



1230416

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. 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 <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

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				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing    Pumping    Gas Lift    Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	F. G. Holl Company L.L.C.
Well Name	CROSBY "A" UNIT 1-23
Doc ID	1230416

All Electric Logs Run

DIL
CPI
BHCS
CDL/CNL/Micro
Microresistivity
fracfinder

Form	ACO1 - Well Completion
Operator	F. G. Holl Company L.L.C.
Well Name	CROSBY "A" UNIT 1-23
Doc ID	1230416

Tops

Name	Top	Datum
Herrington	1837	+105
Winfield	1889	+53
Towanda	1956	-14
Fort Riley	2001	-59
B/Florence	2101	-159
Kinney LS	2116	-174
Wrefold	2148	-206
Council Grove	2174	-232
Crouse	2208	-266
Neva	2404	-462
Red Eagle	2445	-503
Onaga Shale	2564	-622
Wabaunsee	2577	-635
Root Shale	2651	-709
Stotler	2699	-757
Willard Shale	2721	-779
Tarkio	2759	-817
Howard	2897	-955
Severy Shale	2950	-1008
Topeka	2976	-1034
Heebner	3234	-1292
Toronto	3251	-1309
Douglas Shale	3264	-1322
Brown Lime	3330	-1388

Form	ACO1 - Well Completion
Operator	F. G. Holl Company L.L.C.
Well Name	CROSBY "A" UNIT 1-23
Doc ID	1230416

Tops

Name	Top	Datum
LKC	3338	-1396
Drum	3471	-1529
BKC	3571	-1629
Arbuckle	3526	-1683
RTD	3850	-1908





# WELLSITE GEOLOGIST'S REPORT

RENE HUSTEAD  
CONSULTANT GEOLOGIST



Scale 1:240 (5"=100') Imperial  
Measured Depth Log

**Well Name:** CROSBY A NO 1-23  
**Well Id:**  
**Location:** SEC-23-T-20S-R15W  
**License Number:** 15-009-26.019-00-00  
**Spud Date:** AUG-21-2014  
**Surface Coordinates:** 2420' FWL, 1840' FNL 110' E., 140' N. OF C E/2 SE NW  
**Region:** Barton Co  
**Drilling Completed:** AUG 31 2014  
**Bottom Hole Coordinates:** VERTICAL  
**Ground Elevation (ft):** 1934'      **K.B. Elevation (ft):** 1942'  
**Logged Interval (ft):** 1750'      **To:** 3850'      **Total Depth (ft):** 3850'  
**Formation:** LANSING/KC AND ARBUCKLE  
**Type of Drilling Fluid:** STARCH/CHEMICAL  
Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR:

**Company:** F.G. Holl Company LLC  
**Address:** 9431 E. Central, Suite 100  
 Wichita, Kansas 67206

### DRILLING CONTRACTOR:

**DUKE RIG #2**  
 Double derrick; drill pipe 4.5' X H (16.6#); collars 6.25 x2.25 x482'; Bit; 7 7/8, J2HA20QL #1410643, 3-15's;  
 Reference datum 8 ft above ground level. Poor Boy's (Martin- Decker) mechanical geologist. Dion Vasquez  
 -Toolpusher

### SURFACE CASING:

**SURFACE CASING** 8 5/8 INCHES 28 LBS AT 919 FT WITH 400 SAXS OF CEMENT  
**PRODUCTION CASING** 5 1/2 INCHES SET AT 3841 FT WITH 125 SAXS

### CIRCULATION SYSTEM:

**Pump Make:** EWCO, **Pump model:** 14W400, **liner size** 6, **stroke** 14. **Starch mud @ 1700'** to 2550', **Chemical mud @ 2550'** to TD  
**Mud/Co/Service Mud, Inc.-Jason Whiting-Great Bend, Ks-620-282-0556**

### GAS DETECTION SYSTEM:

**MBC Well Logging and Leasing -Analog Gas Detection.**

### OPEN HOLE LOGS:

**DN (PE)-HIGH RES FROM B/KC TO TD-DOLO MATRIX AND FRACFINDER OVER ARBUCKLE, DI (SP)-GAMMA RAY FROM SURFACE TO TD, ML-Sonic, Fracfinder, ; Pioneer Energy Services, Hays, KS, ; Log total depth (3848') was 2 ft short to rotary total depth (3850').**

### COMPLETION:

**PRODUCTION CASING SET ON ARBUCKLE**

### DRILL STEM TEST#4

**DST #4**  
 3663-3672  
 REC-5 FT CLEAN OIL, 640 FT -15% OIL 85% MUD  
 520 FT -20% GAS 55% OIL 25% WATER  
 625 FT-10% GAS 55% OIL 35% WATER  
 441 FT-5% GAS 55% OIL 40% WATER  
 200 FT-40% GAS 40% OIL 20% WATER  
 283 FT-37.5% GAS 60% OIL 2.5% WATER  
 126 FT-5% MUD 95% WATER  
**IBLW-STRNG BLW BOB IN 50 SEC, NO BLWBK**  
**FBLW-STRNG BLW BOB IN 50 SEC-GAS TO SURF IN 50 SEC**  
**YES BLWBK-BOB AND DIED TO 10 INCHES AT END OF SHUT IN**  
 5/60/45/90  
 HP-1757-1674  
 SIP-1231-1231  
 IFF-222-260  
 FFP-285-807  
**GAS RATE**  
 FIRST GAS- CK-.25,PSIG-19-MCF/D-52.99  
 LAST GAS-CK-.13,PSIG-5-MCF/D-7.26  
 MAX GAS-CK-.13,PSIG-21-MCF/D-13.25  
**NOTE-PACKER LEAKED BUT HELD WHEN SET**

### DRILL STEM TEST #5:

**DST #5**  
 REC-40 FT -2.5% OIL ,60% MUD ,37.5% WATER  
 126 FT-15% MUD,85% WATER  
 252 FT-WATER  
**IBLW-BOB IN 50 SEC, NO BLWBK**  
**FBLW-BOB IN 5 MIN AND 10 SEC, GAS TO SURF IN 15 MIN**  
**-GAS UNMEASURABLE -NO BLWBK**  
 5/60/45/90  
 HP-1738-1645  
 SIP-1236-1236  
 IFF-35-40  
 FFP-52-195

### DRILL STEM TEST #6:

**DST #6**  
 REC-630 FT WATER  
**IBLW-GD BLW BOB IN 3 MIN, NO BLWBK**  
**FBLW-FR BLW BOB IN 6 MIN, NO BLWBK**  
 5/60/45/90  
 HP-1763-1641  
 SIP-1241-1239  
 IFF-25-49  
 FFP-63-264

### WELLSITE GEOLOGIST:

**RENE HUSTEAD**  
 600 N. WINWOOD ST.  
 GARDNER, KANSAS 66030  
 PHONE (913) 208-3390

### Geologist Contact Info:

**Name:** Rene Husted  
**Company:** Consultant  
**Address:** 600 N. Winwood St.  
 Gardner, Kansas 66030  
**Phone-** (913) 908-3390

ROP ROP (min/ft)	DST	Lithology <small>Depth and Scale</small>	Geological Descriptions	TG, C1-C4 / REMARKS
0	0	30		
30	30	3100		WT. 9.1 VIS 48
3100	3100	3150	LS-TNF-XLN-BRIT-FOSS-OOL-TR SH LT GRY IMBD-FR INTER-XLN POR-NO VIS FLOR-NO VIS SHOW	
3150	3150	3200	LS-LT BRN-F-XLN-OOL-TR FOSS-HD-DNS SH-GRY-BLKY LS-CRIM-F-XLN-SM OOL-FR OOL-MOLDIC POR-NO VIS FLOR-NO VIS SHOW LS-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH	
3200	3200	3250	LS A.A. LS-CRIM-F-XLN-FOSS-SHLY-MSTLY DNS WITH TR OOL-OLDIC POR IP-NO VIS FLOR-NO VIS SHOW LS-OFF WHT-GRY-F-XLN-TR FOSS-NO VIS FLOR-NO VIS SHOW <b>HEEBNER 3236' (-1294')</b> SH-BLK-CARB	HW 20 UNIT GAS INCRS WT. 9.0 VIS 48
3250	3250	3300	<b>TORONTO 3253' (-1311')</b> LS-OFF WHT-V-F-GRN-HD-DNS <b>DOUGLAS SH 3266' (-1324')</b> SH-LT GRY-V-SILTY SLTSS-FRSTY GRY-F-GRN-SHLY-MICA-HEM SH-GRY-SFT-BLKY-SILTY SH A.A. SH-LT GRY-BLKY-SILTY-HEM-MICA SH-GRY-BLKY-TR MICA-HEM	WT. 9.0 VIS 47
3300	3300	3350	<b>BROWN LS 3330' (-1388')</b> LS-BRN-F-XLN-HD-DNS <b>LANSING/KC 3338' (-1398')</b> LS-OFF WHT-F-XLN-TR FOSS-HD-DNS-DULL WHT IN FLOR-NO VIS SHOW LS-OFF WHT-F-XLN-HD-DNS WITH TR LT BRN STN-NO VIS FLOR-NO VIS CUT LS-CRIM-F-GRN-FOSS-TR PYR-HD-DNS LS-GRY-F-GRN-BRIT-BLK OOL-DNS LS-OFF WHT-V-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-GRY-F-GRN-SHLY-HD-DNS TR FOSS LS-OFF WHT-F-XLN-CHRTY-HD-DNS LS-A.A. LS-CRIM-F-XLN-OOL-OOL-MOLDIC POR-DULL WHT FLOR-NO VIS SHOW LS-CRIM-F-XLN-OOL-GD OOL-MOLDIC POR-DULL WHT FLOR-NO VIS SHOW LS-CRIM-F-XLN-OOL-GD OOL-MOLDIC POR-DULL WHT MIN FLOR-NO VIS SHOW	WT. 9.2 VIS 47
3350	3350	3400	LS-CRIM-F-XLN-OOL-FR TO GD OOL-MOLDIC POR-SCATT BRITE YEL FLOR-NO VIS CUT-NO ODOR LS-CRIM-F-XLN-OOL-FR TO GD OOL-MOLDIC POR-BRITE YEL FLOR-NO VIS CUT-NO ODOR LS-CRIM-F-XLN-HD-DNS WITH GLAU LS-LT BRN-CRIM-M-XLN-FOSS-OOL-BRIT-DNS-DULL WHT MIN FLOR-NO VIS CUT-NO ODOR LS-CRIM-F-XLN-CHLKY-OOL-TR OOL-MOLDIC POR-BRIT-NO VIS CUT-NO ODOR LS-OFF WHT-GRY-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH SH-RED-V-SFT-SILTY-GUMY LS-TNF-XLN-OOL-TR SH LT BRN IMBD-FR OOL-MOLDIC POR-DULL WHT MIN FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH LS-TNF-XLN-HD-DNS W/ TR FN INTER-XLN POR-TR DK BRN STN-DULL YEL FLOR-NO VIS CUT-NO ODOR LS-OFF WHT-GRY-F-GRN-FOSS-OOL-TR DK BRN STN-FR OOL-MOLDIC POR-NO VIS FLOR-NO VIS CUT-NO ODOR B/KC 3666 SH-RED-BLU-GRY-CHRT-VARIG-OPQ-FRSH LS-GRY-F-GRN-FOSS-FUS-SHLY-BRIT-DNS-NO VIS FLOR-NO VIS SHOW-NO ODOR SHALES A.A. SH-RED-GRY-BLKY-W/ CHRT-YEL-OPQ-FRSH W/ SLTSS	WT. 9.0 VIS 43 STRAP=1926.94 BOARD=1926.93
3400	3400	3450	SS-FRSTY TN-M-GRN-TT-ANG-PR BRTE-HEM-NO VIS POR-NO VIS FLOR-NO VIS CUT SH-BLU-FRM-SPLTY ARBUCKLE 3625 HW 30 UNIT GAS INCRS DOLO-TNF-XLN-OOL-PR TO FR OOL-MOLDIC POR-FR INTER-GRN POR-LT BRN STN-YEL GLD FLOR-FR STRM CUT IP-GD ODOR-GAS SHOW DOLO-TNF OFF WHT-F-GRN-BRIT-FR INTER-GRN W/ TR OOL-OLDIC POR-LT BRN STN-SCATT YEL FLOR-FR STRM CUT-GD ODOR-GAS OFF CHART DOLO-OFF WHT BK STN-M-GRN-GD INTER-GRN W/ TR POR-DK BLK STN-YEL FLOR-FR STRM CUT-GD ODOR-GAS SHOW DOLO-OFF WHT DK BRN STN-M-GRN-OOL-GD INTER-GRN OOL-MOLDIC POR-LT BRN STN-YEL FLOR-GD STRM CUT-GAS SHOW-GD ODOR DOLO-TNF-GRN-GRN-BRIT-FR INTER-GRN'S VUG POR-BRITE WHT FLOR-LT BRN STN-GD STRM CUT-STRNG ODOR-GAS SHOW DOLO-TNF-GRN-SUCRO-FR INTER-GRN POR-LT BRN STN-WHT FLOR-STRM CUT-GD ODOR DOLO-OFF WHT-F-XLN-OOL-GD OOL-MOLDIC POR-BRITE WHT FLOR-NO VIS CUT-NO VIS SHOW	WT. 9.3 VIS 48
3450	3450	3500	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #1 3625-3635 REC-252FT -35% MUD AND 65% WATER AND 378 FT-10% MUD AND 90% WATER AND 912 FT -100% WATER GAS RATE- 25.38 MCF 2/80/45/90 IBLWSTRNG BLW BOB IN 50 SEC/WK BLWBK FBLWSTRNG BLW BOB IN 1 IN GAS TO SURF IN 20 IN BLWBK BLT BOB IN 15 IN AND DIED AT END OF SHUT-IN TO 5 INCHES SIP-1214-1214 SIP-1220-1216 IFF-222-266 FFP-292-826 HP-1760-1659 GAS RATE FIRST GAS- CK-.25-PSIG-19-MCF/D-56.41 LAST GAS-CK-.13-PSIG-5-MCF/D-7.26 MAX-CK-.13-PSIG-21-MCF/D-13.25
3500	3500	3550	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #2 3635-3645 REC-411 FT GASSY OIL-10% GAS 90% OIL 189 FT WATER CUT GASSY OIL-10% GAS-87.5% OIL-282 FT-2.5% MUD AND 97.5% WATER, 1031 FT-WATER 100% 2/80/45/90 IBLWSTRNG BLW BOB IN 17 SEC/NO BLWBK FBLWSTRNG BLW BOB IN 7 SEC GAS TO SURF IN 7 SEC BLWBK BOB THEN DIED TO 6 IN BY END OF FINAL SHUT-IN SIP-1214-1214 SIP-1220-1216 IFF-222-266 FFP-292-826 HP-1760-1659 GAS RATE FIRST GAS- CK-.25-PSIG-19-MCF/D-56.41 LAST GAS-CK-.13-PSIG-5-MCF/D-7.26
3550	3550	3600	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #3 3645-3655 REC-30 FT OILY MUD CUT WATER 189 FT OIL-35% OIL-55% OIL-35% WATER 315 FT-2.5% MUD-97.5% WATER 756 FT-100% WATER IBLWBOB IN 17 SEC/WK SURF BLWBK FBLWBOB IN 11 MIN GAS TO SURF IN 20 MIN-BLWBK BLT TO 10 IN 5/60/45/90 SIP-1225-1222 IFF-128-131 FFP-154-559 HP-1778-1686 GAS RATE 1ST-CK-.13-PSIG-0-MCF/D 5.39 LAST-CK-.25-PSIG-15-MCF/D 25.38 MAX-CK-.25-PSIG-21-MCF/D 26.02
3600	3600	3650	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #4 3655-3665 REC-40 FT 2.5 OIL, 60% MUD, 37.5 WATER 126 FT 15% MUD, 85% WATER 222 FT -SALT WATER
3650	3650	3700	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #5 3665-3675 REC-5 FT CLEAN OIL 640 FT 15% OIL, 85% MUD 520 FT 20% GAS, 55% OIL, 25% WATER 625 FT 10% GAS, 55% OIL, 35% WATER 441 FT 5% GAS, 55% OIL, 40% WATER 200 FT 40% GAS, 40% OIL, 20% WATER 283 FT 37.5% GAS, 60% OIL, 2.5% WATER 126 FT 5% MUD, 95% WATER DST #6 3675-3685 REC-40 FT 2.5 OIL, 60% MUD, 37.5 WATER 126 FT 15% MUD, 85% WATER 222 FT -SALT WATER
3700	3700	3750	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #6 3685-3695 REC-630FT -SALT WATER W/ TR OF OIL
3750	3750	3800	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #7 3695-3705 REC-5 FT CLEAN OIL 640 FT 15% OIL, 85% MUD 520 FT 20% GAS, 55% OIL, 25% WATER 625 FT 10% GAS, 55% OIL, 35% WATER 441 FT 5% GAS, 55% OIL, 40% WATER 200 FT 40% GAS, 40% OIL, 20% WATER 283 FT 37.5% GAS, 60% OIL, 2.5% WATER 126 FT 5% MUD, 95% WATER DST #8 3705-3715 REC-40 FT 2.5 OIL, 60% MUD, 37.5 WATER 126 FT 15% MUD, 85% WATER 222 FT -SALT WATER
3800	3800	3850	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F-XLN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-CRS-GRN-V-OOL-V-BRIT-FR INTER-PR POR-DULL YEL FLOR-NO VIS SHOW-NO ODOR W/ CHRT-OFF WHT-OPQ-FRSH DOLO- A.A. W/ TR VS VUG POR-NO VIS SHOW DOLO-TNF-GRN-FR INTER-GRN'S VUG POR-DULL YEL POR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-HD-DNS W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-F-GRN-CHLKY-W/ LOTS OF CHRT-OFF WHT-OPQ-FRSH DOLO-TNF-FR INTER-GRN POR AND TR OOL-MOLDIC POR-SCATT YEL FLOR-NO VIS CUT-NO ODOR DOLO A.A. W/ PYR IMBD DOLO A.A. W/ CHRT-OFF WHT-OPQ-FRSH DOLO-CRIM-CRS-GRN-OOL-PR TO FR INTER-GRN'S VUG POR-DULL YEL FLOR-NO VIS CUT-NO ODOR	WT. 9.0 VIS 43 DST #9 3715-3725 REC-5 FT CLEAN OIL 640 FT 15% OIL, 85% MUD 520 FT 20% GAS, 55% OIL, 25% WATER 625 FT 10% GAS, 55% OIL, 35% WATER 441 FT 5% GAS, 55% OIL, 40% WATER 200 FT 40% GAS, 40% OIL, 20% WATER 283 FT 37.5% GAS, 60% OIL, 2.5% WATER 126 FT 5% MUD, 95% WATER DST #10 3725-3735 REC-40 FT 2.5 OIL, 60% MUD, 37.5 WATER 126 FT 15% MUD, 85% WATER 222 FT -SALT WATER
3850	3850	3900	DOLO-TNF-XLN-SUCRO-PR TO FR INTER-GRN'S VUG POR-NO VIS STN-NO VIS FLOR-NO VIS CUT-FREE OIL IN TRAY DOLO-TNF WHT FLOR-NO VIS SHOW-NO ODOR DOLO-TNF-GRN-CHLKY-FR INTER-GRN'S POR-BRITE WHT FLOR-NO VIS STN-NO VIS CUT-NO ODOR DOLO-TNF OFF WHT-F-GRN-SLI SHLY(RED)-SCATT YEL FLOR-NO VIS CUT-NO VIS SHOW DOLO-TNF-XLN-HP TO M-GRN-BRIT-TR FR INTER-GRN POR-AND TR OF SM VUG POR-SCATT YEL FLOR-NO VIS SHOW-NO ODOR DOLO-CRIM-F	







**BASIC**<sup>SM</sup>  
ENERGY SERVICES  
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61  
P.O. Box 8613  
Pratt, Kansas 67124  
Phone 620-672-1201

FIELD SERVICE TICKET  
1718 11310 A

DATE \_\_\_\_\_ TICKET NO. \_\_\_\_\_

DATE OF JOB	DISTRICT	NEW WELL <input type="checkbox"/>	OLD WELL <input type="checkbox"/>	PROD <input type="checkbox"/>	INJ <input type="checkbox"/>	WDW <input type="checkbox"/>	CUSTOMER ORDER NO.:			
CUSTOMER	LEASE						WELL NO.			
ADDRESS	COUNTY	STATE								
CITY	STATE	SERVICE CREW								
AUTHORIZED BY	JOB TYPE:									
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME
						ARRIVED AT JOB				
						START OPERATION				
						FINISH OPERATION				
						RELEASED				
						MILES FROM STATION TO WELL				

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: \_\_\_\_\_  
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
2005	1/2" Galv	30	125		
2006	1/2" Galv	51	25		
2007	1/2" Galv	11	22		
2008	1/2" Galv	11	22		
2009	1/2" Galv	11	500		
2010	1/2" Galv	11	115		
2011	1/2" Galv	11	125		
2012	1/2" Galv	11	115		
2013	1/2" Galv	11	1		
2014	1/2" Galv	11	1		
2015	1/2" Galv	11	1		
2016	1/2" Galv	11	1		
2017	1/2" Galv	11	1		
2018	1/2" Galv	11	1		
2019	1/2" Galv	11	1		
2020	1/2" Galv	11	1		
2021	1/2" Galv	11	1		
2022	1/2" Galv	11	1		
2023	1/2" Galv	11	1		
2024	1/2" Galv	11	1		
2025	1/2" Galv	11	1		
2026	1/2" Galv	11	1		
2027	1/2" Galv	11	1		
2028	1/2" Galv	11	1		
2029	1/2" Galv	11	1		
2030	1/2" Galv	11	1		
2031	1/2" Galv	11	1		
2032	1/2" Galv	11	1		
2033	1/2" Galv	11	1		
2034	1/2" Galv	11	1		
2035	1/2" Galv	11	1		
2036	1/2" Galv	11	1		
2037	1/2" Galv	11	1		
2038	1/2" Galv	11	1		
2039	1/2" Galv	11	1		
2040	1/2" Galv	11	1		
2041	1/2" Galv	11	1		
2042	1/2" Galv	11	1		
2043	1/2" Galv	11	1		
2044	1/2" Galv	11	1		
2045	1/2" Galv	11	1		
2046	1/2" Galv	11	1		
2047	1/2" Galv	11	1		
2048	1/2" Galv	11	1		
2049	1/2" Galv	11	1		
2050	1/2" Galv	11	1		
2051	1/2" Galv	11	1		
2052	1/2" Galv	11	1		
2053	1/2" Galv	11	1		
2054	1/2" Galv	11	1		
2055	1/2" Galv	11	1		
2056	1/2" Galv	11	1		
2057	1/2" Galv	11	1		
2058	1/2" Galv	11	1		
2059	1/2" Galv	11	1		
2060	1/2" Galv	11	1		
2061	1/2" Galv	11	1		
2062	1/2" Galv	11	1		
2063	1/2" Galv	11	1		
2064	1/2" Galv	11	1		
2065	1/2" Galv	11	1		
2066	1/2" Galv	11	1		
2067	1/2" Galv	11	1		
2068	1/2" Galv	11	1		
2069	1/2" Galv	11	1		
2070	1/2" Galv	11	1		
2071	1/2" Galv	11	1		
2072	1/2" Galv	11	1		
2073	1/2" Galv	11	1		
2074	1/2" Galv	11	1		
2075	1/2" Galv	11	1		
2076	1/2" Galv	11	1		
2077	1/2" Galv	11	1		
2078	1/2" Galv	11	1		
2079	1/2" Galv	11	1		
2080	1/2" Galv	11	1		
2081	1/2" Galv	11	1		
2082	1/2" Galv	11	1		
2083	1/2" Galv	11	1		
2084	1/2" Galv	11	1		
2085	1/2" Galv	11	1		
2086	1/2" Galv	11	1		
2087	1/2" Galv	11	1		
2088	1/2" Galv	11	1		
2089	1/2" Galv	11	1		
2090	1/2" Galv	11	1		
2091	1/2" Galv	11	1		
2092	1/2" Galv	11	1		
2093	1/2" Galv	11	1		
2094	1/2" Galv	11	1		
2095	1/2" Galv	11	1		
2096	1/2" Galv	11	1		
2097	1/2" Galv	11	1		
2098	1/2" Galv	11	1		
2099	1/2" Galv	11	1		
2100	1/2" Galv	11	1		

SUB TOTAL

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$
MATERIALS	%TAX ON \$
TOTAL	

SERVICE REPRESENTATIVE	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY:
FIELD SERVICE ORDER NO.	(WELL OWNER OPERATOR CONTRACTOR OR AGENT)





Customer <i>EG Hall Camp</i>	Lease No.	Date <i>9-1-14</i>	
Lease <i>Crosby A Unit</i>	Well # <i>1-23</i>		
Field Order # <i>11310A</i>	Station <i>Pratt</i>	Casing <i>5 1/2</i>	Depth <i>3511.56</i>
Type Job <i>5 1/2 long string</i>	Formation <i>CNW</i>	County <i>Barton</i>	State <i>ks</i>
		Legal Description <i>73 205 15W</i>	

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
<i>2 1/2</i>				Pre Pad	Max		5 Min.
Depth <i>3511.56</i>	Depth	From	To	Pad	Min		10 Min.
Volume <i>93.73</i>	Volume	From	To	Frac	Avg		15 Min.
Max Press <i>7000</i>	Max Press	From	To		HHP Used		Annulus Pressure
Well Connection <i>5 1/2</i>	Annulus Vol.	From	To	Flush	Gas Volume		Total Load
Plug Depth	Packer Depth	From	To				

Customer Representative <i>Adam</i>	Station Manager <i>Kevin Guidry</i>	Treater <i>Scott Graves</i>
Service Units <i>35470</i>	<i>7686</i>	<i>19903</i>
Driver Names <i>Scott Mire</i>	<i>Mire</i>	<i>Scott</i>

Time	Casing Pressure	Tubing Pressure	Bbbs. Pumped	Rate	Service Log
<i>2:50</i>					<i>On location Safety Meeting Rig up</i>
<i>4:30</i>					<i>Run float equipment (Basket on #4)</i>
					<i>Tubehangers on 2, 3, 4, 5, 6, 7, 8, 9, 10, 11</i>
<i>6:45</i>					<i>Connect with this</i>
<i>8:56</i>	<i>0</i>		<i>5</i>	<i>5</i>	<i>Pump H2O spacer</i>
<i>8:58</i>	<i>100</i>		<i>74</i>	<i>5</i>	<i>Pump 1000 Gallons Super Flush</i>
<i>9:00</i>	<i>160</i>		<i>5</i>	<i>5.3</i>	<i>Pump H2O spacer</i>
<i>9:03</i>	<i>300</i>		<i>31.83</i>	<i>6</i>	<i>Mix 125 sks AA7 cement at 15 ppv</i>
<i>9:11</i>					<i>shut down</i>
<i>9:12</i>					<i>Wash: pump + line</i>
<i>9:14</i>					<i>Drop plug</i>
<i>9:14</i>	<i>400</i>			<i>1.2</i>	<i>Start Displacement</i>
<i>9:36</i>	<i>500</i>		<i>92.5</i>	<i>3.8</i>	<i>Plug landed</i>
<i>9:30</i>	<i>1500</i>				<i>Pressure up on plug</i>
<i>9:37</i>					<i>Release pressure flipper held</i>
<i>9:40</i>	<i>0</i>		<i>7.7</i>	<i>3</i>	<i>Plug set hole 30 sks 60/110 pap</i>
<i>9:45</i>	<i>0</i>		<i>5</i>	<i>3</i>	<i>Plug mouse hole 20 sks 60/110 pap</i>
					<i>Job Complete</i>





**BASIC**<sup>SM</sup>  
ENERGY SERVICES  
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61  
P.O. Box 8613  
Pratt, Kansas 67124  
Phone 620-672-1201

FIELD SERVICE TICKET

1718 11301 A

DATE \_\_\_\_\_ TICKET NO. \_\_\_\_\_

DATE OF JOB: 8-27-14		DISTRICT		NEW WELL <input type="checkbox"/> OLD WELL <input checked="" type="checkbox"/>		PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/>		CUSTOMER ORDER NO.:		
CUSTOMER: 15 Hill Company LLC				LEASE: Crosby				WELL NO.:		
ADDRESS:				COUNTY: Butler		STATE: KS				
CITY:				STATE:		SERVICE CREW:				
AUTHORIZED BY: [Signature]				JOB TYPE: 8 5/8 Surface Pump						
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME
						ARRIVED AT JOB	8-27-14		AM	6:30
						START OPERATION	8-27-14		AM	7:55
						FINISH OPERATION	8-27-14		AM	8:45
						RELEASED	8-27-14		AM	9:30
						MILES FROM STATION TO WELL				

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

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SIGNED: \_\_\_\_\_  
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
20101	Acid Blend Cement	5L	200		
20102	Common Cement	5L	200		
20103	Full Flare	1b	100		
20104	Cable Choke	1b	900		
20105	Top Rubber Compartment Plug 8 5/8	EA	1		
20106	Plugs 8 5/8	EA	3		
20107	Choke Mileage Pick up	MI	70		
20108	Heavy Equipment Mileage	MI	140		
20109	Road Bulk Delivery Charge	TR	130		
20110	Drill Charge 500-100	HR	1		
20111	Blending & Mixing Service Charge	5L	400		
20112	Heavy Equipment Charge	TR	1		
5003	Submer. Supervisor	EA	1		
SUB TOTAL					
SERVICE & EQUIPMENT				%TAX ON \$	
MATERIALS				%TAX ON \$	
TOTAL					169

CHEMICAL / ACID DATA:			

SERVICE REPRESENTATIVE: [Signature]	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: [Signature]
FIELD SERVICE ORDER NO.:	(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

Customer <i>EG Hall Company LLC</i>		Lease No.	Date <i>8-22-14</i>	
Lease <i>Crosby "A" Unit</i>		Well # <i>1-23</i>		
Field Order # <i>11301A</i>	Station <i>Prod</i>	Casing <i>8 5/8</i>	Depth <i>919'</i>	County <i>Barton</i>
Type Job <i>8 5/8 surface pipe</i>		Formation <i>cnw</i>	Legal Description <i>23-205-154</i>	
State <i>KS</i>				

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP	
<i>8 5/8</i>								
Depth <i>919</i>	Depth	From	To	Pre Pad	Max		5 Min.	
Volume <i>38.45</i>	Volume	From	To	Pad	Min		10 Min.	
Max Press <i>500</i>	Max Press	From	To	Frac	Avg		15 Min.	
Well Connection <i>4 3/8</i>	Annulus Vol.	From	To		HHP Used		Annulus Pressure	
Plug Depth	Packer Depth	From	To	Flush	Gas Volume		Total Load	

Customer Representative <i>Dean</i>	Station Manager <i>Kevin Goodby</i>	Treater <i>Scott Grimes</i>
Service Units <i>274163</i>	<i>19866</i>	<i>19983</i>
Driver Names <i>Josh</i>	<i>Adam</i>	<i>Scott</i>
	<i>Adam</i>	

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>6:20</i>					<i>On location Safety Meeting Rigup</i>
<i>6:30</i>					<i>Run Next Equipment</i>
					<i>Centralizers on #1, 12, 19</i>
<i>7:55</i>	<i>150</i>		<i>3</i>	<i>3.5</i>	<i>Pump 170 Spacer</i>
<i>7:57</i>	<i>200</i>		<i>85</i>	<i>4</i>	<i>Mix 200 SFS Acron Blend 12 ppv</i>
<i>8:25</i>	<i>200</i>		<i>43</i>	<i>4.6</i>	<i>Mix 200 SFS Common 15.6 ppv</i>
<i>8:35</i>					<i>shut down</i>
<i>8:36</i>					<i>Drop plug</i>
<i>8:37</i>	<i>200</i>			<i>5</i>	<i>Start Disp</i>
<i>8:40</i>	<i>500</i>		<i>24</i>	<i>5.6</i>	<i>Cement circulated to Surface</i>
<i>8:45</i>	<i>400</i>		<i>33</i>		<i>Displacement Complete</i>
					<i>Shut down</i>
					<i>Job Complete</i>



## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.27 @ 13:10:00

End Date: 2014.08.27 @ 20:58:30

Job Ticket #: 60344                      DST #: 1

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

Printed: 2014.09.03 @ 13:09:40







**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
 9431 E. Central STE 100  
 Wichita KS 67206-2563  
 ATTN: Frank Greenbaum

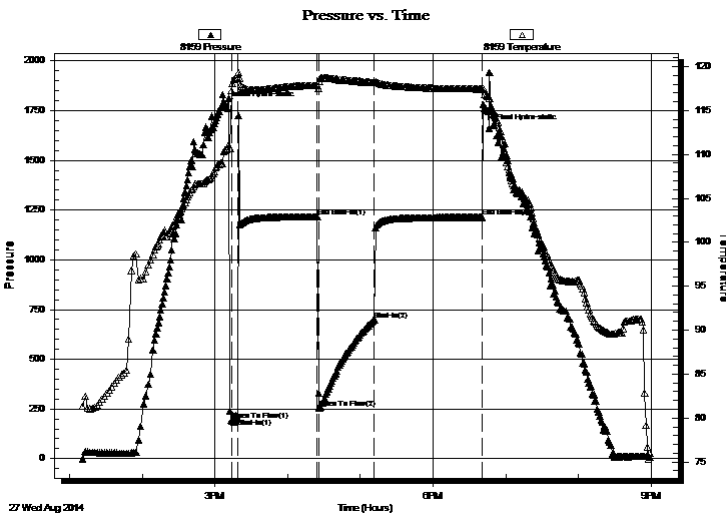
**23-20s-15w Barton,KS**  
**Crosby A Unit #1-23**  
 Job Ticket: 60344 **DST#: 1**  
 Test Start: 2014.08.27 @ 13:10:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: (KB) Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 15:12:30 Tester: Shane Konzem  
 Time Test Ended: 20:58:30 Unit No: S3  
**Interval: 3625.00 ft (KB) To 3635.00 ft (KB) (TVD)** Reference Elevations: 1944.00 ft (KB)  
 Total Depth: 3635.00 ft (KB) (TVD) 1934.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 10.00 ft

**Serial #: 8159 Outside**  
 Press@RunDepth: 1214.14 psig @ 3659.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.27 End Date: 2014.08.27 Last Calib.: 2014.08.27  
 Start Time: 13:11:00 End Time: 20:59:00 Time On Btm: 2014.08.27 @ 15:08:30  
 Time Off Btm: 2014.08.27 @ 18:46:00

**TEST COMMENT:** IFP 5 Strong blow built to bottom of 5 gallon bucket in 50 seconds.  
 ISI 60 Blow back built to 3 inches and died back to weak surface blow by end of 60 minutes.  
 FFP 45 Strong blow built to bottom of 5 gallon bucket in 1minute. Gas to surface in 20 minutes.  
 FSI 90 Blow back built to bottom of bucket in 15 minutes and died back to 6 inches by end of shut in.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1776.41	110.49	Initial Hydro-static
5	193.26	117.24	Open To Flow (1)
10	203.89	118.69	Shut-In(1)
76	1215.39	117.81	End Shut-In(1)
78	253.37	118.33	Open To Flow (2)
123	699.25	118.18	Shut-In(2)
212	1214.14	117.43	End Shut-In(2)
218	1661.70	116.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
252.00	Muddy water 35% Mud, 65% water	3.53
378.00	Muddy water 10% Mud, 90% Water	5.30
912.00	100% Water	12.79

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	0.00	5.39
Last Gas Rate	0.25	1.60	25.38
Max. Gas Rate	0.25	2.00	26.02



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60344

**DST#: 1**

ATTN: Frank Greenbaum

Test Start: 2014.08.27 @ 13:10:00

## Tool Information

Drill Pipe:	Length: 3624.00 ft	Diameter: 3.80 inches	Volume: 50.84 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 50.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	ft			Final 51000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	1000037. ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Shale Packer used.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut-In Tool	5.00			3629.00	
Hydraulic tool	5.00			3634.00	
Jars	6.00			3640.00	
Safety Joint	2.00			3642.00	
Top Packer	5.00			3647.00	
Packer - Shale	5.00			3652.00	
Anchor	5.00			3657.00	
Recorder	1.00	8524	Inside	3658.00	
Recorder	1.00	8159	Outside	3659.00	
Bull Plug	3.00			3662.00	38.00
					Anchor Tool
<b>Total Tool Length:</b>	<b>38.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60344

**DST#: 1**

ATTN: Frank Greenbaum

Test Start: 2014.08.27 @ 13:10:00

## 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:

32000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.34 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7500.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
252.00	Muddy w ater 35% Mud, 65% w ater	3.535
378.00	Muddy w ater 10% Mud, 90% Water	5.302
912.00	100% Water	12.793

Total Length: 1542.00 ft      Total Volume: 21.630 bbl

Num Fluid Samples: 0

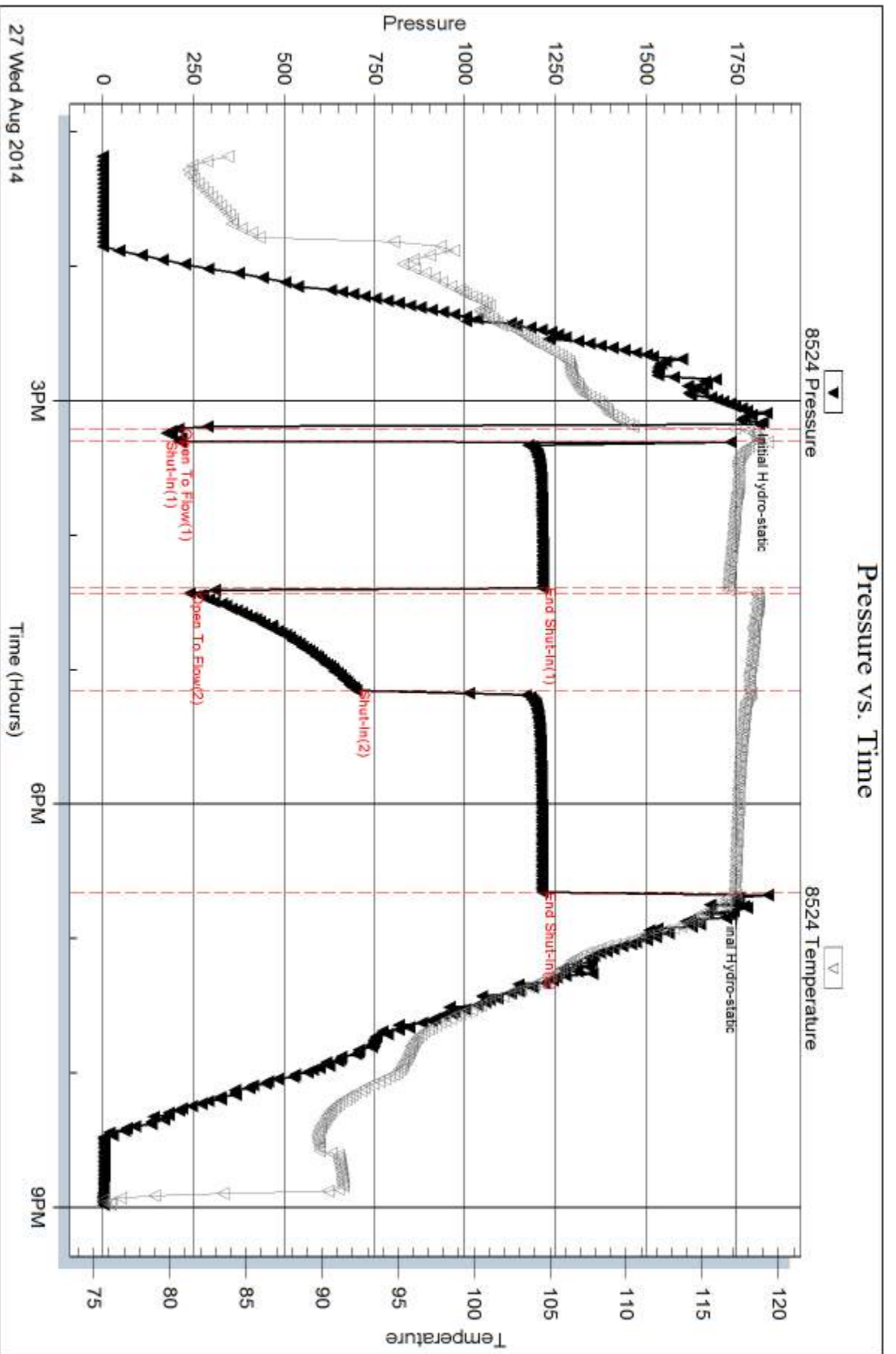
Num Gas Bombs: 0

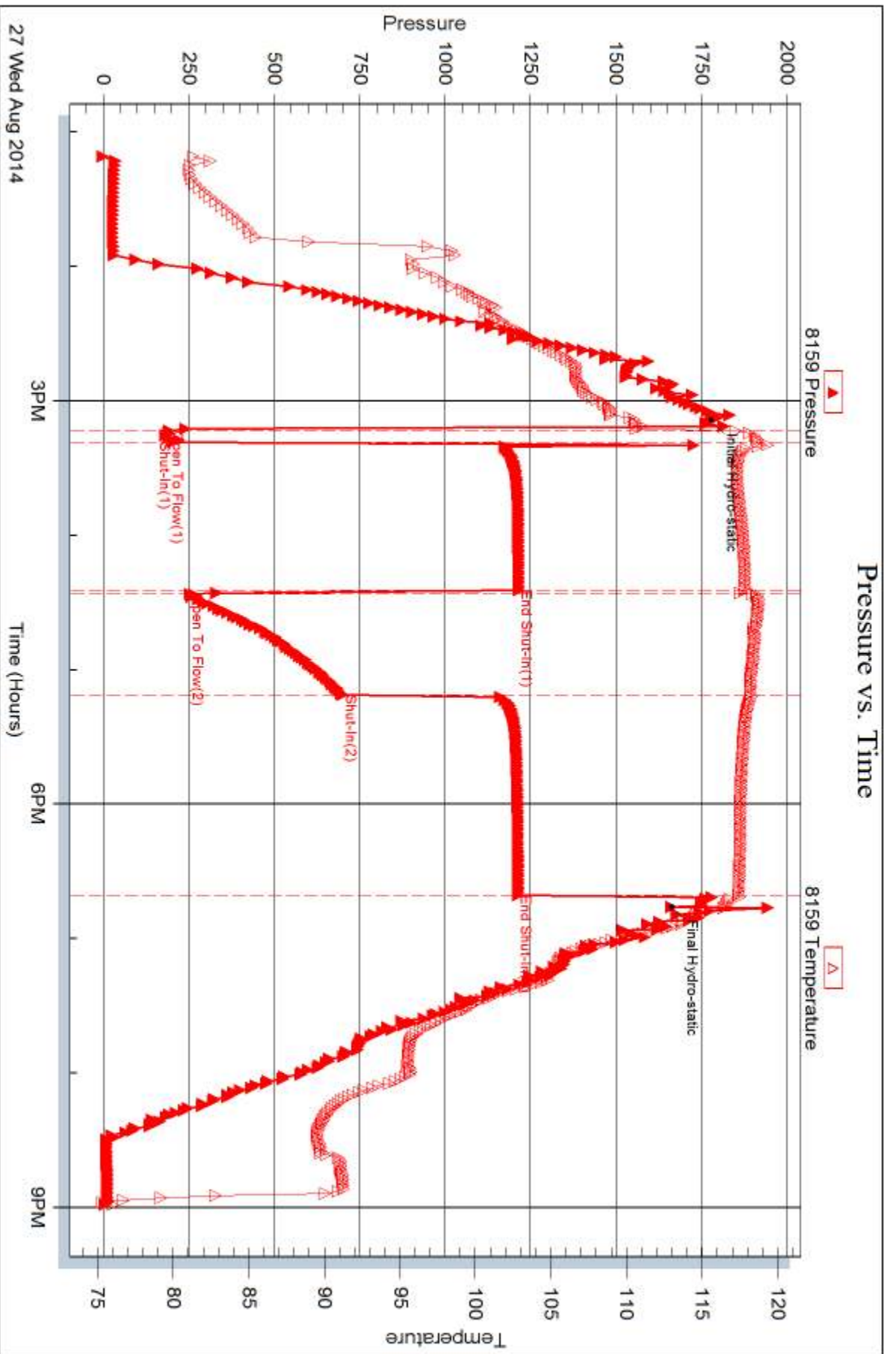
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .22 at 50 degrees









## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.28 @ 16:00:00

End Date: 2014.08.28 @ 23:47:30

Job Ticket #: 60345                      DST #: 2

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

Printed: 2014.09.03 @ 13:08:51

F.G. Holl  
23-20s-15w Barton,KS  
Crosby A Unit #1-23  
DST # 2  
Arbuckle  
2014.08.28



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

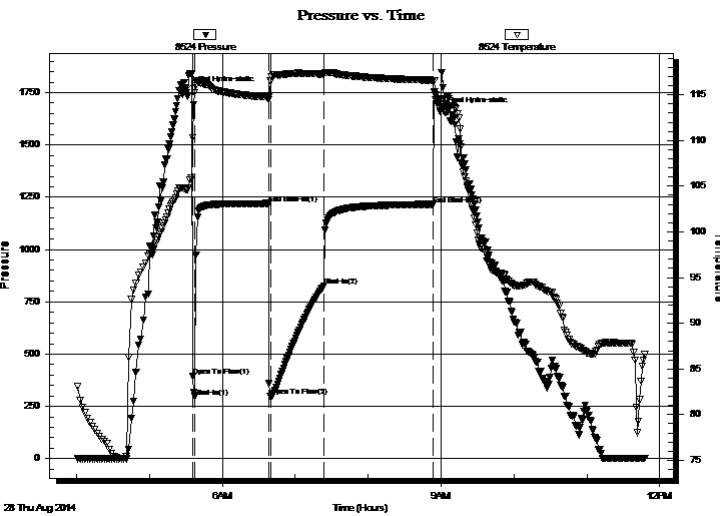
**23-20s-15w Barton,KS**  
**Crosby A Unit #1-23**  
Job Ticket: 60345 **DST#: 2**  
Test Start: 2014.08.28 @ 16:00:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 17:35:30  
Time Test Ended: 23:47:30  
Interval: **3636.00 ft (KB) To 3650.00 ft (KB) (TVD)**  
Total Depth: 3650.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Poor  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Shane Konzem  
Unit No: S3  
Reference Elevations: 1944.00 ft (KB)  
1934.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8524 Inside**  
Press@RunDepth: 826.78 psig @ 3646.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.08.28 End Date: 2014.08.28 Last Calib.: 2014.08.28  
Start Time: 04:01:00 End Time: 11:47:30 Time On Btm: 2014.08.28 @ 05:30:00  
Time Off Btm: 2014.08.28 @ 08:59:30

TEST COMMENT: IFP 2 BOB in 17 seconds.  
ISI 60 No blow back.  
FFP 45 BOB in 7 seconds. GTS in 7 seconds.  
FSI 90 BOB blow back died back to 6 inches by end of shut in.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1760.21	104.60	Initial Hydro-static
6	392.37	110.30	Open To Flow (1)
8	296.16	115.23	Shut-In(1)
68	1220.45	114.76	End Shut-In(1)
70	297.30	116.50	Open To Flow (2)
114	826.78	117.26	Shut-In(2)
204	1216.25	116.58	End Shut-In(2)
210	1659.19	113.52	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
441.00	GCO	6.19
189.00	GWCO 2.5% w ater, 10% gas, 87.5% oil	2.65
252.00	MW 2.5% mud, 97.5% w ater	3.53
1031.00	100% w ater.	14.46

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.38	1.00	56.41
Last Gas Rate	0.13	18.00	12.13
Max. Gas Rate	0.13	18.00	12.13



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
 9431 E. Central STE 100  
 Wichita KS 67206-2563  
 ATTN: Frank Greenbaum

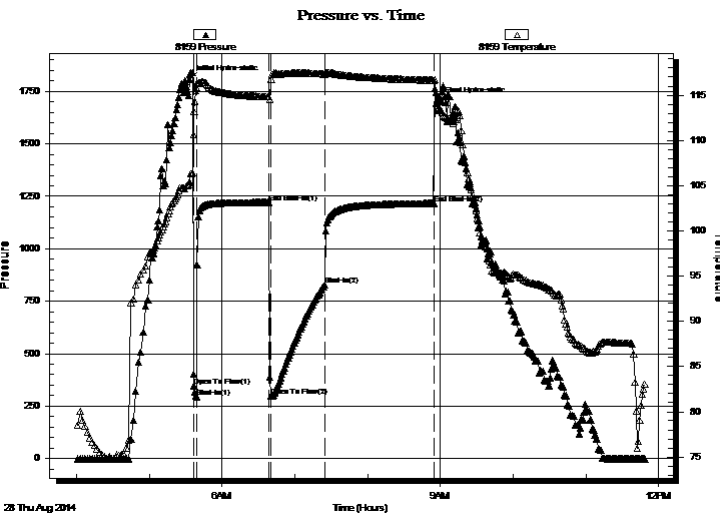
**23-20s-15w Barton, KS**  
**Crosby A Unit #1-23**  
 Job Ticket: 60345 **DST#: 2**  
 Test Start: 2014.08.28 @ 16:00:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 17:35:30 Tester: Shane Konzem  
 Time Test Ended: 23:47:30 Unit No: S3  
 Interval: **3636.00 ft (KB) To 3650.00 ft (KB) (TVD)** Reference Elevations: 1944.00 ft (KB)  
 Total Depth: 3650.00 ft (KB) (TVD) 1934.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 10.00 ft

**Serial #: 8159 Outside**  
 Press@RunDepth: 1216.28 psig @ 3647.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.28 End Date: 2014.08.28 Last Calib.: 2014.08.28  
 Start Time: 04:01:00 End Time: 11:49:00 Time On Btm: 2014.08.28 @ 05:33:00  
 Time Off Btm: 2014.08.28 @ 08:58:00

TEST COMMENT: IFP 2 BOB in 17 seconds.  
 ISI 60 No blow back.  
 FFP 45 BOB in 7 seconds. GTS in 7 seconds.  
 FSI 90 BOB blow back died back to 6 inches by end of shut in.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1807.49	105.16	Initial Hydro-static
4	346.37	113.18	Open To Flow (1)
6	293.66	115.87	Shut-In(1)
66	1220.79	114.83	End Shut-In(1)
68	297.87	116.76	Open To Flow (2)
112	826.11	117.34	Shut-In(2)
202	1216.28	116.64	End Shut-In(2)
205	1700.87	113.51	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
441.00	GCO	6.19
189.00	GWCO 2.5% w ater, 10% gas, 87.5% oil	2.65
252.00	MW 2.5% mud, 97.5% w ater	3.53
1031.00	100% w ater.	14.46

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.38	1.00	56.41
Last Gas Rate	0.13	18.00	12.13
Max. Gas Rate	0.13	18.00	12.13



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60345

**DST#: 2**

ATTN: Frank Greenbaum

Test Start: 2014.08.28 @ 16:00:00

## Tool Information

Drill Pipe:	Length: 3625.00 ft	Diameter: 3.80 inches	Volume: 50.85 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 50.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 57000.00 lb
Depth to Top Packer:	3636.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	42.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Shale Packer used.

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3613.00	
Hydraulic tool	5.00			3618.00	
Jars	6.00			3624.00	
Safety Joint	2.00			3626.00	
Top Packer	5.00			3631.00	
Packer	5.00			3636.00	28.00 Bottom Of Top Packer
Anchor	9.00			3645.00	
Recorder	1.00	8524	Inside	3646.00	
Recorder	1.00	8159	Outside	3647.00	
Bull Plug	3.00			3650.00	14.00 Anchor Tool
<b>Total Tool Length:</b>	<b>42.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60345

**DST#: 2**

ATTN: Frank Greenbaum

Test Start: 2014.08.28 @ 16:00:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 49.00 sec/qt  
Water Loss: 10.35 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 7500.00 ppm  
Filter Cake: 1.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 41 deg API  
Water Salinity: 33000 ppm

## Recovery Information

Recovery Table

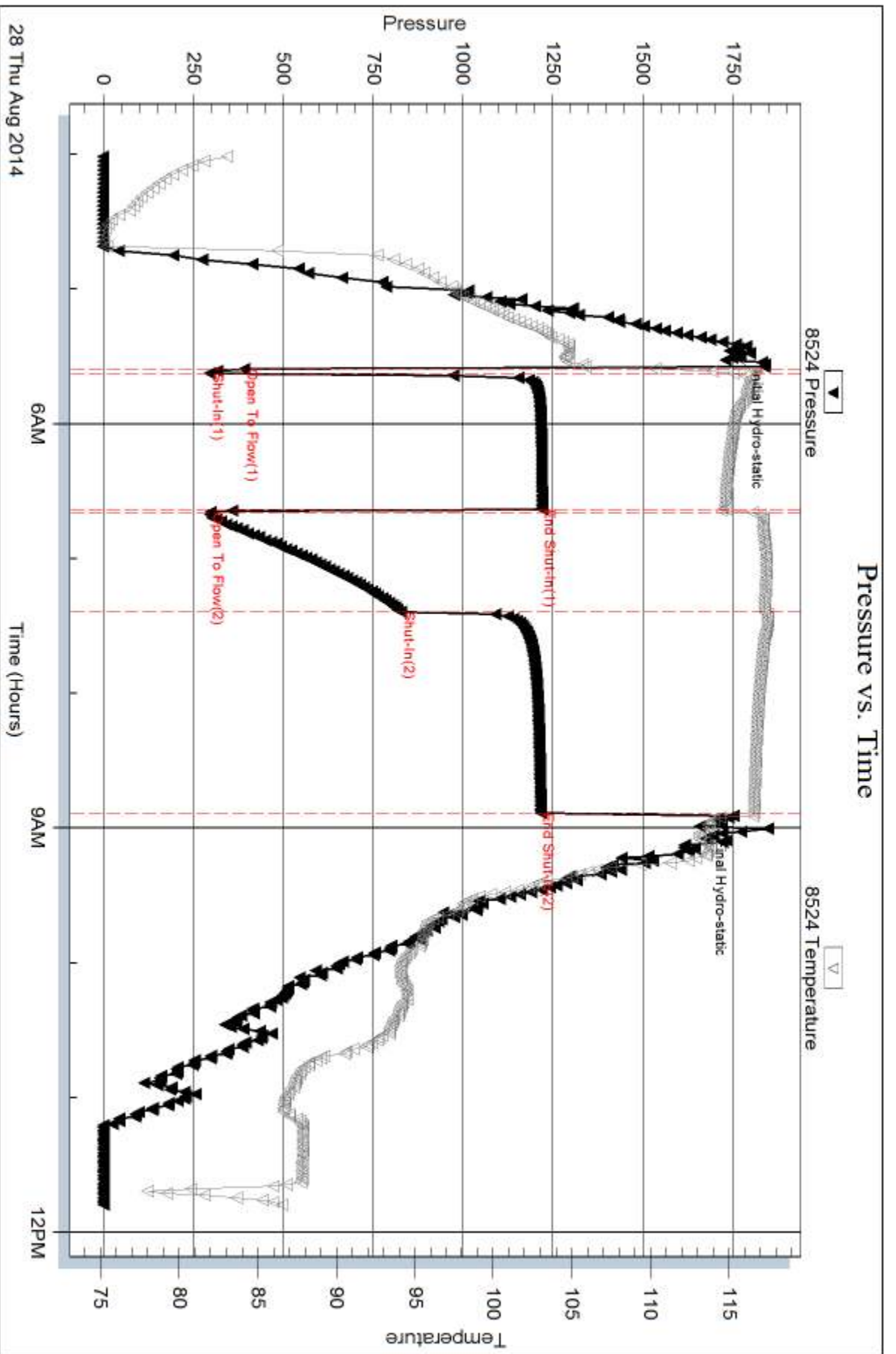
Length ft	Description	Volume bbl
441.00	GCO	6.186
189.00	GWCO 2.5% w ater, 10% gas, 87.5% oil	2.651
252.00	MW 2.5% mud, 97.5% w ater	3.535
1031.00	100% w ater.	14.462

Total Length: 1913.00 ft      Total Volume: 26.834 bbl

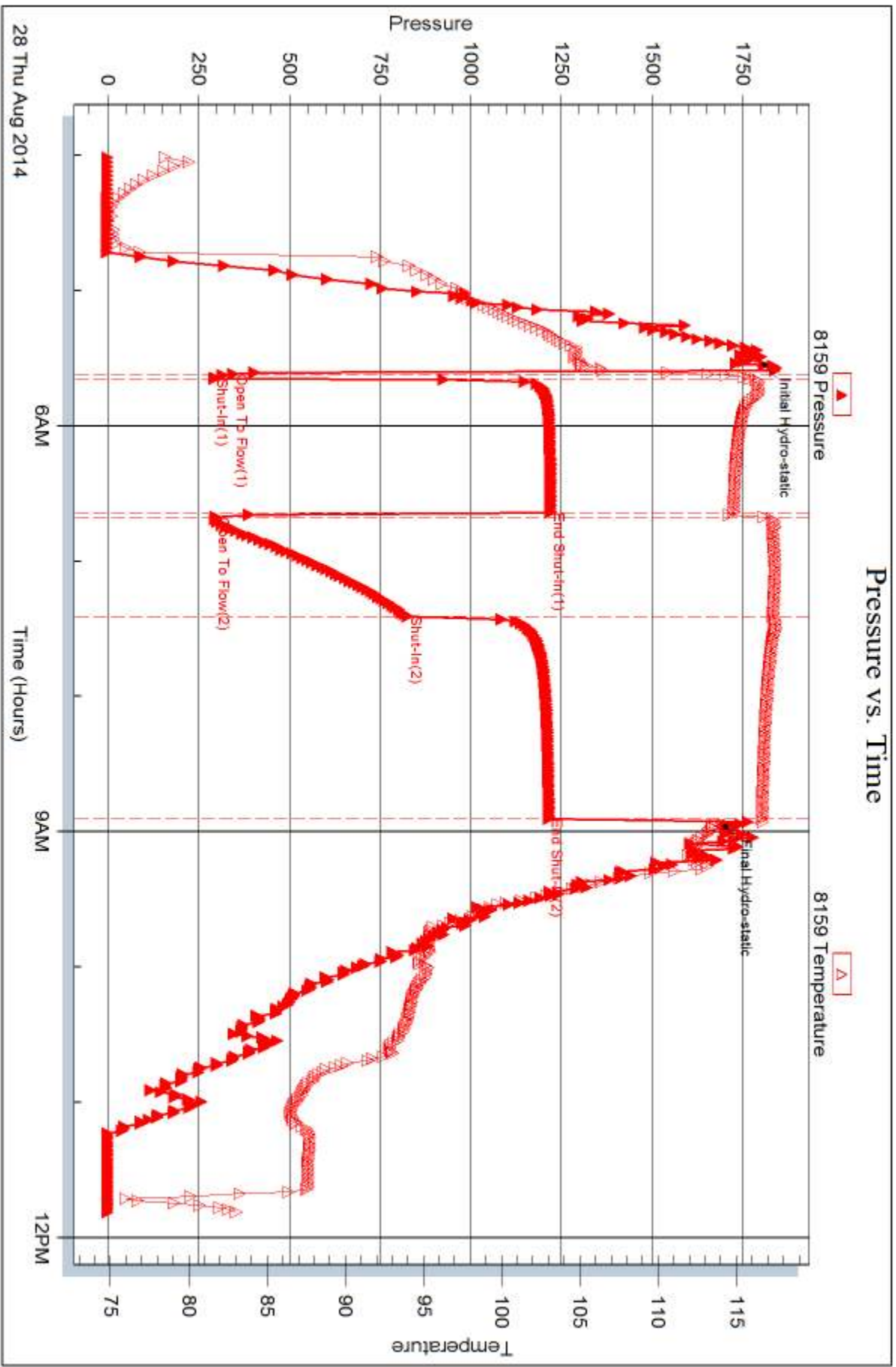
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: RW .22 ohms at 40 degrees









## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.28 @ 19:35:00

End Date: 2014.08.29 @ 02:53:30

Job Ticket #: 60346                      DST #: 3

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

Printed: 2014.09.03 @ 13:08:25

F.G. Holl  
23-20s-15w Barton,KS  
Crosby A Unit #1-23  
DST # 3  
Arbuckle  
2014.08.28



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

**23-20s-15w Barton,KS**

**Crosby A Unit #1-23**

Job Ticket: 60346 **DST#: 3**

Test Start: 2014.08.28 @ 19:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:19:30  
 Time Test Ended: 02:53:30  
 Interval: **3651.00 ft (KB) To 3662.00 ft (KB) (TVD)**  
 Total Depth: 3662.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

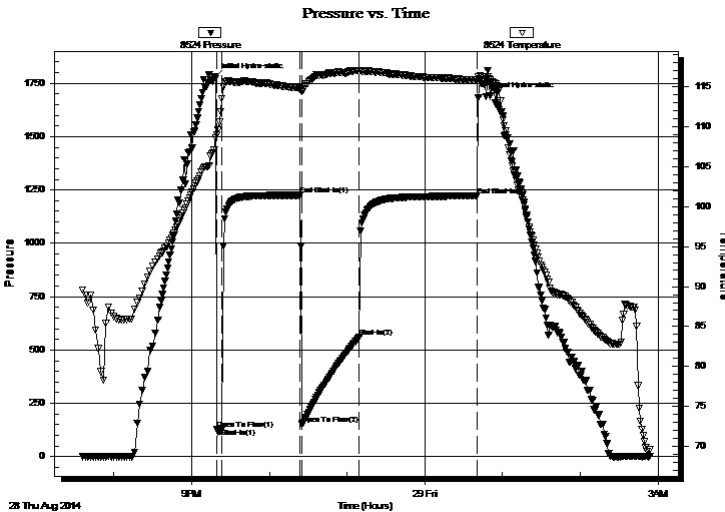
## Serial #: 8524

Inside

Press@RunDepth: 559.96 psig @ 3658.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.28 End Date: 2014.08.29 Last Calib.: 2014.08.29  
 Start Time: 19:36:00 End Time: 02:53:30 Time On Btm: 2014.08.28 @ 21:17:30  
 Time Off Btm: 2014.08.29 @ 00:47:30

TEST COMMENT: IFP 5 BOB in 17 seconds.  
 ISI 60 Weak surface blow back.  
 FFP 45 BOB in 50 seconds. GTS in 20 min.  
 FSI 90 Blow back built to 10"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1778.48	107.10	Initial Hydro-static
2	128.54	108.90	Open To Flow (1)
6	131.36	113.47	Shut-In(1)
66	1225.18	114.79	End Shut-In(1)
68	154.13	114.33	Open To Flow (2)
112	559.96	116.85	Shut-In(2)
203	1222.26	115.79	End Shut-In(2)
210	1686.51	116.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCMW 10% oil, 35% mud, 55% w ater	0.42
189.00	OMCW 2.5% oil, 2.5% mud, 95% w ater	2.65
315.00	MW 2.5% mud, 97.5% w ater	4.42
756.00	100% Water	10.60

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	5.00	7.26
Last Gas Rate	0.13	5.00	7.26
Max. Gas Rate	0.13	5.00	7.26



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

**23-20s-15w Barton,KS**

**Crosby A Unit #1-23**

Job Ticket: 60346 **DST#: 3**

Test Start: 2014.08.28 @ 19:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:19:30  
 Time Test Ended: 02:53:30  
 Interval: **3651.00 ft (KB) To 3662.00 ft (KB) (TVD)**  
 Total Depth: 3662.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

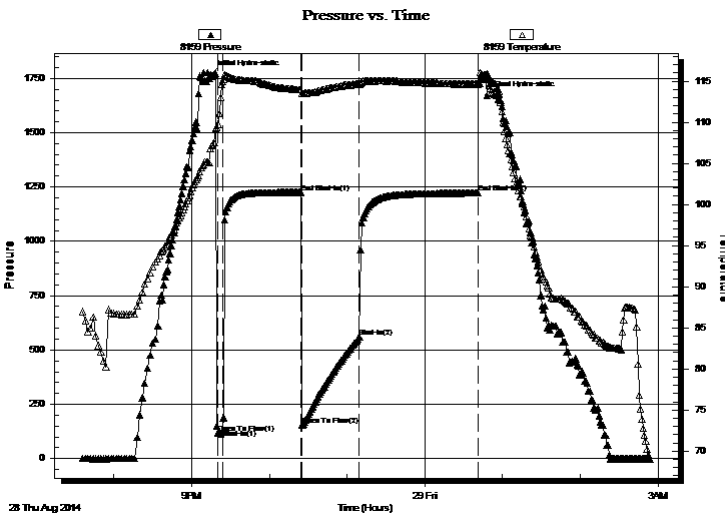
## Serial #: 8159

**Outside**

Press@RunDepth: 1222.54 psig @ 3659.00 ft (KB)  
 Start Date: 2014.08.28 End Date: 2014.08.29  
 Start Time: 19:36:00 End Time: 02:54:00  
 Capacity: 8000.00 psig  
 Last Calib.: 2014.08.29  
 Time On Btm: 2014.08.28 @ 21:14:30  
 Time Off Btm: 2014.08.29 @ 00:48:00

TEST COMMENT: IFP 5 BOB in 17 seconds.  
 ISI 60 Weak surface blow back.  
 FFP 45 BOB in 50 seconds. GTS in 20 min.  
 FSI 90 Blow back built to 10"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1766.41	106.79	Initial Hydro-static
6	116.39	109.76	Open To Flow (1)
10	133.47	114.96	Shut-In(1)
70	1225.55	113.94	End Shut-In(1)
71	152.29	113.52	Open To Flow (2)
115	558.10	114.59	Shut-In(2)
207	1222.54	114.62	End Shut-In(2)
214	1671.37	115.88	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	OCMW 10% oil, 35% mud, 55% w ater	0.42
189.00	OMCW 2.5% oil, 2.5% mud, 95% w ater	2.65
315.00	MW 2.5% mud, 97.5% w ater	4.42
756.00	100% Water	10.60

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	5.00	7.26
Last Gas Rate	0.13	5.00	7.26
Max. Gas Rate	0.13	5.00	7.26



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60346

**DST#: 3**

ATTN: Frank Greenbaum

Test Start: 2014.08.28 @ 19:35:00

## Tool Information

Drill Pipe:	Length: 3656.00 ft	Diameter: 3.80 inches	Volume: 51.28 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 51.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3651.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	11.00 ft			
Tool Length:	34.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3633.00	
Hydraulic tool	5.00			3638.00	
Jars	6.00			3644.00	
Safety Joint	2.00			3646.00	
Packer	5.00			3651.00	23.00 Bottom Of Top Packer
Anchor	6.00			3657.00	
Recorder	1.00	8524	Inside	3658.00	
Recorder	1.00	8159	Outside	3659.00	
Bull Plug	3.00			3662.00	11.00 Anchor Tool
<b>Total Tool Length:</b>	<b>34.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60346

**DST#: 3**

ATTN: Frank Greenbaum

Test Start: 2014.08.28 @ 19:35:00

### 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:

33000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 11.95 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
30.00	OCMW 10% oil, 35% mud, 55% w ater	0.421
189.00	OMCW 2.5% oil, 2.5% mud, 95% w ater	2.651
315.00	MW 2.5% mud, 97.5% w ater	4.419
756.00	100% Water	10.605

Total Length: 1290.00 ft

Total Volume: 18.096 bbl

Num Fluid Samples: 0

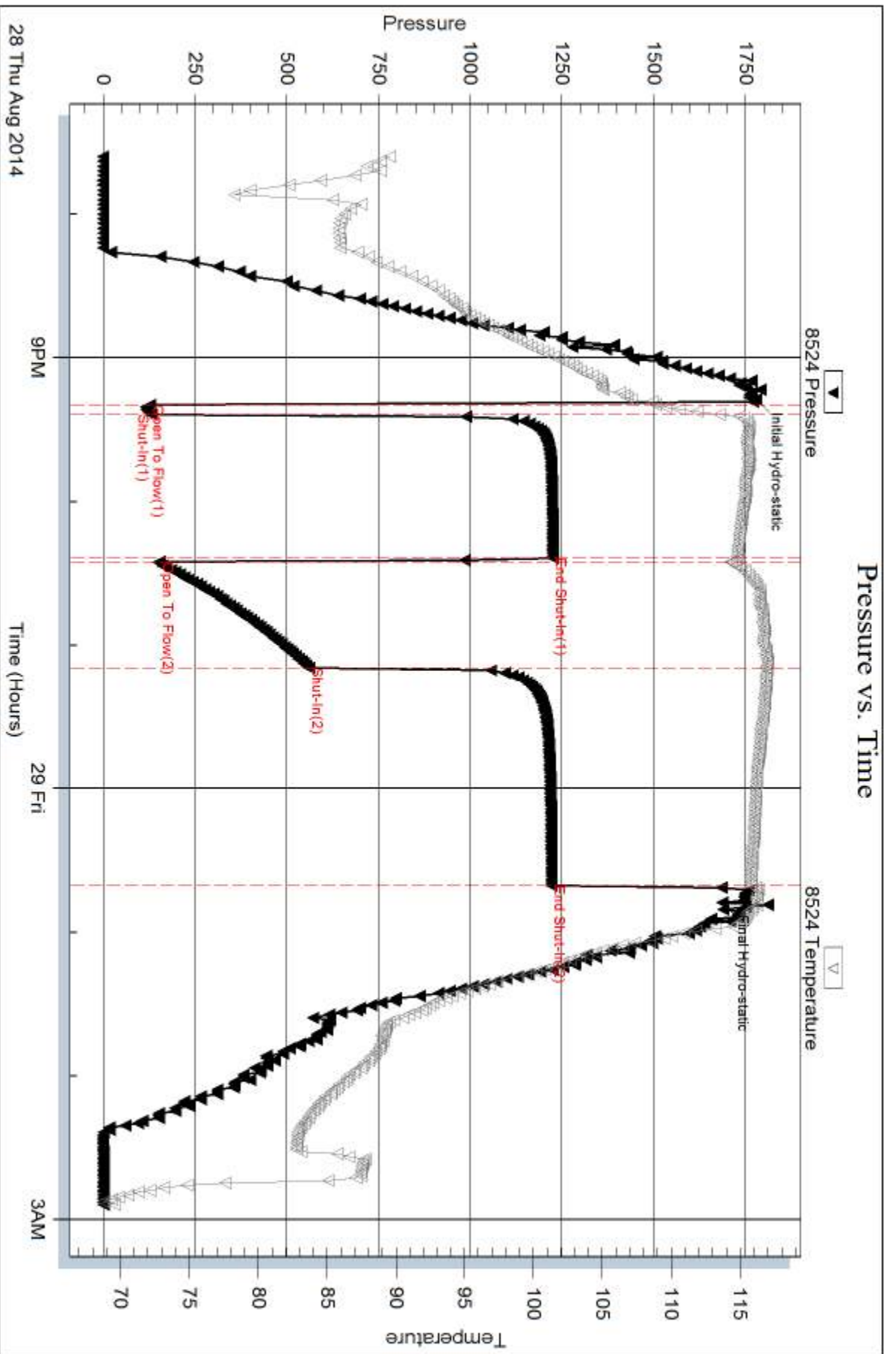
Num Gas Bombs: 0

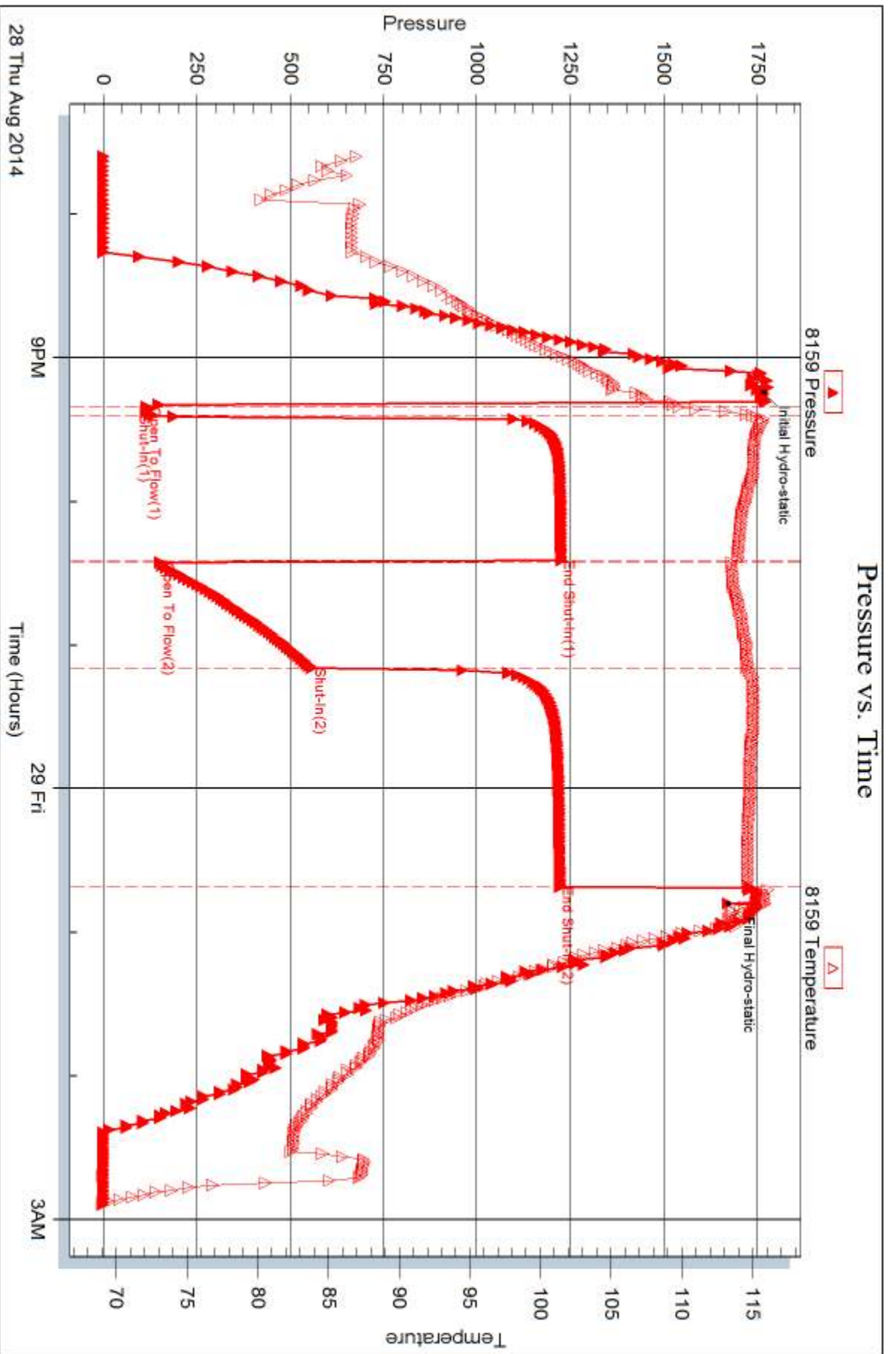
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: resist recov .22 ohms at 40 degrees









## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.29 @ 09:35:00

End Date: 2014.08.29 @ 18:31:30

Job Ticket #: 60347                      DST #: 4

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

Printed: 2014.09.03 @ 13:07:44

F.G. Holl  
23-20s-15w Barton,KS  
Crosby A Unit #1-23  
DST # 4  
Arbuckle  
2014.08.29



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
 9431 E. Central STE 100  
 Wichita KS 67206-2563  
 ATTN: Frank Greenbaum

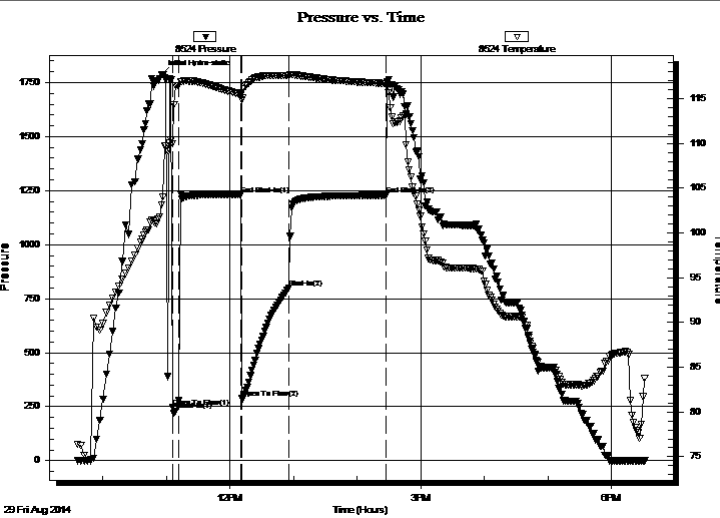
**23-20s-15w Barton,KS**  
**Crosby A Unit #1-23**  
 Job Ticket: 60347 **DST#: 4**  
 Test Start: 2014.08.29 @ 09:35:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:05:30  
 Time Test Ended: 18:31:30  
 Interval: **3663.00 ft (KB) To 3672.00 ft (KB) (TVD)**  
 Total Depth: 3672.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8524 Inside**  
 Press@RunDepth: 798.80 psig @ 3668.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.29 End Date: 2014.08.29 Last Calib.: 2014.08.29  
 Start Time: 09:36:00 End Time: 18:31:30 Time On Btm: 2014.08.29 @ 10:55:00  
 Time Off Btm:

**TEST COMMENT:** IFP 5 BOB in 50 seconds.  
 ISI 60 No blow back.  
 FFP 45 BOB in 50 seconds. GTS in 50 seconds.  
 FSI 90 Blow back built to BOB and died back to 10"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1786.73	103.13	Initial Hydro-static
11	248.94	110.01	Open To Flow (1)
17	277.72	116.47	Shut-In(1)
75	1230.24	115.49	End Shut-In(1)
76	288.64	114.89	Open To Flow (2)
120	798.80	117.61	Shut-In(2)
212	1228.82	116.70	End Shut-In(2)

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	100% Clean gassy oil.	0.07
640.00	OCM 15% Oil, 85% Mud	8.98
520.00	GOCW 20% Gas, 25% Water, 55% Oil.	7.29
625.00	GOCW 10% Gas, 35% Water, 55% oil.	8.77
441.00	GOCW 5% Gas, 40% Water, 55% Oil	6.19
200.00	GWCO 20% w ater, 40% Gas, 40% Oil	2.81

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	19.00	52.99
Last Gas Rate	0.13	14.00	10.63
Max. Gas Rate	0.13	21.00	13.25





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60347

**DST#: 4**

ATTN: Frank Greenbaum

Test Start: 2014.08.29 @ 09:35:00

## Tool Information

Drill Pipe:	Length: 3657.00 ft	Diameter: 3.80 inches	Volume: 51.30 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 51.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3663.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments: On 1st open had to reset packer three times to get it to seal off had total of about 40 foot mud loss from top side.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3645.00	
Hydraulic tool	5.00			3650.00	
Jars	6.00			3656.00	
Safety Joint	2.00			3658.00	
Packer	5.00			3663.00	23.00 Bottom Of Top Packer
Anchor	4.00			3667.00	
Recorder	1.00	8524	Inside	3668.00	
Recorder	1.00	8159	Outside	3669.00	
Bull Plug	3.00			3672.00	9.00 Anchor Tool
<b>Total Tool Length:</b>	<b>32.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60347

**DST#: 4**

ATTN: Frank Greenbaum

Test Start: 2014.08.29 @ 09:35:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 44.00 sec/qt  
Water Loss: 9.17 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6700.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: 35000 ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% Clean gassy oil.	0.070
640.00	OCM 15% Oil, 85% Mud	8.978
520.00	GOCW 20% Gas, 25% Water, 55% Oil.	7.294
625.00	GOCW 10% Gas, 35% Water, 55% oil.	8.767
441.00	GOCW 5% Gas, 40% Water, 55% Oil	6.186
200.00	GWCO 20% w ater, 40% Gas, 40% Oil	2.805
283.00	GWCO 2.5% w ater, 37.5% gas, 60% oil	3.970
126.00	MW 5% Mud, 95% w ater.	1.767

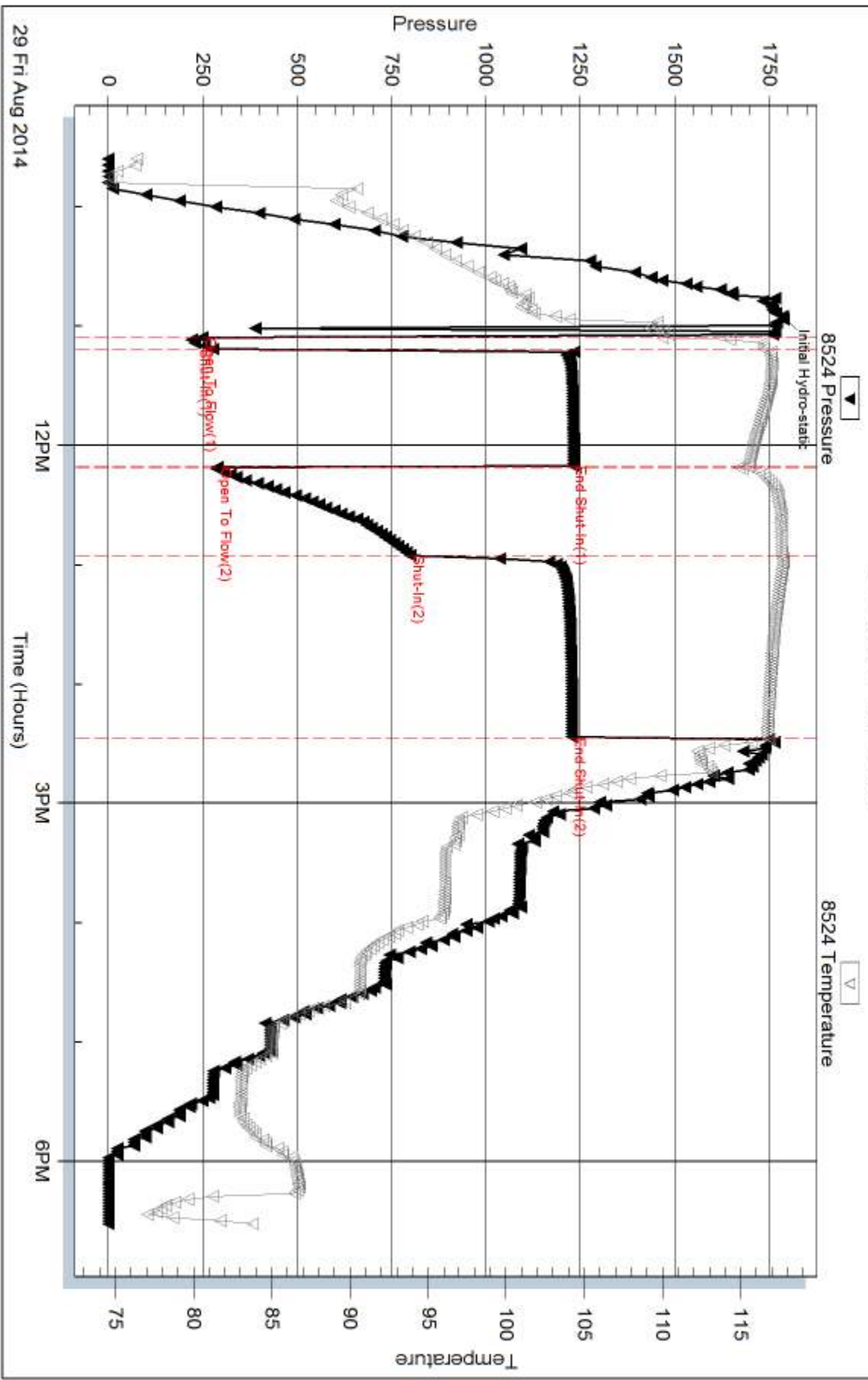
Total Length: 2840.00 ft      Total Volume: 39.837 bbl

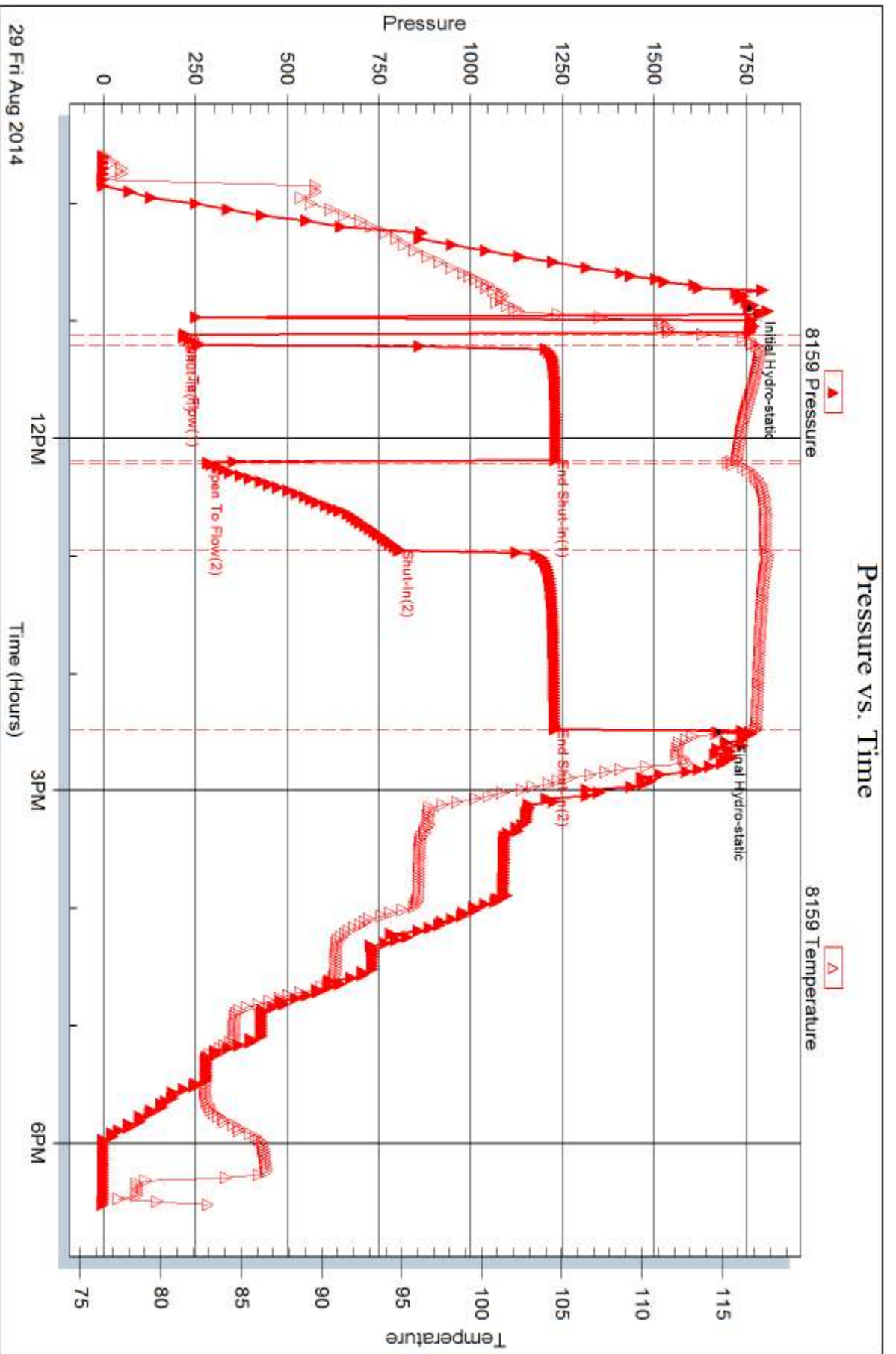
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: resistiv recov .22 at 50 degrees.

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.30 @ 01:55:00

End Date: 2014.08.30 @ 08:46:00

Job Ticket #: 60348                      DST #: 5

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

Printed: 2014.09.03 @ 13:06:56







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

**23-20s-15w Barton,KS**

**Crosby A Unit #1-23**

Job Ticket: 60348 **DST#: 5**

Test Start: 2014.08.30 @ 01:55:00

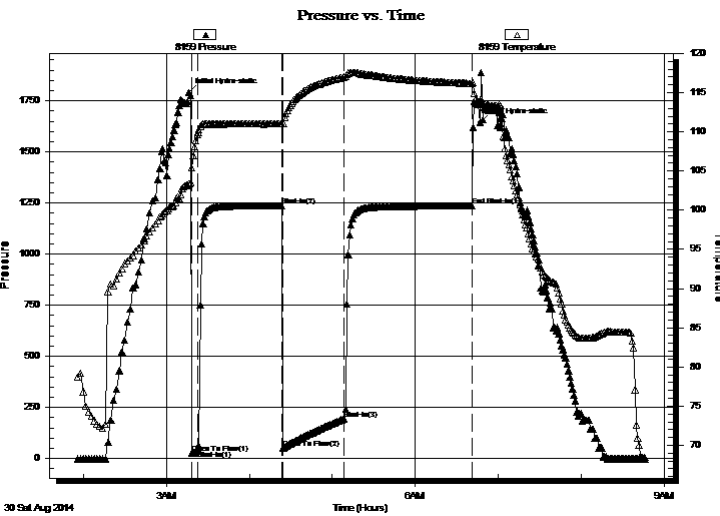
## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:18:00  
 Time Test Ended: 08:46:00  
 Interval: **3673.00 ft (KB) To 3682.00 ft (KB) (TVD)**  
 Total Depth: 3682.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3/20/Great Bend  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8159 Outside**

Press@RunDepth: 1235.63 psig @ 3679.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.30 End Date: 2014.08.30 Last Calib.: 2014.08.30  
 Start Time: 01:56:00 End Time: 08:45:30 Time On Btm: 2014.08.30 @ 03:16:30  
 Time Off Btm: 2014.08.30 @ 06:46:30

TEST COMMENT: IFP 5 BOB in 50 seconds.  
 ISI 60 No blow back.  
 FFP 45 BOB in 5 minutes and 10 seconds. GTS in 15 minutes. TSTM  
 FSI90 No blow back.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1788.55	103.37	Initial Hydro-static
2	25.72	105.43	Open To Flow (1)
7	41.96	109.94	Shut-In(1)
67	1236.33	111.02	Shut-In(2)
68	52.00	111.13	Open To Flow (2)
112	195.03	116.98	Shut-In(3)
204	1235.63	116.18	End Shut-In(1)
210	1645.36	113.82	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
40.00	OCWM 2.5% Oil, 37.5% Water, 60% Mud	0.56
126.00	MW 15% Mud, 85% Water	1.77
252.00	100% Water	3.53

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60348

**DST#: 5**

ATTN: Frank Greenbaum

Test Start: 2014.08.30 @ 01:55:00

## Tool Information

Drill Pipe:	Length: 3657.00 ft	Diameter: 3.80 inches	Volume: 51.30 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 51.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3673.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut-In Tool	5.00			3655.00		
Hydraulic tool	5.00			3660.00		
Jars	6.00			3666.00		
Safety Joint	2.00			3668.00		
Packer	5.00			3673.00	23.00	Bottom Of Top Packer
Anchor	4.00			3677.00		
Recorder	1.00	8524	Inside	3678.00		
Recorder	1.00	8159	Outside	3679.00		
Bull Plug	3.00			3682.00	9.00	Anchor Tool
<b>Total Tool Length:</b>	<b>32.00</b>					



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60348

**DST#: 5**

ATTN: Frank Greenbaum

Test Start: 2014.08.30 @ 01:55:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 44.00 sec/qt  
Water Loss: 9.17 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6700.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: deg API  
Water Salinity: 34000 ppm

## Recovery Information

Recovery Table

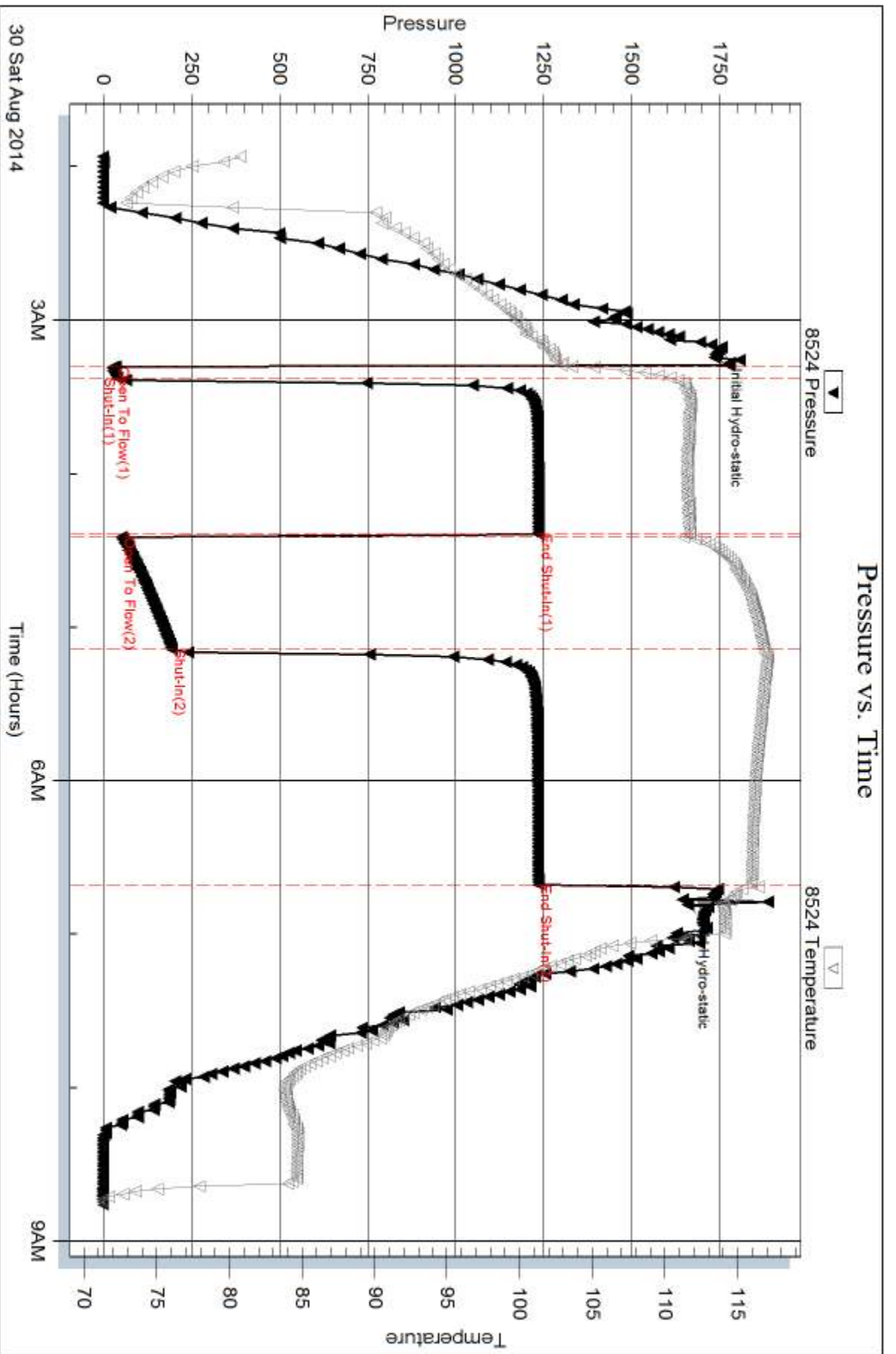
Length ft	Description	Volume bbl
40.00	OCWM 2.5% Oil, 37.5% Water, 60% Mud	0.561
126.00	MW 15% Mud, 85% Water	1.767
252.00	100% Water	3.535

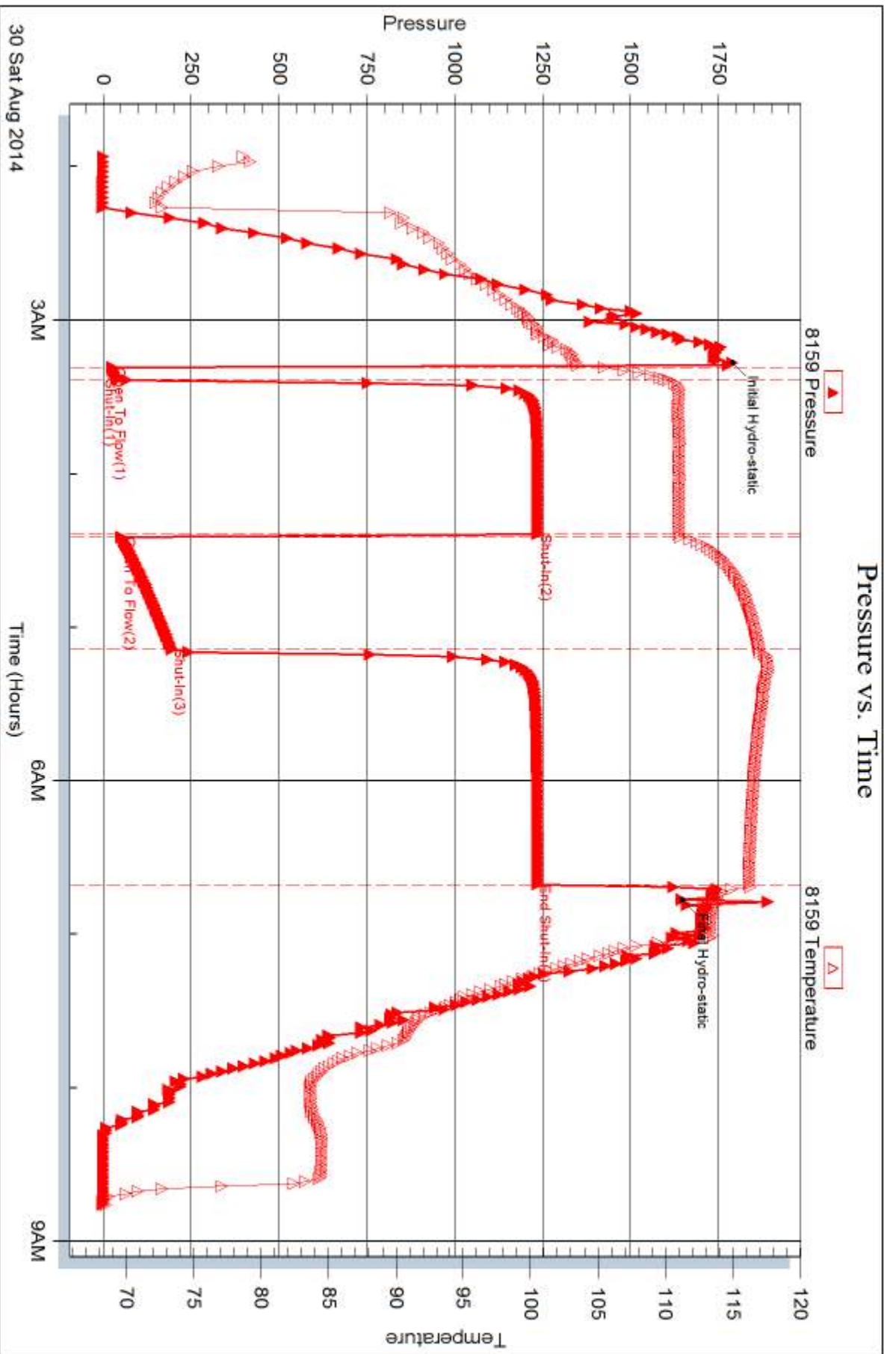
Total Length: 418.00 ft      Total Volume: 5.863 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: resist recov .22 ohms at 40 degrees.







## DRILL STEM TEST REPORT

Prepared For: **F.G. Holl**

9431 E. Central STE 100  
Wichita KS 67206-2563

ATTN: Frank Greenbaum

### **Crosby A Unit #1-23**

### **23-20s-15w Barton,KS**

Start Date: 2014.08.30 @ 14:15:00

End Date: 2014.08.30 @ 21:43:00

Job Ticket #: 60349                      DST #: 6

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

Printed: 2014.09.03 @ 13:06:23



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

**23-20s-15w Barton,KS**

**Crosby A Unit #1-23**

Job Ticket: 60349 **DST#: 6**

Test Start: 2014.08.30 @ 14:15:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:28:30  
 Time Test Ended: 21:43:00  
 Interval: **3683.00 ft (KB) To 3692.00 ft (KB) (TVD)**  
 Total Depth: 3692.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

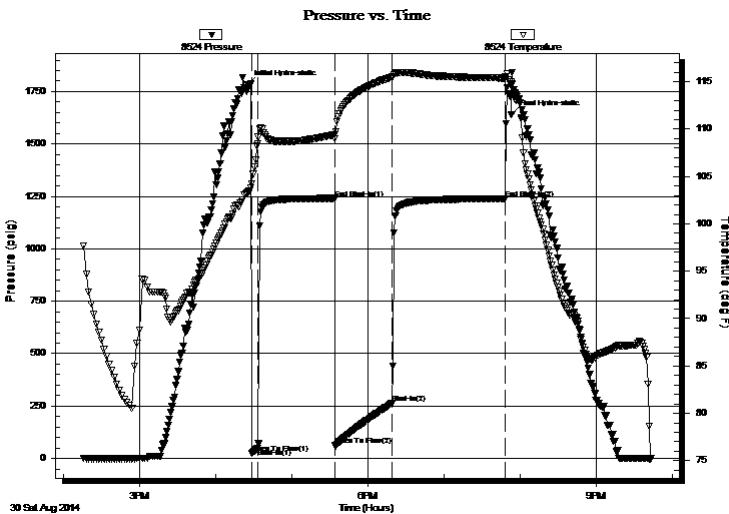
## Serial #: 8524

Inside

Press@RunDepth: 263.51 psig @ 3688.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.30 End Date: 2014.08.30 Last Calib.: 2014.08.30  
 Start Time: 14:16:00 End Time: 21:43:00 Time On Btm: 2014.08.30 @ 16:25:30  
 Time Off Btm: 2014.08.30 @ 19:53:00

TEST COMMENT: IFP 5 BOB in 3 minutes.  
 ISI 60 No blow back.  
 FFP 45 BOB in 6 minutes.  
 FSI90 No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1783.36	103.34	Initial Hydro-static
3	24.66	104.23	Open To Flow (1)
8	48.99	108.49	Shut-In(1)
68	1240.49	109.40	End Shut-In(1)
69	62.96	108.99	Open To Flow (2)
114	263.51	115.50	Shut-In(2)
203	1239.20	115.41	End Shut-In(2)
208	1640.97	114.75	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
630.00	100% w ater w ith a trace of oil.	8.84

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

F.G. Holl  
9431 E. Central STE 100  
Wichita KS 67206-2563  
ATTN: Frank Greenbaum

**23-20s-15w Barton,KS**

**Crosby A Unit #1-23**

Job Ticket: 60349 **DST#: 6**

Test Start: 2014.08.30 @ 14:15:00

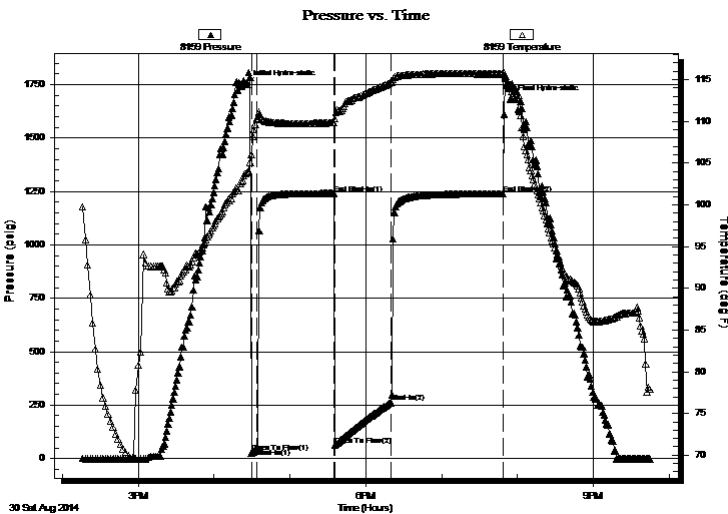
## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:28:30  
 Time Test Ended: 21:43:00  
 Interval: **3683.00 ft (KB) To 3692.00 ft (KB) (TVD)**  
 Total Depth: 3692.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: S3  
 Reference Elevations: 1944.00 ft (KB)  
 1934.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8159 Outside**  
 Press@RunDepth: 1239.62 psig @ 3689.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.08.30 End Date: 2014.08.30 Last Calib.: 2014.08.30  
 Start Time: 14:16:00 End Time: 21:44:30 Time On Btm: 2014.08.30 @ 16:25:30  
 Time Off Btm: 2014.08.30 @ 19:54:30

**TEST COMMENT:** IFP 5 BOB in 3 minutes.  
 ISI 60 No blow back.  
 FFP 45 BOB in 6 minutes.  
 FSI90 No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1751.81	103.83	Initial Hydro-static
4	27.43	105.96	Open To Flow (1)
9	48.51	110.39	Shut-In(1)
69	1240.88	109.83	End Shut-In(1)
70	60.70	110.32	Open To Flow (2)
115	263.42	114.64	Shut-In(2)
203	1239.62	115.64	End Shut-In(2)
209	1681.09	114.33	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
630.00	100% w ater w ith a trace of oil.	8.84

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60349

**DST#: 6**

ATTN: Frank Greenbaum

Test Start: 2014.08.30 @ 14:15:00

## Tool Information

Drill Pipe:	Length: 3677.00 ft	Diameter: 3.80 inches	Volume: 51.58 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 51.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3683.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	9.00 ft			
Tool Length:	32.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3665.00	
Hydraulic tool	5.00			3670.00	
Jars	6.00			3676.00	
Safety Joint	2.00			3678.00	
Packer	5.00			3683.00	23.00 Bottom Of Top Packer
Anchor	4.00			3687.00	
Recorder	1.00	8524	Inside	3688.00	
Recorder	1.00	8159	Outside	3689.00	
Bull Plug	3.00			3692.00	9.00 Anchor Tool
<b>Total Tool Length:</b>	<b>32.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

F.G. Holl

**23-20s-15w Barton,KS**

9431 E. Central STE 100  
Wichita KS 67206-2563

**Crosby A Unit #1-23**

Job Ticket: 60349

**DST#: 6**

ATTN: Frank Greenbaum

Test Start: 2014.08.30 @ 14:15:00

## 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:

34000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
630.00	100% water with a trace of oil.	8.837

Total Length: 630.00 ft      Total Volume: 8.837 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

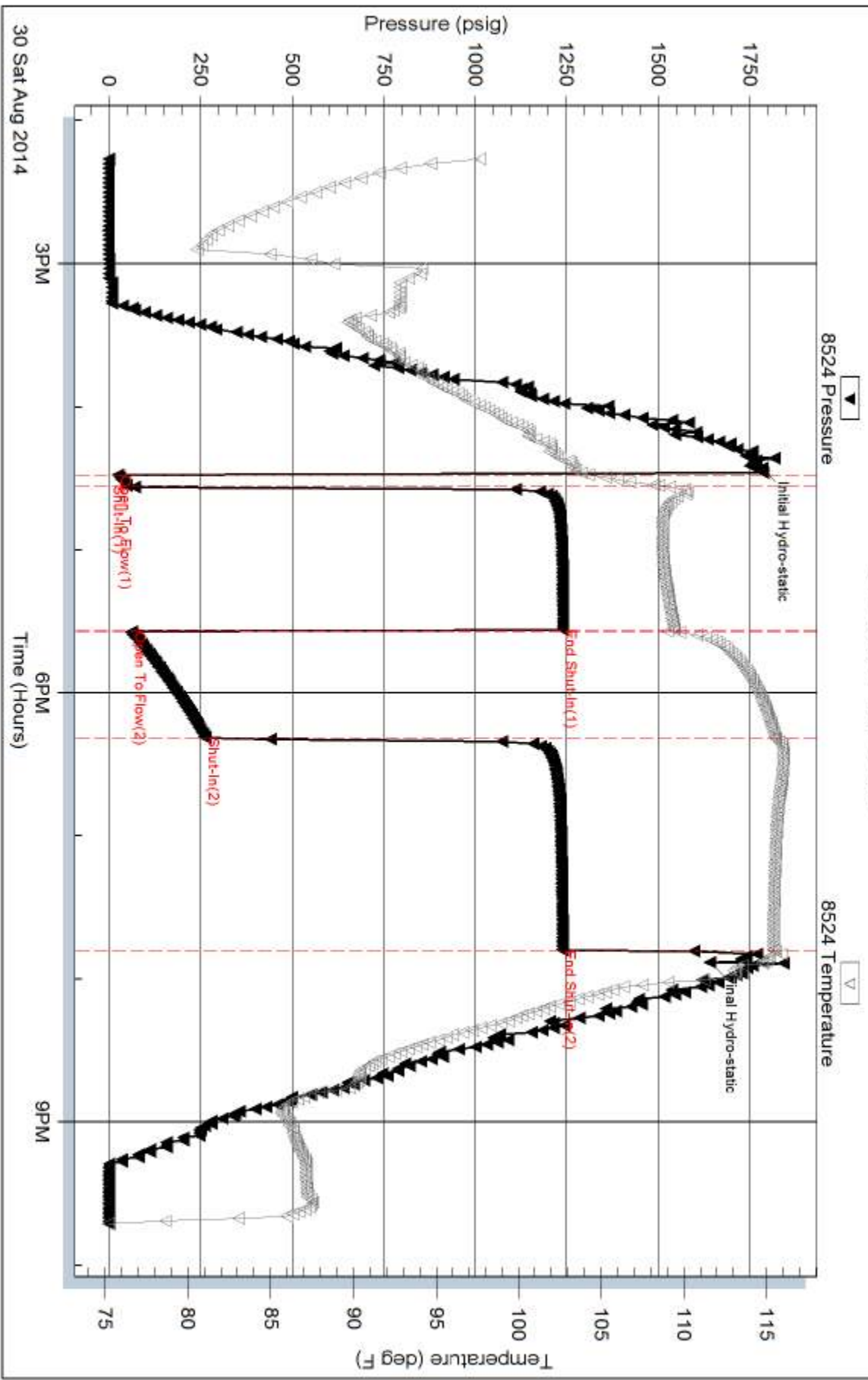
Serial #:

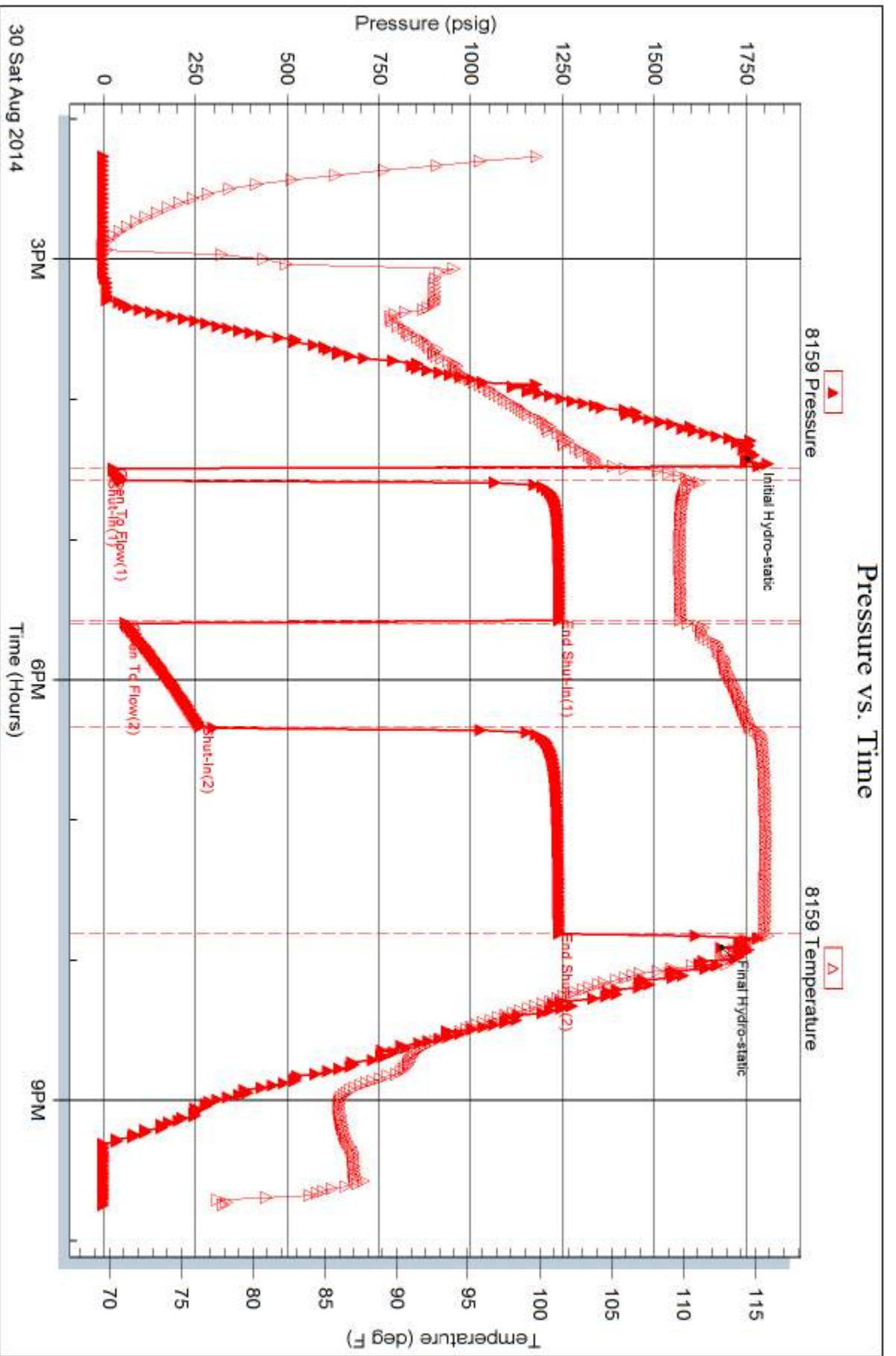
Laboratory Name:

Laboratory Location:

Recovery Comments: resist recov .21 ohms at 40 degrees.

### Pressure vs. Time









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60344

Well Name & No. Crosby "A" unit #1-23 Test No. 1 Date 8-27-14  
 Company EG Hall company L.L.C. Elevation 1934 KB 1934 GL  
 Address 9431 E. Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Duke Rig #  
 Location: Sec. 23 Twp. 20 S Rge. 15 W Co. Barton State KS

Interval Tested 3625 - 3635 Zone Tested Arbuckle  
 Anchor Length 10' Drill Pipe Run 3624 Mud Wt. 9.3  
 Top Packer Depth 3620 Drill Collars Run Ø Vis 49  
 Bottom Packer Depth 3625 Wt. Pipe Run Ø WL 10.4  
 Total Depth 3635 Chlorides 7,500 ppm System LCM 0

Blow Description 1<sup>st</sup> Open - Good blow built to bottom of 5 gallon bucket in 50 seconds.  
1<sup>st</sup> Shut In - Blow back built to 3 inches. Dried back to weak surface blow  
by end of shut in. 2<sup>nd</sup> Open - Bottom of bucket in 1 minute. Gas to  
surface in 20 min. 2<sup>nd</sup> Shut in - Blow built to bottom of bucket in 15 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>252</u>	<u>muddy water</u>			<u>65</u>	<u>35</u>
<u>378</u>	<u>muddy water</u>			<u>90</u>	<u>10</u>
<u>912</u>	<u>water</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1542 BHT 116 Gravity 1150 API RW -22 @ 50° F Chlorides 32000 ppm

(A) Initial Hydrostatic 1762  Test 1150 T-On Location 12:30  
 (B) First Initial Flow 208  Jars 250 T-Started 13:30  
 (C) First Final Flow 211  Safety Joint 75 T-Open 15:15  
 (D) Initial Shut-In 1214  Circ Sub \_\_\_\_\_ T-Pulled 18:35  
 (E) Second Initial Flow 238  Hourly Standby \_\_\_\_\_ T-Out 20:55  
 (F) Second Final Flow 698  Mileage 20 31 Comments Gas sample taken  
 (G) Final Shut-In 1214  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1676  Straddle \_\_\_\_\_  
 Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_

Initial Open 5  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 45  Day Standby \_\_\_\_\_ Total 1756  
 Final Shut-In 90  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1756

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60345

Well Name & No. Crosby "A" Unit #1-23 Test No. 2 Date 8-28-14  
 Company F.G. Hall Company L.L.C Elevation 1944 KB 1934 GL  
 Address 9431 E Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Duke Rig # 2  
 Location: Sec. 23 Twp. 20s Rge. 15w Co. Barton State KS

Interval Tested 3636 - 3650 Zone Tested Arbuckle  
 Anchor Length 14' Drill Pipe Run 3625 Mud Wt. 9.3  
 Top Packer Depth 3631 Drill Collars Run 0 Vis 49  
 Bottom Packer Depth 3636 Wt. Pipe Run 0 WL 10.4  
 Total Depth 3650 Chlorides 7,500 ppm System LCM 0

Blow Description 1<sup>st</sup> Open - Strong blow to bottom of 5 gallon bucket in 17 sec. 1<sup>st</sup> Shut In - No blow back. 2<sup>nd</sup> Open - Strong blow to bottom of bucket in 7 seconds. Gas to surface in 7 seconds. 2<sup>nd</sup> Shut In - Blow back built to bottom of bucket and died back to 6 inches by end of shut in.

Rec	Feet of	%gas	%oil	%water	%mud
<u>441</u>	<u>Gassy oil</u>	<u>10</u>	<u>90</u>		
<u>189</u>	<u>water cut gassy oil</u>	<u>10</u>	<u>87.5</u>	<u>2.5</u>	
<u>252</u>	<u>muddy water</u>			<u>97.5</u>	<u>2.5</u>
<u>1031</u>	<u>water</u>			<u>100</u>	

Rec Total 1920 BHT 113 Gravity 41 API RW 22 @ 40 °F Chlorides 33000 ppm

- (A) Initial Hydrostatic 1760
- (B) First Initial Flow 382
- (C) First Final Flow 296
- (D) Initial Shut-In 1220
- (E) Second Initial Flow 297
- (F) Second Final Flow 826
- (G) Final Shut-In 1216
- (H) Final Hydrostatic 1659

- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 31
- Sampler
- Straddle
- Shale Packer 250
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1756

T-On Location 03:00  
 T-Started 03:45  
 T-Open 05:55  
 T-Pulled 08:55  
 T-Out 11:50  
 Comments Gas Sample taken.  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1756  
 MP/DST Disc't

Initial Open 2  
 Initial Shut-In 60  
 Final Flow 45  
 Final Shut-In 90

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

Our Representative [Signature]





# TRILOBITE TESTING INC.

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## Test Ticket

NO. **60346**

Well Name & No. Crosby "A" Unit #1-23 Test No. 3 Date 8-28-14  
 Company F. G. Holl Company LLC Elevation 1944 KB 1934 GL  
 Address 9431 E Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Dieke Rig #2  
 Location: Sec. 23 Twp. 20 S Rge. 15 W Co. Barton State KS

Interval Tested 365D - 3662 Zone Tested Arbuckle  
 Anchor Length 11' Drill Pipe Run 3656 Mud Wt. 9.4  
 Top Packer Depth N/A Drill Collars Run 0 Vis 51  
 Bottom Packer Depth 365D Wt. Pipe Run 0 WL 12.0  
 Total Depth 3662 Chlorides 7,000 ppm System LCM 0  
 Blow Description 1<sup>st</sup> Open - Built to bottom of bucket in 17 seconds. 1<sup>st</sup> Shut In - weak surface blow back. 2<sup>nd</sup> Open - Bottom of bucket in 50 sec. Gas to surface in 20 minutes, 2<sup>nd</sup> Shut In - Blow built to 10 inches into water.

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>oily mud cut water</u>	<u>10</u>	<u>55</u>	<u>35</u>	<u></u>
<u>189</u>	<u>oily mud cut water</u>	<u>2.5</u>	<u>95</u>	<u>2.5</u>	<u></u>
<u>315</u>	<u>muddy water</u>	<u></u>	<u>97.5</u>	<u>2.5</u>	<u></u>
<u>756</u>	<u>water</u>	<u></u>	<u>100</u>	<u></u>	<u></u>

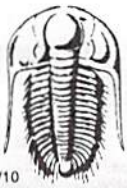
Rec Total 1290 BHT 116 Gravity 1 API RW 22 @ 40 ° F Chlorides 33000 ppm

(A) Initial Hydrostatic 1778  Test 1150 T-On Location 18:20  
 (B) First Initial Flow 128  Jars 250 T-Started 20:20  
 (C) First Final Flow 131  Safety Joint 75 T-Open 21:20  
 (D) Initial Shut-In 1225  Circ Sub \_\_\_\_\_ T-Pulled 00:40  
 (E) Second Initial Flow 154  Hourly Standby \_\_\_\_\_ T-Out \_\_\_\_\_  
 (F) Second Final Flow 559  Mileage 20 31 Comments Gas Sample taken  
 (G) Final Shut-In 1222  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1686  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1506  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1506

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60347

Well Name & No. Crosby "A" unit #1-23 Test No. 4 Date 8-29-14  
 Company F.G. Hall Company LLC Elevation 1944 KB 1934 GL  
 Address 9431 E Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Duke Rig #2  
 Location: Sec. 23 Twp. 20 S Rge. 15 W Co. Barton State KS

Interval Tested 3663 - 3672 Zone Tested Arbuckle  
 Anchor Length 9 Drill Pipe Run 3657 Mud Wt. 9.3  
 Top Packer Depth N/A Drill Collars Run 0 Vis 44  
 Bottom Packer Depth 3663 Wt. Pipe Run 0 WL 9.2  
 Total Depth 3672 Chlorides 6,700 ppm System LCM 0

Blow Description 1st Open - Strong blow to bottom of bucket in 50 seconds. 1st Shut In - No blow back. 2nd Open - bottom of bucket in 50 seconds. Gas to surface in 50 seconds. 2nd Shut In - blow back built to bottom of 5 gallon bucket. died off to 10 inch at end of Shut in.

Rec	Feet of	%gas	%oil	%water	%mud
5	<u>muddy oil clean oil</u>	100			
	<u>oil cut mud</u>	15		85	
	<u>gassy oil cut water</u>	20	55	25	
	<u>gassy oil cut water</u>	10	5	35	
	<u>gassy oil cut water</u>	5	55	40	

Rec Total 2840 BHT \_\_\_\_\_ Gravity 1 API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1786  Test 1150 T-On Location 0900 0900  
 (B) First Initial Flow 248  Jars 250 T-Started 0940  
 (C) First Final Flow 277  Safety Joint 75 T-Open 11:10  
 (D) Initial Shut-In 1230  Circ Sub \_\_\_\_\_ T-Pulled 14:30  
 (E) Second Initial Flow 288  Hourly Standby \_\_\_\_\_ T-Out \_\_\_\_\_  
 (F) Second Final Flow 798  Mileage 20 31 Comments Gas Sample taken  
 (G) Final Shut-In 1228  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1675  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1506  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1506

Approved By \_\_\_\_\_ Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60348

Well Name & No. Crosby "A" Unit #1-23 Test No. 5 Date 8-30-14  
 Company F.G. Holl Company LLC Elevation 1944 KB 1934 GL  
 Address 9431 E. Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Duke Rig #2  
 Location: Sec. 23 Twp. 20S Rge. 15W Co. Barton State KS

Interval Tested 3673 - 3682 Zone Tested Arbuckle  
 Anchor Length 9 Drill Pipe Run 3657 Mud Wt. 9.3  
 Top Packer Depth N/A Drill Collars Run 0 Vis 44  
 Bottom Packer Depth 3673 Wt. Pipe Run 0 WL 9.2  
 Total Depth 3682 Chlorides 6700 ppm System LCM 0

Blow Description 1<sup>st</sup> Open - Bottom of Bucket in 50 seconds. 1<sup>st</sup> Shut In - No blow back. 2<sup>nd</sup> Open - Bottom of Bucket in 5 min. 10 sec. Gas to surface in 15 minutes. Gas was unmeasurable. 2<sup>nd</sup> Shut In - No blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>water mud with oil</u>	<u>2.5</u>	<u>37.5</u>	<u>60</u>	
<u>126</u>	<u>muddy water</u>		<u>85</u>	<u>15</u>	
<u>252</u>	<u>water</u>		<u>100</u>		

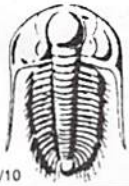
Rec Total 418 BHT 114 Gravity — API RW -22 @ 40 °F Chlorides 34000 ppm

(A) Initial Hydrostatic 1237  Test 1150 T-On Location 0145  
 (B) First Initial Flow 34  Jars 250 T-Started 0200  
 (C) First Final Flow 39  Safety Joint 75 T-Open 0320  
 (D) Initial Shut-In 1235  Circ Sub \_\_\_\_\_ T-Pulled 0640  
 (E) Second Initial Flow 52  Hourly Standby \_\_\_\_\_ T-Out 0840  
 (F) Second Final Flow 194  Mileage 20 31 Comments Gas Sample taken.  
 (G) Final Shut-In 1235  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1644  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1506  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1506

Approved By \_\_\_\_\_ Our Representative Shane King

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60349

4/10

Well Name & No. Crosby "A" Unit #1-23 Test No. 6 Date 8-30-14  
 Company F.G. Hall Company LLC Elevation 1944 KB 1934 GL  
 Address 9431 E. Central STE 100 Wichita KS 67206-2563  
 Co. Rep / Geo. Frank Greenbaum Rig Duke Rig #2  
 Location: Sec. 23 Twp. 20S Rge. 15W Co. Barton State KS

Interval Tested 3683-3692 Zone Tested Arbuckle  
 Anchor Length 9 Drill Pipe Run 3677 Mud Wt. 9.25  
 Top Packer Depth N/A Drill Collars Run 0 Vis 51  
 Bottom Packer Depth 3683 Wt. Pipe Run 0 WL 8.8  
 Total Depth 3692 Chlorides 6600 ppm System LCM 6600 0

Blow Description 1<sup>st</sup> Open - Good blow built to bottom of bucket in 3 mins. 1<sup>st</sup> shut in - No blow back  
2<sup>nd</sup> Open - fair blow to bottom of 5 gallon bucket in 6 min. 2<sup>nd</sup> shut in - No  
Blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>630</u>	<u>water with Trace oil</u>	<u>T</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 630 BHT 114 Gravity ✓ API RW 0.21 @ 40 °F Chlorides 34000 ppm

(A) Initial Hydrostatic 1783  Test 1150 T-On Location 14:30  
 (B) First Initial Flow 24  Jars 250 T-Started 15:15  
 (C) First Final Flow 48  Safety Joint 75 T-Open 16:25  
 (D) Initial Shut-In 1240  Circ Sub \_\_\_\_\_ T-Pulled 19:50  
 (E) Second Initial Flow 62  Hourly Standby \_\_\_\_\_ T-Out 21:30  
 (F) Second Final Flow 263  Mileage 20 31 Comments \_\_\_\_\_  
 (G) Final Shut-In 1239  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1640  Straddle \_\_\_\_\_

Initial Open 5  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 48  Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Shut-In 90  Day Standby \_\_\_\_\_ Sub Total 0  
 Sub Total 1506 Total 1506 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative [Signature]

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