: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.92 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
240.00	Water	2.273
120.00	MW w/show of oil	1.683
15.00	SOCMW 2%O40%M48%W	0.210

Total Length: 375.00 ft      Total Volume: 4.166 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

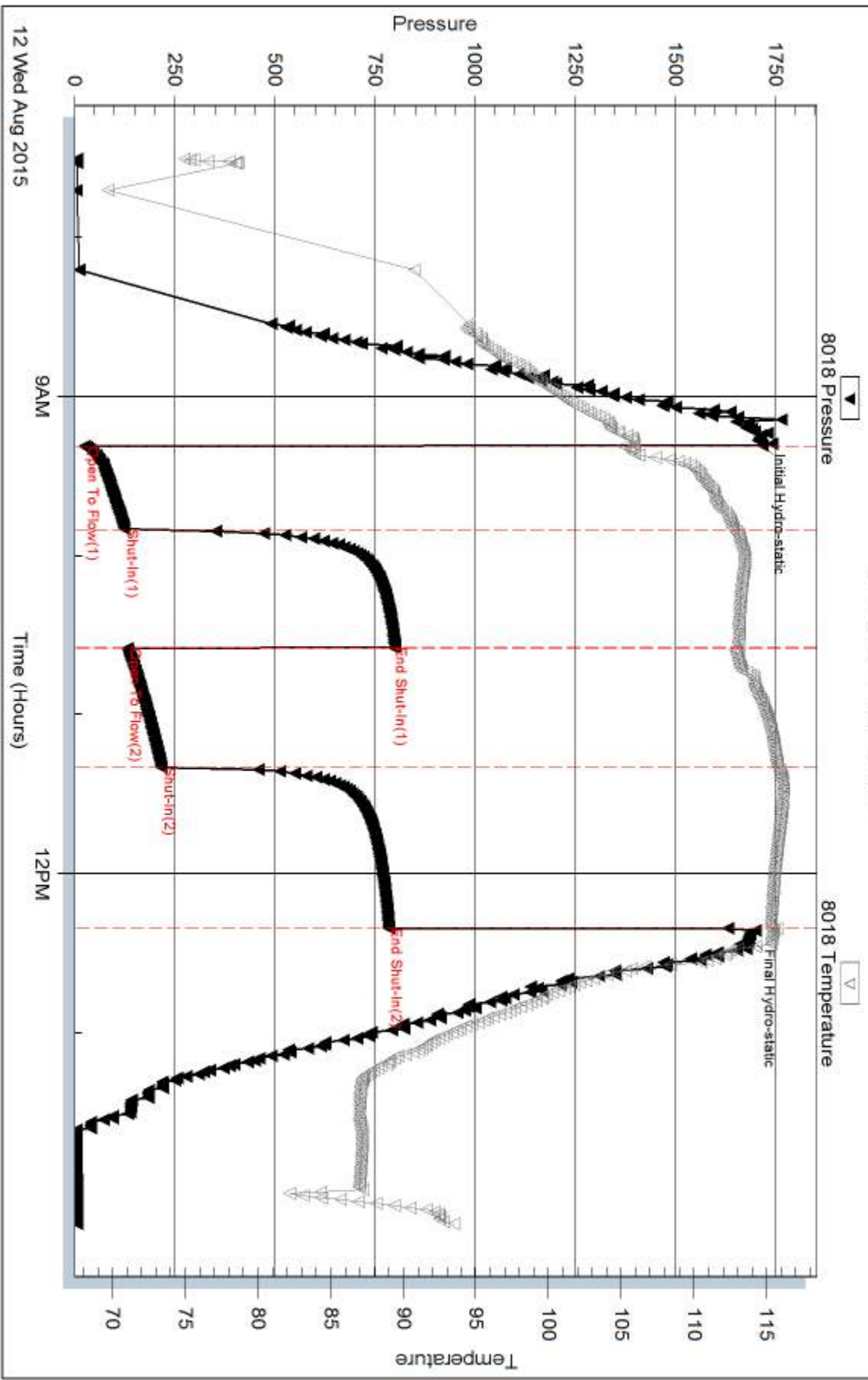
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .08@ 85F

### Pressure vs. Time



12 Wed Aug 2015

9AM

Time (Hours)

12PM

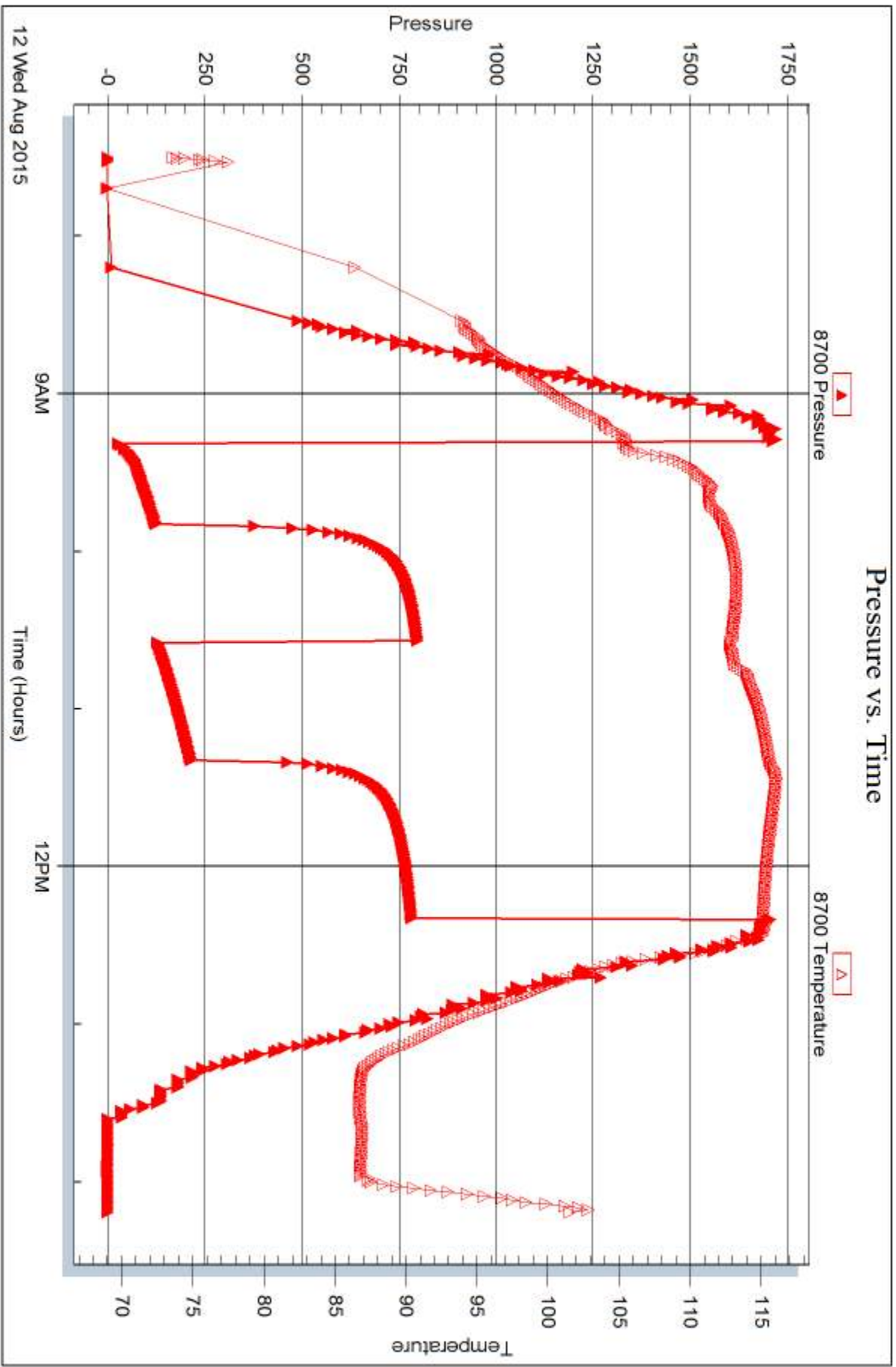


Serial #: 8700

Outside Jasper Co Inc

Gartrell #1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 62654

Printed: 2015.08.14 @ 08:55:48



## DRILL STEM TEST REPORT

Prepared For: **Jaspar Co Inc**

PO Box 1120  
Hays KS 67601

ATTN: Shane Vehige, Jeff La

### **Gartrell #1**

#### **21-6s-20w Rooks,KS**

Start Date: 2015.08.13 @ 09:41:02

End Date: 2015.08.13 @ 16:44:41

Job Ticket #: 62655                      DST #: 4

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

Printed: 2015.08.14 @ 08:54:53



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62655

**DST#: 4**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.13 @ 09:41:02

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:40:27

Time Test Ended: 16:44:41

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 70

**Interval: 3680.00 ft (KB) To 3701.00 ft (KB) (TVD)**

Reference Elevations: 2230.00 ft (KB)

Total Depth: 3701.00 ft (KB) (TVD)

2222.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

**Serial #: 8018**

**Inside**

Press@RunDepth: 19.90 psig @ 3681.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.13

End Date:

2015.08.13

Last Calib.:

2015.08.13

Start Time: 09:41:02

End Time:

16:44:41

Time On Btm:

2015.08.13 @ 11:38:27

Time Off Btm:

2015.08.13 @ 15:16:11

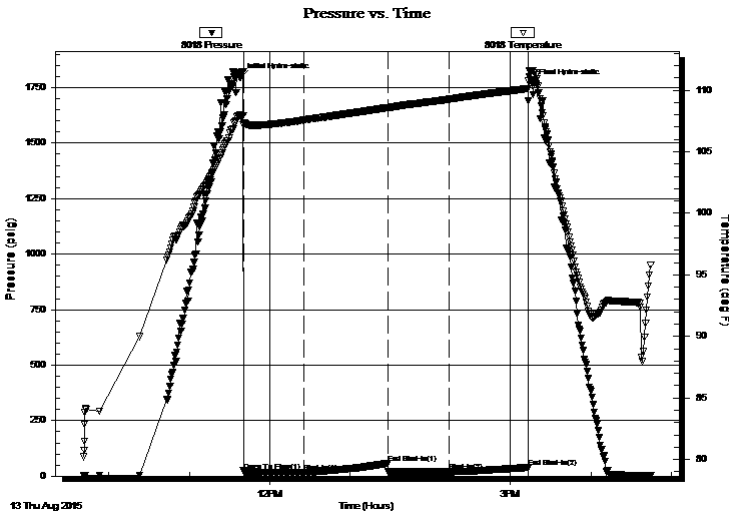
TEST COMMENT: 45-IFP-surface bl, died in 28 min

60-ISIP-no bl

45-FFP-no bl

60-FSIP-no bl

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1794.01	107.95	Initial Hydro-static
2	23.04	107.14	Open To Flow (1)
48	16.90	107.57	Shut-In(1)
110	58.24	108.58	End Shut-In(1)
110	20.15	108.56	Open To Flow (2)
156	19.90	109.26	Shut-In(2)
215	38.09	110.12	End Shut-In(2)
218	1766.22	111.59	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	HOCM 25%O75%M	0.02
0.00	w/ show of clean oil on top of tool	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**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62655

**DST#: 4**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.13 @ 09:41:02

## Tool Information

Drill Pipe:	Length: 3571.00 ft	Diameter: 3.80 inches	Volume: 50.09 bbl	Tool Weight: 2200.00 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: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 50.68 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	3680.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	42.00 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			3660.00	
Shut In Tool	5.00			3665.00	
Hydraulic tool	5.00			3670.00	
Packer	5.00			3675.00	21.00 Bottom Of Top Packer
Packer	5.00			3680.00	
Stubb	1.00			3681.00	
Recorder	0.00	8018	Inside	3681.00	
Recorder	0.00	8700	Outside	3681.00	
Perforations	17.00			3698.00	
Recorder	3.00			3701.00	21.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>42.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Jaspar Co Inc

**21-6s-20w Rooks,KS**

PO Box 1120  
Hays KS 67601

**Gartrell #1**

Job Ticket: 62655

**DST#: 4**

ATTN: Shane Vehige, Jeff La

Test Start: 2015.08.13 @ 09:41:02

## 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: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	HOCM 25% O 75% M	0.025
0.00	w / show of clean oil on top of tool	0.000

Total Length: 5.00 ft      Total Volume: 0.025 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8018

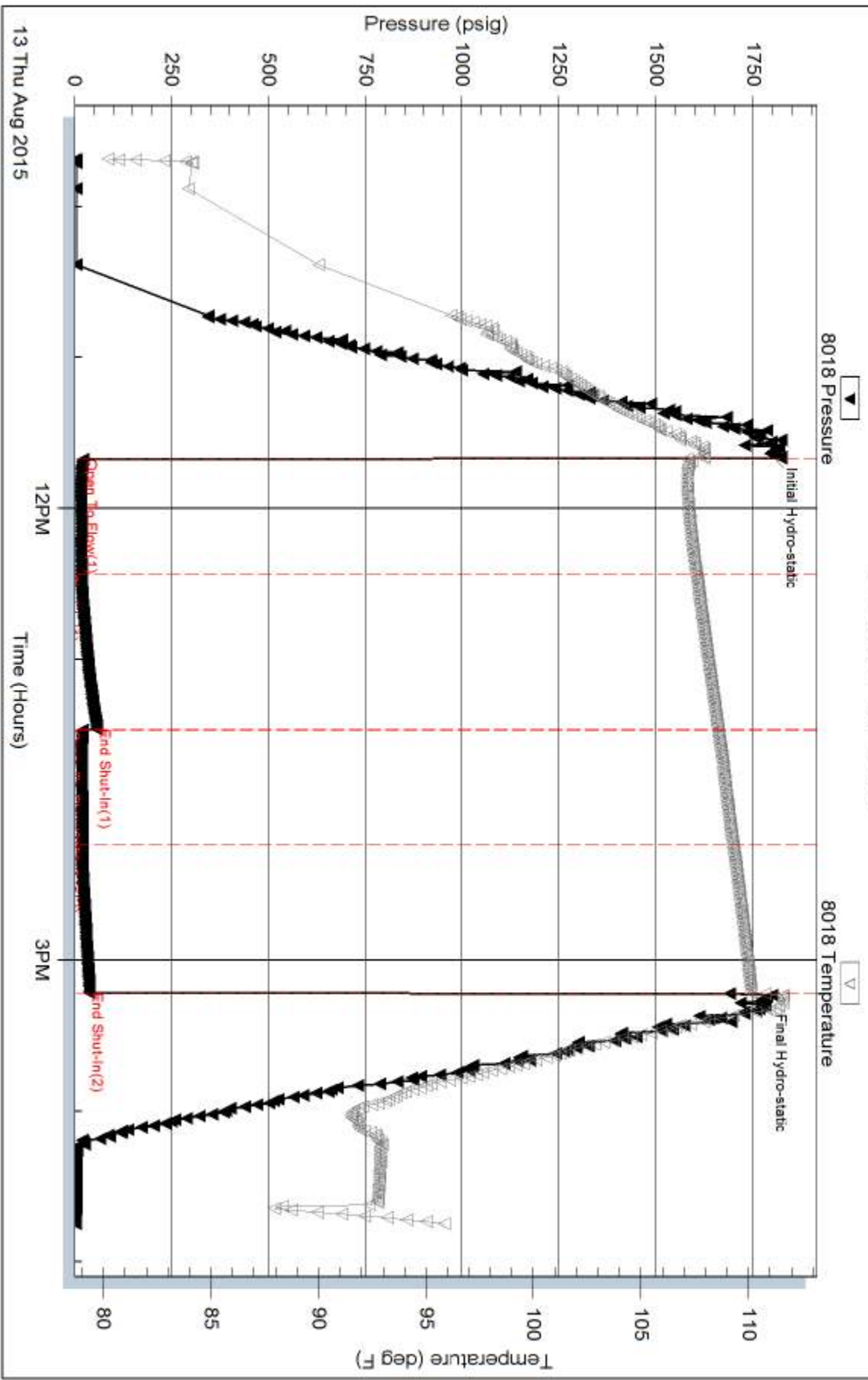
Inside

Jaspar Co Inc

Gartrell #1

DST Test Number: 4

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 62855

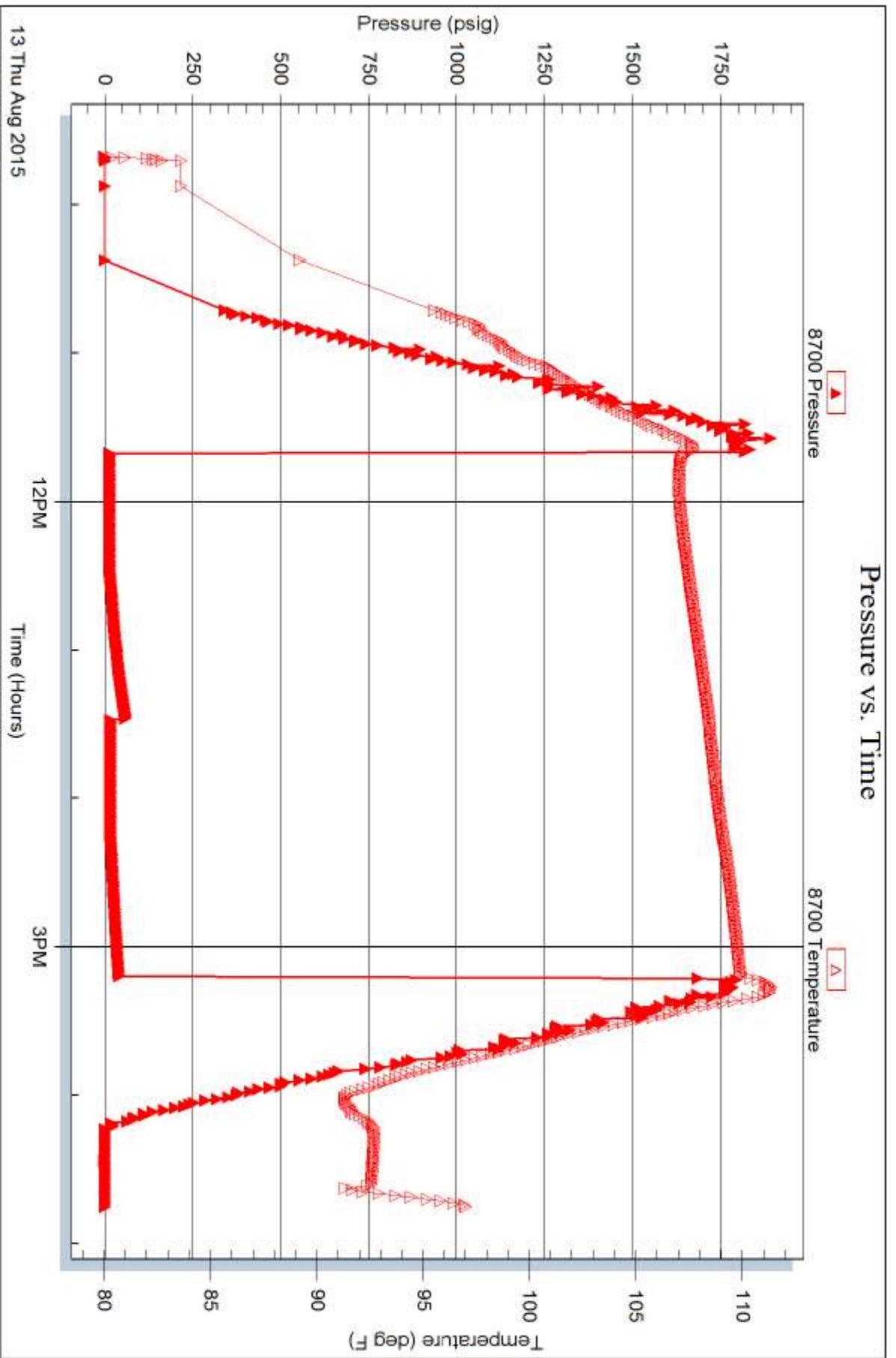
Printed: 2015.08.14 @ 08:54:54

Serial #: 8700

Outside Jasper Co Inc

Gartrell #1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 62855

Printed: 2015.08.14 @ 08:54:55





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62652

Well Name & No. GARTRELL #1 Test No. 1 Date 8-11-15  
 Company Jasper Co. Inc Elevation 2230 KB 2222 GL  
 Address PO Box 1120 HAYS, Ks 67601, 1681 Limestone Road South  
 Co. Rep / Geo. Jeff Lawlee Rig WW rig 12  
 Location: Sec. 21 Twp. 6<sup>s</sup> Rge. 20<sup>w</sup> Co. Rooks State Ks

Interval Tested 3420-3470 Zone Tested TORONTO-LKC A  
 Anchor Length 50 Drill Pipe Run 3292 Mud Wt. 8.7  
 Top Packer Depth 3415 Drill Collars Run 120 Vis 54  
 Bottom Packer Depth 3420 Wt. Pipe Run - WL 8  
 Total Depth 3470 Chlorides 700 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 4 MIN  
ISIP - 3" BLOW BACK  
FFP - WEAK TO STRONG IN 3 1/2 MIN  
FSIP - 3" BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>700</u>	<u>GIP</u>				
<u>124</u>	<u>GMO</u>	<u>40</u>	<u>50</u>		<u>10</u>
<u>62</u>	<u>CO</u>				
<u>105</u>	<u>MGO</u>	<u>20</u>	<u>60</u>		<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 291 BHT 112 Gravity 35 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1659  Test 1050 T-On Location 0230  
 (B) First Initial Flow 62  Jars - T-Started 0355  
 (C) First Final Flow 125  Safety Joint - T-Open 0605  
 (D) Initial Shut-In 1112  Circ Sub - T-Pulled 0805  
 (E) Second Initial Flow 139  Hourly Standby - T-Out 1009

(F) Second Final Flow 174  Mileage 122 RT Comments SLD Tool APPROX 6' TO  
 (G) Final Shut-In 1074  Sampler - BOTTOM  
 (H) Final Hydrostatic 1637  Straddle -  Ruined Shale Packer -  
 Shale Packer -  Ruined Packer -

Initial Open 15  Extra Packer -  Extra Copies -  
 Initial Shut-In 45  Extra Recorder - Sub Total 0  
 Final Flow 15  Day Standby - Total 1172  
 Final Shut-In 45  Accessibility - MP/DST Disc't -  
 Sub Total 1172

Approved By \_\_\_\_\_ Our Representative Ray Schwager Thank you

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. 62653

Well Name & No. GARTRELL #1 Test No. 2 Date 8-11-15  
 Company JASPAR Co, Inc Elevation 2230 KB 2222 GL  
 Address PO Box 1120 Hays, Ks 67601  
 Co. Rep / Geo. Jeff Lawler Rig WW rig/2  
 Location: Sec. 21 Twp. 6<sup>s</sup> Rge. 20<sup>w</sup> Co. Rooks State Ks

Interval Tested 3480-3525 Zone Tested LKC C-D  
 Anchor Length 45 Drill Pipe Run 3351 Mud Wt. 9.1  
 Top Packer Depth 3475 Drill Collars Run 120 Vis 53  
 Bottom Packer Depth 3480 Wt. Pipe Run - WL 8  
 Total Depth 3525 Chlorides 700 ppm System LCM 2#

Blow Description IFP - WEAK TO A FAIR BLOW 1/4" TO 1/2" BLOW  
ISIP - NO BLOW  
FFP - NO BLOW 1<sup>st</sup> 5 MIN, THEN WEAK THROUGH, SURFACE TO 2" BLOW  
FSTIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Mud w/slow of air</u>				
<u>124</u>	<u>MW</u>			<u>80</u>	<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 169 BHT 111 Gravity - API RW 16 @ 60 ° F Chlorides 54000 ppm

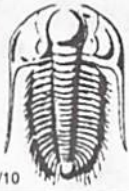
(A) Initial Hydrostatic 1661  Test 1050 T-On Location 1710  
 (B) First Initial Flow 23  Jars 1740  
 (C) First Final Flow 74  Safety Joint 1940  
 (D) Initial Shut-In 807  Circ Sub 2225  
 (E) Second Initial Flow 79  Hourly Standby 0615  
 (F) Second Final Flow 95  Mileage 122 Comments Slid Tool approx 5' to  
 (G) Final Shut-In 797  Sampler Bottom  
 (H) Final Hydrostatic 1655  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies 0  
 Extra Recorder

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 30  
 Final Shut-In 60  
 Sub Total 1172  
 Total 1172  
 MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Ray Schwager Thank you

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62654

Well Name & No. GARTRELL #1 Test No. 3 Date 8-12-15  
 Company JASPAR Co. Inc Elevation 2230 KB 2222 GL  
 Address PO Box 1120 HAYS, KS 67601  
 Co. Rep / Geo. JEFF LAWLER Rig WW1912  
 Location: Sec. 21 Twp. 6<sup>s</sup> Rge. 20<sup>w</sup> Co. Rooks State Ks

Interval Tested 3524-3552 Zone Tested LKC E-F  
 Anchor Length 28 Drill Pipe Run 3414 Mud Wt. 9.1  
 Top Packer Depth 3519 Drill Collars Run 120 Vis 57  
 Bottom Packer Depth 3524 Wt. Pipe Run — WL 8  
 Total Depth 3552 Chlorides 700 ppm System LCM 2#

Blow Description IFP - WEAK TO STRONG IN 18 MIN  
ISIP - NO BLOW  
FFP - WEAK TO STRONG IN 25 MIN  
FSIP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>248</u>	<u>WATER</u>				
<u>120</u>	<u>MW w/show of oil</u>				
<u>15</u>	<u>SOC MW</u>		<u>2</u>	<u>48</u>	<u>40</u>

Rec Total 383 BHT 115 Gravity — API RW .08 @ 85 ° F Chlorides 77000 ppm  
 (A) Initial Hydrostatic 1707  Test 1050 T-On Location 0700  
 (B) First Initial Flow 25  Jars \_\_\_\_\_ T-Started 0730  
 (C) First Final Flow 124  Safety Joint \_\_\_\_\_ T-Open 0915  
 (D) Initial Shut-In 794  Circ Sub \_\_\_\_\_ T-Pulled 1215  
 (E) Second Initial Flow 132  Hourly Standby \_\_\_\_\_ T-Out 1411  
 (F) Second Final Flow 217  Mileage 122 Comments \_\_\_\_\_  
 (G) Final Shut-In 784  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1683  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1172

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 60

MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_

Our Representative RAY SCHWAGA Thank you

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 62655

Well Name & No. GARTRELL #1 Test No. 4 Date 8-13-15  
 Company JASPAR ED Inc Elevation 2230 KB 2222 GL  
 Address PO Box 1120 HAYS, KS 67601  
 Co. Rep / Geo. Jeff Lawler Rig WW rig 12  
 Location: Sec. 21 Twp. 6<sup>s</sup> Rge. 20<sup>w</sup> Co. Rooks State Ks

Interval Tested 3680-3701 Zone Tested Arbuckle  
 Anchor Length 21 Drill Pipe Run 3571 Mud Wt. 9.1  
 Top Packer Depth 3675 Drill Collars Run 120 Vis 51  
 Bottom Packer Depth 3680 Wt. Pipe Run — WL 8  
 Total Depth 3701 Chlorides 200 ppm System LCM 2#  
 Blow Description I FP - SURFACE Blow, died IN 28 min  
ISIP - NO Blow  
FFP - NO Blow  
FSIP - NO Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>HOCM</u>	<u>25</u>		<u>25</u>	
	<u>w/show of CO on Top of Tool</u>				

Rec Total 5 BHT 110 Gravity — API RW — @ — °F Chlorides — ppm  
 (A) Initial Hydrostatic 1794  Test 1050 T-On Location 0905  
 (B) First Initial Flow 23  Jars — T-Started 0940  
 (C) First Final Flow 17  Safety Joint — T-Open 1140  
 (D) Initial Shut-In 58  Circ Sub — T-Pulled 1510  
 (E) Second Initial Flow 20  Hourly Standby — T-Out 1644  
 (F) Second Final Flow 19  Mileage 122 Comments —  
 (G) Final Shut-In 38  Sampler —  
 (H) Final Hydrostatic 1766  Straddle —  Ruined Shale Packer —  
 Shale Packer —  Ruined Packer —  
 Extra Packer —  Extra Copies —  
 Initial Open 45  Extra Recorder — Sub Total 0  
 Initial Shut-In 60  Day Standby — Total 1172  
 Final Flow 45  Accessibility — MP/DST Disc't —  
 Final Shut-In 60  Sub Total 1172

Approved By \_\_\_\_\_

Our Representative RAY SCHWAGER Thank you

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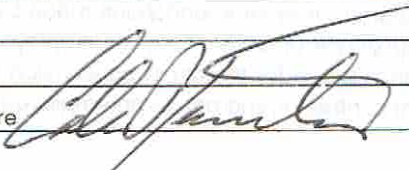
# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Home Office P.O. Box 32 Russell, KS 67665

No. 1602

2025  
-1041

Date	8-17-15	Sec.	21	Twp.	6	Range	20	County	Rooks	State	Ks	On Location		Finish	6:45 PM	
Location													Damar, Ks - N to 24 Hwy, 3N to JRD			
Lease	Gartrell		Well No.	1		Owner	IE 5N 1/2 E 15									
Contractor	W W		12		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.											
Type Job	Surface		Charge To													
Hole Size	12 1/4"		T.D.	221'		Jaspac Oil										
Csg.	8 5/8"		Depth	221'		Street										
Tbg. Size			Depth			City State										
Tool			Depth			The above was done to satisfaction and supervision of owner agent or contractor.										
Cement Left in Csg.	15'		Shoe Joint	15'		Cement Amount Ordered 150 80/20 3% CC 2 1/2 Gel										
Meas Line			Displace	13 BLS												
<b>EQUIPMENT</b>													Common			120
Pumptrk	5	No.	Cementer	Billy		Poz. Mix			30							
Bulktrk	9	No.	Driver	Doug		Gel.			3							
Bulktrk	p.m.	No.	Driver	Rick		Calcium			6							
<b>JOB SERVICES &amp; REMARKS</b>													Hulls			
Remarks:	Cement did Circulate												Salt			
Rat Hole													Flowseal			
Mouse Hole													Kol-Seal			
Centralizers													Mud CLR 48			
Baskets													CFL-117 or CD110 CAF 38			
D/V or Port Collar													Sand			
												Handling			159	
												Mileage				
<b>FLOAT EQUIPMENT</b>													Guide Shoe			
												Centralizer				
												Baskets				
												AFU Inserts				
												Float Shoe				
												Latch Down				
												Pumptrk Charge			Surface	
												Mileage			55	
												Tax				
												Discount				
												Total Charge				
X Signature																

Quality Oilwell Cementing



# QUALITY OILWELL CEMENTING, INC

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 10

part  
tra  
st

Date	Sec.	Twp.	Range	County	State	On Location	Finis.
8-14-15	21	6	20	Rooks	KS		1:00 PM
				Location Damar N10 24 3N 1E 5N 1/2 E			

Lease	Well No. #1	Owner
Gartrell		Ninko
Contractor	WW #12	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cement and helper to assist owner or contractor to do work as listed.
Type Job	Production string	Charge To Jasper Oil
Hole Size	7 3/4	T.D. 3701
Csg.	5 1/2	Depth 3700
Tbg. Size		Street
Tool		City
		State
Cement Left in Csg.	Shoe Joint 21.76	The above was done to satisfaction and supervision of owner agent or contractor.
Meas Line	Displace 87 1/2 bbl	Cement Amount Ordered 450 80/20 QMDC 1/4 Cl
		150 com 10% salt 5% Gilsonite

**EQUIPMENT**

Pumptrk	No.	Cement Helper	Common
20		Greg	150
Bulktrk	No.	Driver	Poz. Mix
14		Nick	450 80/20 QMDC
Bulktrk	No.	Driver	Gel.
19		Brett	Calcium

**JOB SERVICES & REMARKS**

Remarks:	Hulls
Rat Hole - 30sx	Salt 1513
Mouse Hole <del>40sx</del>	Flowseal 112#
Centralizers	Kol-Seal 750#
Baskets	Mud CLR 48 - 500 gal
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand
	Handling 609 609
Ran 3700' 5 1/2" + Est circulation	Mileage
Mix 500 gal Mud Flush	5 1/2" <b>FLOAT EQUIPMENT</b>
Plug Rat + Mouse hole	Guide Shoe
Mixed 400 sx QMDC tailed by	Centralizer - 10
150 sx com 10% salt 5% Gilsonite	Baskets - 9
Displaced 87 1/2 bbl H <sub>2</sub> O	AFU Inserts
	Float Shoe - 1
Lift pressure 1200#	Latch Down - 1

Landed @ 2000#	Pumptrk Charge	Tax
Cement Circulated	Mileage 55	Discount
Signature		Total Charge