

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1246118  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- 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 ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

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
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1246118

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

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

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

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

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

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

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

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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

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

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

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	DAMW 1-11
Doc ID	1246118

All Electric Logs Run

DIL
DUCP
MEL
BHCS
CBL





*Acct Prod-me*

# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 147376  
Invoice Date: Nov 29, 2014  
Page: 1

Voice: (817) 546-7282  
Fax: (817) 246-3361

Federal Tax I.D.#: 20-8651475

<b>Bill To:</b>
Murfin Drig. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	63796	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Nov 29, 2014	12/29/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	<del>DAMW #A-11</del> → DAMW 1-11		
235.00	CEMENT MATERIALS	Class A Common	17.90	4,206.50
663.00	CEMENT MATERIALS	Chloride	1.10	729.30
246.75	CEMENT SERVICE	Cubic Feet Charge	2.48	611.94
466.45	CEMENT SERVICE	Ton Mileage Charge	2.75	1,282.74
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
41.00	CEMENT SERVICE	Pump Truck Mileage	7.70	315.70
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
41.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	180.40
1.00	CEMENT SUPERVISOR	Alan Ryan		
1.00	EQUIPMENT OPERATOR	Kevin Ryan		

Subtotal	9,113.83
Sales Tax	402.27
Total Invoice Amount	9,516.10
Payment/Credit Applied	
<b>TOTAL</b>	<b>9,516.10</b>

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

\$ 3,189.84

ONLY IF PAID ON OR BEFORE  
Dec 29, 2014

*Handwritten signature*

# ALLIED OIL & GAS SERVICES, LLC

2020  
063796  
11.25

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT:

Dakota Hwy

DATE <u>11/20/14</u>	SEC. <u>11</u>	TWP. <u>17</u>	RANGE <u>32</u>	CALLED OUT	ON LOCATION	JOB START <u>8:30a</u>	JOB FINISH <u>9:00p</u>
LEASE <u>OGMW</u>	WELL# <u>A-11</u>	LOCATION <u>85 1/4 W 15 40 W 10 N</u>			COUNTY <u>Suett</u>	STATE <u>TX</u>	
OLD OR <input checked="" type="radio"/> NEW (Circle one)			<u>W 40</u>				

CONTRACTOR Mucron 21  
 TYPE OF JOB Surface  
 HOLE SIZE 12 1/4 T.D.  
 CASING SIZE 8 5/8 DEPTH 269'  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG. 15'  
 PERFS.  
 DISPLACEMENT 16.17

OWNER Same  
 CEMENT AMOUNT ORDERED 235 Can 3" O.C.L

EQUIPMENT  
 PUMP TRUCK CEMENTER After Ryan  
 # 481281 HELPER Kevin Ryan  
 BULK TRUCK  
 # 890 DRIVER Ricardo (Tus)  
 BULK TRUCK  
 # DRIVER

COMMON 235 @ 12.90 4006.50  
 POZMIX @  
 GEL @  
 CHLORIDE 603.16 @ 2.10 729.30  
 ASC @  
 @  
 @  
 Material Total @ 4435.80  
 (1721.53/3 @ 1.0)  
 @  
 @  
 HANDLING 246.75 @ 2.18 611.91  
 MILEAGE 25 @ 11.377 284.43  
 TOTAL

REMARKS:  
Shovel, Concrete, Dry Cement, Disposal Cement

Shovel  
Cement Dry Concrete 5 BBL 70 P/T  
Truck  
From Kevin Ricardo

CHARGE TO: Mucron Blasting  
 STREET  
 CITY STATE ZIP

SERVICE  
 DEPTH OF JOB 269'  
 PUMP TRUCK CHARGE 152.25  
 EXTRA FOOTAGE @  
 MILEAGE 41 @ 7.70 315.70  
 MANIFOLD @  
Vehicle 41 @ 4.50 184.50  
 @  
 (1462.31/358) TOTAL 4118.05

PLUG & FLOAT EQUIPMENT  
 @  
 @  
 @  
 @  
 @  
 TOTAL

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Juan Tinoco  
 SIGNATURE Juan Tinoco

SALES TAX (if Any)  
 TOTAL CHARGES 9,113.85  
 DISCOUNT 3,189.84 (35%) IF PAID IN 30 DAYS  
5,924.00 Net



P. O. Box 466  
Ness City, KS 67560  
Off: 785-798-2300



# Invoice

DATE	INVOICE #
12/10/2014	28127

BILL TO
Murfin Drilling Co Inc P. O. Box 130 Hill City, KS 67642-0130
USED FOR <u>IC/03</u>
APPROVED <u>[Signature]</u>

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-11	DAMW	Scott	Company Tools	Oil	Development	Cement Two-Sta...	Blaine
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				70	Miles	6.00	420.00
579D	Pump Charge - Two-Stage				1	Job	2,000.00	2,000.00
403-5	5 1/2" Cement Basket				1	Each	300.00	300.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
408-5	5 1/2" D.V. Tool & Plug Set				1	Each	3,550.00	3,550.00T
409-5	5 1/2" Turbolizer				10	Each	90.00	900.00T
413-5	5 1/2" Roto Wall Scratcher				25	Each	40.00	1,000.00T
417-5	5 1/2" D.V. Latch Down Plug & Baffle				1	Each	200.00	200.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	18.50	5,550.00T
325	Standard Cement				225	Sacks	14.50	3,262.50T
284	Calseal				11	Sack(s)	35.00	385.00T
283	Salt				1,150	Lb(s)	0.20	230.00T
285	CFR-1				125	Lb(s)	4.50	562.50T
276	Flocele				125	Lb(s)	2.50	312.50T
290	D-Air				4	Gallon(s)	42.00	168.00T
280	Flocheck 21				500	Gallon(s)	3.00	1,500.00T
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
580	Additional Hours (If Circulate More Than 1 Hour)				1	Hour	200.00	200.00
581D	Service Charge Cement				525	Sacks	2.00	1,050.00
583D	Drayage				1,863.75	Ton Miles	1.00	1,863.75
	Subtotal							24,129.25
	Sales Tax Scott County						8.15%	1,515.53

<b>Thank You For Your Business &amp; Best Wishes For A Wonderful Holiday Season!!</b>	<b>Total</b>	<b>\$25,644.78</b>
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CHARGE TO: **MORAN DRILLING**  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET 28127

PAGE 1 OF 2

SERVICE LOCATIONS: **Wichita KS**  
 WELL/PROJECT NO.: **1-11**  
 LEASE: **DANMU**  
 COUNTY/PARISH: **Scott**  
 STATE: **KS**  
 CITY: **Scott City**  
 DATE: **10 Dec 14**  
 OWNER: **11-17-23**  
 TICKET TYPE:  SERVICE  SALES  
 CONTRACTOR:  
 RIG NAME/NO.:  
 WELL TYPE: **D-1**  
 WELL CATEGORY: **CO TRESS**  
 JOB PURPOSE: **Development 2 stage cement plug string**  
 DELIVERED TO: **location**  
 WELL PERMIT NO.:  
 WELL LOCATION: **11-17-23**

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE	70	mi			6.00	420.00
579					Pump Charge	1	ea			2000.00	2000.00
403					Cement Bracket	5	ea	1	ea	300.00	300.00
407					Insert Flat Shoe w/ auto fill	5	ea	1	ea	375.00	375.00
408					DV tool	5	ea	1	ea	3550.00	3550.00
409					Turbolizer	5	ea	10	ea	90.00	900.00
413					Rate seal scratcher	5	ea	25	ea	40.00	1000.00
417					DV latch down plug & handle	5	ea	1	ea	200.00	200.00
419					Rotating head handle	5	ea	1	ea	200.00	200.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY,** and **LIMITED WARRANTY** provisions.  
 IT BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO DELIVERY OF WORK OR DELIVERY OF GOODS  
 E SIGNED: *Colleen King* TIME SIGNED:  A.M.  P.M.  
 REMIT PAYMENT TO:  
**SWIFT SERVICES, INC.**  
**P.O. BOX 466**  
**NESS CITY, KS 67560**  
**785-798-2300**

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 APPROVAL: *Bill*  
 FT OPERATOR: *Bill*  
 TOTAL: **25,644.78**  
 TAX: **1,515.53**  
 SUBTOTAL: **24,129.25**  
 TAX: **1,515.53**  
 TOTAL: **25,644.78**  
 Thank You!





Services, Inc.

PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 28127

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING		TIME	DESCRIPTION	WEIGHT				UNIT PRICE	AMOUNT
		LOC	ACCT			QTY	U/M	QTY	U/M		
330					Standard cement	300	SK			18.50	5550.00
325					Standard cement (for 34-2)	225	SK			14.80	3362.50
284					Cal Seal	1100	Lb	11	SK	35.00	38500
283					Salt	1150	Lb			2.90	2300.00
285					CFR-1	1805	Lb			4.50	562.50
276					Fiberline	125	Lb			2.50	312.50
290					D-air	4	gal			42.00	168.00
280					Fiberline - 2k	500	gal			3.00	1500.00
271					KOL <del>Flake</del> Liquid	2	gal			25.00	100.00
580					Additional hours		1/hr			200.00	200.00
581										2.00	1050.00
583										1.00	1863.75
					SERVICE CHARGE						
					MILEAGE CHARGE						
					TOTAL MILEAGE	525		70			
					LOADED MILES						
					TON MILES						
					CUBIC FEET						
					CONTINUATION TOTAL						5184.25

DATE 10 Dec 14 PAGE 2 OF 2

**JOB LOG**

**SWIFT Services, Inc.**

DATE **10 Dec 14** PAGE NO. **1**

CUSTOMER **Murphy Drilling** WELL NO. **1-11** LEASE **DAMW** JOB TYPE **2 stage cement plug string** TICKET NO. **28127**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								225 sk SA-2 w/ 7' floccle 300 sk SMD w/ 4' floccle 115 jts 5 1/2" x 15.5# casing pipe = 4812' TD = 4828' DV tool #58 2387' Control valves 1, 2, 3, 4, 6, 8, 10, 12, 14, 5, 7 brstnt #58
	0630							on loc TRK 110
	0650							start 5 1/2" x 15.5# casing in well
	0750							circulate jt #64 (20 min)
	0920							Drop ball - circulate - ROTATE
	1025		5					Pump 5 bbl KCL flush
			12					Pump 12 bbl Floccle
			15					Pump 15 bbl KCL flush
	1036	3 1/2	7					Plug RH - MH 20 sk - 20 sk
	1042	3 1/2	46			200		mix SA-2 cement 175 sk @ 15.3 PPG Drop 1st stage plug washout pump # line
	1100	5 1/2	{57}			200		Displace plug w/ H <sub>2</sub> O Displace w/ drilling mud
		5	110			600		
	1115	5	114			1500		LAND 1st stage plug Release pressure to truck - dried up
	1120							Drop bomb wash truck
	1140					1400		open DV tool
						1400		Circulate well (2 hrs)
	1340	4	140			200		pump 20 bbl KCL flush mix SMD cement 200 sk Drop 2nd stage plug Displace plug
		4	55			350		— cement to surface — {200 sk top}
	1440	4	57			1400		LAND plug - close DV Release pressure to truck - dried up wash truck - back up job complete Thanks Brent Hunt, Bob, Jason

MDCI  
 DAMW #1-11  
 2305' FSL 990' FEL  
 Sec. 11-T17S-R33W  
 3018' KB

Formation	Sample Top	Datum	Ref	Log tops	Datum	Ref
Anhydrite				2286	+732	+12
B/Anhydrite	2374	+644	+13	2373	+645	+14
Topeka	3704	-686	+13	3698	-680	+19
Heebner	3941	-923	+13	3937	-919	+17
Lansing	3987	-969	+11	3980	-962	+18
Stark	4268	-1250	+5	4266	-1248	+7
Pawnee	4494	-1476	-1	4489	-1471	+4
Ft. Scott	4537	-1519	-2	4532	-1514	+3
Mississippi				4704	-1686	-4
RTD	4818	-1800				
LTD				4815	-1797	



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

**DAMW #1-11**

**11-17s-33w Scott,KS**

Start Date: 2014.12.03 @ 13:05:19

End Date: 2014.12.03 @ 21:15:04

Job Ticket #: 59715                      DST #: 1

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

Printed: 2014.12.12 @ 10:52:58



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

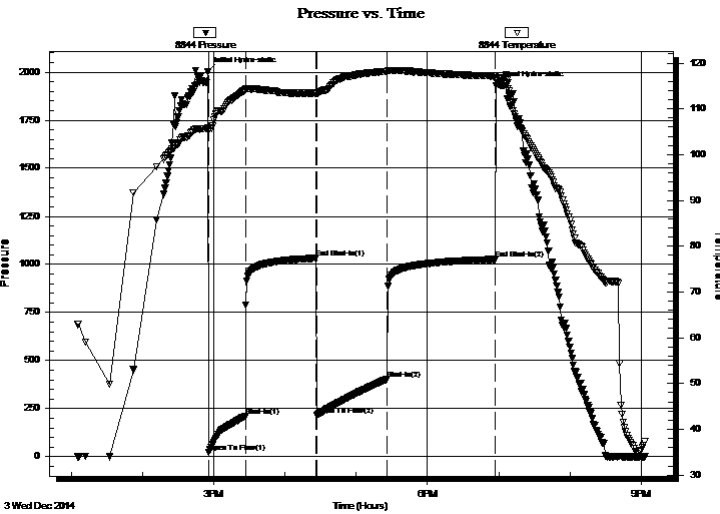
**11-17s-33w Scott,KS**  
**DAMW #1-11**  
 Job Ticket: 59715 **DST#: 1**  
 Test Start: 2014.12.03 @ 13:05:19

## GENERAL INFORMATION:

Formation: **LKC B-D**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:55:49  
 Time Test Ended: 21:15:04  
 Interval: **4010.00 ft (KB) To 4076.00 ft (KB) (TVD)**  
 Total Depth: 4076.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3018.00 ft (KB)  
 3007.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8844 Outside**  
 Press@RunDepth: 403.59 psig @ 4011.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.03 End Date: 2014.12.03 Last Calib.: 2014.12.03  
 Start Time: 13:05:19 End Time: 21:03:04 Time On Btm: 2014.12.03 @ 14:54:49  
 Time Off Btm: 2014.12.03 @ 18:57:49

TEST COMMENT: B.O.B. in 12 min  
 No return  
 B.O.B. in 17 min.  
 No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2001.04	105.76	Initial Hydro-static
1	24.36	105.25	Open To Flow (1)
32	211.62	114.15	Shut-In(1)
92	1032.76	113.47	End Shut-In(1)
92	216.63	113.25	Open To Flow (2)
152	403.59	118.18	Shut-In(2)
242	1026.49	117.16	End Shut-In(2)
243	1930.20	116.86	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
496.00	water 100%w	4.71
186.00	s m c w 10%m 90%w	2.61
155.00	m c w 40%m 60%w w/oil spots on top	2.17

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59715 **DST#: 1**  
Test Start: 2014.12.03 @ 13:05:19

## Tool Information

Drill Pipe:	Length: 3766.00 ft	Diameter: 3.80 inches	Volume: 52.83 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 54.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4010.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	94.00 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			3983.00	
Shut In Tool	5.00			3988.00	
Hydraulic tool	5.00			3993.00	
Jars	5.00			3998.00	
Safety Joint	3.00			4001.00	
Packer	5.00			4006.00	28.00 Bottom Of Top Packer
Packer	4.00			4010.00	
Stubb	1.00			4011.00	
Recorder	0.00	6771	Inside	4011.00	
Recorder	0.00	8844	Outside	4011.00	
Perforations	26.00			4037.00	
Change Over Sub	1.00			4038.00	
Drill Pipe	32.00			4070.00	
Change Over Sub	1.00			4071.00	
Bullnose	5.00			4076.00	66.00 Bottom Packers & Anchor

**Total Tool Length: 94.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59715      **DST#: 1**  
Test Start: 2014.12.03 @ 13:05:19

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 30000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.33 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 3500.00 ppm		
Filter Cake: 2.00 inches		

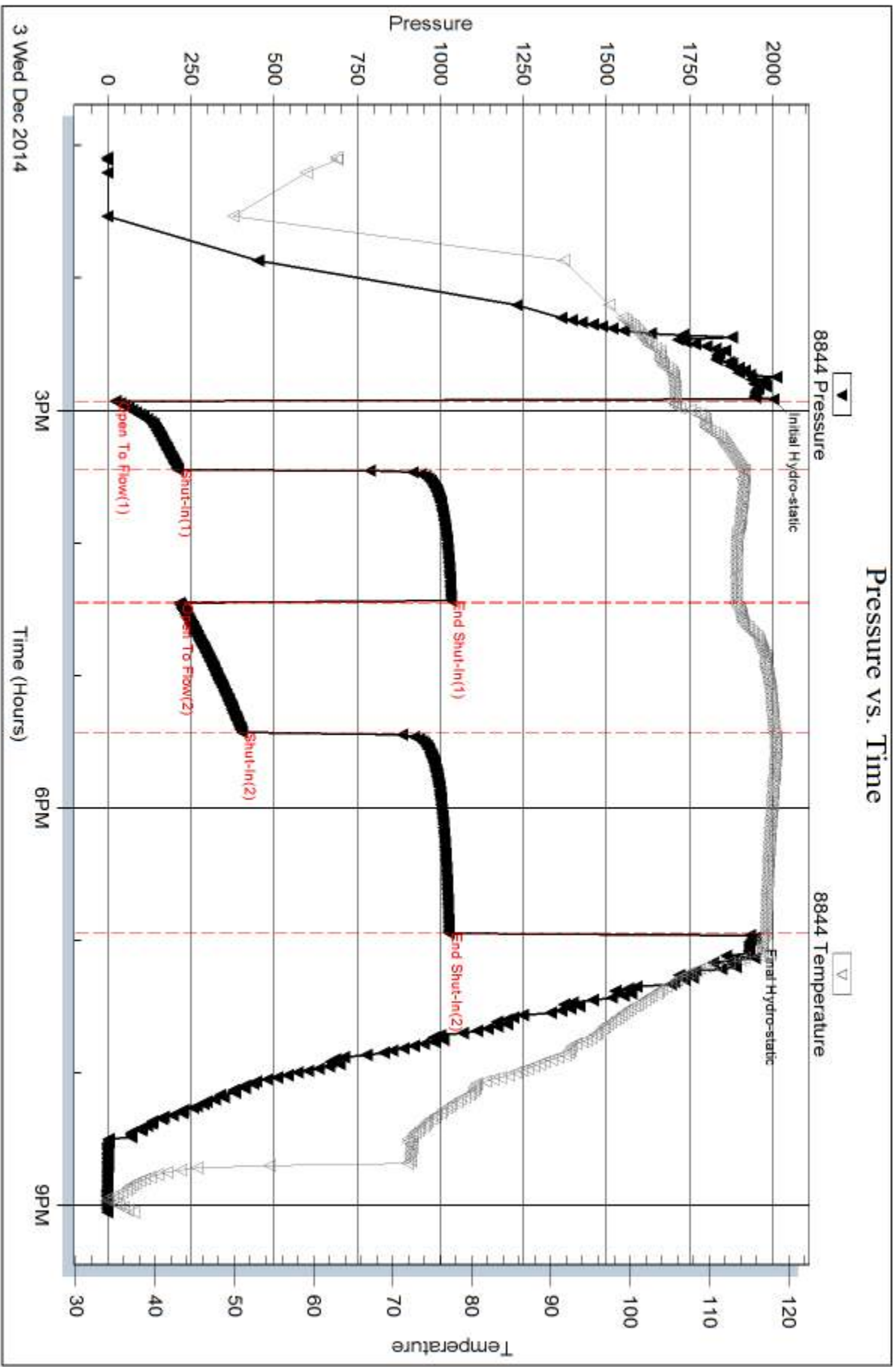
### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
496.00	water 100%w	4.708
186.00	s m c w 10%m 90%w	2.609
155.00	m c w 40%m 60%w w/oil spots on top	2.174

Total Length: 837.00 ft      Total Volume: 9.582 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: rw .268 @ 60\*f =30,000 chlor





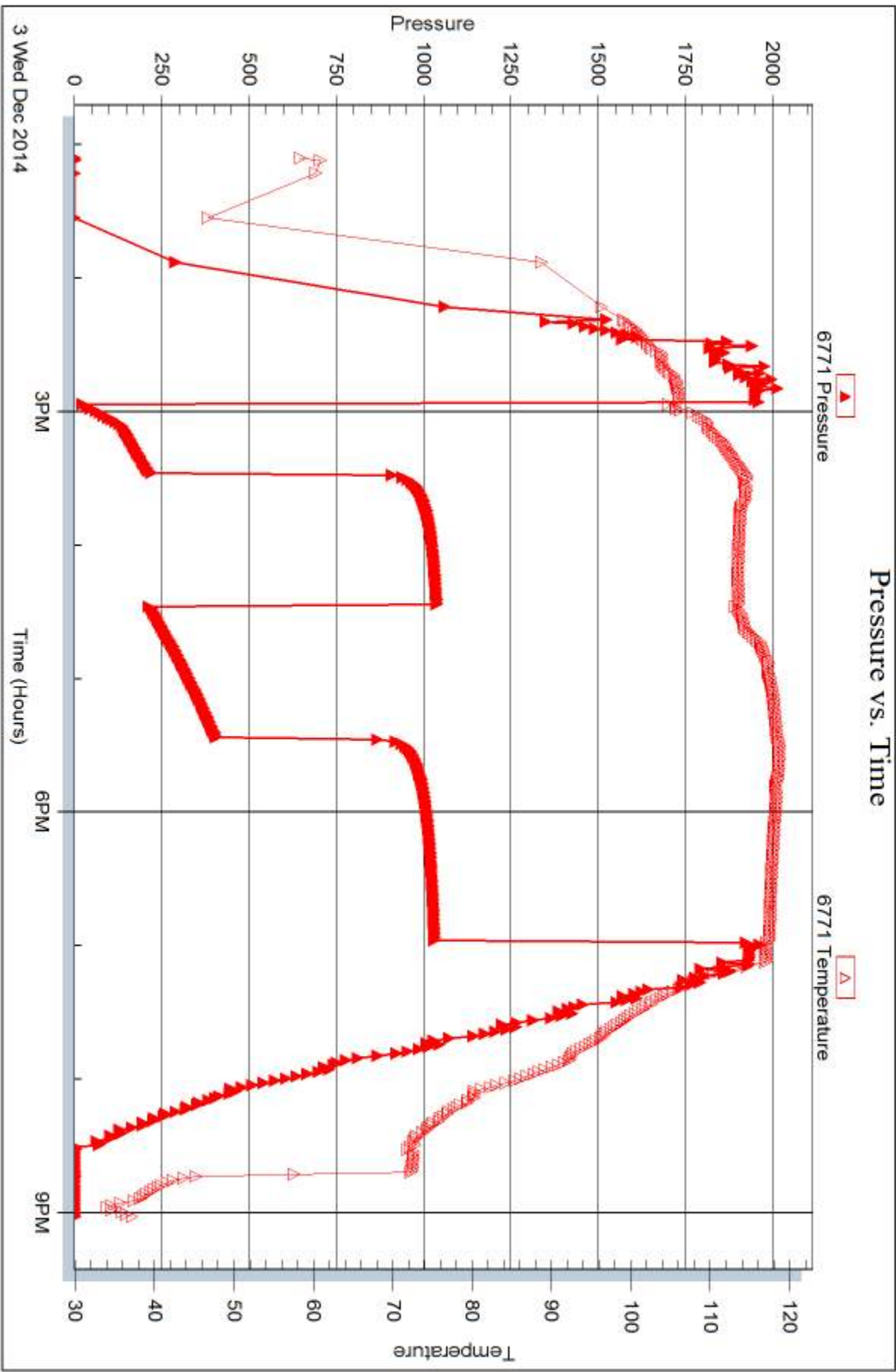
Serial #: 6771

Inside

Murfin Drilling Co Inc

DAMW #1-11

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 59715

Printed: 2014.12.12 @ 10:53:00



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

### **11-17s-33w Scott,KS**

Start Date: 2014.12.04 @ 21:15:50

End Date: 2014.12.05 @ 03:40:50

Job Ticket #: 59716                      DST #: 2

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

Printed: 2014.12.12 @ 10:52:18



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59716 **DST#: 2**  
Test Start: 2014.12.04 @ 21:15:50

## GENERAL INFORMATION:

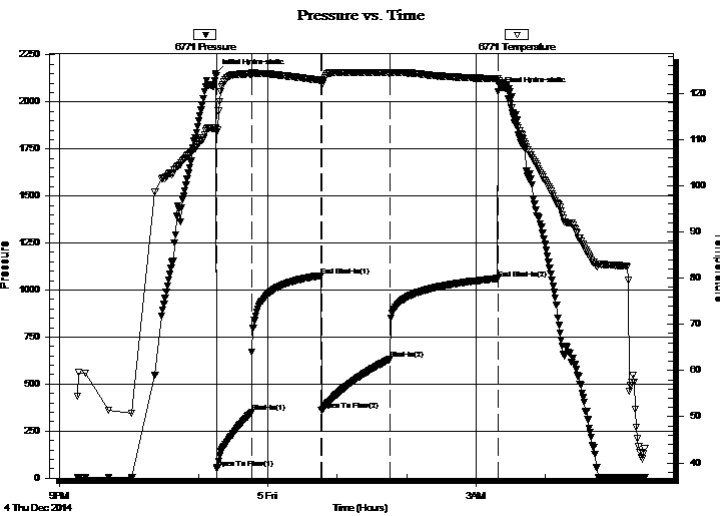
Formation: **K**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 23:16:05  
Time Test Ended: 03:40:50  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Shane McBride  
Unit No: 55  
Interval: **4266.00 ft (KB) To 4314.00 ft (KB) (TVD)**  
Reference Elevations: 3018.00 ft (KB)  
Total Depth: 4314.00 ft (KB) (TVD) 3007.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

## Serial #: 6771

Inside

Press@RunDepth: 631.58 psig @ 4267.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.04 End Date: 2014.12.05 Last Calib.: 2014.12.05  
Start Time: 21:15:50 End Time: 05:25:50 Time On Btm: 2014.12.04 @ 23:15:05  
Time Off Btm: 2014.12.05 @ 03:19:05

TEST COMMENT: B.O.B. in 5 min  
No return  
B.O.B. in 10 min  
No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2152.50	112.49	Initial Hydro-static
1	51.31	111.69	Open To Flow (1)
31	350.41	124.17	Shut-In(1)
91	1076.83	122.85	End Shut-In(1)
92	362.72	122.28	Open To Flow (2)
151	631.58	124.41	Shut-In(2)
244	1061.48	123.13	End Shut-In(2)
244	2055.64	123.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
740.00	water w/heavy oil scum 100%w	8.13
186.00	s o & m c w 3%o 10%m 87%w	2.61
156.00	s o c m w 4%o 46%m 50%w	2.19
3.00	free oil	0.04

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

## DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott, KS**  
**DAMW #1-11**  
Job Ticket: 59716 **DST#: 2**  
Test Start: 2014.12.04 @ 21:15:50

### GENERAL INFORMATION:

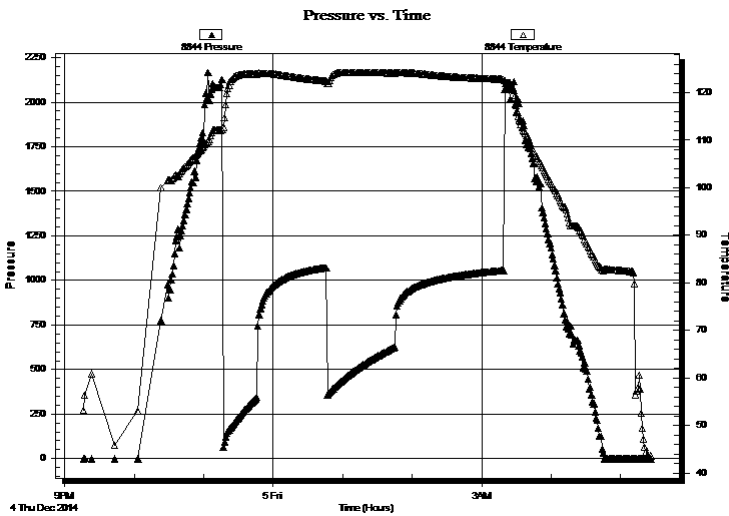
Formation: **K**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 23:16:05  
Time Test Ended: 03:40:50  
Interval: **4266.00 ft (KB) To 4314.00 ft (KB) (TVD)**  
Total Depth: 4314.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Reference Elevations: 3018.00 ft (KB)  
3007.00 ft (CF)  
KB to GR/CF: 11.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Shane McBride  
Unit No: 55

### Serial #: 8844

**Outside**

Press@RunDepth: psig @ 4267.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.04 End Date: 2014.12.05 Last Calib.: 2014.12.05  
Start Time: 21:16:14 End Time: 05:25:59 Time On Btm:  
Time Off Btm:

TEST COMMENT: B.O.B. in 5 min  
No return  
B.O.B. in 10 min  
No return



### PRESSURE SUMMARY

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

### Recovery

Length (ft)	Description	Volume (bbl)
740.00	water w/heavy oil scum 100%w	8.13
186.00	s o & m c w 3%o 10%m 87%w	2.61
156.00	s o c m w 4%o 46%m 50%w	2.19
3.00	free oil	0.04

### 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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59716 **DST#: 2**  
Test Start: 2014.12.04 @ 21:15:50

## Tool Information

Drill Pipe:	Length: 4016.00 ft	Diameter: 3.80 inches	Volume: 56.33 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 57.54 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4266.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	48.00 ft			
Tool Length:	76.00 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			4239.00	
Shut In Tool	5.00			4244.00	
Hydraulic tool	5.00			4249.00	
Jars	5.00			4254.00	
Safety Joint	3.00			4257.00	
Packer	5.00			4262.00	28.00 Bottom Of Top Packer
Packer	4.00			4266.00	
Stubb	1.00			4267.00	
Recorder	0.00	6771	Inside	4267.00	
Recorder	0.00	8844	Outside	4267.00	
Perforations	9.00			4276.00	
Change Over Sub	1.00			4277.00	
Drill Pipe	31.00			4308.00	
Change Over Sub	1.00			4309.00	
Bullnose	5.00			4314.00	48.00 Bottom Packers & Anchor

**Total Tool Length: 76.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59716      **DST#: 2**  
Test Start: 2014.12.04 @ 21:15:50

### Mud and Cushion Information

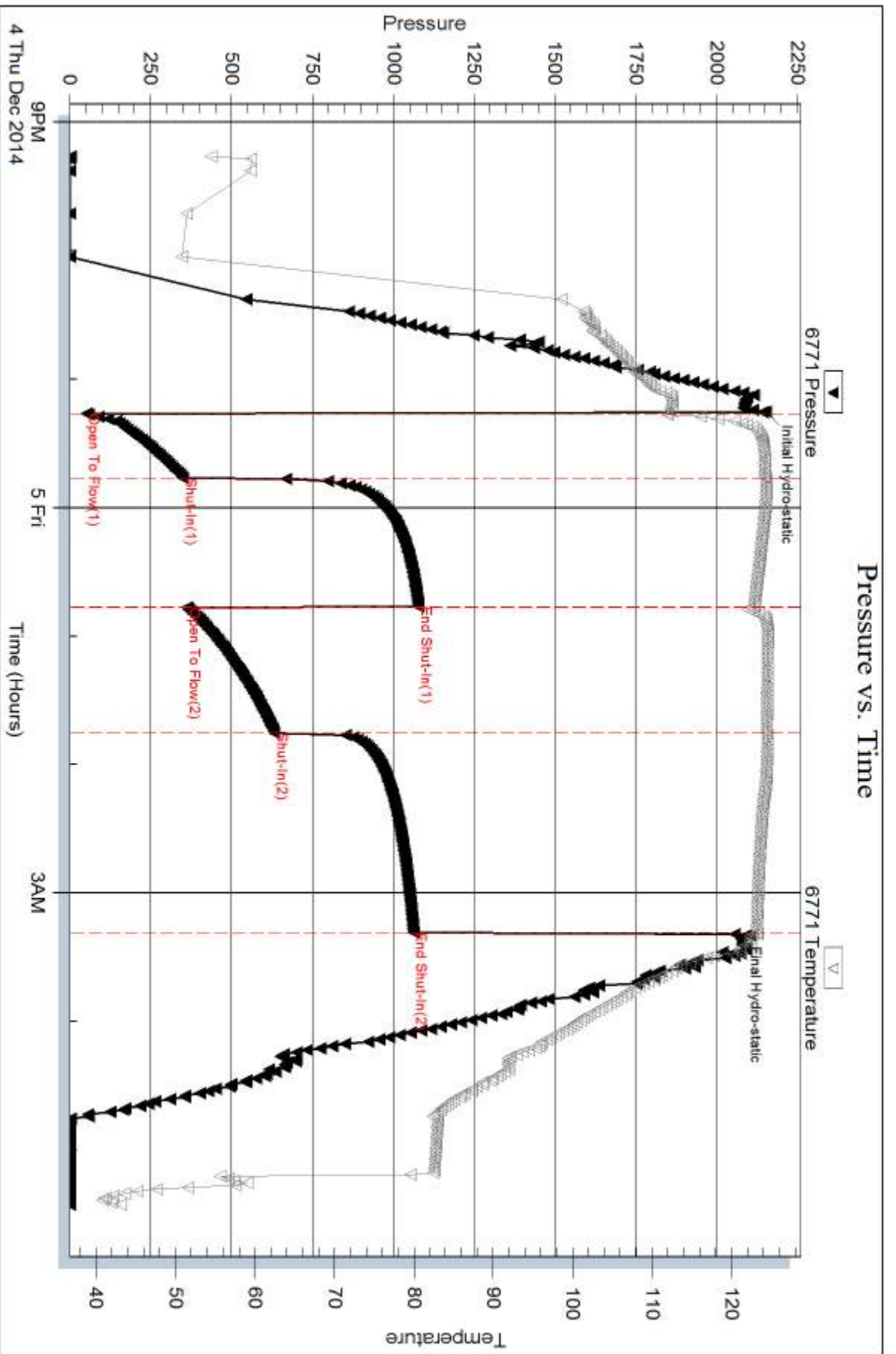
Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 37000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.95 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5200.00 ppm		
Filter Cake: 2.00 inches		

### Recovery Information

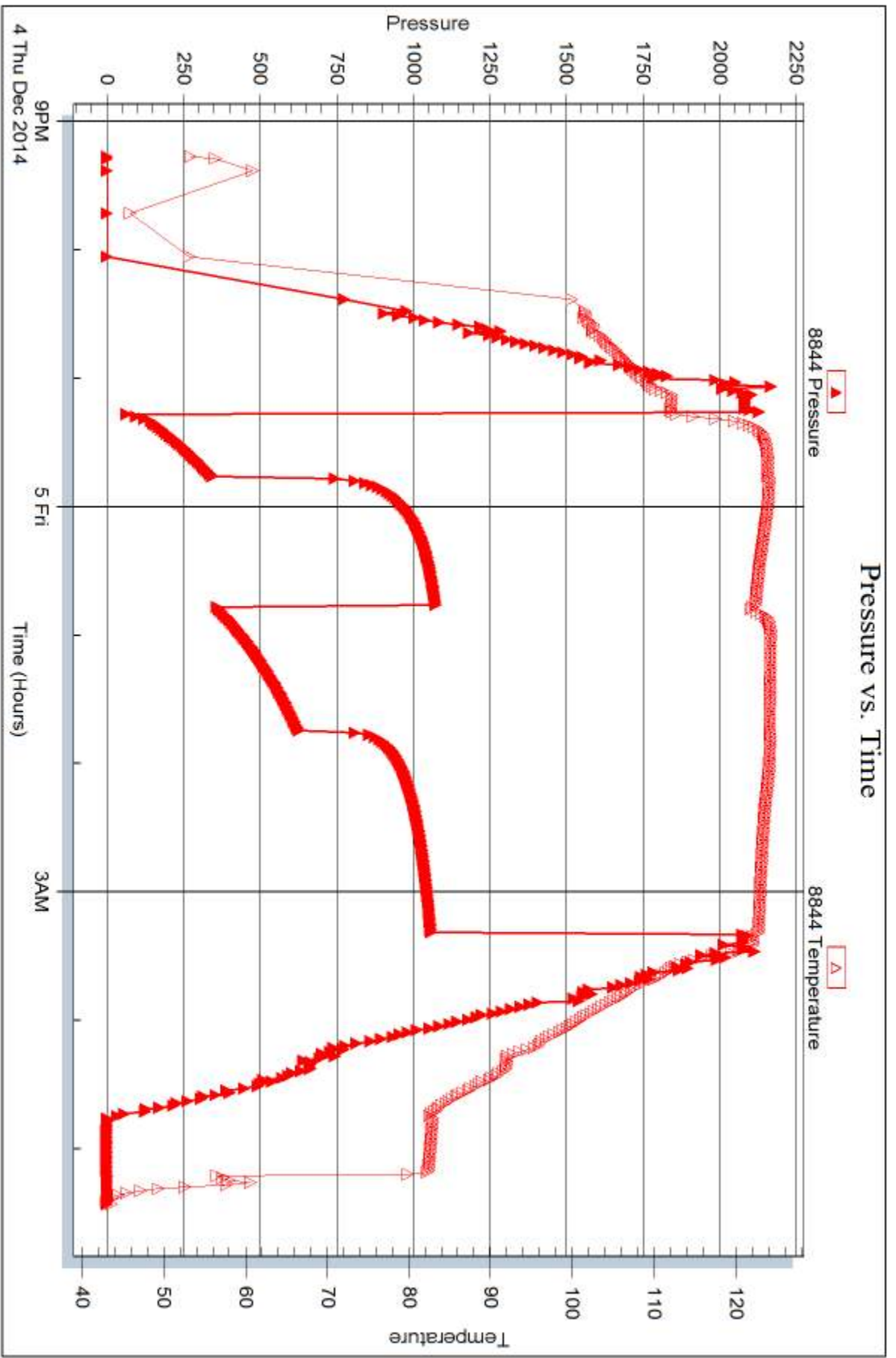
Recovery Table

Length ft	Description	Volume bbl
740.00	water w/heavy oil scum 100%w	8.130
186.00	s o & m c w 3%o 10%m 87%w	2.609
156.00	s o c m w 4%o 46%m 50%w	2.188
3.00	free oil	0.042

Total Length: 1085.00 ft      Total Volume: 12.969 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: rw .268 @ 51\*f=37000 chlort









## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

### **11-17s-33w Scott,KS**

Start Date: 2014.12.05 @ 12:40:24

End Date: 2014.12.05 @ 20:45:39

Job Ticket #: 59717                      DST #: 3

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

Printed: 2014.12.12 @ 10:51:40



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
 Job Ticket: 59717 **DST#: 3**  
 Test Start: 2014.12.05 @ 12:40:24

## GENERAL INFORMATION:

Formation: **LKC L - Lenapah**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:29:24  
 Time Test Ended: 20:45:39  
 Interval: **4312.00 ft (KB) To 4394.00 ft (KB) (TVD)**  
 Total Depth: 4394.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3018.00 ft (KB)  
 3007.00 ft (CF)  
 KB to GR/CF: 11.00 ft

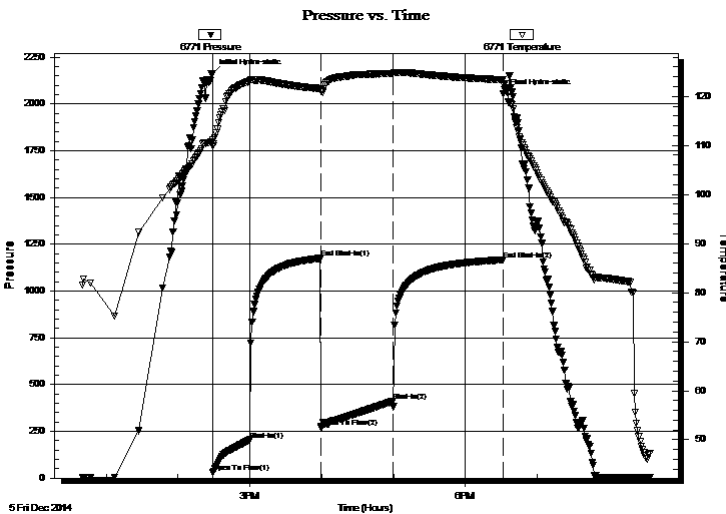
## Serial #: 6771

Inside

Press@RunDepth: 411.52 psig @ 4313.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.05 End Date: 2014.12.05 Last Calib.: 2014.12.05  
 Start Time: 12:40:24 End Time: 20:34:39 Time On Btm: 2014.12.05 @ 14:29:09  
 Time Off Btm: 2014.12.05 @ 18:31:54

TEST COMMENT: B.O.B. in 13 min.  
 No return  
 B.O.B. in 21 min.  
 No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.69	111.04	Initial Hydro-static
1	32.17	109.90	Open To Flow (1)
31	204.41	123.08	Shut-In(1)
90	1174.95	121.57	End Shut-In(1)
91	270.39	121.07	Open To Flow (2)
151	411.52	124.65	Shut-In(2)
243	1167.15	123.40	End Shut-In(2)
243	2054.46	122.61	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
434.00	water 100%w	3.84
186.00	s m c w 10%m 90%w	2.61
174.00	m c w w/oil spots on top 35%m 65%w	2.44

\* 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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59717      **DST#: 3**  
Test Start: 2014.12.05 @ 12:40:24

**Tool Information**

Drill Pipe:	Length: 4047.00 ft	Diameter: 3.80 inches	Volume: 56.77 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 57.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4312.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	110.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

**Tool Description**

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4285.00	
Shut In Tool	5.00			4290.00	
Hydraulic tool	5.00			4295.00	
Jars	5.00			4300.00	
Safety Joint	3.00			4303.00	
Packer	5.00			4308.00	28.00 Bottom Of Top Packer
Packer	4.00			4312.00	
Stubb	1.00			4313.00	
Recorder	0.00	6771	Inside	4313.00	
Recorder	0.00	8844	Outside	4313.00	
Perforations	11.00			4324.00	
Change Over Sub	1.00			4325.00	
Drill Pipe	63.00			4388.00	
Change Over Sub	1.00			4389.00	
Bullnose	5.00			4394.00	82.00 Bottom Packers & Anchor

**Total Tool Length: 110.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59717      **DST#: 3**  
Test Start: 2014.12.05 @ 12:40:24

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 31000 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.95 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5900.00 ppm		
Filter Cake: 2.00 inches		

## Recovery Information

Recovery Table

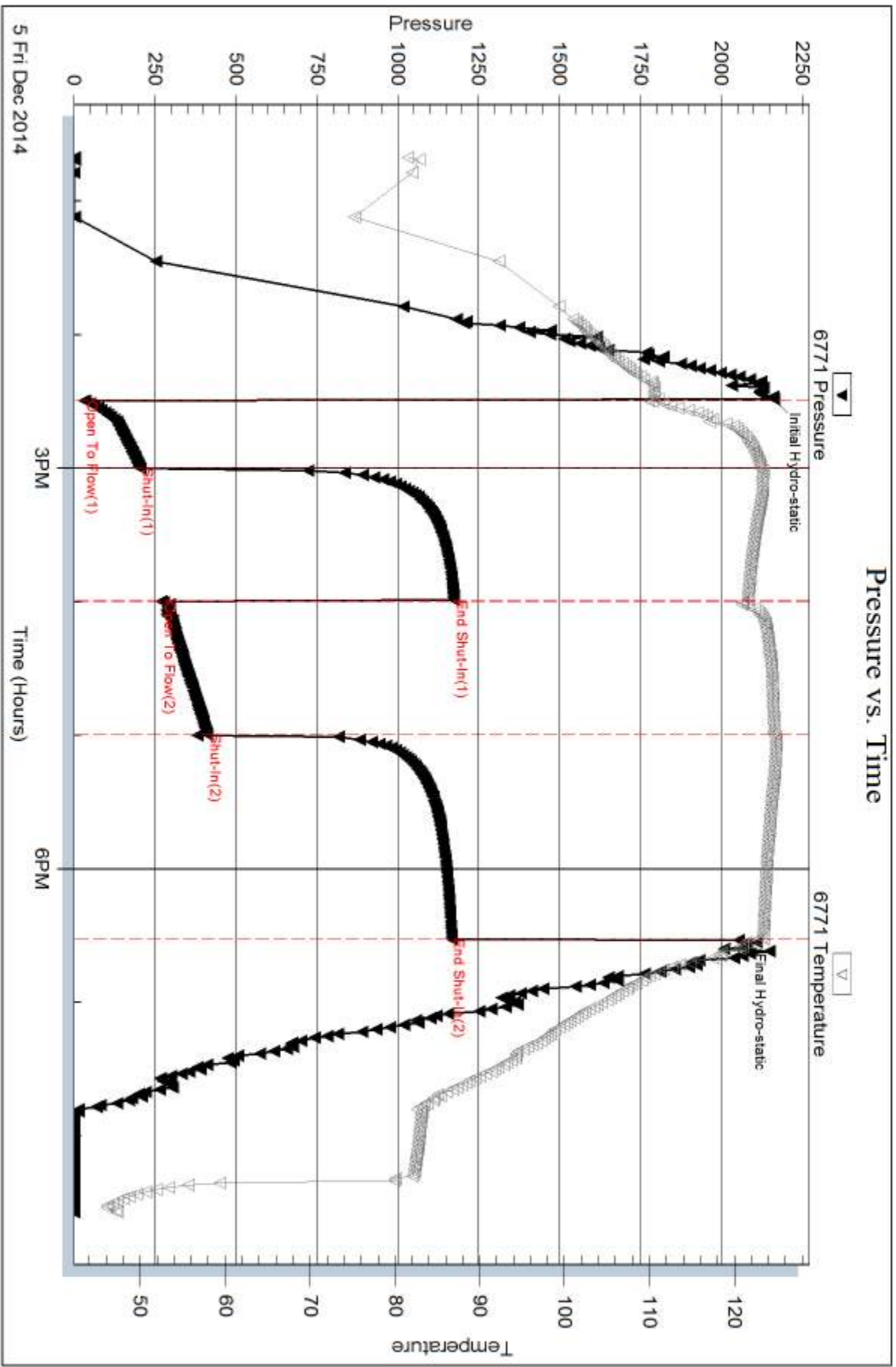
Length ft	Description	Volume bbl
434.00	w ater 100%w	3.838
186.00	s m c w 10%m 90%w	2.609
174.00	m c w w /oil spots on top 35%m 65%w	2.441

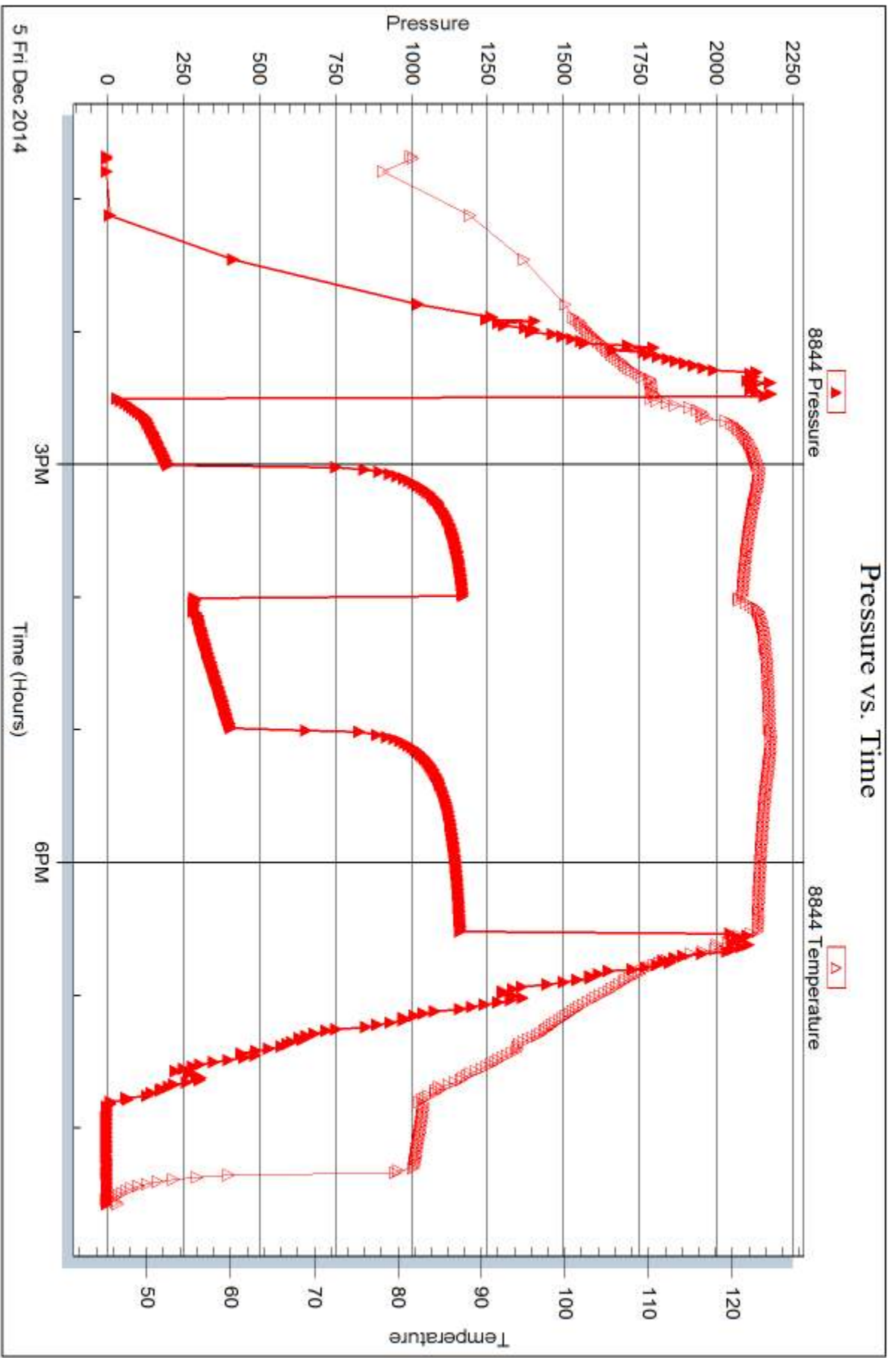
Total Length: 794.00 ft      Total Volume: 8.888 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: rw .351 @ 43\*f= 31,000 chlor









## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

### **11-17s-33w Scott,KS**

Start Date: 2014.12.06 @ 07:35:42

End Date: 2014.12.06 @ 16:55:57

Job Ticket #: 59718                      DST #: 4

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

Printed: 2014.12.12 @ 10:51:14



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

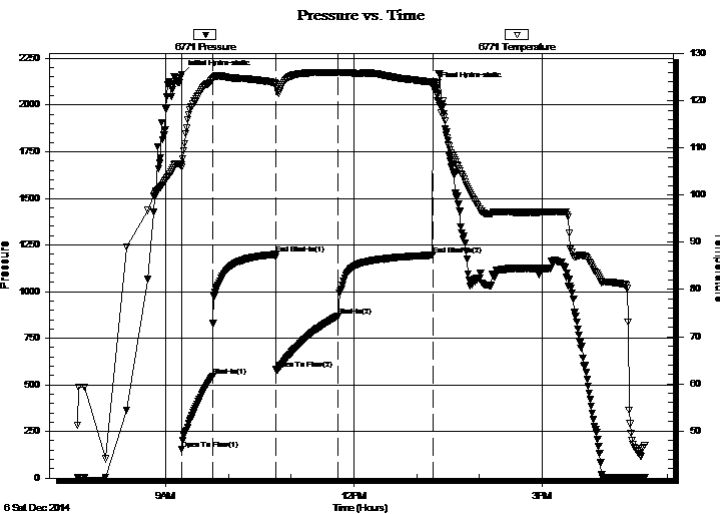
**11-17s-33w Scott,KS**  
**DAMW #1-11**  
 Job Ticket: 59718 **DST#: 4**  
 Test Start: 2014.12.06 @ 07:35:42

## GENERAL INFORMATION:

Formation: **Marmaton A-C**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 09:15:27 Tester: Shane McBride  
 Time Test Ended: 16:55:57 Unit No: 55  
 Interval: **4393.00 ft (KB) To 4484.00 ft (KB) (TVD)** Reference Elevations: 3018.00 ft (KB)  
 Total Depth: 4484.00 ft (KB) (TVD) 3007.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

**Serial #: 6771 Inside**  
 Press@RunDepth: 868.69 psig @ 4394.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.06 End Date: 2014.12.06 Last Calib.: 2014.12.06  
 Start Time: 07:35:42 End Time: 16:38:57 Time On Btm: 2014.12.06 @ 09:15:12  
 Time Off Btm: 2014.12.06 @ 13:16:12

**TEST COMMENT:** B.O.B. in 2 1/2 min.  
 B led off for 6 min. , Return blow built to B.O.B. in 10 min.  
 B.O.B. @ open  
 Bled off for 7min , Return to B.O.B. in 40 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2162.15	106.51	Initial Hydro-static
1	153.23	105.91	Open To Flow (1)
30	548.00	124.55	Shut-In(1)
90	1199.85	123.69	End Shut-In(1)
91	581.95	123.37	Open To Flow (2)
150	868.69	125.94	Shut-In(2)
241	1195.32	123.94	End Shut-In(2)
241	2098.75	124.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	under circ sub g o c m 20g 35o 45m	0.61
2170.00	c g o reversed out 20%g 80%o	29.32
50.00	c g o dumped 20%g 80%o	0.70
0.00	1250' gas in pipe	0.00

\* 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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59718      **DST#: 4**  
Test Start: 2014.12.06 @ 07:35:42

## Tool Information

Drill Pipe:	Length: 4144.00 ft	Diameter: 3.80 inches	Volume: 58.13 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 59.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4393.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	91.00 ft			
Tool Length:	119.00 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			4366.00	
Shut In Tool	5.00			4371.00	
Hydraulic tool	5.00			4376.00	
Jars	5.00			4381.00	
Safety Joint	3.00			4384.00	
Packer	5.00			4389.00	28.00      Bottom Of Top Packer
Packer	4.00			4393.00	
Stubb	1.00			4394.00	
Recorder	0.00	6771	Inside	4394.00	
Recorder	0.00	8844	Outside	4394.00	
Perforations	21.00			4415.00	
Change Over Sub	1.00			4416.00	
Drill Pipe	62.00			4478.00	
Change Over Sub	1.00			4479.00	
Bullnose	5.00			4484.00	91.00      Bottom Packers & Anchor

**Total Tool Length: 119.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59718      **DST#: 4**  
Test Start: 2014.12.06 @ 07:35:42

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	30 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.96 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 5900.00 ppm			
Filter Cake: 2.00 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	under circ sub g o c m 20g 35o 45m	0.610
2170.00	c g o reversed out 20%g 80%o	29.319
50.00	c g o dumped 20%g 80%o	0.701
0.00	1250' gas in pipe	0.000

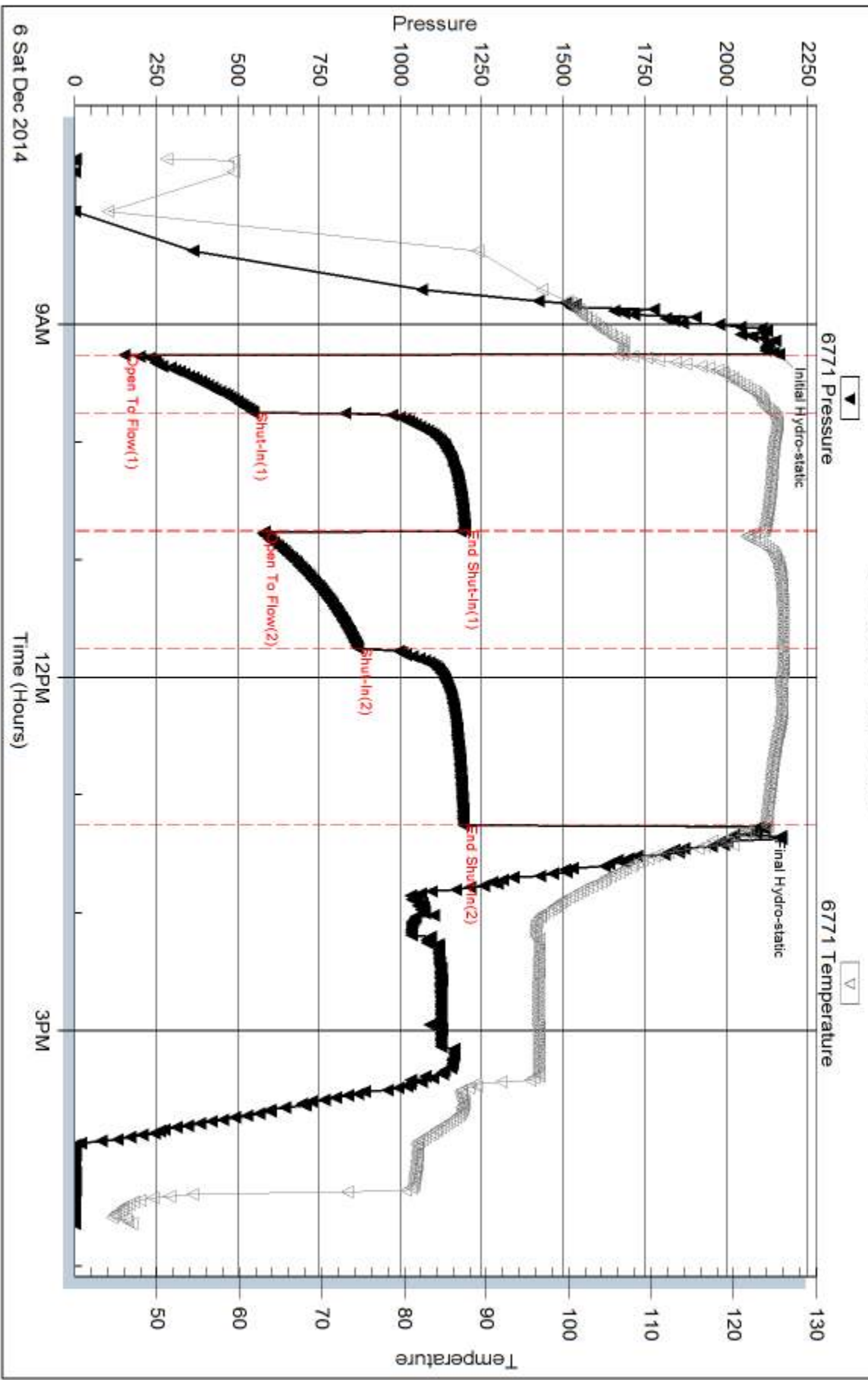
Total Length: 2344.00 ft      Total Volume: 30.630 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

### Pressure vs. Time

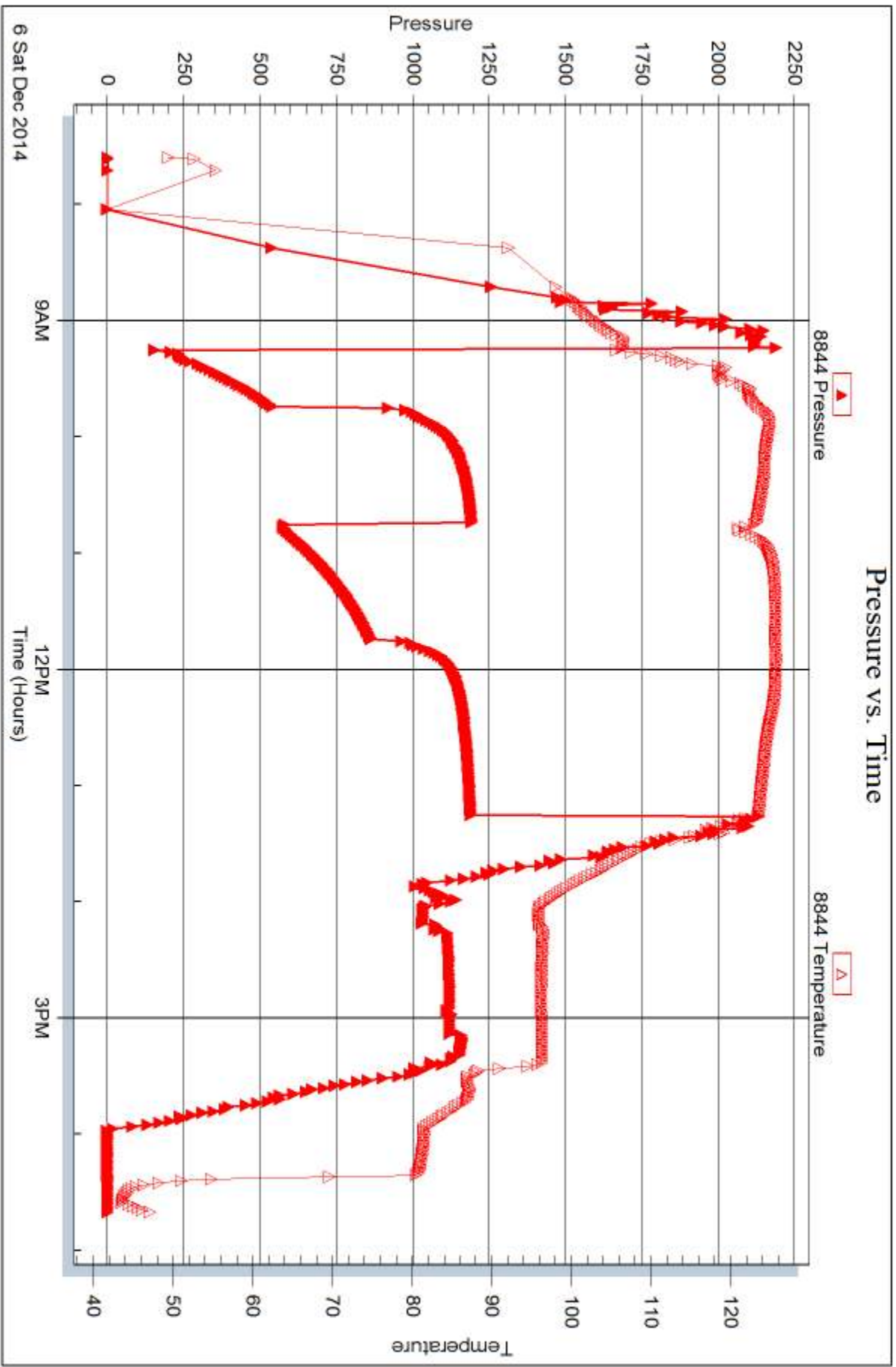


Serial #: 8844

Outside Murfin Drilling Co Inc

DAMW #1-11

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 59718

Printed: 2014.12.12 @ 10:51:16



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

#### **11-17s-33w Scott,KS**

Start Date: 2014.12.07 @ 01:50:58

End Date: 2014.12.07 @ 08:55:28

Job Ticket #: 59719                      DST #: 5

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

Printed: 2014.12.12 @ 10:50:35





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

**11-17s-33w Scott, KS**  
**DAMW #1-11**  
 Job Ticket: 59719 **DST#: 5**  
 Test Start: 2014.12.07 @ 01:50:58

## GENERAL INFORMATION:

Formation: **Lower Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:49:43  
 Time Test Ended: 08:55:28  
 Interval: **4513.00 ft (KB) To 4535.00 ft (KB) (TVD)**  
 Total Depth: 4535.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3018.00 ft (KB)  
 3007.00 ft (CF)  
 KB to GR/CF: 11.00 ft

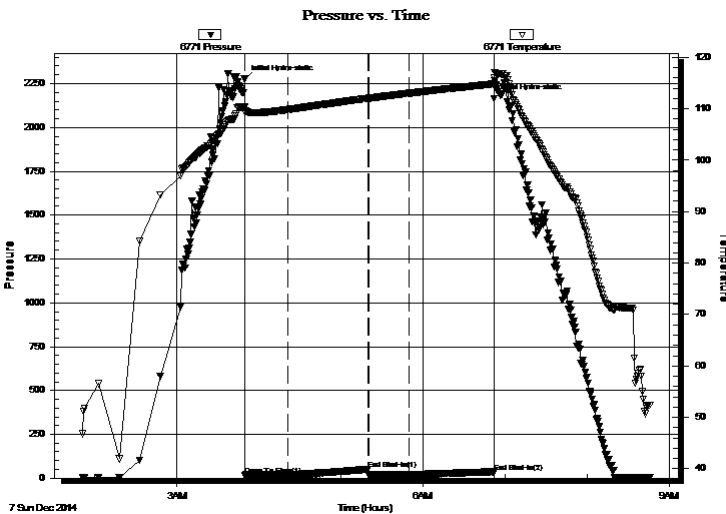
## Serial #: 6771

Inside

Press@RunDepth: 22.44 psig @ 4514.00 ft (KB)  
 Start Date: 2014.12.07 End Date: 2014.12.07  
 Start Time: 01:50:58 End Time: 08:45:28  
 Capacity: 8000.00 psig  
 Last Calib.: 2014.12.07  
 Time On Btm: 2014.12.07 @ 03:49:28  
 Time Off Btm: 2014.12.07 @ 06:51:43

TEST COMMENT: Weak surface blow, died in 8 min.  
 No return  
 No blow  
 No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2275.02	110.31	Initial Hydro-static
1	16.85	109.33	Open To Flow (1)
32	18.92	109.83	Shut-In(1)
90	51.13	112.03	End Shut-In(1)
91	19.21	112.04	Open To Flow (2)
120	22.44	113.01	Shut-In(2)
182	35.75	114.81	End Shut-In(2)
183	2162.87	115.99	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	mud w / oil spots 100% m	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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

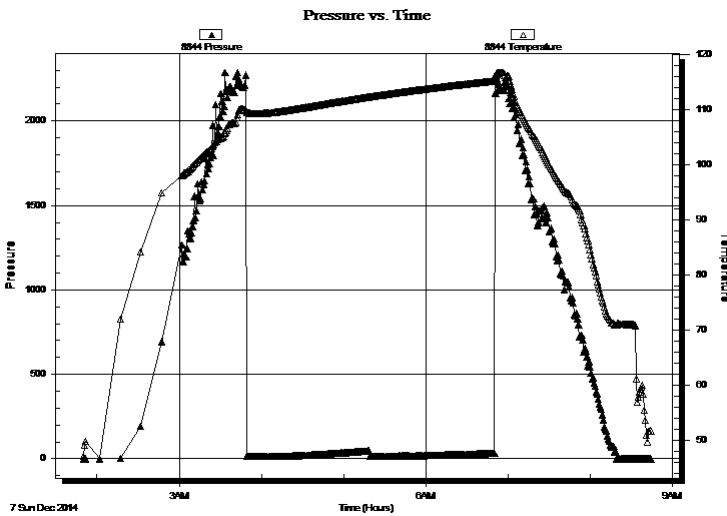
**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59719 **DST#: 5**  
Test Start: 2014.12.07 @ 01:50:58

**GENERAL INFORMATION:**

Formation: **Lower Pawnee**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 03:49:43  
Time Test Ended: 08:55:28  
Interval: **4513.00 ft (KB) To 4535.00 ft (KB) (TVD)**  
Total Depth: 4535.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Shane McBride  
Unit No: 55  
Reference Elevations: 3018.00 ft (KB)  
3007.00 ft (CF)  
KB to GR/CF: 11.00 ft

**Serial #: 8844 Outside**  
Press@RunDepth: psig @ 4514.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07  
Start Time: 01:50:17 End Time: 08:44:32 Time On Btm:  
Time Off Btm:

**TEST COMMENT:** Weak surface blow , died in 8 min.  
No return  
No blow  
No return



**PRESSURE SUMMARY**

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

**Recovery**

Length (ft)	Description	Volume (bbl)
1.00	mud w / oil spots 100% m	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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59719      **DST#: 5**  
Test Start: 2014.12.07 @ 01:50:58

**Tool Information**

Drill Pipe:	Length: 4268.00 ft	Diameter: 3.80 inches	Volume: 59.87 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 61.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4513.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Change Over Sub	1.00			4486.00	
Shut In Tool	5.00			4491.00	
Hydraulic tool	5.00			4496.00	
Jars	5.00			4501.00	
Safety Joint	3.00			4504.00	
Packer	5.00			4509.00	28.00      Bottom Of Top Packer
Packer	4.00			4513.00	
Stubb	1.00			4514.00	
Recorder	0.00	6771	Inside	4514.00	
Recorder	0.00	8844	Outside	4514.00	
Perforations	16.00			4530.00	
Bullnose	5.00			4535.00	22.00      Bottom Packers & Anchor

**Total Tool Length: 50.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59719      **DST#: 5**  
Test Start: 2014.12.07 @ 01:50:58

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.17 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 5300.00 ppm			
Filter Cake: 2.00 inches			

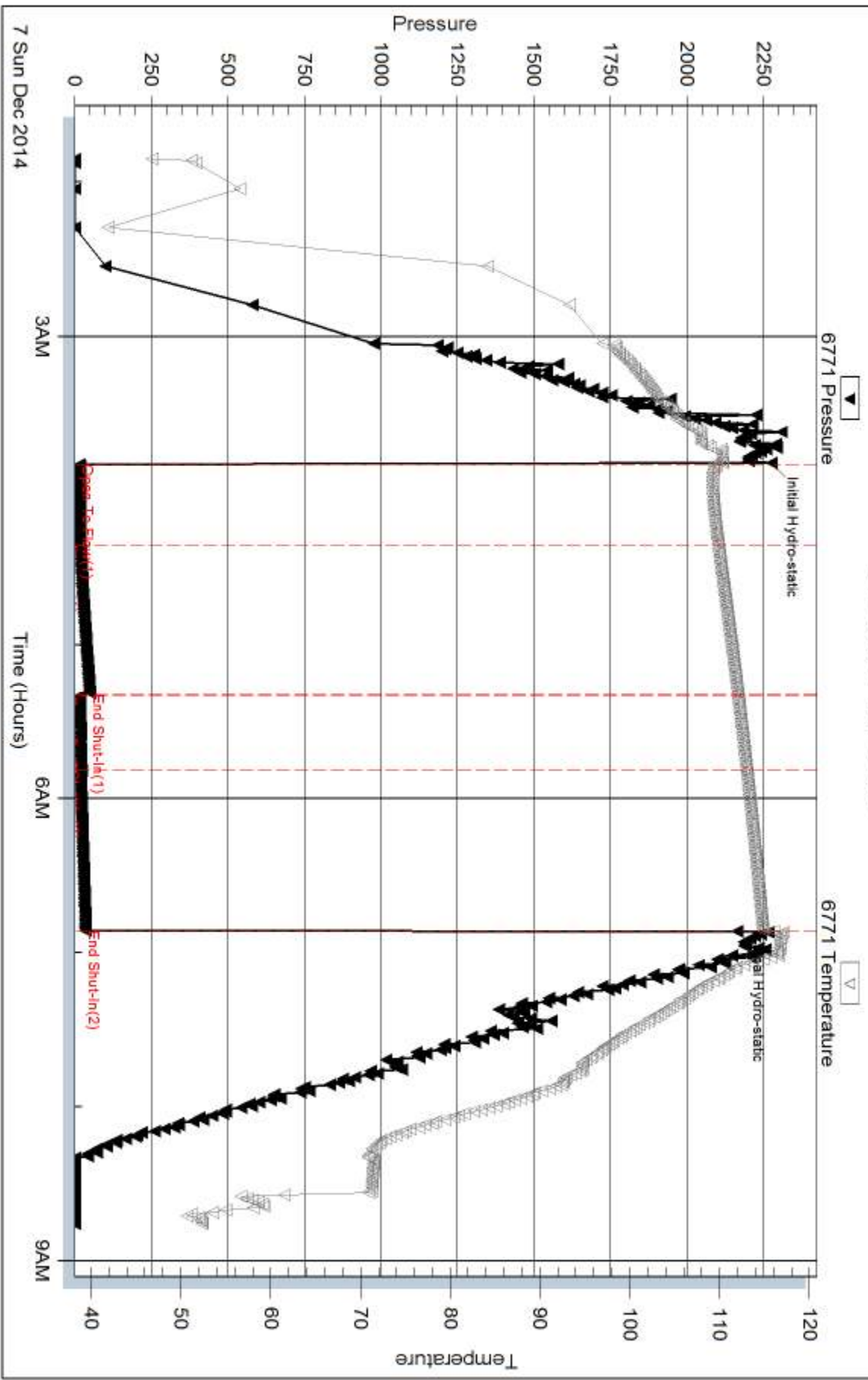
### Recovery Information

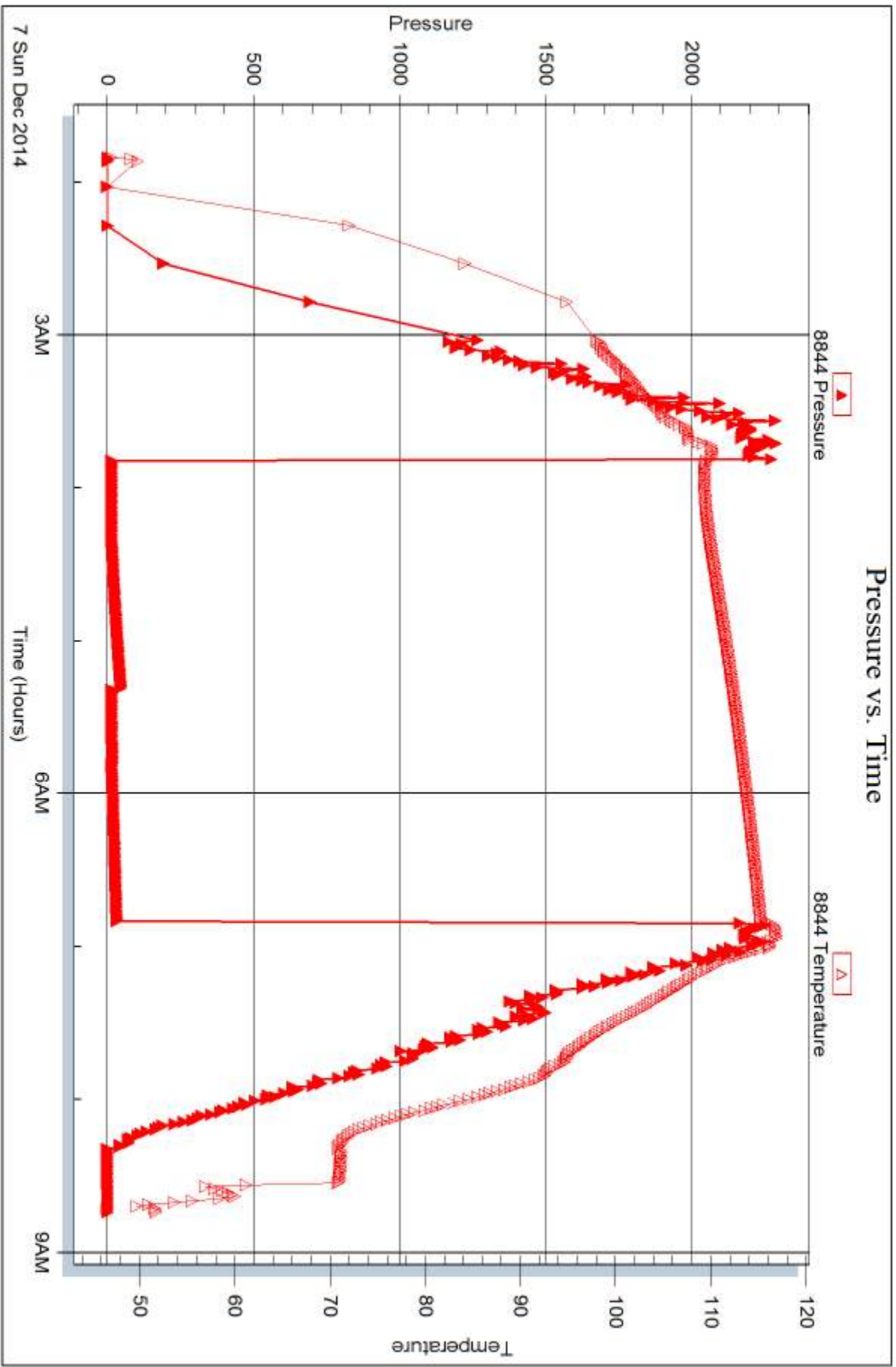
Recovery Table

Length ft	Description	Volume bbl
1.00	mud w / oil spots 100%m	0.005

Total Length: 1.00 ft      Total Volume: 0.005 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

### **11-17s-33w Scott,KS**

Start Date: 2014.12.08 @ 00:15:28

End Date: 2014.12.08 @ 09:10:28

Job Ticket #: 59720                      DST #: 6

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

Printed: 2014.12.12 @ 10:49:54



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
 Job Ticket: 59720 **DST#: 6**  
 Test Start: 2014.12.08 @ 00:15:28

## GENERAL INFORMATION:

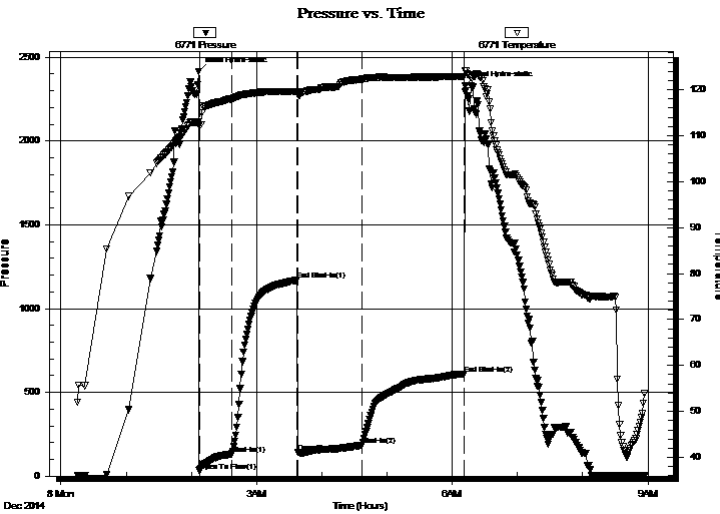
Formation: **Johnson - Atoka**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:07:13  
 Time Test Ended: 09:10:28  
 Interval: **4582.00 ft (KB) To 4660.00 ft (KB) (TVD)**  
 Total Depth: 4660.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3018.00 ft (KB)  
 3007.00 ft (CF)  
 KB to GR/CF: 11.00 ft

## Serial #: 6771

Inside

Press@RunDepth: 185.04 psig @ 4583.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.08 End Date: 2014.12.08 Last Calib.: 2014.12.08  
 Start Time: 00:15:28 End Time: 08:57:28 Time On Btm: 2014.12.08 @ 02:06:58  
 Time Off Btm: 2014.12.08 @ 06:12:13

TEST COMMENT: B.O.B. in 10 1/2 min.  
 2" in return blow  
 B.O.B. in 8 min.  
 Bled off for 2 min. Return to B.O.B. in 21 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2416.43	113.04	Initial Hydro-static
1	30.83	112.39	Open To Flow (1)
31	133.23	117.93	Shut-In(1)
91	1169.87	119.56	End Shut-In(1)
91	143.99	118.97	Open To Flow (2)
151	185.04	122.30	Shut-In(2)
244	610.57	122.90	End Shut-In(2)
246	2330.56	124.20	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
247.00	g m c o 60%g 30%o 10%m	1.21
321.00	c g o 20%g 80%o	4.50
0.00	1788' Gas In Pipe	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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59720      **DST#: 6**  
Test Start: 2014.12.08 @ 00:15:28

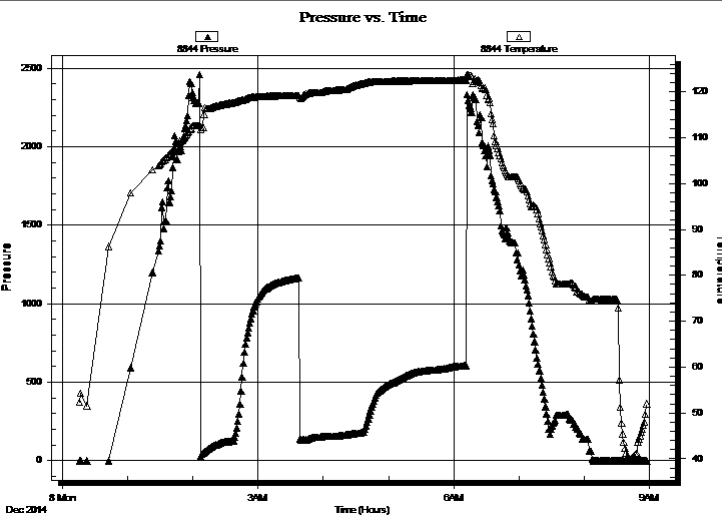
## GENERAL INFORMATION:

Formation: **Johnson - Atoka**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 02:07:13  
Time Test Ended: 09:10:28  
**Interval: 4582.00 ft (KB) To 4660.00 ft (KB) (TVD)**  
Total Depth: 4660.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Shane McBride  
Unit No: 55  
Reference Elevations: 3018.00 ft (KB)  
3007.00 ft (CF)  
KB to GR/CF: 11.00 ft

## Serial #: 8844 Outside

Press@RunDepth: psig @ 4583.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.08 End Date: 2014.12.08 Last Calib.: 2014.12.08  
Start Time: 00:15:49 End Time: 08:57:34 Time On Btm:  
Time Off Btm:

TEST COMMENT: B.O.B. in 10 1/2 min.  
2" in return blow  
B.O.B. in 8 min.  
Bled off for 2 min. Return to B.O.B. in 21 min.



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
247.00	g m c o 60%g 30%o 10%m	1.21
321.00	c g o 20%g 80%o	4.50
0.00	1788' Gas In Pipe	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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59720      **DST#: 6**  
Test Start: 2014.12.08 @ 00:15:28

## Tool Information

Drill Pipe:	Length: 4332.00 ft	Diameter: 3.80 inches	Volume: 60.77 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 61.98 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4582.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	78.00 ft			
Tool Length:	106.00 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			4555.00	
Shut In Tool	5.00			4560.00	
Hydraulic tool	5.00			4565.00	
Jars	5.00			4570.00	
Safety Joint	3.00			4573.00	
Packer	5.00			4578.00	28.00 Bottom Of Top Packer
Packer	4.00			4582.00	
Stubb	1.00			4583.00	
Recorder	0.00	6771	Inside	4583.00	
Recorder	0.00	8844	Outside	4583.00	
Perforations	8.00			4591.00	
Change Over Sub	1.00			4592.00	
Drill Pipe	62.00			4654.00	
Change Over Sub	1.00			4655.00	
Bullnose	5.00			4660.00	78.00 Bottom Packers & Anchor

**Total Tool Length: 106.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59720      **DST#: 6**  
Test Start: 2014.12.08 @ 00:15:28

### Mud and Cushion Information

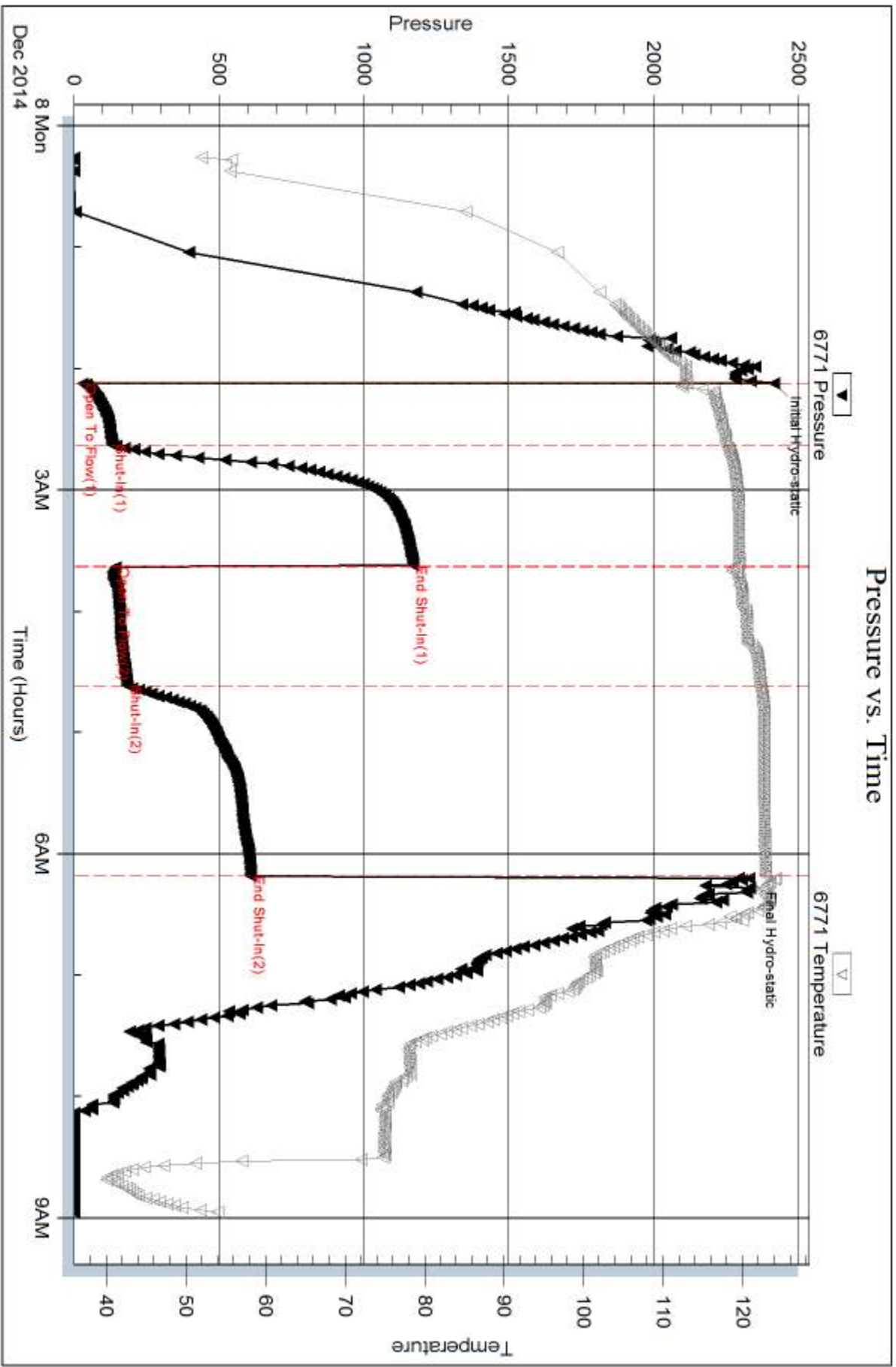
Mud Type: Gel Chem	Cushion Type:	Oil API: 27 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.19 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5300.00 ppm		
Filter Cake: 2.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
247.00	g m c o 60%g 30%o 10%m	1.215
321.00	c g o 20%g 80%o	4.503
0.00	1788' Gas In Pipe	0.000

Total Length: 568.00 ft      Total Volume: 5.718 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

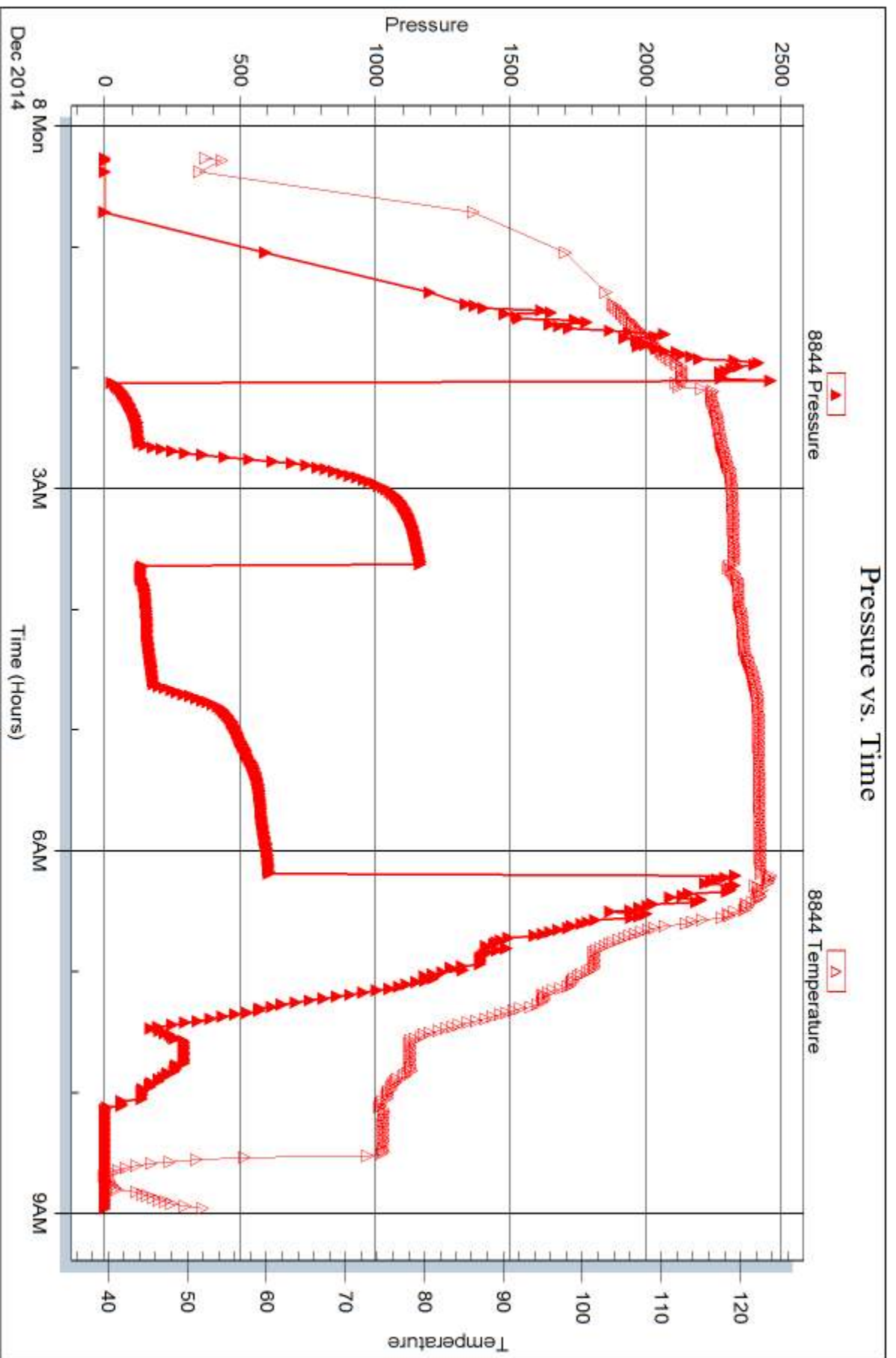


Serial #: 8844

Outside Murfin Drilling Co Inc

DAMW #1-11

DST Test Number: 6





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300  
Wichita, KS 67202 - 1216

ATTN: Larry Nicholson

### **DAMW #1-11**

#### **11-17s-33w Scott,KS**

Start Date: 2014.12.08 @ 18:36:06

End Date: 2014.12.09 @ 03:45:21

Job Ticket #: 59721                      DST #: 7

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

Printed: 2014.12.12 @ 10:49:01



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N Water Ste 300  
 Wichita, KS 67202 - 1216  
 ATTN: Larry Nicholson

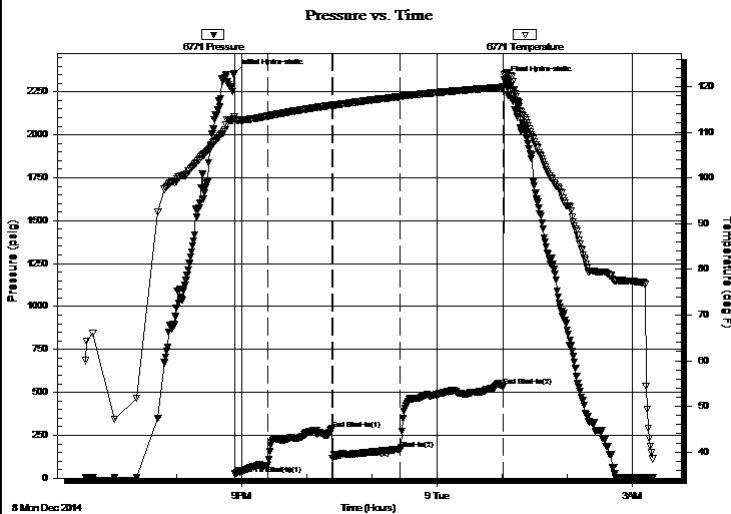
**11-17s-33w Scott,KS**  
**DAMW #1-11**  
 Job Ticket: 59721 **DST#: 7**  
 Test Start: 2014.12.08 @ 18:36:06

## GENERAL INFORMATION:

Formation: **Morrow Sand**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:53:36  
 Time Test Ended: 03:45:21  
 Interval: **4658.00 ft (KB) To 4697.00 ft (KB) (TVD)**  
 Total Depth: 4697.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Shane McBride  
 Unit No: 55  
 Reference Elevations: 3018.00 ft (KB)  
 3007.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 6771 Inside**  
 Press@RunDepth: 170.19 psig @ 4659.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.08 End Date: 2014.12.09 Last Calib.: 2014.12.09  
 Start Time: 18:36:06 End Time: 03:19:21 Time On Btm: 2014.12.08 @ 20:53:06  
 Time Off Btm: 2014.12.09 @ 01:01:36

TEST COMMENT: B.O.B. in 4 1/2 min  
 B.O.B. return in 23 min.  
 B.O.B. @ open  
 B.O.B. return in 18 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2358.36	113.39	Initial Hydro-static
1	24.23	112.75	Open To Flow (1)
31	74.83	113.51	Shut-In(1)
90	287.17	115.92	End Shut-In(1)
91	115.01	115.87	Open To Flow (2)
153	170.19	117.77	Shut-In(2)
248	533.87	119.88	End Shut-In(2)
249	2318.99	122.49	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	g s m c o 50g 10m 40o	0.30
526.00	c g o 40g 60o	5.69
0.00	1766' gas in pipe	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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59721 **DST#: 7**  
Test Start: 2014.12.08 @ 18:36:06

## GENERAL INFORMATION:

Formation: **Morrow Sand**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 20:53:36  
Time Test Ended: 03:45:21  
Interval: **4658.00 ft (KB) To 4697.00 ft (KB) (TVD)**  
Total Depth: 4697.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Shane McBride  
Unit No: 55  
Reference Elevations: 3018.00 ft (KB)  
3007.00 ft (CF)  
KB to GR/CF: 11.00 ft

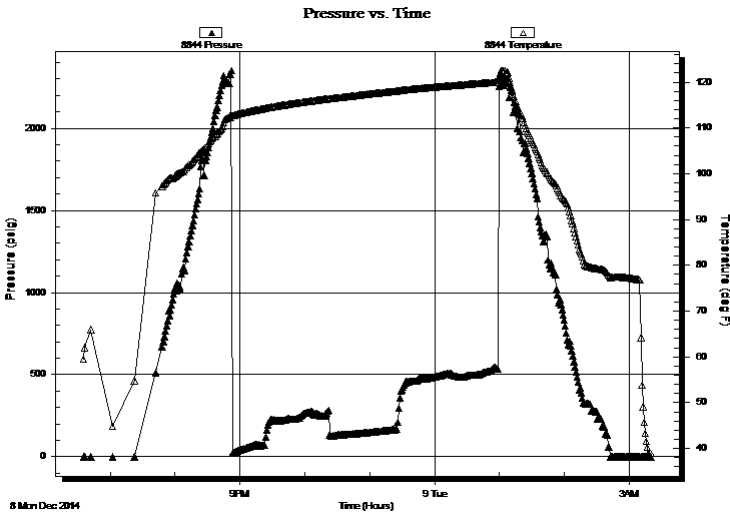
## Serial #: 8844

**Outside**

Press@RunDepth: psig @ 4659.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2014.12.08 End Date: 2014.12.09 Last Calib.: 2014.12.09  
Start Time: 18:35:23 End Time: 03:20:38 Time On Btm:  
Time Off Btm:

TEST COMMENT: B.O.B. in 4 1/2 min  
B.O.B. return in 23 min.  
B.O.B. @ open  
B.O.B. return in 18 min.

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	g s m c o 50g 10m 40o	0.30
526.00	c g o 40g 60o	5.69
0.00	1766' gas in pipe	0.00

\* 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 Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59721      **DST#: 7**  
Test Start: 2014.12.08 @ 18:36:06

## Tool Information

Drill Pipe:	Length: 4396.00 ft	Diameter: 3.80 inches	Volume: 61.66 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 247.00 ft	Diameter: 2.25 inches	Volume: 1.21 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 62.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4658.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	39.00 ft			
Tool Length:	67.00 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			4631.00	
Shut In Tool	5.00			4636.00	
Hydraulic tool	5.00			4641.00	
Jars	5.00			4646.00	
Safety Joint	3.00			4649.00	
Packer	5.00			4654.00	28.00      Bottom Of Top Packer
Packer	4.00			4658.00	
Stubb	1.00			4659.00	
Recorder	0.00	6771	Inside	4659.00	
Recorder	0.00	8844	Outside	4659.00	
Perforations	1.00			4660.00	
Change Over Sub	1.00			4661.00	
Drill Pipe	30.00			4691.00	
Change Over Sub	1.00			4692.00	
Bullnose	5.00			4697.00	39.00      Bottom Packers & Anchor

**Total Tool Length: 67.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co Inc  
250 N Water Ste 300  
Wichita, KS 67202 - 1216  
ATTN: Larry Nicholson

**11-17s-33w Scott,KS**  
**DAMW #1-11**  
Job Ticket: 59721      **DST#: 7**  
Test Start: 2014.12.08 @ 18:36:06

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 26 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.33 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 3500.00 ppm		
Filter Cake: 2.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	g s m c o 50g 10m 40o	0.305
526.00	c g o 40g 60o	5.693
0.00	1766' gas in pipe	0.000

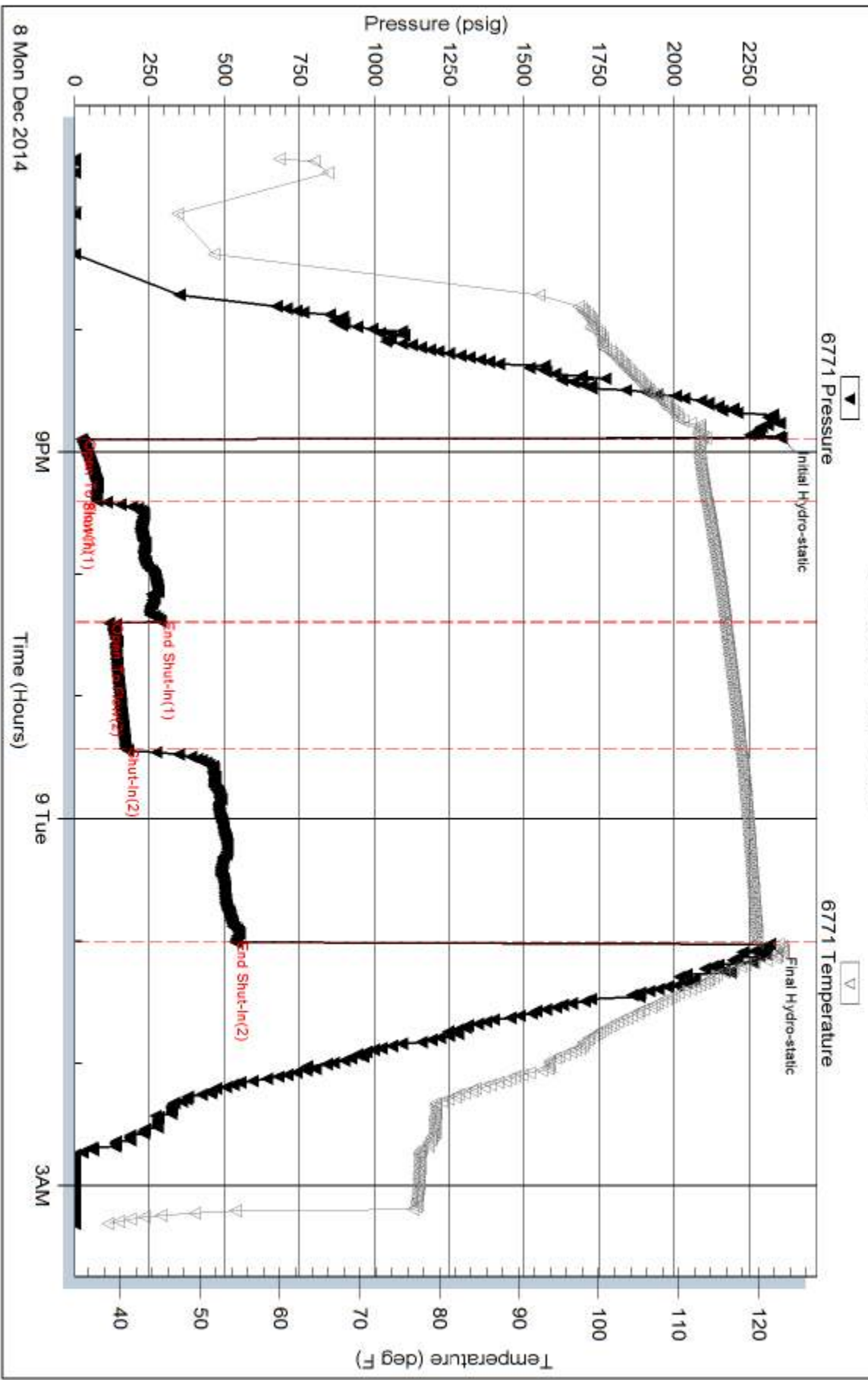
Total Length: 588.00 ft      Total Volume: 5.998 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

### Pressure vs. Time

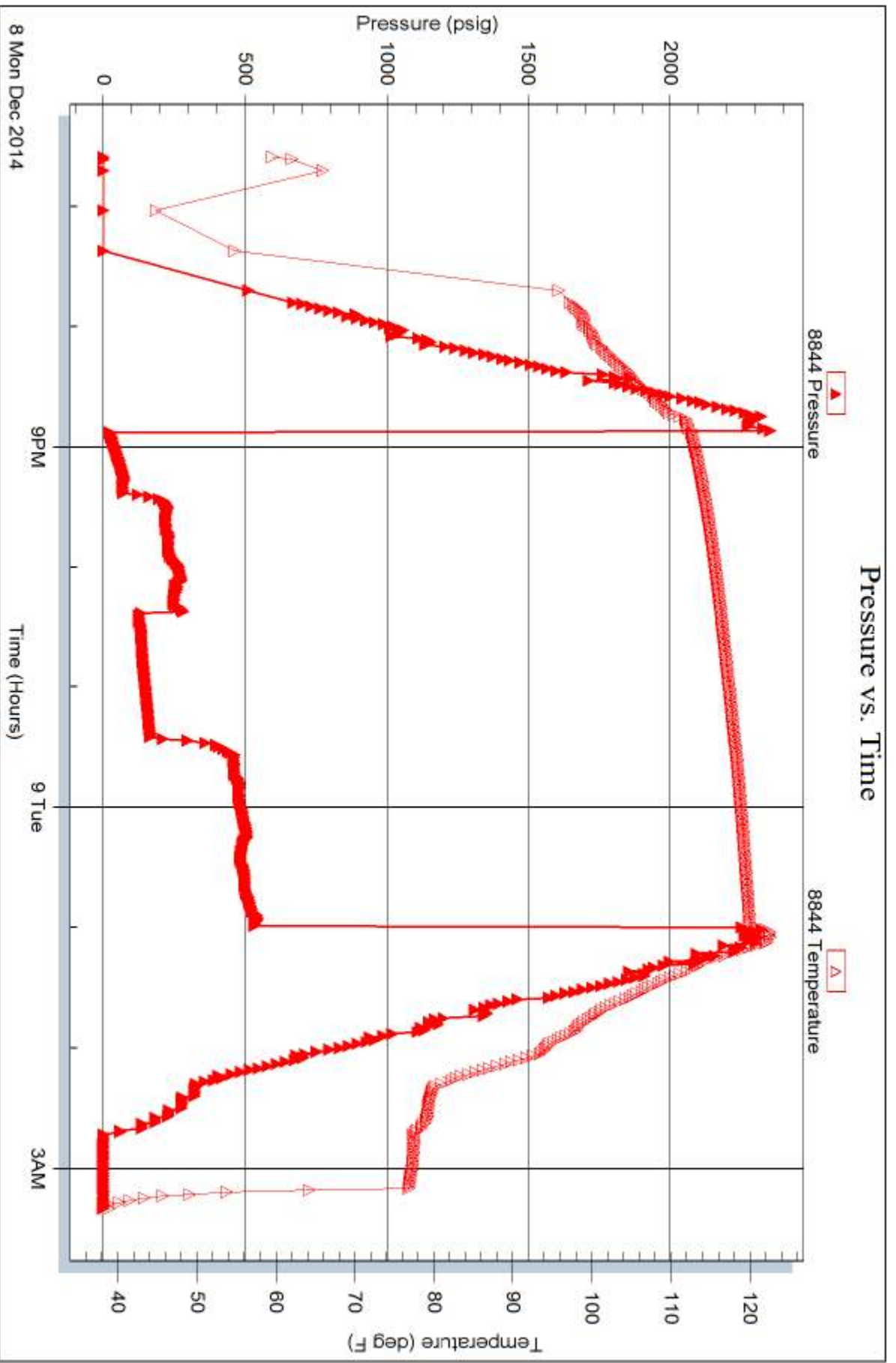


Serial #: 8844

Outside Murfin Drilling Co Inc

DAMW #1-11

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 59721

Printed: 2014.12.12 @ 10:49:02





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59715

4/10

Well Name & No. DAMW # 1-11 Test No. # 1 Date 12/3/14  
 Company Mullin Drilling Co. Inc. Elevation 3018' KB 3007' GL  
 Address 250 N. Water St. 300 Wichita, Ks 67202-1214  
 Co. Rep / Geo. Darryl Nicholson Rig Mullin # 21  
 Location: Sec. 11 Twp. 17s Rge. 33w Co. Scott State Ks

Interval Tested 4010 4076 Zone Tested B-D  
 Anchor Length 66 Drill Pipe Run 3766' Mud Wt. 9.0  
 Top Packer Depth 4005 Drill Collars Run 247' Vis 59  
 Bottom Packer Depth 4010 Wt. Pipe Run --- WL 6.4  
 Total Depth 4076 Chlorides 3500 ppm System LCM # 4

Blow Description B.O.B. in 12 min  
No return  
B.O.B. in 17 min  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>155</u>	<u>MCW spots on top</u>	<u>spots</u>	<u>60</u>	<u>40</u>	
<u>186</u>	<u>SMCW</u>		<u>90</u>	<u>10</u>	
<u>496</u>	<u>WATER</u>		<u>100</u>		

Rec Total 837' BHT 117° Gravity --- API RW .268@ 60° F Chlorides 30,000 ppm

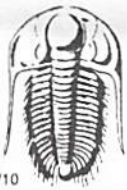
(A) Initial Hydrostatic <u>2001</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>12:20</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>13:05</u>
(C) First Final Flow <u>211</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>14:56</u>
(D) Initial Shut-In <u>1032</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>18:56</u>
(E) Second Initial Flow <u>216</u>	<input type="checkbox"/> Hourly Standby	T-Out
(F) Second Final Flow <u>403</u>	<input checked="" type="checkbox"/> Mileage <u>26FT</u> 40.30	Comments
(G) Final Shut-In <u>1626</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1930</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer

Initial Open 30  Extra Packer  Extra Copies  
 Initial Shut-In 60  Extra Recorder Sub Total 0  
 Final Flow 60  Day Standby Total 1615.30  
 Final Shut-In 90  Accessibility MP/DST Disc't  
 Sub Total 1615.30

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59716

Well Name & No. DAMW #1-11 Test No. #2 Date 12/5/14  
 Company Mullins Drilling Co. Inc. Elevation \_\_\_\_\_ KB \_\_\_\_\_ GL \_\_\_\_\_  
 Address 250 N Water St. 300 W. 2nd St. Hays, KS 67202  
 Co. Rep / Geo. Larry Nicholson Rig Mullins #21  
 Location: Sec. 11 Twp. 17S Rge. 3W Co. Scott State KS

Interval Tested 4266 4314 Zone Tested K  
 Anchor Length \_\_\_\_\_ 48 Drill Pipe Run 4016' Mud Wt. 9.5  
 Top Packer Depth \_\_\_\_\_ 4261 Drill Collars Run 247' Vis SS  
 Bottom Packer Depth \_\_\_\_\_ 4266 Wt. Pipe Run \_\_\_\_\_ WL 6.0  
 Total Depth \_\_\_\_\_ 4314 Chlorides 5200 ppm System LCM #3

Blow Description B.O.B. in 5 min  
No return  
B.O.B. in 10 min  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>3'</u>	<u>Free oil</u>	<u>100</u>			
<u>156</u>	<u>SOC mud</u>	<u>4</u>	<u>50</u>	<u>46</u>	
<u>186</u>	<u>SOC mud</u>	<u>3</u>	<u>87</u>	<u>10</u>	
<u>740</u>	<u>Water w/ Heavy Oil Scum</u>	<u>Scum</u>	<u>100</u>		

Rec Total 1085 BHT 125° Gravity \_\_\_\_\_ API RW 268 @ 31 °F Chlorides 37000 ppm  
 (A) Initial Hydrostatic 2152  Test 1250 T-On Location 18:35  
 (B) First Initial Flow 51  Jars 250 T-Started 19:15  
 (C) First Final Flow 350  Safety Joint 75 T-Open 21:14  
 (D) Initial Shut-In 1076  Circ Sub W/JE T-Pulled 01:14  
 (E) Second Initial Flow 362  Hourly Standby T-Out 03:40  
 (F) Second Final Flow 631  Mileage 26.25 40.30  
 (G) Final Shut-In 1061  Sampler  
 (H) Final Hydrostatic 2055  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1615.30  
 Accessibility MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1615.30

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

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59717

Well Name & No. DAMW #1-11 Test No. #3 Date 12/5/14  
 Company Murkin Drilling Co Inc. Elevation 3018 KB 3007 GL  
 Address 250 N Water Ste 300 Wichita, KS 67202  
 Co. Rep / Geo. Larry Nicholson Rig Mark #21  
 Location: Sec. 11 Twp. 17E Rge. 33W Co. Scott State KS

Interval Tested 4312 4394 Zone Tested L - Lenapeh  
 Anchor Length 82 Drill Pipe Run 4047' Mud Wt. 9.2  
 Top Packer Depth 4307 Drill Collars Run 247' Vis 59  
 Bottom Packer Depth 4312 Wt. Pipe Run --- WL 6.0  
 Total Depth 4394 Chlorides 5900 ppm System LCM #5

Blow Description B.O.B. on 13 min  
No return  
B.O.B. on 21 min.  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>174</u>	<u>mcw w/oil spots on Top</u>	<u>Spits</u>	<u>65</u>	<u>35</u>	
<u>186</u>	<u>Smcw</u>		<u>90</u>	<u>10</u>	
<u>434</u>	<u>water</u>		<u>100</u>		

Rec Total 794 BHT 125° Gravity --- API RW .351 @ 43° F Chlorides 31,000 ppm

(A) Initial Hydrostatic	<u>2162</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>12:15</u>
(B) First Initial Flow	<u>32</u>	<input checked="" type="checkbox"/> Jars	<u>250</u>	T-Started	<u>12:40</u>
(C) First Final Flow	<u>204</u>	<input checked="" type="checkbox"/> Safety Joint	<u>75</u>	T-Open	<u>14:29</u>
(D) Initial Shut-In	<u>1174</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>18:29</u>
(E) Second Initial Flow	<u>270</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>20:45</u>
(F) Second Final Flow	<u>411</u>	<input checked="" type="checkbox"/> Mileage	<u>Murt 40.30</u>	Comments	
(G) Final Shut-In	<u>1167</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2054</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	
		<input type="checkbox"/> Shale Packer		<input type="checkbox"/> Ruined Packer	
		<input type="checkbox"/> Extra Packer		<input type="checkbox"/> Extra Copies	

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Sub Total 1615.30

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59718

4/10

Well Name & No. DAMW # 1-11 Test No. #4 Date 12/6/14  
 Company Murkin Drilling Co Inc. Elevation 3018 KB 3007 GL  
 Address 250 N. Water St. 300, Wichita, KS 67202  
 Co. Rep / Geo Darryl Nicholson Rig Murkin #21  
 Location: Sec. 11 Twp. 17S Rge. 33W Co. Scott State KS

Interval Tested 4393 4484 Zone Tested Marmaton A-C  
 Anchor Length 91 Drill Pipe Run 4144' Mud Wt. 9.2  
 Top Packer Depth 4388 Drill Collars Run 247' Vis 59  
 Bottom Packer Depth 4393 Wt. Pipe Run          WL 6.0  
 Total Depth 4484 Chlorides 5900 ppm System LCM #5

Blow Description B.O.B. in 2 1/2 min.  
Bled off for 6 min, Return blow built to B.O.B. in 10 min.

B.O.B. @ open  
Bled off for 7 min, Return blow built to B.O.B. in 40 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>50'</u>	<u>cgo</u>	<u>20%</u>	<u>80%</u>		
<u>2170'</u>	<u>cgo (Reversed out)</u>	<u>20%</u>	<u>80%</u>		
<u>124'</u>	<u>under circ Sub gocm</u>	<u>20%</u>	<u>35%</u>		<u>45%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2344' BHT 126' Gravity 30 API RW          @          ° F Chlorides          ppm

(A) Initial Hydrostatic 2162  Test 1615.30 T-On Location 07:00  
 (B) First Initial Flow 153  Jars 250 T-Started 07:35  
 (C) First Final Flow 548  Safety Joint 75 T-Open 09:15  
 (D) Initial Shut-In 1199  Circ Sub #50.00 T-Pulled 13:15  
 (E) Second Initial Flow 581  Hourly Standby          T-Out           
 (F) Second Final Flow 868  Mileage 24.45 40.30 Comments           
 (G) Final Shut-In 1195  Sampler           
 (H) Final Hydrostatic 2098  Straddle           Ruined Shale Packer           
 Shale Packer           Ruined Packer           
 Extra Packer           Extra Copies           
 Extra Recorder          Sub Total 0  
 Day Standby          Total 1665.30  
 Accessibility          MP/DST Disc't         

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1665.30

Approved By          Our Representative

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59719

Well Name & No. DAMW # 1-11 Test No. #5 Date 12/7/14  
 Company Murfin Drilling Co Inc Elevation 3018' KB 3007' GL  
 Address 250 N. Water Ste 300, Wichita, KS 67202  
 Co. Rep / Geo. Larry Nicholson Rig Murfin #21  
 Location: Sec. 11 Twp. 17s Rge. 33w Co. Scott State KS

Interval Tested 4513 4535 Zone Tested Lower Pennine  
 Anchor Length 22 Drill Pipe Run 4268' Mud Wt. 9.1  
 Top Packer Depth 4508 Drill Collars Run 247' Vis 52  
 Bottom Packer Depth 4513 Wt. Pipe Run --- WL 7.2  
 Total Depth 4535 Chlorides 5300 ppm System LCM #6

Blow Description Weak surface blow died in 8 min.  
No return  
No blow  
No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1'</u>	<u>Mud w/oil spots</u>	<u>spots</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1' BHT 115° Gravity --- API RW --- @ --- °F Chlorides --- ppm

- (A) Initial Hydrostatic 2275
- (B) First Initial Flow 16
- (C) First Final Flow 18
- (D) Initial Shut-In 51
- (E) Second Initial Flow 19
- (F) Second Final Flow 22
- (G) Final Shut-In 35
- (H) Final Hydrostatic 2162

- Test 1250
- Jars 250
- Safety Joint 75
- Circ Sub N/C
- Hourly Standby
- Mileage HERS 40.30
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1615.30

- T-On Location 01:30
- T-Started 01:50
- T-Open 03:50
- T-Pulled 06:50
- T-Out 08:55

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

Comments ---  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1615.30  
 MP/DST Disc't ---

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59720

4/10

Well Name & No. DAMW # 1-11 Test No. #4 Date 12/8/14  
 Company Murkin Drilling Co. Inc. Elevation 3018 KB 3007 GL  
 Address 250 N. Water Ste. 300 Wich Hays, KS 67202  
 Co. Rep / Geo. Larry Nicholson Rig Murkin #21  
 Location: Sec. 11 Twp. 17S Rge. 33W Co. Scott State KS

Interval Tested 4582 4660 Zone Tested Johnson - Roka  
 Anchor Length 78 Drill Pipe Run 4332 Mud Wt. 9.1  
 Top Packer Depth 4577 Drill Collars Run 247' Vis 53  
 Bottom Packer Depth 4582 Wt. Pipe Run --- WL 7.2  
 Total Depth 4660 Chlorides 5300 ppm System LCM #6

Blow Description B.O.B. in 10 1/2 min  
2" in return blow  
B.O.B. in 8 min.  
Bled off for 2 min Return to B.O.B. in 21 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>321'</u>	<u>cgo</u>	<u>20</u>	<u>80</u>		
<u>247'</u>	<u>gmc 0</u>	<u>60</u>	<u>30</u>		<u>10</u>

Rec Total 568' BHT 124° Gravity 27 API RW --- @ --- °F Chlorides --- ppm

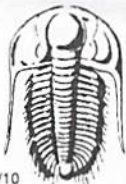
(A) Initial Hydrostatic 2416  Test 1250 T-On Location 23:35  
 (B) First Initial Flow 30  Jars 250 T-Started 00:15  
 (C) First Final Flow 133  Safety Joint 75 T-Open 02:07  
 (D) Initial Shut-In 1169  Circ Sub N/C T-Pulled 06:07  
 (E) Second Initial Flow 143  Hourly Standby --- T-Out 09:10  
 (F) Second Final Flow 185  Mileage 26.15 40.30  
 (G) Final Shut-In 610  Sampler ---  
 (H) Final Hydrostatic 2330  Straddle ---  Ruined Shale Packer ---  
 Shale Packer ---  Ruined Packer ---  
 Extra Packer ---  Extra Copies ---  
 Extra Recorder ---

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 1615.30  
 Total 1615.30  
 MP/DST Disc't ---

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 59721

Well Name & No. DAMW #1-11 Test No. #7 Date 12/9/14  
 Company Murphy Drilling Co Inc Elevation 3098 KB 3007 GL  
 Address 250 N Water Ste 300, Wichita KS 67202  
 Co. Rep / Geo. Jerry Nicholas Rig Murphy #1  
 Location: Sec. 11 Twp. 17S Rge. 33W Co. Scott State KS

Interval Tested 4658 4697 Zone Tested moist sand  
 Anchor Length 39 Drill Pipe Run 4396 Mud Wt. 9.3  
 Top Packer Depth 4653 Drill Collars Run 247 Vis 53  
 Bottom Packer Depth 4658 Wt. Pipe Run --- WL 8.8  
 Total Depth 4697 Chlorides 8500 ppm System LCM #4

Blow Description B.O.B. in 4 1/2 min  
B.O.B. return blow in 23 min.  
B.O.B. @ open  
B.O.B. return in 18 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>526</u>	<u>cgo</u>	<u>40</u>	<u>60</u>		
<u>62</u>	<u>gsmc</u>	<u>50</u>	<u>40</u>		<u>10</u>
	<u>(1766' gas entire)</u>				

Rec Total 588' BHT 122 Gravity 26 API RW --- @ --- ° F Chlorides --- ppm

(A) Initial Hydrostatic	<u>2358</u>
(B) First Initial Flow	<u>24</u>
(C) First Final Flow	<u>74</u>
(D) Initial Shut-In	<u>287</u>
(E) Second Initial Flow	<u>115</u>
(F) Second Final Flow	<u>170</u>
(G) Final Shut-In	<u>533</u>
(H) Final Hydrostatic	<u>2318</u>

Test 1250  
 Jars 250  
 Safety Joint 75  
 Circ Sub n/c  
 Hourly Standby  
 Mileage 26.05 40.30  
 Sampler  
 Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility  
 Sub Total 1615.30

T-On Location 18110  
 T-Started 18535  
 T-Open 20153  
 T-Pulled 0053  
 T-Out 03:45

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Comments  
 Ruined Shale Packer  
 Ruined Packer  
 Extra Copies  
 Sub Total 0  
 Total 1615.30  
 MP/DST Disc't

Approved By R. Nichol 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.



# GEOLOGICAL REPORT

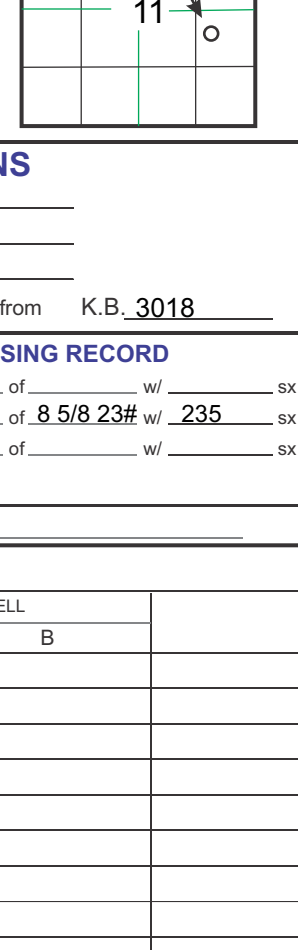
## Larry A. Nicholson

NAD 83  
38.990169167  
-100.529393056

COMPANY **Murfin Drilling Company, Inc.**  
API # **15-171-21073** FIELD **WELLS**  
LEASE **DAMW #11-11**  
LOCATION **S2 NW NE SE**  
SURVEY **2305' FSL 990' FEL**  
SECTION **11** TWP **17S** RGE **33W**  
COUNTY **Scott** STATE **Kansas**

CONTRACTOR **Murfin Drilling Company, Inc. Rig # 21.**  
SPUD **4:00 pm 11-29-14** COMP. **K.B. 3018**  
RTD **4:18' 12:26 pm 12-09-14** LTD **4815**  
MUD UP AT **3150**  
MUD TYPE **Chemical, Morgan Mud**  
D.F. **3007**  
All measurements from **K.B. 3018**

SAMPLES SAVED  
DRILLING TIME  
SAMPLES EXAMINED  
GEOLOGICAL SUPERVISION  
WELL SITE GEOLOGIST **LARRY A. NICHOLSON**



**ELEVATIONS**

K.B.	3018
D.F.	3007

All measurements from K.B. 3018

**CASING RECORD**

Surface	of	8.58' 23W	W 235
Production	of	8.58' 23W	W 235

**ELECTRICAL SURVEYS** Pioneer, Den, Neu, Dual, Micro, Sonic

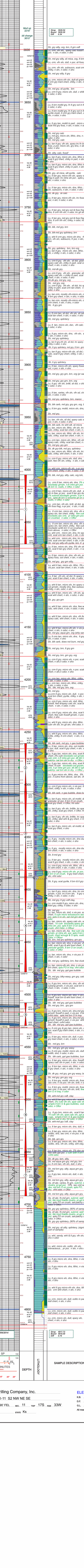
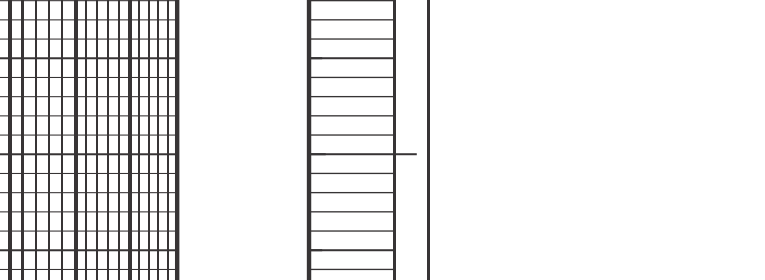
FORMATION	SAMPLE TOPS	SURSEA DATUM	ELEG LOG TOPS	SURSEA DATUM	REFERENCE WELL
Anhydrite	2286	+595	2286	+595	2287 +170 +12
B/Anhydrite	2374	+563	2374	+563	2356 +431 +13
Topoka	3699	-795	3699	-795	3686 -999 +18
Healoner Sh	3937	-1023	3937	-1023	3923 -936 +17
Lansing	3981	-1063	3981	-1063	3967 -980 +17
Stark Sh	4266	-1307	4266	-1307	4242 -1255 +7
Pawnee	4489	-1500	4489	-1500	4462 -1475 +4
Fort Scott Ls	4532	-1558	4532	-1558	4504 -1517 +3
Johnson Zone	4600	-1633	4600	-1633	4570 -1583 +1
Miss	4664	-1761	4664	-1761	4627 -1640 -6
Miss Dol	4704	-1690	4704	-1690	4669 -1682 -4
RTD	4818	-1777	4818	-1777	4770 -1783
LTD	4815	-1776	4815	-1776	4768 -1781

REFERENCE WELLS  
A: Murfin Drilling Wilkens #1-6, 2640 NGL 1800' FWL, Sec 6 T17S R32W KB 2987  
B: \_\_\_\_\_

REMARKS & RECOMMENDATIONS:  
Based on structure position, and dst results csq was set  
NOTE: ROP curve is roughly 5' low to elog curves. Rops & Dsts were moved up 5 feet to match elog.  
Formation tops have been corrected to Log tops

LAN 762, Modified 5/05, 11/11, 4/12 Hanover, KS 66445 1inch = 25.4mm 8.5 x 97.5 216 mm x 2460 mm

### LEGEND



**SAMPLE DESCRIPTIONS**

**REMARKS**

**DST (1) 4010-4076**  
30-60-60-90  
IF: BOB in 12 min  
IS: Blud in 8 min  
Return blow bulb to BOB 10 min  
Total Rec: 4.00  
SIP: 1032 FSP: 1004  
HP: 2001 FHP: 1930  
Temp 12.0 F BHT  
Flow 30.0 gpm  
Chloride 30.00 ppm

**DST (2) 4266-4314**  
Lans K  
30-60-60-90  
IF: BOB in 5 min  
IS: No return  
FF: BOB in 17 min  
Total Rec: 1.00  
SIP: 158 FSP: 1061  
HP: 2152 FHP: 2055  
Temp 12.0 F BHT  
Flow 30.0 gpm  
Chloride 37.000 ppm

**DST (3) 4312-4394**  
L - Lenepah  
30-60-90-90  
IF: BOB in 13 min  
IS: No return  
FF: BOB in 21 min  
Return blow bulb to BOB 40 min  
Total Rec: 7.44  
SIP: 1174 FSP: 1167  
HP: 2162 FHP: 2054  
Temp 12.0 F BHT  
Flow 30.0 gpm  
Chloride 31.000 ppm

**DST (4) 4393-4484**  
Marm A-C  
30-60-60-90  
IF: BOB in 2 1/2 min  
IS: Blud in 6 min  
Return blow bulb to BOB 10 min  
FF: BOB in 8 min  
Total Rec: 2.44  
SIP: 1159 FSP: 1195  
HP: 2162 FHP: 2054  
Temp 12.0 F BHT  
Flow 30.0 gpm  
Chloride 31.000 ppm

**DST (5) 4513-4535**  
Lower Pawnee  
30-60-30-60  
IF: Weak Surf blow  
IS: No return  
FF: BOB in 8 min  
Total Rec: 1.00  
SIP: 1618 FSP: 1922  
HP: 2275 FHP: 2162  
Temp 11.0 F BHT

**DST (6) 4582-4600**  
Johnson - Atoka  
30-60-60-90  
IF: BOB in 10 1/2 min  
IS: BOB in 23 min  
FF: BOB in 8 min  
Total Rec: 3.33  
SIP: 1169 FSP: 1161  
HP: 2416 FHP: 2330  
Temp 12.0 F BHT  
Flow 30.0 gpm

**DST (7) 3658-4697**  
30-60-60-90  
IF: BOB in 4 1/2 min  
IS: BOB blow in 23 min  
FF: BOB in 8 min  
Total Rec: 3.88  
SIP: 287 FSP: 533  
HP: 2358 FHP: 2318  
Temp 12.0 F BHT  
Flow 27.0 Oil

**DST (8) 4818-4815**  
LTD 4815 (1792)  
RTD 4818 (1797)  
IF: BOB in 4.818  
vis 52 wt 9.3 Chlor 5.000  
LCM 4.0W Ph: 10.5 WL: 7.2

COMPANY **Murfin Drilling Company, Inc.**  
LEASE **DAMW #11-11 S2 NW NE SE**  
LOCATION **2305' FSL 990' FEL** SEC. **11** TWP **17S** RGE **33W**  
COUNTY **Scott** STATE **Ks**

**ELEVATIONS**  
K.B. 3018  
D.F. 3007  
All measurements from K.B. 3018







# WELL LE BASIC<sup>SM</sup> ENERGY SERVICES

PRESSURE PUMPING & WIRELINE

1700 S. Country Estates Rd.  
Liberal, Kansas 67905  
Phone 620-624-2277

FIELD SERVICE TICKET  
1717 06097 A

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

DATE OF JOB <u>01/08/15</u> DISTRICT <u>1717</u>		NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/> CUSTOMER ORDER NO.:						
CUSTOMER <u>Murfin Drilling, Inc</u>		LEASE <u>DAMW 1-11</u>		WELL NO.				
ADDRESS		COUNTY <u>Scott City</u> STATE <u>Ks</u>						
CITY STATE		SERVICE CREW <u>Hector Mario Margarita Hector R Juan Edgar Angel</u>						
AUTHORIZED BY <u>TUCE DAVIS</u>		JOB TYPE: <u>7 BZ Frac</u>						
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	TIME
<u>39878</u>	<u>12</u>	<u>12978</u>	<u>12</u>				<u>1-8-15</u>	<u>5:00</u>
<u>20394</u>		<u>19917</u>	<u>-</u>			ARRIVED AT JOB		<u>8:00</u>
<u>12945</u>		<u>70890</u>	<u>-</u>			START OPERATION		<u>10:18</u>
<u>30325</u>		<u>70350</u>				FINISH OPERATION		<u>11:30</u>
<u>70192</u>	<u>-</u>					RELEASED		<u>12:30</u>
<u>70250</u>						MILES FROM STATION TO WELL		<u>115</u>

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

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

SIGNED: [Signature]  
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
<u>54162</u>	<u>Progel G250</u>	<u>gal</u>	<u>6390</u>		
<u>54142</u>	<u>Profrac 2500</u>	<u>gal</u>	<u>11500</u>		
<u>6604</u>	<u>Bio-S Biocide</u>	<u>lb</u>	<u>2</u>		
<u>0507</u>	<u>Breaker 10L</u>	<u>gal</u>	<u>2</u>		
<u>01806</u>	<u>10E150</u>	<u>gal</u>	<u>25</u>		
<u>02315</u>	<u>S80MB-Surfactant</u>	<u>gal</u>	<u>12</u>		
<u>0704</u>	<u>Claymax KCl</u>	<u>gal</u>	<u>35</u>		
<u>pk211</u>	<u>20-40 mesh Sand</u>	<u>cwt</u>	<u>150</u>		
<u>p402</u>	<u>16130 Resin Coated</u>	<u>cwt</u>	<u>20</u>		
<u>e101</u>	<u>Heavy Equipment Mileage</u>	<u>mi</u>	<u>290</u>		
<u>e100</u>	<u>Unit Mileage Charge Pickup</u>	<u>mi</u>	<u>58</u>		
<u>e113</u>	<u>Prop Delivery Charge</u>	<u>fm</u>	<u>863</u>		
<u>@434</u>	<u>1500 HHP Triplex</u>	<u>ea</u>	<u>1</u>		
<u>e729</u>	<u>Densometer</u>	<u>ea</u>	<u>1</u>		
<u>T101</u>	<u>Treatment Van</u>	<u>job</u>	<u>1</u>		
<u>b200</u>	<u>Blender 0-10BPM</u>	<u>ea</u>	<u>1</u>		
<u>p800</u>	<u>20/40 mesh Prop charge</u>	<u>cwt</u>	<u>150</u>		
<u>p801</u>	<u>16130 Resin Coated Prop charge</u>	<u>cwt</u>	<u>20</u>		
<u>p900</u>	<u>1.1 to 4 ppg Prop charge</u>	<u>gal</u>	<u>9000</u>		

SUB TOTAL 721394.38

CHEMICAL / ACID DATA:			

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

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



PRESSURE PUMPING & WIRELINE

1700 S. Country Estates Rd.  
P.O. Box 129  
Liberal, Kansas 67905  
Phone 620-624-2277

FIELD SERVICE TICKET CONT.

TICKET NO. 6097A

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
e75	2" Frac Valve	ea	1		
8003	Service Supervisor	ea	1		
e606	Cambelt Sand Lizard	ea	1		
e712	Liquid chemical Unit	job	1		

Customer <i>Murfin Drilling</i>	Lease No. <i>DAMW 1-11</i>	Date <i>01/08/2015</i>
Lease <i>DAMW 1-11</i>	Well #	
Field Order # <i>026097</i>	Station <i>1717</i>	Casing <i>5 7/8</i>
Type Job <i>2 B2</i>	Formation <i>BASAL PENN SAND</i>	Depth <i>4688</i>
	Legal Description <i>11-175-330</i>	County <i>Scott city</i>
		State <i>KS</i>

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP	
<i>5 7/8</i>		<i>4 spf</i>					<i>1700</i>	
Depth <i>4688</i>	Depth	From <i>4684</i>	To <i>4688</i>	Pre Pad <i>2,100 gal KCL</i>	Max <i>10.1</i>	<i>1860</i>	5 Min. <i>1533</i>	
Volume <i>111</i>	Volume	From	To	Pad <i>5,500 gal PAD</i>	Min <i>2.3</i>	<i>142</i>	10 Min. <i>1443</i>	
Max Press <i>2600</i>	Max Press	From	To	Frac <i>9,000 gal Profrac 2500 lb</i>	Avg <i>10</i>	<i>1600</i>	15 Min. <i>1375</i>	
Well Connection <i>5 7/8</i>	Annulus Vol.	From	To		HHP Used		Annulus Pressure	
Plug Depth	Packer Depth	From	To	Flush <i>4,600 gal Profrac 250 lb</i>	Gas Volume		Total Load <i>527</i>	

Customer Representative <i>John Gerstner</i>	Station Manager <i>Tyce Davis</i>	Treater <i>Hector Esqueda</i>
Service Units <i>39878 20394 12945 30325 7092 70230 12978 19917 70890 70330</i>		
Driver Names <i>Hector Hector Kuan Margarita Edgar Mario Angel</i>		

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
<i>10:18</i>	<i>3520</i>		<i>.3</i>		<i>Prime up Pressure test 2,100 gal</i>
<i>10:20</i>	<i>159</i>		<i>5.4</i>	<i>7.9</i>	<i>Start 4% KCL water</i>
<i>10:26</i>	<i>142</i>		<i>50</i>	<i>8.3</i>	<i>Start 5,500 gal PAD</i>
<i>10:32</i>	<i>1400</i>		<i>99</i>	<i>2.3</i>	<i>loaded</i>
<i>10:34</i>	<i>1578</i>		<i>111</i>	<i>8.4</i>	<i>Established rate</i>
<i>10:35</i>	<i>15166</i>		<i>124</i>	<i>9.4</i>	<i>Increased rate</i>
<i>10:41</i>	<i>1600</i>		<i>181</i>	<i>10.1</i>	<i>Start 4,000 gal 1 lb 20/40 sand</i>
<i>10:52</i>	<i>1650</i>		<i>276</i>	<i>9.9</i>	<i>Start 4,000 gal 2 lb 20/40 sand</i>
<i>10:53</i>	<i>1677</i>		<i>292</i>	<i>9.7</i>	<i>1 lb 20/40 sand 1/3</i>
<i>11:02</i>	<i>1608</i>		<i>371</i>	<i>9.8</i>	<i>Start 325 gal 3 lb 20/40 sand</i>
<i>11:03</i>	<i>1611</i>		<i>379</i>	<i>9.9</i>	<i>Start 675 gal 3 lb 10/30 resin sand</i>
<i>11:04</i>	<i>1637</i>		<i>387</i>	<i>9.7</i>	<i>2 lb 20/40 sand 1/3</i>
<i>11:06</i>	<i>1650</i>		<i>395</i>	<i>9.8</i>	<i>Start Flush</i>
<i>11:12</i>	<i>1860</i>		<i>482</i>	<i>9.8</i>	<i>3 lb 20/40 sand 1/3</i>
<i>11:12</i>	<i>1795</i>		<i>490</i>	<i>9.8</i>	<i>3 lb 10/30 resin sand 1/3</i>
<i>11:15</i>	<i>1700</i>		<i>527</i>		<i>Shutdown</i>
<i>11:20</i>	<i>1533</i>				<i>5 min</i>
<i>11:25</i>	<i>1443</i>				<i>10 min</i>
<i>11:30</i>	<i>1375</i>				<i>15 min</i>
<i>11:35</i>	<i>1295</i>				<i>20 min</i>
<i>11:40</i>	<i>1234</i>				<i>25 min</i>
<i>11:45</i>	<i>1099</i>				<i>30 min</i>