

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) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	CARMICHAEL 2-22
Doc ID	1663209

All Electric Logs Run

DIL
DUCP
MEL
BHCS



## DRILLING REPORT - LOG TOPS - CARMICHAEL 2-22

MDCI Carmichael #2-22 1600 FNL 990 FWL Sec. 22-T9S-R17W 2114' KB						
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	1402	712	-15	1402	712	-15
B/Anhydrite	1438	676	-13	1436	678	-11
Topeka	3019	-905	-5	3019	-905	-5
Heebner	3236	-1122	-7	3234	-1120	-5
Toronto	3260	-1146	-8	3254	-1140	-2
Lansing	3280	-1166	-9	3275	-1161	-4
BKC	3506	-1392	+3	3507	-1393	+2
Arbuckle	3600	-1486	-2	3578	-1464	+20
RTD	3670					
LTD				3667		



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

### **Carmichael #2-22**

### **22-9s-17w Rooks,KS**

Start Date: 2022.07.12 @ 04:30:00

End Date: 2022.07.12 @ 06:36:47

Job Ticket #: 69067                      DST #: 1

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

Printed: 2022.07.15 @ 11:18:00









**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69067

**DST#: 1**

ATTN: Rod Anderson

Test Start: 2022.07.12 @ 04:30:00

## Tool Information

Drill Pipe:	Length: 3208.00 ft	Diameter: 3.82 inches	Volume: 45.47 bbl	Tool Weight:	2500.00 daN
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	daN
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	daN
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	daN
Drill Pipe Above KB:	6.00 ft			Final	daN
Depth to Top Packer:	3264.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	91.00 ft				
Tool Length:	123.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3233.00	
Shut In Tool	5.00			3238.00	
Hydraulic tool	5.00			3243.00	
Jars	5.00			3248.00	
Gap Sub	4.00			3252.00	
Safety Joint	3.00			3255.00	
Packer	5.00			3260.00	32.00 Bottom Of Top Packer
Packer	4.00			3264.00	
Stubb	1.00			3265.00	
Perforations	1.00			3266.00	
Change Over Sub	1.00			3267.00	
Recorder	0.00	6838	Inside	3267.00	
Recorder	0.00	8875	Inside	3267.00	
Drill Pipe	63.00			3330.00	
Change Over Sub	1.00			3331.00	
Perforations	20.00			3351.00	
Change Over Sub	1.00			3352.00	
Bullnose	3.00			3355.00	91.00 Bottom Packers & Anchor

**Total Tool Length: 123.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69067

**DST#: 1**

ATTN: Rod Anderson

Test Start: 2022.07.12 @ 04:30:00

### 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl

Total Length: ft

Total Volume: bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 2#LCM

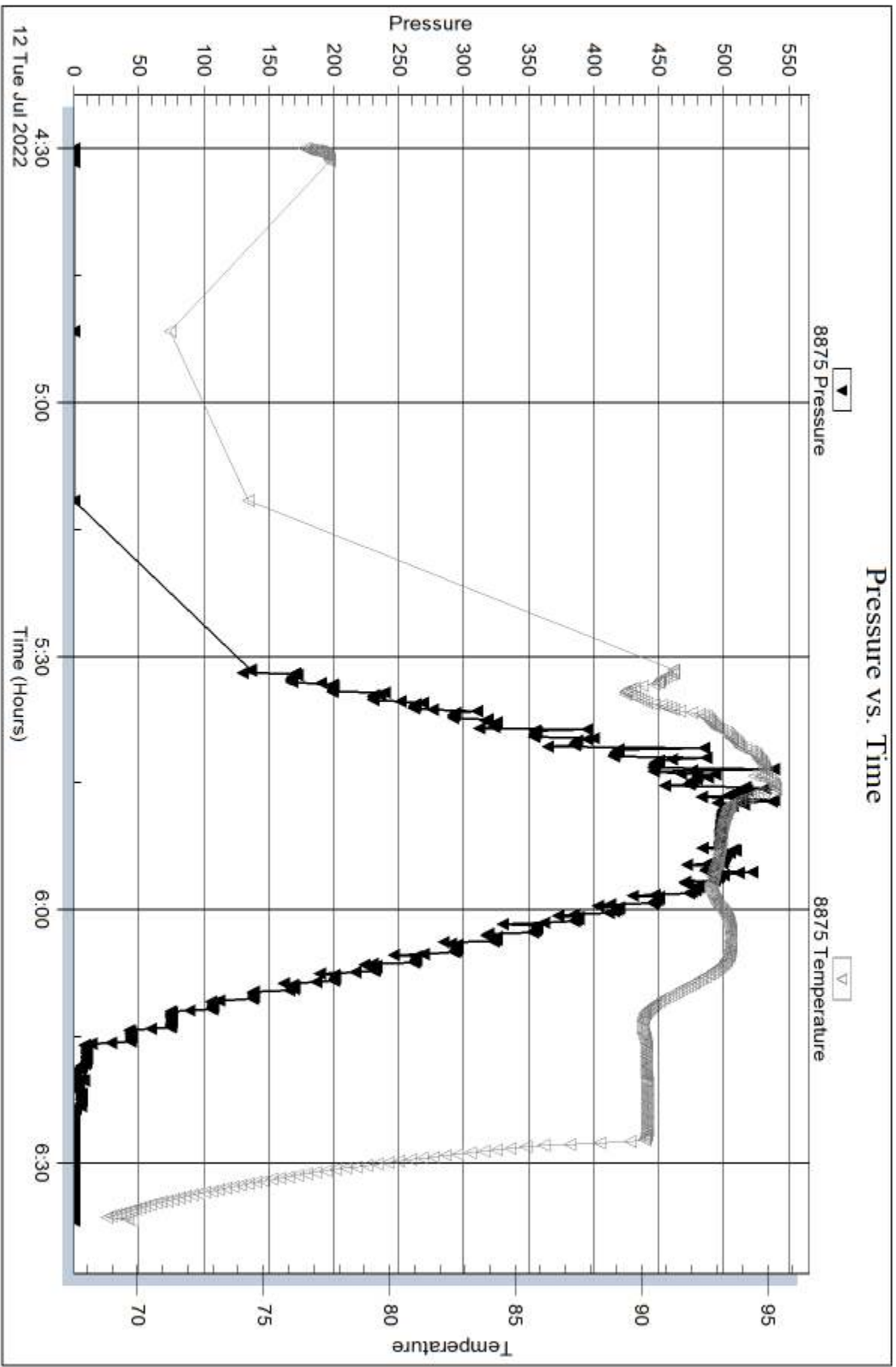
Serial #: 8875

Inside

Murfin Drilling Company Inc

Carmichael #2-22

DST Test Number: 1



Trilobe Testing, Inc

Ref. No: 69067

Printed: 2022.07.15 @ 11:18:01

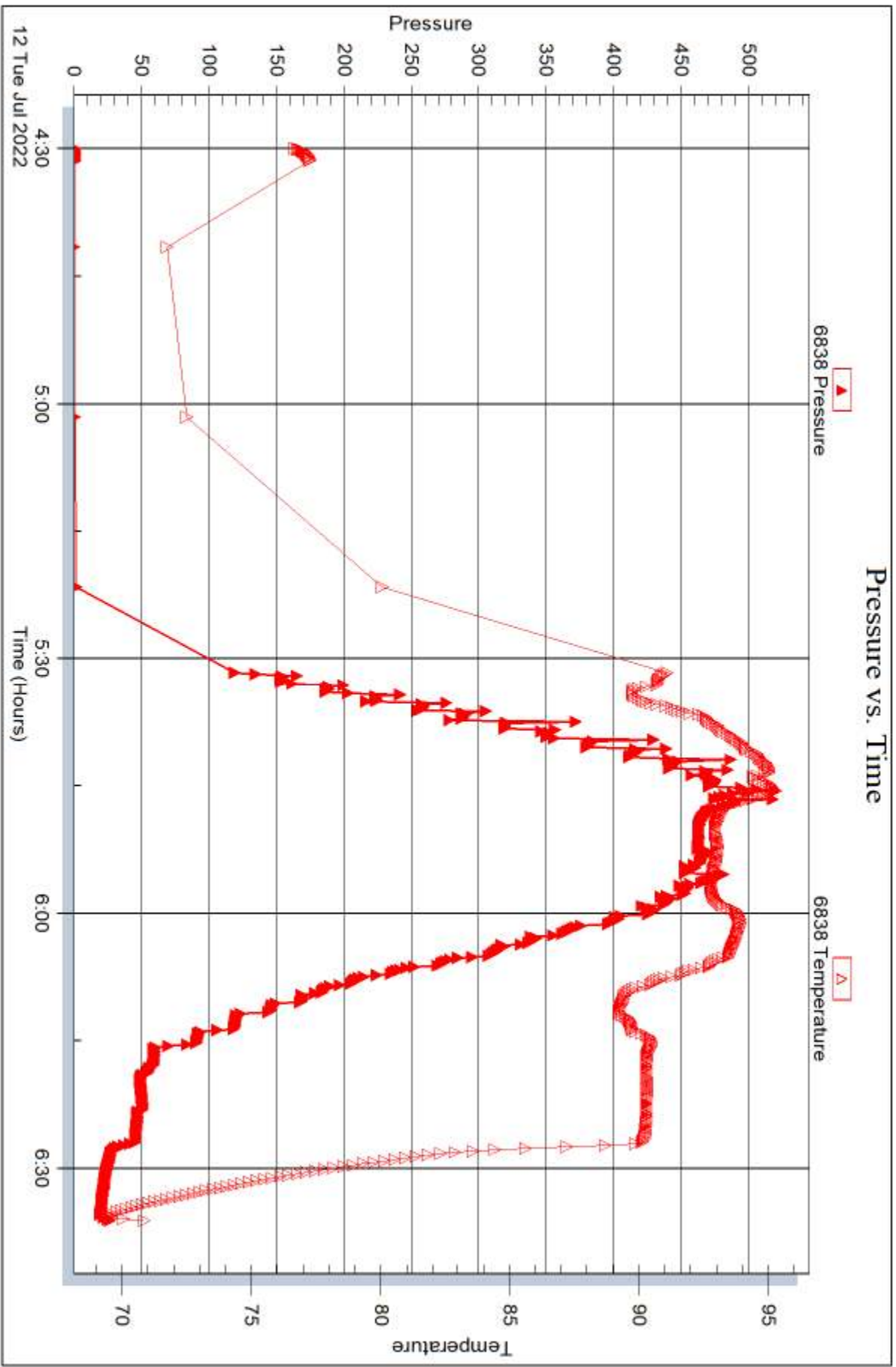
Serial #: 6838

Inside

Murfin Drilling Company Inc

Carmichael #2-22

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 69067

Printed: 2022.07.15 @ 11:18:01



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

### **Carmichael #2-22**

### **22-9s-17w Rooks,KS**

Start Date: 2022.07.12 @ 11:40:14

End Date: 2022.07.12 @ 18:36:01

Job Ticket #: 69068                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2022.07.15 @ 11:17:00



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc  
 250 N Water Ste 300  
 Wichita KS 67202+1216  
 ATTN: Rod Anderson

**22-9s-17w Rooks,KS**

**Carmichael #2-22**

Job Ticket: 69068

**DST#: 2**

Test Start: 2022.07.12 @ 11:40:14

## GENERAL INFORMATION:

Formation: **LKC A-D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:25:41  
 Time Test Ended: 18:36:01  
 Interval: **3264.00 ft (KB) To 3355.00 ft (KB) (TVD)**  
 Total Depth: 3355.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Spencer J Staab  
 Unit No: 84  
 Reference Elevations: 2114.00 ft (KB)  
 2109.00 ft (CF)  
 KB to GR/CF: 5.00 ft

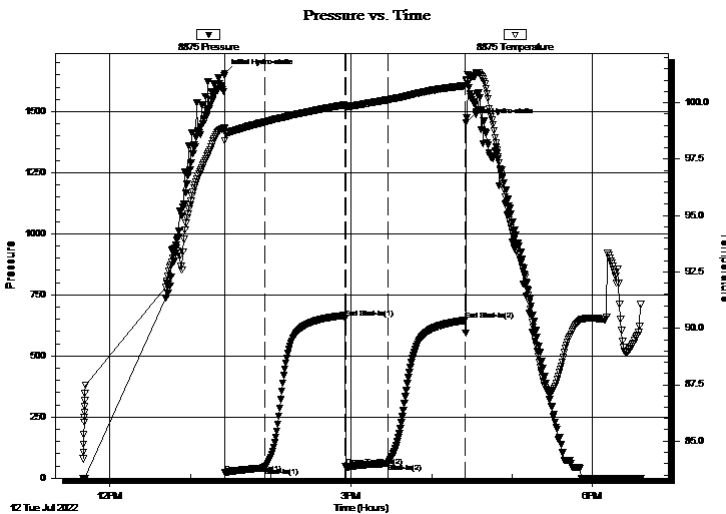
## Serial #: 8875

Inside

Press@RunDepth: 60.73 psig @ 3267.00 ft (KB) Capacity: psig  
 Start Date: 2022.07.12 End Date: 2022.07.12 Last Calib.: 2022.07.13  
 Start Time: 11:40:15 End Time: 18:36:01 Time On Btm: 2022.07.12 @ 13:25:31  
 Time Off Btm: 2022.07.12 @ 16:25:46

TEST COMMENT: 30-IF-Surface to 1/4" Died  
 60-ISI-No Return  
 30-FF-Surface to 1/2"  
 60-FSI-No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1656.81	98.88	Initial Hydro-static
1	21.11	98.31	Open To Flow (1)
31	43.19	99.15	Shut-In(1)
90	653.62	99.87	End Shut-In(1)
91	46.81	99.83	Open To Flow (2)
122	60.73	100.13	Shut-In(2)
180	646.19	100.76	End Shut-In(2)
181	1454.85	100.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
85.00	GHOCM 20%G 30%O 50%M	0.42
15.00	GO 15%G 85%O	0.07
0.00	40 GIP 100%G	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69068

**DST#: 2**

ATTN: Rod Anderson

Test Start: 2022.07.12 @ 11:40:14

## GENERAL INFORMATION:

Formation: **LKC A-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:25:41

Time Test Ended: 18:36:01

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3264.00 ft (KB) To 3355.00 ft (KB) (TVD)**

Reference Elevations: 2114.00 ft (KB)

Total Depth: 3355.00 ft (KB) (TVD)

2109.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6838 Inside**

Press@RunDepth: psig @ 3267.00 ft (KB)

Capacity: psig

Start Date: 2022.07.12 End Date: 2022.07.12

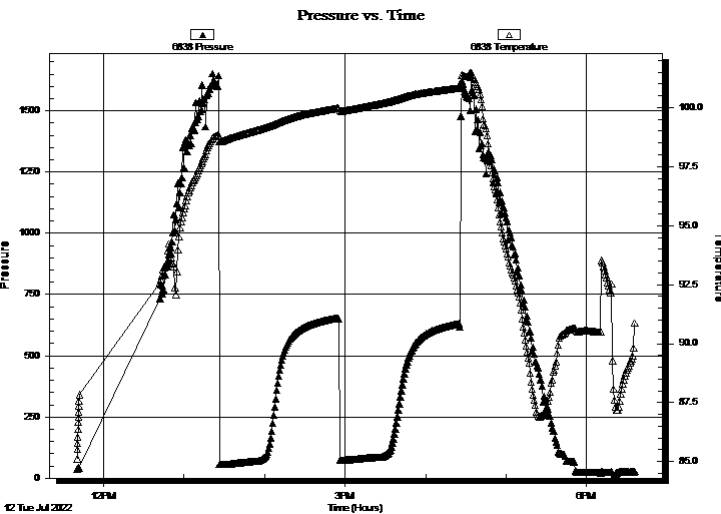
Last Calib.: 2022.07.13

Start Time: 11:40:17 End Time: 18:36:03

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IF-Surface to 1/4" Died  
60-ISI-No Return  
30-FF-Surface to 1/2"  
60-FSI-No Return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
85.00	GHOCM 20%G 30%O 50%M	0.42
15.00	GO 15%G 85%O	0.07
0.00	40 GIP 100%G	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69068

**DST#: 2**

ATTN: Rod Anderson

Test Start: 2022.07.12 @ 11:40:14

## Tool Information

Drill Pipe:	Length: 3111.00 ft	Diameter: 3.82 inches	Volume: 44.10 bbl	Tool Weight:	2500.00 daN
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 daN
Drill Collar:	Length: 154.00 ft	Diameter: 2.25 inches	Volume: 0.76 bbl	Weight to Pull Loose:	59000.00 daN
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	58000.00 daN
Drill Pipe Above KB:	33.00 ft			Final	58000.00 daN
Depth to Top Packer:	3264.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	91.00 ft				
Tool Length:	123.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3233.00	
Shut In Tool	5.00			3238.00	
Hydraulic tool	5.00			3243.00	
Jars	5.00			3248.00	
Gap Sub	4.00			3252.00	
Safety Joint	3.00			3255.00	
Packer	5.00			3260.00	32.00 Bottom Of Top Packer
Packer	4.00			3264.00	
Stubb	1.00			3265.00	
Perforations	1.00			3266.00	
Change Over Sub	1.00			3267.00	
Recorder	0.00	6838	Inside	3267.00	
Recorder	0.00	8875	Inside	3267.00	
Drill Pipe	63.00			3330.00	
Change Over Sub	1.00			3331.00	
Perforations	20.00			3351.00	
Change Over Sub	1.00			3352.00	
Bullnose	3.00			3355.00	91.00 Bottom Packers & Anchor

**Total Tool Length: 123.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69068

**DST#: 2**

ATTN: Rod Anderson

Test Start: 2022.07.12 @ 11:40:14

### 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.77 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2700.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
85.00	GHOCM 20%G 30%O 50%M	0.418
15.00	GO 15%G 85%O	0.074
0.00	40 GIP 100%G	0.000

Total Length: 100.00 ft      Total Volume: 0.492 bbl

Num Fluid Samples: 0

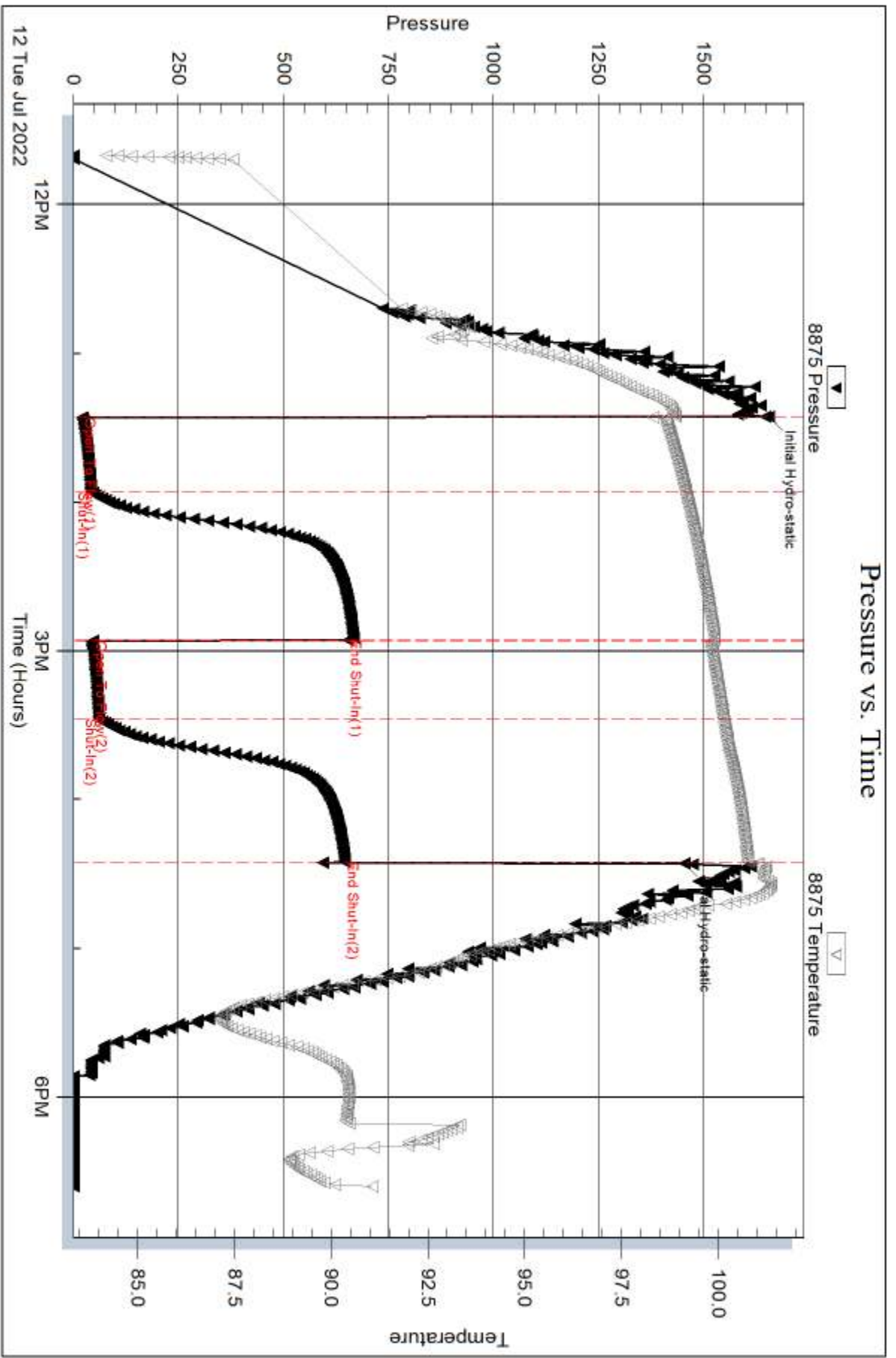
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



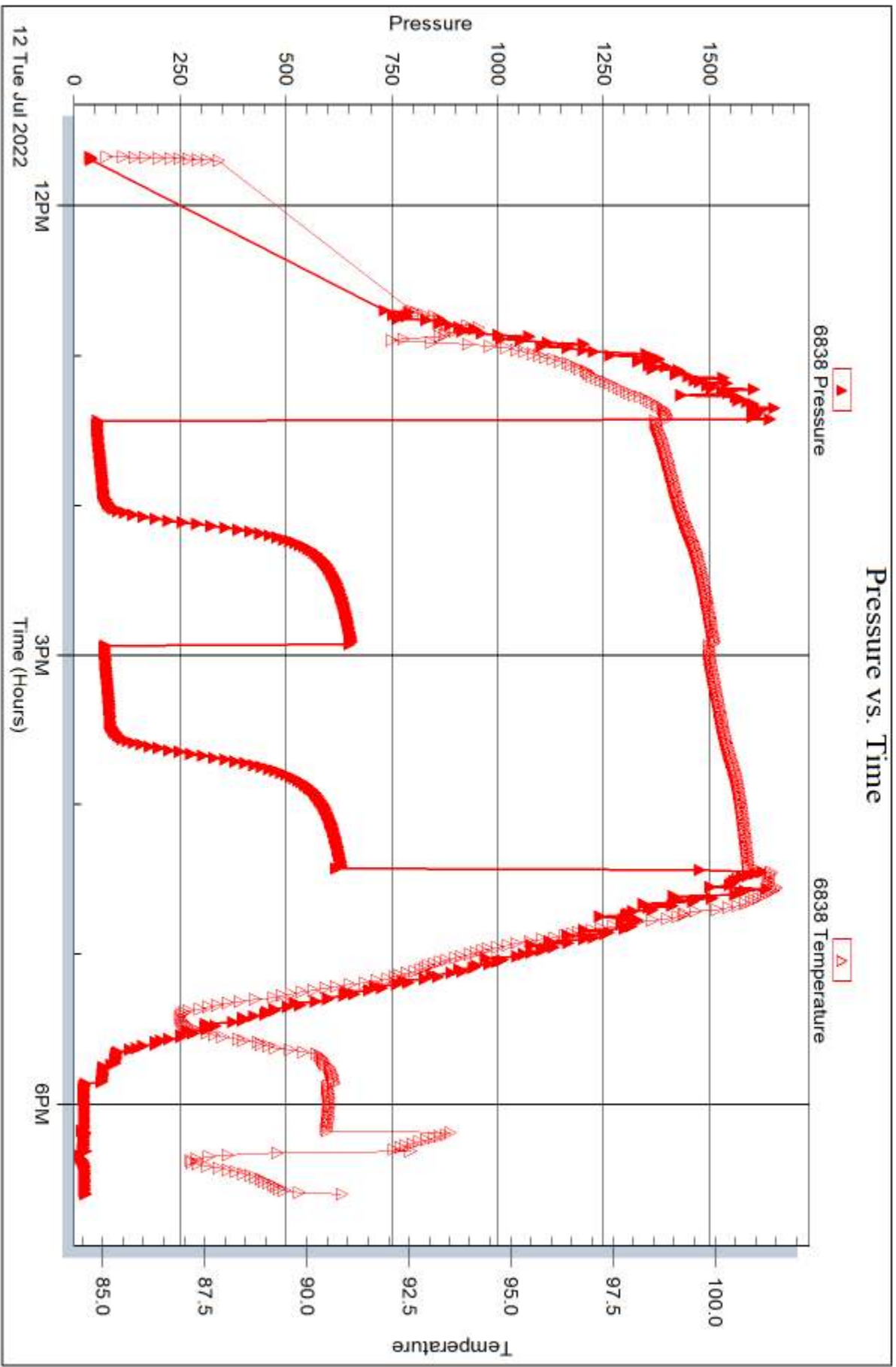
Serial #: 6838

Inside

Murfin Drilling Company Inc

Carmichael #2-22

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 69068

Printed: 2022.07.15 @ 11:17:01



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

### **Carmichael #2-22**

### **22-9s-17w Rooks,KS**

Start Date: 2022.07.13 @ 06:40:00

End Date: 2022.07.13 @ 13:26:26

Job Ticket #: 69069                      DST #: 3

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

Printed: 2022.07.15 @ 11:15:12



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

ATTN: Rod Anderson

Job Ticket: 69069

**DST#: 3**

Test Start: 2022.07.13 @ 06:40:00

## GENERAL INFORMATION:

Formation: **LKC E-G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:26:57

Time Test Ended: 13:26:26

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3347.00 ft (KB) To 3405.00 ft (KB) (TVD)**

Reference Elevations: 2114.00 ft (KB)

Total Depth: 3405.00 ft (KB) (TVD)

2109.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8875**

**Inside**

Press@RunDepth: 252.79 psig @ 3350.00 ft (KB)

Capacity: psig

Start Date: 2022.07.13

End Date:

2022.07.13

Last Calib.: 2022.07.13

Start Time: 06:40:01

End Time:

13:26:26

Time On Btm: 2022.07.13 @ 08:26:02

Time Off Btm: 2022.07.13 @ 11:28:32

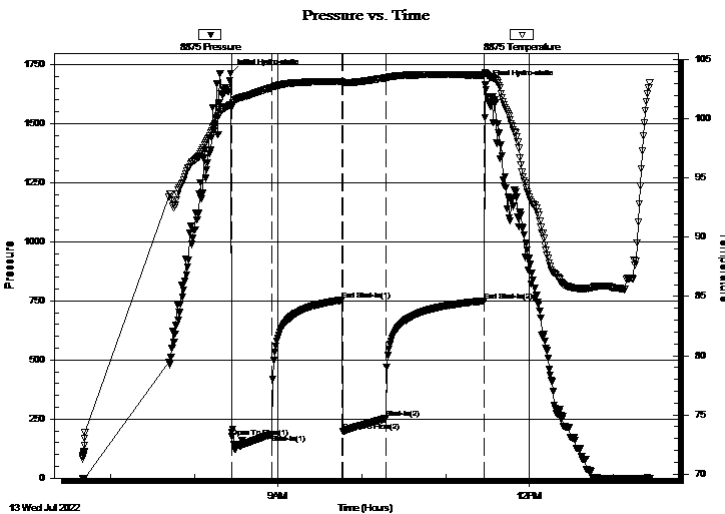
**TEST COMMENT:** 30-IF-BOB 1 min Built to 22"

60-ISI-Weak Surface

30-FF-Surface to 9"

60-FSI-Surface to 1/2"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1712.11	101.17	Initial Hydro-static
1	174.26	101.10	Open To Flow (1)
30	186.24	102.63	Shut-In(1)
80	753.45	103.16	End Shut-In(1)
81	196.99	103.08	Open To Flow (2)
111	252.79	103.46	Shut-In(2)
182	750.28	103.71	End Shut-In(2)
183	1663.98	103.88	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
200.00	Water 100%W	2.56
160.00	GVSOCWM 10%G 3%O 20%W 67%M	2.27
120.00	GOCM 10%G 10%O 80%M	1.70
20.00	GO 25%G 75%O	0.28
0.00	90 GIP 100%G	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

**DRILL STEM TEST REPORT**

Murfin Drilling Company Inc

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

**22-9s-17w Rooks,KS**

**Carmichael #2-22**

Job Ticket: 69069                  **DST#: 3**

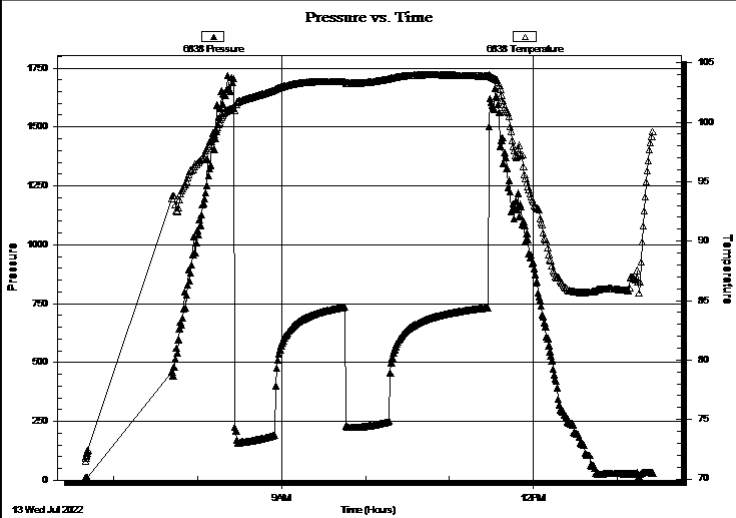
Test Start: 2022.07.13 @ 06:40:00

**GENERAL INFORMATION:**

Formation: <b>LKC E-G</b>	Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 08:26:57	Time Test Ended: 13:26:26		Tester: Spencer J Staab
			Unit No: 84
<b>Interval: 3347.00 ft (KB) To 3405.00 ft (KB) (TVD)</b>			Reference Elevations: 2114.00 ft (KB)
Total Depth: 3405.00 ft (KB) (TVD)			2109.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair		KB to GR/CF: 5.00 ft

<b>Serial #: 6838</b>	<b>Inside</b>				
Press@RunDepth:                  psig @	3350.00 ft (KB)	Capacity:	psig		
Start Date: 2022.07.13	End Date: 2022.07.13	Last Calib.:	2022.07.13		
Start Time: 06:40:01	End Time: 13:25:47	Time On Btm:			
		Time Off Btm:			

**TEST COMMENT:** 30-IF-BOB 1 min Built to 22"  
60-ISI-Weak Surface  
30-FF-Surface to 9"  
60-FSI-Surface to 1/2"



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

Recovery		
Length (ft)	Description	Volume (bbl)
200.00	Water 100%W	2.56
160.00	GVSOCWM 10%G 3%O 20%W 67%M	2.27
120.00	GOCM 10%G 10%O 80%M	1.70
20.00	GO 25%G 75%O	0.28
0.00	90 GIP 100%G	0.00
* Recovery from multiple tests		

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69069

**DST#: 3**

ATTN: Rod Anderson

Test Start: 2022.07.13 @ 06:40:00

## Tool Information

Drill Pipe:	Length: 3301.00 ft	Diameter: 3.82 inches	Volume: 46.79 bbl	Tool Weight:	2500.00 daN
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 daN
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 daN
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	52000.00 daN
Drill Pipe Above KB:	16.00 ft			Final	55000.00 daN
Depth to Top Packer:	3347.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	90.00 ft				
Number of Packers:	1	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3316.00	
Shut In Tool	5.00			3321.00	
Hydraulic tool	5.00			3326.00	
Jars	5.00			3331.00	
Gap Sub	4.00			3335.00	
Safety Joint	3.00			3338.00	
Packer	5.00			3343.00	32.00 Bottom Of Top Packer
Packer	4.00			3347.00	
Stubb	1.00			3348.00	
Perforations	1.00			3349.00	
Change Over Sub	1.00			3350.00	
Recorder	0.00	6838	Inside	3350.00	
Recorder	0.00	8875	Inside	3350.00	
Drill Pipe	32.00			3382.00	
Change Over Sub	1.00			3383.00	
Perforations	18.00			3401.00	
Change Over Sub	1.00			3402.00	
Bullnose	3.00			3405.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 90.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69069

**DST#: 3**

ATTN: Rod Anderson

Test Start: 2022.07.13 @ 06:40:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

57000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	Water 100%W	2.557
160.00	GVSOCWM 10%G 3%O 20%W 67%M	2.268
120.00	GOCM 10%G 10%O 80%M	1.701
20.00	GO 25%G 75%O	0.284
0.00	90 GIP 100%G	0.000

Total Length: 500.00 ft

Total Volume: 6.810 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

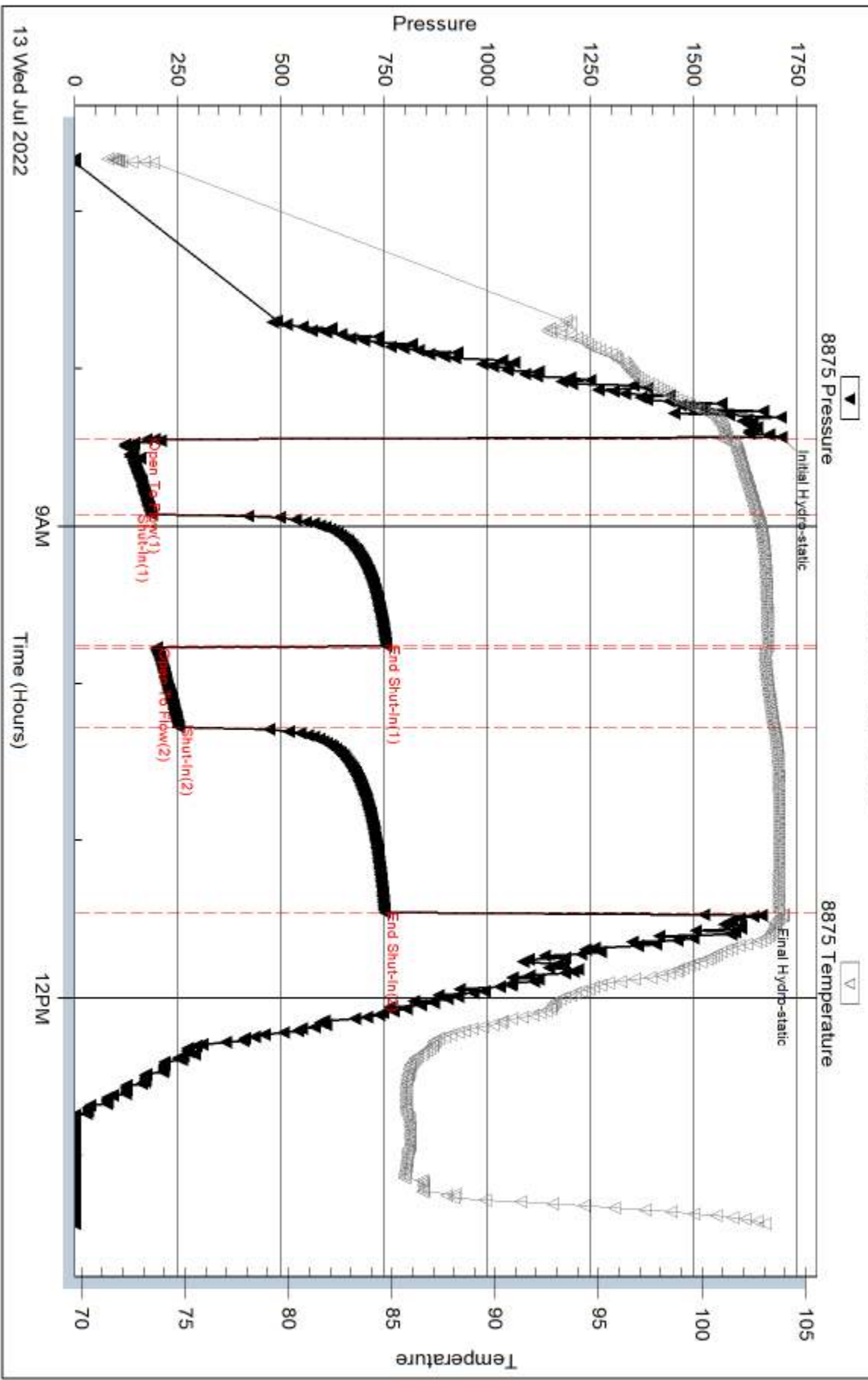
Laboratory Location:

Recovery Comments: 2#LCM

RW=.103@90F



### Pressure vs. Time



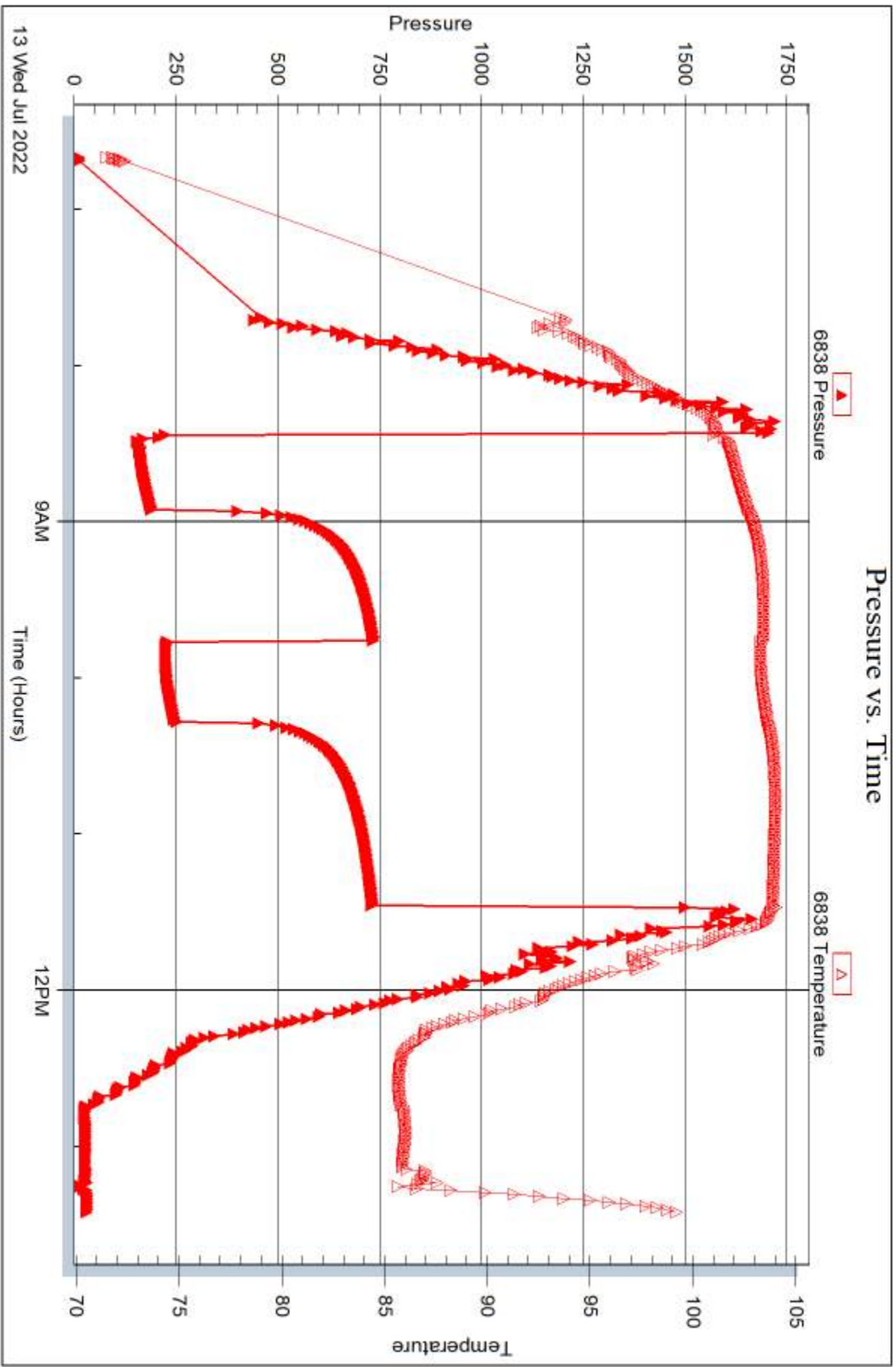
Serial #: 6838

Inside

Murfin Drilling Company Inc

Carnichael #2-22

DST Test Number: 3



13 Wed Jul 2022



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company Inc**

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

### **Carmichael #2-22**

### **22-9s-17w Rooks,KS**

Start Date: 2022.07.14 @ 06:25:00

End Date: 2022.07.14 @ 13:10:07

Job Ticket #: 69070                      DST #: 4

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

Printed: 2022.07.15 @ 11:10:39



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69070

**DST#: 4**

ATTN: Rod Anderson

Test Start: 2022.07.14 @ 06:25:00

## GENERAL INFORMATION:

Formation: **LKC H-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:23:52

Time Test Ended: 13:10:07

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3390.00 ft (KB) To 3522.00 ft (KB) (TVD)**

Reference Elevations: 2114.00 ft (KB)

Total Depth: 3522.00 ft (KB) (TVD)

2109.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8875**

**Inside**

Press@RunDepth: 46.54 psig @ 3393.00 ft (KB)

Capacity: psig

Start Date: 2022.07.14

End Date:

2022.07.14

Last Calib.:

2022.07.14

Start Time: 06:25:01

End Time:

13:10:07

Time On Btm:

2022.07.14 @ 08:23:42

Time Off Btm:

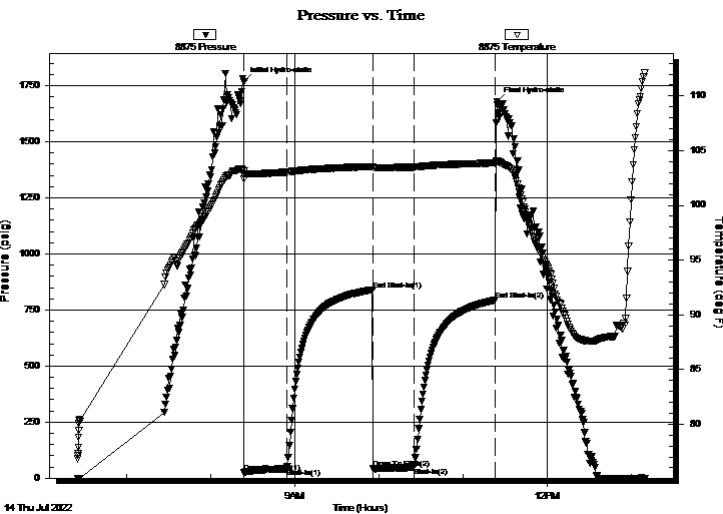
2022.07.14 @ 11:24:07

TEST COMMENT: 30-IF-Surface to 1" Died

60-ISI-No Return

30-FF-Weak Surface

60-FSI-No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1767.11	103.16	Initial Hydro-static
1	25.46	102.78	Open To Flow (1)
31	42.01	103.05	Shut-In(1)
92	838.68	103.53	End Shut-In(1)
93	41.83	103.44	Open To Flow (2)
122	46.54	103.50	Shut-In(2)
180	794.12	103.90	End Shut-In(2)
181	1679.34	104.05	Final Hydro-static

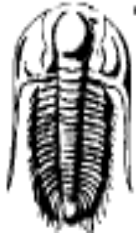
## Recovery

Length (ft)	Description	Volume (bbl)
45.00	OSM 100%M	0.36

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Murfin Drilling Company Inc

250 N Water Ste 300  
Wichita KS 67202+1216

ATTN: Rod Anderson

**22-9s-17w Rooks, KS**

**Carmichael #2-22**

Job Ticket: 69070

**DST#: 4**

Test Start: 2022.07.14 @ 06:25:00

### GENERAL INFORMATION:

Formation: **LKC H-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:23:52

Time Test Ended: 13:10:07

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J Staab

Unit No: 84

**Interval: 3390.00 ft (KB) To 3522.00 ft (KB) (TVD)**

Reference Elevations: 2114.00 ft (KB)

Total Depth: 3522.00 ft (KB) (TVD)

2109.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6838      Inside**

Press@RunDepth:                      psig @      3393.00 ft (KB)

Capacity:    psig

Start Date:                      2022.07.14                      End Date:                      2022.07.14

Last Calib.:                                      2022.07.14

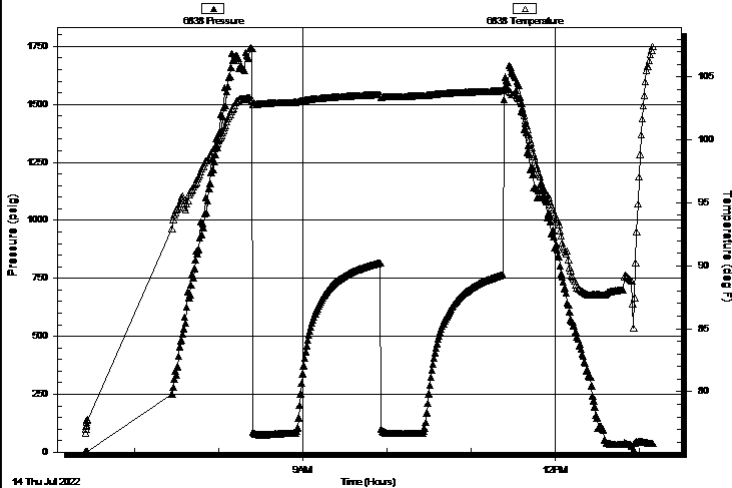
Start Time:                      06:25:01                      End Time:                      13:10:07

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-Surface to 1" Died  
60-ISI-No Return  
30-FF-Weak Surface  
60-FSI-No Return

### Pressure vs. Time



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
45.00	OSM 100%M	0.36

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69070

**DST#: 4**

ATTN: Rod Anderson

Test Start: 2022.07.14 @ 06:25:00

## Tool Information

Drill Pipe:	Length: 3334.00 ft	Diameter: 3.82 inches	Volume: 47.26 bbl	Tool Weight:	2500.00 daN
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer:	25000.00 daN
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 daN
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	53000.00 daN
Drill Pipe Above KB:	6.00 ft			Final	53000.00 daN
Depth to Top Packer:	3390.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	132.00 ft				
Tool Length:	164.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

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

Change Over Sub	1.00			3359.00	
Shut In Tool	5.00			3364.00	
Hydraulic tool	5.00			3369.00	
Jars	5.00			3374.00	
Gap Sub	4.00			3378.00	
Safety Joint	3.00			3381.00	
Packer	5.00			3386.00	32.00 Bottom Of Top Packer
Packer	4.00			3390.00	
Stubb	1.00			3391.00	
Perforations	1.00			3392.00	
Change Over Sub	1.00			3393.00	
Recorder	0.00	6838	Inside	3393.00	
Recorder	0.00	8875	Inside	3393.00	
Drill Pipe	95.00			3488.00	
Change Over Sub	1.00			3489.00	
Perforations	29.00			3518.00	
Change Over Sub	1.00			3519.00	
Bullnose	3.00			3522.00	132.00 Bottom Packers & Anchor

**Total Tool Length: 164.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Company Inc

**22-9s-17w Rooks,KS**

250 N Water Ste 300  
Wichita KS 67202+1216

**Carmichael #2-22**

Job Ticket: 69070

**DST#: 4**

ATTN: Rod Anderson

Test Start: 2022.07.14 @ 06:25:00

### 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: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.80 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2600.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
45.00	OSM 100%M	0.360

Total Length: 45.00 ft      Total Volume: 0.360 bbl

Num Fluid Samples: 0

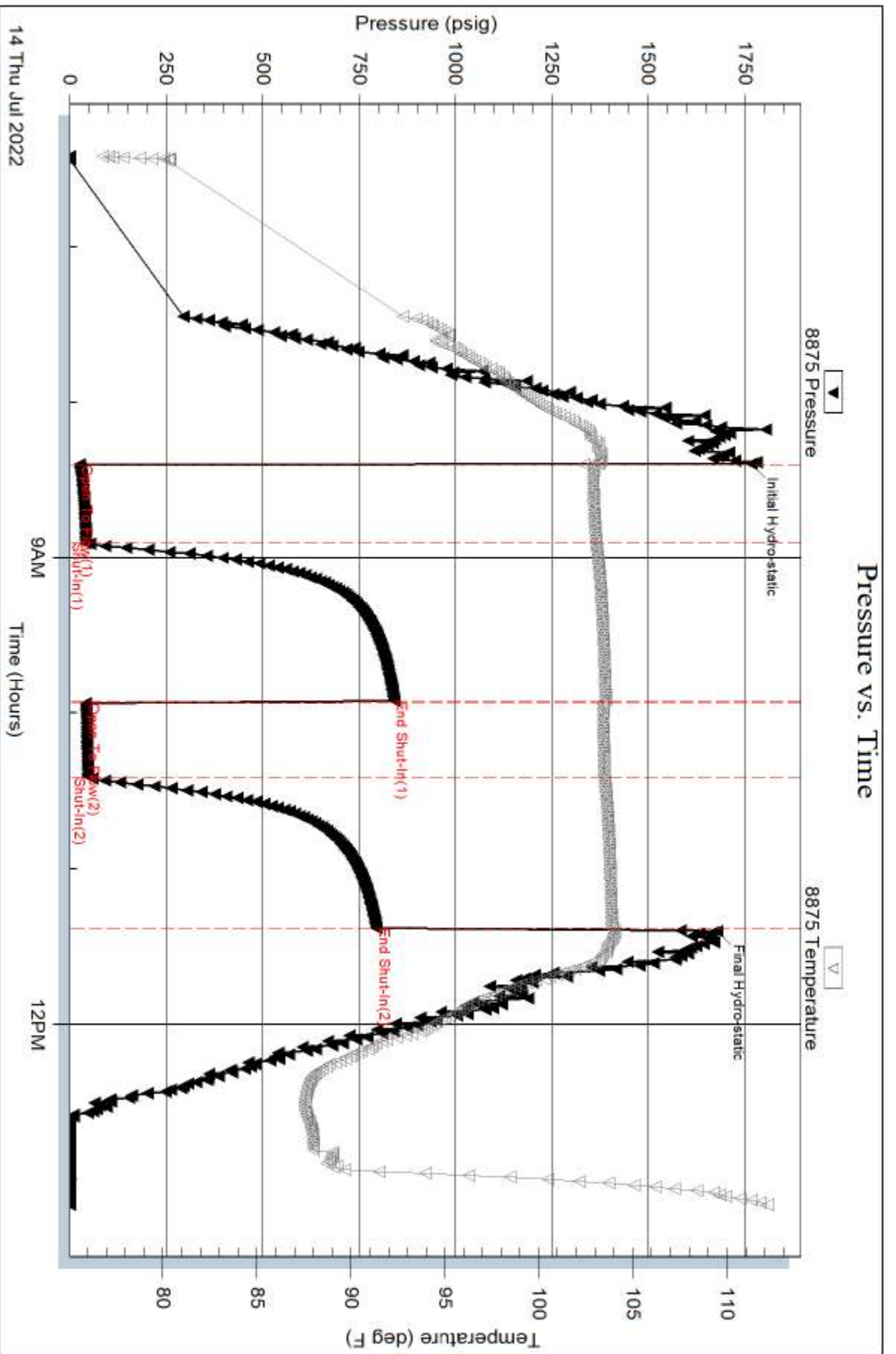
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: 1#LCM





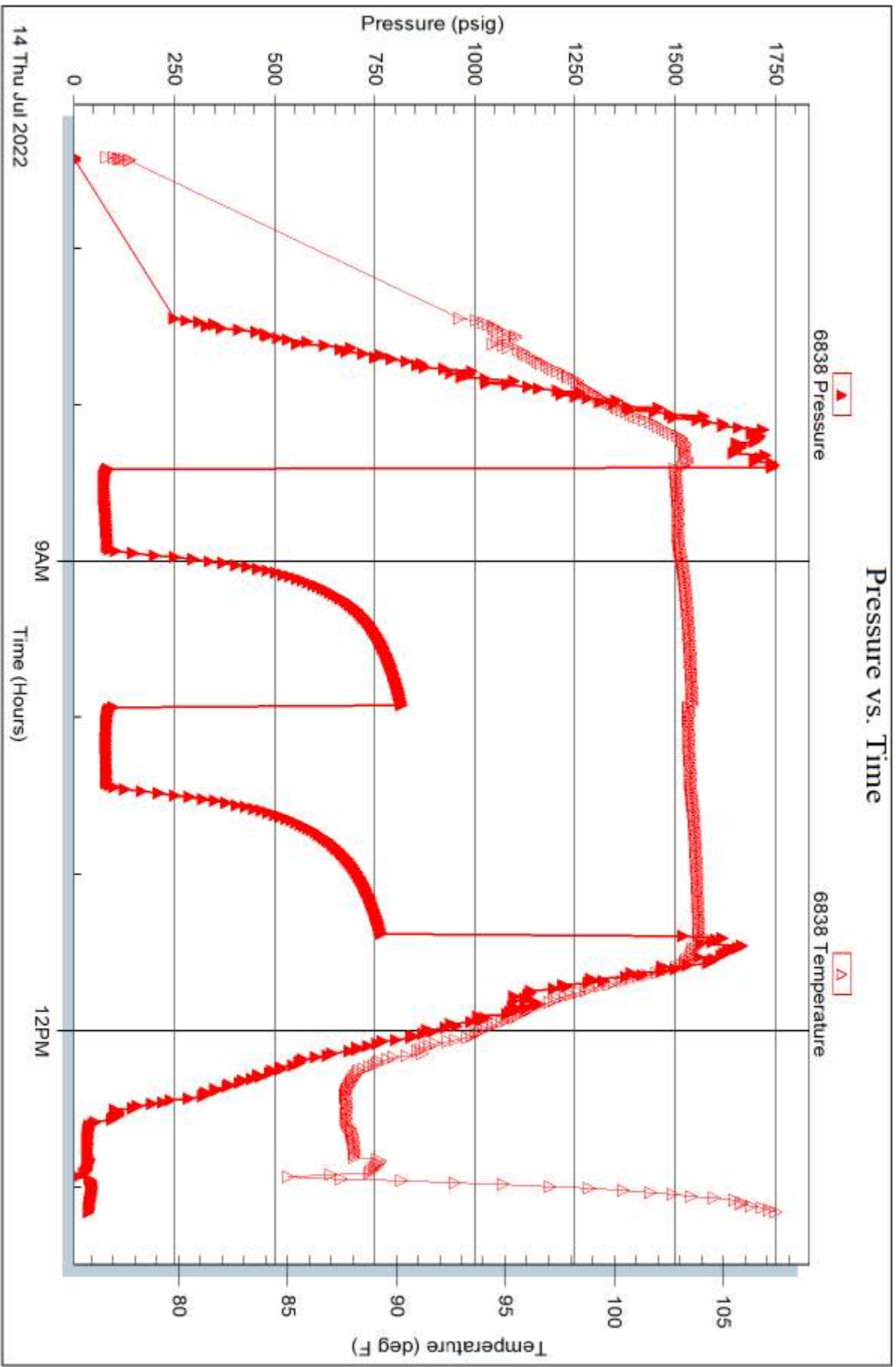
Serial #: 6838

Inside

Murfin Drilling Company Inc

Carnichael #2-22

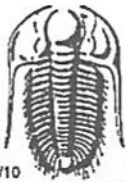
DST Test Number: 4



Tribble Testing, Inc

Ref. No: 69070

Printed: 2022.07.15 @ 11:10:39



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69067

Well Name & No. Carmichael #2-22 Test No. 1 Date 07/12/2022  
 Company Murfin Drilling Company Inc Elevation 2114 KB 2109 GL  
 Address 250 N Water St 300 Wichita KS 67202 + 1216  
 Co. Rep / Geo. Rod Anderson Rig Murfin #16  
 Location: Sec. 22 Twp 9s Rge. 17w Co. Rooks State KS

Interval Tested 3264' - 3355' Zone Tested LKC a-d  
 Anchor Length 91' Drill Pipe Run 3208' Mud Wt. 9.0  
 Top Packer Depth 3259' Drill Collars Run 30 Vls 54  
 Bottom Packer Depth 3264' Wt. Pipe Run - WL 5.8  
 Total Depth 3355' Chlorides 2700 ppm System LCM 2H

Blow Description 17- Det Bridge 17 + 18 stands in  
1st  
77-  
7st

Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic \_\_\_\_\_  Test 1350 T-On Location 03:05  
 (B) First Initial Flow \_\_\_\_\_  Jars 300 T-Started 04:30  
 (C) First Final Flow \_\_\_\_\_  Safety Joint \_\_\_\_\_ T-Open \_\_\_\_\_  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled \_\_\_\_\_  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 06:34  
 (F) Second Final Flow \_\_\_\_\_  Mileage 6227 93 Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic \_\_\_\_\_  Straddle \_\_\_\_\_  EM Tool -350  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total \_\_\_\_\_  
 Accessibility \_\_\_\_\_ Total 1393  
 Sub Total 1743 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Spencer J. Jacob Thanks!  
 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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69068

Well Name & No. Carmichael #2-22 Test No. 2 Date 07/12  
 Company Murphy Drilling Company Inc Elevation 2114 KB 2109 GL  
 Address 250 N Water STE 300 Wichita KS 67202-1216  
 Co. Rep / Geo. Rod Anderson Rig Murphy #16  
 Location: Sec. 22 Twp 9s Rge. 17w Co. Rooks State KS

Interval Tested 3264'-3355' Zone Tested LKC a-d  
 Anchor Length 91' Drill Pipe Run 3111' Mud Wt. 9.0  
 Top Packer Depth 3259' Drill Collars Run 154' Vis 54  
 Bottom Packer Depth 3264' Wt. Pipe Run - WL 5.8  
 Total Depth 3355' Chlorides 2700 ppm System LCM 2#

Blow Description J7-Surface to 1/4" ; Dried  
J5-J No Return  
J7-Surface to 1/2"  
J5-J No Return

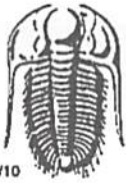
Rec	Feet of	%gas	%oil	%water	%mud
<u>85</u>	<u>GHO CM</u>	<u>20</u>	<u>30</u>	<u>50</u>	
<u>15</u>	<u>GO</u>	<u>15</u>	<u>85</u>		
	<u>40 GIP</u>	<u>100</u>			

Rec Total 100' BHT \_\_\_\_\_ Gravity 32° API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic \_\_\_\_\_  Test 1800 T-On Location 07:40  
 (B) First Initial Flow \_\_\_\_\_  Jars 300 T-Started 10:50  
 (C) First Final Flow \_\_\_\_\_  Safety Joint \_\_\_\_\_ T-Open 12:30  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled 15:30  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby x2 T-Out 17:41  
 (F) Second Final Flow \_\_\_\_\_  Mileage 6217 <sup>93</sup> Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic \_\_\_\_\_  Straddle \_\_\_\_\_  EM Tool \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30 Sub Total 0  
 Initial Shut-In 60 Total 2193  
 Final Flow 30 MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 2193

Approved By \_\_\_\_\_ Our Representative Spencer J. Paul  
 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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69069

Well Name & No. Carmichael #2-22 Test No. 3 Date 07/13/2022  
 Company Murfin Drilling Company Inc Elevation 2114 KB 2109 GL  
 Address 250 N Water St 300 Wichita Ks 67202-1216  
 Co. Rep / Geo. Rod Anderson Rig Murfin #16  
 Location: Sec. 22 Twp 9A Rge. 17W Co. Rocks State KS

Interval Tested 3347'-3405' Zone Tested LHC E-21  
 Anchor Length 53' Drill Pipe Run 3301' Mud Wt. 9.1  
 Top Packer Depth 3342' Drill Collars Run 30' Vis 58  
 Bottom Packer Depth 3347' Wt. Pipe Run - WL 5.4  
 Total Depth 3405' Chlorides 2400 ppm System LCM 2H

Blow Description 17-BOB 1/min; Build to 22"  
131- Weak Surface  
77- Surface to 9"  
750- Surface to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
200	Water		100		
160	G VSOCWM	10	3	20	67
120	GOCM	10	10		80
20	GIO	25	75		
	90' GTP	100			

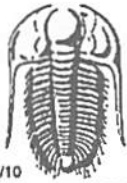
Rec Total 500' BHT 103° Gravity 30° API RW .103 @ 90 °F Chlorides 57,000 ppm

(A) Initial Hydrostatic <u>1712</u>	<input checked="" type="checkbox"/> Test <u>1800</u>	T-On Location <u>05:42</u>
(B) First Initial Flow <u>174</u>	<input checked="" type="checkbox"/> Jars <u>300</u>	T-Started <u>06:40</u>
(C) First Final Flow <u>186</u>	<input checked="" type="checkbox"/> Safety Joint	T-Open <u>08:19</u>
(D) Initial Shut-In <u>753</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>11:20</u>
(E) Second Initial Flow <u>196</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:20</u>
(F) Second Final Flow <u>252</u>	<input checked="" type="checkbox"/> Mileage <u>6227</u> 93	Comments
(G) Final Shut-In <u>750</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1663</u>	<input type="checkbox"/> Straddle	<input checked="" type="checkbox"/> EM Tool
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>2193</u>
	Sub Total <u>2193</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Spencer J. Neal Thanks!  
 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.

785-259-0056





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 69070

Well Name & No. Carmichael #2-22 Test No. 4 Date 07/14/2022  
 Company Murfin Drilling Company Inc Elevation 2114 KB 2/09 GL  
 Address 250 N Water STE 300 Wichita KS 67202+1216  
 Co. Rep / Geo. Rod Anderson Rig Murfin #16  
 Location: Sec. 22 Twp 9s Rge. 17w Co. Hooker State KS

Interval Tested 3390' - 3522' Zone Tested LHC A-L  
 Anchor Length 132' Drill Pipe Run 3334' Mud Wt. 9.1  
 Top Packer Depth 3385' Drill Collars Run 30 Vis 61  
 Bottom Packer Depth 3390' Wt. Pipe Run - WL 5.8  
 Total Depth 3522' Chlorides 2600 ppm System LCM 1#

Blow Description 17- Surface to 1"; Dried  
150- No Return  
77- Weak Surface  
750- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>OSM</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 45' BHT 103° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1767</u>	<input checked="" type="checkbox"/> Test <u>1800</u>	T-On Location <u>04:20</u>
(B) First Initial Flow <u>25</u>	<input checked="" type="checkbox"/> Jars <u>300</u>	T-Started <u>06:25</u>
(C) First Final Flow <u>42</u>	<input checked="" type="checkbox"/> Safety Joint	T-Open <u>08:20</u>
(D) Initial Shut-In <u>838</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>11:20</u>
(E) Second Initial Flow <u>41</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:06</u>
(F) Second Final Flow <u>46</u>	<input checked="" type="checkbox"/> Mileage <u>62K x 2</u> 93+93	Comments <u>loaded @ 03:00</u>
(G) Final Shut-In <u>794</u>	<input type="checkbox"/> Sampler	<u>07/15/2022</u>
(H) Final Hydrostatic <u>1679</u>	<input type="checkbox"/> Straddle	<input checked="" type="checkbox"/> EM Tool

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

Sub Total 2286 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Spencer J. Steals Thanks!  
 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.

785-259-0056

# LITHOLOGY STRIP LOG

## WellSight Systems

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

Well Name: Carmichael #2-22

Well Id:

Location: 1600 FNL & 990' FWL Sec 22 -9S-17W

License Number: 15-163-24455

Spud Date: 6/8/2022

Surface Coordinates:

Region:

Drilling Completed: 6/15/2022

Bottom Hole

Coordinates:

Ground Elevation (ft): 2109

K.B. Elevation (ft): 2114

Logged Interval (ft): 2900 To: 3670

Total Depth (ft): 3670

Formation: Arbuckle

Type of Drilling Fluid: Chemical mud

Printed by WellSight LogViewer from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR

Company: Murfin Drilling Company, Inc

Address: 250 N Water Suite 300  
Wichita, Kansas 67202

### GEOLOGIST

Name: Rod Andersen

Company: Rod Andersen Consulting


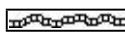
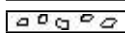
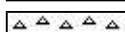
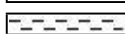
Address: 100 S. Main Suite 225  
Wichita, Kansas 67202


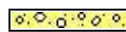



### Cores



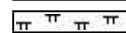

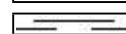
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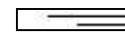


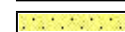

### Comments

### ROCK TYPES

 Anhy  
 Bent  
 Brec  
 Cht  
 Clyst

 Coal  
 Congl  
 Dol  
 Gyp  
 Igne

 Lmst  
 Meta  
 Mrlst  
 Salt  
 Shale

 Shcol  
 Shgy  
 Sltst  
 Ss  
 Till

### ACCESSORIES

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl

- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

#### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral

- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

#### STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol

- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

#### TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

### OTHER SYMBOLS

#### POROSITY

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

#### SORTING

- Well
- Moderate
- Poor

#### ROUNDING

- Rounded
- Subrnd
- Subang

- Angular

#### OIL SHOW

- Even
- Spotted
- Ques
- Dead

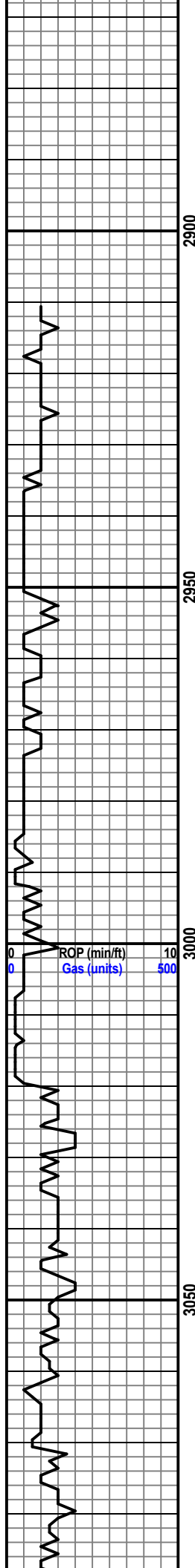
#### INTERVAL

- Core
- Dst

#### EVENT

- Rft
- Sidewall

Curve Track 1 ROP (min/ft) ——— Gas (units) - - - - -	MD	Porosity Type	Porosity	Lithology	Geological Descriptions	TG, C1-C5
<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>ROP (min/ft) 10</p> <p>Gas (units) 500</p> </div> <div style="text-align: center;"> <p>28</p> </div> </div>			<p>24%</p> <p>18%</p> <p>12%</p> <p>6%</p>		<p>Anhydrite 1402=712 1438+675</p> <p style="text-align: right;">Base Anhydrite</p>	<p>Geologist on location @ 2650 7/10/2022</p>
	2850					

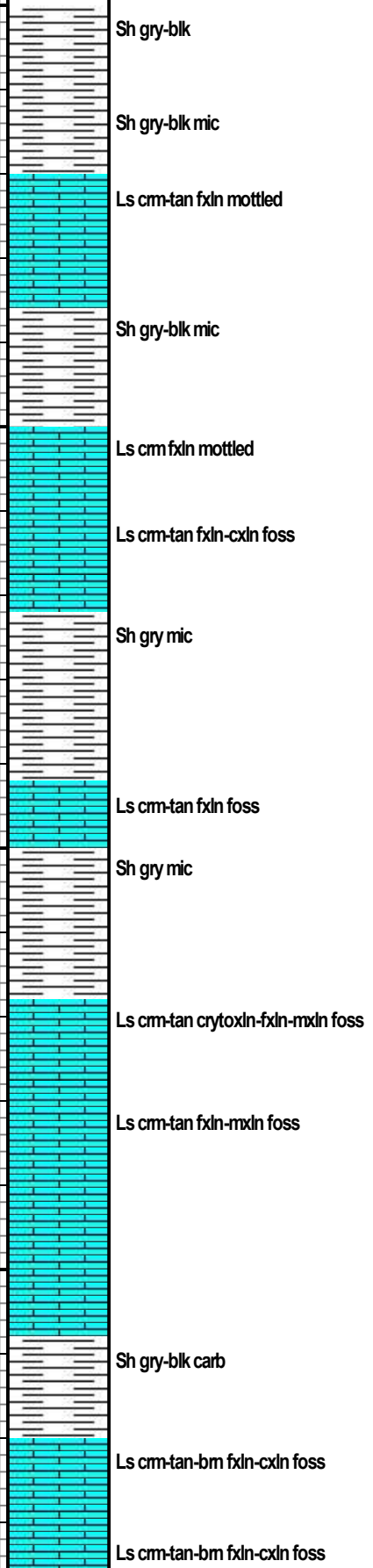


2900

2950

3000

3050



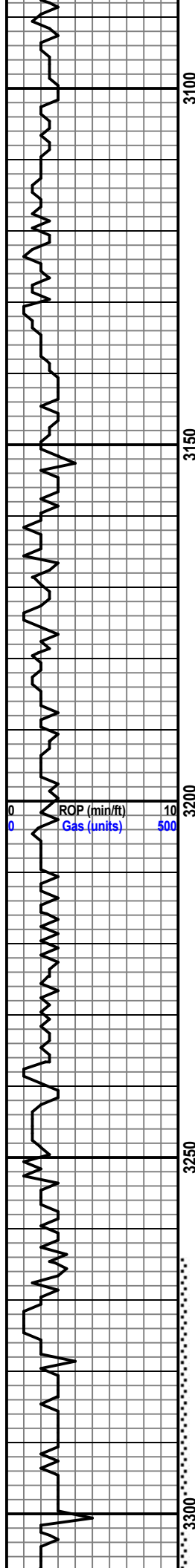
7/11/2022

Mud  
Wt 8.6  
Vis 51

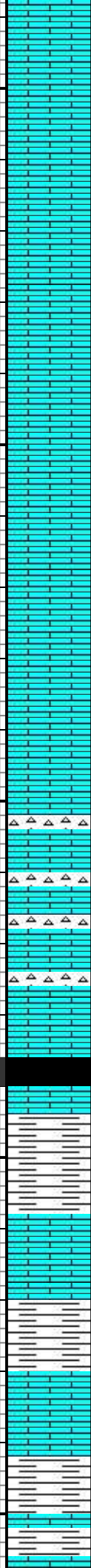
TOPEKA 3019 -905

DEER CREEK 3070 -956





3100  
3150  
3200  
3250  
3300



Ls tan-bm cxln foss no show  
 Ls bm fxln-cxln-vuggy por no show  
 Ls cm-tan fxln-mxln foss  
 Ls bm fxln-cxln foss cherty in part  
 Ls tan-bm fxln-cxln foss  
 Ls cm-tan-bm fxln-cxln vuggy in part cherty  
 Ls cm-tan fxln-cxln-vuggy varicolored chert v. foss  
 Ls cm-tan fxln-cxln v. foss cherty  
 Ls cm-tan fxln-cxln scattered blk oil stain no free oil  
 Sh blk carb gry mic  
 Sh gry mic pyritic  
 Ls cm-tan fxln-cxln-vuggy in part scattered bm oil stain no free oil no odor  
 Sh gry mic  
 Ls cm-tan fxln-cxln-vuggy por light bm stain no free oil slight odor  
 Sh gry-dk gry silty-mic  
 Ls interbedded cm-bm fxln foss

LACOMPTON 3132 -1018

HEEBNER 3236 -1122

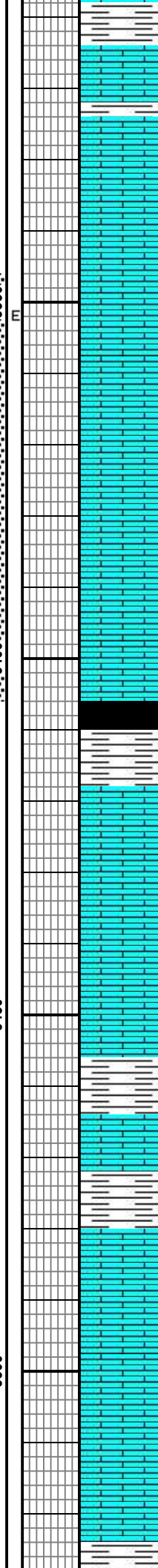
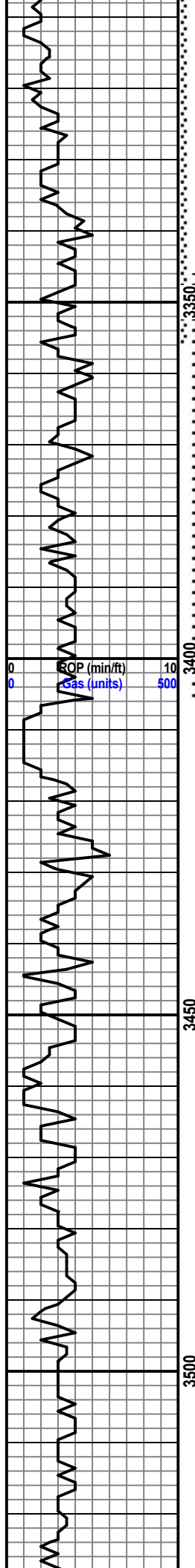
TORONTO 3260 - 1146

CFS 3269

LANSING A 3280 -1166

cfs 3295

DST #1  
 3264-3355  
 Rec: 15' GASSY OIL+85' HG&OCM



Ls cm-tan fxln-cxln-vuggy por good staining some free oil  
good odor good yellow fluor

Sh gry mic

Ls cm-tan fxln-cxln intercrystalline por bm stain no free oil  
fair odor yellow fluor

Ls cm-bm fxln-cxln v. foss scattered blk stain fair odor

Ls cm-tan fxln-cxln-vuggy por good stain scattered free  
oil good odor

Ls tan fxln-cxln-vuggy por good bm stain good free oil  
some bleeding oil good odor

Ls tan fxln-cxln-vuggy good bm stain good free oil strong  
odor

Ls cm-tan fxln-cxln no free oil strong odor

Ls cm fxln no free oil scattered stain strong odor

Sh gry blk carb in part

Ls cm-tan fxln-cxln- vuggy por scattered blk stain vuggy  
pieces have free oil and stain fair odor yellow fluor

Ls wt-cm-tan fxln-cxln-vuggy por scattered stain free oil in  
vuggy pieces fair odor

Ls cm-tan-br fxln-cxln-vuggy por good show free oil  
scattered blk stain good odor yellow fluor

Ls cm-tan fxln-cxln slight scattered stain no free oil no  
odor

Ls tan-bm fxln-cxln vuggy por in part fair show free oil  
good odor yellow fluor

Sh gry-blk carb

Ls cm-tan fxln-mxln no show

Ls tan fxln-cxln-pinpoint por in a few pieces bm oil stain  
no free oil fair odor

Ls cm-tan fxln-cxln pinpoint por bm oil stain no free oil fair  
odor

Ls cm-tan fxln-mxln foss no show

Sh drk gry mic in part

**LANSING B 3313 -1199**  
mud  
wt: 9  
Vis: 55  
cfs 3335  
7/12/2022

**LANSING C 3334 -1220**

**LANSING D 3345 -1231**  
pipe strap 1.8' short  
degree  
cfs 3355  
straight hole 0.5

**LANSING E 3357 -1243**  
cfs 3370

**LANSING F 3367 -1253**  
cfs 3378

**LANSING G 3376 -1262**  
7/13/2022  
MUD  
wt: 9.1  
Vis: 58

**cfs 3405**  
DST #2 3347-3405  
Rec:  
90'GIP+20'GOIL+120'G&OCM+160'G&OCWM+200'  
WATER  
ISIP 753 FSIP 750#

**LANSING H 3414 -1300**  
cfs 3432

**LANSING I 3432 -1318**

**LANSING J 3450 -1336**  
cfs 3452

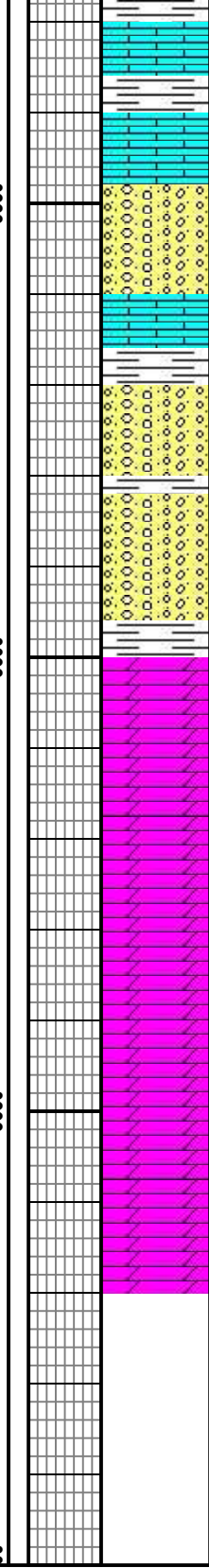
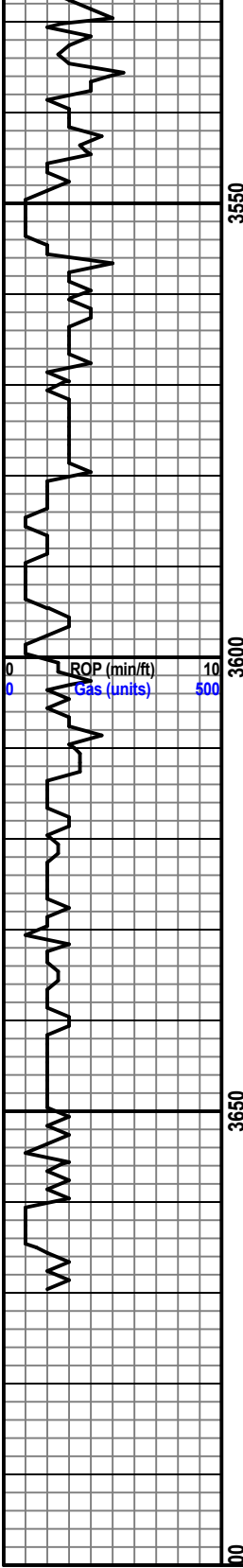
**LANSING K 3464 -1350**  
cfs 3475

**LANSING L 3496 -1382**  
cfs 3500

cfs 3522

DST #2 3390 3527

DST #3 3550-3527  
Rec: 45' Oil Spotted Mud  
ISIP 838  
FSIP 794#  
6/14/2022



Ls wt-cm-tan fxln-cxln spotty bm stain no odor no free oil

Ls wt-tan fxln-cxln pinpoint por had weak show free oil no odor weak yellow fluor chert

Cong: Ss bm med gm rounded well cemented, ls cm fxln oolitic, chert varicolored no show

Ls cm fxln no show

Sh gy mic silty in part

Sh gry-bkl-br varicolored, Ss vgm-mgm sub round no show, Ls fxln-pinpoint por weak show free oil faint odor

Cong Dol wt-tan-bm hard dense-suc pinpoint por light bm stain some free oil in a few samples Sh varicolored, Ss vgm subround well cemented no show abundant chert

Dol wt-bm hard dense, suc in part, pinpoint-vuggy por blk flaky stain lt bm oil stain sli odor

Dol bm hard dense suc in part scattered blk flaky oil stain no free oil no odor

Dol wt-bm hard dense increase in chert fresh wt no show

Dol wt-bm hard dense cherty no show

Dol wt-bm hard dense cherty no show

Dol bm hard dense cherty no show

Dol bm dense cherty no show

**ARBUCKLE 3600 -1486**

TD Driller 3670  
TD Logger 3667

6/15/2022



### CEMENT TREATMENT REPORT

Customer:	Murfin Drilling Co	Well:	Carmichael #2-22	Ticket:	WP 3051
City, State:		County:	Rooks, KS	Date:	7/8/2022
Field Rep:	Spencer Savage	S-T-R:	22-9S-17W	Service:	Surface

Downhole Information	
Hole Size:	12.25 in
Hole Depth:	260 ft
Casing Size:	8 5/8 in
Casing Depth:	254 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	15.0 bbls

Calculated Slurry - Lead	
Blend:	H-325
Weight:	14.8 ppg
Water / Sx:	6.9 gal / sx
Yield:	1.41 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0735 bbs / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	45.2 bbls
Total Sacks:	180 sx

Calculated Slurry - Tail	
Blend:	
Weight:	ppg
Water / Sx:	gal / sx
Yield:	ft <sup>3</sup> / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	0.0 bbls
Total Sacks:	0 sx

TIME	RATE	PSI	STAGE		REMARKS
			BBLs	TOTAL BBLs	
100pm			-	-	Arrive on Location
115pm					Safety Meeting
335pm					Rig Up
					247' of casing with 7' landing joint
348pm	5.0	210.0	5.0	5.0	H2O Ahead
352pm	4.0	100.0	1.0	6.0	Start Cement slurry H-325 14.8ppg
402pm	4.4	350.0	45.2	51.2	
403pm	4.0	230.0	1.0	52.2	Begin Displacement
409pm	4.0	170.0	15.0	67.2	Plug Down
410pm				67.2	Close in head wash pump and lines 5bbls of cement circulated to pit
412pm				67.2	rig down
420pm					Leave Location

	CREW		UNIT	SUMMARY		
				Average Rate	Average Pressure	Total Fluid
Cementer:	Spencer		26	4.3 bpm	212 psi	67 bbls
Pump Operator:	Micheal		230			
Bulk #1:	Charlie		180/530			
Bulk #2:						



**CEMENT TREATMENT REPORT**

Customer: Murfin Drilling	Well: Carmichael #2-22	Ticket: WP 3083
City, State: Plainville KS	County: Rooks KS	Date: 7/16/2022
Field Rep: John G	S-T-R: 22-9S-17W	Service: 2 Stage

Downhole Information	
Hole Size:	7.875 in
Hole Depth:	3670 ft
Casing Size:	5 1/2 in
Casing Depth:	3660 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	1432 ft
Displacement:	86.5 bbls

Calculated Slurry - Lead	
Blend:	H-LD
Weight:	14.8 ppg
Water / Sx:	6.5 gal / sx
Yield:	1.51 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0309 bbs / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	63.1 bbls
Total Sacks:	235 sx

Calculated Slurry - Tail	
Blend:	H-Con
Weight:	12 ppg
Water / Sx:	15.5 gal / sx
Yield:	2.56 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	0.0309 bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	102.5 bbls
Total Sacks:	225 sx

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
5:00 PM			-	-	Arrived on location
5:10 PM					Safety meeting
6:20 PM					Rigged up
8:06 PM					Set DV tool @ 1432'
8:49 PM					Casing on bottom
9:13 PM					Circulated mud
10:13 PM	2.6	200.0	5.0	5.0	Water ahead
10:15 PM	4.0	300.0	12.0	17.0	Pump super mud flush
10:18 PM	3.3	275.0	10.0	27.0	Water behind
10:25 PM	2.0	100.0	8.0	35.0	Mixed 30 sacks H-LD cement @ 14.8 ppg for rat hole plug
10:31 PM	2.0	100.0	6.3	40.3	Mixed 20 sacks H-LD cement @ 14.8 ppg for mouse hole plug
10:35 PM	4.0	300.0	49.7		Mixed 185 sacks H-LD cement @ 14.8 ppg down hole
10:55 PM					Shut down, loaded plug, cleared lines and pump
11:05 PM	6.0	300.0	40.0		Begin displacement with KCL in first 40 bbls of water
11:12 PM	6.0	300.0	46.5		Begin displacement with mud
11:22 PM		1,300.0			Plug down with 800 landing psi and 1300 bump psi
11:24 PM					Released pressure plug held with 1/2 bbl back to tank
11:31 PM					Dropped bomb
11:53 PM	2.0	1,000.0	0.5		Opened tool with .5 bbl @ 1000 psi
12:00 AM					Circulated mud
1:05 AM	6.0	275.0	102.5		Mixed 225 sacks H-Con cement @ 12.0 ppg down hole
1:31 AM					Shut down, loaded plug, cleared lines and pump
1:40 AM	5.5	250.0	34.0		Begin displacement
1:49 AM		1,000.0			Plug down @ 500 landing psi and 1000 bump psi with 15 bbls cement circulated to pit
1:50 AM					Released pressure plug held with 1/4 bbl back to tank
1:52 AM					Washed up and rigged down
2:15 AM					Left location

CREW		UNIT	SUMMARY		
Cementor:	John	64	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Jose V	208	3.9 bpm	438 psi	314 bbls
Bulk #1:	Kale	180-530			
Bulk #2:					