

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	B & W UNIT 1-30
Doc ID	1509518

All Electric Logs Run

DIL
DUCP
MEL
BHCS





**CEMENT TREATMENT REPORT**

<b>Customer:</b> Murfin Drilling Co	<b>Well:</b> B and W Unit # 1-30	<b>Ticket:</b> ICT3199
<b>City, State:</b> Wichita KS	<b>County:</b> Cheyenne KS	<b>Date:</b> 2/4/2019
<b>Field Rep:</b> Arturo	<b>S-T-R:</b> 30-2-37	<b>Service:</b> Surface

Downhole Information	
Hole Size:	12.25 in
Hole Depth:	348 ft
Casing Size:	8 5/8 in
Casing Depth:	348 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	20.8 bbls

Calculated Slurry	
Weight:	14.8 # / sx
Water / Sx:	6.88 gal / sx
Yield:	1.41 ft <sup>3</sup> / sx
Bbls / Ft.:	0.0735
Depth:	348 ft
Annular Volume:	25.578 bbls
Excess:	195%
Total Slurry:	75.5 bbls
Total Sacks:	300 sx

Product	% / #	#
Class A	100.00	28200
Poz		
Gel	2.00	564
CaCl	3.00	846
Gypsum		
Metso		
Kol Seal		
Flo Seal	0.25	71
Salt (bww)		
<b>Total</b>		<b>29,681</b>

TIME	RATE	PSI	BBLs	REMARKS
6:00 PM				Arrive on location
6:05 PM				Safety meeting
6:10 PM				Rig up pump and lines
7:30 PM				Casing on bottom
7:35 PM				Circulate
7:40 PM	2.0	180.0	5.0	Pump H2O ahead
7:42 PM	7.5	450.0	75.0	Mix 300 sks of H325 @ 14.8 ppg. Mudscale confirmed
7:49 PM	7.5	370.0	20.5	Displace with H2O
7:53 PM				End displacement
8:00 PM		140.0		Shut in well
8:05 PM				Final wash up
8:10 PM				Rig down pump and lines
8:30 PM				Depart location
				Approx. 10 bbls of cement to pit

	CREW		UNIT	SUMMARY		
	Cementor:			Average Rate	Average Pressure	Total Fluid
	Dane		29	5.66667 bpm	285 psi	101 bbls
Pump Operator:	Cory		231			
Bulk #1:	John		194			
Bulk #2:						



**CEMENT TREATMENT REPORT**

<b>Customer:</b>	Murfin Drilling Co	<b>Well:</b>	B & W Unit 1-30	<b>Ticket:</b>	ICT3263
<b>City, State:</b>		<b>County:</b>	Cheyenne KS	<b>Date:</b>	2/15/2020
<b>Field Rep:</b>		<b>S-T-R:</b>	30-2-37	<b>Service:</b>	PTA

Downhole Information	
Hole Size:	7 7/8 In
Hole Depth:	ft
Casing Size:	In
Casing Depth:	ft
Tubing / Liner:	In
Depth:	ft
Tool / Packer:	
Depth:	ft
Displacement:	bbls

Calculated Slurry	
Weight:	13.8 # / sx
Water / Sx:	6.89 gal / sx
Yield:	1.42 ft <sup>3</sup> / sx
Bbls / Ft:	0.0406
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	64.4 bbls
Total Sacks:	255 sx

Product	% / #	#
Class A	60.00	14382
Poz	40.00	7548
Gel	4.00	877
CaCl		
Gypsum		
Metso		
Kol Seal		
Flo Seal	0.25	55
Salt (bww)		
<b>Total</b>		<b>22,807</b>

TIME	RATE	PSI	BBLs	REMARKS
6:15 AM				Arrive
6:20 AM				Safety meeting
6:25 AM				Rig up pump and lines
6:30 AM	2.0	150.0	5.0	Pump H2O
6:35 AM	4.0	300.0	12.6	Mix 50 sks of HPlug @ 13.8 ppg @ 3319
6:40 AM	9.0	600.0	45.5	Displace with mud
7:05 AM	2.0	150.0	5.0	Pump H2O ahead
7:10 AM	4.0	280.0	25.0	Mix 100 sks of HPlug @ 13.8 ppg @ 2575
7:15 AM	8.0	550.0	36.5	Displace with mud
8:15 AM	4.0	200.0	5.5	Mix 50 sks @ 398
8:45 AM	4.0	180.0	14.0	Plug top 40 with 10 sks. MH and RH with 45 sks
9:00 AM				Wash up and rig down
9:30 AM				Depart

CREW		UNIT	SUMMARY		
Cementer:	Josh Mosler	29	Average Rate	Average Pressure	Total Fluid
Pump Operator:	Corey Davis	209	4.625 bpm	301 psi	149 bbls
Bulk #1:	Kale Ochs	365			
Bulk #2:					

Hurricane Services, Inc.  
 250 N. Water  
 Wichita, KS 67202

MDCI  
 B & W Unit #1-30  
 1980FSL 4150FEL  
 Sec. 30-T2S-R37W  
 3430' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3301	+129	-4	3302	+128	-5
B/Anhydrite	3337	+93	-3	3338	+92	-4
Topeka	4114	-684	-3	4128	-698	-7
Oread	4272	-842	-17	4276	-846	-21
Lansing	4348	-918	-16	4349	-919	-17
Stark	4576	-1146	-17	4582	-1152	-23
Mound City	4626	-1196	-16	4634	-1204	-24
Ft Scott	4756	-1326	-16	4762	-1332	-22
Oakley	4826	-1396	-12	4838	-1408	-24
Mississippian	5066	-1636	-24	5070	-1640	-28
RTD	5100					
LTD				5104		



# Saman Sharifaie

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**  
LEASE: **R&W Unit #1-30**

FIELD: **Wildcat**  
LOCATION: **1980 FSI & 4150 FEL**  
SEC: **30 TWP 2S R3E 31W**  
COUNTY: **Cherokee STATE Kansas**  
CONTRACTOR: **Martin Drilling #7**  
SPUD: **02/04/20 COMP 02/15/20**  
RTD: **5102' TYPE MUD 5104'**  
MUD UP: **3.16' TYPE MUD Chemical**

SAMPLES SAVED FROM: **4010' TO RTD**  
DRILLING TIME KEPT FROM: **4000' TO RTD**  
SAMPLES EXAMINED FROM: **4010' TO RTD**

GEOREGICAL SUPERVISION FROM: **3710'**  
REFERENCE WELL: **MDCT - Culwell #1-19**  
CND: **D.L. MEL, S. SAIC**  
SILVER: **Fluorel, Hreline**

Formation	Sample Tops	E-log Tops	Strat Pos.
Anhydrite	3301 (+129)	3302 (+128)	-5
Base Anhydrite	3337 (+493)	3338 (+492)	-4
Tuscarora	4114 (-684)	4128 (-688)	-17
Oread	4272 (-842)	4276 (-846)	-21
Stark	4348 (-918)	4349 (-919)	-17
Stark	4348 (-918)	4352 (-152)	-23
Mount City	4626 (-1146)	4634 (-1154)	-24
FT Scott	4756 (-1326)	4762 (-1332)	-24
ORKREV	4826 (-1396)	4838 (-1408)	-24



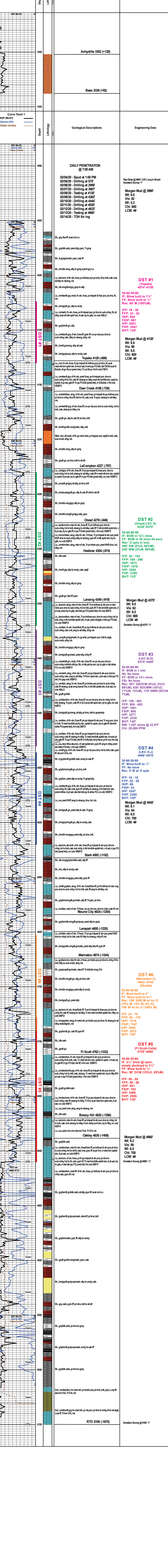
REMARKS: Due to poor to fair shows of oil in multiple potential pay zones and negative DST results, it is recommended and agreed upon by all parties that this well be plugged and abandoned.

Respectfully Submitted,

API #15-023-21532

Saman Sharifaie  
Petroleum Geologist

\*Tops have been adjusted to electric logs







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.08 @ 00:58:00

End Date: 2020.02.08 @ 08:32:50

Job Ticket #: 66006                      DST #: 1

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

Printed: 2020.02.17 @ 10:13:07



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66006

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2020.02.08 @ 00:58:00

## GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:14:20

Time Test Ended: 08:32:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Shaw n Wheelbarger

Unit No: 76

**Interval: 4074.00 ft (KB) To 4130.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: 41.49 psig @ 4075.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08

End Date:

2020.02.08

Last Calib.:

2020.02.08

Start Time: 00:58:01

End Time:

08:32:50

Time On Btm:

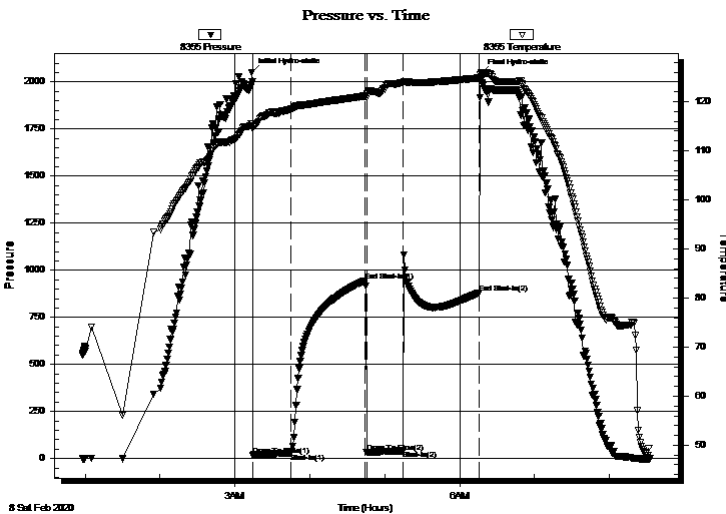
2020.02.08 @ 03:13:30

Time Off Btm:

2020.02.08 @ 06:17:09

**TEST COMMENT:** 30-IF-1/4" Blow @ open built to 1 3/4"  
60-FSI-No blow back  
30-FF-Blow built to 1/2"  
60-FSI-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2051.31	115.44	Initial Hydro-static
1	18.42	114.48	Open To Flow (1)
32	29.50	118.48	Shut-In(1)
91	944.19	121.13	End Shut-In(1)
92	32.69	120.95	Open To Flow (2)
122	41.49	123.80	Shut-In(2)
183	880.56	124.81	End Shut-In(2)
184	2046.76	125.95	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	100% Mud	0.30

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66006

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Reference Elevations: 3430.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8645 Inside**

Press@RunDepth: psig @ 4075.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.08

End Date: 2020.02.08

Last Calib.: 2020.02.08

Start Time: 00:58:01

End Time: 08:32:20

Time On Btm:

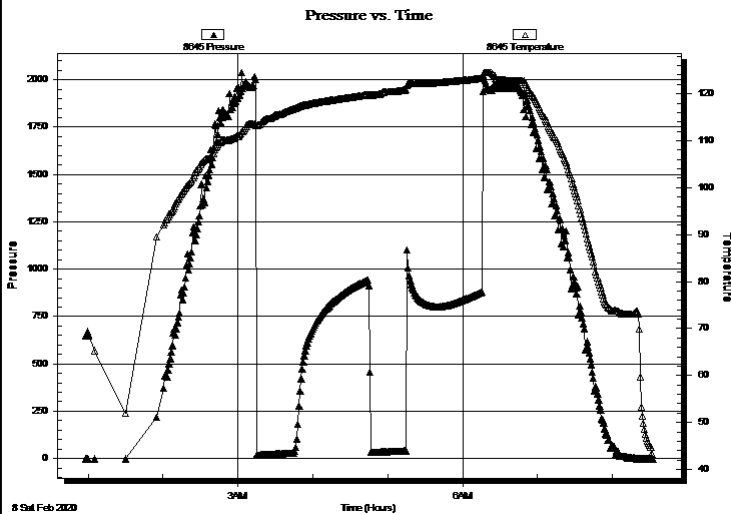
Time Off Btm:

**TEST COMMENT:** 30-IF-1/4" Blow @ open built to 1 3/4"

60-FSI-No blow back

30-FF-Blow built to 1/2"

60-FSI-No blow



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	100% Mud	0.30

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66006

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2020.02.08 @ 00:58:00

## Tool Information

Drill Pipe:	Length: 3897.00 ft	Diameter: 3.80 inches	Volume: 54.66 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 179.00 ft	Diameter: 2.25 inches	Volume: 0.88 bbl	Weight to Pull Loose: 76000.00 lb
			<u>Total Volume: 55.54 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4074.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4047.00	
Shut In Tool	5.00			4052.00	
Hydraulic tool	5.00		Inside	4057.00	
Jars	5.00			4062.00	
Safety Joint	2.00			4064.00	
Packer	5.00			4069.00	28.00 Bottom Of Top Packer
Packer	5.00			4074.00	
Stubb	1.00			4075.00	
Recorder	0.00	8355	Outside	4075.00	
Recorder	0.00	8645	Inside	4075.00	
Perforations	18.00			4093.00	
Change Over Sub	1.00			4094.00	
Drill Pipe	32.00			4126.00	
Change Over Sub	1.00			4127.00	
Bullnose	3.00			4130.00	56.00 Bottom Packers & Anchor

**Total Tool Length: 84.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66006

**DST#: 1**

ATTN: Saman ShariFaie

Test Start: 2020.02.08 @ 00:58:00

### 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: 92.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	100% Mud	0.295

Total Length: 60.00 ft      Total Volume: 0.295 bbl

Num Fluid Samples: 0

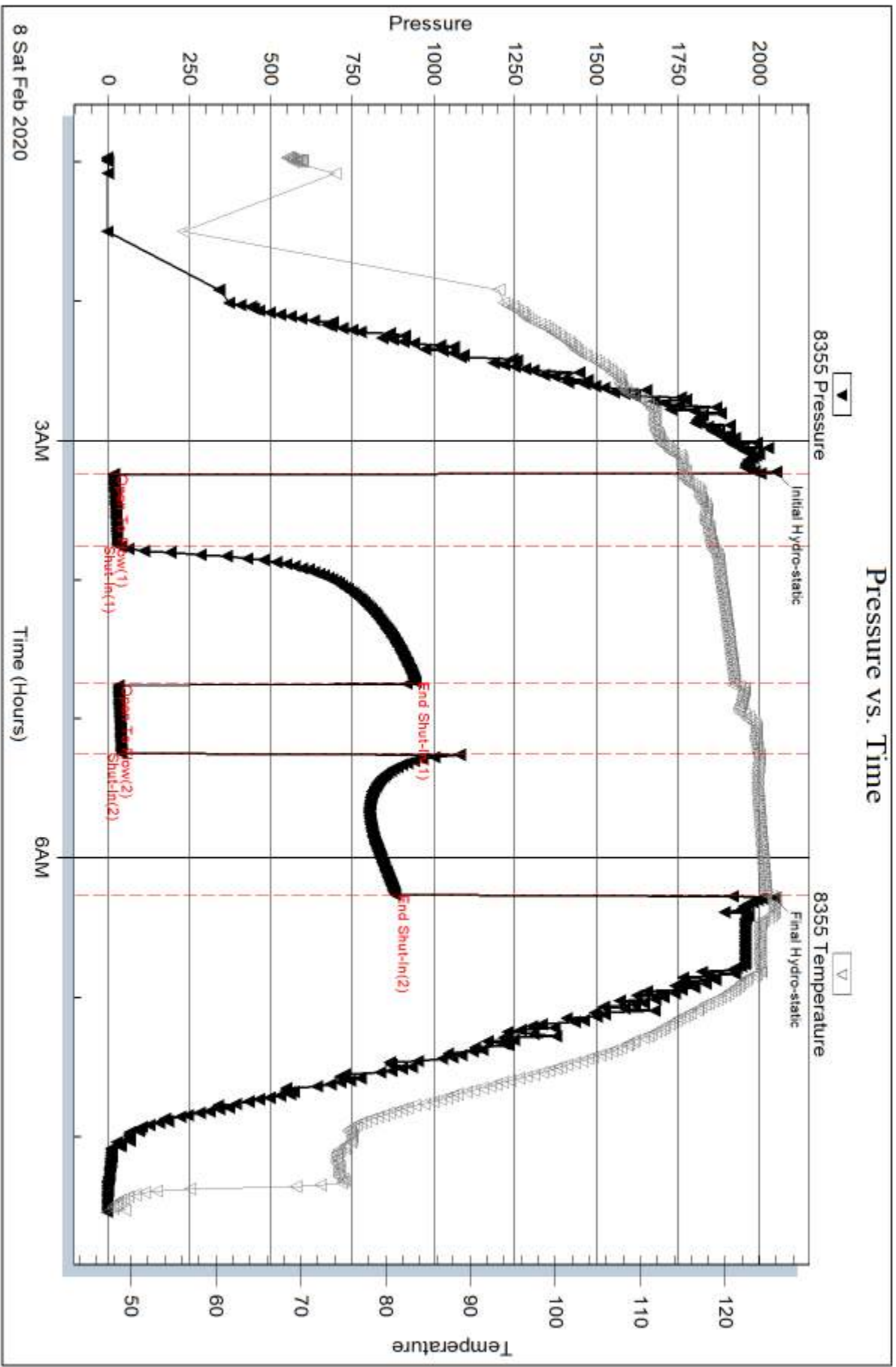
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



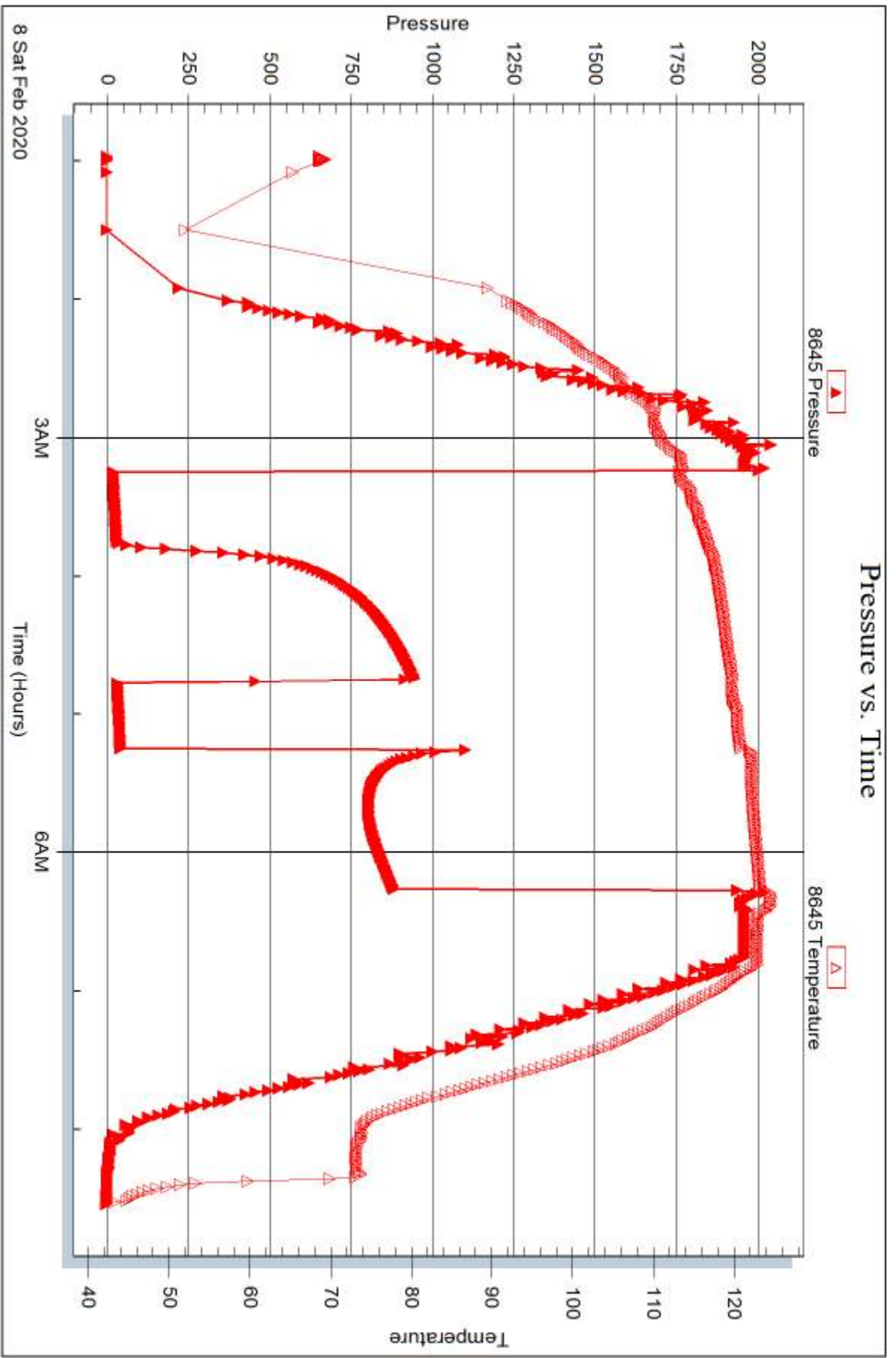
Serial #: 8645

Inside

Murfin Drilling Co

B&W #1-30

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 66006

Printed: 2020.02.17 @ 10:13:08



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

#### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.09 @ 12:39:00

End Date: 2020.02.09 @ 21:07:00

Job Ticket #: 66007                      DST #: 2

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

Printed: 2020.02.17 @ 10:12:36





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66007

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2020.02.09 @ 12:39:00

## GENERAL INFORMATION:

Formation: **Oread-LKC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:33:40

Time Test Ended: 21:07:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Shawn Wheelbarger

Unit No: 76

**Interval: 4230.00 ft (KB) To 4370.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: 295.85 psig @ 4231.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.09

End Date:

2020.02.09

Last Calib.:

2020.02.09

Start Time: 12:39:01

End Time:

21:07:00

Time On Btm:

2020.02.09 @ 14:33:00

Time Off Btm:

2020.02.09 @ 18:36:09

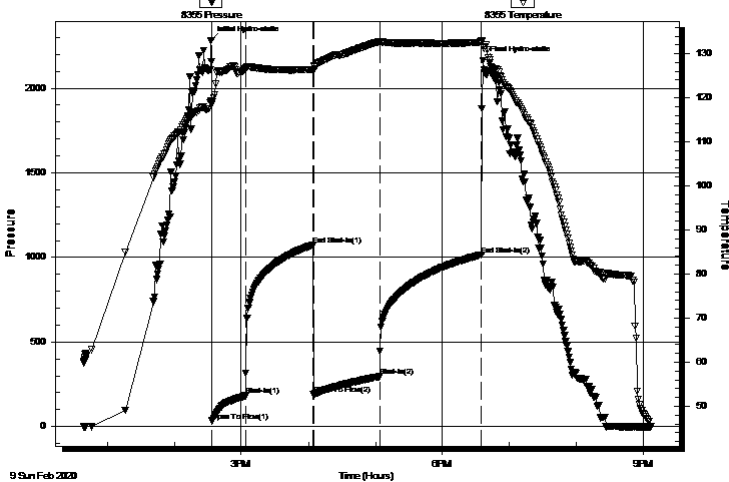
**TEST COMMENT:** 30-IF-1" Blow @ open BOB in 12 min 30 sec Built to 15 1/2"

60-ISI-No blow back

60-FF-BOB 30 min 45 sec Blow built to 12"

90-FSI-No blow

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2282.16	119.32	Initial Hydro-static
1	33.57	118.48	Open To Flow (1)
31	183.44	126.58	Shut-In(1)
91	1072.74	126.39	End Shut-In(1)
92	188.68	126.18	Open To Flow (2)
151	295.85	132.72	Shut-In(2)
242	1015.55	132.61	End Shut-In(2)
244	2164.53	131.50	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
239.00	WM 2%W, 98%M	1.18
365.00	GM 8%G, 92%M	5.12
0.00	Oil spots in tool	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE**  
TESTING, INC

# DRILL STEM TEST REPORT

Murfin Drilling Co

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

**30-2s-37w Cheyenne,KS**

**B&W #1-30**

Job Ticket: 66007

**DST#: 2**

Test Start: 2020.02.09 @ 12:39:00

## GENERAL INFORMATION:

Formation: **Oread-LKC A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:33:40

Time Test Ended: 21:07:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Shawn Wheelbarger

Unit No: 76

**Interval: 4230.00 ft (KB) To 4370.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8645 Inside**

Press@RunDepth: psig @ 4231.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.09 End Date: 2020.02.09

Last Calib.: 2020.02.09

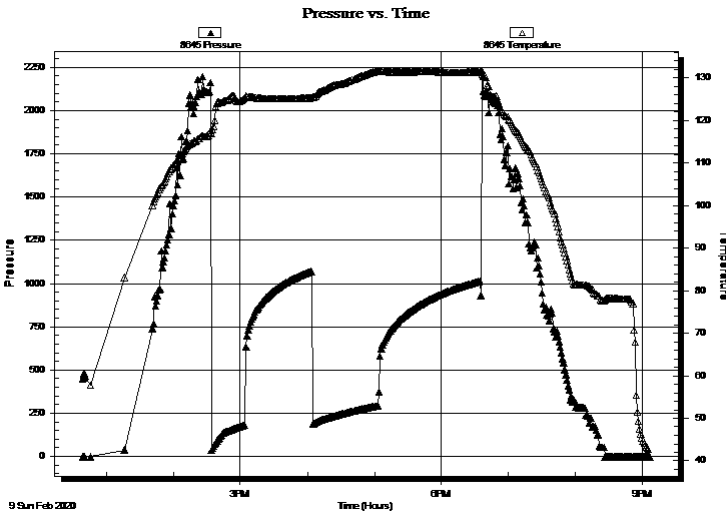
Start Time: 12:39:01 End Time: 21:07:00

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IF-1" Blow @ open BOB in 12 min 30 sec Built to 15 1/2"  
60-ISI-No blow back  
60-FF-BOB 30 min 45 sec Blow built to 12"  
90-FSI-No blow

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
239.00	WM 2%W, 98%M	1.18
365.00	GM 8%G, 92%M	5.12
0.00	Oil spots in tool	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66007

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2020.02.09 @ 12:39:00

## Tool Information

Drill Pipe:	Length: 3991.00 ft	Diameter: 3.80 inches	Volume: 55.98 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 239.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	110000.0 lb
			<u>Total Volume: 57.16 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	82000.00 lb
Depth to Top Packer:	4230.00 ft			Final	88000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	140.00 ft				
Tool Length:	168.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4203.00	
Shut In Tool	5.00			4208.00	
Hydraulic tool	5.00		Inside	4213.00	
Jars	5.00			4218.00	
Safety Joint	2.00			4220.00	
Packer	5.00			4225.00	28.00 Bottom Of Top Packer
Packer	5.00			4230.00	
Stubb	1.00			4231.00	
Recorder	0.00	8355	Outside	4231.00	
Recorder	0.00	8645	Inside	4231.00	
Perforations	7.00			4238.00	
Change Over Sub	1.00			4239.00	
Drill Pipe	127.00			4366.00	
Change Over Sub	1.00			4367.00	
Bullnose	3.00			4370.00	140.00 Bottom Packers & Anchor

**Total Tool Length: 168.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66007

**DST#: 2**

ATTN: Saman ShariFaie

Test Start: 2020.02.09 @ 12:39:00

### 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
239.00	WM 2%W, 98%M	1.175
365.00	GM 8%G, 92%M	5.120
0.00	Oil spots in tool	0.000

Total Length: 604.00 ft      Total Volume: 6.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

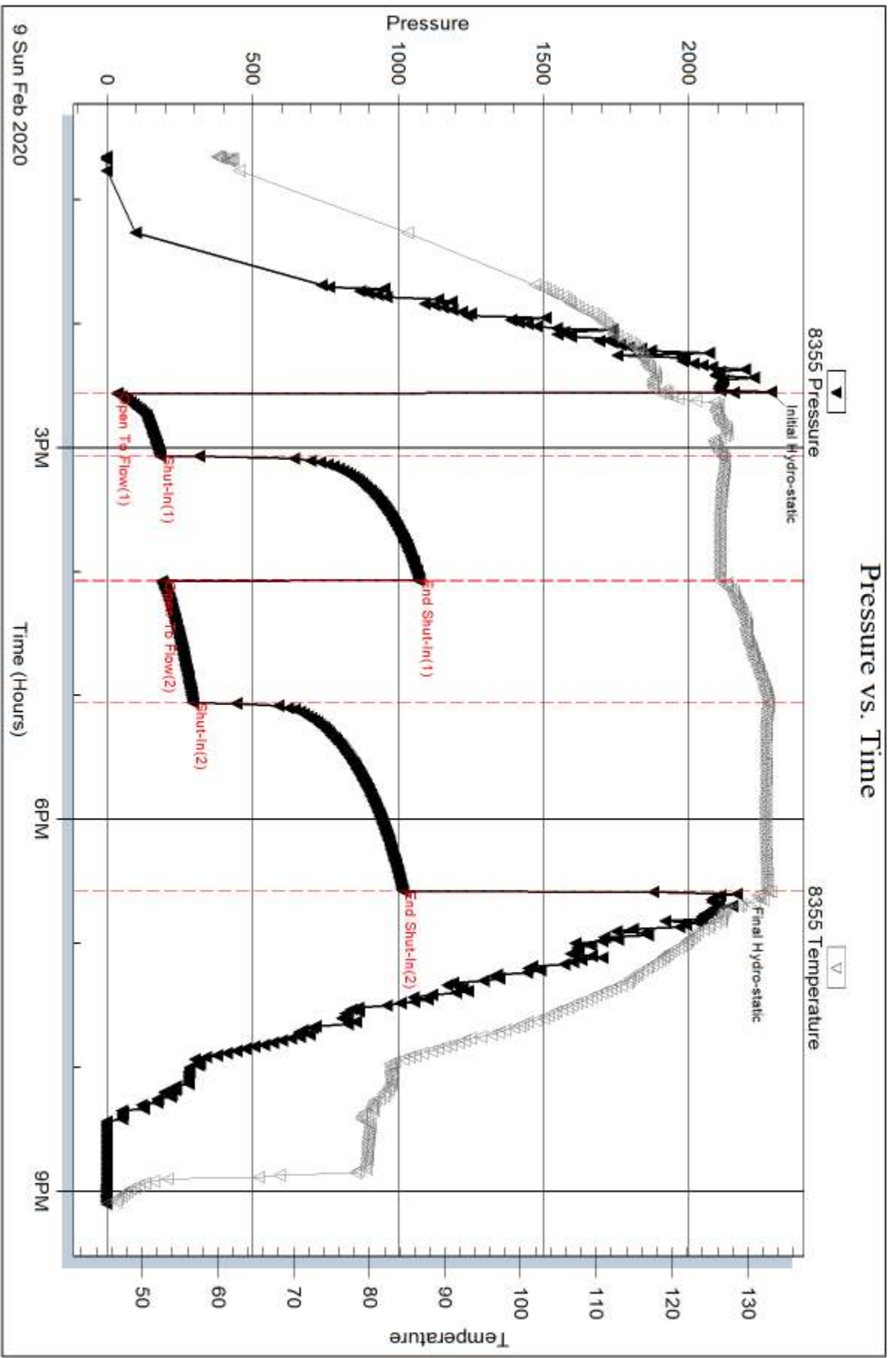
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





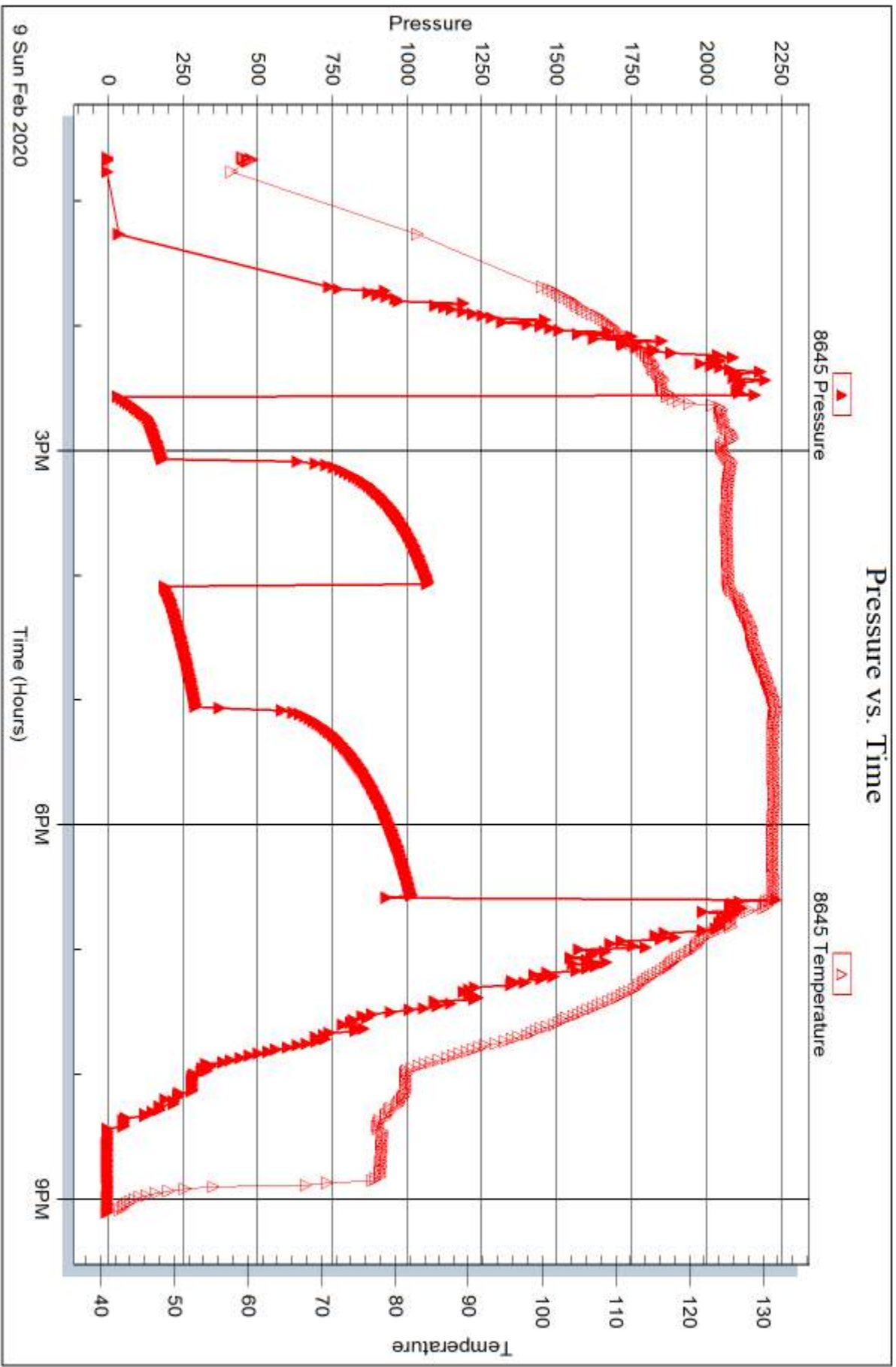
Serial #: 8645

Inside

Murfin Drilling Co

B&W #1-30

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 66007

Printed: 2020.02.17 @ 10:12:37



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

#### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.10 @ 12:21:00

End Date: 2020.02.10 @ 21:47:30

Job Ticket #: 66008                      DST #: 3

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

Printed: 2020.02.17 @ 10:12:12



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66008

**DST#: 3**

ATTN: Saman ShariFaie

Test Start: 2020.02.10 @ 12:21:00

## GENERAL INFORMATION:

Formation: **LKC D-G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:34:20

Time Test Ended: 21:47:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Shawn Wheelbarger

Unit No: 76

**Interval: 4374.00 ft (KB) To 4480.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4480.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: 603.25 psig @ 4375.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.10

End Date: 2020.02.10

Last Calib.: 2020.02.10

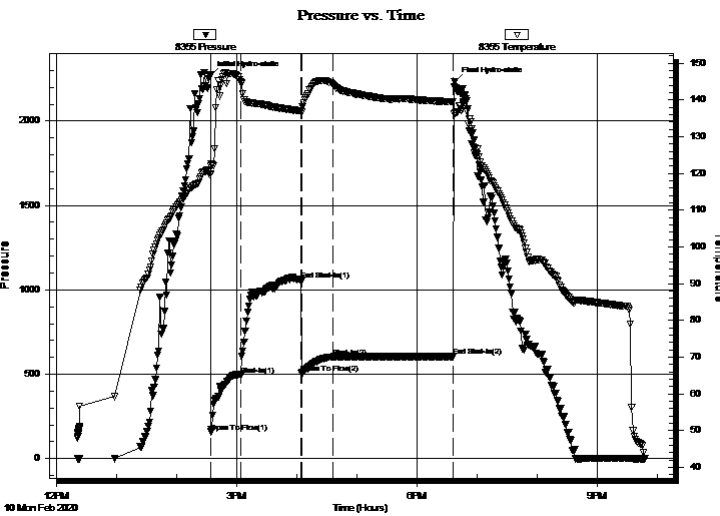
Start Time: 12:21:01

End Time: 21:47:30

Time On Btm: 2020.02.10 @ 14:33:50

Time Off Btm: 2020.02.10 @ 18:37:30

**TEST COMMENT:** 30-IF-5" Blow @ open BOB in 1 min blow built to 70 3/4" Declined to 65"  
60-ISI-No blow back  
60-FF-BOB in 14 min 30 sec blow built to 12" in 26 min declined to  
90-FSI-No blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2270.93	119.98	Initial Hydro-static
1	158.03	121.92	Open To Flow (1)
31	492.95	144.75	Shut-In(1)
91	1060.84	137.01	End Shut-In(1)
91	504.81	136.71	Open To Flow (2)
123	603.25	144.09	Shut-In(2)
243	604.84	139.51	End Shut-In(2)
244	2234.71	136.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
179.00	SMW 93%W, 7%M	0.88
630.00	SOCMW 10%O, 77%W, 13%M	8.29
501.00	GSOCM 6%G, 8%O, 86%M	7.03

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66008

**DST#: 3**

ATTN: Saman ShariFaie

Test Start: 2020.02.10 @ 12:21:00

## Tool Information

Drill Pipe:	Length: 4118.00 ft	Diameter: 3.80 inches	Volume: 57.76 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 239.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	98000.00 lb
			<u>Total Volume: 58.94 bbl</u>	Tool Chased	4.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	88000.00 lb
Depth to Top Packer:	4374.00 ft			Final	94000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	106.00 ft				
Tool Length:	134.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments: Tool slid 4" to bottom lost mud in the hole. filled up within 30 sec

## Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4347.00	
Shut In Tool	5.00			4352.00	
Hydraulic tool	5.00		Inside	4357.00	
Jars	5.00			4362.00	
Safety Joint	2.00			4364.00	
Packer	5.00			4369.00	28.00 Bottom Of Top Packer
Packer	5.00			4374.00	
Stubb	1.00			4375.00	
Recorder	0.00	8355	Outside	4375.00	
Recorder	0.00	8645	Inside	4375.00	
Perforations	5.00			4380.00	
Change Over Sub	1.00			4381.00	
Drill Pipe	95.00			4476.00	
Change Over Sub	1.00			4477.00	
Bullnose	3.00			4480.00	106.00 Bottom Packers & Anchor

**Total Tool Length: 134.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66008

**DST#: 3**

ATTN: Saman ShariFaie

Test Start: 2020.02.10 @ 12:21:00

## 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:

20000 ppm

Viscosity: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
179.00	SMW 93%W, 7%M	0.880
630.00	SOCMW 10%O, 77%W, 13%M	8.291
501.00	GSOCM 6%G, 8%O, 86%M	7.028

Total Length: 1310.00 ft      Total Volume: 16.199 bbl

Num Fluid Samples: 0

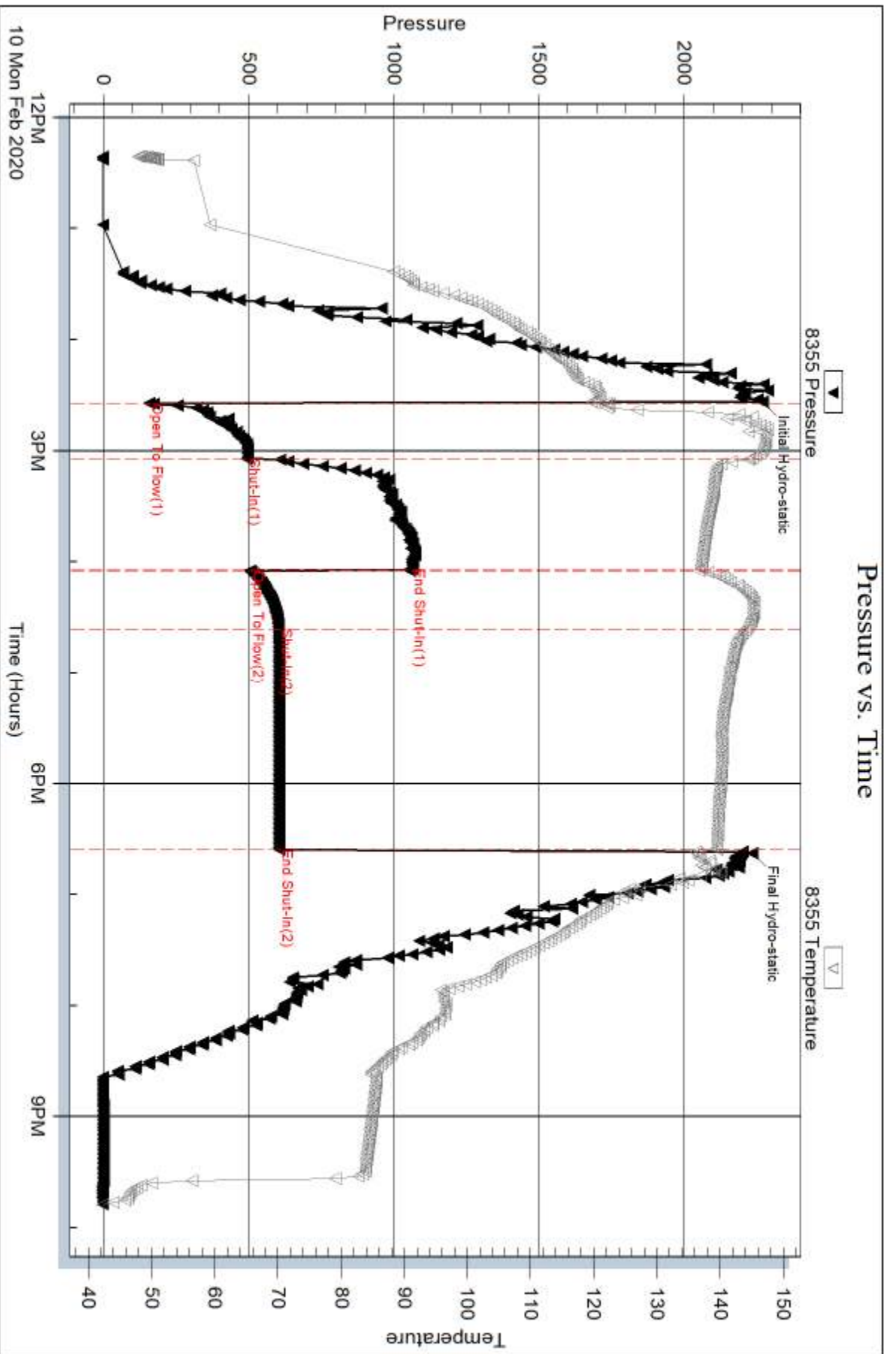
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW 1.297 @ 33.8 DEG F Chlorides 20000 PPM



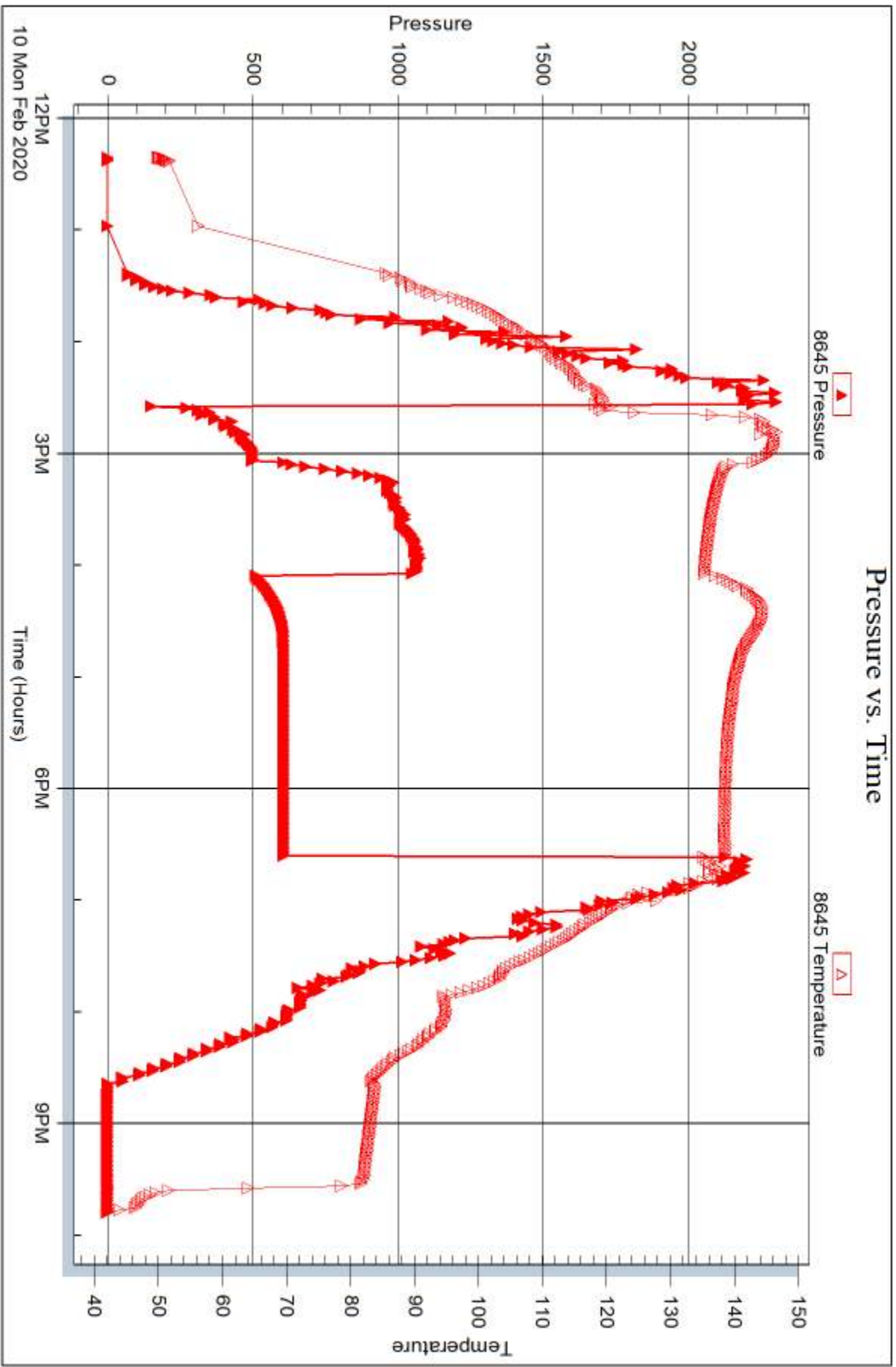
Serial #: 8645

Inside

Murfin Drilling Co

B&W #1-30

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 66008

Printed: 2020.02.17 @ 10:12:12



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

#### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.11 @ 13:37:00

End Date: 2020.02.11 @ 21:07:00

Job Ticket #: 66009                      DST #: 4

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

Printed: 2020.02.17 @ 10:11:45

Murfin Drilling Co  
30-2s-37w Cheyenne,KS  
B&W #1-30  
DST # 4  
LKC H-J  
2020.02.11



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66009

**DST#: 4**

ATTN: Saman ShariFaie

Test Start: 2020.02.11 @ 13:37:00

## GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:57:40

Time Test Ended: 21:07:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Shaw n Wheelbarger

Unit No: 76

**Interval: 4486.00 ft (KB) To 4570.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: 19.77 psig @ 4487.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.11

End Date:

2020.02.11

Last Calib.: 2020.02.11

Start Time: 13:37:01

End Time:

21:07:00

Time On Btm: 2020.02.11 @ 15:56:30

Time Off Btm: 2020.02.11 @ 19:00:20

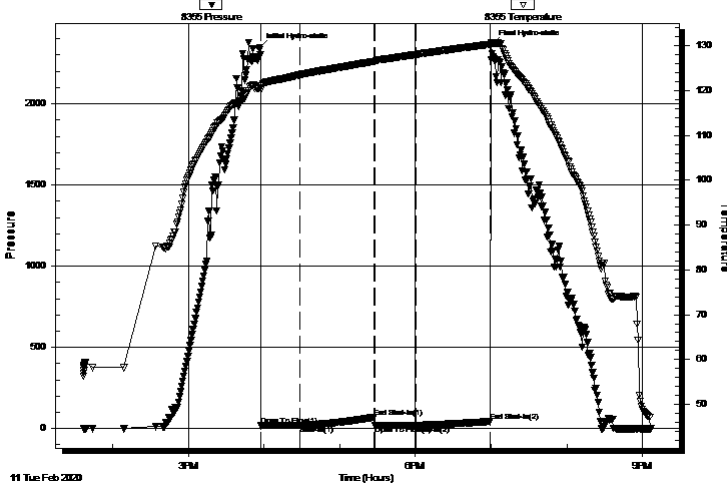
**TEST COMMENT:** 30-IF-1/4" Blow @ open built to 1/2"

60-ISI-No blow back

30-FF-No blow

60-FSI-No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2347.15	121.06	Initial Hydro-static
2	17.87	120.34	Open To Flow (1)
32	18.28	123.49	Shut-In(1)
91	69.37	126.54	End Shut-In(1)
92	19.69	126.54	Open To Flow (2)
125	19.77	128.07	Shut-In(2)
183	43.46	130.30	End Shut-In(2)
184	2364.79	130.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	100% Mud w / oil spots	0.02

Gas Rates

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

\* Recovery from multiple tests







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66009

**DST#: 4**

ATTN: Saman ShariFaie

Test Start: 2020.02.11 @ 13:37:00

## Tool Information

Drill Pipe:	Length: 4245.00 ft	Diameter: 3.80 inches	Volume: 59.55 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 239.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 106000.0 lb
			<u>Total Volume: 60.73 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 85000.00 lb
Depth to Top Packer:	4486.00 ft			Final 83000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	84.00 ft			
Tool Length:	112.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4459.00	
Shut In Tool	5.00			4464.00	
Hydraulic tool	5.00		Inside	4469.00	
Jars	5.00			4474.00	
Safety Joint	2.00			4476.00	
Packer	5.00			4481.00	28.00 Bottom Of Top Packer
Packer	5.00			4486.00	
Stubb	1.00			4487.00	
Recorder	0.00	8355	Outside	4487.00	
Recorder	0.00	8645	Inside	4487.00	
Perforations	15.00			4502.00	
Change Over Sub	1.00			4503.00	
Drill Pipe	63.00			4566.00	
Change Over Sub	1.00			4567.00	
Bullnose	3.00			4570.00	84.00 Bottom Packers & Anchor

**Total Tool Length: 112.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66009

**DST#: 4**

ATTN: Saman ShariFaie

Test Start: 2020.02.11 @ 13:37:00

### 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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% Mud w / oil spots	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

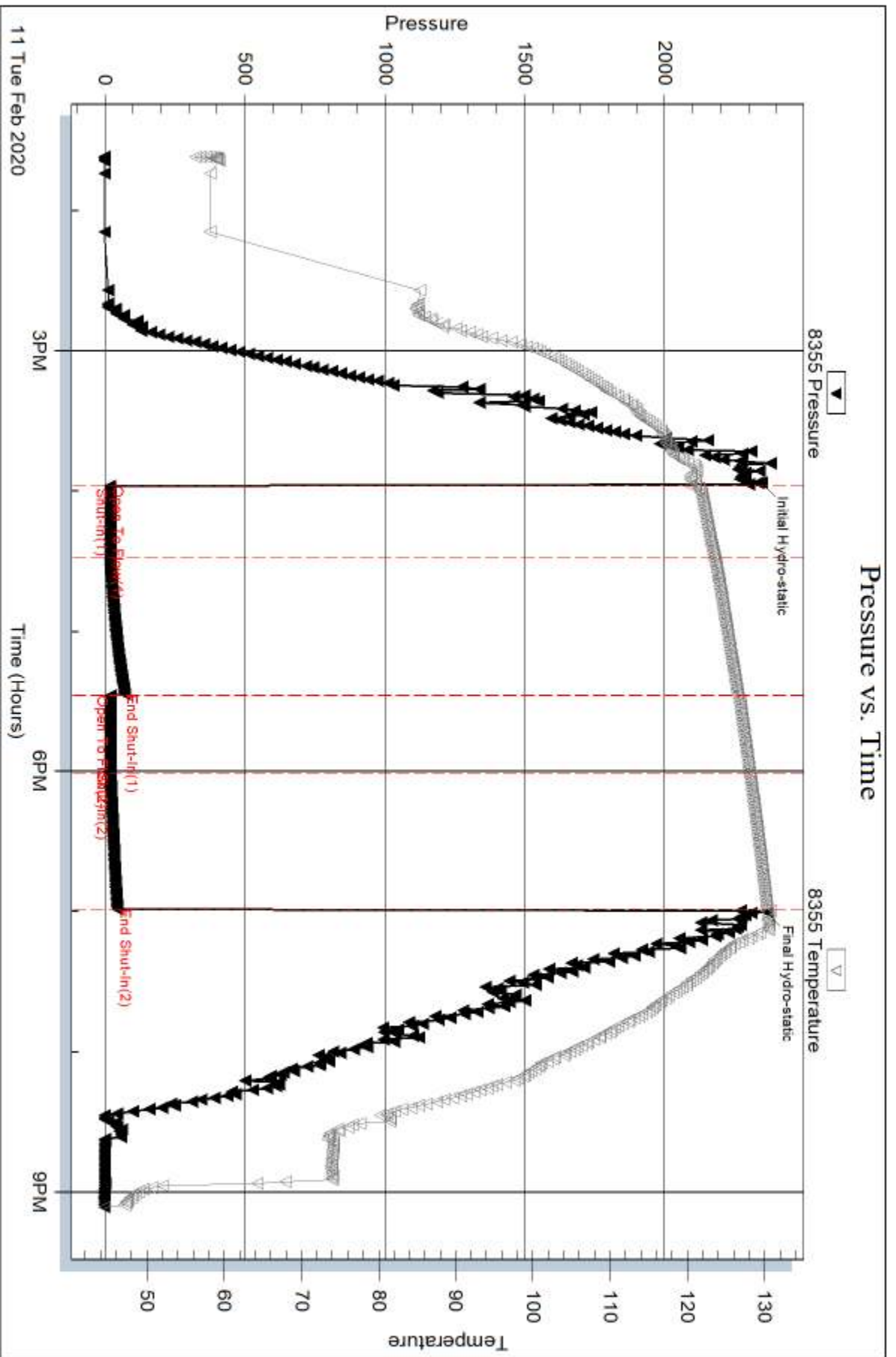
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



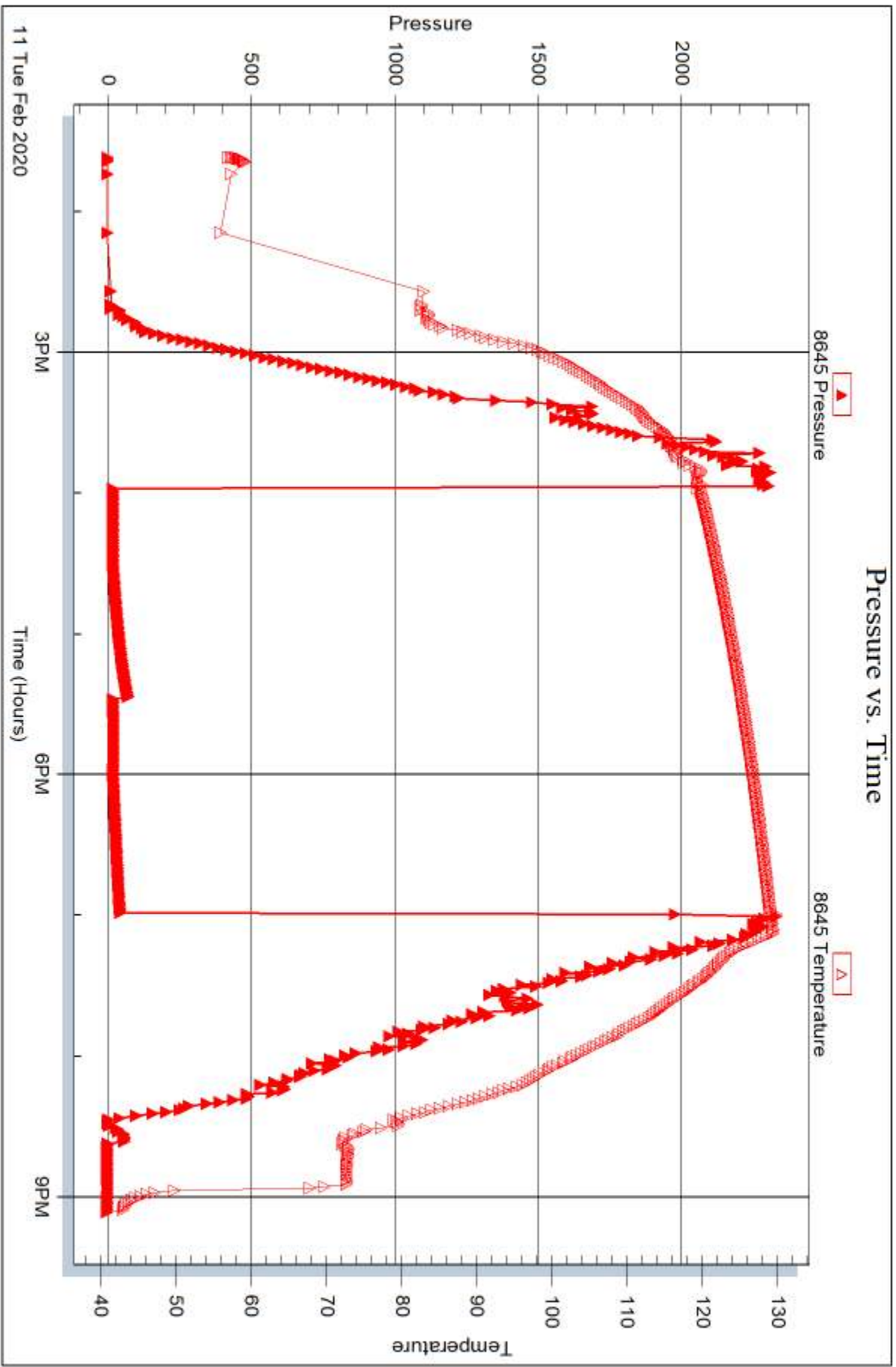
Serial #: 8645

Inside

Murfin Drilling Co

B&W #1-30

DST Test Number: 4





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.13 @ 09:01:00

End Date: 2020.02.13 @ 17:25:30

Job Ticket #: 66010                      DST #: 5

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

Printed: 2020.02.17 @ 10:11:10



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66010

**DST#: 5**

ATTN: Saman ShariFaie

Test Start: 2020.02.13 @ 09:01:00

## GENERAL INFORMATION:

Formation: **Ft Scott - Celia**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:54:40

Time Test Ended: 17:25:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Shaw n Wheelbarger

Unit No: 76

**Interval: 4728.00 ft (KB) To 4860.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 4860.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8355 Outside**

Press@RunDepth: 58.48 psig @ 4729.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.13

End Date: 2020.02.13

Last Calib.: 2020.02.13

Start Time: 09:01:01

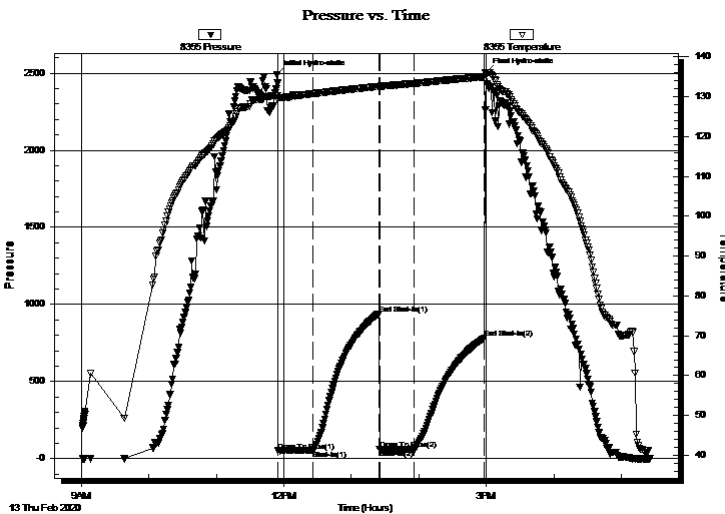
End Time: 17:25:30

Time On Btm: 2020.02.13 @ 11:53:40

Time Off Btm: 2020.02.13 @ 14:59:30

**TEST COMMENT:** 30-IF-2 1/2" Blow @ open slowly declined to 1 1/4"  
60-ISI-No blow back  
30-FF-Weak surface blow @ 13 min built to 1/4"  
60-FSI-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2488.58	130.34	Initial Hydro-static
1	50.32	129.33	Open To Flow (1)
32	54.60	130.77	Shut-In(1)
91	940.73	132.61	End Shut-In(1)
92	59.18	132.22	Open To Flow (2)
122	58.48	133.32	Shut-In(2)
185	782.32	135.01	End Shut-In(2)
186	2504.82	136.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
90.00	OCM 15%O, 85%M	0.44

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66010

**DST#: 5**

ATTN: Saman ShariFaie

Test Start: 2020.02.13 @ 09:01:00

## Tool Information

Drill Pipe:	Length: 4481.00 ft	Diameter: 3.80 inches	Volume: 62.86 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 239.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose:	118000.0 lb
			<u>Total Volume: 64.04 bbl</u>	Tool Chased	5.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	84000.00 lb
Depth to Top Packer:	4728.00 ft			Final	86000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	132.00 ft				
Tool Length:	160.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments: tool slid 5' to bottom lost 15' mud in the hole

## Tool Description

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

Change Over Sub	1.00			4701.00	
Shut In Tool	5.00			4706.00	
Hydraulic tool	5.00		Inside	4711.00	
Jars	5.00			4716.00	
Safety Joint	2.00			4718.00	
Packer	5.00			4723.00	28.00 Bottom Of Top Packer
Packer	5.00			4728.00	
Stubb	1.00			4729.00	
Recorder	0.00	8355	Outside	4729.00	
Recorder	0.00	8645	Inside	4729.00	
Perforations	31.00			4760.00	
Change Over Sub	1.00			4761.00	
Drill Pipe	95.00			4856.00	
Change Over Sub	1.00			4857.00	
Bullnose	3.00			4860.00	132.00 Bottom Packers & Anchor

**Total Tool Length: 160.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66010

**DST#: 5**

ATTN: Saman ShariFaie

Test Start: 2020.02.13 @ 09:01:00

### 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: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
90.00	OCM 15%O, 85%M	0.443

Total Length: 90.00 ft      Total Volume: 0.443 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

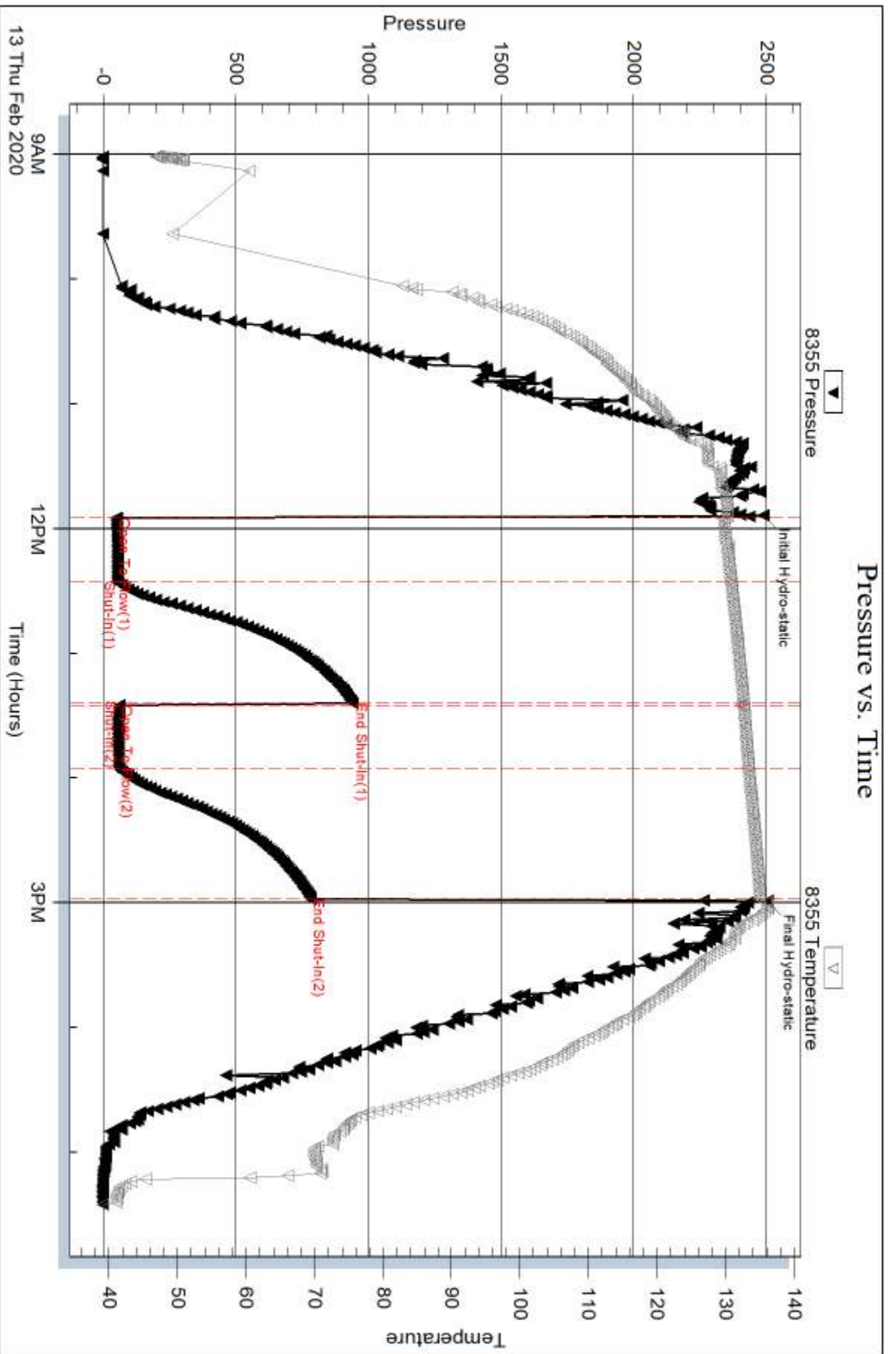
Recovery Comments:

Serial #: 8355

Outside Marfin Drilling Co

B&W #1-30

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 66010

Printed: 2020.02.17 @ 10:11:11

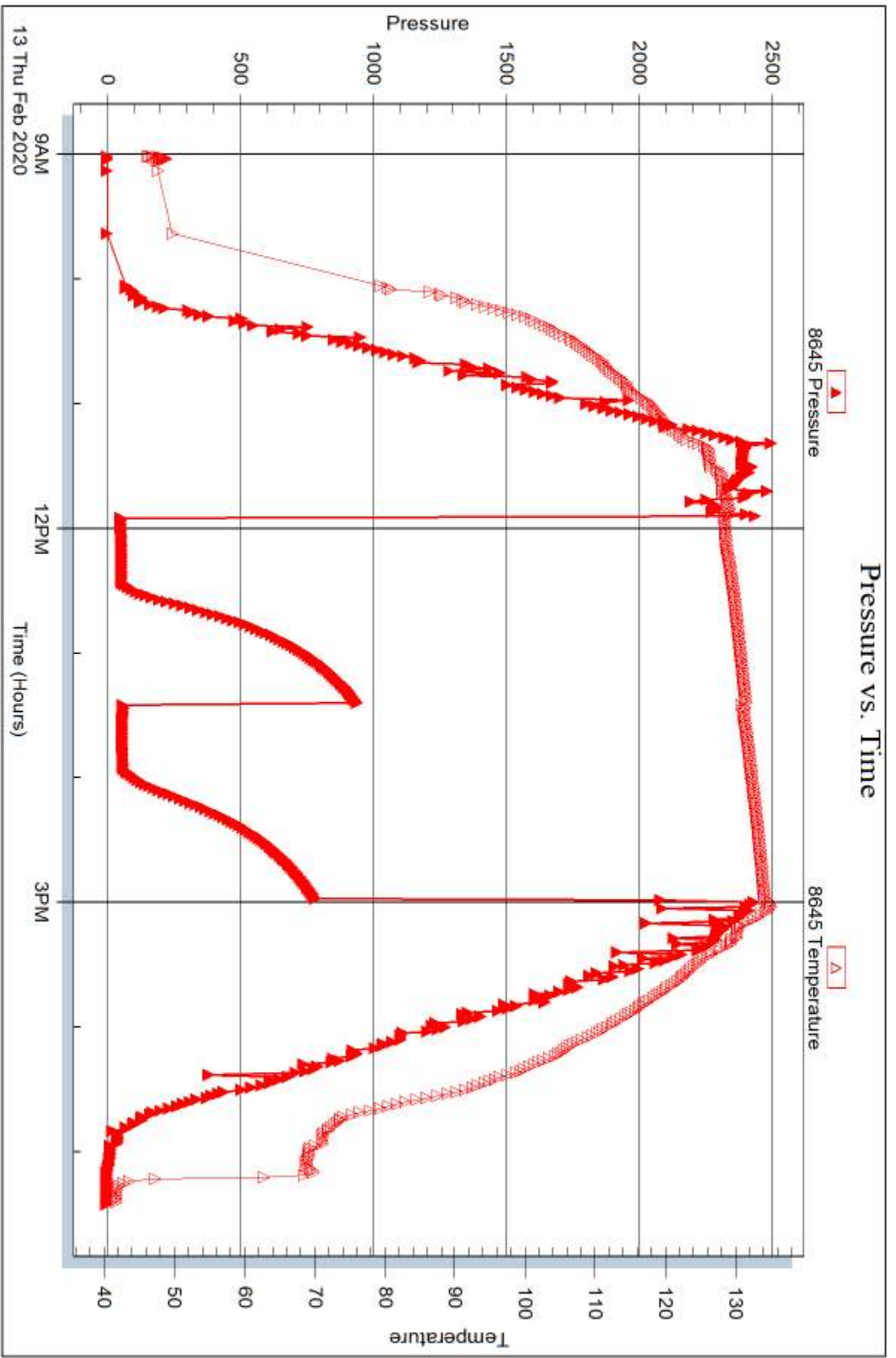
Serial #: 8645

Inside

Murfin Drilling Co

B&W #1-30

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 66010

Printed: 2020.02.17 @ 10:11:11



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman ShariFaie

### **B&W #1-30**

#### **30-2s-37w Cheyenne,KS**

Start Date: 2020.02.14 @ 14:31:00

End Date: 2020.02.14 @ 23:59:00

Job Ticket #: 66480                      DST #: 6

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

Printed: 2020.02.17 @ 10:10:42



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co

**30-2s-37w Cheyenne, KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66480

**DST#: 6**

ATTN: Saman ShariFaie

Test Start: 2020.02.14 @ 14:31:00

## GENERAL INFORMATION:

Formation: **Marmaton "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:02:15

Time Test Ended: 23:59:00

Test Type: Conventional Straddle (Reset)

Tester: James Winder

Unit No: 83

**Interval: 4653.00 ft (KB) To 4740.00 ft (KB) (TVD)**

Reference Elevations: 3430.00 ft (KB)

Total Depth: 5104.00 ft (KB) (TVD)

3425.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8652 Outside**

Press@RunDepth: 170.13 psig @ 4654.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2020.02.14

End Date:

2020.02.14

Last Calib.:

2020.02.15

Start Time:

14:31:05

End Time:

23:59:00

Time On Btm:

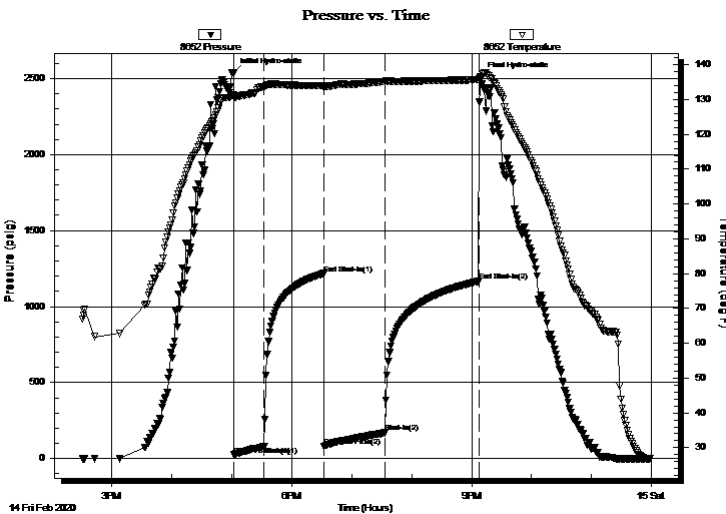
2020.02.14 @ 17:02:00

Time Off Btm:

2020.02.14 @ 21:09:00

**TEST COMMENT:** 30 - IF: Blow built to 4"  
60 - IS: No blow back  
60 - FF: Blow built to 4 1/4"  
90 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2540.43	131.29	Initial Hydro-static
1	23.73	130.68	Open To Flow (1)
31	77.99	133.59	Shut-In(1)
91	1217.59	134.04	End Shut-In(1)
91	81.75	133.53	Open To Flow (2)
152	170.13	135.28	Shut-In(2)
246	1166.77	135.72	End Shut-In(2)
247	2512.53	136.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	GWCM w/trace oil 79%m, 13%w, 8%g	0.89
105.00	Mud w/trace oil 100%m	0.52

## Gas Rates

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

\* Recovery from multiple tests







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66480

**DST#: 6**

ATTN: Saman ShariFaie

Test Start: 2020.02.14 @ 14:31:00

## Tool Information

Drill Pipe:	Length: 4182.00 ft	Diameter: 3.80 inches	Volume: 58.66 bbl	Tool Weight: 3500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 476.00 ft	Diameter: 2.25 inches	Volume: 2.34 bbl	Weight to Pull Loose: 106000.0 lb
			<u>Total Volume: 61.00 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial 106000.0 lb
Depth to Top Packer:	4653.00 ft			Final 106000.0 lb
Depth to Bottom Packer:	4740.00 ft			
Interval between Packers:	87.00 ft			
Tool Length:	480.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4625.00	
Shut In Tool	5.00			4630.00	
Hydraulic tool	5.00			4635.00	
Jars	5.00			4640.00	
Safety Joint	3.00			4643.00	
Packer	5.00			4648.00	29.00 Bottom Of Top Packer
Packer	5.00			4653.00	
Stubb	1.00			4654.00	
Recorder	0.00	6625	Inside	4654.00	
Recorder	0.00	8652	Outside	4654.00	
Perforations	2.00			4656.00	
Blank Spacing	65.00			4721.00	
Perforations	14.00			4735.00	
Blank Off Sub	1.00			4736.00	
Blank Spacing	4.00			4740.00	87.00 Tool Interval
Packer	0.00			4740.00	
Packer - Shale	0.00			4740.00	
Stubb	1.00			4741.00	
Recorder	0.00	8167	Below	4741.00	
Perforations	10.00			4751.00	
Blank Spacing	350.00			5101.00	
Bullnose	3.00			5104.00	364.00 Bottom Packers & Anchor

**Total Tool Length: 480.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**30-2s-37w Cheyenne,KS**

250 N Water STE 300  
Wichita KS 67202

**B&W #1-30**

Job Ticket: 66480

**DST#: 6**

ATTN: Saman ShariFaie

Test Start: 2020.02.14 @ 14:31:00

### 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:

9500 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	GWCM w /trace oil 79%m, 13%w, 8%g	0.885
105.00	Mud w /trace oil 100%m	0.516

Total Length: 285.00 ft      Total Volume: 1.401 bbl

Num Fluid Samples: 0

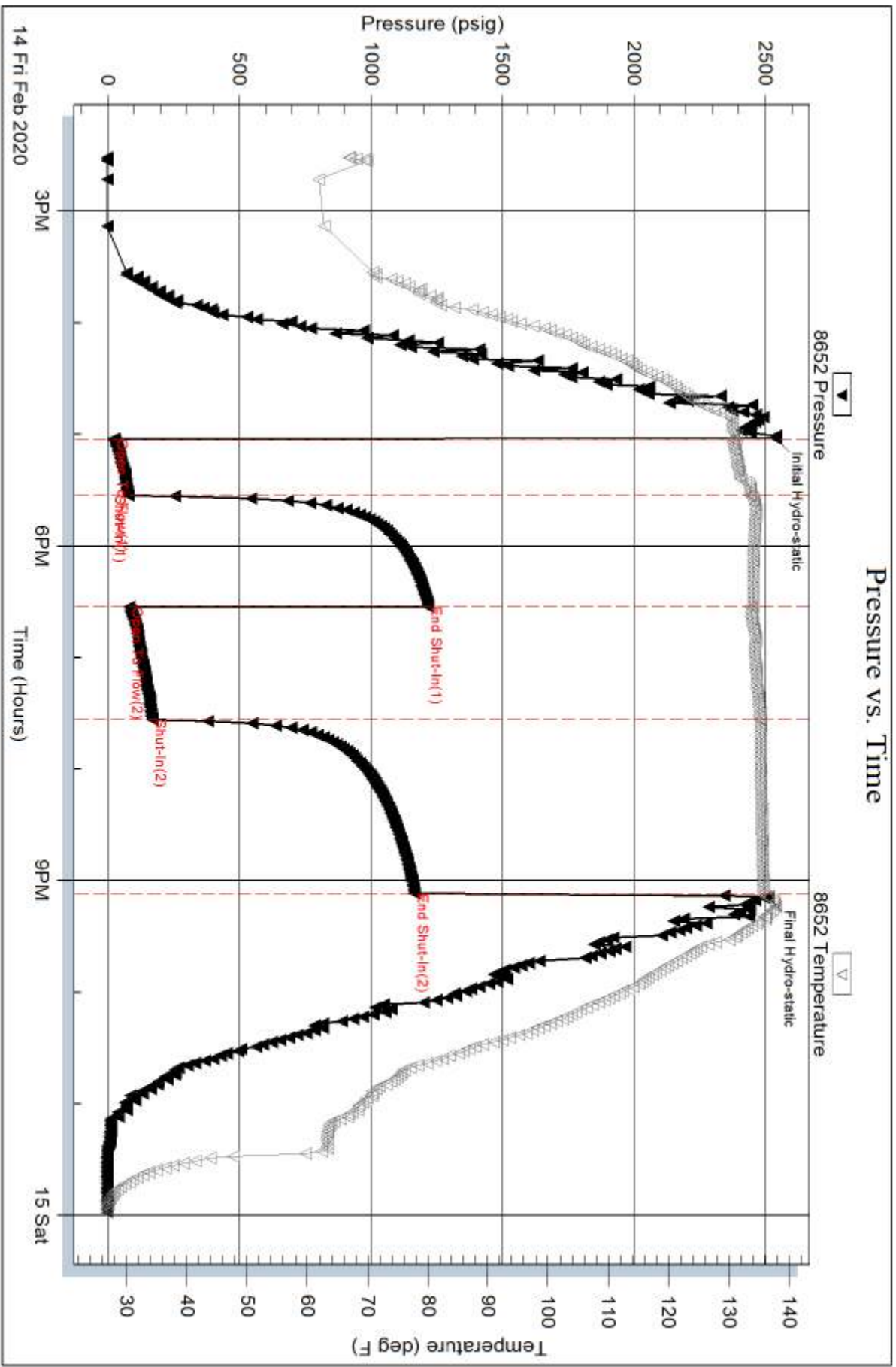
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = 1.3 ohms @ 34.4 deg F Chlorides = 9,500 ppm



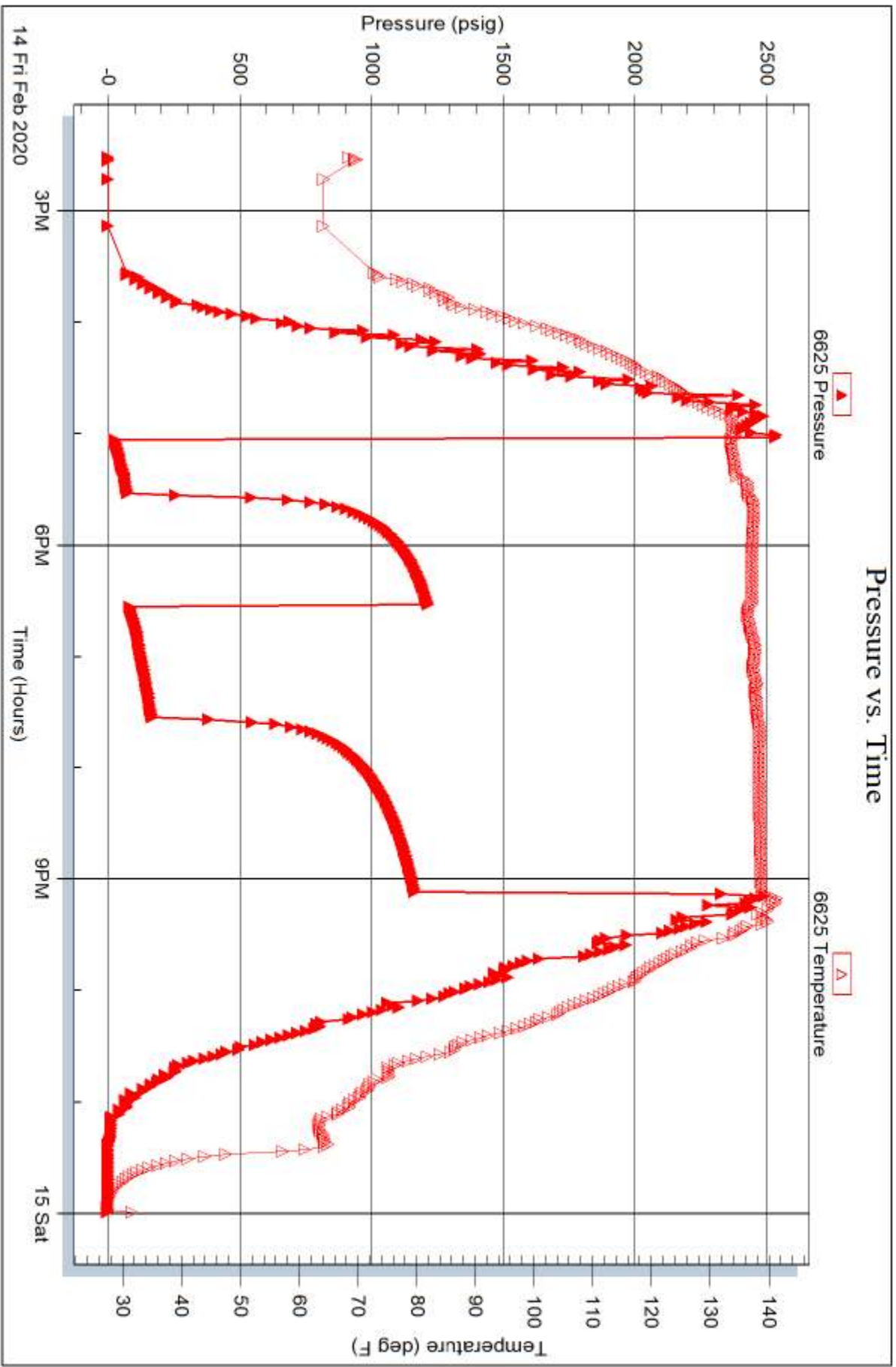
Serial #: 6625

Inside

Marfin Drilling Co

B&W #1-30

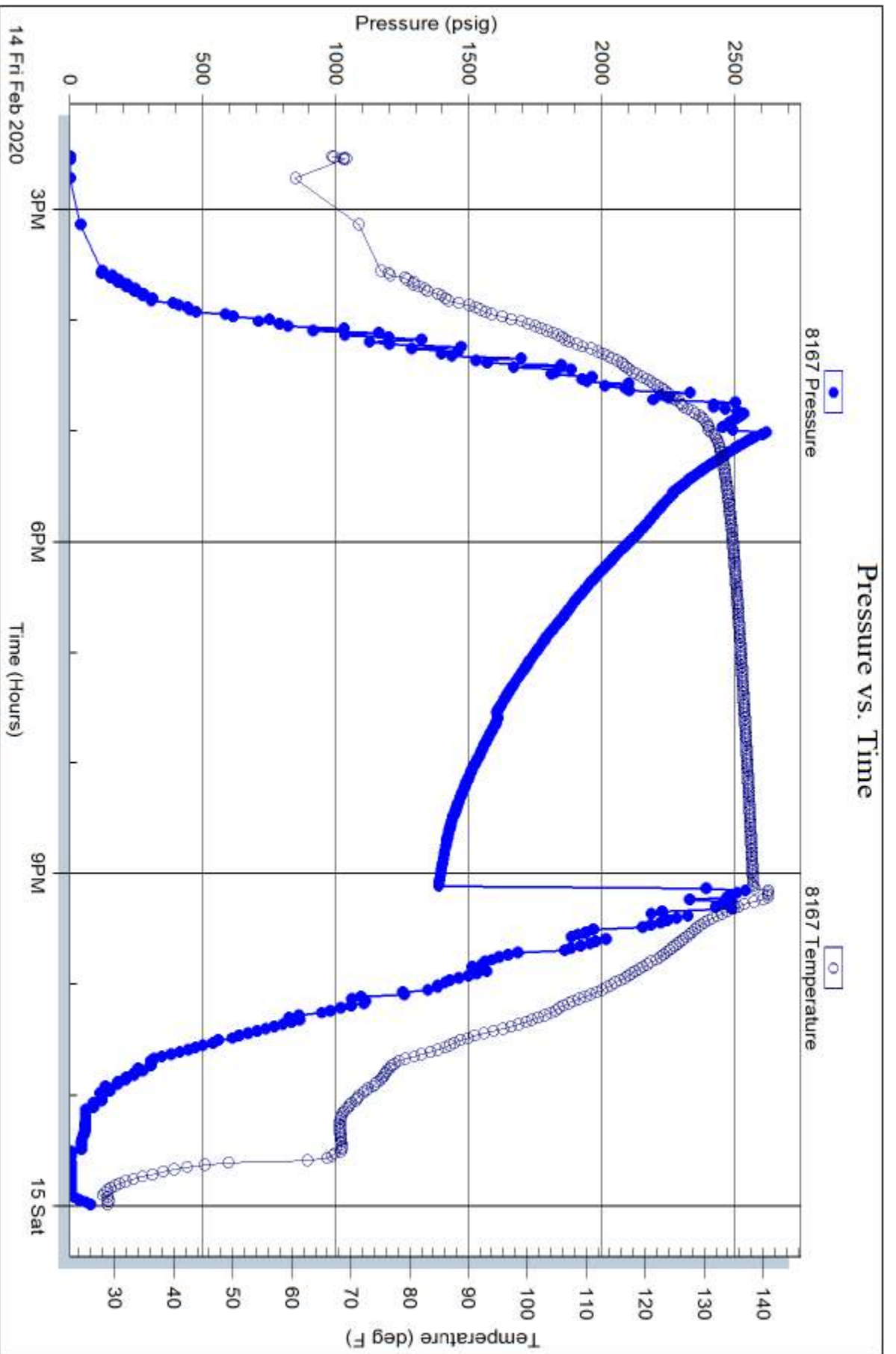
DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 66480

Printed: 2020.02.17 @ 10:10:42







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket 66150

NO.

Well Name & No. Taylor 33-1 Test No. 1 Date 2-11-20  
 Company Brito oil company inc Elevation 3462 KB 3457 GL  
 Address 8100 E 22nd St N Ste 600-R Wichita, KS 67226  
 Co. Rep / Geo. Brod Bime Rig Murfin 110  
 Location: Sec. 33 Twp 65 Rge. 37W Co. Sherman State KS

Interval Tested 4456 4543 Zone Tested LKC H & J  
 Anchor Length 87 Drill Pipe Run 4317 Mud Wt. 9.3  
 Top Packer Depth 4451 Drill Collars Run 123 Vls 53  
 Bottom Packer Depth 4456 Wt. Pipe Run — WL 8.8  
 Total Depth 4543 Chlorides 6000 ppm System LCM 1  
 Blow Description ±F: 3/4 blow built to 4,  
±S: NO return.  
FF: 1/4 blow built to 2 1/4.  
FS: NO return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free oil</u>	<u>100</u>			
<u>30</u>	<u>WCM</u>		<u>20</u>	<u>80</u>	
<u>123</u>	<u>MLW</u>		<u>60</u>	<u>40</u>	

Rec Total 154 BHT 127 Gravity — API RW .55 @ 35 °F Chlorides 25,000 ppm

(A) Initial Hydrostatic <u>2285</u>	<input checked="" type="checkbox"/> Test 1300	T-On Location <u>15:00</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>16:44</u>
(C) First Final Flow <u>62</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>18:48</u>
(D) Initial Shut-In <u>1279</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>22:03</u>
(E) Second Initial Flow <u>71</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>23:50</u>
(F) Second Final Flow <u>95</u>	<input checked="" type="checkbox"/> Mileage <u>201- 141rt</u>	Comments _____
(G) Final Shut-In <u>1251</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> EM Tool
(H) Final Hydrostatic <u>2194</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1766</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1766</u>	

Approved By Brod Bime 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 66626

NO.

Well Name & No. Taylor 33-1 Test No. 2 Date 2-12-20  
 Company Brito oil Elevation 3462 KB 3457 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Brad Rine Rig Murfin 110  
 Location: Sec. 33 Twp 65 Rge. 37W Co. Sherman State KS

Interval Tested 4651 4705 Zone Tested Altamont C  
 Anchor Length 54 Drill Pipe Run 4507 Mud Wt. 9.3  
 Top Packer Depth 4646 Drill Collars Run 123 Vls 50  
 Bottom Packer Depth 4651 Wt. Pipe Run \_\_\_\_\_ WL 7.2  
 Total Depth 4705 Chlorides 6600 ppm System LCM 1

Blow Description IF: 1/4 blow built to 1.  
IS: No return.  
FF: No return blow.  
FS: 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 120 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2418  Test 1300 T-On Location 17:45  
 (B) First Initial Flow 21  Jars 250 T-Started 21:09  
 (C) First Final Flow 20  Safety Joint 75 T-Open 23:14  
 (D) Initial Shut-In 20  Circ Sub NIL T-Pulled 1:14  
 (E) Second Initial Flow 18  Hourly Standby 3-300.00 T-Out 2:55  
 (F) Second Final Flow 20  Mileage 201 - 282 Comments short trip  
 (G) Final Shut-In 22  Sampler \_\_\_\_\_ No phone call  
 (H) Final Hydrostatic 2349  Straddle \_\_\_\_\_ Loaded 2-14 7pm

Initial Open 30  EM Tool \_\_\_\_\_  
 Initial Shut-In 30  Ruined Shale Packer \_\_\_\_\_  
 Final Flow 30  Ruined Packer \_\_\_\_\_  
 Final Shut-In 30  Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby 1.5d 4h Sub Total 800  
 Accessibility \_\_\_\_\_ Total 2707  
 Sub Total 1907 MP/DST Disc't \_\_\_\_\_

Approved By Brad Rine 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.