

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

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 <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)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom

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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Form	ACO1 - Well Completion
Operator	Jaspar Co.
Well Name	3DR UNIT 1
Doc ID	1459751

Perforations

Shots Per Foot	Perforation Top	Perforation Bottom	BridgePlugType	BridgePlugSet At	Material Record
			CIBP Cast Iron Bridge Plug	3390	
4	3349	3351			250 GAL 15% MCA, 375 GAL 20% NE
4	3307	3309			250 GAL 15% MCA, 500 GAL 20% NE
4	3286	3288			250 GAL 15% MCA, 500 GAL 20% NE
4	3134	3137			500 GAL 20% MCA
4	3135	3138			250 GAL 15% MCA



Scale 1:240 Imperial

Well Name: 3DR UNIT #1
Surface Location: NE NE NW NW Sec. 14 -7S - 19W
Bottom Location:
API: 15-163-24380
License Number: 34903
Spud Date: 1/2/2019 Time: 2:00 PM
Region: ROOKS COUNTY
Drilling Completed: 1/8/2019 Time: 10:08 AM
Surface Coordinates: 220' FNL & 1110' FWL
Bottom Hole Coordinates:
Ground Elevation: 1951.00ft
K.B. Elevation: 1956.00ft
Logged Interval: 2800.00ft To: 3550.00ft
Total Depth: 3550.00ft
Formation: LANSING - KANSAS CITY; ARBUCKLE
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: JASPAR CO
Address: P.O. BOX 1120
HAYS, KS 67601
Contact Geologist: SHANE VEHIGE
Contact Phone Nbr: (785) 23-6982
Well Name: 3DR UNIT #1
Location: NE NE NW NW Sec. 14 -7S - 19W
API: 15-163-24380
Pool: State: KANSAS Field: GROVER
Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.4121846
Latitude: 39.4514025
N/S Co-ord: 220' FNL
E/W Co-ord: 1110' FWL

LOGGED BY



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

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

Name: JEFF LAWLER

CONTRACTOR

Contractor: WW DRILLING, LLC
 Rig #: 8
 Rig Type: MUD ROTARY
 Spud Date: 1/2/2019
 TD Date: 1/8/2019
 Rig Release: 1/9/2019
 Time: 2:00 PM
 Time: 10:08 AM
 Time: 11:00 PM

ELEVATIONS

K.B. Elevation: 1956.00ft
 K.B. to Ground: 5.00ft
 Ground Elevation: 1951.00ft

NOTES


DUE TO ECONOMICAL RECOVERY ON DST #6 DECISION WAS MADE TO RUN PRODUCTION CASING AND FURTHER EVALUATE THE ZONE UPON COMPLETION.

RESPECTFULLY SUBMITTED,
 JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	3DR UNIT #1				REED #1				REED OWWO #1				JACKSON #4				JACKSON OWWO#1											
	1956		1951		1961		1953		1956		1956		1966		1966		1966											
	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS	LOG TOPS	SAMPLE TOPS										
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM										
ANHYDRITE TOP	1463	493	1465	491	1451	510	-	17	-	19	1471	482	+	11	+	9	1460	496	-	3	-	5	1483	483	+	10	+	8
BASE	1497	459	1500	456	1504	457	+	2	-	1	1498	455	+	4	+	1	1492	464	-	5	-	8	1516	450	+	9	+	6
TOPEKA	2911	-955	2910	-954	2922	-961	+	6	+	7	2913	-960	+	5	+	6	2910	-954	-	1	+	0	2922	-956	+	1	+	2
HEEBNER SHALE	3111	-1155	3111	-1155	3124	-1163	+	8	+	8	3113	-1160	+	5	+	5	3111	-1155	+	0	+	0	3122	-1156	+	1	+	1
TORONTO	3133	-1177	3132	-1176	3149	-1188	+	11	+	12	3136	-1183	+	6	+	7	3135	-1179	+	2	+	3	3145	-1179	+	2	+	3
LKC	3153	-1197	3151	-1195	3164	-1203	+	6	+	8	3153	-1200	+	3	+	5	3153	-1197	+	0	+	2	3164	-1198	+	1	+	3
BKC	3374	-1418	3374	-1418	3384	-1423	+	5	+	5	3373	-1420	+	2	+	2	3373	-1417	-	1	-	1	3383	-1417	-	1	-	1
CONGLOMERATE																												
ARBUCKLE	3469	-1513	3461	-1505	3458	-1497	-	16	-	8	3424	-1471	-	42	-	34	3458	-1502	-	11	-	3	3449	-1483	-	30	-	22
TOTAL DEPTH	3552	-1596	3550	-1594	3470	-1509	-	87	-	85	3471	-1518	-	78	-	76	3745	-1789	+	193	+	195	3495	-1529	-	67	-	65

DST #1 LKC C _D 3175' - 3215'



DRILL STEM TEST REPORT

Jaspar Co.
 PO Box 1120
 Hays, Ks 67601
 ATTN: Jeff Lowler

14 - 7S - 19W

3DR Unit #1

Job Ticket: 65387 **DST#: 1**

Test Start: 2019.01.05 @ 21:30:00

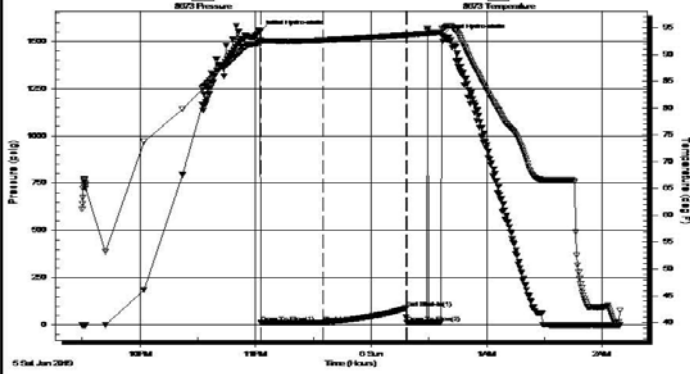
GENERAL INFORMATION:

Formation: **Lansing C, D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:02:45
 Time Test Ended: 02:09:30
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: #77
 Interval: **3175.00 ft (KB) To 3215.00 ft (KB) (TVD)**
 Total Depth: 3215.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 1956.00 ft (KB)
 1951.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8673

Press@RunDepth: 13.41 psig @ ft (KB)
 Start Date: 2019.01.05 End Date: 2019.01.06
 Start Time: 21:30:05 End Time: 02:09:29
 Capacity: 8000.00 psig
 Last Calib.: 2019.01.06
 Time On Btm: 2019.01.05 @ 23:02:30
 Time Off Btm: 2019.01.06 @ 00:36:45

TEST COMMENT: 30 - IFF - No Surface Blow
 45 - ISI - No Return
 FFP - Opened tool for 10 min. No Surface blow, Flushed Tool bubbled, Pulled Tool



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1554.62	92.68	Initial Hydro-static
1	11.91	92.13	Open To Flow (1)
33	13.41	92.67	Shut-In(1)
76	89.25	93.64	End Shut-In(1)
76	12.92	93.64	Open To Flow (2)
95	1531.88	94.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100%m - Oil Spots	0.02

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 65387

Printed: 2019.01.06 @ 07:19:38

DST #2 LKC E - F 3214' - 3242'

<p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT	
	<p>Jaspar Co. PO Box 1120 Hays, Ks 67601 ATTN: Jeff Lowler</p>	<p>14 - 7S - 19W 3DR Unit #1 Job Ticket: 65388 DST#: 2 Test Start: 2019.01.06 @ 08:19:00</p>

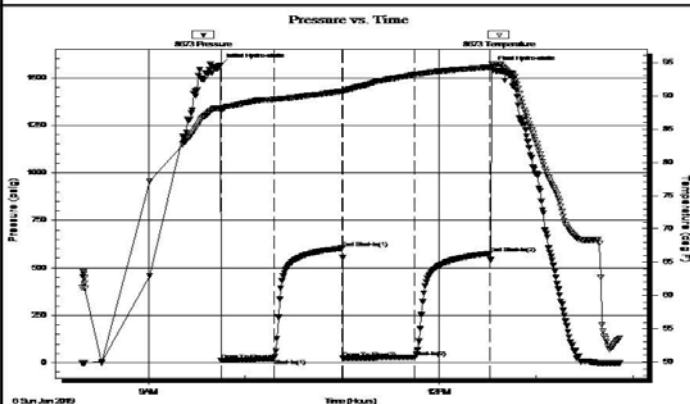
GENERAL INFORMATION:

Formation: **Lansing E& F**
 Deviated: No Whipstock ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:45:00 Tester: Royal Fisher
 Time Test Ended: 13:52:30 Unit No: #77
 Interval: **3214.00 ft (KB) To 3242.00 ft (KB) (TVD)** Reference Elevations: 1956.00 ft (KB)
 Total Depth: 3242.00 ft (KB) (TVD) 1951.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8673

Press@RunDepth: 30.51 psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.01.06 End Date: 2019.01.06 Last Calib.: 2019.01.06
 Start Time: 08:19:05 End Time: 13:52:29 Time On Btm: 2019.01.06 @ 09:44:45
 Time Off Btm: 2019.01.06 @ 12:32:30

TEST COMMENT: 30 - IFP - Surface blow built up to 1 1/4"
 45 - ISI - No Return
 45 - FFP - Stayed at a weak surface blow throughout
 45 - FSI - Got a faint return 35 mins. into shut in.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1568.09	88.17	Initial Hydro-static
1	12.26	87.62	Open To Flow (1)
33	22.67	89.44	Shut-In(1)
76	602.87	90.70	End Shut-In(1)
76	23.94	90.57	Open To Flow (2)
121	30.51	93.18	Shut-In(2)
167	575.83	94.31	End Shut-In(2)
168	1554.19	94.70	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
45.00	OSWM - Oil Spots - 2%w - 98%m	0.22


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

Trilobite Testing, Inc

Ref. No: 65388

Printed: 2019.01.06 @ 21:33:17

DST #3 LKC G 3240' - 3253'

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Jaspar Co. PO Box 1120 Hays, Ks 67601 ATTN: Jeff Lowler	14 - 7S - 19W 3DR Unit #1 Job Ticket: 65389 DST#: 3 Test Start: 2019.01.06 @ 19:38:00

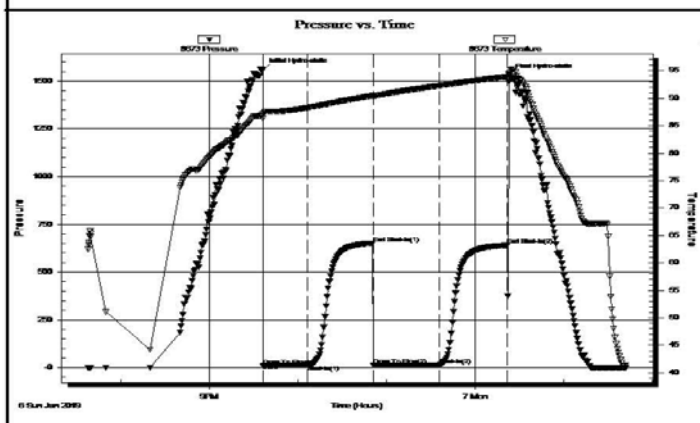
GENERAL INFORMATION:

Formation: LKC - G	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock ft (KB)	Tester: Royal Fisher
Time Tool Opened: 21:36:30	Unit No: #77
Time Test Ended: 01:42:30	Reference Elevations: 1956.00 ft (KB)
Interval: 3240.00 ft (KB) To 3253.00 ft (KB) (TVD)	1951.00 ft (CF)
Total Depth: 3253.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches Hole Condition: Fair	

Serial #: 8673

Press@RunDepth: 13.87 psig @ ft (KB)	Capacity: 8000.00 psig
Start Date: 2019.01.06 End Date: 2019.01.07	Last Calib.: 2019.01.07
Start Time: 19:38:05 End Time: 01:42:29	Time On Btm: 2019.01.06 @ 21:36:15
	Time Off Btm: 2019.01.07 @ 00:23:15

TEST COMMENT: 30 - IFP - Surface blow slow ly built to almost 3/4"
 45 - ISI - No Return
 45 - FFP - A very faint surface blow started 28 mins into open then died back off
 45 - FSI - No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1558.89	87.16	Initial Hydro-static
1	9.52	86.29	Open To Flow (1)
31	12.09	88.24	Shut-In(1)
75	652.07	90.47	End Shut-In(1)
76	11.79	90.21	Open To Flow (2)
120	13.87	92.25	Shut-In(2)
166	641.22	93.91	End Shut-In(2)
167	1531.19	94.49	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	Mud - 100%m	0.02

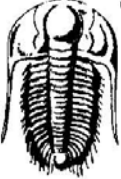
Gas Rates		
Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc

Ref. No: 65389

Printed: 2019.01.07 @ 07:08:06

DST #4 LKC H - L 3267' - 3371'

 <p>TRILOBITE TESTING, INC.</p>	DRILL STEM TEST REPORT	
	Jaspar Co. PO Box 1120 Hays, Ks 67601 ATTN: Jeff Lowler	14 - 7S - 19W 3DR Unit #1 Job Ticket: 65390 DST#: 4 Test Start: 2019.01.07 @ 14:37:00

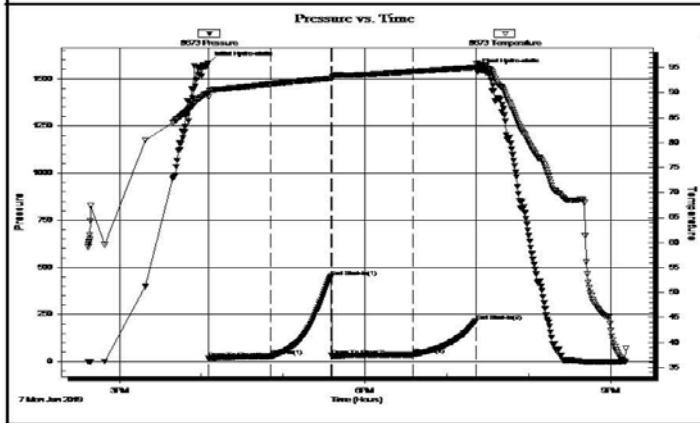
GENERAL INFORMATION:

Formation: LKC = H - L	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock ft (KB)	Tester: Royal Fisher
Time Tool Opened: 16:05:15	Unit No: #77
Time Test Ended: 21:11:45	Reference Elevations: 1956.00 ft (KB)
Interval: 3267.00 ft (KB) To 3371.00 ft (KB) (TVD)	1951.00 ft (CF)
Total Depth: 3371.00 ft (KB) (TVD)	KB to GR/CF: 5.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Fair

Serial #: 8673

Press@RunDepth: 36.20 psig @ ft (KB)	Capacity: 8000.00 psig
Start Date: 2019.01.07 End Date: 2019.01.07	Last Calib.: 2019.01.07
Start Time: 14:37:05 End Time: 21:11:44	Time On Btm: 2019.01.07 @ 16:05:00
	Time Off Btm: 2019.01.07 @ 19:21:45

TEST COMMENT: 45 - IFP - Surface blow gradually built up to 1 1/2"
 45 - ISI - No Return
 60 - FFP - Weak surface blow started 3 mins. in and built up to 1 1/4"
 45 - FSI - No Return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1585.46	89.96	Initial Hydro-static
1	16.81	89.04	Open To Flow (1)
46	28.21	91.74	Shut-In(1)
90	451.36	92.84	End Shut-In(1)
91	31.93	92.73	Open To Flow (2)
151	36.20	94.22	Shut-In(2)
197	215.27	95.01	End Shut-In(2)
197	1548.56	95.74	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
59.00	OCM - 35%oil - 65%mud	0.29

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

Trilobite Testing, Inc

Ref. No: 65390

Printed: 2019.01.08 @ 07:11:52

ROCK TYPES










 Dolprim	 shale, grn	 Carbon Sh	 shale, red
 Lmst fw7>	 shale, gry	 Shblk	 Ss
			 Arg/Shale

ACCESSORIES

MINERAL • Sandy	FOSSIL ◊ Oolite	TEXTURE c Chalky
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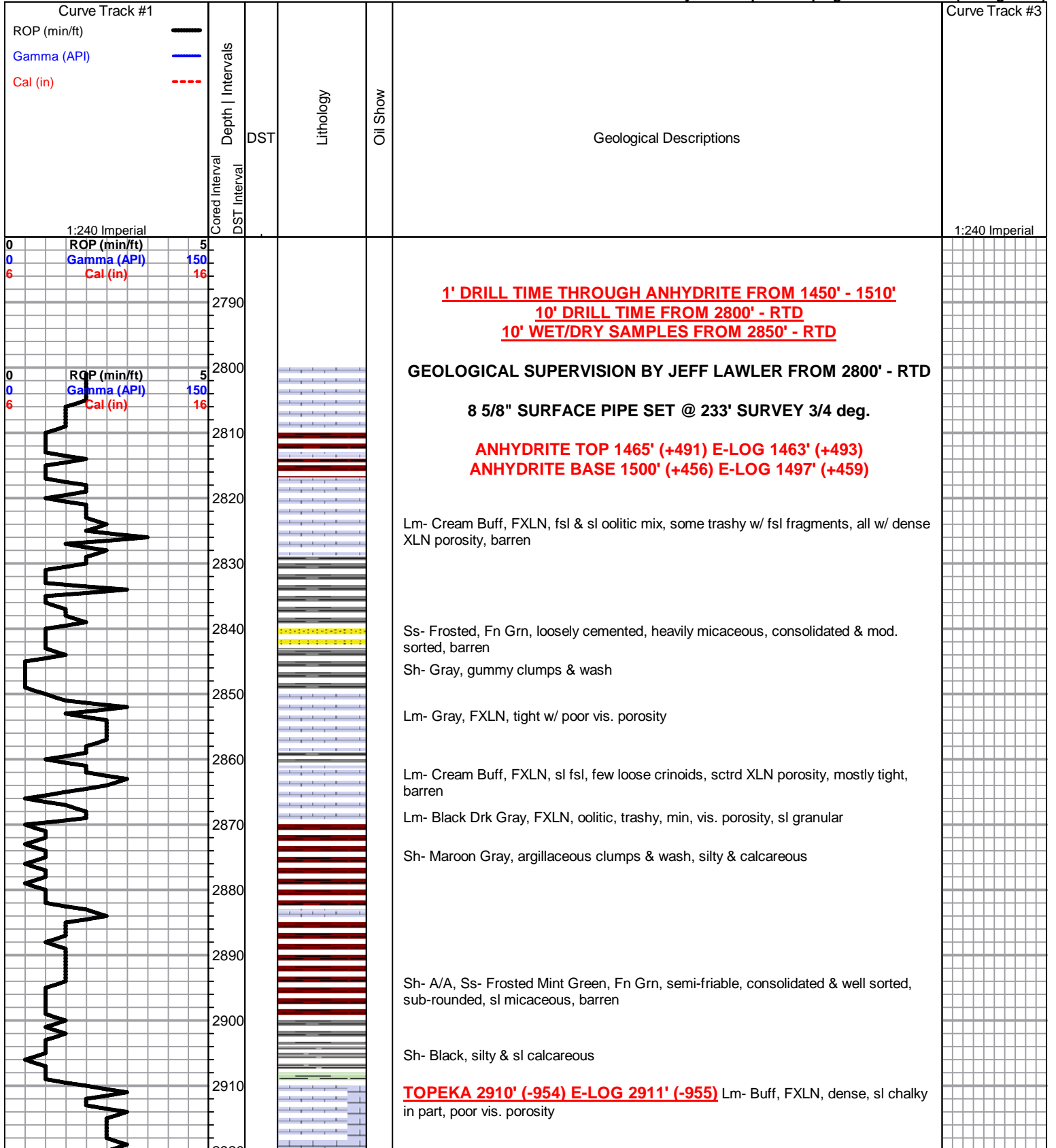
OTHER SYMBOLS

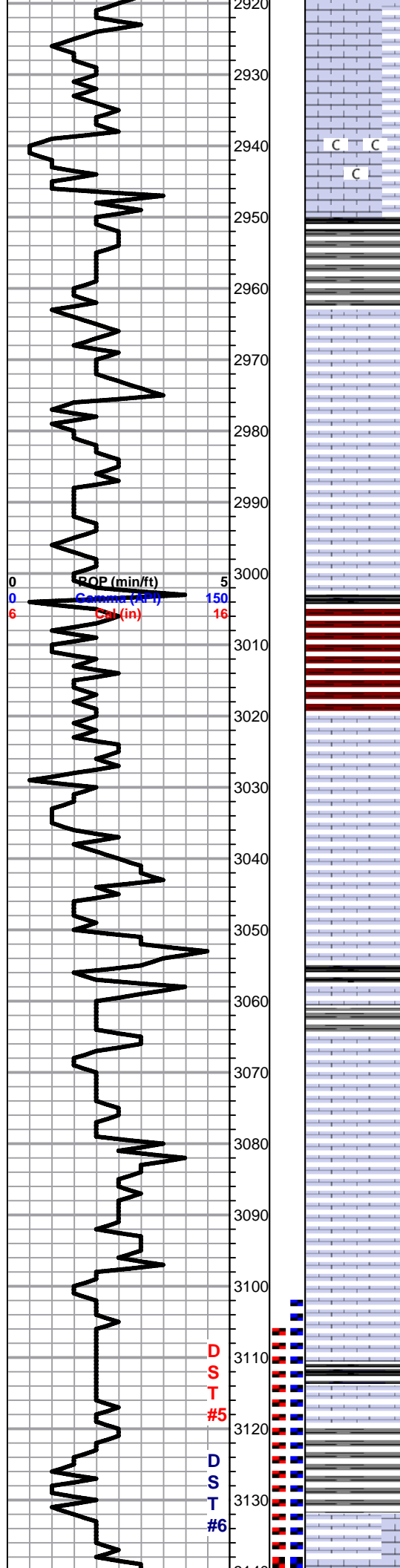
MISC

-  Daily Report
-  Digital Photo
-  Document
-  Folder
-  Link
-  Vertical Log File
-  Horizontal Log File
-  Core Log File
-  Drill Cuttings Rpt

DST

-  DST Int
-  DST alt





Lm- Tan, VFXLN, dense, well cemented sl cherty Ls w/o vis. porosity

Lm- Cream Buff, VF-FXLN, dense & tight, some chalky in part, poor vis, porosity, barren

Sh- Black Gray Maroon, fissile & carbonaceous, silty & calcareous

Lm- Tan Cream Buff, FXLN, fsl & oolitic, densely packed, dense secondary reXLN porosity & clear replacement cementation, much soft white chalk, barren

A/A, sl influx of soft white chalk

Lm- Cream Off White, FXLN, trashy & fsl, heavily mottled, abundant soft white chalk

Lm- Buff, A/A

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

Lm- Cream Buff Gray, fxln, dense, fsl, heavily mottled, sctrd to dense XLN, some w/ dense fractured XLN porosity, some soft white chalk, barren

Lm- Cream Off White, FXLN, fsl & sl oolitic, gritty & semi granular, mod well dev. vry dense XLN porosity & some sctrd fracturing, vry clean & barren, much soft white chalk

Sh- Black Gray Green, fissile & carbonaceous, silty & calcareous, gummy wash

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

Lm- Cream Semi Translucent- FXLN, sl dolomitic Ls w/ vry dense XLN porosity, clean & barren

Lm- Cream Tan Brown, mix of well dev. sl granular dolomitic Ls w/ consistent XLN porosity, & tight dark colored cherty Ls w/o vis. porosity

Lm- Cream Off White, fsl & oolitic, dense fn ppt inter fsl porosity, SCTRD DRK STN, TR FO, WK ODR

Lm- Cream Buff, FXLN, fsl, sctrd lt mottling, XLN porosity, some soft white chalk

Lm- Cream, FXLN, fsl, dense fractured & XLN porosity, some sctrd clear replacement cementation, barren, sctrd mottling, several pcs of sl cherty Ls w/ min. vis. porosity

Lm- Buff, FXLN, sl fsl, mostly tight w/ sctrd XLN & poor vis. porosity

HEEBNER 3111' (-1155) E-LOG 3111' (-1155) Sh- Black, fissile & carbonaceous

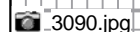
Sh- Gray Maroon, gummy clumps, gritty & earthy

TORONTO 3132' (-1176) E-LOG 3133' (-1177) Lm- Cream Off White, F-Med XLN, fsl w/ fusulinids & mod. well developed w/ ppt inter fsl & XLN porosity, LT DRK STN, SL TR FO, WK ODR

DST #6 TORONTO
3103' - 3169'
(STRADDLE)
15-45-15-45

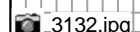
692' TOTAL FLUID
258' FREE OIL
Gr: 36
248' MCO
(70%O,30%M)
124' MCO
(75%O,25%M)
62' GMCO
(25%G, 50%O
25%M)

IFP: 58-193#
FFP: 172-248#
SIP: 1016-981#
BHT: 102 deg.



DST #5 TORONTO
3103' - 3155'
(STRADDLE)

MISRUN
527' MUD

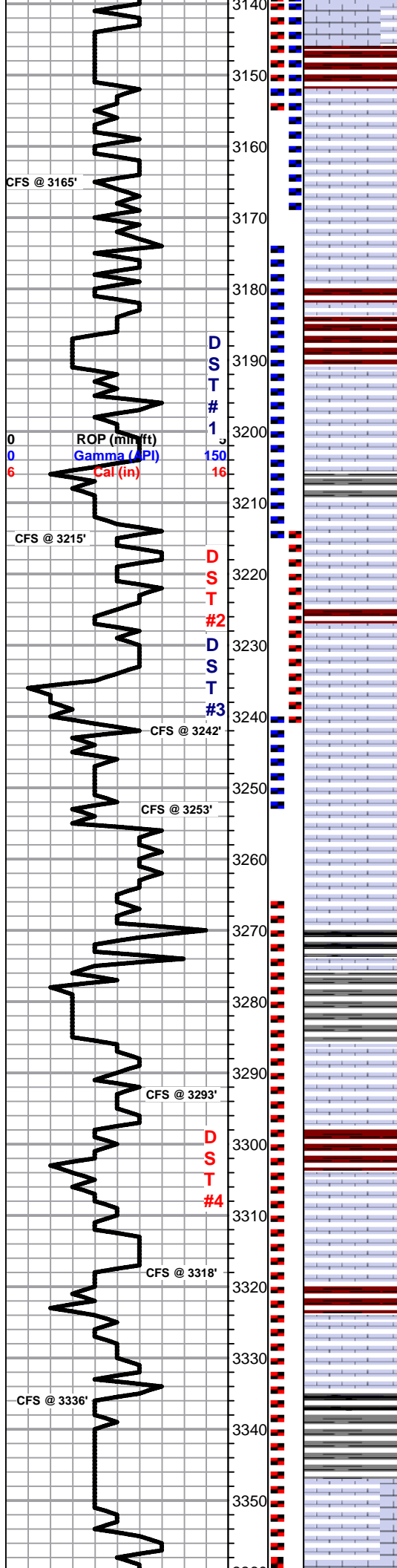


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Sh- Maroon Brown, gritty & earthy, sl waxy

LKC 3151' (-1195) E-LOG 3153' (-1197) Lm- Off White, FXLN, oolitic, loosely cemented, dense XLN & secondary (fractured??) porosity, vry clean & barren

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

Lm- Off White Cream, VF-FXLN, dense, mostly well cemented & tight w/ sctrd XLN porosity, some soft white chalk

Sh- Maroon Gray, gritty & earthy, gummy clumps

① Lm- Cream Off White, F-Med XLN, fsl w/ fusulinids, mostly consistent XLN & ppt inter fsl porosity, SCTRD LT STN, NSFO, NO ODR

Sh- Gray Maroon, argillaceous clumps, gritty & earthy

Lm- Cream Buff, FXLN, sl fsl, poorly dev. w/ sctrd XLN porosity, clean & barren

① Lm- Off White, FXLN, sl fsl & oolitic, sctrd ppt inter oolite & XLN porosity, SCTRD LT STN, TR FO, WK ODR

① Lm- Cream Off White, FXLN, oolitic & fsl w/ fusulinids, few w/ glauconite inclusions, sctrd ppt inter oolite porosity, SCTRD DRK STN, SL TR FO, WK ODR, several pcs of FXLN dolomite & dolomitic Ls w/ consistent XLN porosity, massive, barren, few pcs of fresh bedded chert w/o vis. porosity

① Lm- Cream Off White, FXLN, oolitic & sctrd oomoldic, poor inter moldic connectivity, dense XLN & sctrd vuggy porosity, SCTRD TO CONSISTENT DRK STN, FR SFO WHEN HEATED, FR SL SULPHURIC ODR, few pcs sl chalky in part

Lm- Cream Tan, VF-FXLN, dense, well cemented, sctrd micro XLN porosity, clean & barren

Lm- Gray, FXLN, dense, well cemented & mostly tight w/ sctrd XLN porosity, some soft white chalk, barren

Sh- Black Gray, fissile & carbonaceous, gummy clumps

Lm- Gray, FXLN, trashy fsl mix, some w/ fsl fragments, XLN porosity

Sh- Gray Marron Brown, gummy clumps, semi-waxy

① Lm- Buff Cream Off White, Vf Grn FXLN, dense mostly tight mix of grain supported mudstone w/ sctrd fn ppt porosity, SCTRD DRK STN, SL TR FRO, NO ODR, & tight FXLN w/ sctrd XLN porosity, clean & barren
 ① Chert- Milky Gray, fresh bedded w/ sctrd ppt & XLN porosity, LT STN, NSFO, TR ODR??

① Lm- Cream Off White, FXLN, well cemented, dense, vry fn ppt & XLN porosity, SCTRD DRK STN, SL TRFO, TR ODR??, several pcs of sl fsl FXLN w/ sctrd fn ppt & XLN inter XLN porosity, SCTRD DRK STN, NSFO, ODR A/A

Sh- Maroon Gray, gummy clumps

① Lm- Cream Off White, FXLN, oolitic, mod. well dev. w/ mostly consistent ppt inter oolite porosity, SCTRD TO SUB-SAT DRK STN, TR FO, FEW PCS W/ GSY OIL UPON CRUSH, TR ODR

Sh- Black Gray Maroon, fissile & carbonaceous & abundant argillaceous wash, gritty & earthy

Lm- Off White Buff, VF-FXLN, dense, well cemented, mostly tight, sl fsl, poor vis. to sctrd XLN porosity, some soft white chalk, all clean & barren

Lm- Tan. FXLN, semi-trashy, massive, oolitic, loosely cemented & semi-crumbly, poor

SHORT TRIP STRAP -1.42' SURVEY 1 deg

DST #1 LKC C&D 3175' - 3215' 30-45-10-0

5' OSM

IFP: 11-13# FFP: N/A SIP: 89-N/A#

3193.jpg

DST #2 LKC E-F 3214' - 3242' 30-45-30-45

45' OSWM (2%W, 98%M)

IFP: 12-23# FFP: 24-31# SIP: 603-576# BHT: 94 deg.

3228.jpg

3238.jpg

3244.jpg

DST #3 LKC G 3240' - 3253' 30-45-45-45

5' MUD

IFP: 10-12# FFP: 12-14# SIP: 652-641#

3286.jpg

3290.jpg

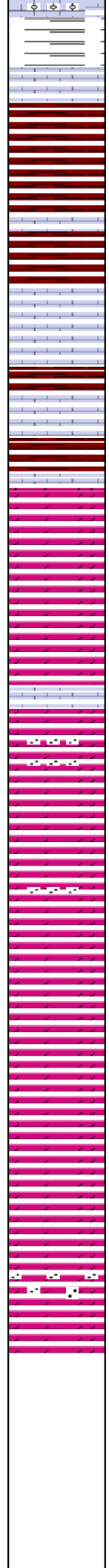
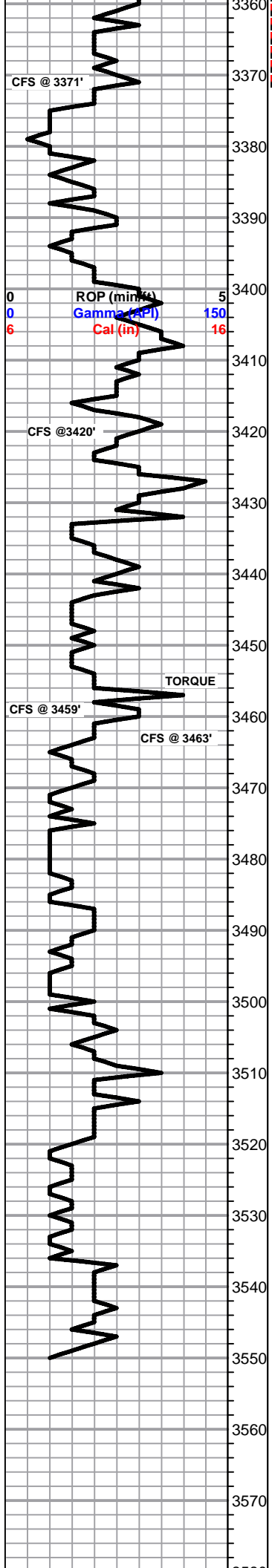
3310.jpg

3326.jpg

DST #4 LKC H-L 3267' - 3371' 45-45-60-45

59' OCM (35%O, 65%M)

IFP: 16-28# FFP: 31-36# SIP: 451-245# BHT: 95 deg.



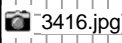
matrix development, sctrd XLN porosity, barren

Lm- Cream Buff, VF-FXLN, dense, well cemented, sl chalky in part, poor XLN porosity, barren

BKC 3374' (-1418) E-LOG 3374' (-1418) Sh- Maroon Gray Green, gritty & earthy, sandy, waxy

Lm- Cream Off White Purple hue, FXLN, fsl & sl oolitic, most well cemented, sctrd XLN porosity, few sl chalky in part, clean & barren

Lm- Cream Off White, FXLN, oolitic & oomoldic, sctrd fn ppt & vuggy porosity, well cemented, SAT DRK STN, FR SHW FR O, WK ODR, LOW GRAVITY OIL



Dolomite- Cream Tan Yellow Purple, FXLN, dense, well cemented, most semi tight w/ micro XLN & XLN porosity, barren

Dolo- Cream Tan, Med XLN, consistent developed XLN porosity, barren, semi-rhombic

Dol- A/A w/ Green Hue, several pcs of mint green waxy shale

Dolo- Cream Maroon, FXLN, well cemented, consistent micro XLN porosity, barren

ARBUCKLE 3461' (-1505) E-LOG 3469' (-1513) 3465'-Dolo- Cream Off White, F-Med XLN, mix of massive Med XLN w/ sctrd-consistent XLN porosity, w/ glauconite & Med sub-angular qtz. inclusions, few pcs of pink cherty dolomite, clean & barren

Dolo- Clear Frosted, Med Grn, sub-rounded sandy dolomite, glauconite inclusions A/A, light dolomitic cementation, semi-friable to friable, clean & barren

3470'- Dolo- Cream, F-Crs XLN, heavy glauconite inclusions, sub-rounded Fn-Med qtz. inclusions, euhedral rhombs, poor to dense inter XLN porosity, clean & barren

Dolo- Cream, FXLN, A/A w/ decreasing ratio of qtz & glauconite inclusions, less dev. w/ micro XLN porosity, barren

Dolo- Cream Maroon Hue, VF-FXLN, dense, well cemented, dense micro XLN porosity, some tight cherty Dolo, barren

Dolo- Maroon, FXLN, well to loosely cemented, mostly tight, micro XLN porosity

Dolo- Cream Maroon, Med XLN mix of heavy w/ glauconite & sub-rounded med gr qtz inclusions & A/A w/ med XLN euhedral rhombs, all barren

Dolo- Cream Clear, Med-Crs XLN, heavy w/ glauconite & sub-rounded med gr qtz inclusions, all well dev. w/ consistent ppt inter XLN porosity, barren

Dolo- Clear SI Frosted, Crs Grn, sandy friable angular - sub-angular clusters w/ Ca cementation, some heavy w/ glauconite inclusions, barren

Dolo- White, F-Med XLN, well cemented, sctrd glauconite inclusions, pristine & barren

RTD 3550' (-1594) LTD 3552' (-1596) @ 10:08 1/8/2019

- DST 5.jpg
- DST 5_BTMPKR.jpg
- DST 6.jpg
- DST 6_BTMPKR.jpg

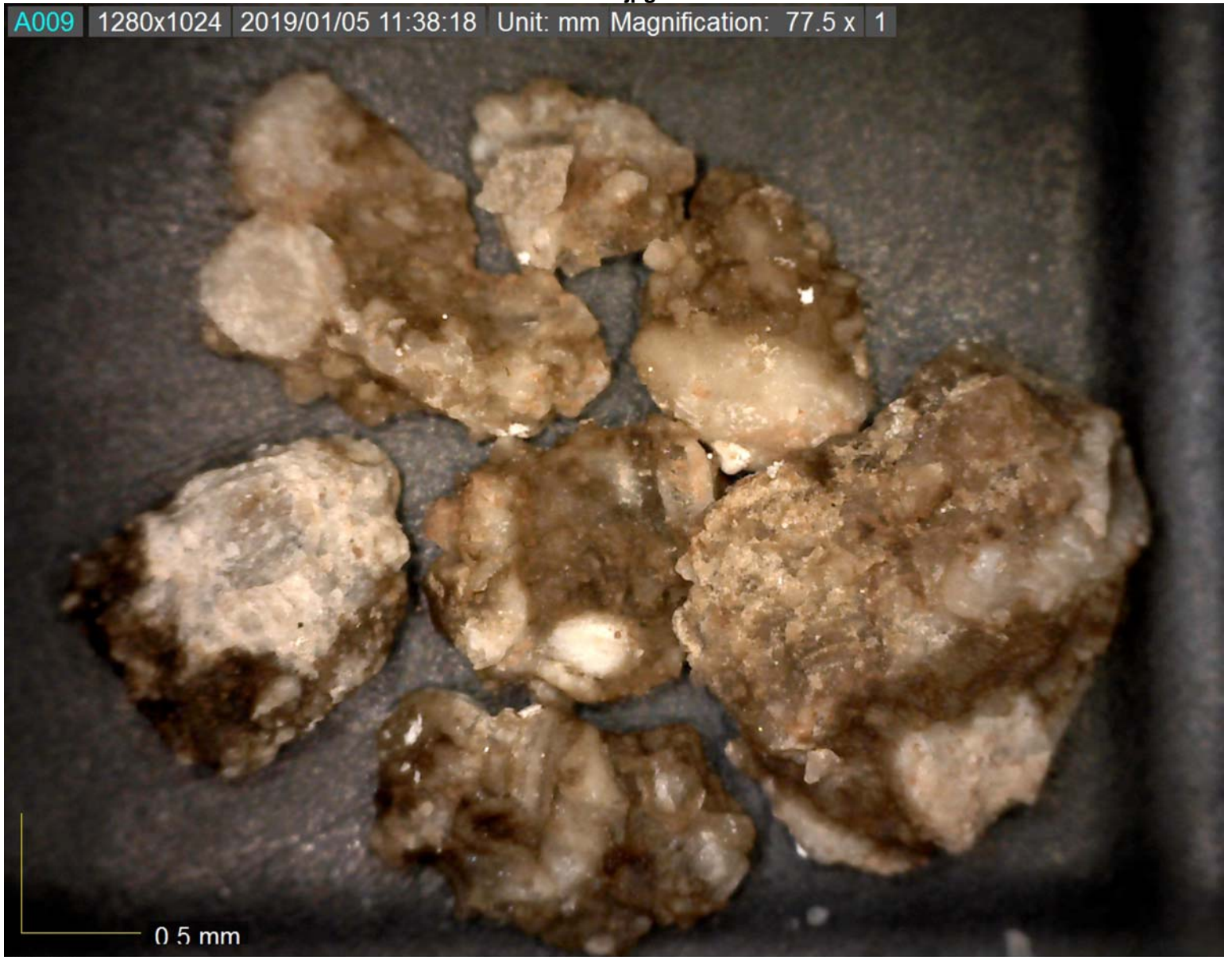
15 STAND SHORT TRIP CTCH SURVEY 1 deg. TOH FOR LOG LOGGED BY ELI

3090.jpg

A008 1280x1024 2019/01/05 08:44:27 Unit: mm Magnification: 77.5 x 1



3090'



3132'





3228'









3290'


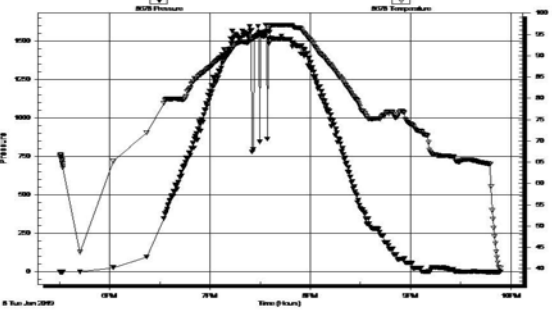


3310'





34116'

	DRILL STEM TEST REPORT																																										
	Jasper Co. PO Box 1120 Hays, Ks 67601 ATTN: Jeff Lowler	14 - 7S - 19W 3DR Unit #1 Job Ticket: 65391 Test Start: 2019.01.09 @ 00:00:00	DST#: 5																																								
GENERAL INFORMATION:																																											
Formation: Toronto Deviated: No Whipstock Time Tool Opened: Time Test Ended:	ft (KB)	Test Type: Conventional Straddle (Initial) Tester: Royal Fisher Unit No: #77																																									
Interval: 3106.00 ft (KB) To 3155.00 ft (KB) (TVD) Total Depth: 3552.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair		Reference Elevations: 1956.00 ft (KB) 1951.00 ft (CF) KB to GR/CF: 5.00 ft																																									
Serial #: 8678 Below (Straddle)																																											
Press@RunDepth: psig @ 3180.00 ft (KB) Start Date: 2019.01.08 Start Time: 17:30:05	Capacity: 8000.00 psig Last Calib.: 2019.01.09 Time On Btm: Time Off Btm:	End Date: 2019.01.08 End Time: 21:53:44																																									
TEST COMMENT: IFP - Packer failure, tried resetting tool three times pulled out																																											
Pressure vs. Time		PRESSURE SUMMARY																																									
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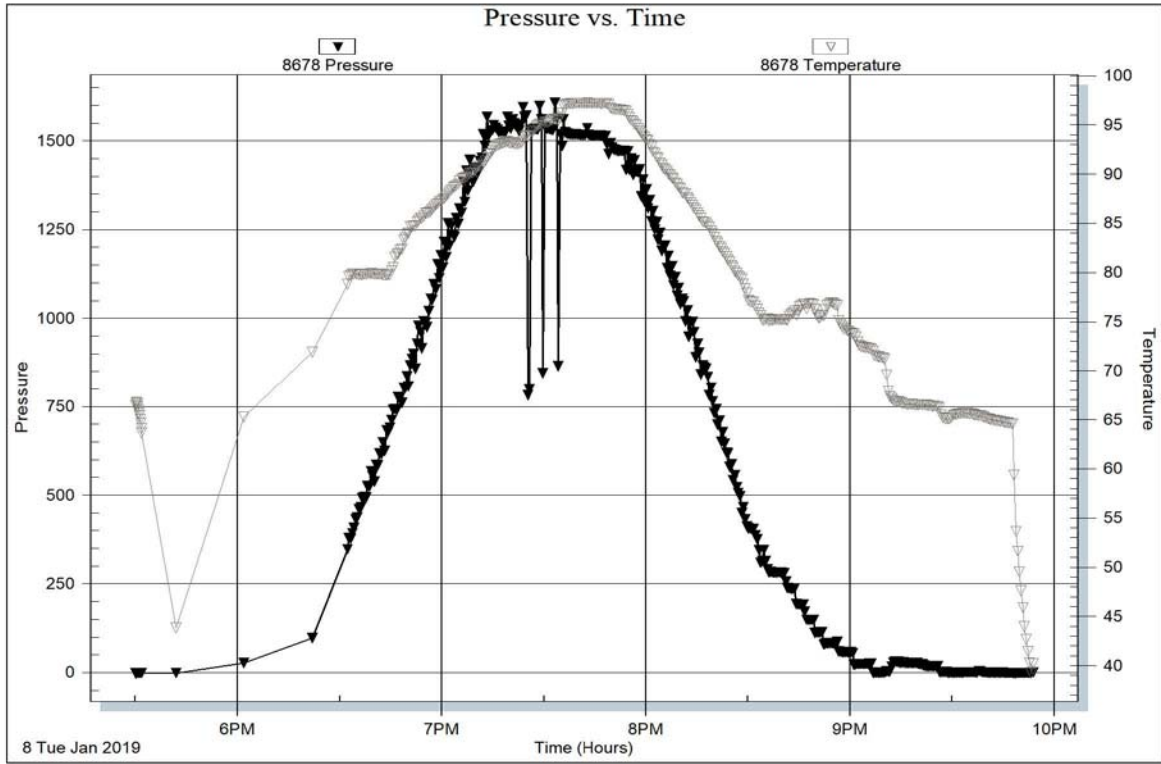
DST 5_BTMPKR.jpg


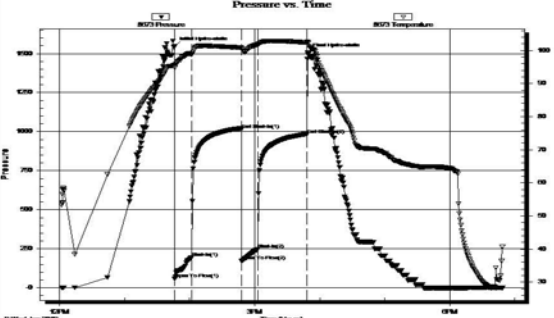
Serial #: 8678

Below (Straddler) Co.

3DR Unit #1

DST Test Number: 5



 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT																																												
Jaspar Co. PO Box 1120 Hays, Ks 67601 ATTN: Jeff Lowler	14 - 7S - 19W 3DR Unit #1 Job Ticket: 65392 DST#: 6 Test Start: 2019.01.08 @ 12:02:00																																												
GENERAL INFORMATION: Formation: Toronto Deviated: No Whipstock ft (KB) Test Type: Conventional Straddle (Initial) Time Tool Opened: 13:46:15 Tester: Royal Fisher Time Test Ended: 18:49:00 Unit No: #77 Interval: 3103.00 ft (KB) To 3169.00 ft (KB) (TVD) Total Depth: 3552.00 ft (KB) (TVD) Reference Elevations: 1956.00 ft (KB) Hole Diameter: 7.88 inches Hole Condition: Fair 1951.00 ft (CF) KB to GR/CF: 5.00 ft																																													
Serial #: 8673 Inside Press@RunDepth: 248.30 psig @ 3104.00 ft (KB) Capacity: 8000.00 psig Start Date: 2019.01.09 End Date: 2019.01.09 Last Calib.: 2019.01.09 Start Time: 12:02:05 End Time: 18:48:59 Time On Btm: 2019.01.09 @ 13:46:00 Time Off Btm: 2019.01.09 @ 15:49:00																																													
TEST COMMENT: 15 - IFI - Surface blow built to bottom of the bucket in 3 mins 45 - ISI - Return built to botom of the bucket in 14 mins 15 - FFP - Surface blow built to bottom of the bucket in 5 mins. 45 - FSI - Return built to bottom of the bucket in 20 min.																																													
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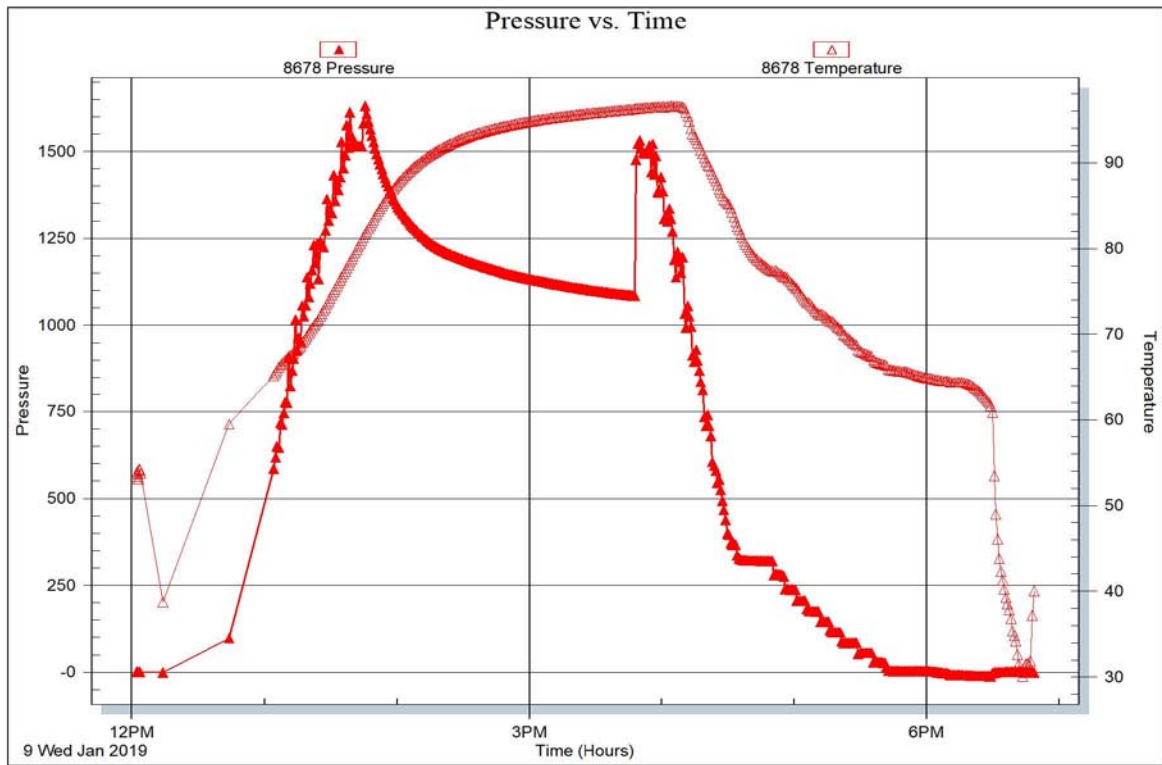
DST 6_BTMPKR.jpg

Serial #: 8678

Below (Straddler) Co.

3DR Unit #1

DST Test Number: 6



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

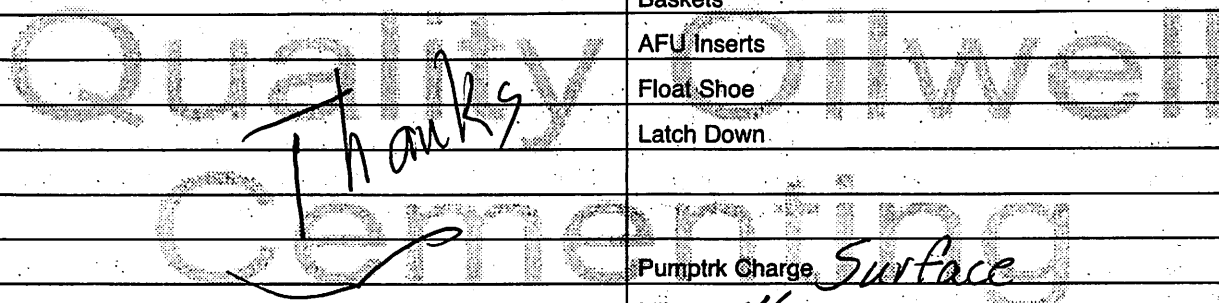
Phone 785-483-2025
Cell 785-324-1041

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

No. 1098

Date	1-2-19	Sec.	14	Twp.	7	Range	19	County	Rooks	State	KS	On Location		Finish	11:00pm
Lease								Well No. 1		Owner					
Contractor								W was		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 Jasper Company					
Hole Size								12 1/4		T.D.		233			
Csg.								8 5/8		Depth		232			
Tbg. Size										Depth					
Tool										Depth					
Cement Left in Csg.								10		Shoe Joint		Cement Amount Ordered 150 8/20 3/4 2/1000			
Meas Line								Displace		14/BL					
EQUIPMENT															
Pumptrk		20		No.		Cement		Helper		Graig		Common		120	
Bulktrk				No.		Driver		Bret		Poz. Mix				30	
Bulktrk		14		No.		Driver		Tony		Gel.				3	
Bulktrk				No.		Driver				Calcium				6	
JOB SERVICES & REMARKS															
Remarks:								Hulls							
Rat Hole								Salt							
Mouse Hole								Flowseal							
Centralizers								Kol-Seal							
Baskets								Mud CLR 48							
DN or Port Collar								CFL-117 or CD110 CAF 38							
8 5/8 on bottom. Est. Circulation								Sand							
Mit 1500K & Displace.								Handling 159							
Cement Circulated								Mileage							
FLOAT EQUIPMENT															
								Guide Shoe							
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								Pumptrk Charge Surface							
								Mileage 46							
								Tax							
								Discount							
								Total Charge							
X Signature								S. J. Island							

THANKS



GENERAL TERMS AND CONDITIONS

DEFINITIONS: In these terms and conditions, "Quality" shall mean Quality Oilwell Cementing, Inc., and "Customer" shall refer to the party identified by that term on the front of this contract. As applicable, "Job" relates to the services described on the front side of this contract, "merchandise" refers to the material described on the front of this contract and to any other materials, products, or supplies used, sold, or furnished under the requirements of this contract.

- **TERMS:** Unless satisfactory credit has been established, "CUSTOMER" must tender full cash payment to "QUALITY" before the job is undertaken or merchandise is delivered. If satisfactory credit has been established, the terms of payment for the job and/or merchandise, including bulk cement, are net cash, payable in 30 days from the completion of the job and/or delivery of the merchandise. For all past due invoices, "CUSTOMER" agrees to pay interest on amounts invoiced at a rate of 18 percent per annum until paid. Notwithstanding the foregoing in no event shall this Contract provide for interest exceeding the maximum rate of interest that "CUSTOMER" may agree to pay under applicable law. If any such interest should be provided for, it shall be and hereby is deemed to be a mistake, and this contract shall be automatically reformed to lower the rate of interest to the maximum legal contract rate, any amounts previously paid as excess interest shall be deducted from the amounts owing from the "CUSTOMER" or at the option of "QUALITY," refunded directly to "CUSTOMER." For purposes of this paragraph, QUALITY and CUSTOMER agree that KANSAS law shall apply. Any discounts granted with this contract are null and void if the charges are not paid when due.

- **ATTORNEY FEES:** In any legal action or proceeding between the parties to enforce any of the terms of this Service Contract, or in any way pertaining to the term of this Contract, the prevailing party shall be entitled to recover all expenses, including, but not limit to, a reasonable sum as and attorney's fees.

- **PRICES AND TAXES:** All merchandise listed in "QUALITY'S" current price schedule are F.O.B. QUALITY'S local station and are subject to change without notice. All prices are exclusive of any federal, state, local, or special taxes for the sale or use of the merchandise or services listed. The amount of taxes required to be paid by QUALITY shall be added to the quoted prices charged to CUSTOMER.

- **TOWING CHARGES:** QUALITY will make a reasonable attempt to get to and from each job site using its own equipment. Should QUALITY be unable to do so because of poor or inadequate road conditions, and should it become necessary to employ a tractor or other pulling equipment to get to or from the job site, the tractor or pulling equipment will be supplied by CUSTOMER or, if furnished by QUALITY, will be charged to and paid by CUSTOMER.

- **PREPARATION CHARGES:** If a job and/or merchandise is ordered and CUSTOMER cancels the order after preparation of a chemical solution or other material, CUSTOMER will pay QUALITY for the expenses incurred by QUALITY as a result of the cancellation.

- **DEADHAUL CHARGES:** Unless otherwise specified on the front of this Contract, a deadhaul charges as set forth in QUALITY'S current price book will be charged each way for each service unit which is ordered by CUSTOMER but not used.

- **SERVICE CONDITIONS AND LIABILITIES:** 1. QUALITY carries public liability and property damage insurance, but since there are so many uncertain and unknown conditions beyond QUALITY'S control, QUALITY shall not be liable for injuries to property or persons or for loss or damage arising from the performance of the job or delivery of the merchandise. Customer shall be responsible for and indemnify, defend, and hold harmless QUALITY, its officers, agents and employees, from and against any and all claims or suits for:

(A) Damage to property or for bodily injury, sickness, disease, or death, brought by any person, including CUSTOMER and/or the well owner; and:

(B) Oil spills, pollution, surface or sub-surface damage, injury to the well, reservoir loss, or damage arising from a well blowout arising out of or in connection with QUALITY'S performance of the job or furnishing of merchandise in accordance with this contract, unless such loss or damage is caused by the willful misconduct or gross negligence of QUALITY or its employees.

2. With respect to any of QUALITY'S tools, equipment, or instruments which are lost in the well or damaged when performing or attempting to perform the job or, in the case of marine operations, are lost or damaged at any time after delivery to the landing for CUSTOMER and before return to QUALITY at the landing, CUSTOMER shall either recover the lost item without cost to QUALITY or reimburse QUALITY the current replacement cost of the item unless the loss or damage results from the sole negligence of QUALITY or its employees.

3. QUALITY does not assume any liability or responsibility for damages or conditions resulting from chemical action in cements caused by contamination of water or other fluids.

WARRANTIES: 1. QUALITY warrants all merchandise manufactured or furnished by it to be free from defects in material and workmanship under normal use and service when installed, and used, and/or serviced in the manner provided and intended. QUALITY'S obligation under this warranty is expressly limited to repair replacement, or allowance for credit, at its option, for any merchandise which is determined by QUALITY to be defective. THIS IS THE SOLE WARRANTY OF QUALITY AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESS OR OTHERWISE IMPLIED, IN FACT OR IN LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE, CUSTOMER'S sole and only remedy with regard to any defective merchandise shall be the repair or replacement thereof or allowance for credit as herein provided, and QUALITY shall not be liable for any consequential, special, incidental, or punitive damages resulting from or caused by defective materials, products or supplies.

2. More specifically:

(A) Nothing in this contract shall be constructed as a warranty by QUALITY of the success or the effectiveness of the result of any work done or merchandise used, sold, or furnished under this contract.

(B) Nothing in this contract shall be construed as a warranty of the accuracy or correctness of any facts, information, or data furnished by QUALITY or any interpretation of test, meter readings, chart information, analysis or research, or recommendations made by QUALITY, unless the inaccuracy or incorrectness is caused by the willful misconduct or gross negligence of QUALITY or its employees in the preparation or furnishing of such facts, information or data. (C) Work done by QUALITY shall be under the direct supervision and control of the CUSTOMER or his agent and QUALITY will accomplish the job as an independent contractor and not as an employee or agent of the CUSTOMER.

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 1203

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
1-9-19	14	7	19	Rooks	KS		7:00pm

Location Section 8W NR 1 1/2 N E into

Lease <u>3 DR Unit</u>	Well No. <u>1</u>	Owner
Contractor <u>W/W</u>		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 <u>Production string</u>		Charge To <u>Jasper</u>
Hole Size <u>7 7/8</u>	T.D. <u>3550</u>	Street
Csg. <u>5 1/2</u>	Depth <u>3538</u>	City
Tbg. Size	Depth	State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg. <u>20</u>	Shoe Joint <u>20</u>	Cement Amount Ordered <u>465 30/100 Emdc 1/4 FF 6</u>
Meas Line	Displace <u>8484</u>	<u>150 10/ Salt + 5/ Cemente 500 gal mud per</u>

EQUIPMENT

Pumptrk <u>20</u>	No. Cementer Helper <u>3</u>	Poz. Mix
Bulktrk <u>15</u>	No. Driver <u>3</u>	Gel.
Bulktrk <u>19</u>	No. Driver <u>3</u>	Calcium

JOB SERVICES & REMARKS

Remarks:	Hulls
Rat Hole <u>30SK</u>	Salt
Mouse Hole	Flowseal
Centralizers	Kol-Seal
Baskets	Mud CLR 48
D/V or Port Collar	CFL-117 or CD110 CAF 38
	Sand

5 1/2 set @ 3538 Ball @ 3548
Flow circulation plug 30SK
Cement pump 50 gal mud clear.
Cement 5 1/2 with 585SK
Clear line & Displace plug.
Cement Circ 1/2 @ 2000
Plug landed @ 2000
2 1/2 pressure 12000

FLOAT EQUIPMENT

Guide Shoe	
Centralizer <u>7</u>	
Baskets <u>5</u>	
AFU Inserts	
Float Shoe	
Latch Down <u>1</u>	

Quality Oilwell Cementing

	Pumptrk Charge	Tax
	Mileage	Discount
<u>[Signature]</u>		Total Charge

GENERAL TERMS AND CONDITIONS

DEFINITIONS: In these terms and conditions, "Quality" shall mean Quality Oilwell Cementing, Inc., and "Customer" shall refer to the party identified by that term on the front of this contract. As applicable, "Job" relates to the services described on the front side of this contract, "merchandise" refers to the material described on the front of this contract and to any other materials, products, or supplies used, sold, or furnished under the requirements of this contract.

– TERMS: Unless satisfactory credit has been established, "CUSTOMER" must tender full cash payment to "QUALITY" before the job is undertaken or merchandise is delivered. If satisfactory credit has been established, the terms of payment for the job and/or merchandise, including bulk cement, are net cash, payable in 30 days from the completion of the job and/or delivery of the merchandise. For all past due invoices, "CUSTOMER" agrees to pay interest on amounts invoiced at a rate of 18 percent per annum until paid. Notwithstanding the foregoing in no event shall this Contract provide for interest exceeding the maximum rate of interest that "CUSTOMER" may agree to pay under applicable law. If any such interest should be provided for, it shall be and hereby is deemed to be a mistake, and this contract shall be automatically reformed to lower the rate of interest to the maximum legal contract rate, any amounts previously paid as excess interest shall be deducted from the amounts owing from the "CUSTOMER" or at the option of "QUALITY," refunded directly to "CUSTOMER." For purposes of this paragraph, QUALITY and CUSTOMER agree that KANSAS law shall apply. Any discounts granted with this contract are null and void if the charges are not paid when due.

– ATTORNEY FEES: In any legal action or proceeding between the parties to enforce any of the terms of this Service Contract, or in any way pertaining to the term of this Contract, the prevailing party shall be entitled to recover all expenses, including, but not limit to, a reasonable sum as and attorney's fees.

– PRICES AND TAXES: All merchandise listed in "QUALITY'S" current price schedule are F.O.B. QUALITY'S local station and are subject to change without notice. All prices are exclusive of any federal, state, local, or special taxes for the sale or use of the merchandise or services listed. The amount of taxes required to be paid by QUALITY shall be added to the quoted prices charged to CUSTOMER.

– TOWING CHARGES: QUALITY will make a reasonable attempt to get to and from each job site using its own equipment. Should QUALITY be unable to do so because of poor or inadequate road conditions, and should it become necessary to employ a tractor or other pulling equipment to get to or from the job site, the tractor or pulling equipment will be supplied by CUSTOMER or, if furnished by QUALITY, will be charged to and paid by CUSTOMER.

– PREPARATION CHARGES: If a job and/or merchandise is ordered and CUSTOMER cancels the order after preparation of a chemical solution or other material, CUSTOMER will pay QUALITY for the expenses incurred by QUALITY as a result of the cancellation.

– DEADHAUL, CHARGES: Unless otherwise specified on the front of this Contract, a deadhaul charges as set forth in QUALITY'S current price book will be charged each way for each service unit which is ordered by CUSTOMER but not used.

– SERVICE CONDITIONS AND LIABILITIES: 1. QUALITY carries public liability and property damage insurance, but since there are so many uncertain and unknown conditions beyond QUALITY'S control, QUALITY shall not be liable for injuries to property or persons or for loss or damage arising from the performance of the job or delivery of the merchandise. Customer shall be responsible for and indemnify, defend, and hold harmless QUALITY, its officers, agents and employees, from and against any and all claims or suits for:

(A) Damage to property or for bodily injury, sickness, disease, or death, brought by any person, including CUSTOMER and/or the well owner; and:

(B) Oil spills, pollution, surface or sub-surface damage, injury to the well, reservoir loss, or damage arising from a well blowout arising out of or in connection with QUALITY'S performance of the job or furnishing of merchandise in accordance with this contract, unless such loss or damage is caused by the willful misconduct or gross negligence of QUALITY or its employees.

2. With respect to any of QUALITY'S tools, equipment, or instruments which are lost in the well or damaged when performing or attempting to perform the job or, in the case of marine operations, are lost or damaged at any time after delivery to the landing for CUSTOMER and before return to QUALITY at the landing, CUSTOMER shall either recover the lost item without cost to QUALITY or reimburse QUALITY the current replacement cost of the item unless the loss or damage results from the sole negligence of QUALITY or its employees.

3. QUALITY does not assume any liability or responsibility for damages or conditions resulting from chemical action in cements caused by contamination of water or other fluids.

WARRANTIES: 1. QUALITY warrants all merchandise manufactured or furnished by it to be free from defects in material and workmanship under normal use and service when installed, and used, and/or serviced in the manner provided and intended. QUALITY'S obligation under this warranty is expressly limited to repair replacement, or allowance for credit, at its option, for any merchandise which is determined by QUALITY to be defective. THIS IS THE SOLE WARRANTY OF QUALITY AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESS OR OTHERWISE IMPLIED, IN FACT OR IN LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE, CUSTOMER'S sole and only remedy with regard to any defective merchandise shall be the repair or replacement thereof or allowance for credit as herein provided, and QUALITY shall not be liable for any consequential, special, incidental, or punitive damages resulting from or caused by defective materials, products or supplies.

2. More specifically:

(A) Nothing in this contract shall be constructed as a warranty by QUALITY of the success or the effectiveness of the result of any work done or merchandise used, sold, or furnished under this contract.

(B) Nothing in this contract shall be construed as a warranty of the accuracy or correctness of any facts, information, or data furnished by QUALITY or any interpretation of test, meter readings, chart information, analysis or research, or recommendations made by QUALITY, unless the inaccuracy or incorrectness is caused by the willful misconduct or gross negligence of QUALITY or its employees in the preparation or furnishing of such facts, information or data. (C) Work done by QUALITY shall be under the direct supervision and control of the CUSTOMER or his agent and QUALITY will accomplish the job as an independent contractor and not as an employee or agent of the CUSTOMER.



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14-7S-19W Rooks,KS

Start Date: 2019.01.05 @ 21:30:00

End Date: 2019.01.06 @ 02:09:30

Job Ticket #: 65387 DST #: 1

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

Printed: 2019.01.11 @ 09:33:42



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65387 **DST#: 1**
Test Start: 2019.01.05 @ 21:30:00

GENERAL INFORMATION:

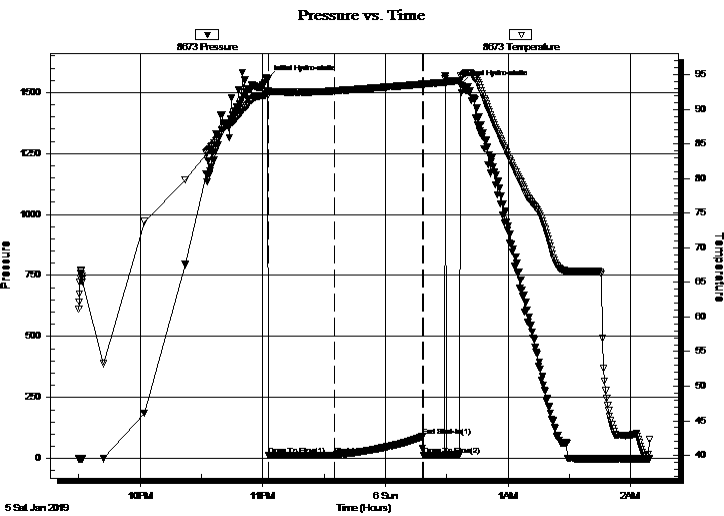
Formation: **LKC C - D**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:02:45
 Time Test Ended: 02:09:30
 Interval: **3175.00 ft (KB) To 3215.00 ft (KB) (TVD)**
 Total Depth: 3215.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: 77
 Reference Elevations: 1956.00 ft (KB)
 1951.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8673

Outside

Press@RunDepth: 13.41 psig @ 3176.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.01.05 End Date: 2019.01.06 Last Calib.: 2019.01.06
 Start Time: 21:30:05 End Time: 02:09:29 Time On Btm: 2019.01.05 @ 23:02:30
 Time Off Btm: 2019.01.06 @ 00:36:45

TEST COMMENT: 30 - IFP - No Surface Blow
 45 - ISI - No Return
 FFP - Opened tool for 10 min. No Surface blow , Flushed Tool bubbled, Pulled Tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1554.62	92.68	Initial Hydro-static
1	11.91	92.13	Open To Flow (1)
33	13.41	92.67	Shut-In(1)
76	89.25	93.64	End Shut-In(1)
76	12.92	93.64	Open To Flow (2)
95	1531.88	94.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100%- Oil Spots	0.02

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

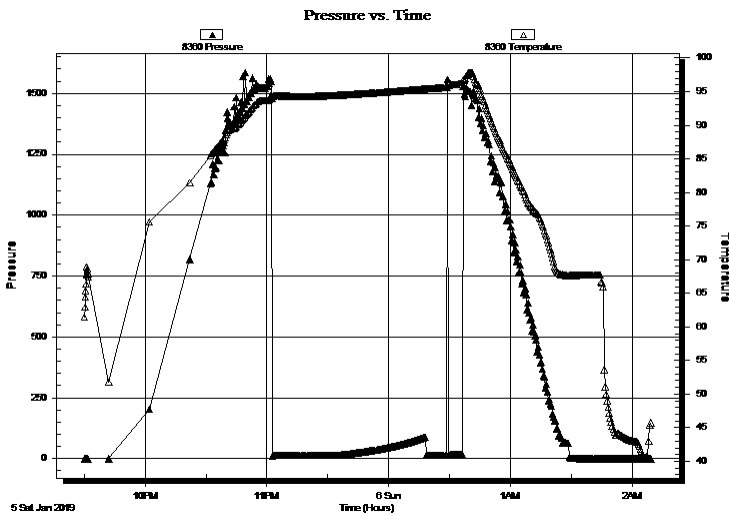
14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65387 **DST#: 1**
Test Start: 2019.01.05 @ 21:30:00

GENERAL INFORMATION:

Formation: **LKC C - D**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 23:02:45 Tester: Royal Fisher
Time Test Ended: 02:09:30 Unit No: 77
Interval: 3175.00 ft (KB) To 3215.00 ft (KB) (TVD) Reference Elevations: 1956.00 ft (KB)
Total Depth: 3215.00 ft (KB) (TVD) 1951.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8360 Outside
Press@RunDepth: psig @ 3176.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.01.05 End Date: 2019.01.06 Last Calib.: 2019.01.06
Start Time: 21:30:05 End Time: 02:09:29 Time On Btm:
Time Off Btm:

TEST COMMENT: 30 - IFP - No Surface Blow
45 - ISI - No Return
FFP - Opened tool for 10 min. No Surface blow , Flushed Tool bubbled, Pulled Tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100%- Oil Spots	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65387 **DST#: 1**
Test Start: 2019.01.05 @ 21:30:00

Tool Information

Drill Pipe:	Length: 3045.39 ft	Diameter: 3.25 inches	Volume: 31.25 bbl	Tool Weight: 2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 31.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3175.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3160.00	
Hydraulic tool	5.00			3165.00	
Packer	5.00			3170.00	20.00 Bottom Of Top Packer
Packer	5.00			3175.00	
Stubb	1.00			3176.00	
Recorder	0.00	8673	Outside	3176.00	
Recorder	0.00	8360	Outside	3176.00	
perforations	36.00			3212.00	
Bullnose	3.00			3215.00	40.00 Bottom Packers & Anchor
Total Tool Length:	60.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65387

DST#: 1

ATTN: Jeff Lowler

Test Start: 2019.01.05 @ 21:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OSM - 100%m - Oil Spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

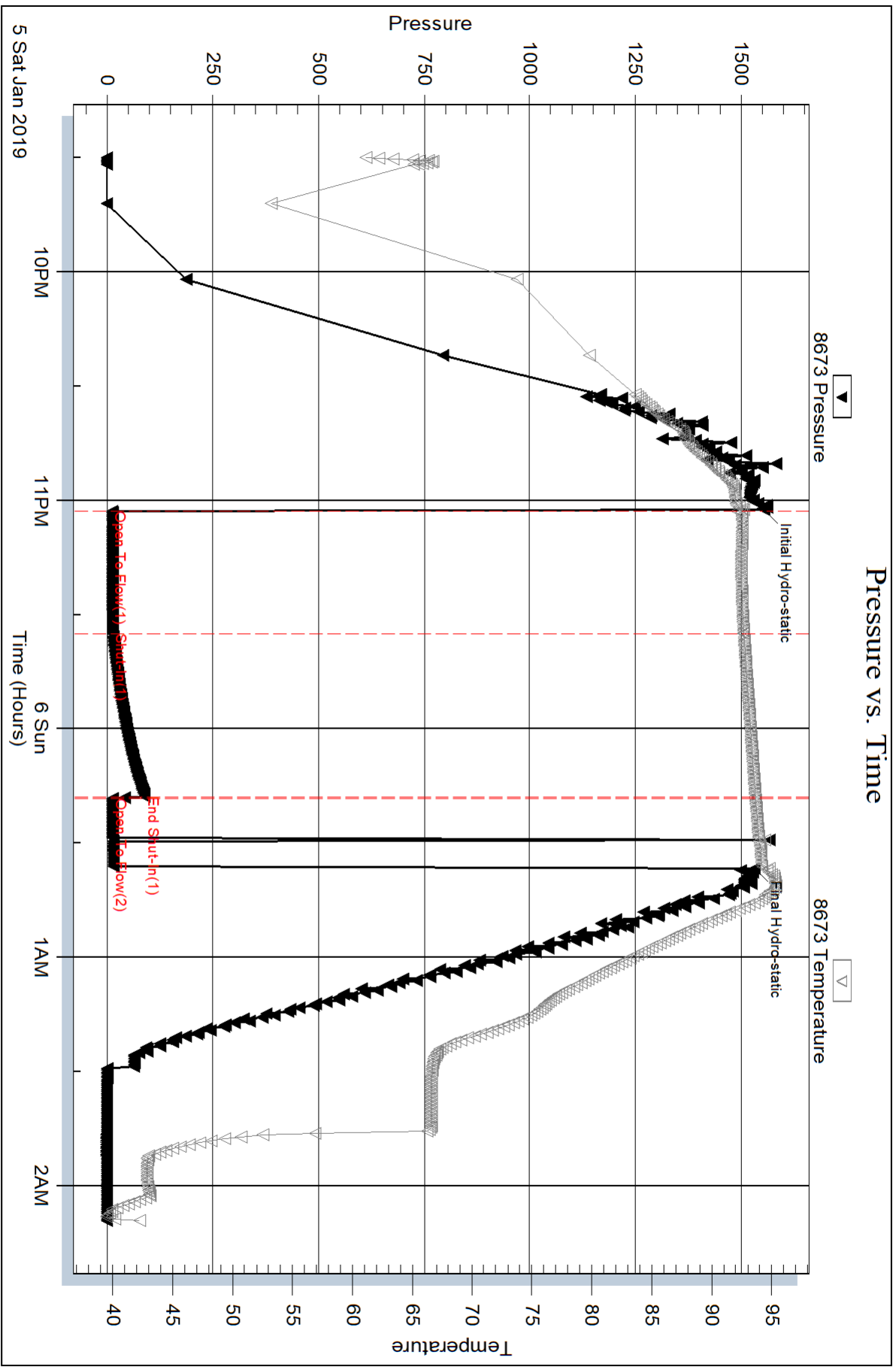
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

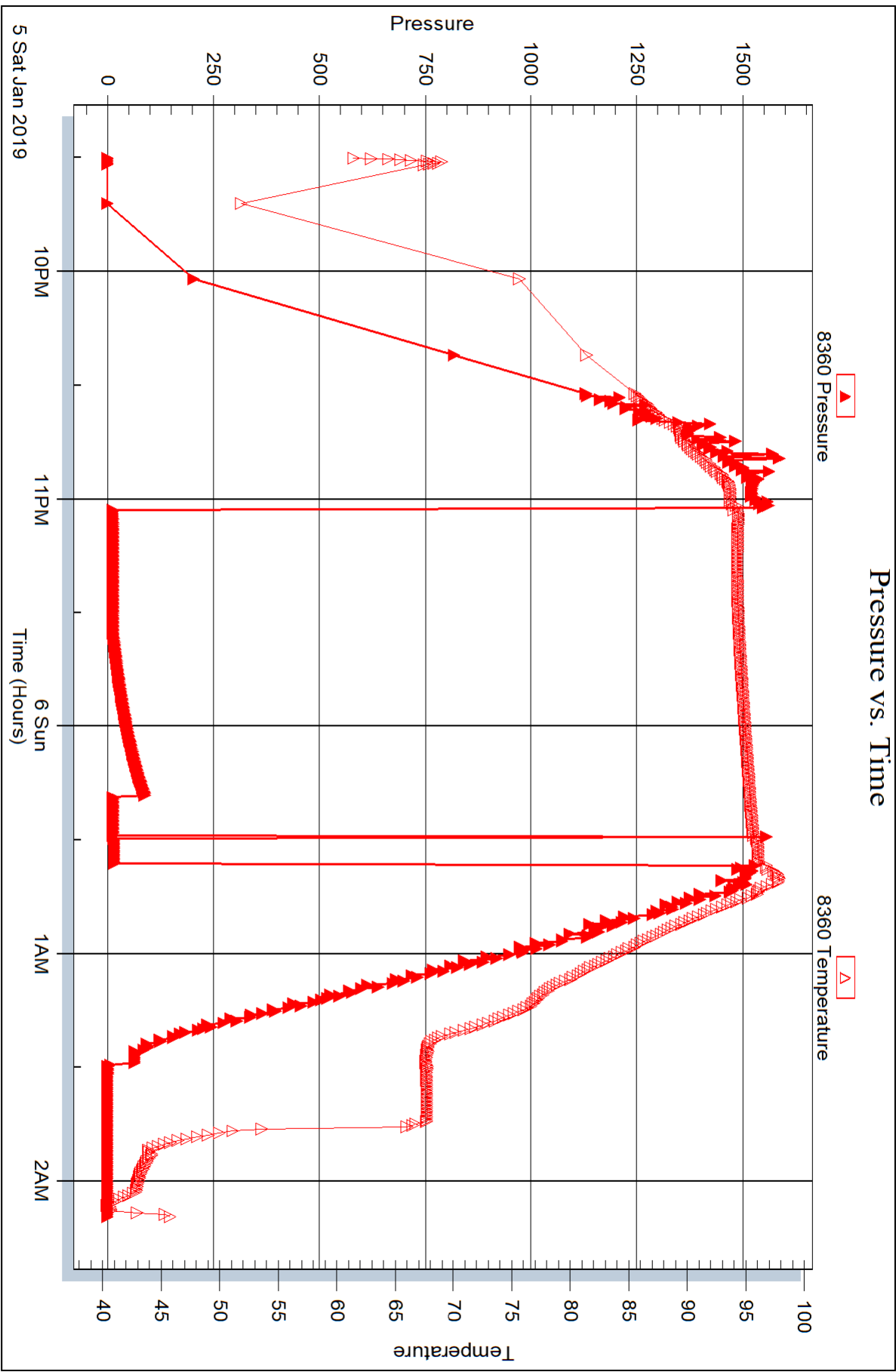


Serial #: 8360

Outside Jasper Co.

3DR Unit #1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14-7S-19W Rooks,KS

Start Date: 2019.01.06 @ 08:19:00

End Date: 2019.01.06 @ 13:52:30

Job Ticket #: 65388 DST #: 2

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

Printed: 2019.01.11 @ 09:33:15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

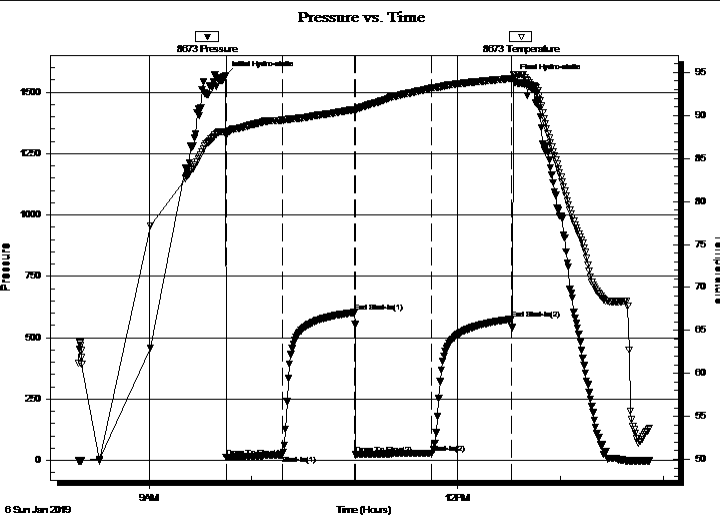
14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65388 **DST#: 2**
Test Start: 2019.01.06 @ 08:19:00

GENERAL INFORMATION:

Formation: **Lansing E&F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:45:00
Time Test Ended: 13:52:30
Interval: **3214.00 ft (KB) To 3242.00 ft (KB) (TVD)**
Total Depth: 3242.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 1956.00 ft (KB)
1951.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8673 Outside
Press@RunDepth: 30.51 psig @ 3215.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.01.06 End Date: 2019.01.06 Last Calib.: 2019.01.06
Start Time: 08:19:05 End Time: 13:52:29 Time On Btm: 2019.01.06 @ 09:44:45
Time Off Btm: 2019.01.06 @ 12:32:30

TEST COMMENT: 30 - IFP - Surface blow built up to 1 1/4"
45 - ISI - No Return
45 - FFP - Stayed at a weak surface blow throughout
45 - FSI - Got a faint return 35 mins. into shut in.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1568.09	88.17	Initial Hydro-static
1	12.26	87.62	Open To Flow (1)
33	22.67	89.44	Shut-In(1)
76	602.87	90.70	End Shut-In(1)
76	23.94	90.57	Open To Flow (2)
121	30.51	93.18	Shut-In(2)
167	575.83	94.31	End Shut-In(2)
168	1554.19	94.70	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	OSWM - Oil Spots - 2%w - 98%m	0.22

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
 PO Box 1120
 Hays, Ks 67601
 ATTN: Jeff Lowler

14-7S-19W Rooks, KS
3DR Unit #1
 Job Ticket: 65388 **DST#: 2**
 Test Start: 2019.01.06 @ 08:19:00

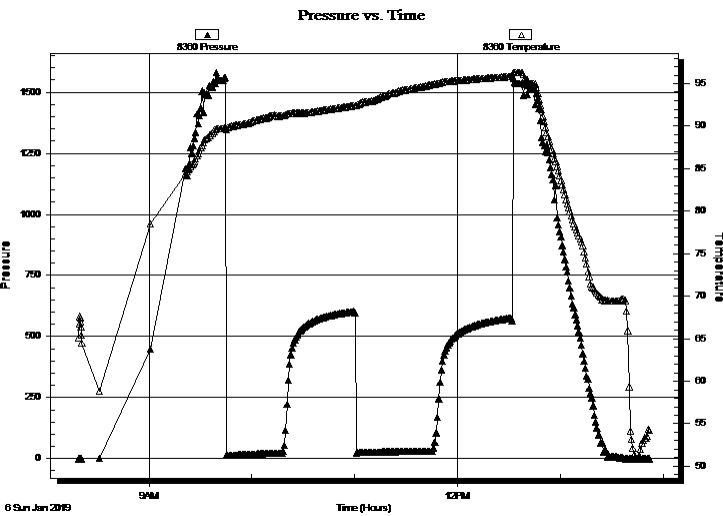
GENERAL INFORMATION:

Formation: **Lansing E&F**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 09:45:00 Tester: Royal Fisher
 Time Test Ended: 13:52:30 Unit No: 77
Interval: 3214.00 ft (KB) To 3242.00 ft (KB) (TVD) Reference Elevations: 1956.00 ft (KB)
 Total Depth: 3242.00 ft (KB) (TVD) 1951.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8360 Outside

Press@RunDepth: psig @ 3215.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2019.01.06 End Date: 2019.01.06	Last Calib.: 2019.01.06
Start Time: 08:19:05 End Time: 13:52:29	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30 - IFP - Surface blow built up to 1 1/4"
 45 - ISI - No Return
 45 - FFP - Stayed at a weak surface blow throughout
 45 - FSI - Got a faint return 35 mins. into shut in.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
45.00	OSWM - Oil Spots - 2%w - 98%m	0.22

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65388 **DST#: 2**
Test Start: 2019.01.06 @ 08:19:00

Tool Information

Drill Pipe:	Length: 3107.39 ft	Diameter: 3.25 inches	Volume: 31.88 bbl	Tool Weight:	2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 32.47 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3214.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	28.00 ft				
Tool Length:	48.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

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

Shut In Tool	5.00			3199.00	
Hydraulic tool	5.00			3204.00	
Packer	5.00			3209.00	20.00 Bottom Of Top Packer
Packer	5.00			3214.00	
Stubb	1.00			3215.00	
Recorder	0.00	8673	Outside	3215.00	
Recorder	0.00	8360	Outside	3215.00	
perforations	24.00			3239.00	
Bullnose	3.00			3242.00	28.00 Bottom Packers & Anchor
Total Tool Length:	48.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65388

DST#: 2

ATTN: Jeff Lowler

Test Start: 2019.01.06 @ 08:19:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	OSWM - Oil Spots - 2%w - 98%m	0.221

Total Length: 45.00 ft Total Volume: 0.221 bbl

Num Fluid Samples: 0

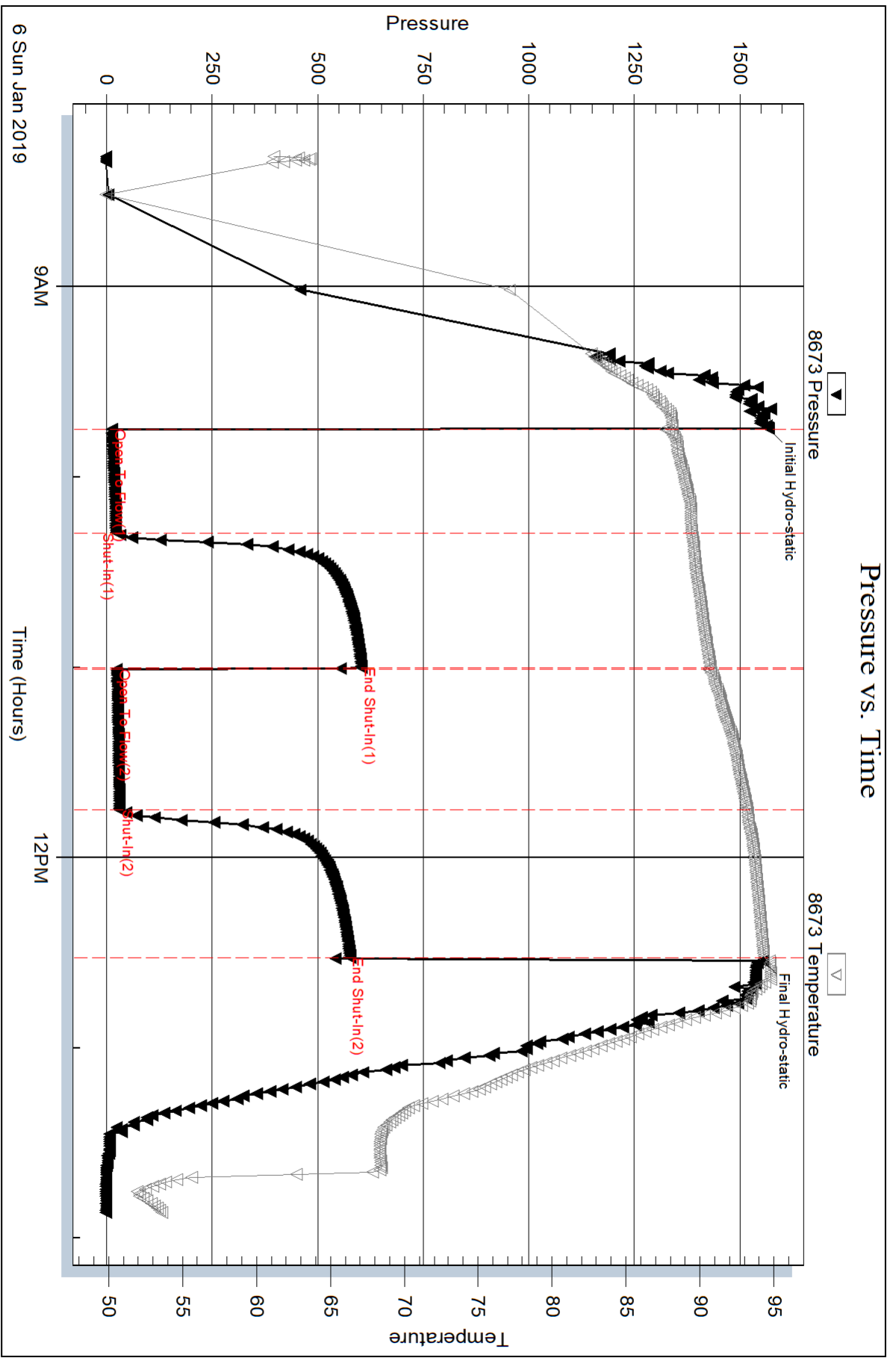
Num Gas Bombs: 0

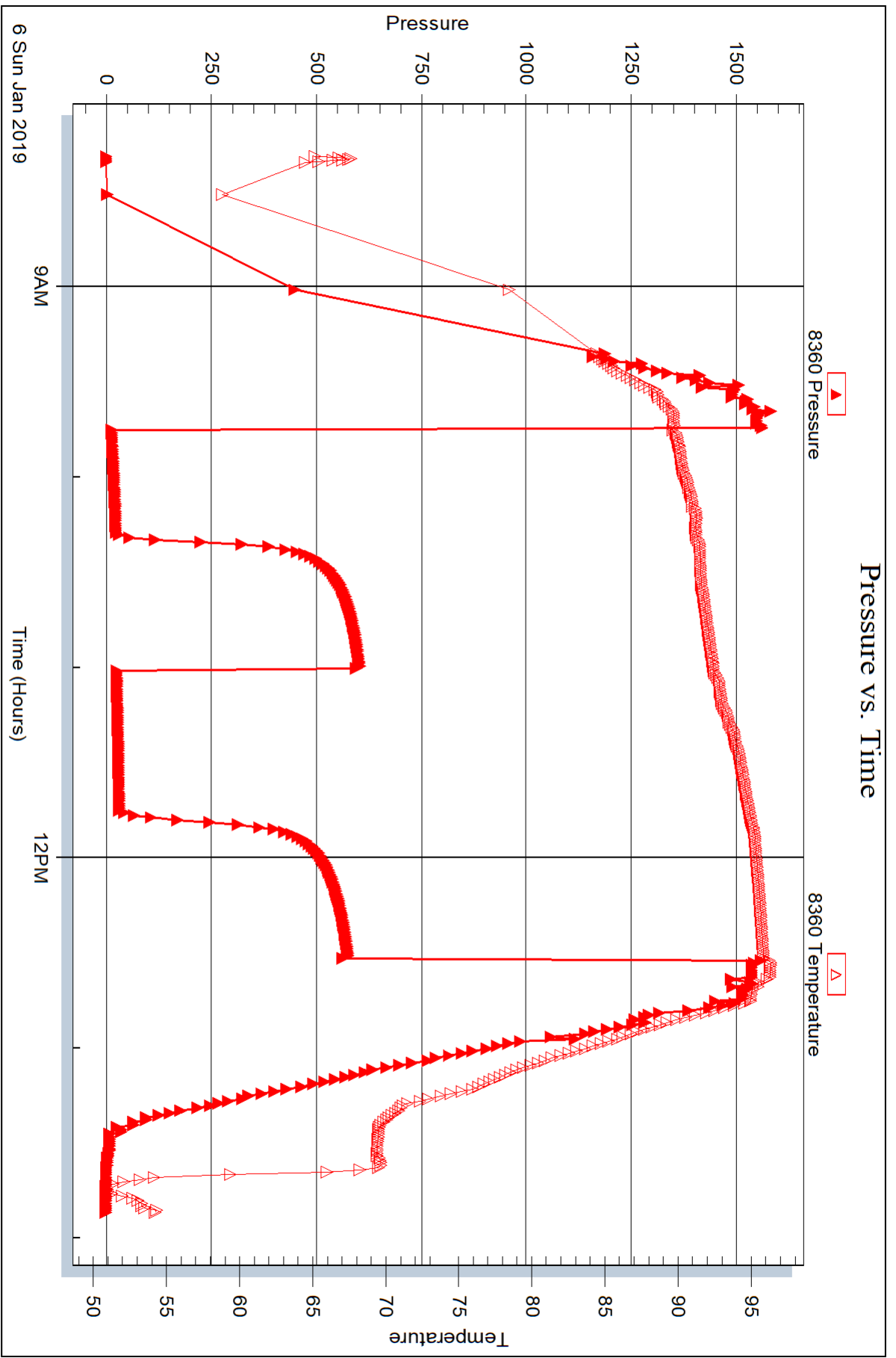
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14-7S-19W Rooks,KS

Start Date: 2019.01.06 @ 19:38:00

End Date: 2019.01.07 @ 01:42:30

Job Ticket #: 65389 DST #: 3

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

Printed: 2019.01.11 @ 09:30:17

Jaspar Co. 14-7S-19W Rooks,KS 3DR Unit #1 DST # 3 LKC - G 2019.01.06



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65389 **DST#: 3**
Test Start: 2019.01.06 @ 19:38:00

GENERAL INFORMATION:

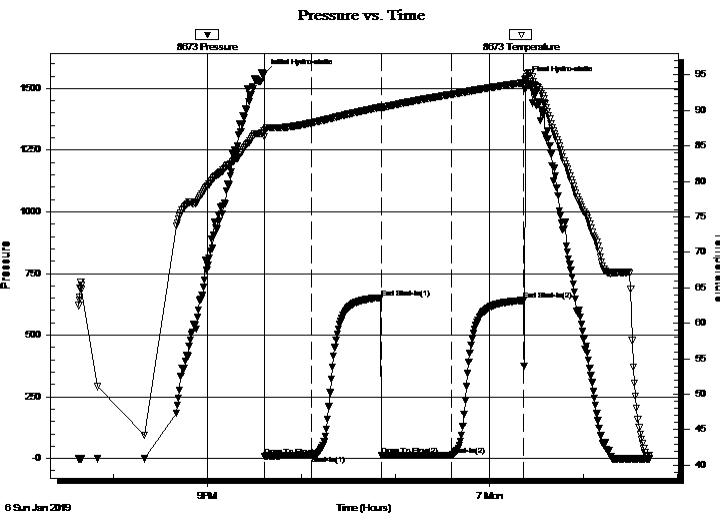
Formation: **LKC - G**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:36:30
Time Test Ended: 01:42:30
Interval: **3240.00 ft (KB) To 3253.00 ft (KB) (TVD)**
Total Depth: 3253.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Reference Elevations: 1956.00 ft (KB)
1951.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8673

Outside

Press@RunDepth: 13.87 psig @ 3241.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.01.06 End Date: 2019.01.07 Last Calib.: 2019.01.07
Start Time: 19:38:05 End Time: 01:42:29 Time On Btm: 2019.01.06 @ 21:36:15
Time Off Btm: 2019.01.07 @ 00:23:15

TEST COMMENT: 30 - IFP - Surface blow slowly built to almost 3/4"
45 - ISI - No Return
45 - FFP - A very faint surface blow started 28 mins into open then died back off
45 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1558.89	87.16	Initial Hydro-static
1	9.52	86.29	Open To Flow (1)
31	12.09	88.24	Shut-In(1)
75	652.07	90.47	End Shut-In(1)
76	11.79	90.21	Open To Flow (2)
120	13.87	92.25	Shut-In(2)
166	641.22	93.91	End Shut-In(2)
167	1531.19	94.49	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100% m	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65389 **DST#: 3**
Test Start: 2019.01.06 @ 19:38:00

Tool Information

Drill Pipe:	Length: 3107.90 ft	Diameter: 3.25 inches	Volume: 31.89 bbl	Tool Weight: 2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 32.48 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.51 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3240.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	33.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3225.00	
Hydraulic tool	5.00			3230.00	
Packer	5.00			3235.00	20.00 Bottom Of Top Packer
Packer	5.00			3240.00	
Stubb	1.00			3241.00	
Recorder	0.00	8673	Outside	3241.00	
Recorder	0.00	8360	Outside	3241.00	
perforations	9.00			3250.00	
Bullnose	3.00			3253.00	13.00 Bottom Packers & Anchor
Total Tool Length:	33.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65389

DST#: 3

ATTN: Jeff Lowler

Test Start: 2019.01.06 @ 19:38:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud - 100%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

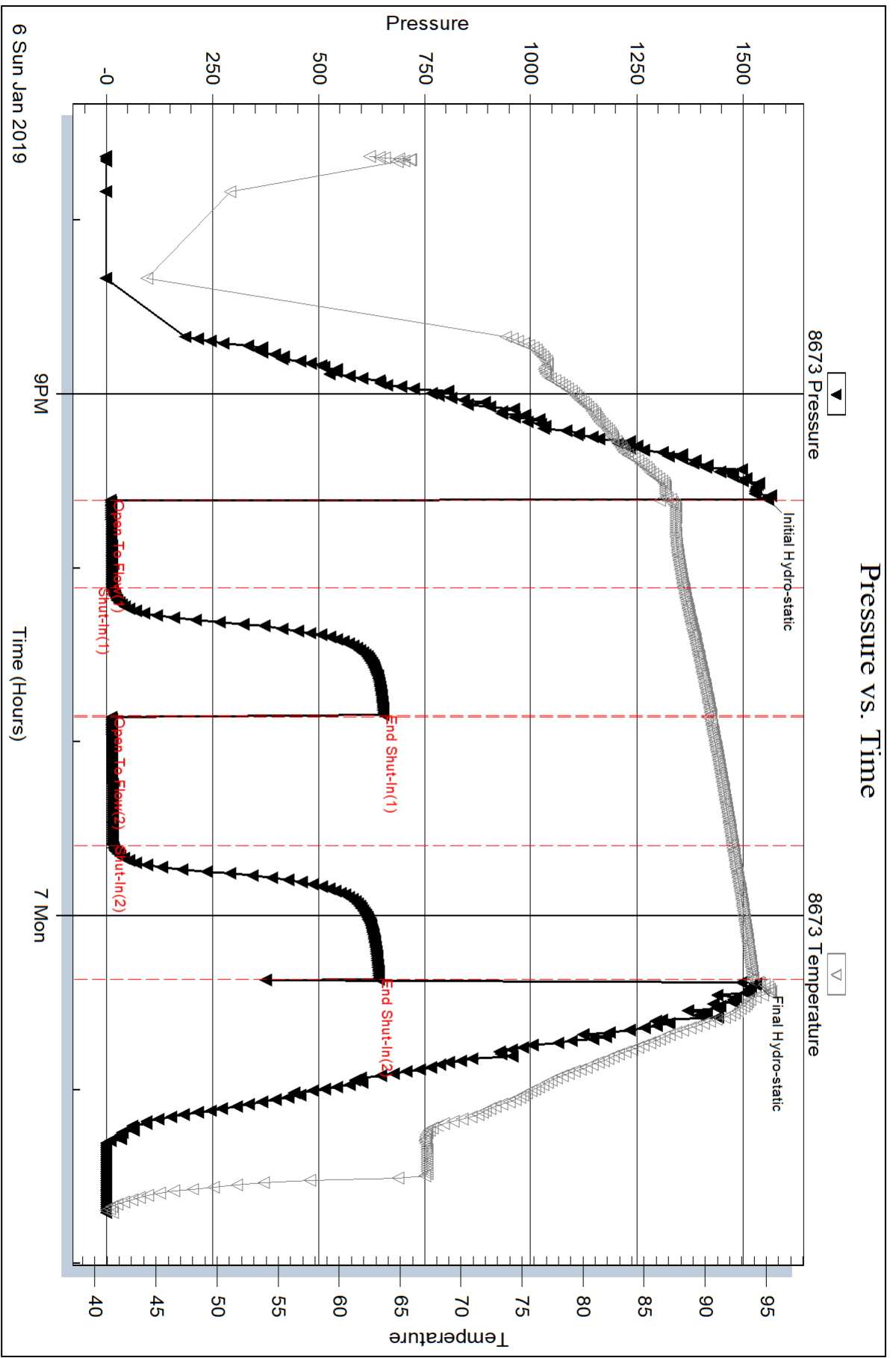
Num Gas Bombs: 0

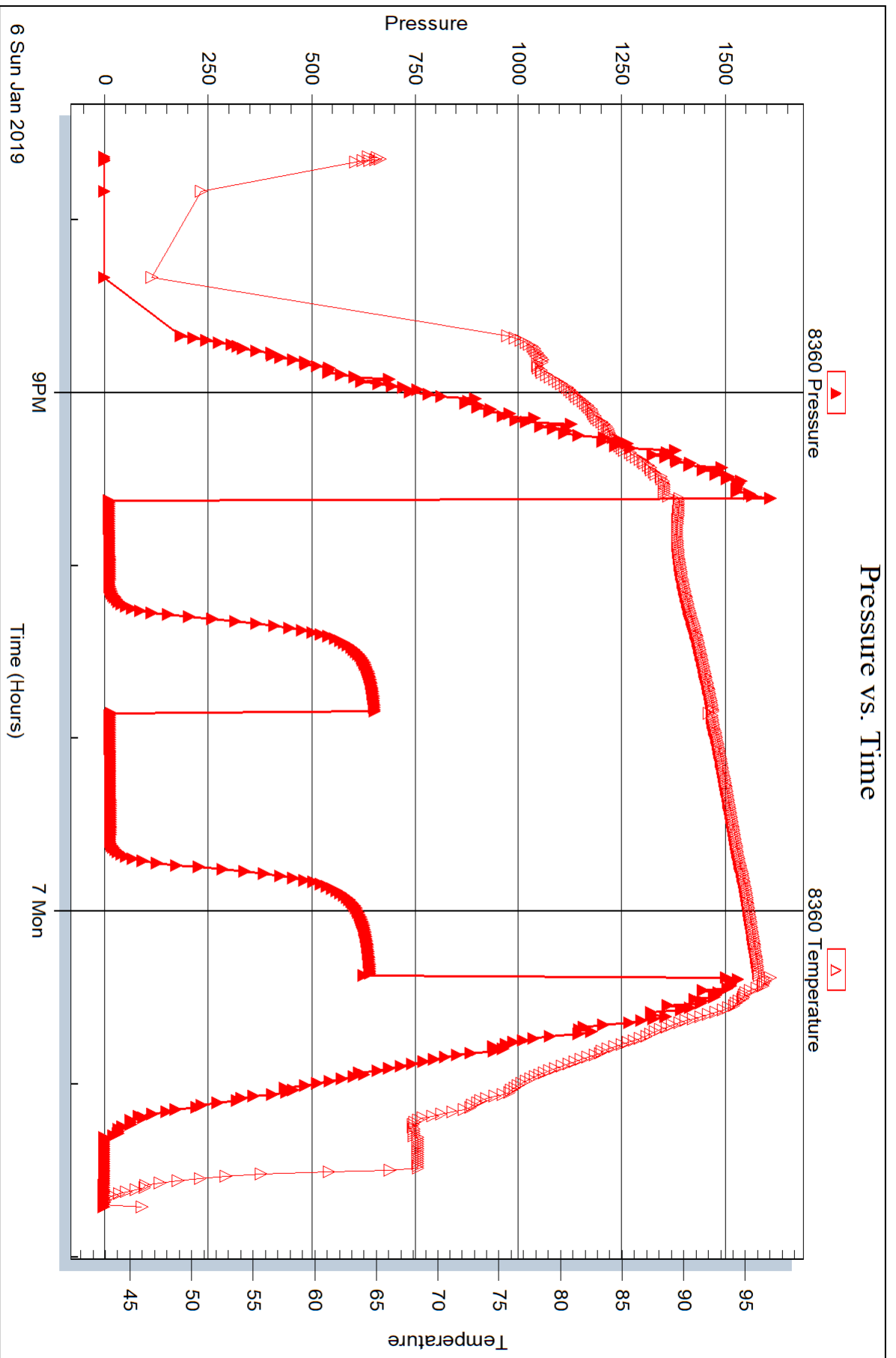
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14-7S-19W Rooks,KS

Start Date: 2019.01.07 @ 14:37:00

End Date: 2019.01.07 @ 21:11:45

Job Ticket #: 65390 DST #: 4

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

Printed: 2019.01.11 @ 09:24:07



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

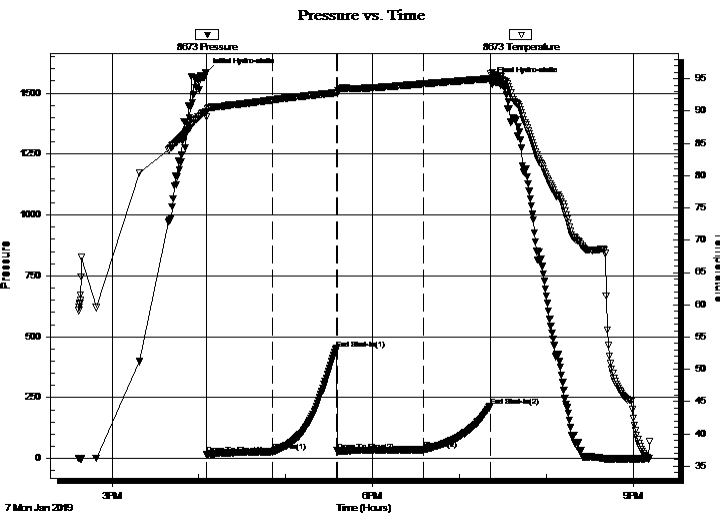
14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65390 **DST#: 4**
Test Start: 2019.01.07 @ 14:37:00

GENERAL INFORMATION:

Formation: **LKC H-L**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:05:15
Time Test Ended: 21:11:45
Interval: **3267.00 ft (KB) To 3371.00 ft (KB) (TVD)**
Total Depth: 3371.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: 77
Reference Elevations: 1956.00 ft (KB)
1951.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8673 Outside
Press@RunDepth: 36.20 psig @ 3268.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.01.07 End Date: 2019.01.07 Last Calib.: 2019.01.07
Start Time: 14:37:05 End Time: 21:11:44 Time On Btm: 2019.01.07 @ 16:05:00
Time Off Btm: 2019.01.07 @ 19:21:45

TEST COMMENT: 45 - IFP - Surface blow gradually built up to 1 1/2"
45 - ISI - No Return
60 - FFP - Weak surface blow started 3 mins. in and built up to 1 1/4"
45 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1585.46	89.96	Initial Hydro-static
1	16.81	89.04	Open To Flow (1)
46	28.21	91.74	Shut-In(1)
90	451.36	92.84	End Shut-In(1)
91	31.93	92.73	Open To Flow (2)
151	36.20	94.22	Shut-In(2)
197	215.27	95.01	End Shut-In(2)
197	1548.56	95.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
59.00	OCM - 35%oil - 65%mud	0.29

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65390

DST#: 4

ATTN: Jeff Lowler

Test Start: 2019.01.07 @ 14:37:00

Tool Information

Drill Pipe:	Length: 3138.76 ft	Diameter: 3.25 inches	Volume: 32.21 bbl	Tool Weight: 2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 32.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.37 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3267.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	104.00 ft			
Tool Length:	124.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3252.00	
Hydraulic tool	5.00			3257.00	
Packer	5.00			3262.00	20.00 Bottom Of Top Packer
Packer	5.00			3267.00	
Stubb	1.00			3268.00	
Recorder	0.00	8673	Outside	3268.00	
Recorder	0.00	8360	Outside	3268.00	
perforations	5.00			3273.00	
Change Over Sub	1.00			3274.00	
Drill Pipe	93.00			3367.00	
Change Over Sub	1.00			3368.00	
Bullnose	3.00			3371.00	104.00 Bottom Packers & Anchor

Total Tool Length: 124.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65390

DST#: 4

ATTN: Jeff Lowler

Test Start: 2019.01.07 @ 14:37:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
59.00	OCM - 35%oil - 65%mud	0.290

Total Length: 59.00 ft Total Volume: 0.290 bbl

Num Fluid Samples: 0

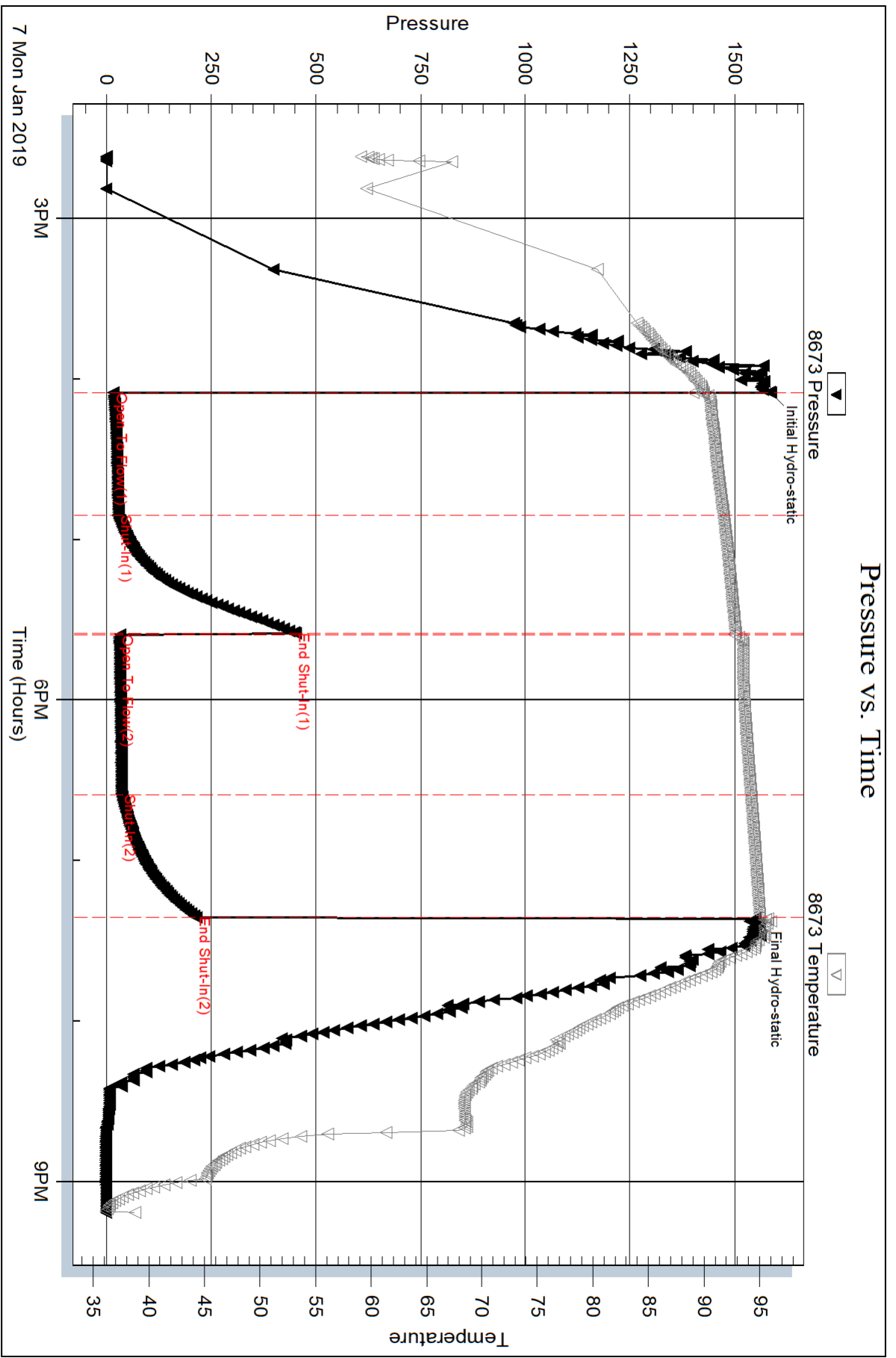
Num Gas Bombs: 0

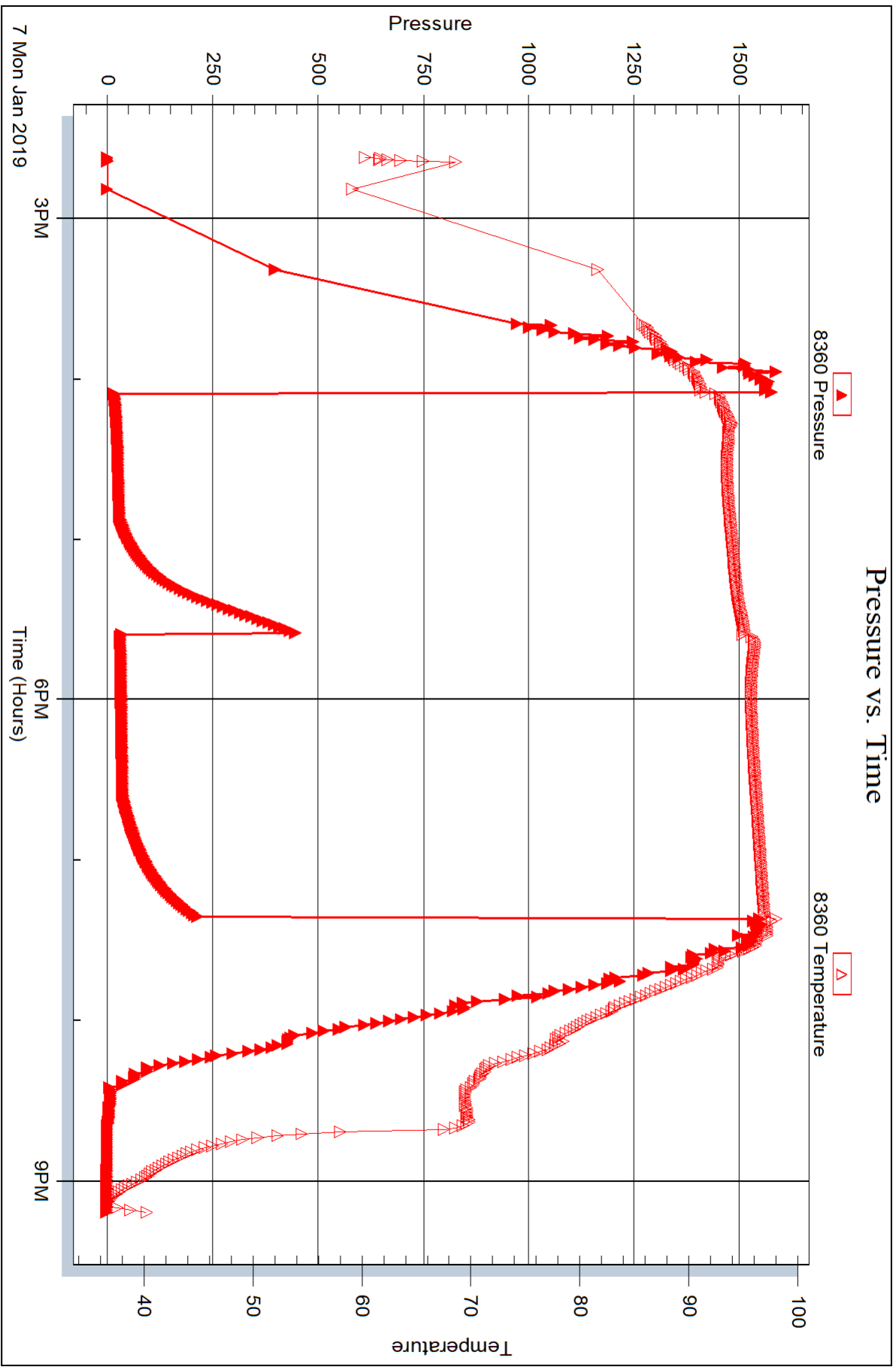
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14-7S-19W Rooks,KS

Start Date: 2019.01.08 @ 17:30:05

End Date: 2019.01.08 @ 21:53:44

Job Ticket #: 65391 DST #: 5

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

Printed: 2019.01.11 @ 09:27:08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
 PO Box 1120
 Hays, Ks 67601
 ATTN: Jeff Lowler

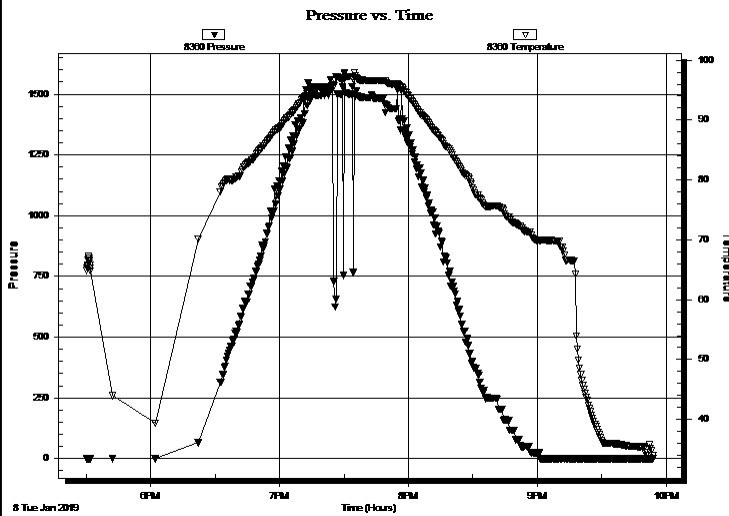
14-7S-19W Rooks,KS
3DR Unit #1
 Job Ticket: 65391 **DST#: 5**
 Test Start: 2019.01.08 @ 17:30:05

GENERAL INFORMATION:

Formation: **Toronto**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened:
 Time Test Ended: 21:53:44
 Interval: **3106.00 ft (KB) To 3155.00 ft (KB) (TVD)**
 Total Depth: 3552.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Royal Fisher
 Unit No: #77
 Reference Elevations: 1956.00 ft (KB)
 1951.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8360 **Inside**
 Press@RunDepth: psig @ 3107.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.01.08 End Date: 2019.01.08 Last Calib.: 2019.01.09
 Start Time: 17:30:05 End Time: 21:53:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: IFP - Packer failure, tried resetting tool three times pulled tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
527.00	Mud - 100% _m	4.77

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

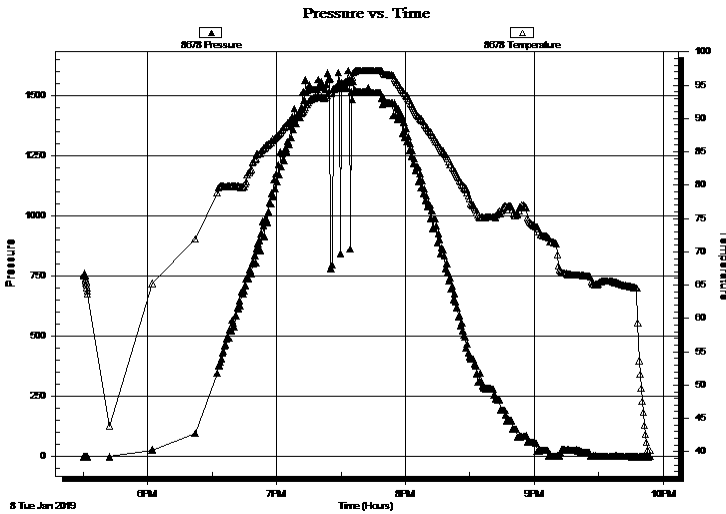
14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65391 **DST#: 5**
Test Start: 2019.01.08 @ 17:30:05

GENERAL INFORMATION:

Formation: **Toronto**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Initial)
Time Tool Opened: Tester: Royal Fisher
Time Test Ended: 21:53:44 Unit No: #77
Interval: **3106.00 ft (KB) To 3155.00 ft (KB) (TVD)** Reference Elevations: 1956.00 ft (KB)
Total Depth: 3552.00 ft (KB) (TVD) 1951.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8678 Below (Straddle)
Press@RunDepth: psig @ 3180.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.01.08 End Date: 2019.01.08 Last Calib.: 2019.01.09
Start Time: 17:30:05 End Time: 21:53:44 Time On Btm:
Time Off Btm:

TEST COMMENT: IFP - Packer failure, tried resetting tool three times pulled tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
527.00	Mud - 100%m	4.77

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

14-7S-19W Rooks,KS

3DR Unit #1

Job Ticket: 65391

DST#: 5

Test Start: 2019.01.08 @ 17:30:05

GENERAL INFORMATION:

Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 21:53:44

Interval: 3106.00 ft (KB) To 3155.00 ft (KB) (TVD)

Total Depth: 3552.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Straddle (Initial)

Tester: Royal Fisher

Unit No: #77

Reference Elevations: 1956.00 ft (KB)

1951.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8673 Inside

Press@RunDepth: psig @ 3107.00 ft (KB)

Start Date: 2019.01.08

End Date: 2019.01.08

Start Time: 17:30:05

End Time: 21:53:44

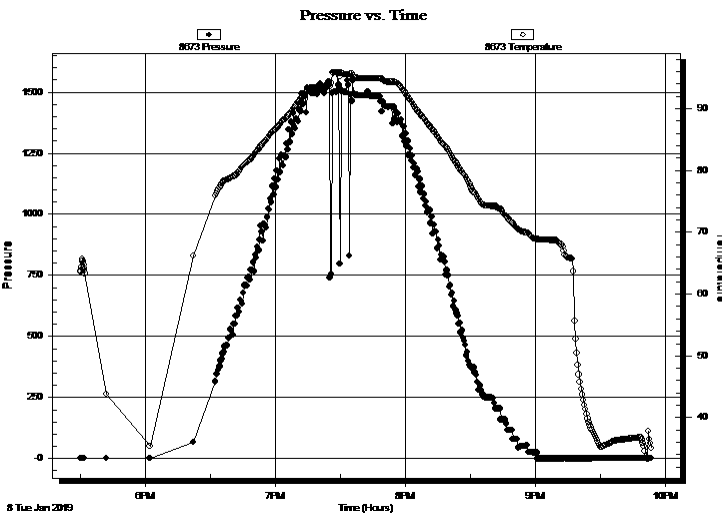
Capacity: 8000.00 psig

Last Calib.: 2019.01.09

Time On Btm:

Time Off Btm:

TEST COMMENT: IFP - Packer failure, tried resetting tool three times pulled tool



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
527.00	Mud - 100% _m	4.77

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14-7S-19W Rooks,KS
3DR Unit #1
Job Ticket: 65391 **DST#: 5**
Test Start: 2019.01.08 @ 17:30:05

Tool Information

Drill Pipe:	Length: 2983.39 ft	Diameter: 3.25 inches	Volume: 30.61 bbl	Tool Weight:	2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 31.20 bbl</u>	Tool Chased	4.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3106.00 ft			Final	56000.00 lb
Depth to Bottom Packer:	3559.00 ft				
Interval between Packers:	453.00 ft				
Tool Length:	473.00 ft				
Number of Packers:	3	Diameter:	6.75 inches		
Tool Comments:					

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

Shut In Tool	5.00			3091.00	
Hydraulic tool	5.00			3096.00	
Packer	5.00		Inside	3101.00	20.00 Bottom Of Top Packer
Packer	5.00			3106.00	
Stubb	1.00			3107.00	
Recorder	0.00	8673	Inside	3107.00	
Recorder	0.00	8360	Inside	3107.00	
Perforations	12.00			3119.00	
Change Over Sub	1.00			3120.00	
Drill Pipe	31.00			3151.00	
Change Over Sub	1.00			3152.00	
Stubb	3.00		Outside	3155.00	
Packer - Shale	5.00		Outside	3160.00	
Stubb	1.00			3161.00	
Perforations	18.00			3179.00	
Change Over Sub	1.00			3180.00	
Recorder	0.00	8678	Below	3180.00	
Drill Pipe	375.00		Below	3555.00	
Change Over Sub	1.00			3556.00	
Bullnose	3.00			3559.00	453.00 Bottom Packers & Anchor

Total Tool Length: 473.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14-7S-19W Rooks,KS

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65391

DST#: 5

ATTN: Jeff Lowler

Test Start: 2019.01.08 @ 17:30:05

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
527.00	Mud - 100%m	4.768

Total Length: 527.00 ft Total Volume: 4.768 bbl

Num Fluid Samples: 0

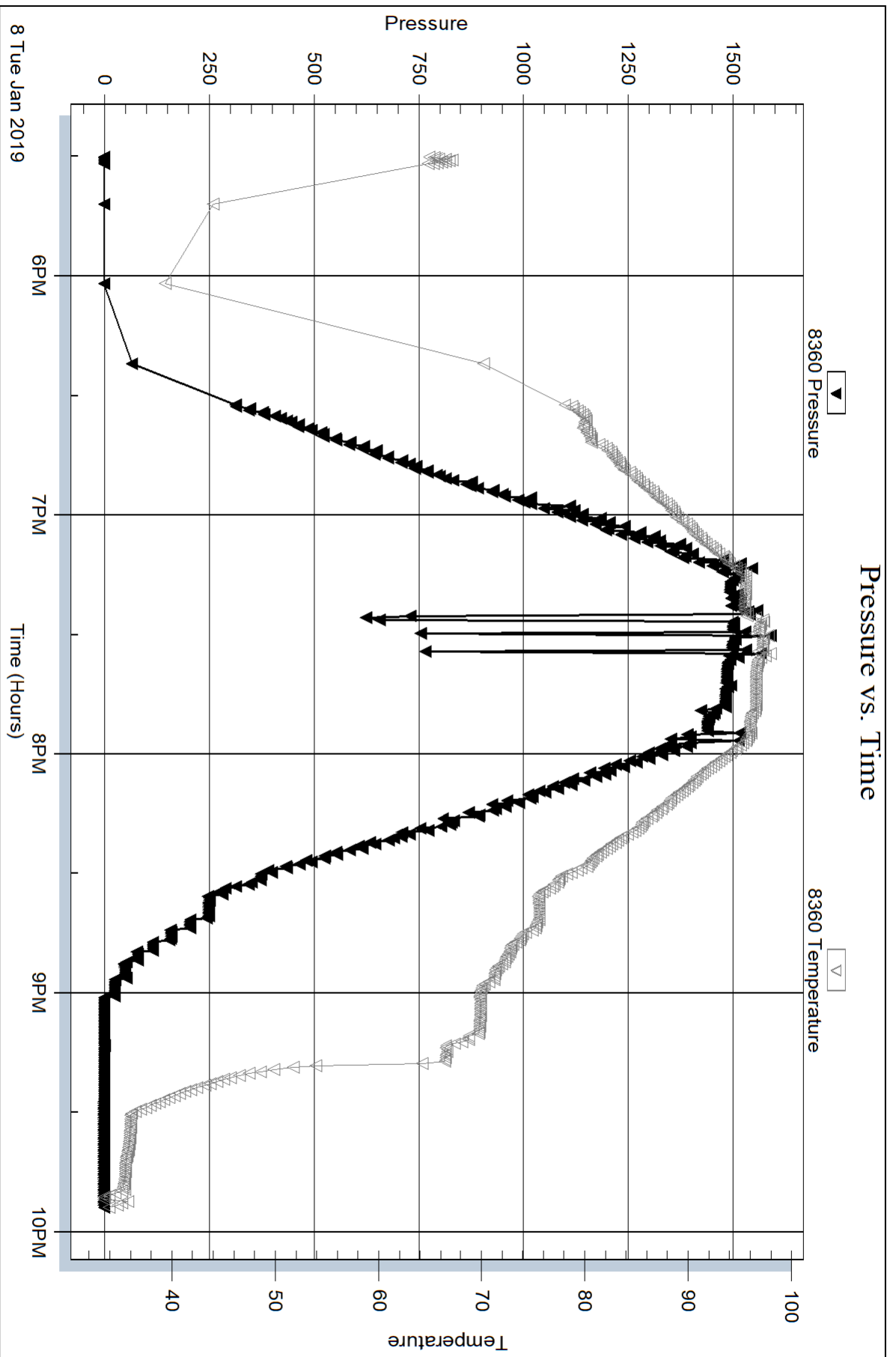
Num Gas Bombs: 0

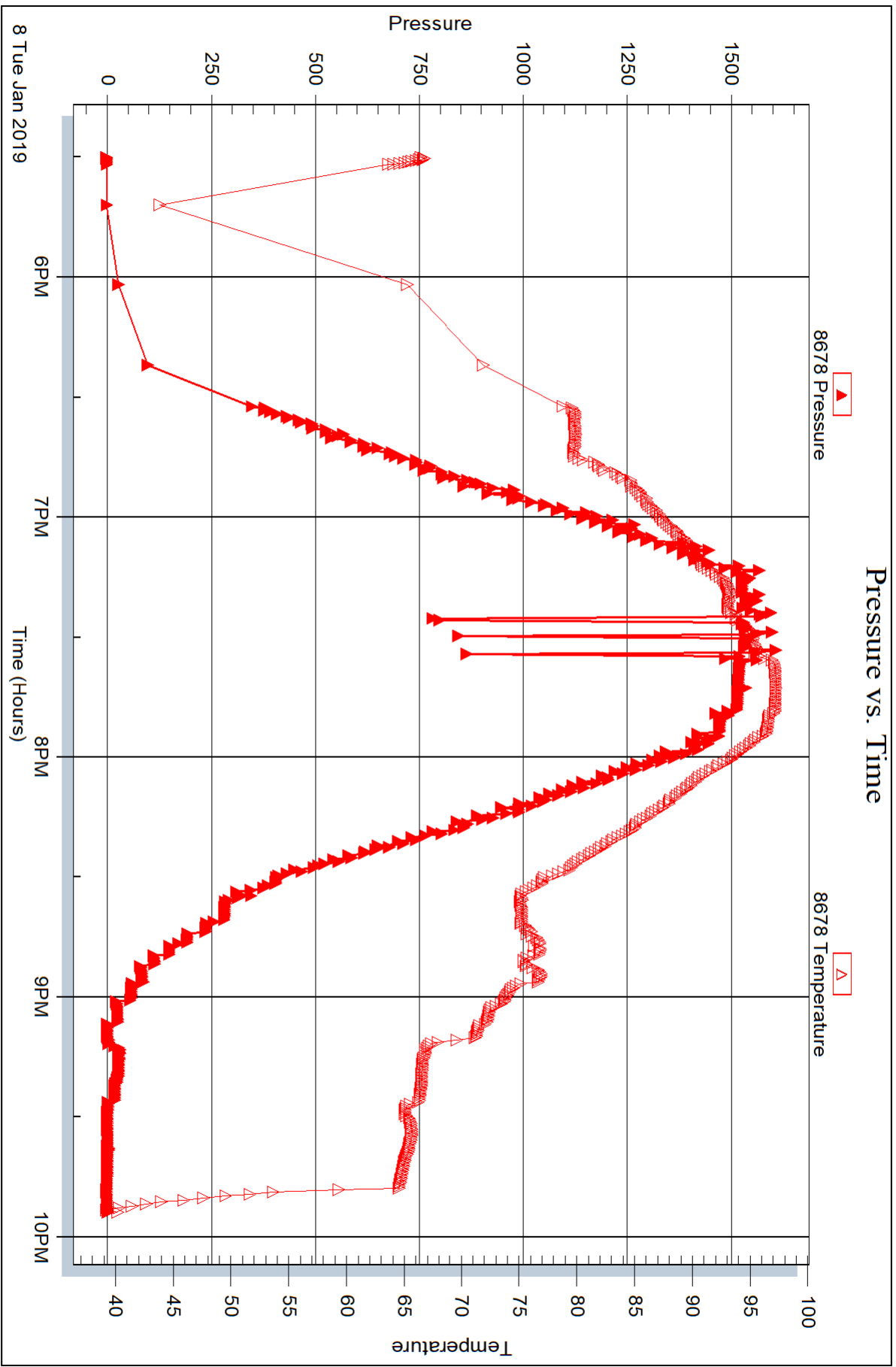
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





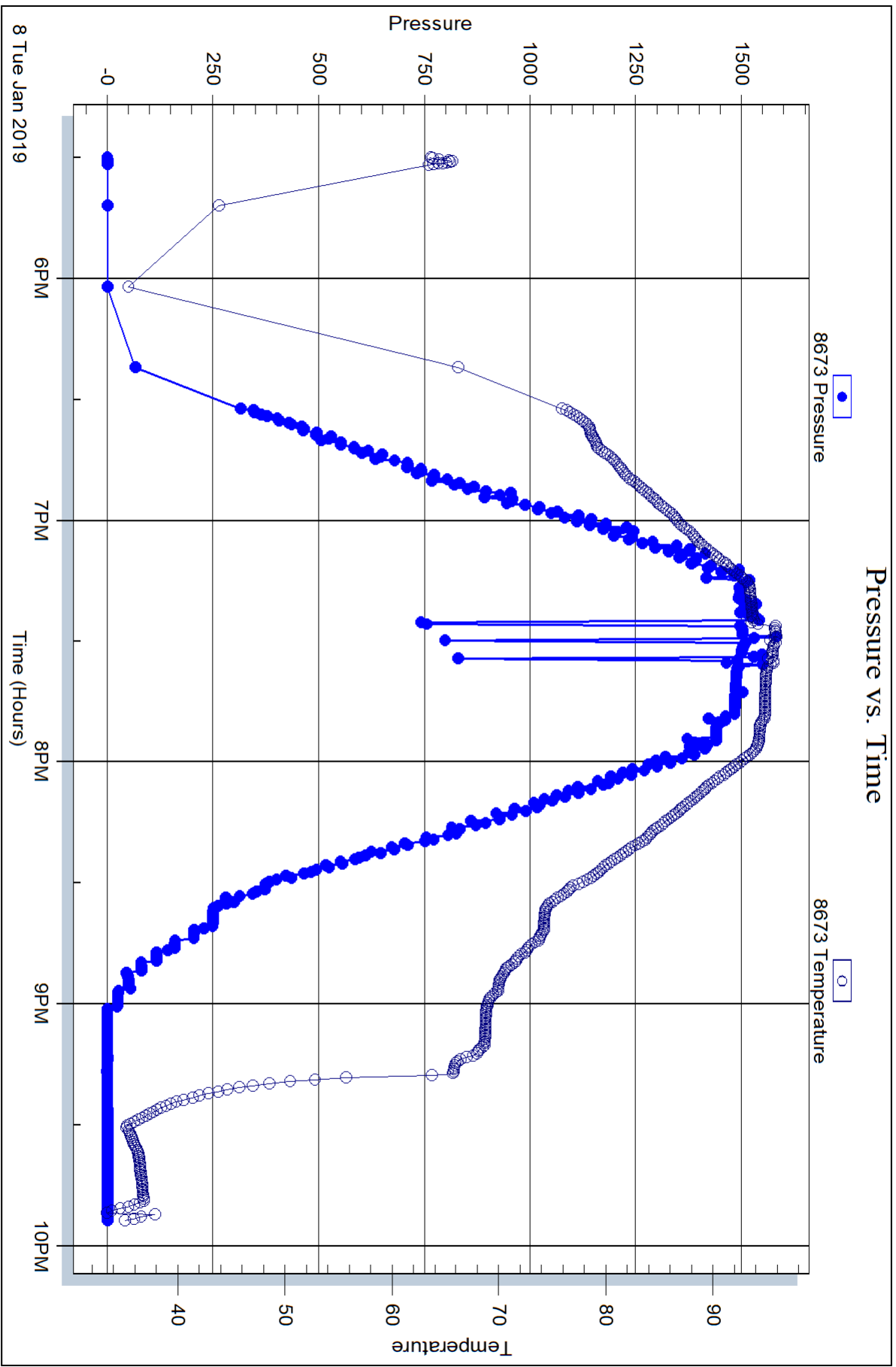
Serial #: 8673

Inside

Jaspar Co.

3DR Unit #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 65391

Printed: 2019.01.11 @ 09:27:09



DRILL STEM TEST REPORT

Prepared For: **Jaspar Co.**

PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

3DR Unit #1

14 - 7S - 19W

Start Date: 2019.01.08 @ 12:02:00

End Date: 2019.01.08 @ 18:49:00

Job Ticket #: 65392 DST #: 6

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

Printed: 2019.01.11 @ 09:22:11



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601

ATTN: Jeff Lowler

14 - 7S - 19W

3DR Unit #1

Job Ticket: 65392 **DST#: 6**

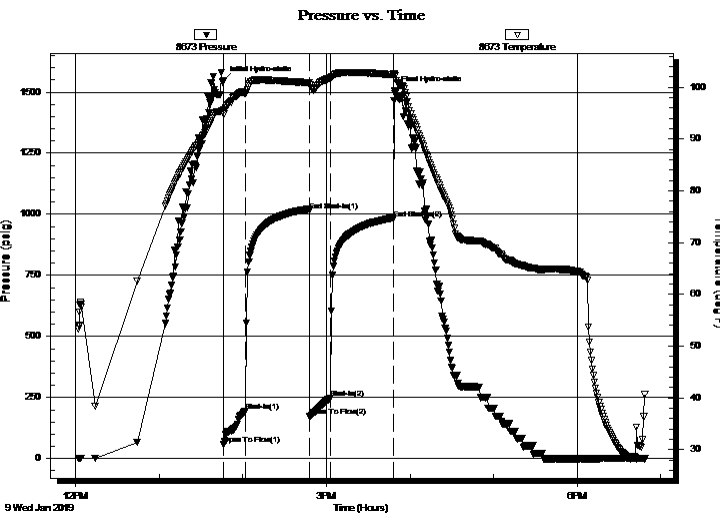
Test Start: 2019.01.08 @ 12:02:00

GENERAL INFORMATION:

Formation: **Toronto**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:46:15
 Time Test Ended: 18:49:00
 Interval: **3103.00 ft (KB) To 3169.00 ft (KB) (TVD)**
 Total Depth: 3552.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Initial)
 Tester: Royal Fisher
 Unit No: #77
 Reference Elevations: 1956.00 ft (KB)
 1951.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8673 Inside
 Press@RunDepth: 248.30 psig @ 3104.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.01.09 End Date: 2019.01.09 Last Calib.: 2019.01.09
 Start Time: 12:02:05 End Time: 18:48:59 Time On Btm: 2019.01.09 @ 13:46:00
 Time Off Btm: 2019.01.09 @ 15:49:00

TEST COMMENT: 15 - IFI - BOB in 3 mins
 45 - ISI - BOB in 14 mins
 15 - FFP - BOB in 5 mins.
 45 - FSI - BOB in 20 min.



PRESSURE SUMMARY

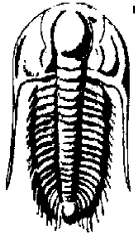
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1548.40	95.73	Initial Hydro-static
1	57.65	94.81	Open To Flow (1)
16	193.35	98.81	Shut-In(1)
62	1016.36	100.84	End Shut-In(1)
62	172.30	100.49	Open To Flow (2)
77	248.30	101.81	Shut-In(2)
122	981.56	102.38	End Shut-In(2)
123	1504.77	102.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
258.00	Free Oil - 100%o	2.01
248.00	MCO - 70%o - 30%m	2.54
124.00	MCO - 75%o - 25%m	1.27
62.00	GMCO - 25%g - 25%m - 50%o	0.64

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601

14 - 7S - 19W

3DR Unit #1

Job Ticket: 65392 **DST#: 6**

ATTN: Jeff Lowler

Test Start: 2019.01.08 @ 12:02:00

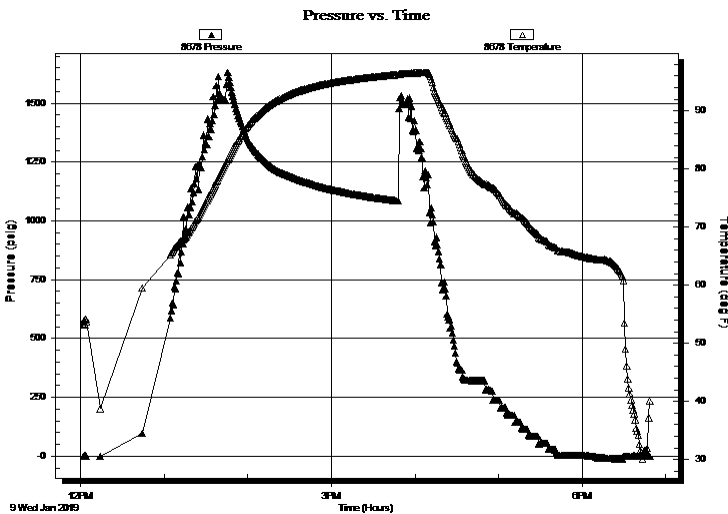
GENERAL INFORMATION:

Formation: **Toronto**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:46:15
Time Test Ended: 18:49:00
Interval: 3103.00 ft (KB) To 3169.00 ft (KB) (TVD)
Total Depth: 3552.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Straddle (Initial)
Tester: Royal Fisher
Unit No: #77
Reference Elevations: 1956.00 ft (KB)
1951.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8678 Below (Straddle)
Press@RunDepth: psig @ 3176.00 ft (KB)
Start Date: 2019.01.09 End Date: 2019.01.09 Capacity: 8000.00 psig
Start Time: 12:02:05 End Time: 18:48:59 Last Calib.: 2019.01.09
Time On Btm:
Time Off Btm:

TEST COMMENT: 15 - IFI - BOB in 3 mins
45 - ISI - BOB in 14 mins
15 - FFP - BOB in 5 mins.
45 - FSI - BOB in 20 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
258.00	Free Oil - 100%o	2.01
248.00	MCO - 70%o - 30%m	2.54
124.00	MCO - 75%o - 25%m	1.27
62.00	GMCO - 25%g - 25%m - 50%o	0.64

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

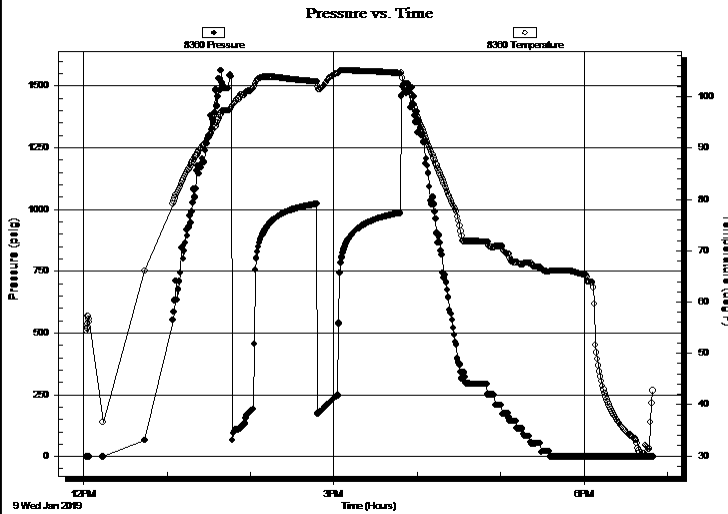
14 - 7S - 19W
3DR Unit #1
Job Ticket: 65392 **DST#: 6**
Test Start: 2019.01.08 @ 12:02:00

GENERAL INFORMATION:

Formation: **Toronto**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:46:15
 Time Test Ended: 18:49:00
 Test Type: Conventional Straddle (Initial)
 Tester: Royal Fisher
 Unit No: #77
 Interval: **3103.00 ft (KB) To 3169.00 ft (KB) (TVD)**
 Reference Elevations: 1956.00 ft (KB)
 Total Depth: 3552.00 ft (KB) (TVD)
 1951.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 8360 **Inside**
 Press@RunDepth: psig @ 3104.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.01.09 End Date: 2019.01.09 Last Calib.: 2019.01.09
 Start Time: 12:02:05 End Time: 18:49:14 Time On Btm:
 Time Off Btm:

TEST COMMENT: 15 - IFI - BOB in 3 mins
 45 - ISI - BOB in 14 mins
 15 - FFP - BOB in 5 mins.
 45 - FSI - BOB in 20 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
258.00	Free Oil - 100%o	2.01
248.00	MCO - 70%o - 30%m	2.54
124.00	MCO - 75%o - 25%m	1.27
62.00	GMCO - 25%g - 25%m - 50%o	0.64

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Jaspar Co.
PO Box 1120
Hays, Ks 67601
ATTN: Jeff Lowler

14 - 7S - 19W
3DR Unit #1
Job Ticket: 65392 **DST#: 6**
Test Start: 2019.01.08 @ 12:02:00

Tool Information

Drill Pipe:	Length: 2976.39 ft	Diameter: 3.25 inches	Volume: 30.54 bbl	Tool Weight: 2500.00 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: 119.61 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 55000.00 lb
		Total Volume: 31.13 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3103.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	3555.00 ft			
Interval between Packers:	452.00 ft			
Tool Length:	472.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3088.00	
Hydraulic tool	5.00			3093.00	
Packer	5.00		Inside	3098.00	20.00 Bottom Of Top Packer
Packer	5.00			3103.00	
Stubb	1.00			3104.00	
Recorder	0.00	8673	Inside	3104.00	
Recorder	0.00	8360	Inside	3104.00	
Perforations	28.00			3132.00	
Change Over Sub	1.00			3133.00	
Drill Pipe	31.00			3164.00	
Change Over Sub	1.00			3165.00	
Stubb	3.00		Outside	3168.00	
Packer - Shale	5.00		Outside	3173.00	
Stubb	1.00			3174.00	
Blank Off Sub	1.00			3175.00	
Change Over Sub	1.00			3176.00	
Recorder	0.00	8678	Below	3176.00	
Drill Pipe	375.00		Below	3551.00	
Change Over Sub	1.00			3552.00	
Bullnose	3.00			3555.00	452.00 Bottom Packers & Anchor

Total Tool Length: 472.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Jaspar Co.

14 - 7S - 19W

PO Box 1120
Hays, Ks 67601

3DR Unit #1

Job Ticket: 65392

DST#: 6

ATTN: Jeff Lowler

Test Start: 2019.01.08 @ 12:02:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
258.00	Free Oil - 100%o	2.008
248.00	MCO - 70%o - 30%m	2.545
124.00	MCO - 75%o - 25%m	1.272
62.00	GMCO - 25%g - 25%m - 50%o	0.636

Total Length: 692.00 ft

Total Volume: 6.461 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

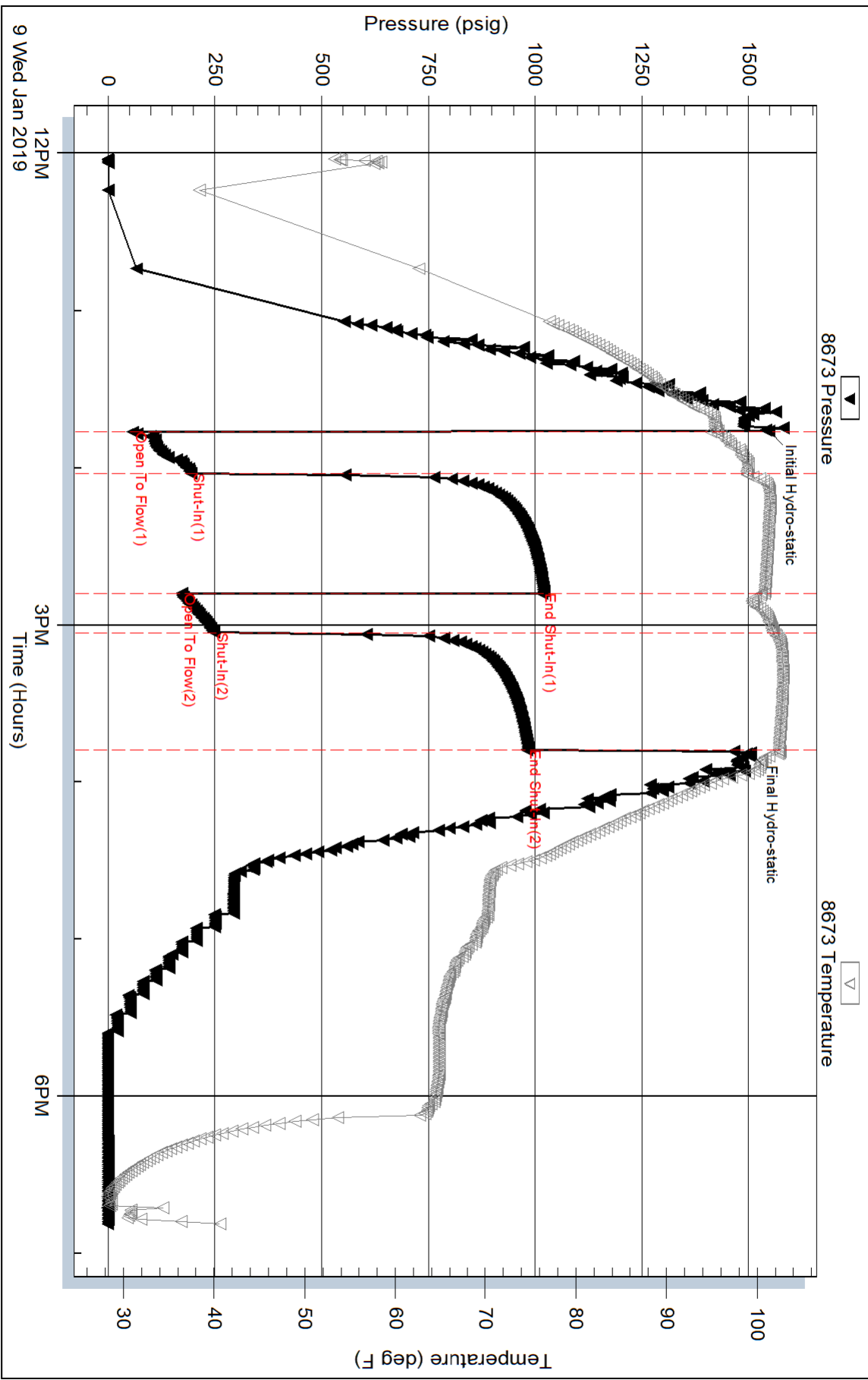
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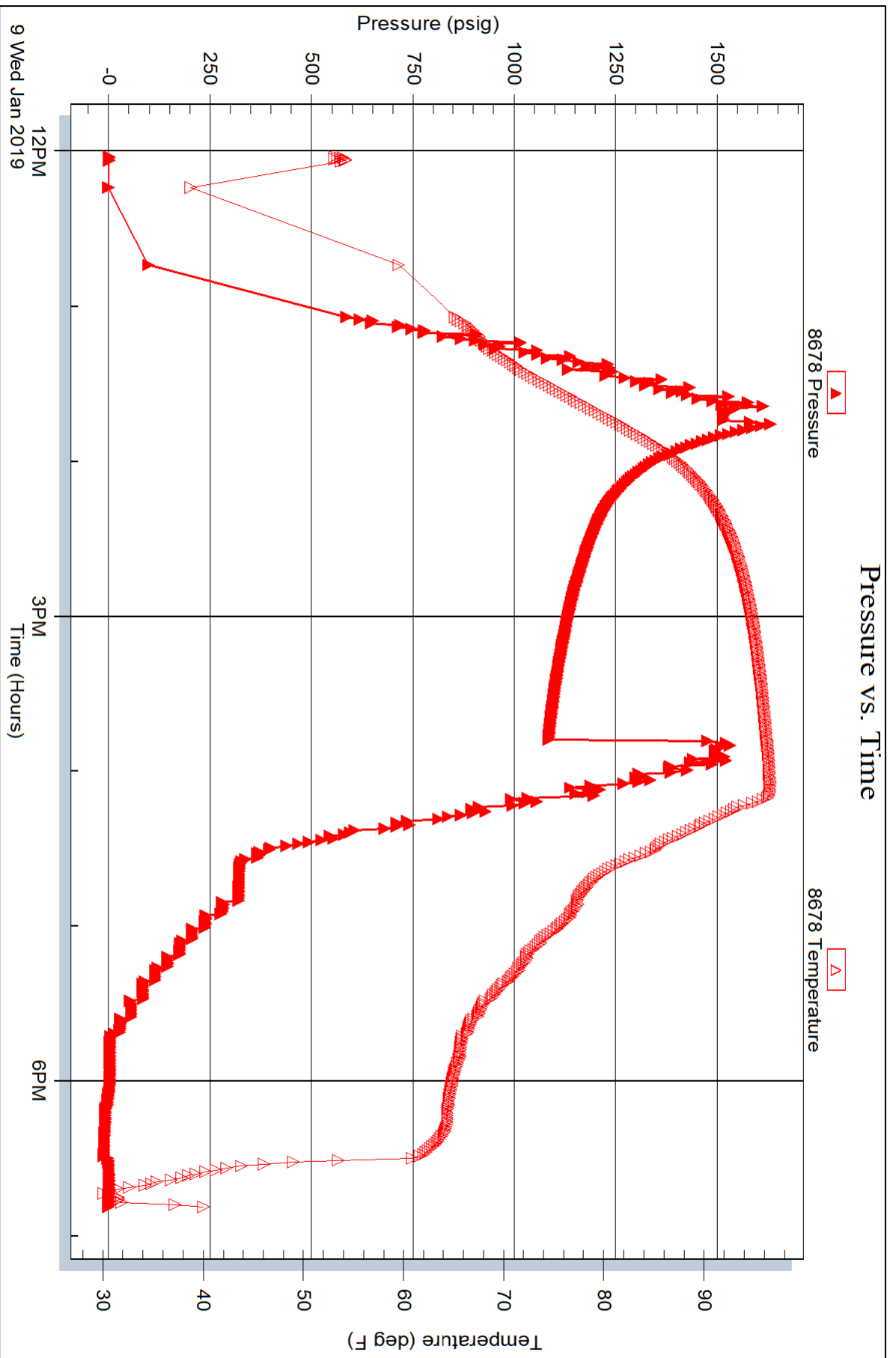
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





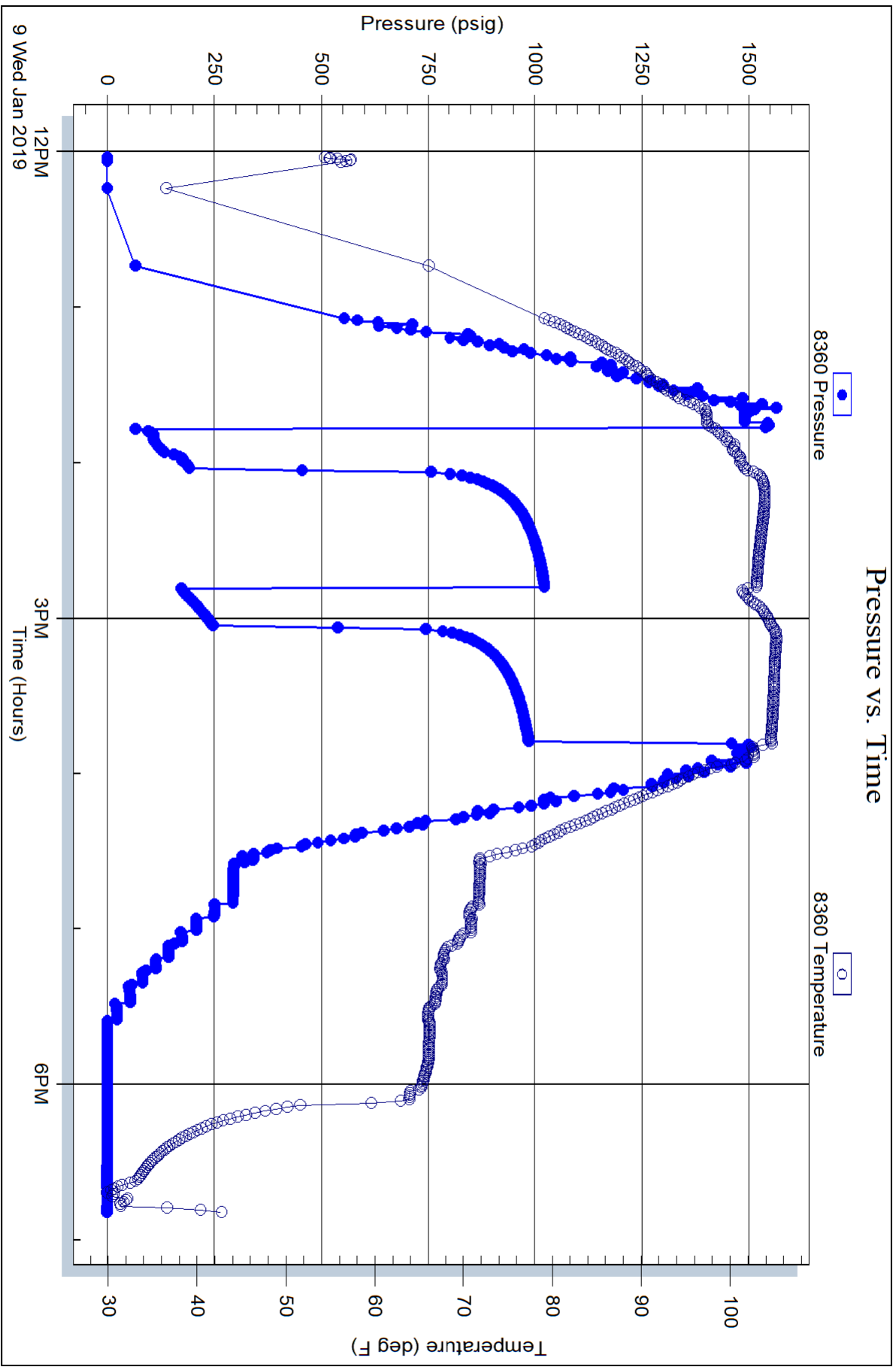
Serial #: 8360

Inside

Jaspar Co.

3DR Unit #1

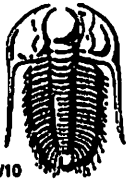
DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 65392

Printed: 2019.01.11 @ 09:22:12



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65387

Well Name & No. 3DA Unit #1 Test No. 1 Date 1-5-19
 Company Jasper Co., Inc. Elevation 1956 KB 1951 GL
 Address PO Box 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WJW #8
 Location: Sec. 14 Twp 7S Rge. 19W Co. Rooks State Ks

Interval Tested 3175'-3215' Zone Tested Lansing C+D
 Anchor Length 40' Drill Pipe Run 3045.39' Mud Wt. 8.9
 Top Packer Depth 3170' Drill Collars Run 119.11' Vls 51
 Bottom Packer Depth 3175' Wt. Pipe Run 0 WL 8
 Total Depth 3215' Chlorides 1500 ppm System LCM 2#

Blow Description IFP - No surface blow
ISI - No Return
IFP - open tool for 10 mins. No blow, flushed tool bubbled on open pulled tool
ISI.

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>OSM</u>	<u>Spots</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 1555
- (B) First Initial Flow 12
- (C) First Final Flow 13
- (D) Initial Shut-In 89
- (E) Second Initial Flow 12
- (F) Second Final Flow _____
- (G) Final Shut-In _____
- (H) Final Hydrostatic 1532

- Test 1050
- Jars _____
- Safety Joint _____
- Circ Sub _____
- Hourly Standby _____
- Mileage 196 R/T 100rt
- Sampler _____
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1150

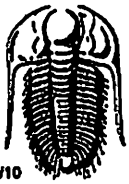
T-On Location 7:10pm
 T-Started 9:30pm
 T-Open 11:03pm
 T-Pulled 12:45am
 T-Out 2:10am
 Comments got stuck on location had to wait for cat to get to katwalk
 EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1150

Initial Open 30
 Initial Shut-In 45
 Final Flow 10
 Final Shut-In _____

Approved By _____

Our Representative Jeff Lawler MP/DST Disc't _____

Triobite 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. 65388

Well Name & No. 3DR Unit #1 Test No. 2 Date 1-16-19
 Company Jasper Co. Inc. Elevation 1956 KB 1951 GL
 Address PO Box 1120 Hays ks 67701
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 14 Twp 7S Rge. 19W Co. Rocks State ks

Interval Tested 3214'-3242' Zone Tested E+F
 Anchor Length 28' Drill Pipe Run 3107.39' Mud Wt. 9.2
 Top Packer Depth 3209' Drill Collars Run 119.61' Vis 48
 Bottom Packer Depth 3214' Wt. Pipe Run 0 WL 8
 Total Depth 3242' Chlorides 1500 ppm System LCM 2#

Blow Description IFP - Surface blow built up to 1 1/4"
ISI - No return
FFP - Surface blow stayed at a weak blow through out
FFI - Got a faint return about 35mins into the shut in

Rec	Feet of	%gas	Spots	%oil	%water	%mud
<u>45'</u>	<u>CSWM</u>				<u>2</u>	<u>98</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 45' BHT 94°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1568 Test 1050 T-On Location 8:05 am
 (B) First Initial Flow 12 Jars _____ T-Started 8:19 am
 (C) First Final Flow 23 Safety Joint _____ T-Open 9:45 am
 (D) Initial Shut-In 1203 Circ Sub _____ T-Pulled 12:30 pm
 (E) Second Initial Flow 24 Hourly Standby _____ T-Out 1:53 pm
 (F) Second Final Flow 31 Mileage 194 R/T 100 Comments _____
 (G) Final Shut-In 5710 Sampler _____
 (H) Final Hydrostatic 1554 Straddle _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 45 Extra Recorder _____
 Final Shut-In 45 Day Standby _____
 Sub Total 1150 Accessibility _____
 Sub Total 1150 EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1150
 MP/DST Disc't _____

Approved By _____ Our Representative Paul Lawler

Triobite 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. 65389

Well Name & No. 3DR Unit #1 Test No. 3 Date 1-6-19
 Company Jasper Co. Inc. Elevation 19546 KB 19541 GL
 Address PO Box 1120 Hays Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 14 Twp 7S Rge. 19W Co. Rooks State Ks

Interval Tested 3240'-3253 Zone Tested LHC-G
 Anchor Length 13' Drill Pipe Run 3107.90' Mud Wt. 9.2
 Top Packer Depth 3235' Drill Collars Run 119.61 Vis 48
 Bottom Packer Depth 3240' Wt. Pipe Run 0 WL 8
 Total Depth 3253' Chlorides 1500 ppm System LCM 2#

Blow Description IFP Surface blow slowly built to almost 3/4"
ISI - No Return
FFP Surface blow started a very faint blow 28 mins in then died
FSI - No Return

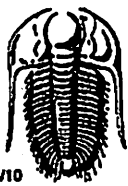
Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 94°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1559 Test 1050 T-On Location 8:05am 1-6-19
 (B) First Initial Flow 10 Jars _____ T-Started 7:38 pm
 (C) First Final Flow 12 Safety Joint _____ T-Open 9:31 pm
 (D) Initial Shut-In 652 Circ Sub _____ T-Pulled 12:21 am
 (E) Second Initial Flow 12 Hourly Standby _____ T-Out 1:43 am
 (F) Second Final Flow 14 Mileage 196 B/T Comments _____
 (G) Final Shut-In 641 Sampler _____ stayed on location
 (H) Final Hydrostatic 1531 Straddle _____ EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1050
 Sub Total 1050 MP/DST Disc't _____

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

Approved By _____ Our Representative Jeff Lawler
 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. 65390

Well Name & No. 3DR Unit #1 Test No. 4 Date 1-7-19
 Company Jasper Co. Inc. Elevation 1956 KB 1951 GL
 Address PO Box 1120 Hays, ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. H Twp 7S Rge. 19W Co. Roob's State ks

Interval Tested 3267-3371 Zone Tested LHC-H-L
 Anchor Length 104 Drill Pipe Run 3138.76 Mud Wt. 9
 Top Packer Depth 3262' Drill Collars Run 119.61 Vis 44
 Bottom Packer Depth 3267' Wt. Pipe Run 0 WL 8
 Total Depth 3371' Chlorides 500 ppm System LCM 1 1/2 #
 Blow Description IFP - Surface blow gradually built up to 1 1/2" ISI - No Return
FFP - Weak surface blow started 3 mins in and built up to 1/4" FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>59'</u>	<u>OCM</u>	<u>35</u>		<u>105</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

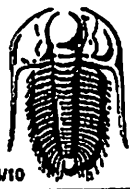
Rec Total 59' BHT 959' Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 585 Test 1050 T-On Location 2:11 pm
 (B) First Initial Flow 16 Jars _____ T-Started 2:37 pm
 (C) First Final Flow 28 Safety Joint _____ T-Open 4:05 pm
 (D) Initial Shut-In 451 Circ Sub _____ T-Pulled 7:20 pm
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 9:12 pm
 (F) Second Final Flow 310 Mileage 19 1/2 B/T 100 Comments _____
 (G) Final Shut-In 215 Sampler _____
 (H) Final Hydrostatic 548 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 45 EM Tool _____
 Initial Shut-In 45 Ruined Shale Packer _____
 Final Flow 10 Ruined Packer _____
 Final Shut-In 45 Extra Copies _____

Sub Total 1150 Total 1150 MR/DST Disc't _____

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65391

Well Name & No. 30A Unit #1 Test No. 5 Date 1-8-19
 Company Jordan Co. Inc. Elevation 1956 KB PS1 GL
 Address PO Box 1120 Hays ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 14 Twp 2S Rge. RW Co. Rooks State ks

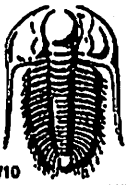
Interval Tested 3106'-355' Zone Tested Heebner
 Anchor Length 49' Drill Pipe Run 2983.39 Mud Wt. 9.2
 Top Packer Depth 3101' Drill Collars Run 119.61 Vls 53
 Bottom Packer Depth 3106' Wt. Pipe Run 0 WL 26
 Total Depth 3552' Chlorides 1000 ppm System LCM 4#
 Blow Description JFP - packer failure, tried resetting packer 3 times

Rec	Feet of	%gas	%oil	%water	%mud
<u>527'</u>	<u>Mud</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 Total 527' BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test Packer Failure T-On Location 5:30 pm
 (B) First Initial Flow _____ Jars 850 T-Started 6:47 pm
 (C) First Final Flow _____ Safety Joint _____ T-Open 8:41 pm
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled 9:00 pm
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 11:11 pm
 (F) Second Final Flow _____ Mileage 196 R/T 100 Comments _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle 600
 Shale Packer 250 EM Tool _____
 Extra Packer _____ Ruined Shale Packer _____
 Extra Recorder _____ Ruined Packer _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1800
 Sub Total 1800 MP/DST Disc'n _____

Approved By _____ Our Representative [Signature]
 TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 65392

Well Name & No. 3DR Unit #1 Test No. 6 Date 1-8-19
 Company Gaspar Co. Inc Elevation 956 KB 1951 GL
 Address PO Box 1120 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW#8
 Location: Sec. 14 Twp 7S Rge. 19W Co. Rocks State KS

Interval Tested 303'-3169' Zone Tested Toronto
 Anchor Length 660 Drill Pipe Run 2976.39 Mud Wt. 9.2
 Top Packer Depth 3098' Drill Collars Run 119.61 Vis 53
 Bottom Packer Depth 3103 Wt. Pipe Run 0 WL 76
 Total Depth 3552' Chlorides 1000 ppm System LCM 4#

Blow Description IFP - surface blow built to bottom of the bucket in 3mins
IST - return built to bottom of the bucket in 14mins
FFP - surface blow to bottom of the bucket in 5mins
FST - return blow from bottom of the bucket in

Rec	Feet of	%gas	%oil	%water	%mud
<u>258</u>	<u>Free Oil</u>	<u>100</u>			
<u>248</u>	<u>MCO</u>	<u>70</u>			<u>30</u>
<u>124</u>	<u>MCO-75</u>	<u>75</u>			<u>25</u>
<u>62</u>	<u>Gmco</u>	<u>25</u>	<u>50</u>		<u>25</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 692 BHT 102°F Gravity 31.060° API RW @ ° F Chlorides ppm

- (A) Initial Hydrostatic 1548
- (B) First Initial Flow 58
- (C) First Final Flow 123
- (D) Initial Shut-In 1010
- (E) Second Initial Flow 172
- (F) Second Final Flow 248
- (G) Final Shut-In 981
- (H) Final Hydrostatic 1535

- Test 1050
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 19/0 RT
- Sampler
- Straddle 600
- Shale Packer 250
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1900

T-On Location 5:30pm
 T-Started 12:02am
 T-Open 1:46am
 T-Pulled 3:46am
 T-Out 6:50am

Comments _____
 EM Tool
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1900
 MP/DST Disc't _____

Initial Open 15
 Initial Shut-In 45
 Final Flow 15
 Final Shut-In 45

Approved By _____ Our Representative [Signature]

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513

Phone: 316-337-6200
Fax: 346-337-6211
<http://kcc.ks.gov/>

Dwight D. Keen, Chair
Shari Feist Albrecht, Commissioner
Jay Scott Emler, Commissioner

Laura Kelly, Governor

May 08, 2019

Shane Vehige
Jaspar Co.
PO BOX 1120
HAYS, KS 67601-1120

Re: ACO-1
API 15-163-24380-00-00
3DR UNIT 1
NW/4 Sec.14-07S-19W
Rooks County, Kansas

Dear Shane Vehige:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 01/02/2019 and the ACO-1 was received on May 08, 2019 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department