

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

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

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

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD
 Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

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

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

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

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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

County: _____ Permit #: _____

AFFIDAVIT

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

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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

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

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

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

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top _____ Bottom _____
---	---	--

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

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	YOUNGMEYER 'A' 2-14
Doc ID	1363571

All Electric Logs Run

DIL
DUCP
MEL
BHCS



250 N. Water, Ste 200 - Wichita, Ks 67202

HURRICANE SERVICES INC

104 Prairie Plaza Parkway - Garnett, Ks 66032

Customer:	MURFIN	Customer Name:	DUKE	Ticket No.:	50301			
Address:		Contractor:	C & G	Date:	6/30/2017			
City, State, Zip:		Job type:	SURFACE	Well Type:	OIL			
Service District:	MADISON, KANSAS	Well Details:	SEC 14	Twp:	29S	R:	8E	
Well name & No.:	YOUNGMEYER A 2-14	Well Location:	LATHAM	County:	ELK	State:	KANSAS	
Equipment #	Driver	TRUCK CALLED					AM	TIME
201	KEVIN	ARRIVED AT JOB					PM	
202	MARK	START OPERATION					AM	
30	JAKE	FINISH OPERATION					PM	
		RELEASED					AM	
		MILES FROM STATION TO WELL					PM	80

ON LOCATION SAFETY MEETING. SPOT IN AND RIG UP. WAIT ON RIG. CIRCULATE JOINT DOWN. BREAK CIRCULATION. MIX AND PUMP 55 SACKS CLASS A + 2%GEL + 3%CC + .25 LB/SK FLOSEAL. DISPLACE WITH 2.5 BBL WATER. SHUT IN WELL AND RIG DOWN. OFF LOACTION 4:00 PM

3010

Product/Service Code	Description	Unit of Measure	Quantity	List Price/Unit	Gross Amount	Net Amount
C001	Heavy Equip. One Way	mi	160.00	\$3.25	\$520.00	\$353.60
C002	Light Equip. One Way	mi	80.00	\$1.50	\$120.00	\$81.60
C003 C004	Ton Mileage - <i>One-way Minimum</i>	mi	1.00	\$1.30	<i>300.00</i>	<i>204.00</i>
C020	Cement Pump	ea	1.00	\$675.00	\$675.00	\$459.00
CP006	Regular - Class A Cement	sack	55.00	\$16.25	\$893.75	\$607.75
CP013	Bentonite Gel	lb	104.00	\$0.30	\$31.20	\$21.22
CP014	Calcium - Chloride	lb	156.00	\$1.00	\$156.00	\$106.08
CP017	FLO-Seal	lb	14.00	\$2.15	\$30.10	\$20.47

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts may pay interest on the balance past due at the rate of 1 1/4% per month or the maximum allowable by applicable state or federal laws if such laws limit interest to a lesser amount. In the event it is necessary to employ an agency and/or attorney to affect the collection of said account, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any and all discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount will become immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Discount rate is based on 30 days net payment terms or cash.

DISCLAIMER NOTICE:

This technical data is presented in good faith, but no warranty is given by and H.S.I. assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The information presented is HSI best estimate of the actual results that may be achieved and should be used for comparison purposes and make no guarantee of future production performance. Customer warrants that well and all associated equipment in acceptable condition to receive services by H.S.I. Likewise, the customer will guarantee proper operational care of all customer owned production and associated equipment, while H.S.I. is on location performing services which could adversely affect the performance of such services. Authorization below acknowledges receipt and acceptance of all terms and conditions stated

X _____
CUSTOMER AUTHORIZED AGENT

Gross:		\$ 2,427.35	Net:	\$ 1853.72
Total Taxable	\$ -	Tax Rate:		
Frac and Acid service treatments designed with intent to increase production on newly drilled or existing wells are not taxable.		Sale Tax:	\$ -	
		Total:	\$ 1853.72	
Date of Service:	6/30/2017			
HSI Representative:	JAKE HEARD			
Customer Comments:				

TREATMENT REPORT



HURRICANE SERVICES INC

Customer: Murfin	Date: 7/17/2017	Ticket No.: 50311
Field Rep: Duke		
Address:		
City, State:		
County, Zip:		

Field Order No.:		Open Hole: 3230	Perf Depths (ft)	Perfs
Well Name: Youngmayer A 2-14		Casing Depth:		
Location: Latham, Ks		Casing Size:		
Formation:		Tubing Depth:		
Type of Service: PTA		Tubing Size:		
Well Type:		Liner Depth:		
Age of Well: New		Liner Size:		
Packer Type:		Liner Top:		
Packer Depth:		Liner Bottom:		
Treatment Via: Drill Pipe		Total Depth:		
			Total Perfs	0

TIME	INJECTION RATE		PRESSURE		REMARKS	PROP (lbs)	HCL (gls)	FLUID (bbls)
	FLUID	N2/CO2	STP	ANNULUS				
10:30 PM					On location safety meeting, spot in and rig up			
					Wait on rig			
					Hook up to drill pipe 3230'			
					Break Circulation			
	4.0		400.0		Pump 8.5 water			8.50
	4.0		400.0		Mix and pump 20 sacks cement			5.00
	4.0		400.0		Pump 3 water			3.00
	9.0		400.0		Pump 30 mud			30.00
					Hook up to drill pipe 2790'			
	4.0		350.0		Pump 8.5 water			8.50
	4.0		350.0		Mix and pump 20 sacks cement			5.00
	4.0		350.0		Pump 3 water			3.00
	9.0		350.0		Pump 25 mud			25.00
					Hook up to drill pipe 2000'			
	4.0		350.0		Pump 8.5 water			8.50
	4.0		350.0		Mix and pump 20 sacks cement			5.00
	4.0		350.0		Pump 3 water			3.00
	9.0		350.0		Pump 16 mud			16.00
TOTAL:						-	-	167.80

SUMMARY

Max Fl. Rate	Avg Fl. Rate	Max PSI	Avg PSI
9.0	4.7	400.0	320.0

PRODUCTS USED

250 Sacks 60:40% Gel

Treater: Jake Heard

Customer: Duke

MDCI
 Youngmeyer 'A' #2-14
 460 FNL 660 FWL
 Sec. 14-T29S-R8E
 1550' KB

Formation	Sample tops	Datum	Ref	Log Tops	Datum	Ref
Heebner	1290	+260	-37	1287	+263	-34
Lansing	1693	-143	-16	1679	-129	-2
Kansas City	2026	-476	-34	2018	-468	-26
BKC	2240	-690	-34	2230	-680	-24
Altamont	2347	-797	-26	2340	-790	-19
Pawnee	2432	-882	-22	2426	-876	-16
Ft Scott	2470	-920	-20	2464	-914	-14
Excello	2509	-959	-23	2501	-951	-14
Oakley	2580	-1030	-20	2573	-1023	-13
Mississippi	2796	-1246	-14	2790	-1240	-8
B/Cowley	2976	-1426	-12	2968	-1418	-4
Arbuckle	3149	-1599	-25	3144	-1594	-20
RTD	3230					
LTD				3227		

Jeff Christian

PETROLEUM GEOLOGIST
WICHITA, KANSAS

GEOLOGICAL REPORT
EMRI Logging Time and Sample Locations

ELEVATIONS
K8: 1500'
K9: 1541'

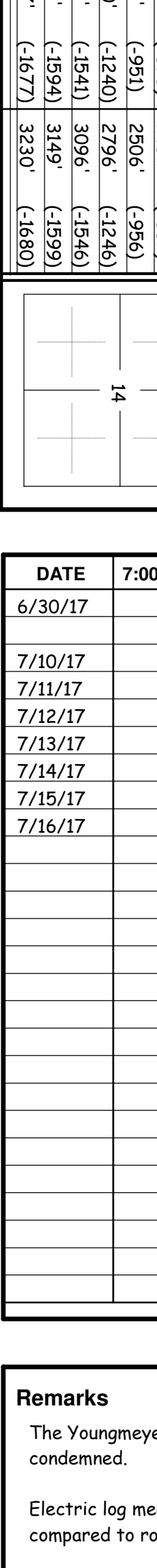
OPERATOR
MURFIN DRILLING COMPANY
LEASE
YOUNGMAYER 'A' # 2-14
LOCATION
460' FNL & 660' FWL

SEC. 14 TWP. 23 S. R. 8 E.
COUNTY ELK STATE KANSAS
FIELD WILD CAT
DATE 15-04-2012 00:00

CONTRACTOR C.A.G.
DRILLING STARTED 06/30/2012
DRILLING TIME 11/17
DRILLING TIME 1000'
DRILLING TIME 1000'
DRILLING TIME 1000'

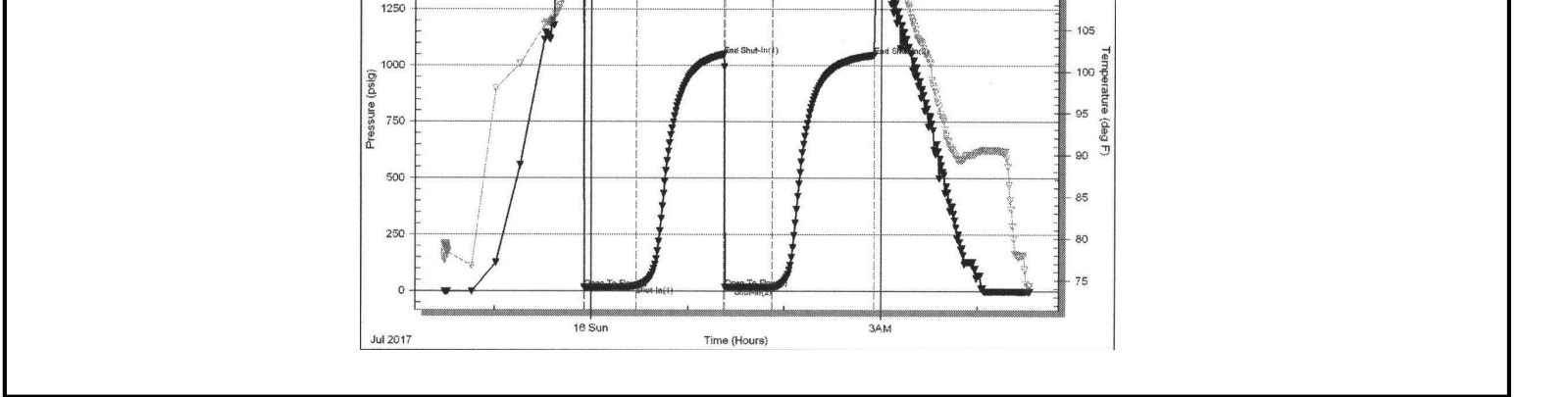
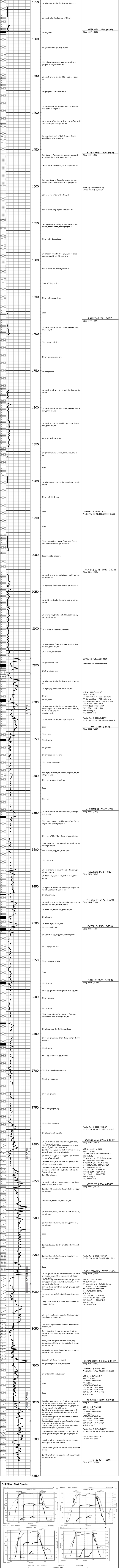
MEASUREMENTS FROM B
CASING RECORD
Conductor NONE
Gardner 8.875" @ 3'
W/ 2.5" SX
Foster 8.875" @ 3'
ELECTRICAL SURVEYS
FLUORER
DLE/2RL
MEL

FORMATION
NAME LOG DATE TIME TOP SAMPLE DATE TIME
LANSDING 1679' (-1293) 1693' (-1433) (1433)
KANSAS CITY 2018' (-1488) 2026' (-1763) (1763)
KANSAS CITY 2320' (-1880) 2326' (-1976) (1976)
PARKER 2426' (-1986) 2432' (-2082) (2082)
EAGLES 2532' (-2092) 2538' (-2188) (2188)
EAGLES 2638' (-2198) 2644' (-2294) (2294)
KINDERHOOK 3091' (-2541) 3096' (-2546) (2546)
KINDERHOOK 3144' (-2594) 3149' (-2599) (2599)
ARBUCKLE 3227' (-2671) 3230' (-2674) (2674)



DATE	7:00 AM DEPTH	REMARKS
6/30/17	MIRT	SPUD 12:30 pm Set 8 5/8" Surface Casing @ 53' w/ 55 SX PD @ 3:40 pm Shut Down for Week DO @ 7:30 am
7/10/17	53'	DO @ 7:30 am
7/11/17	2131'	Drlg
7/12/17	2288'	Drlg
7/13/17	2820'	TOH for DST # 2 dev. 7/8 deg.
7/14/17	2974'	Drlg
7/15/17	3154'	CFS
7/16/17	3167'	Drlg RTD 3230' @ 1:15 pm dev. 7/8 deg. Finish Logging @ 6:00 pm

Remarks
The Youngmayer 'A' # 2-14 was considered dry and abandoned. All sample shows of oil were drill stem tested and condensed.
Electric log measurements correlate about 2' high on upper formations to about 6' high on lower formations compared to rotary measurements.
Samples delivered to the Kansas Geological Survey in Wichita, Kansas.
Respectfully Submitted,
Jeff Christian
Jeff Christian





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.11 @ 19:33:54

End Date: 2017.07.12 @ 02:14:09

Job Ticket #: 63608 DST #: 1

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

Printed: 2017.07.17 @ 10:19:24



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water Ste 250
Wichita, KS 67202
ATTN: Jeff Christian

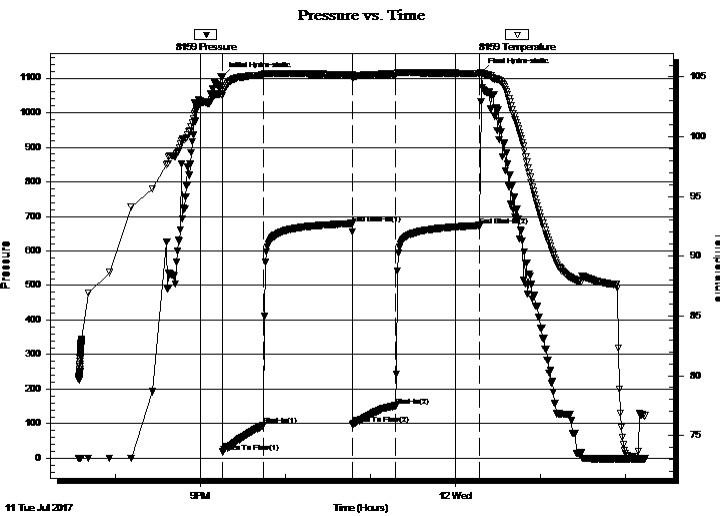
14-29S-8E EIk, KS
Youngmeyer A #2-14
Job Ticket: 63608 **DST#: 1**
Test Start: 2017.07.11 @ 19:33:54

GENERAL INFORMATION:

Formation: **Hertha**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:15:24
Time Test Ended: 02:14:09
Interval: **2204.00 ft (KB) To 2216.00 ft (KB) (TVD)**
Total Depth: 2216.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Leal Cason
Unit No: 74
Reference Elevations: 1550.00 ft (KB)
1541.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 8159 Inside
Press@RunDepth: 151.65 psig @ 2205.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.11 End Date: 2017.07.12 Last Calib.: 2017.07.12
Start Time: 19:33:55 End Time: 02:14:09 Time On Btm: 2017.07.11 @ 21:15:09
Time Off Btm: 2017.07.12 @ 00:18:24

TEST COMMENT: IF: Fair Blow , Built to 7 inches
IS: No Blow Back
FF: Weak Surface Blow
FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1103.41	103.74	Initial Hydro-static
1	18.37	103.44	Open To Flow (1)
30	96.51	105.17	Shut-In(1)
92	679.20	105.18	End Shut-In(1)
93	99.08	104.97	Open To Flow (2)
123	151.65	105.25	Shut-In(2)
182	673.55	105.30	End Shut-In(2)
184	1116.52	105.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
270.00	MCW 30%M 70%W	1.59

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

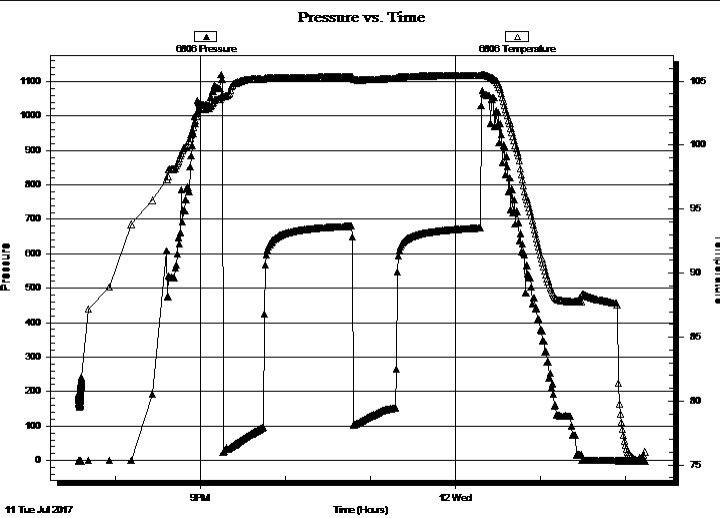
14-29S-8E EIk,KS
Youngmeyer A #2-14
 Job Ticket: 63608 **DST#: 1**
 Test Start: 2017.07.11 @ 19:33:54

GENERAL INFORMATION:

Formation: **Hertha**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 21:15:24 Tester: Leal Cason
 Time Test Ended: 02:14:09 Unit No: 74
 Interval: **2204.00 ft (KB) To 2216.00 ft (KB) (TVD)** Reference Elevations: 1550.00 ft (KB)
 Total Depth: 2216.00 ft (KB) (TVD) 1541.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 6806 Outside
 Press@RunDepth: psig @ 2205.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.11 End Date: 2017.07.12 Last Calib.: 2017.07.12
 Start Time: 19:33:55 End Time: 02:14:09 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Fair Blow , Built to 7 inches
 IS: No Blow Back
 FF: Weak Surface Blow
 FS: No Blow Back



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

Recovery		
Length (ft)	Description	Volume (bbl)
270.00	MCW 30%M 70%W	1.59

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63608

DST#: 1

ATTN: Jeff Christian

Test Start: 2017.07.11 @ 19:33:54

Tool Information

Drill Pipe:	Length: 1944.00 ft	Diameter: 3.80 inches	Volume: 27.27 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 28.46 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	2204.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			2183.00	
Hydraulic tool	5.00			2188.00	
Jars	5.00			2193.00	
Safety Joint	2.00			2195.00	
Packer	5.00			2200.00	26.00 Bottom Of Top Packer
Packer	4.00			2204.00	
Stubb	1.00			2205.00	
Recorder	0.00	8159	Inside	2205.00	
Recorder	0.00	6806	Outside	2205.00	
Perforations	8.00			2213.00	
Bullnose	3.00			2216.00	12.00 Bottom Packers & Anchor

Total Tool Length: 38.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63608

DST#: 1

ATTN: Jeff Christian

Test Start: 2017.07.11 @ 19:33:54

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:

82000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	MCW 30%M 70%W	1.592

Total Length: 270.00 ft Total Volume: 1.592 bbl

Num Fluid Samples: 0

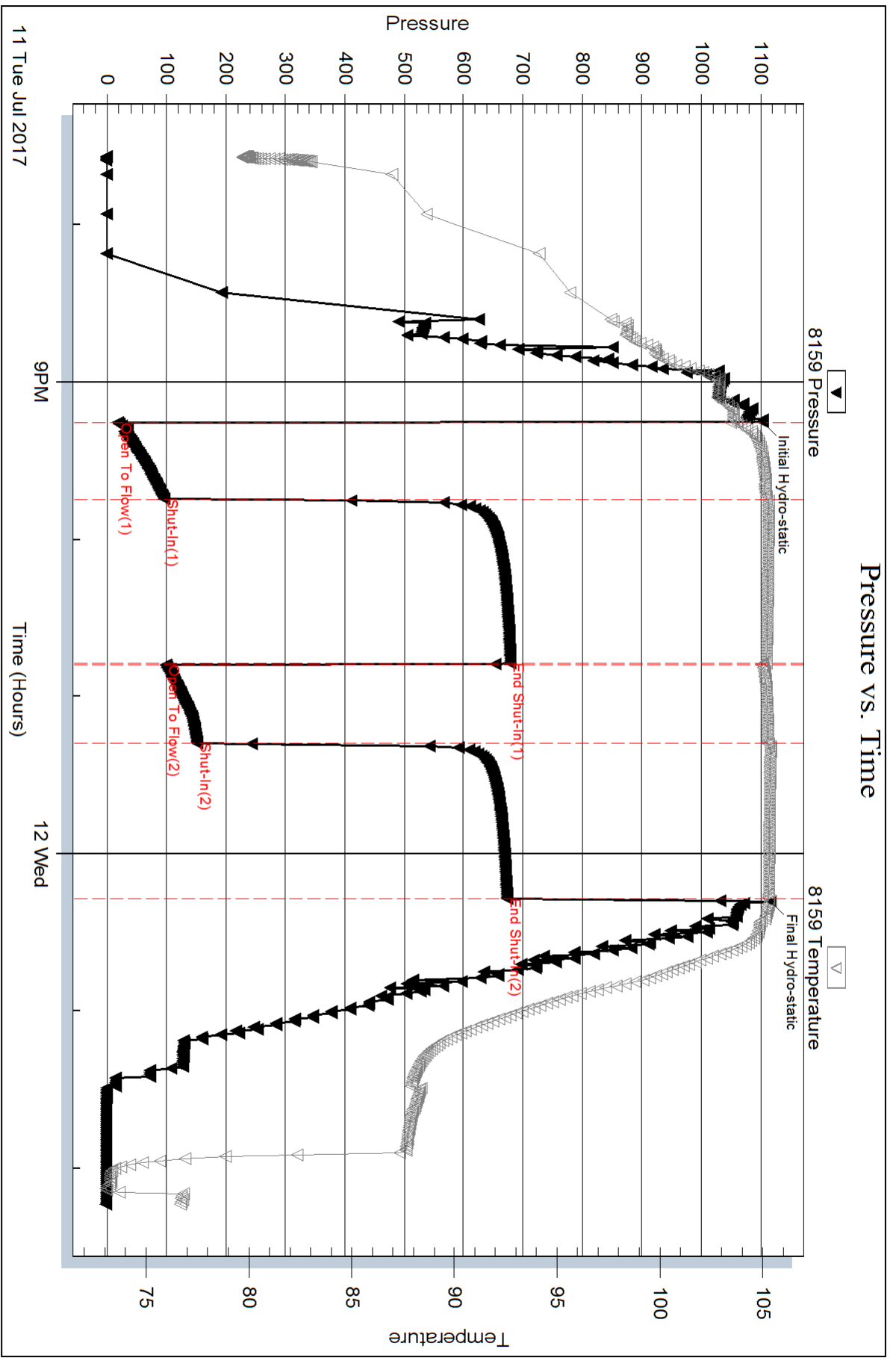
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .085 @ 80 degrees

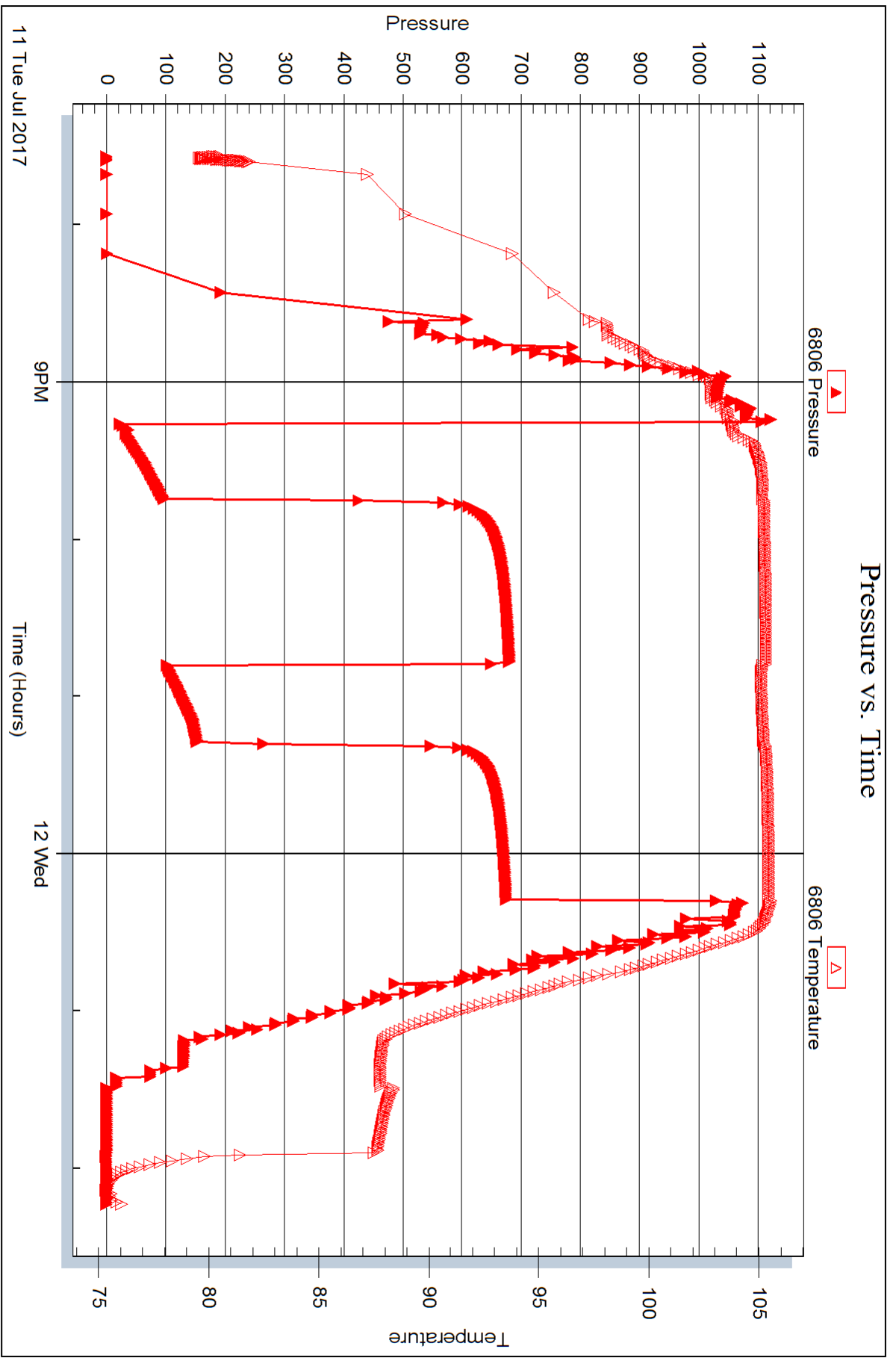


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.13 @ 08:52:24

End Date: 2017.07.13 @ 15:47:47

Job Ticket #: 63609 DST #: 2

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

Printed: 2017.07.17 @ 10:18:29

Murfin Drilling Co
14-29S-8E Elk,KS
Youngmeyer A #2-14
DST # 2
Mississippi
2017.07.13



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

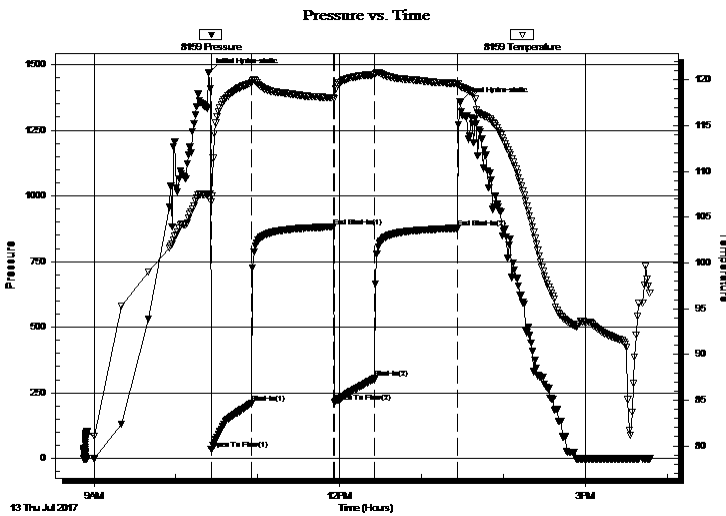
14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63609 **DST#: 2**
 Test Start: 2017.07.13 @ 08:52:24

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:25:47
 Time Test Ended: 15:47:47
 Interval: **2805.00 ft (KB) To 2820.00 ft (KB) (TVD)**
 Total Depth: 2820.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8159 Inside
 Press@RunDepth: 304.36 psig @ 2806.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.13 End Date: 2017.07.13 Last Calib.: 2017.07.13
 Start Time: 08:52:25 End Time: 15:47:47 Time On Btm: 2017.07.13 @ 10:24:17
 Time Off Btm: 2017.07.13 @ 13:28:17

TEST COMMENT: IF: Weak Blow , Built to 3 1/2 inches by 16 minutes, Died Off to 2 inches @ 30 minutes
 IS: No Blow Back
 FF: Weak Blow , Built to 1 1/2 inches
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1470.50	107.55	Initial Hydro-static
2	35.90	106.67	Open To Flow (1)
31	208.88	119.67	Shut-In(1)
92	882.05	118.04	End Shut-In(1)
92	215.29	117.95	Open To Flow (2)
122	304.36	120.57	Shut-In(2)
183	876.42	119.59	End Shut-In(2)
184	1357.45	119.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
427.00	GCMW 5%G 95%W	3.79
124.00	GMCW 5%G 30%M 65%W	1.74
2.00	SOSWCM -1%O 30%W 69%M	0.03

* 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 250
Wichita, KS 67202
ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
Job Ticket: 63609 **DST#: 2**
Test Start: 2017.07.13 @ 08:52:24

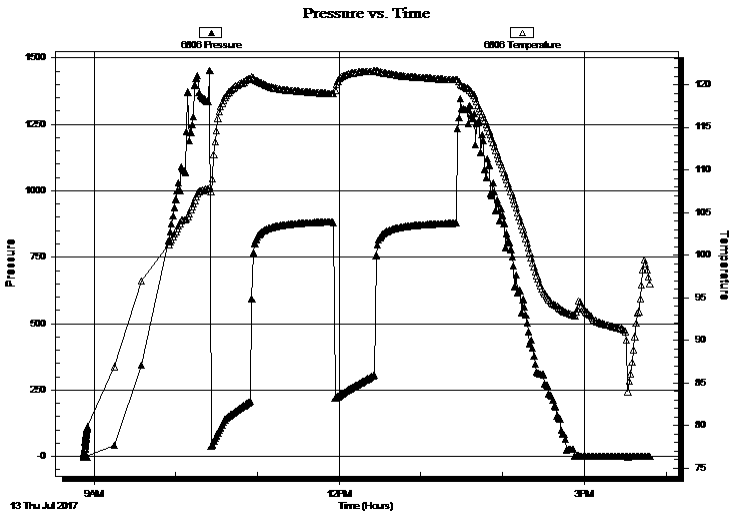
GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:25:47
Time Test Ended: 15:47:47
Interval: **2805.00 ft (KB) To 2820.00 ft (KB) (TVD)**
Total Depth: 2820.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 1550.00 ft (KB)
1541.00 ft (CF)
KB to GR/CF: 9.00 ft
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 74

Serial #: 6806 Outside

Press@RunDepth: psig @ 2806.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.13 End Date: 2017.07.13 Last Calib.: 2017.07.13
Start Time: 08:52:25 End Time: 15:48:03 Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Weak Blow , Built to 3 1/2 inches by 16 minutes, Died Off to 2 inches @ 30 minutes
IS: No Blow Back
FF: Weak Blow , Built to 1 1/2 inches
FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
427.00	GCMW 5%G 95%W	3.79
124.00	GMCW 5%G 30%M 65%W	1.74
2.00	SOSWCM -1%O 30%W 69%M	0.03

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

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63609

DST#: 2

ATTN: Jeff Christian

Test Start: 2017.07.13 @ 08:52:24

Tool Information

Drill Pipe:	Length: 2541.00 ft	Diameter: 3.80 inches	Volume: 35.64 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 36.83 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	2805.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	15.00 ft			
Tool Length:	41.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			2784.00	
Hydraulic tool	5.00			2789.00	
Jars	5.00			2794.00	
Safety Joint	2.00			2796.00	
Packer	5.00			2801.00	26.00 Bottom Of Top Packer
Packer	4.00			2805.00	
Stubb	1.00			2806.00	
Recorder	0.00	8159	Inside	2806.00	
Recorder	0.00	6806	Outside	2806.00	
Perforations	11.00			2817.00	
Bullnose	3.00			2820.00	15.00 Bottom Packers & Anchor

Total Tool Length: 41.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk,KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63609

DST#: 2

ATTN: Jeff Christian

Test Start: 2017.07.13 @ 08:52:24

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:

42000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
427.00	GCMW 5%G 95%W	3.794
124.00	GMCW 5%G 30%M 65%W	1.739
2.00	SOSWCM -1%O 30%W 69%M	0.028

Total Length: 553.00 ft Total Volume: 5.561 bbl

Num Fluid Samples: 0

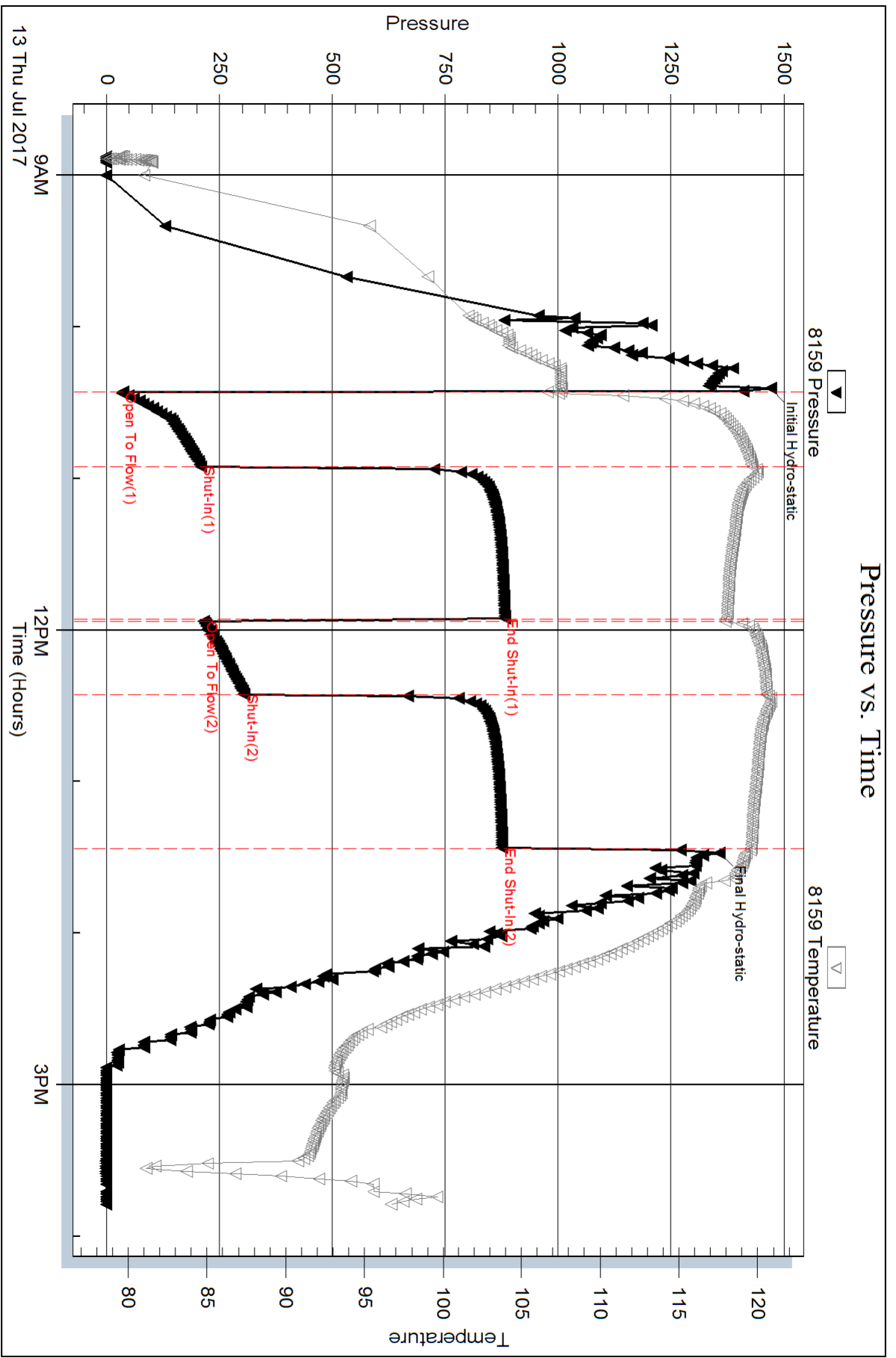
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .13 @ 94 degrees

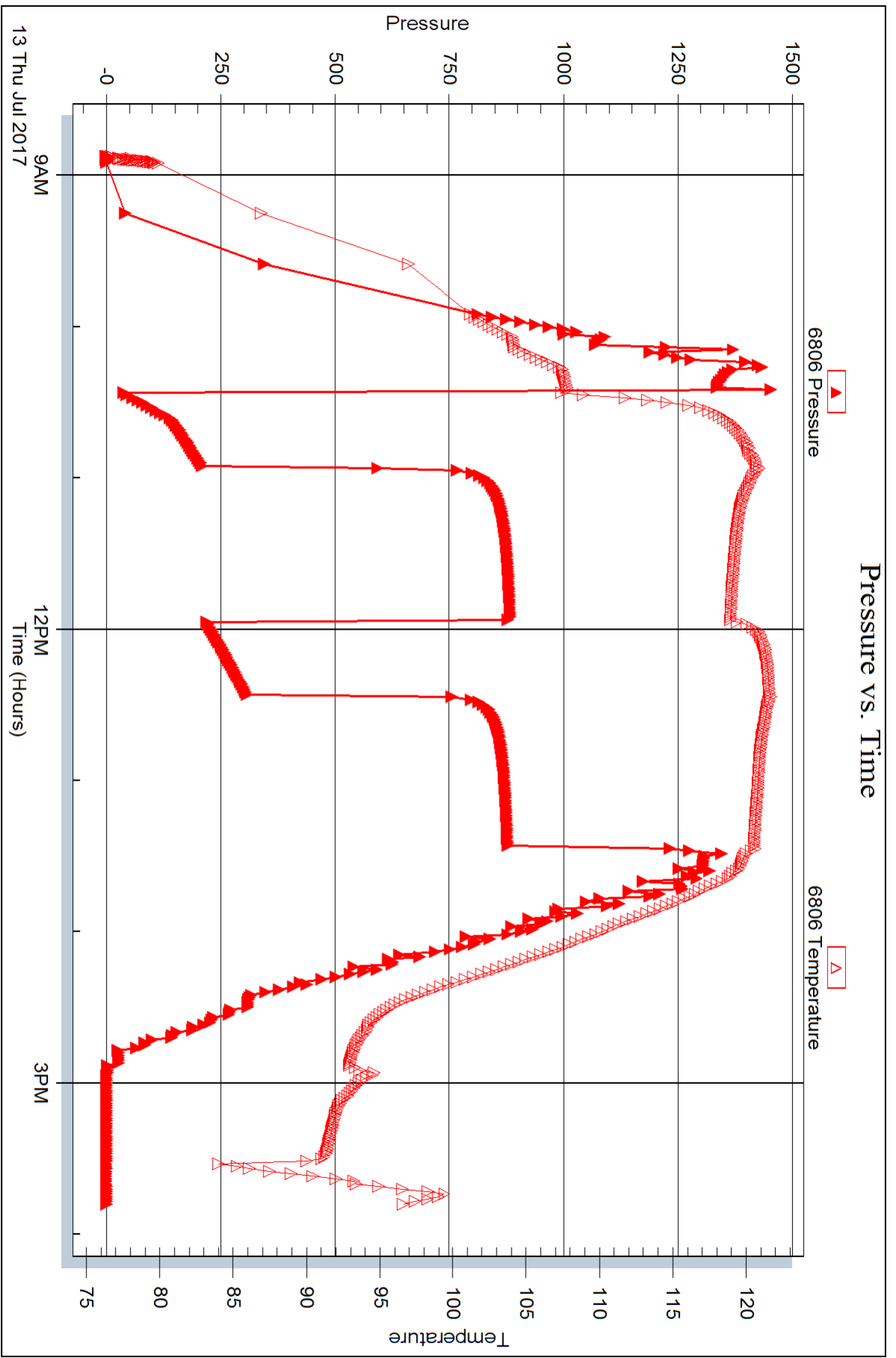


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 63609

Printed: 2017.07.17 @ 10:18:32



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.14 @ 11:49:15

End Date: 2017.07.14 @ 19:19:45

Job Ticket #: 63610 DST #: 3

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

Printed: 2017.07.17 @ 10:18:08

Murfin Drilling Co

14-29S-8E Elk,KS

Youngmeyer A #2-14

DST # 3

Lower Mississippi

2017.07.14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63610 **DST#: 3**
 Test Start: 2017.07.14 @ 11:49:15

GENERAL INFORMATION:

Formation: **Lower Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:44:15
 Time Test Ended: 19:19:45
 Interval: **2965.00 ft (KB) To 3002.00 ft (KB) (TVD)**
 Total Depth: 3002.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

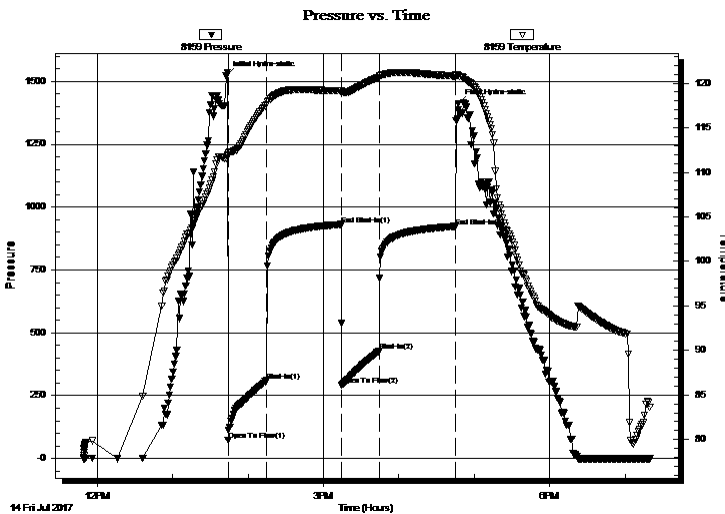
Serial #: 8159

Inside

Press@RunDepth: 427.25 psig @ 2966.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.14 End Date: 2017.07.14 Last Calib.: 2017.07.14
 Start Time: 11:49:16 End Time: 19:19:45 Time On Btm: 2017.07.14 @ 13:42:30
 Time Off Btm: 2017.07.14 @ 16:47:15

TEST COMMENT: IF: Fair Blow , Built to 8 inches
 IS: No Blow Back
 FF: Fair Blow , BOB in 8 Minutes
 FS: No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1521.79	111.57	Initial Hydro-static
2	73.22	111.89	Open To Flow (1)
32	308.94	117.61	Shut-In(1)
92	930.73	119.15	End Shut-In(1)
93	292.25	118.95	Open To Flow (2)
122	427.25	120.67	Shut-In(2)
183	922.96	120.79	End Shut-In(2)
185	1410.87	120.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
675.00	Water	7.27
124.00	MCW 40%M 60%W	1.74

* 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 250
Wichita, KS 67202
ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
Job Ticket: 63610 **DST#: 3**
Test Start: 2017.07.14 @ 11:49:15

GENERAL INFORMATION:

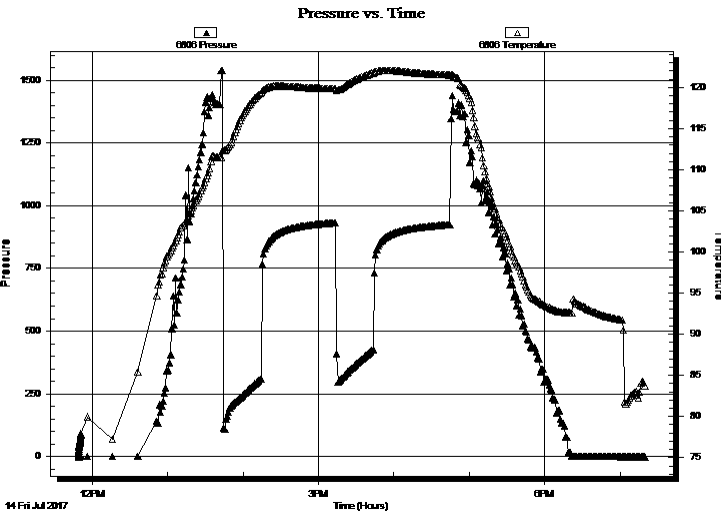
Formation: **Lower Mississippi**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 13:44:15 Tester: Leal Cason
Time Test Ended: 19:19:45 Unit No: 74
Interval: **2965.00 ft (KB) To 3002.00 ft (KB) (TVD)** Reference Elevations: 1550.00 ft (KB)
Total Depth: 3002.00 ft (KB) (TVD) 1541.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 9.00 ft

Serial #: 6806

Outside

Press@RunDepth: psig @ 2966.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.14 End Date: 2017.07.14 Last Calib.: 2017.07.14
Start Time: 11:49:16 End Time: 19:19:45 Time On Btm:
Time Off Btm:

TEST COMMENT: IF: Fair Blow , Built to 8 inches
IS: No Blow Back
FF: Fair Blow , BOB in 8 Minutes
FS: No Blow Back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
675.00	Water	7.27
124.00	MCW 40%M 60%W	1.74

* 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

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63610

DST#: 3

ATTN: Jeff Christian

Test Start: 2017.07.14 @ 11:49:15

Tool Information

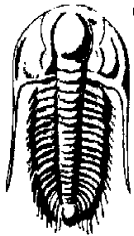
Drill Pipe:	Length: 2701.00 ft	Diameter: 3.80 inches	Volume: 37.89 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 39.08 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	2965.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	63.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			2944.00	
Hydraulic tool	5.00			2949.00	
Jars	5.00			2954.00	
Safety Joint	2.00			2956.00	
Packer	5.00			2961.00	26.00 Bottom Of Top Packer
Packer	4.00			2965.00	
Stubb	1.00			2966.00	
Recorder	0.00	8159	Inside	2966.00	
Recorder	0.00	6806	Outside	2966.00	
Perforations	33.00			2999.00	
Bullnose	3.00			3002.00	37.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63610

DST#: 3

ATTN: Jeff Christian

Test Start: 2017.07.14 @ 11:49:15

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:

40000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
675.00	Water	7.273
124.00	MCW 40%M 60%W	1.739

Total Length: 799.00 ft Total Volume: 9.012 bbl

Num Fluid Samples: 0

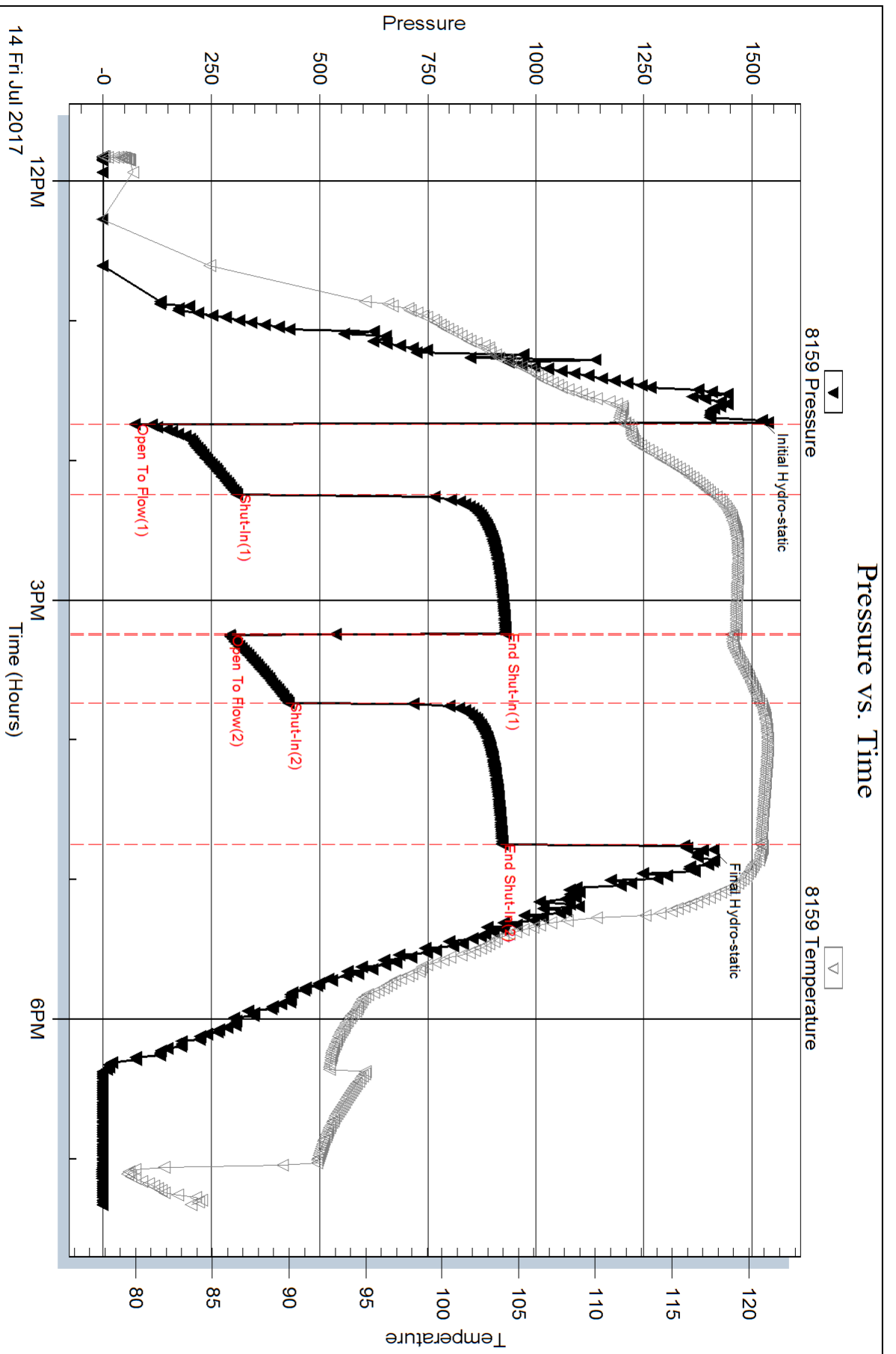
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .16 @ 80 degrees

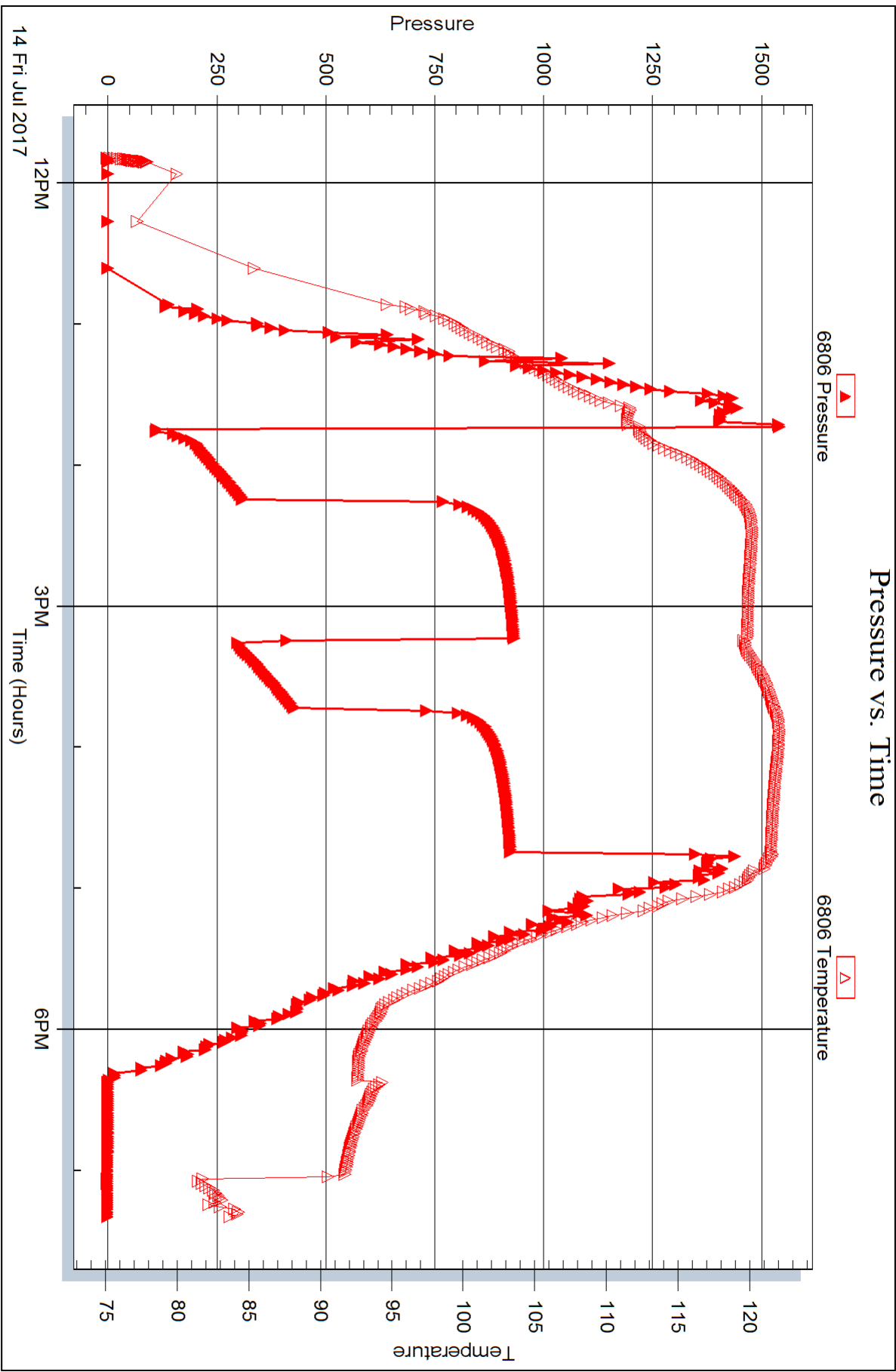


Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.15 @ 09:48:10

End Date: 2017.07.15 @ 17:00:25

Job Ticket #: 63611 DST #: 4

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

Printed: 2017.07.17 @ 10:17:46

Murfin Drilling Co
14-29S-8E Elk,KS
Youngmeyer A #2-14
DST # 4
Arbuckle
2017.07.15



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water Ste 250
Wichita, KS 67202
ATTN: Jeff Christian

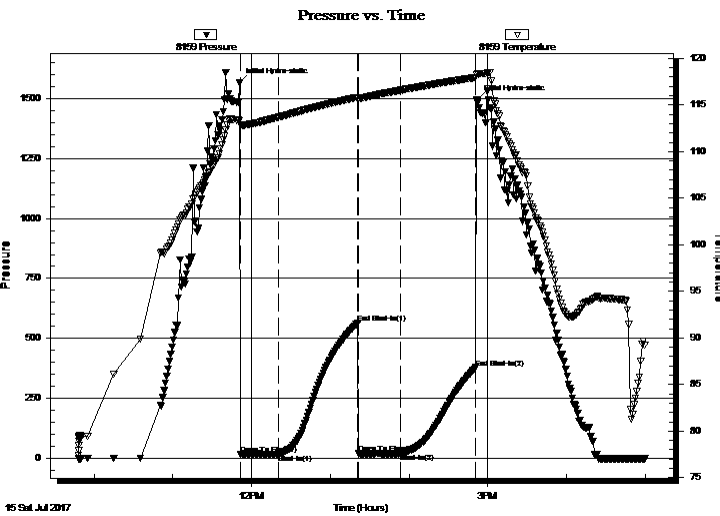
14-29S-8E E1k, KS
Youngmeyer A #2-14
Job Ticket: 63611 **DST#: 4**
Test Start: 2017.07.15 @ 09:48:10

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:51:25
Time Test Ended: 17:00:25
Interval: **3136.00 ft (KB) To 3154.00 ft (KB) (TVD)**
Total Depth: 3154.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Reset)
Tester: Leal Cason
Unit No: 74
Reference Elevations: 1550.00 ft (KB)
1541.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 8159 **Inside**
Press@RunDepth: 20.96 psig @ 3137.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.15 End Date: 2017.07.15 Last Calib.: 2017.07.15
Start Time: 09:48:11 End Time: 17:00:25 Time On Btm: 2017.07.15 @ 11:50:40
Time Off Btm: 2017.07.15 @ 14:51:55

TEST COMMENT: IF: Weak Surface Blow
IS: No Blow Back
FF: No Blow
FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1563.90	113.33	Initial Hydro-static
1	18.42	112.82	Open To Flow (1)
30	18.82	113.67	Shut-In(1)
91	565.29	115.83	End Shut-In(1)
91	20.08	115.69	Open To Flow (2)
123	20.96	116.57	Shut-In(2)
180	377.93	117.94	End Shut-In(2)
182	1495.09	118.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

* 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

14-29S-8E EIk,KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63611

DST#: 4

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 09:48:10

Tool Information

Drill Pipe:	Length: 2891.00 ft	Diameter: 3.80 inches	Volume: 40.55 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 41.74 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3136.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	44.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Shale Packer On Bottom

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3115.00	
Hydraulic tool	5.00			3120.00	
Jars	5.00			3125.00	
Safety Joint	2.00			3127.00	
Packer	5.00			3132.00	26.00 Bottom Of Top Packer
Packer	4.00			3136.00	
Stubb	1.00			3137.00	
Recorder	0.00	8159	Inside	3137.00	
Recorder	0.00	6806	Outside	3137.00	
Perforations	14.00			3151.00	
Bullnose	3.00			3154.00	18.00 Bottom Packers & Anchor

Total Tool Length: 44.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63611

DST#: 4

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 09:48:10

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.36 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

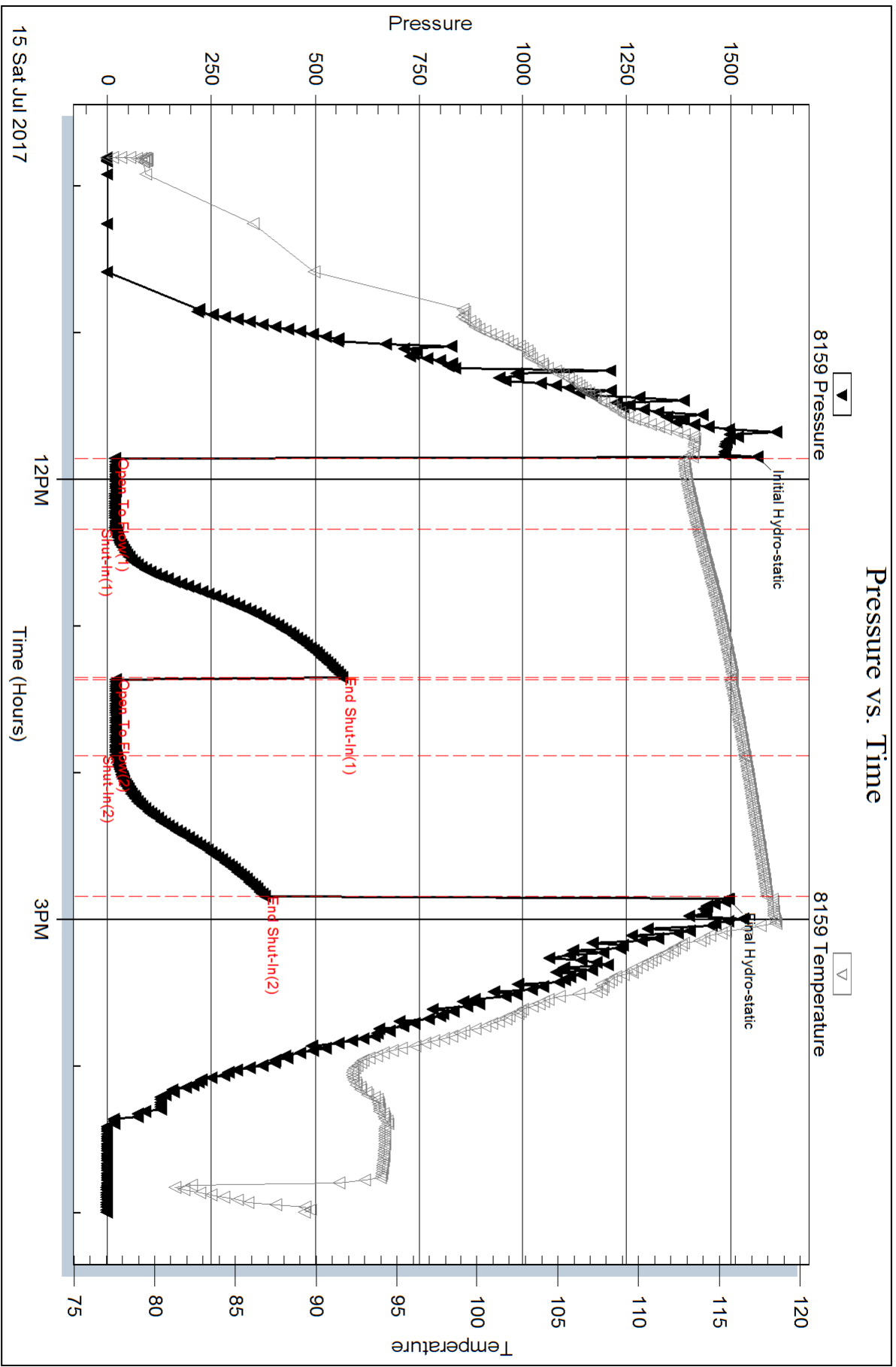
Serial #: 8159

Inside

Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 63611

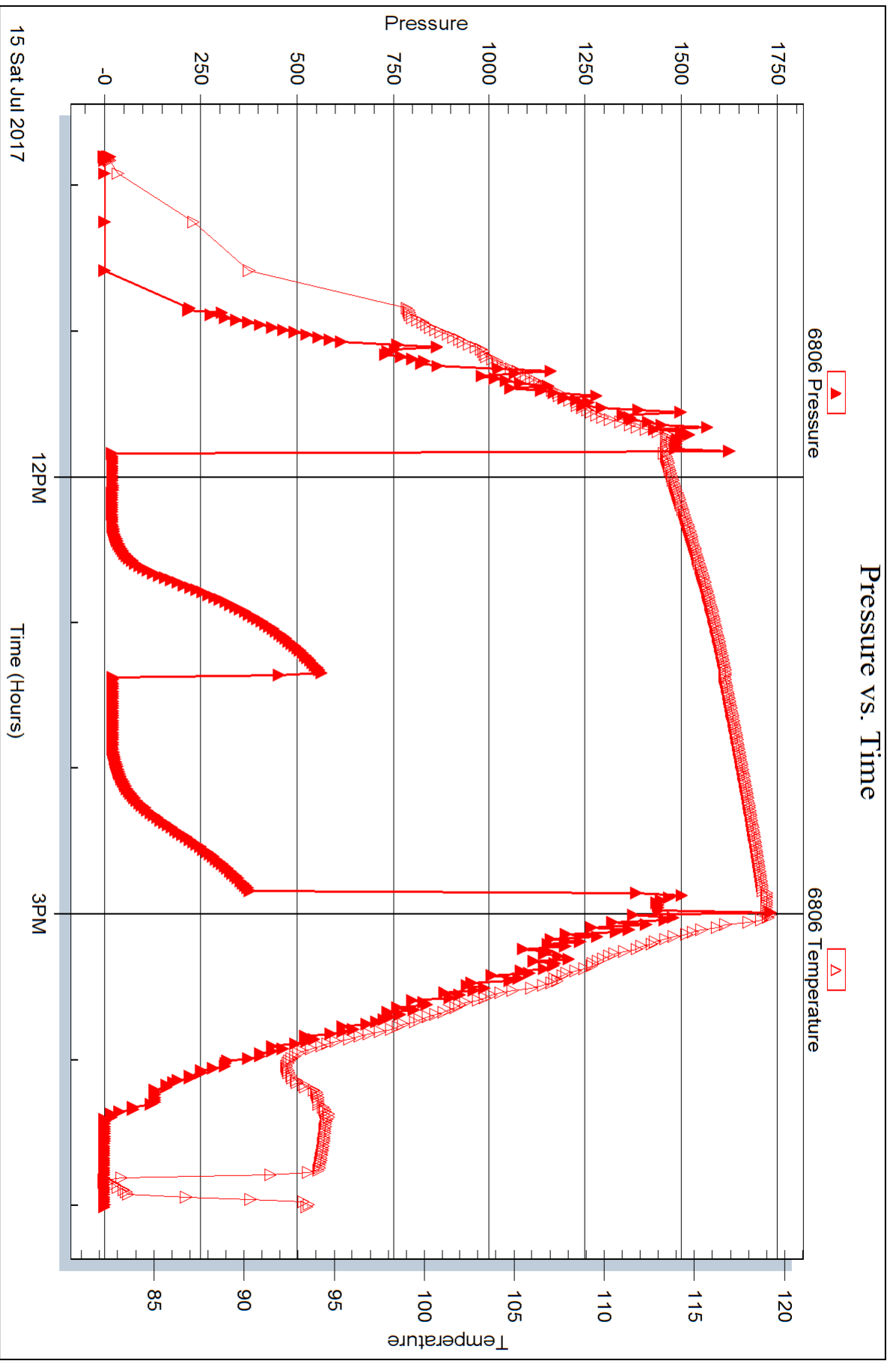
Printed: 2017.07.17 @ 10:17:47

Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water Ste 250
Wichita, KS 67202

ATTN: Jeff Christian

Youngmeyer A #2-14

14-29S-8E Elk,KS

Start Date: 2017.07.15 @ 22:28:44

End Date: 2017.07.16 @ 04:32:29

Job Ticket #: 63612 DST #: 5

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

Printed: 2017.07.17 @ 10:17:13

Murfin Drilling Co
14-29S-8E Elk,KS
Youngmeyer A #2-14
DST # 5
Arbuckle
2017.07.15



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water Ste 250
 Wichita, KS 67202
 ATTN: Jeff Christian

14-29S-8E EIk, KS
Youngmeyer A #2-14
 Job Ticket: 63612 **DST#: 5**
 Test Start: 2017.07.15 @ 22:28:44

GENERAL INFORMATION:

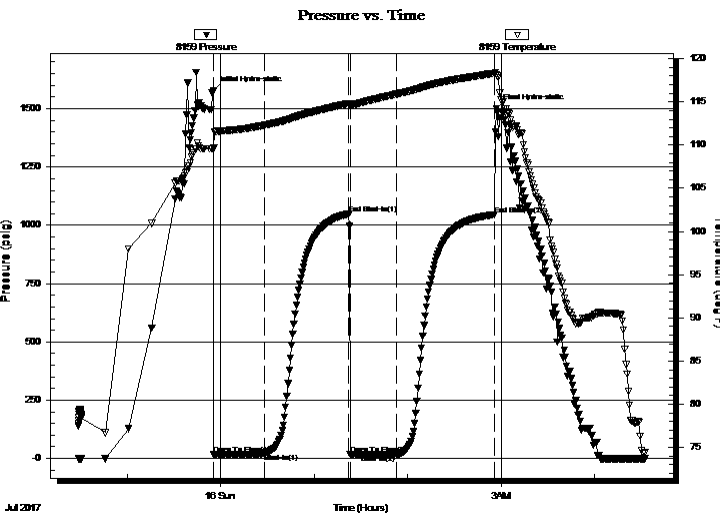
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:55:29
 Time Test Ended: 04:32:29
 Interval: **3154.00 ft (KB) To 3161.00 ft (KB) (TVD)**
 Total Depth: 3161.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Leal Cason
 Unit No: 74
 Reference Elevations: 1550.00 ft (KB)
 1541.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8159

Inside

Press@RunDepth: 16.37 psig @ 3155.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.15 End Date: 2017.07.16 Last Calib.: 2017.07.16
 Start Time: 22:28:45 End Time: 04:32:29 Time On Btm: 2017.07.15 @ 23:55:14
 Time Off Btm: 2017.07.16 @ 02:56:59

TEST COMMENT: IF: Weak Surface Blow
 IS: No Blow Back
 FF: No Blow
 FS: No Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1575.86	109.70	Initial Hydro-static
1	16.47	109.63	Open To Flow (1)
33	23.50	112.28	Shut-In(1)
87	1049.23	114.83	End Shut-In(1)
88	17.21	114.55	Open To Flow (2)
118	16.37	115.88	Shut-In(2)
181	1045.67	118.32	End Shut-In(2)
182	1500.72	118.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.01

* 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

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63612

DST#: 5

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 22:28:44

Tool Information

Drill Pipe:	Length: 2891.00 ft	Diameter: 3.80 inches	Volume: 40.55 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 41.74 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3154.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	33.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3133.00	
Hydraulic tool	5.00			3138.00	
Jars	5.00			3143.00	
Safety Joint	2.00			3145.00	
Packer	5.00			3150.00	26.00 Bottom Of Top Packer
Packer	4.00			3154.00	
Stubb	1.00			3155.00	
Recorder	0.00	8159	Inside	3155.00	
Recorder	0.00	6806	Outside	3155.00	
Perforations	3.00			3158.00	
Bullnose	3.00			3161.00	7.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

14-29S-8E EIk, KS

250 N Water Ste 250
Wichita, KS 67202

Youngmeyer A #2-14

Job Ticket: 63612

DST#: 5

ATTN: Jeff Christian

Test Start: 2017.07.15 @ 22:28:44

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 740.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

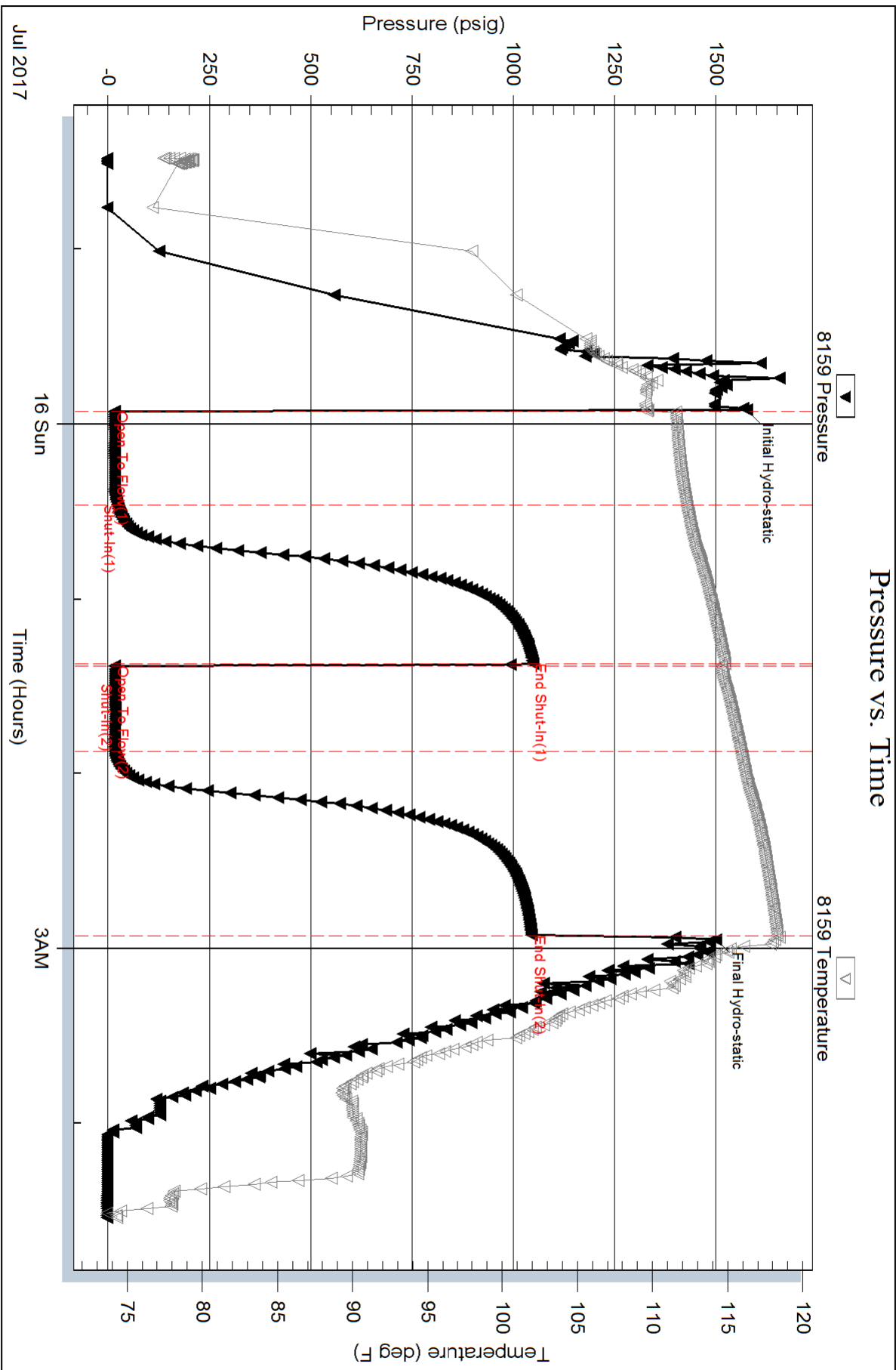
Serial #: 8159

Inside

Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 63612

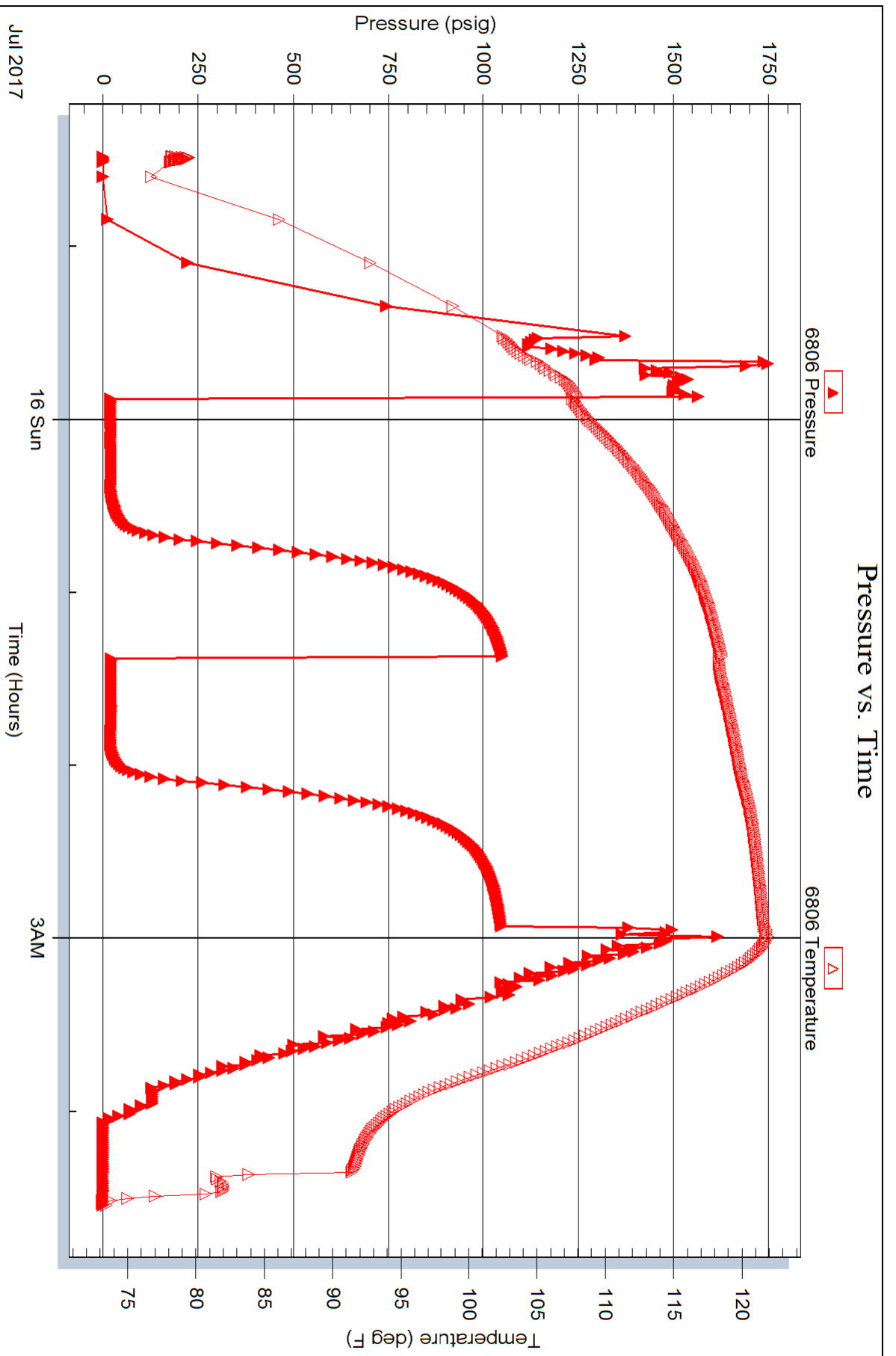
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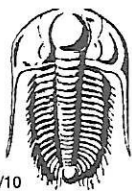
Serial #: 6806

Outside Murfin Drilling Co

Youngmeyer A #2-14

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63608**

Well Name & No. Youngmeyer A 2-14 Test No. 1 Date 07/11/17
 Company Murfin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water St 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2204 - 2216 Zone Tested Hertha
 Anchor Length 12 Drill Pipe Run 1944 Mud Wt. 9.3
 Top Packer Depth 2199 Drill Collars Run 241 Vis 53
 Bottom Packer Depth 2204 Wt. Pipe Run 0 WL 10.4
 Total Depth 2216 Chlorides 740 ppm System LCM 1

Blow Description IF: Fair Blow, Built to 7 inches

ISI: No Blow Back

FF: Weak Surface Blow

FSI: No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>270</u>	<u>MCW</u>		<u>70</u>	<u>30</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 270 BHT 105 Gravity N/C API RW .085 @ 80° F Chlorides 82000 ppm

(A) Initial Hydrostatic 1103
 (B) First Initial Flow 18
 (C) First Final Flow 96
 (D) Initial Shut-In 679
 (E) Second Initial Flow 99
 (F) Second Final Flow 151
 (G) Final Shut-In 673
 (H) Final Hydrostatic 1116

Test 1050
 Jars 250
 Safety Joint 75
 Circ Sub
 Hourly Standby
 Mileage (2802) 210
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1585

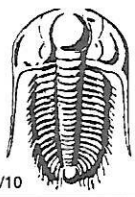
T-On Location 18:45
 T-Started 19:33
 T-Open 21:15
 T-Pulled 00:17
 T-Out 02:14
 Comments Motel
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1585
 MP/DST Disc't

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

Approved By [Signature]

Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63609**

Well Name & No. Youngmeyer A 2-14 Test No. 2 Date 07/13/17
 Company Martin Drilling CO Elevation 1550 KB 1541 GL
 Address 250 N. Water St E 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2805 - 2820 Zone Tested Mississippi
 Anchor Length 15 Drill Pipe Run 2541 Mud Wt. 9.3
 Top Packer Depth 2800 Drill Collars Run 241 Vis 55
 Bottom Packer Depth 2805 Wt. Pipe Run 0 WL 8.1
 Total Depth 2820 Chlorides 710 ppm System LCM 2

Blow Description IF: Weak Blow, Built to 3 1/2 inches by 16 minutes, Died off to 2 inches @ 30 min.
ISI: NO Blow Back
OFF: Weak Blow, Built to 1 1/2 inches
FSI: NO Blow Back

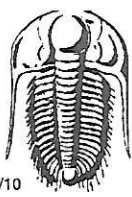
Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>505 WCM</u>	<u>-1</u>	<u>30</u>	<u>69</u>	<u>0</u>
<u>124</u>	<u>GMCW</u>	<u>5</u>	<u>65</u>	<u>30</u>	<u>0</u>
<u>427</u>	<u>Gassy water</u>	<u>5</u>	<u>95</u>	<u>0</u>	<u>0</u>

Rec Total 553 BHT 119 Gravity N/C API RW .13 @ 94 ° F Chlorides 47000 ppm

(A) Initial Hydrostatic <u>1470</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>08:30</u>
(B) First Initial Flow <u>36</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>08:52</u>
(C) First Final Flow <u>209</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:25</u>
(D) Initial Shut-In <u>882</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>13:26</u>
(E) Second Initial Flow <u>215</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>15:47</u>
(F) Second Final Flow <u>304</u>	<input checked="" type="checkbox"/> Mileage <u>(2807)</u> 210	Comments <u>Motel</u>
(G) Final Shut-In <u>876</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1357</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Total <u>1585</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1585</u>	

Approved By [Signature] Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63610**

Well Name & No. Youngmeyer A 2-14 Test No. 3 Date 07/14/17
 Company Martin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G 2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 2965 - 3002 Zone Tested Lower Mississippi
 Anchor Length 37 Drill Pipe Run 2701 Mud Wt. 9.2
 Top Packer Depth 2960 Drill Collars Run 241 Vis 44
 Bottom Packer Depth 2965 Wt. Pipe Run 0 WL 8.8
 Total Depth 3002 Chlorides 650 ppm System LCM 3

Blow Description IF: Fair Blow, Built to 8 inches

FSI: NO BLOW BACK

FF: Fair Blow, BOB in 8 minutes

FSI: NO BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>MCW</u>			<u>60</u>	<u>40</u>
<u>675</u>	<u>Water</u>				

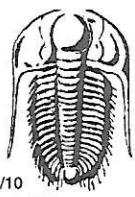
Rec Total 799 BHT 121 Gravity N/C API RW .16 @ 80° F Chlorides 40000 ppm

(A) Initial Hydrostatic <u>1522</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>11:15</u>
(B) First Initial Flow <u>73</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:49</u>
(C) First Final Flow <u>309</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>13:44</u>
(D) Initial Shut-In <u>931</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>16:45</u>
(E) Second Initial Flow <u>292</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>19:19</u>
(F) Second Final Flow <u>427</u>	<input checked="" type="checkbox"/> Mileage <u>2801</u> <u>210</u>	Comments <u>Motel</u>
(G) Final Shut-In <u>923</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1411</u>	<input type="checkbox"/> Straddle	

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>1585</u>
	Sub Total <u>1585</u>	MP/DST Disc't

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63611**

Well Name & No. Youngmeyer A 2-14 Test No. 4 Date 07/15/17
 Company Murfin Drilling Co Elevation 1550 KB 1541 GL
 Address 250 N. Water Ste 300 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 3136 - 3154 Zone Tested Arbuckle
 Anchor Length 18 Drill Pipe Run 2891 Mud Wt. 9.2
 Top Packer Depth 3131 Drill Collars Run 241 Vis 45
 Bottom Packer Depth 3136 Wt. Pipe Run 0 WL 9.2
 Total Depth 3154 Chlorides 620 ppm System LCM 3

Blow Description IF: weak surface blow
ISI: NO Blow Back
FF: NO Blow
FSI: NO Blow Back

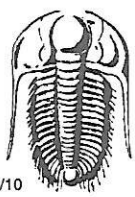
Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud</u>				

Rec Total 2 BHT 119 Gravity NIC API RW NIC @ NK °F Chlorides NIC ppm

(A) Initial Hydrostatic <u>1564</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>09:15</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>09:48</u>
(C) First Final Flow <u>19</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:51</u>
(D) Initial Shut-In <u>565</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>14:50</u>
(E) Second Initial Flow <u>20</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>17:00</u>
(F) Second Final Flow <u>21</u>	<input checked="" type="checkbox"/> Mileage <u>(290)</u> 210	Comments <u>Motel</u>
(G) Final Shut-In <u>378</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1495</u>	<input type="checkbox"/> Straddle	
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	Total <u>1835</u>
	Sub Total <u>1835</u>	MP/DST Disc't

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63612**

Well Name & No. Youngmeyer A 2-14 Test No. 5 Date 07/15/17
 Company Martin Drilling CO Elevation 1550 KB 1541 GL
 Address 250 N Water Ste 250 Wichita, KS 67202
 Co. Rep / Geo. Jeff Christian Rig C+G2
 Location: Sec. 14 Twp. 29S Rge. 8E Co. E1K State KS

Interval Tested 3154 - 3161 Zone Tested Arbuckle
 Anchor Length 7 Drill Pipe Run 2891 Mud Wt. 9.3
 Top Packer Depth 3149 Drill Collars Run 241 Vis 55
 Bottom Packer Depth 3154 Wt. Pipe Run 0 WL 7.6
 Total Depth 3161 Chlorides 730 ppm System LCM 2.5

Blow Description IF: weak surface blow
ISI: NO Blow BACK
FF: NO Blow

FSI: NO Blow BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud</u>				

Rec Total 2 BHT 118 Gravity N/C API RW N/C @ N/C °F Chlorides N/C ppm

(A) Initial Hydrostatic <u>1576</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>22:00</u>
(B) First Initial Flow <u>16</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:28</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>23:55</u>
(D) Initial Shut-In <u>1049</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>02:55</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>04:32</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>(280)</u> 210	Comments <u>MOTEL</u>
(G) Final Shut-In <u>1046</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1501</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>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1585</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1585</u>	

Approved By Jeff Christian Our Representative [Signature]

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