



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1233947
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: _____

1233947

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 Yes No
(Attach Additional Sheets)
Samples Sent to Geological Survey Yes No
Cores Taken Yes No
Electric Log Run Yes No

Log Formation (Top), Depth and Datum Sample
Name Top Datum

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 (Amount and Kind of Material Used)	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

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

Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Bash 1-29
Doc ID	1233947

All Electric Logs Run

DIL
DUCP
MEL
BHCS



www Prod-MG

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 145502

Invoice Date: Sep 5, 2014

Voice: (817) 546-7282

Page: 1

Fax: (817) 246-3361

Bill To:
Murfin Drlg. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	64211	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Sep 5, 2014	10/5/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Bash #1-29		
225.00	CEMENT MATERIALS	Class A Common	17.90	4,027.50
634.00	CEMENT MATERIALS	Chloride	1.10	697.40
236.25	CEMENT SERVICE	Cubic Feet Charge	2.48	585.90
1,034.55	CEMENT SERVICE	Ton Mileage Charge	2.75	2,845.01
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
95.00	CEMENT SERVICE	Pump Truck Mileage	7.70	731.50
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
95.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	418.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	OPERATOR ASSISTANT	Brandon Wilkinson		
1.00	OPERATOR ASSISTANT	Wayne Messalle		

Subtotal	11,092.56
Sales Tax	385.08
Total Invoice Amount	11,477.64
Payment/Credit Applied	
TOTAL	11,477.64

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

\$ 3,882.39

ONLY IF PAID ON OR BEFORE

Oct 5, 2014

3882.39

7595.25

Okja

ALLIED OIL & GAS SERVICES, LLC 064211

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Oakley

DATE <u>9-5-14</u>	SEC. <u>29</u>	TWP. <u>1</u>	RANGE <u>38</u>	CALLED OUT	ON LOCATION <u>9:30 AM</u>	JOB START <u>11:30 AM</u>	JOB FINISH <u>12:00 PM</u>
LEASE <u>Bash</u>	WELL# <u>1-29</u>	LOCATION <u>Birdcity 14N 4W 15</u>			COUNTY <u>Chester</u>	STATE <u>TX</u>	
OLD OR NEW (Circle one) <u>NEW</u>		V2 E Sinto					

CONTRACTOR <u>Murfin 7</u>	OWNER <u>same</u>
TYPE OF JOB <u>Surface</u>	CEMENT
HOLE SIZE <u>12 1/4</u> T.D. <u>219'</u>	AMOUNT ORDERED <u>225 sks com 3800</u>
CASING SIZE <u>8 1/2</u> DEPTH <u>219'</u>	COMMON <u>225 sks @ 12.90 40 = 2.90</u>
TUBING SIZE DEPTH	POZMIX @
DRILL PIPE DEPTH	GEL @
TOOL DEPTH	CHLORIDE <u>634 2 @ 1.10 692.40</u>
PRES. MAX MINIMUM	ASC @
MEAS. LINE SHOE JOINT	Material Total <u>4,721.90</u>
CEMENT LEFT IN CSG. <u>15'</u>	(<u>16.53 11 / 30</u>)
PERFS.	
DISPLACEMENT <u>12,199</u>	

EQUIPMENT

PUMP TRUCK CEMENTER <u>Andrew Forstner</u>	
# <u>431</u> HELPER <u>Brandon Wilkerson</u>	
BULK TRUCK	
# <u>891</u> DRIVER <u>Wayne Massalle</u>	
BULK TRUCK	
# DRIVER	
HANDLING <u>236.25 @ 2.42 585.90</u>	
MILEAGE <u>2.25 @ 2815.01</u>	

REMARKS:

Circulated 5 bbls to pit.
Plug down 11:30 PM

Thank you

CHARGE TO: Murfin
STREET _____
CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB <u>218'</u>	
PUMP TRUCK CHARGE <u>1512.25</u>	
EXTRA FOOTAGE @	
MILEAGE <u>9.5 miles @ 2.70 256.50</u>	
MANIFOLD <u>head @ 225.00</u>	
<u>Light Vehicle @ 440 48.00</u>	
(<u>2228.68 / 353</u>) TOTAL <u>6,317.66</u>	

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 FRED WILLIAMS
SIGNATURE [Signature]

SALES TAX (if Any) _____
TOTAL CHARGES 11,092.56
DISCOUNT 3,882.39 / 353 IF PAID IN 30 DAYS
7,210.16 Net



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

COPY

Invoice

DATE	INVOICE #
9/17/2014	26798

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661

USED FOR 15 123 *Acidizing*
 APPROVED JT 12 *Cement*
Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-29	Bash	Cheyenne		Oil	Development	Cement LongStri...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				170	Miles	6.00	1,020.00
579D	Pump Charge - Top To Bottom LongString				1	Job	2,000.00	2,000.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
290	D-Air				6	Gallon(s)	42.00	252.00T
403-5	5 1/2" Cement Basket				3	Each	300.00	900.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	275.00	275.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
413-5	5 1/2" Roto Wall Scratcher				5	Each	40.00	200.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				200	Sacks	14.50	2,900.00T
276	Flocele				50	Lb(s)	2.50	125.00T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				10	Sack(s)	35.00	350.00T
285	CFR-1				141	Lb(s)	4.50	634.50T
330	Swift Multi-Density Standard (MIDCON II)				375	Sacks	18.50	6,937.50T
276	Flocele				188	Lb(s)	2.50	470.00T
581D	Service Charge Cement				575	Sacks	2.00	1,150.00
583D	Drayage				4,959.07	Ton Miles	1.00	4,959.07
	Subtotal							25,023.07
	Sales Tax Cheyenne County						8.15%	1,295.36
We Appreciate Your Business!							Total	\$26,318.43



CHARGE TO: Marlin Dry Co
ADDRESS

CITY, STATE, ZIP CODE

TICKET 26798

PAGE 1 OF 2

SERVICE LOCATIONS	WELL/PROJECT NO	LEASE	COUNTY/PARISH	STATE	CITY	DATE	OWNER
1. <u>Haystack</u>	<u>1-29</u>	<u>Back</u>	<u>Cherokee</u>	<u>KS</u>		<u>9-17-14</u>	
2. <u>Ness Dry KS</u>	TICKET TYPE <input checked="" type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO	ORDER NO.	
	<input type="checkbox"/>	<u>Co</u>	<u>#7</u>	<u>CT</u>	<u>Nuss Builders, KS</u>		
3.	WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.	WELL LOCATION		
	<u>D-1</u>	<u>W.C.</u>	<u>Drill Bit Longstring</u>				
4.	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
<u>575</u>					<u>MILEAGE #112</u>	<u>170</u>	<u>Mi</u>			<u>600</u>	<u>102000</u>
<u>579</u>					<u>Drill Charge - CUT TOP TO BOTTOM</u>	<u>100</u>					<u>200000</u>
<u>881</u>					<u>Liquid KCL</u>	<u>4</u>	<u>gal</u>			<u>2500</u>	<u>10000</u>
<u>881</u>					<u>Mud Flush</u>	<u>575</u>	<u>gal</u>			<u>185</u>	<u>105750</u>
<u>890</u>					<u>D-Air</u>	<u>6</u>	<u>gal</u>			<u>4200</u>	<u>25200</u>
<u>503</u>					<u>Cement Baskets</u>	<u>3</u>	<u>ea</u>	<u>5 1/2</u>	<u>in</u>	<u>30000</u>	<u>90000</u>
<u>506</u>					<u>Letal Drum Plug T-Baffle</u>	<u>1</u>	<u>ea</u>	<u>5 1/2</u>	<u>in</u>	<u>27500</u>	<u>27500</u>
<u>407</u>					<u>Insert Elbow Shoe W/ Auto 574</u>	<u>1</u>	<u>ea</u>	<u>5 1/2</u>	<u>in</u>	<u>37500</u>	<u>37500</u>
<u>409</u>					<u>Tachometers</u>	<u>15</u>	<u>ea</u>	<u>5 1/2</u>	<u>in</u>	<u>9000</u>	<u>135000</u>
<u>513</u>					<u>Rib Wall Scrubbers</u>	<u>5</u>	<u>ea</u>	<u>5</u>	<u>ft</u>	<u>4000</u>	<u>20000</u>
<u>519</u>					<u>Rotating Head Router</u>	<u>1</u>	<u>ea</u>	<u>5 1/2</u>	<u>in</u>	<u>20000</u>	<u>20000</u>

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.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

DATE SIGNED: 9-17-14 TIME SIGNED: 0100

A.M. P.M.

REMIT PAYMENT TO:
SWIFT SERVICES, INC.
P.O. BOX 466
NESS CITY, KS 67560
785-798-2300

SURVEY		AGREE	UN-DECIDED	DIS-AGREE	
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?					
WE UNDERSTOOD AND MET YOUR NEEDS?					
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
TOTAL					<u>26,318.43</u>

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR: Don Sommer APPROVAL: _____

Thank You!



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

TICKET CONTINUATION

TICKET No. 216798

CUSTOMER
Martin Drq. Co

WELL
1-29 Bash

DATE
9-17-14

PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT	
		LOC	ACCT	DE			QTY	UM	QTY	UM			
325		2				Shovel Cement	200	SKS	1800	185	1450	290000	
276		2				Flcecl	50	lbs			250	12500	
283		2				S&P	200	lbs			30	20000	
284		2				2.500	940	lbs	10	SKS	3500	35000	
285		2				CFR-1	141	lbs			450	63450	
330		2				SUD Cement	375	SKS	3700	185	1850	693750	
276		2				Flcecl	188	lbs			250	47000	
581		2				Service Charge					200	115000	
583		2				Mileage Change					100	495907	
SERVICE CHARGE MILEAGE CHANGE TOTAL WEIGHT LOADED MILES CUBIC FEET TON MILES							Cement		170	575 SKS	200	115000	
CONTINUATION TOTAL												100	495907
													1772607

JOB LOG

SWIFT Services, Inc.

DATE 9-17-14 PAGE NO. 1

CUSTOMER *Martini Dlg B* WELL NO. *1-29* LEASE *Bash* JOB TYPE *Concrete Long string* TICKET NO. *26798*

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TO-5000' DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0100					15.5 #/ft	5 1/2	On location w/ Float Equip. Rig LD D.C. Start 5 1/2 - 15.5 #/ft casing to KB-4993 Insert Float Shoe w/ Auto Fall L.D. Baffle - S 5-21.63' = 4971 = 118.3 BBL Trenchers - 1 thru 8-9-11-12-14-18-19-21-43-54 - Cut Baskets # 22-44-55 5 Roto Walls used CIR # 60 / 20 min Continue running casing Drop fill up ball + its oval Finish running casing start cir & Rotate casing Fin cir - Plug RH/MH - 30/20 5MD cut.
	0320							
	0440							
	0500							
	0600							
	0610							
	0725							
	0730	5	12			350	Pump 500 gal Mud Flush	
		5 1/2	20			400	Pump 20 BBL KLL Flush	
		5				300	Start 325 SKS 8MD cement	
			200				@ 11.2 #/gal = 200 BBL	
						200	Start 200 SKS EAC cut	
							@ 15.5 #/gal = 49 BBL	
			250			Var	Finish cut	
							Wash out pump & lines	
		9	20			400	Drop L.D. Plug.	
		8	60/70			500	Start Displ - 1st 20 BBL KLL cut.	
		7	85			700	Caught lift press - slow rate	
		6	100			1000	slow rate	
			118			1300	Press CIR	
	0900		118 1/2			1500	Plug Down - Hold - Release & Hold	
							Job Complete	
	0945						Wash up & Packup	
							<i>[Signature]</i>	
							John, Tom, Steve, Rob & Isaac	
							30 SKS cut cir to PL	
							<i>[Signature]</i>	

Bash #1-29
 Daily Drilling Report
 Page Two

MDCI Bash #1-29 1665' FNL 800' FEL Sec. 29-T1S-R38W 3216' KB							MDCI Gleason Unit #1-30 2640' FNL 1540' FEL Sec. 30-T1S-R38W 3125' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3165	+51	+16	3168	+48	+13	3090	+35
B/Anhydrite	3196	+20	+15	3203	+13	+8	3120	+5
Neva	3611	-395	+15	3615	-399	+11	3535	-410
Red Eagle	3681	-465	+15	3685	-469	+11	3605	-480
Foraker	3733	-517	+16	3739	-523	+10	3658	-533
Topeka	3962	-746	+13	3968	-752	+7	3884	-759
Oread	4095	-879	+13	4094	-878	+14	4017	-892
Lansing	4162	-946	+22	4164	-948	+20	4093	-968
Stark	4383	-1167	+22	4387	-1171	+18	4314	-1189
BKC	4441	-1225	+20	4443	-1227	+18	4370	-1245
Pawnee	4568	-1352	+21	4571	-1355	+18	4498	-1373
Cherokee	4653	-1437	+23	4656	-1440	+20	4585	-1460
Mississippi	4906	-1690	-----	4890	-1674		DNR	
RTD	5000	-1784					4700	-1575
LTD				5002	-1786		4700	-1575



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.09 @ 22:06:00

End Date: 2014.09.10 @ 07:36:30

Job Ticket #: 60139 DST #: 1

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

Printed: 2014.09.16 @ 11:40:07



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
205 N Water STE 300
Wichita, KS 67202
ATTN: Rocky MilFord

29-1s-38w Cheyenne KS

Bash #1-29

Job Ticket: 60139

DST#: 1

Test Start: 2014.09.09 @ 22:06:00

GENERAL INFORMATION:

Formation: **Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:21:00
 Time Test Ended: 07:36:30
 Interval: **4055.00 ft (KB) To 4120.00 ft (KB) (TVD)**
 Total Depth: 4120.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Donovan Baumann
 Unit No: 49
 Reference Elevations: 3216.00 ft (KB)
 3211.00 ft (CF)
 KB to GR/CF: 5.00 ft

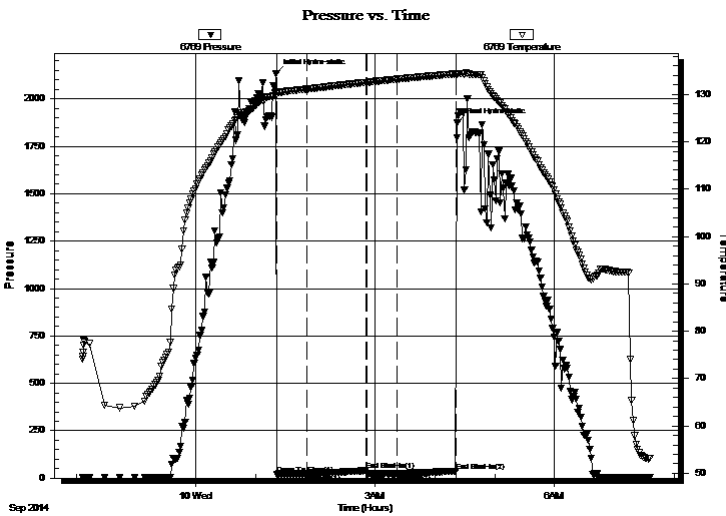
Serial #: 6769

Outside

Press@RunDepth: 24.96 psig @ 4056.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.09.09 End Date: 2014.09.10 Last Calib.: 2014.09.10
 Start Time: 22:06:05 End Time: 07:36:30 Time On Btm: 2014.09.10 @ 01:20:30
 Time Off Btm: 2014.09.10 @ 04:22:30

TEST COMMENT: 30 - IF - No surface blow
 60 - ISI - No return
 30 - FF - No surface blow
 60 - FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2134.22	129.74	Initial Hydro-static
1	21.13	130.07	Open To Flow (1)
31	22.77	131.12	Shut-In(1)
91	39.87	132.56	End Shut-In(1)
92	23.98	132.56	Open To Flow (2)
122	24.96	133.23	Shut-In(2)
181	36.44	134.35	End Shut-In(2)
182	1872.48	134.33	Final Hydro-static

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60139

DST#: 1

ATTN: Rocky MilFord

Test Start: 2014.09.09 @ 22:06:00

Tool Information

Drill Pipe:	Length: 3864.00 ft	Diameter: 3.80 inches	Volume: 54.20 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 55.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4055.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 ft			
Tool Length:	92.00 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			4033.00	
Hydraulic tool	5.00			4038.00	
Jars	5.00			4043.00	
Safety Joint	3.00			4046.00	
Packer	5.00			4051.00	27.00 Bottom Of Top Packer
Packer	4.00			4055.00	
Stubb	1.00			4056.00	
Recorder	0.00	8521	Inside	4056.00	
Recorder	0.00	6769	Outside	4056.00	
Perforations	28.00			4084.00	
Change Over Sub	1.00			4085.00	
Drill Pipe	31.00			4116.00	
Change Over Sub	1.00			4117.00	
Bullnose	3.00			4120.00	65.00 Bottom Packers & Anchor

Total Tool Length: 92.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60139

DST#: 1

ATTN: Rocky MilFord

Test Start: 2014.09.09 @ 22:06:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.17 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud - 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

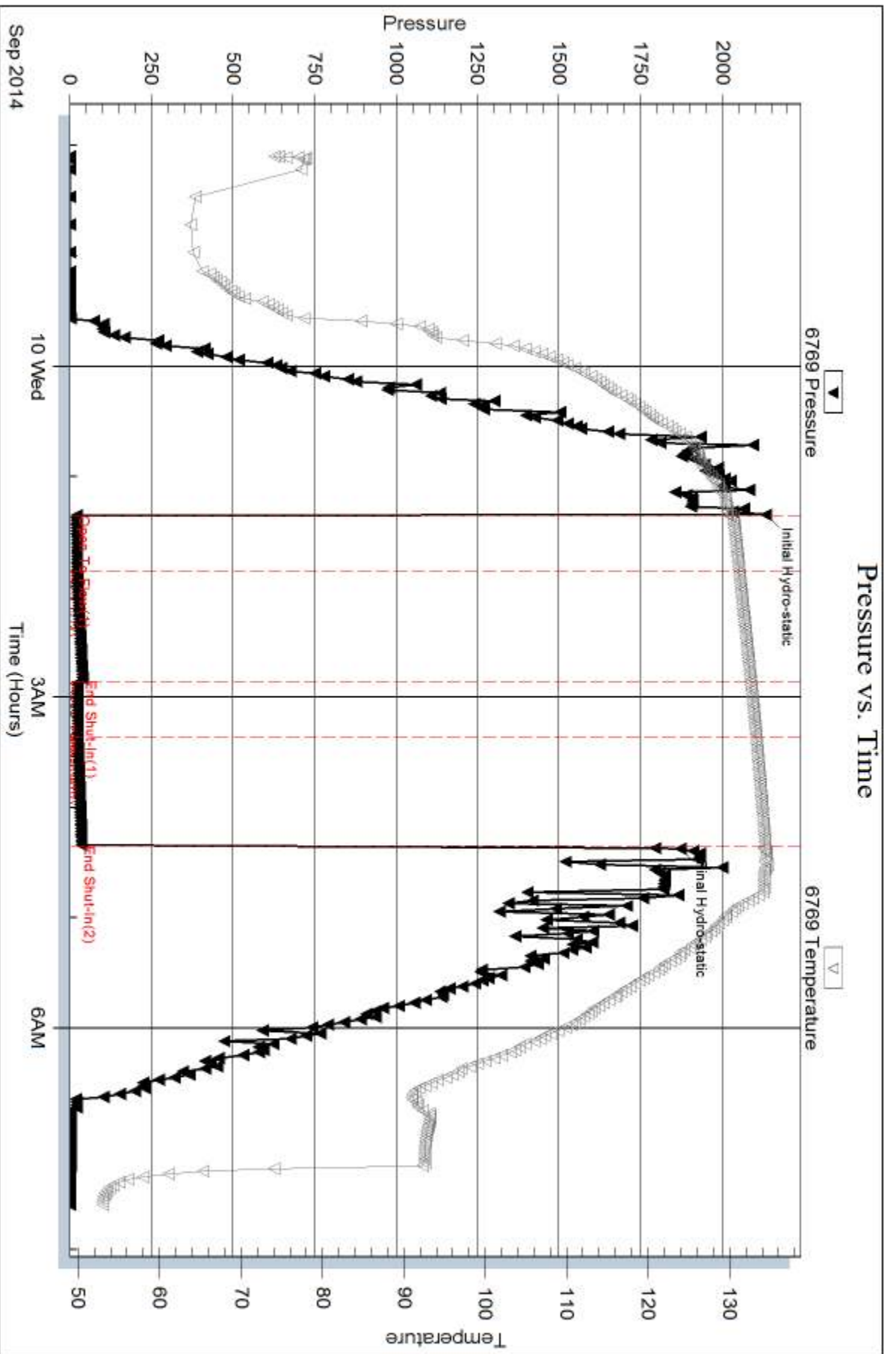
Num Gas Bombs: 0

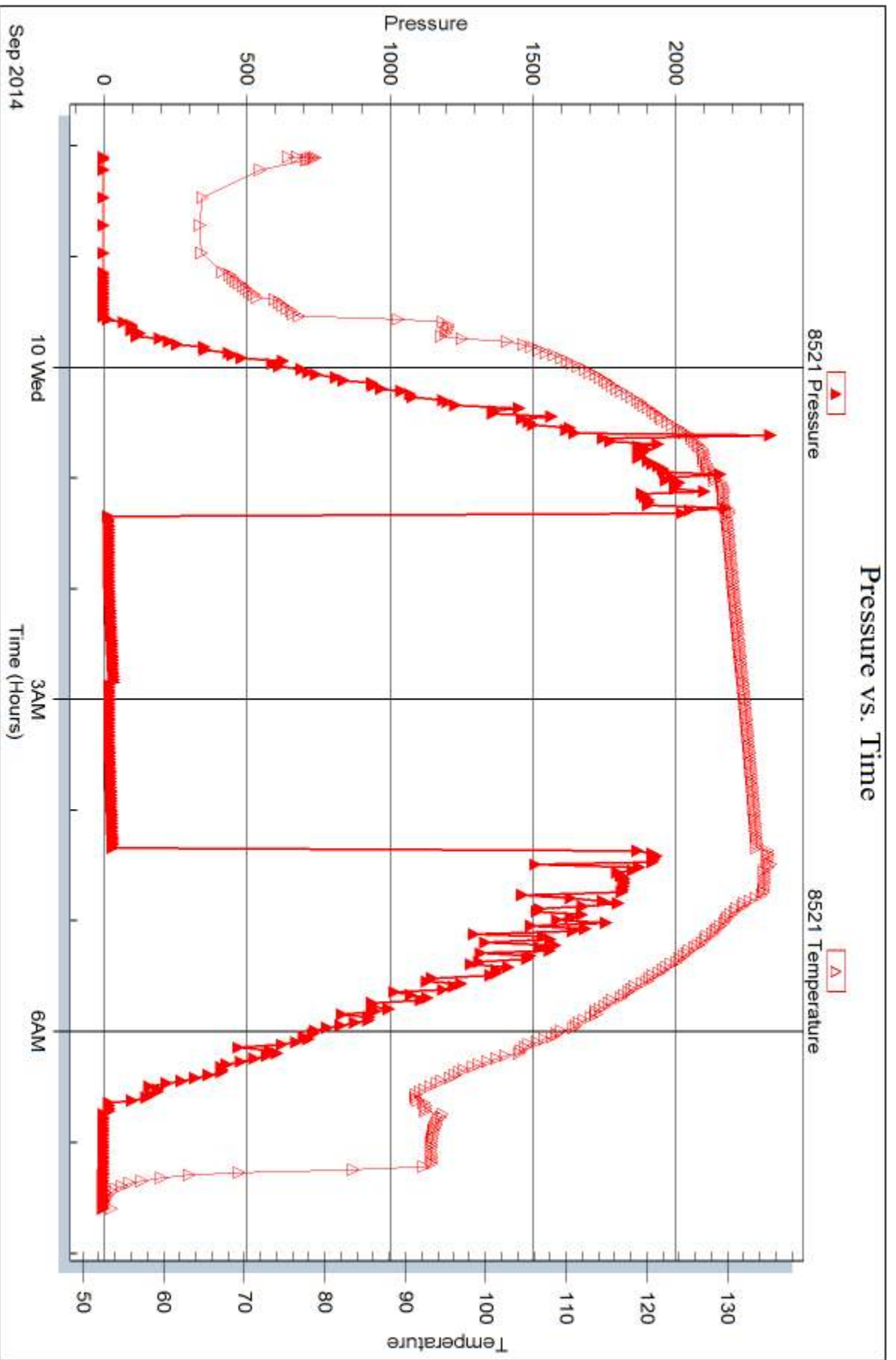
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.10 @ 21:04:00

End Date: 2014.09.11 @ 06:20:00

Job Ticket #: 60140 DST #: 2

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

Printed: 2014.09.16 @ 11:39:35

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

Bash #1-29

DST # 2

Douglas sand - LKC "

2014.09.10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
205 N Water STE 300
Wichita, KS 67202
ATTN: Rocky MilFord

29-1s-38w Cheyenne KS

Bash #1-29

Job Ticket: 60140

DST#: 2

Test Start: 2014.09.10 @ 21:04:00

GENERAL INFORMATION:

Formation: **Douglas sand - LKC "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:59:30

Time Test Ended: 06:20:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 49

Interval: 4121.00 ft (KB) To 4209.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4209.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 6769 Outside

Press@RunDepth: 45.31 psig @ 4122.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.10

End Date:

2014.09.11

Last Calib.: 2014.09.11

Start Time: 21:04:05

End Time:

06:20:00

Time On Btm: 2014.09.10 @ 23:59:00

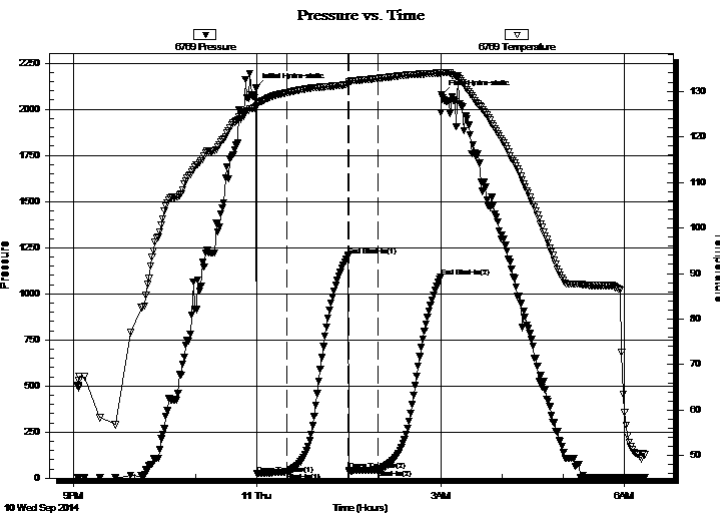
Time Off Btm: 2014.09.11 @ 03:01:00

TEST COMMENT: 30 - IF - Weak surface blow dead in 2 min.

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2115.04	126.51	Initial Hydro-static
1	23.24	126.80	Open To Flow (1)
30	33.49	129.69	Shut-In(1)
91	1207.48	131.49	End Shut-In(1)
91	41.14	131.75	Open To Flow (2)
120	45.31	132.84	Shut-In(2)
181	1090.90	134.05	End Shut-In(2)
182	2080.62	134.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM - 65M - 35o	0.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60140

DST#: 2

ATTN: Rocky MilFord

Test Start: 2014.09.10 @ 21:04:00

GENERAL INFORMATION:

Formation: **Douglas sand - LKC "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:59:30

Time Test Ended: 06:20:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 49

Interval: 4121.00 ft (KB) To 4209.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4209.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8521

Inside

Press@RunDepth: psig @ 4122.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.10

End Date:

2014.09.11

Last Calib.:

2014.09.11

Start Time: 21:04:05

End Time:

06:19:30

Time On Btm:

Time Off Btm:

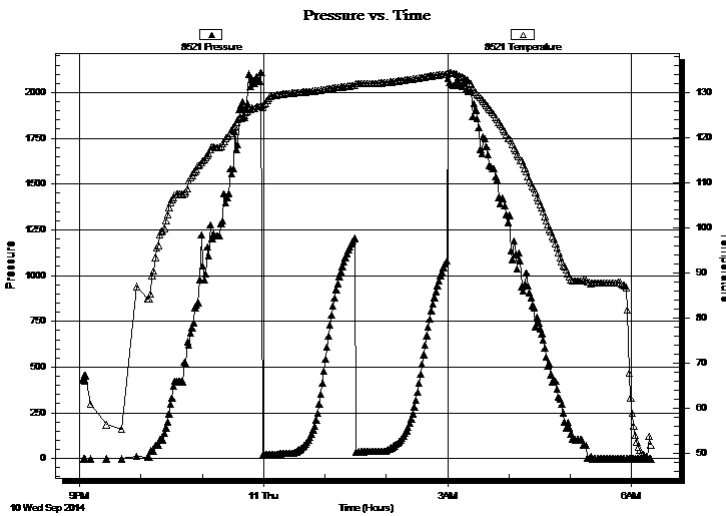
TEST COMMENT: 30 - IF - Weak surface blow dead in 2 min.

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM - 65M - 35o	0.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60140

DST#: 2

ATTN: Rocky MilFord

Test Start: 2014.09.10 @ 21:04:00

Tool Information

Drill Pipe:	Length: 3928.00 ft	Diameter: 3.80 inches	Volume: 55.10 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 56.01 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 63000.00 lb
Depth to Top Packer:	4121.00 ft			Final 63000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	115.00 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			4099.00	
Hydraulic tool	5.00			4104.00	
Jars	5.00			4109.00	
Safety Joint	3.00			4112.00	
Packer	5.00			4117.00	27.00 Bottom Of Top Packer
Packer	4.00			4121.00	
Stubb	1.00			4122.00	
Recorder	0.00	8521	Inside	4122.00	
Recorder	0.00	6769	Outside	4122.00	
Perforations	19.00			4141.00	
Change Over Sub	1.00			4142.00	
Drill Pipe	63.00			4205.00	
Change Over Sub	1.00			4206.00	
Bullnose	3.00			4209.00	88.00 Bottom Packers & Anchor

Total Tool Length: 115.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60140

DST#: 2

ATTN: Rocky MilFord

Test Start: 2014.09.10 @ 21:04:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 111.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OCM - 65M - 35o	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbl

Num Fluid Samples: 0

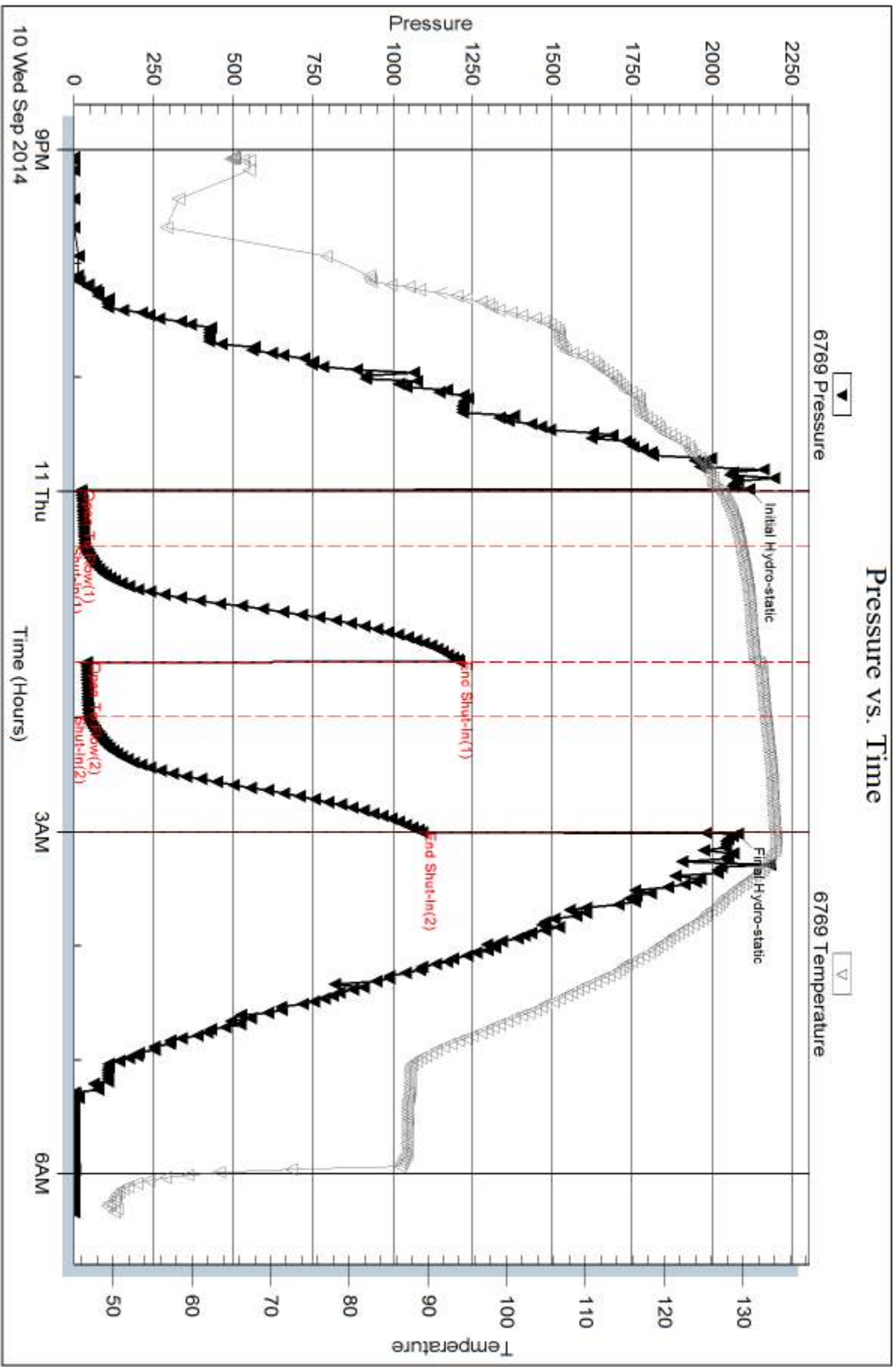
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



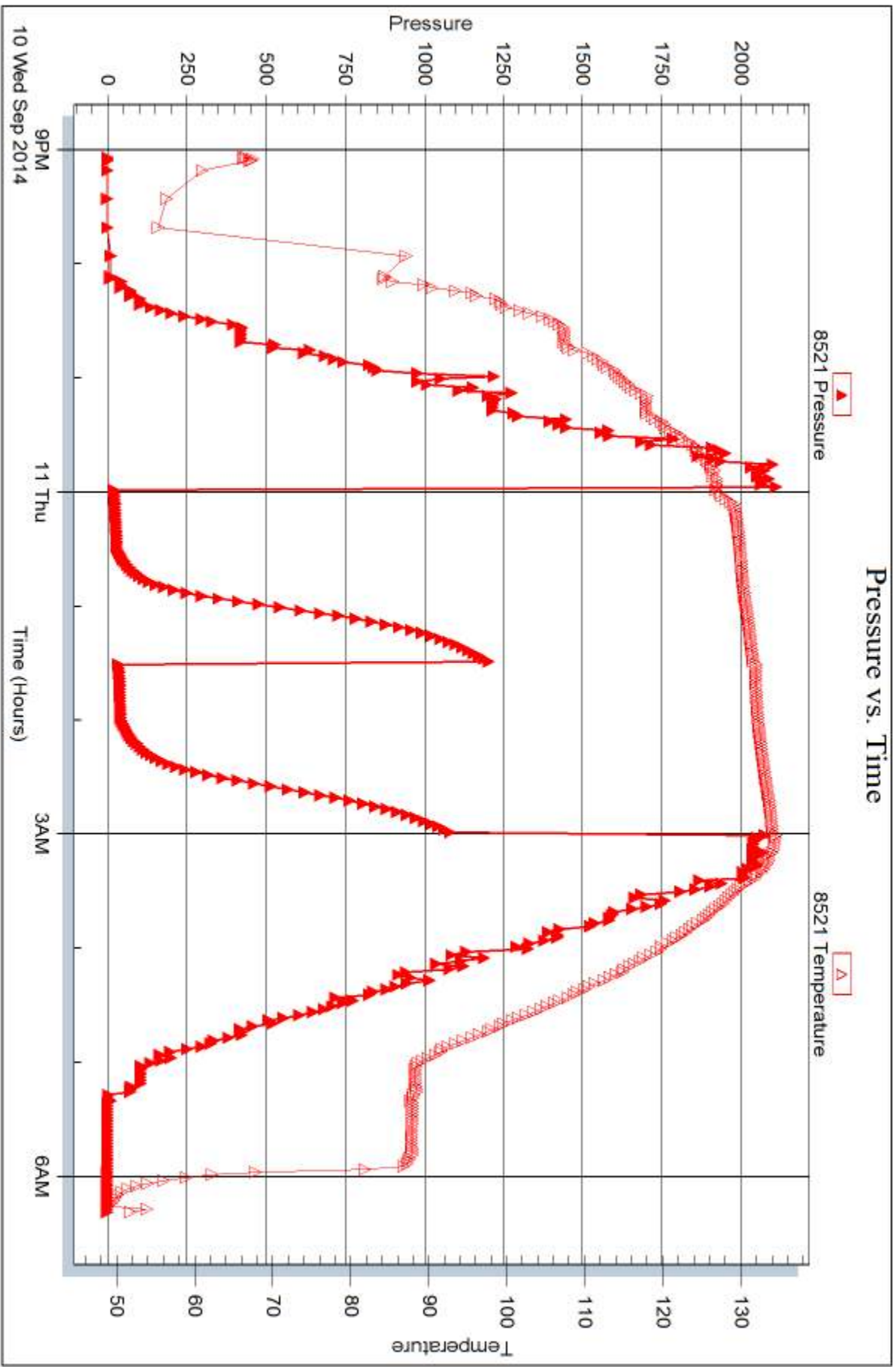
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Bash #1-29

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 60140

Printed: 2014.09.16 @ 11:39:36



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.11 @ 14:50:00

End Date: 2014.09.12 @ 00:57:00

Job Ticket #: 60141 DST #: 3

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

Printed: 2014.09.16 @ 11:39:14



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60141

DST#: 3

ATTN: Rocky MilFord

Test Start: 2014.09.11 @ 14:50:00

GENERAL INFORMATION:

Formation: **LKC "D"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:44:30
 Tester: Donovan Baumann
 Time Test Ended: 00:57:00
 Unit No: 49
 Interval: **4182.00 ft (KB) To 4240.00 ft (KB) (TVD)**
 Reference Elevations: 3216.00 ft (KB)
 Total Depth: 4240.00 ft (KB) (TVD)
 3211.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 5.00 ft

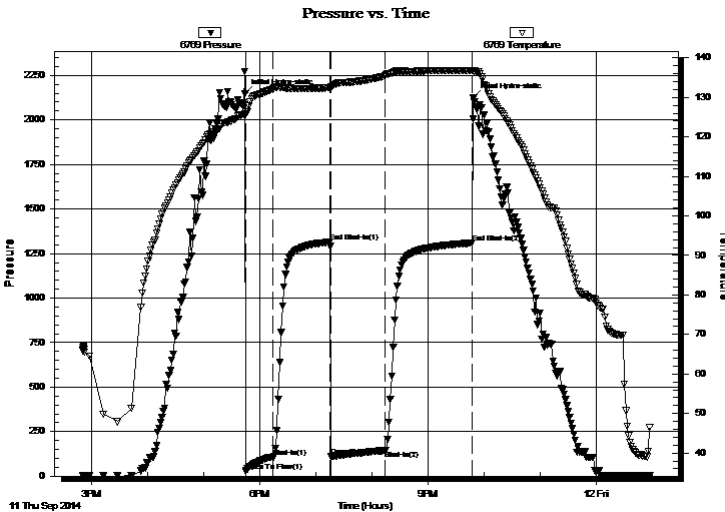
Serial #: 6769

Outside

Press@RunDepth: 145.17 psig @ 4183.00 ft (KB)
 Capacity: 8000.00 psig
 Start Date: 2014.09.11 End Date: 2014.09.12 Last Calib.: 2014.09.12
 Start Time: 14:50:05 End Time: 00:57:00 Time On Btm: 2014.09.11 @ 17:44:00
 Time Off Btm: 2014.09.11 @ 21:48:30

TEST COMMENT: 30 - IF - Surface blow built to 8 1/2"
 60 - ISI - Return built to 1/4 in 10 min then stayed
 60 - FF - Surface blow built to BOB in 24 min.
 90 - FSI - Return built to 1/4" in 8 min then stayed

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2146.45	125.73	Initial Hydro-static
1	26.99	125.62	Open To Flow (1)
30	107.67	132.24	Shut-In(1)
91	1315.20	132.43	End Shut-In(1)
92	112.55	132.71	Open To Flow (2)
150	145.17	135.55	Shut-In(2)
243	1309.58	136.84	End Shut-In(2)
245	2126.70	136.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	OCM - 60M - 40o	0.89
63.00	GOCM - 50M - 40o - 10G	0.83
50.00	GO - 90o - 10G	0.70

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60141

DST#: 3

ATTN: Rocky MilFord

Test Start: 2014.09.11 @ 14:50:00

Tool Information

Drill Pipe:	Length: 3991.00 ft	Diameter: 3.80 inches	Volume: 55.98 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 56.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4182.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 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			4160.00	
Hydraulic tool	5.00			4165.00	
Jars	5.00			4170.00	
Safety Joint	3.00			4173.00	
Packer	5.00			4178.00	27.00 Bottom Of Top Packer
Packer	4.00			4182.00	
Stubb	1.00			4183.00	
Recorder	0.00	8521	Inside	4183.00	
Recorder	0.00	6769	Outside	4183.00	
Perforations	21.00			4204.00	
Change Over Sub	1.00			4205.00	
Drill Pipe	31.00			4236.00	
Change Over Sub	1.00			4237.00	
Bullnose	3.00			4240.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60141

DST#: 3

ATTN: Rocky MilFord

Test Start: 2014.09.11 @ 14:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 76.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	OCM - 60M - 40o	0.885
63.00	GOCM - 50M - 40o - 10G	0.829
50.00	GO - 90o - 10G	0.701

Total Length: 293.00 ft Total Volume: 2.415 bbl

Num Fluid Samples: 0

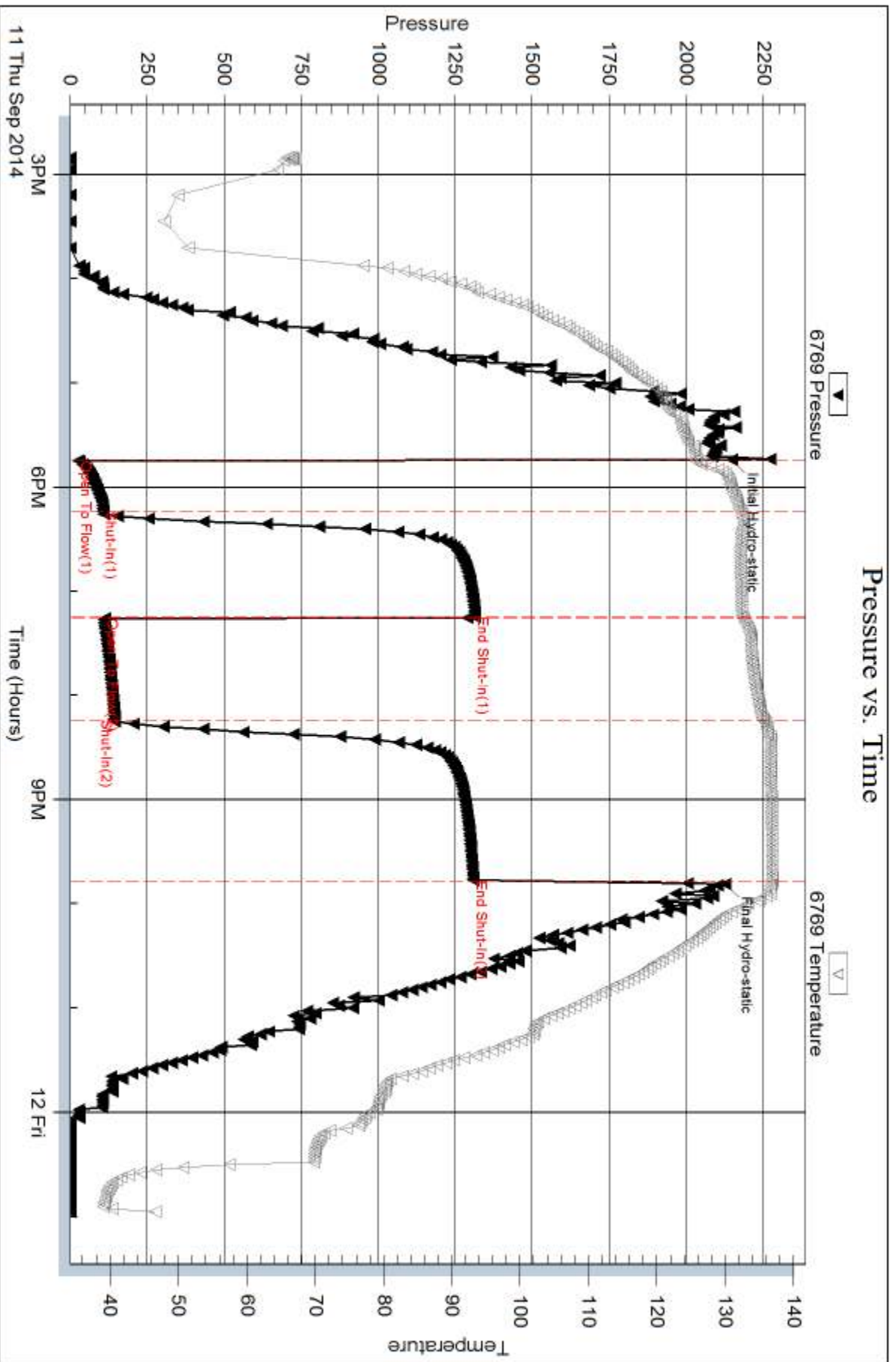
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



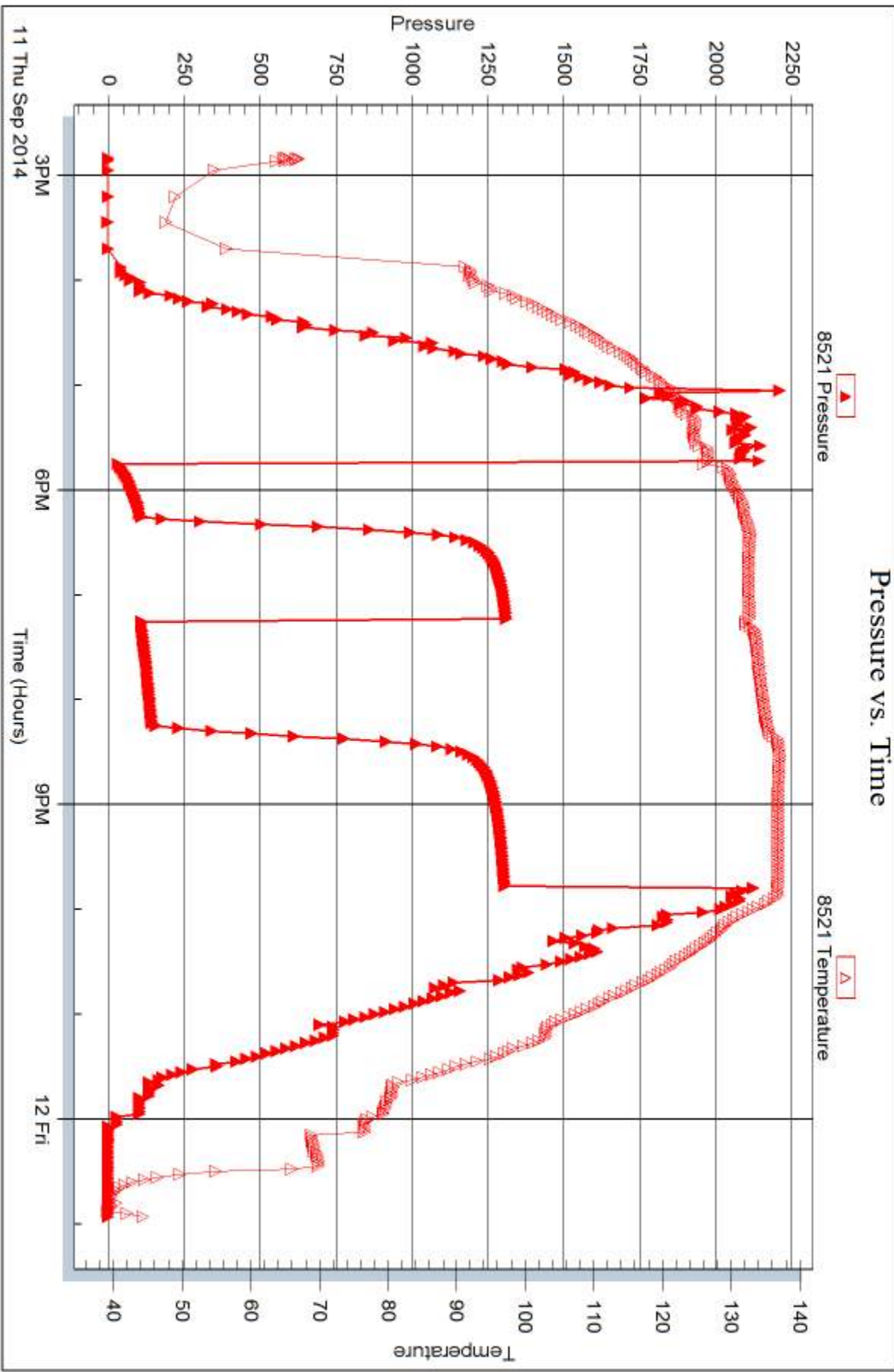
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Basin #1-29

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 60141

Printed: 2014.09.16 @ 11:39:15



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.12 @ 18:47:00

End Date: 2014.09.13 @ 03:44:00

Job Ticket #: 60142 DST #: 4

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

Printed: 2014.09.16 @ 11:38:51



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 205 N Water STE 300
 Wichita, KS 67202
 ATTN: Rocky Milford

29-1s-38w Cheyenne KS

Bash #1-29

Job Ticket: 60142

DST#: 4

Test Start: 2014.09.12 @ 18:47:00

GENERAL INFORMATION:

Formation: **LKC "E-H"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 21:43:00
 Time Test Ended: 03:44:00
 Interval: **4238.00 ft (KB) To 4345.00 ft (KB) (TVD)**
 Total Depth: 4345.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Donovan Baumann
 Unit No: 49
 Reference Elevations: 3216.00 ft (KB)
 3211.00 ft (CF)
 KB to GR/CF: 5.00 ft

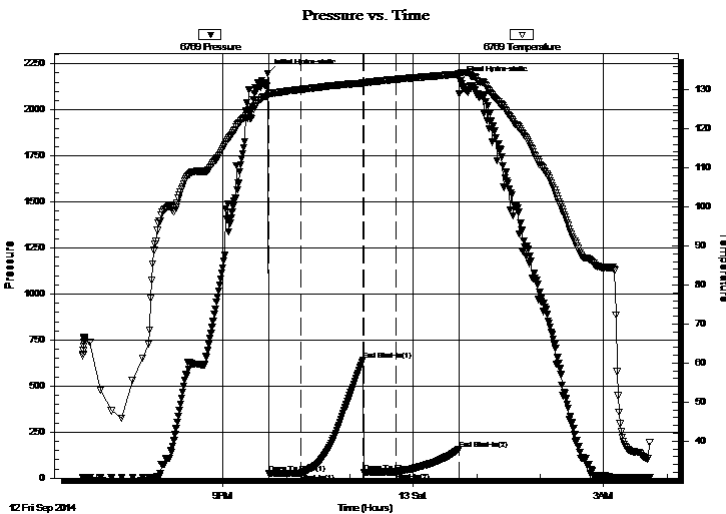
Serial #: 6769

Outside

Press@RunDepth: 34.01 psig @ 4239.00 ft (KB)
 Start Date: 2014.09.12 End Date: 2014.09.13
 Start Time: 18:47:05 End Time: 03:44:00
 Capacity: 8000.00 psig
 Last Calib.: 2014.09.13
 Time On Btm: 2014.09.12 @ 21:42:30
 Time Off Btm: 2014.09.13 @ 00:44:30

TEST COMMENT: 30 - IF - Weak surface blow built to 1"
 60 - ISI - No return
 30 - FF - No surface blow
 60 - FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2198.17	128.46	Initial Hydro-static
1	23.90	128.88	Open To Flow (1)
31	26.94	130.01	Shut-In(1)
90	642.54	131.67	End Shut-In(1)
91	32.17	131.61	Open To Flow (2)
121	34.01	132.60	Shut-In(2)
181	157.30	133.95	End Shut-In(2)
182	2156.38	134.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM - 65M - 35o	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60142

DST#: 4

ATTN: Rocky MilFord

Test Start: 2014.09.12 @ 18:47:00

Tool Information

Drill Pipe:	Length: 4054.00 ft	Diameter: 3.80 inches	Volume: 56.87 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	68000.00 lb
			<u>Total Volume: 57.78 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4238.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	107.00 ft				
Tool Length:	134.00 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			4216.00	
Hydraulic tool	5.00			4221.00	
Jars	5.00			4226.00	
Safety Joint	3.00			4229.00	
Packer	5.00			4234.00	27.00 Bottom Of Top Packer
Packer	4.00			4238.00	
Stubb	1.00			4239.00	
Recorder	0.00	8521	Inside	4239.00	
Recorder	0.00	6769	Outside	4239.00	
Perforations	38.00			4277.00	
Change Over Sub	1.00			4278.00	
Drill Pipe	63.00			4341.00	
Change Over Sub	1.00			4342.00	
Bullnose	3.00			4345.00	107.00 Bottom Packers & Anchor

Total Tool Length: 134.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60142

DST#: 4

ATTN: Rocky MilFord

Test Start: 2014.09.12 @ 18:47:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 4.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM - 65M - 35o	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

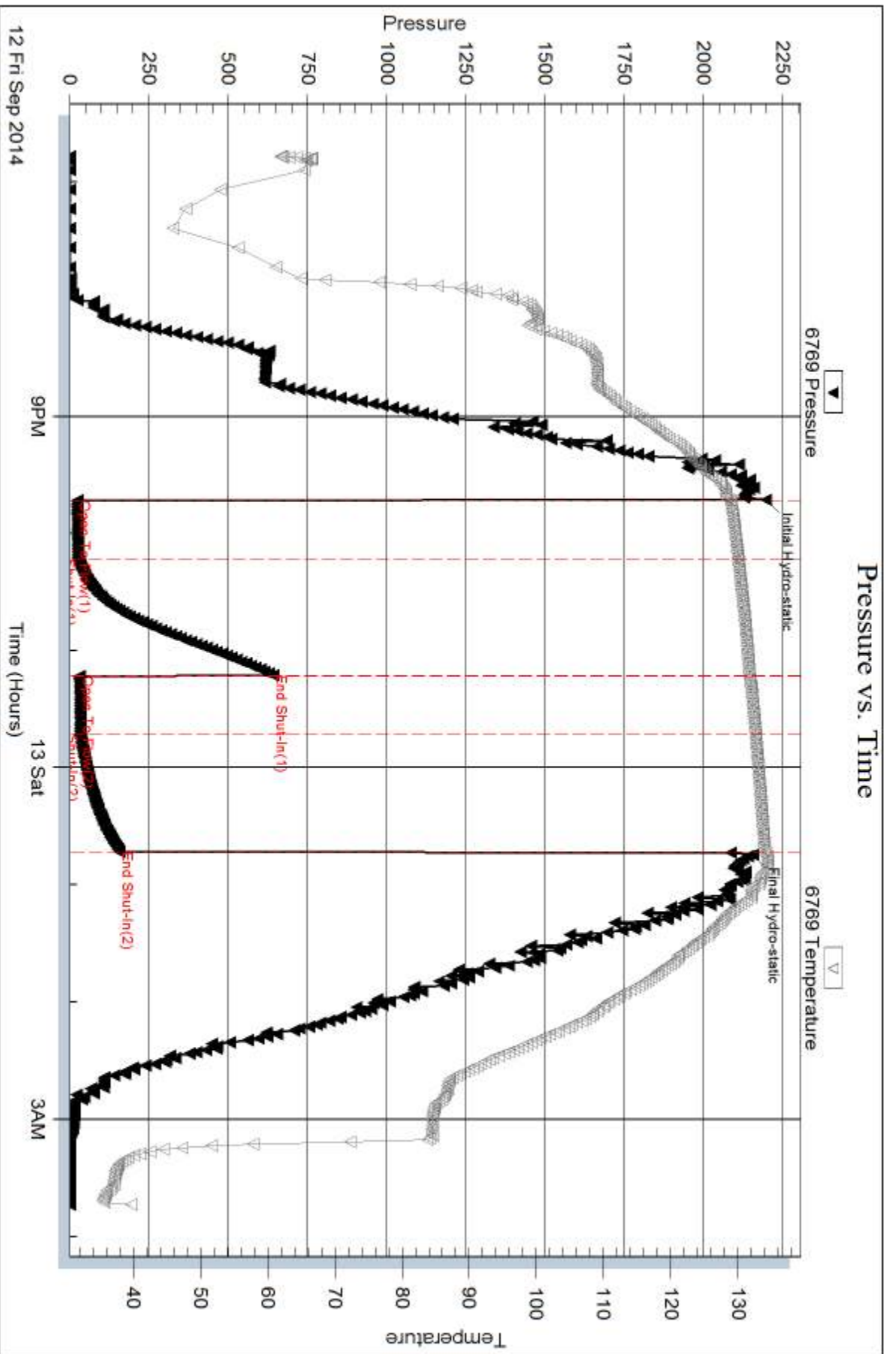
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



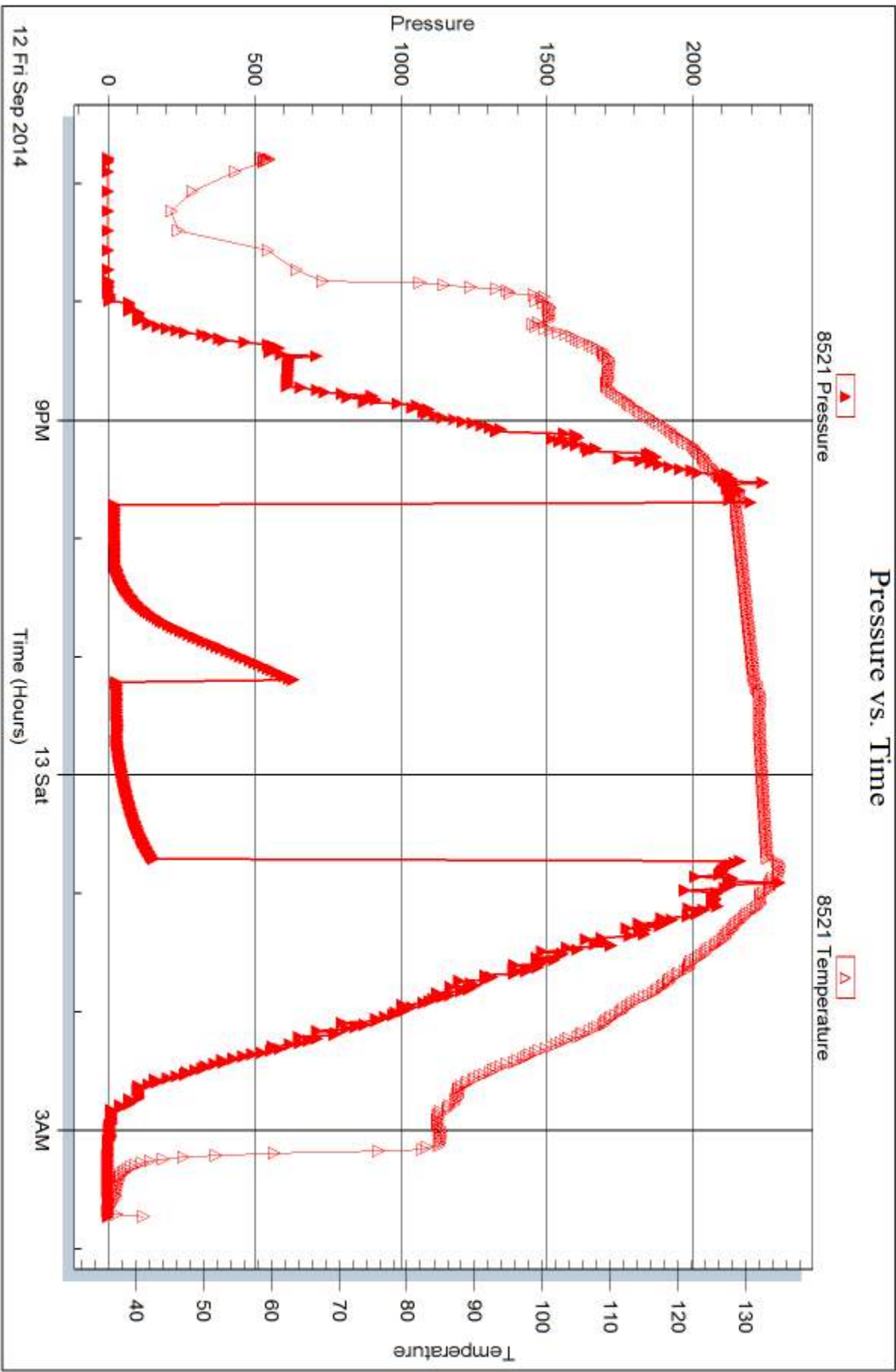
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Basin #1-29

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 60142

Printed: 2014.09.16 @ 11:38:53



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.13 @ 17:00:00

End Date: 2014.09.14 @ 01:22:30

Job Ticket #: 60160 DST #: 5

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

Printed: 2014.09.16 @ 11:38:27



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60160

DST#: 5

ATTN: Rocky MilFord

Test Start: 2014.09.13 @ 17:00:00

GENERAL INFORMATION:

Formation: **LKC "J--L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:53:30

Time Test Ended: 01:22:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

Interval: 4327.00 ft (KB) To 4448.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4448.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6769 Outside

Press@RunDepth: 51.41 psig @ 4328.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.13

End Date:

2014.09.14

Last Calib.: 2014.09.14

Start Time: 17:00:05

End Time:

01:22:29

Time On Btm: 2014.09.13 @ 19:53:00

Time Off Btm: 2014.09.13 @ 22:56:30

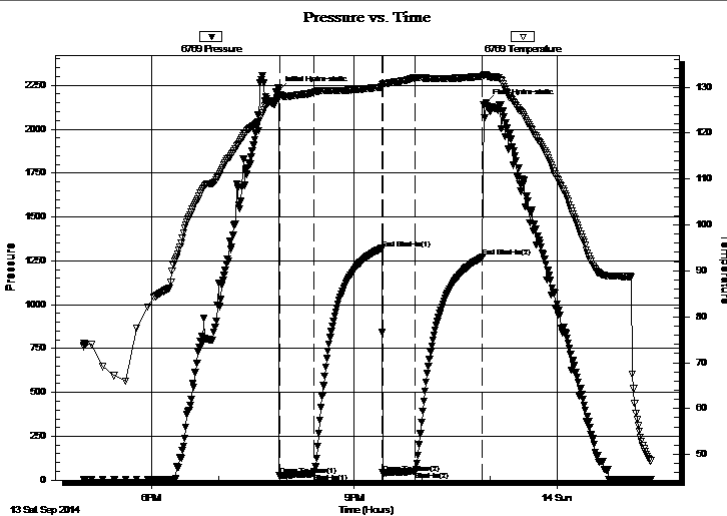
TEST COMMENT: 30-IF- Blow built to 1"

60-IS- No return

30-FF- No blow

60-FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2219.31	128.06	Initial Hydro-static
1	25.04	127.83	Open To Flow (1)
31	37.20	128.85	Shut-In(1)
91	1320.85	129.97	End Shut-In(1)
92	41.13	130.48	Open To Flow (2)
121	51.41	132.00	Shut-In(2)
181	1270.49	132.32	End Shut-In(2)
184	2148.14	132.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%m	0.05

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.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60160

DST#: 5

ATTN: Rocky MilFord

Test Start: 2014.09.13 @ 17:00:00

Tool Information

Drill Pipe:	Length: 4116.00 ft	Diameter: 3.80 inches	Volume: 57.74 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	74000.00 lb
			<u>Total Volume: 58.65 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	2.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4327.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	121.00 ft				
Tool Length:	148.00 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			4305.00	
Hydraulic tool	5.00			4310.00	
Jars	5.00			4315.00	
Safety Joint	3.00			4318.00	
Packer	5.00			4323.00	27.00 Bottom Of Top Packer
Packer	4.00			4327.00	
Stubb	1.00			4328.00	
Recorder	0.00	8521	Inside	4328.00	
Recorder	0.00	6769	Outside	4328.00	
Perforations	20.00			4348.00	
Change Over Sub	1.00			4349.00	
Drill Pipe	95.00			4444.00	
Change Over Sub	1.00			4445.00	
Bullnose	3.00			4448.00	121.00 Bottom Packers & Anchor

Total Tool Length: 148.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60160

DST#: 5

ATTN: Rocky MilFord

Test Start: 2014.09.13 @ 17:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 4.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	mud 100%m	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

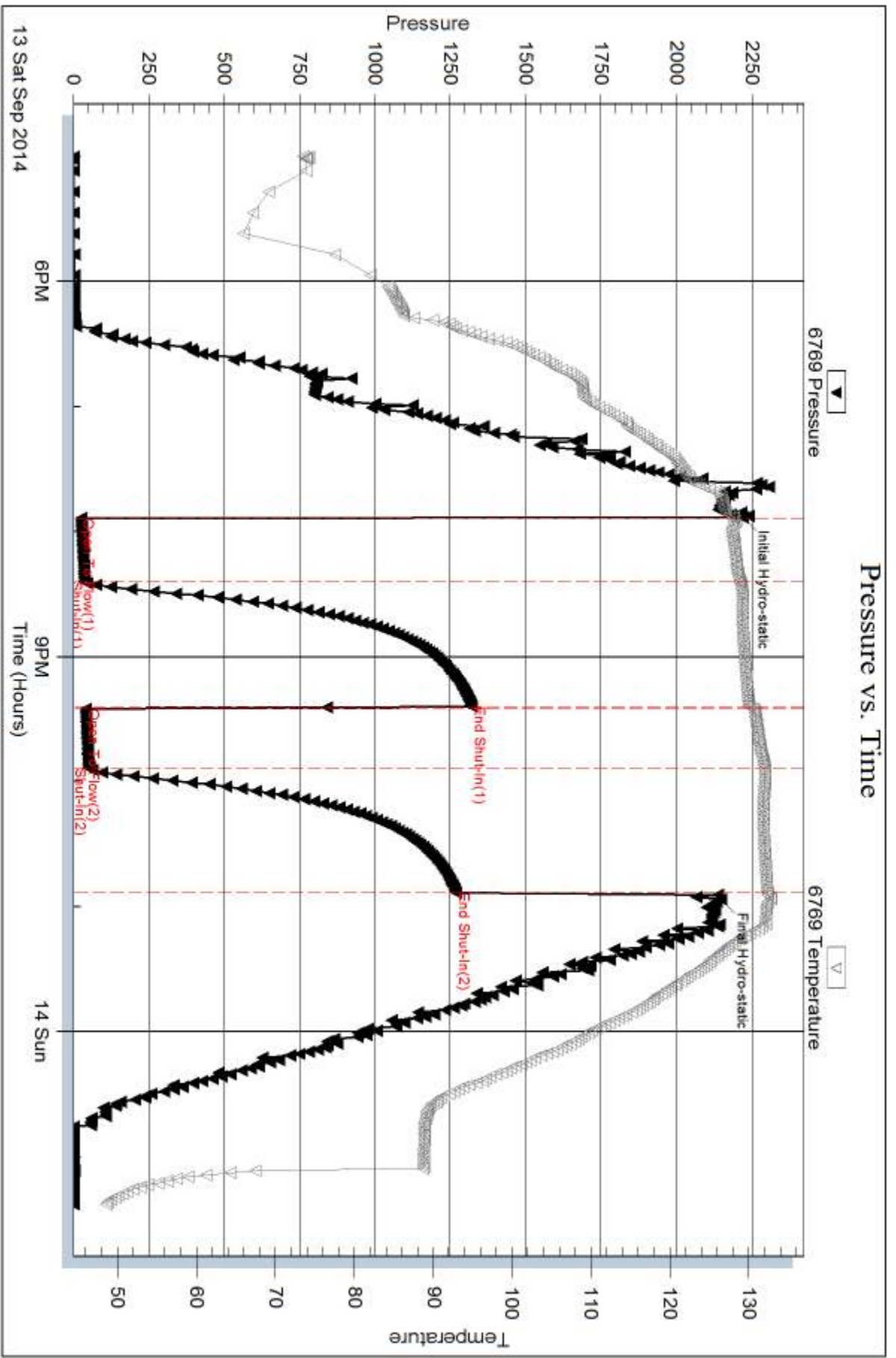
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



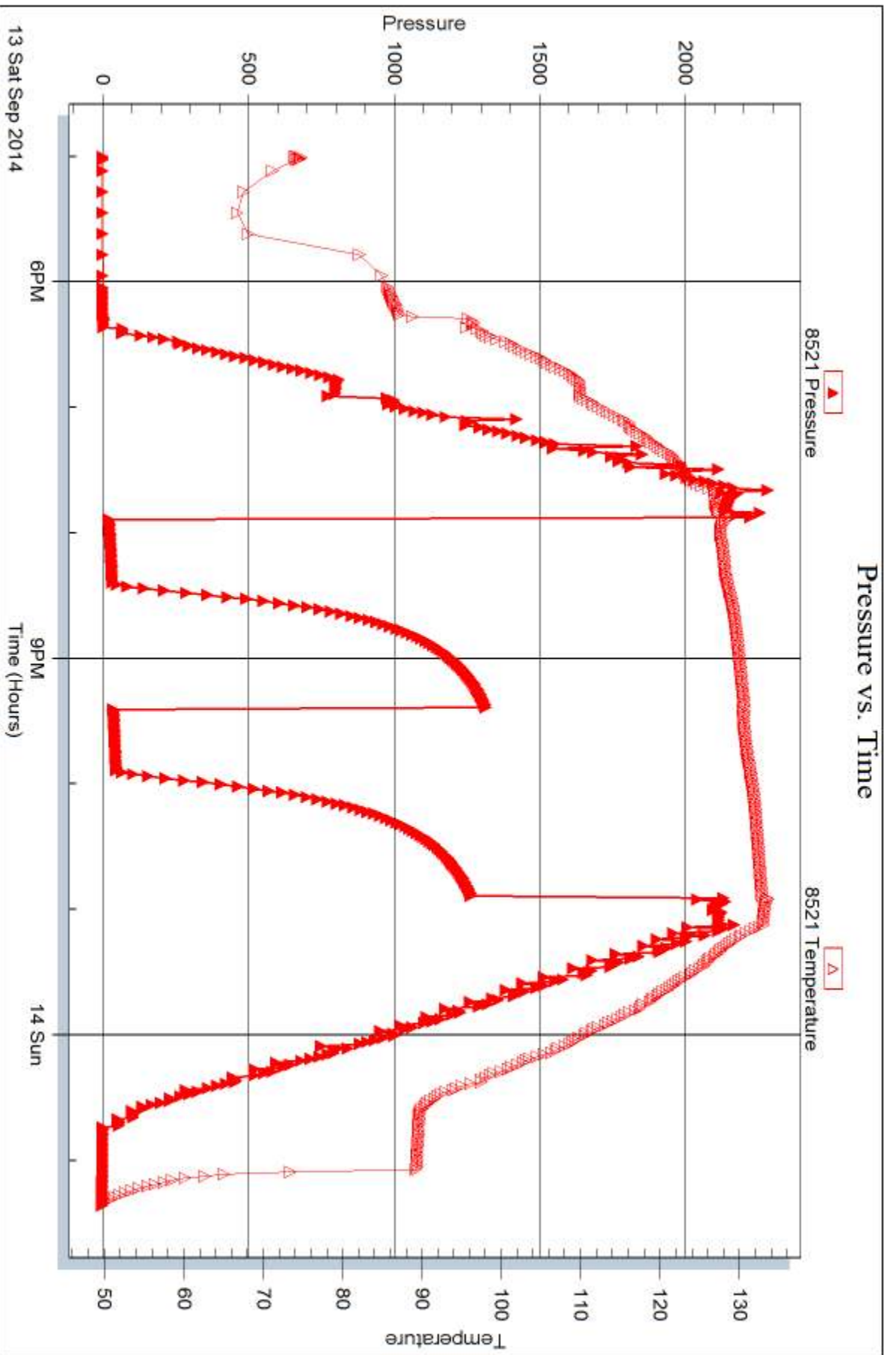
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Basin #1-29

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 60160

Printed: 2014.09.16 @ 11:38:28



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

205 N Water STE 300
Wichita, KS 67202

ATTN: Rocky MilFord

Bash #1-29

29-1s-38w Cheyenne KS

Start Date: 2014.09.14 @ 21:00:00

End Date: 2014.09.15 @ 05:14:00

Job Ticket #: 60161 DST #: 6

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

Printed: 2014.09.16 @ 11:37:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60161

DST#: 6

ATTN: Rocky MilFord

Test Start: 2014.09.14 @ 21:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 05:14:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

Interval: 4547.00 ft (KB) To 4596.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4596.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6769 Outside

Press@RunDepth: 26.61 psig @ 4548.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.14

End Date:

2014.09.15

Last Calib.: 2014.09.15

Start Time: 21:00:05

End Time:

05:13:59

Time On Btm: 2014.09.14 @ 23:40:30

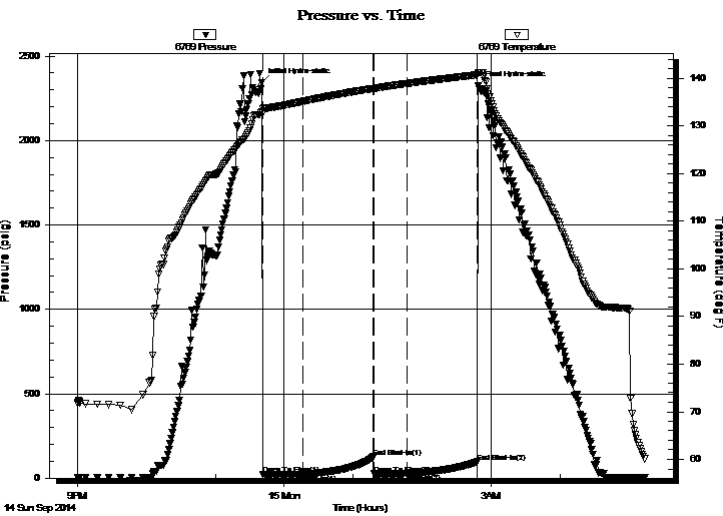
Time Off Btm: 2014.09.15 @ 02:48:30

TEST COMMENT: 30-IF- Blow built to 1" died back to 1/4"

60-IS- No return

30-FF- No blow

60-FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2344.54	133.00	Initial Hydro-static
1	21.12	132.72	Open To Flow (1)
36	24.13	135.17	Shut-In(1)
97	125.34	137.90	End Shut-In(1)
98	25.23	137.85	Open To Flow (2)
127	26.61	138.92	Shut-In(2)
187	95.79	140.73	End Shut-In(2)
188	2323.69	141.09	Final Hydro-static

Recovery

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

* 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.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60161

DST#: 6

ATTN: Rocky MilFord

Test Start: 2014.09.14 @ 21:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:41:00

Time Test Ended: 05:14:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

Interval: 4547.00 ft (KB) To 4596.00 ft (KB) (TVD)

Reference Elevations: 3216.00 ft (KB)

Total Depth: 4596.00 ft (KB) (TVD)

3211.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8521 Inside

Press@RunDepth: psig @ 4548.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.09.14

End Date:

2014.09.15

Last Calib.:

2014.09.15

Start Time: 21:00:05

End Time:

05:13:29

Time On Btm:

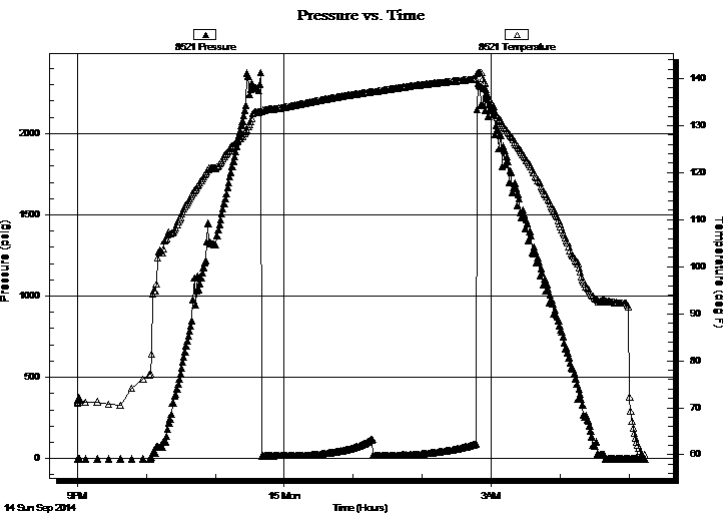
Time Off Btm:

TEST COMMENT: 30-IF- Blow built to 1" died back to 1/4"

60-ISI- No return

30-FF- No blow

60-FSI- No return



PRESSURE SUMMARY

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

Recovery

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

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60161

DST#: 6

ATTN: Rocky MilFord

Test Start: 2014.09.14 @ 21:00:00

Tool Information

Drill Pipe:	Length: 4339.00 ft	Diameter: 3.80 inches	Volume: 60.86 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 61.77 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4547.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 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
Shut In Tool	5.00			4525.00	
Hydraulic tool	5.00			4530.00	
Jars	5.00			4535.00	
Safety Joint	3.00			4538.00	
Packer	5.00			4543.00	27.00 Bottom Of Top Packer
Packer	4.00			4547.00	
Stubb	1.00			4548.00	
Recorder	0.00	8521	Inside	4548.00	
Recorder	0.00	6769	Outside	4548.00	
Perforations	12.00			4560.00	
Change Over Sub	1.00			4561.00	
Drill Pipe	31.00			4592.00	
Change Over Sub	1.00			4593.00	
Bullnose	3.00			4596.00	49.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-38w Cheyenne KS

205 N Water STE 300
Wichita, KS 67202

Bash #1-29

Job Ticket: 60161

DST#: 6

ATTN: Rocky MilFord

Test Start: 2014.09.14 @ 21:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 78.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

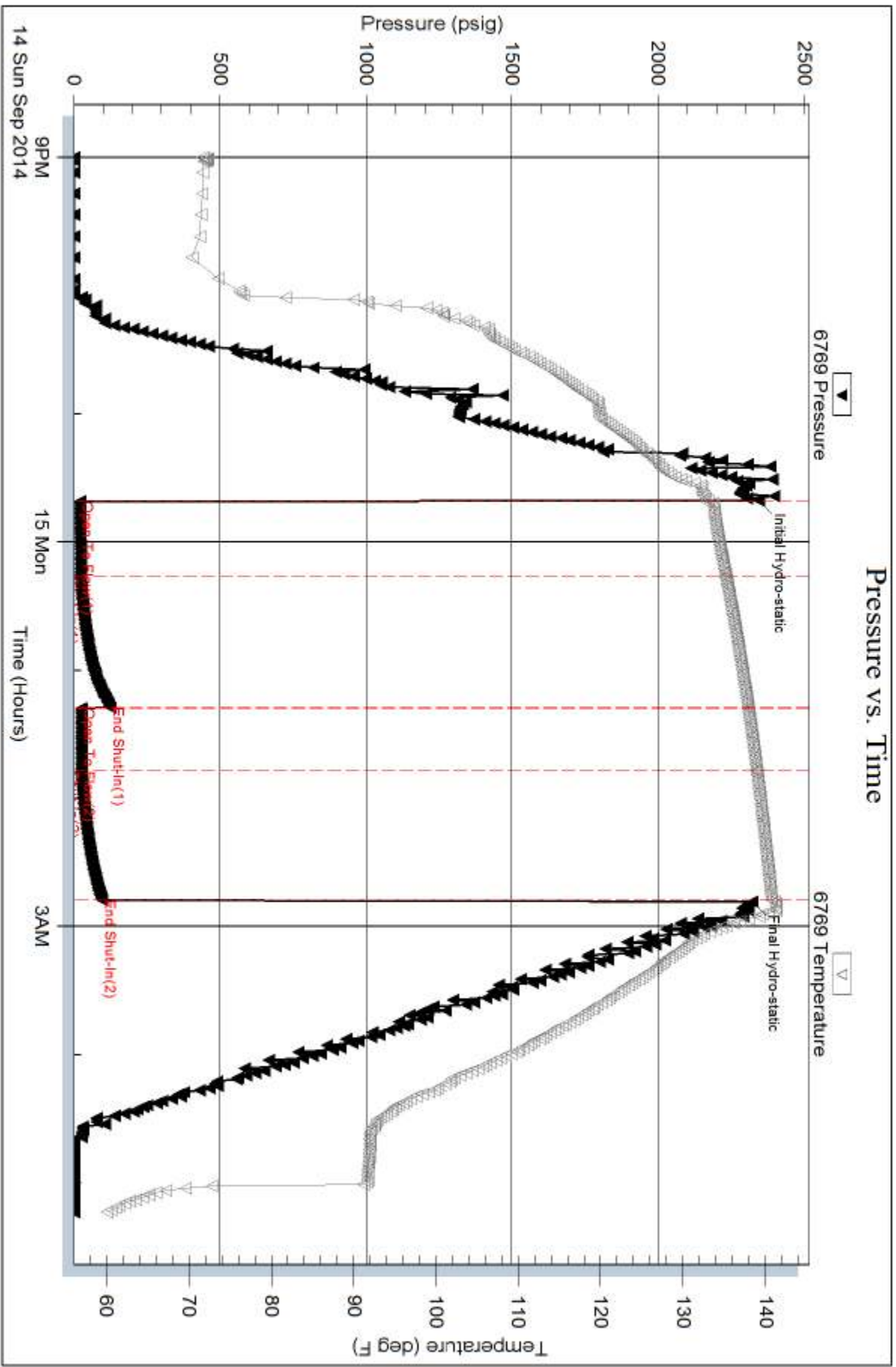
Recovery Comments:

Serial #: 6769

Outside Murfin Drilling Co., Inc.

Bash #1-29

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 60161

Printed: 2014.09.16 @ 11:37:58

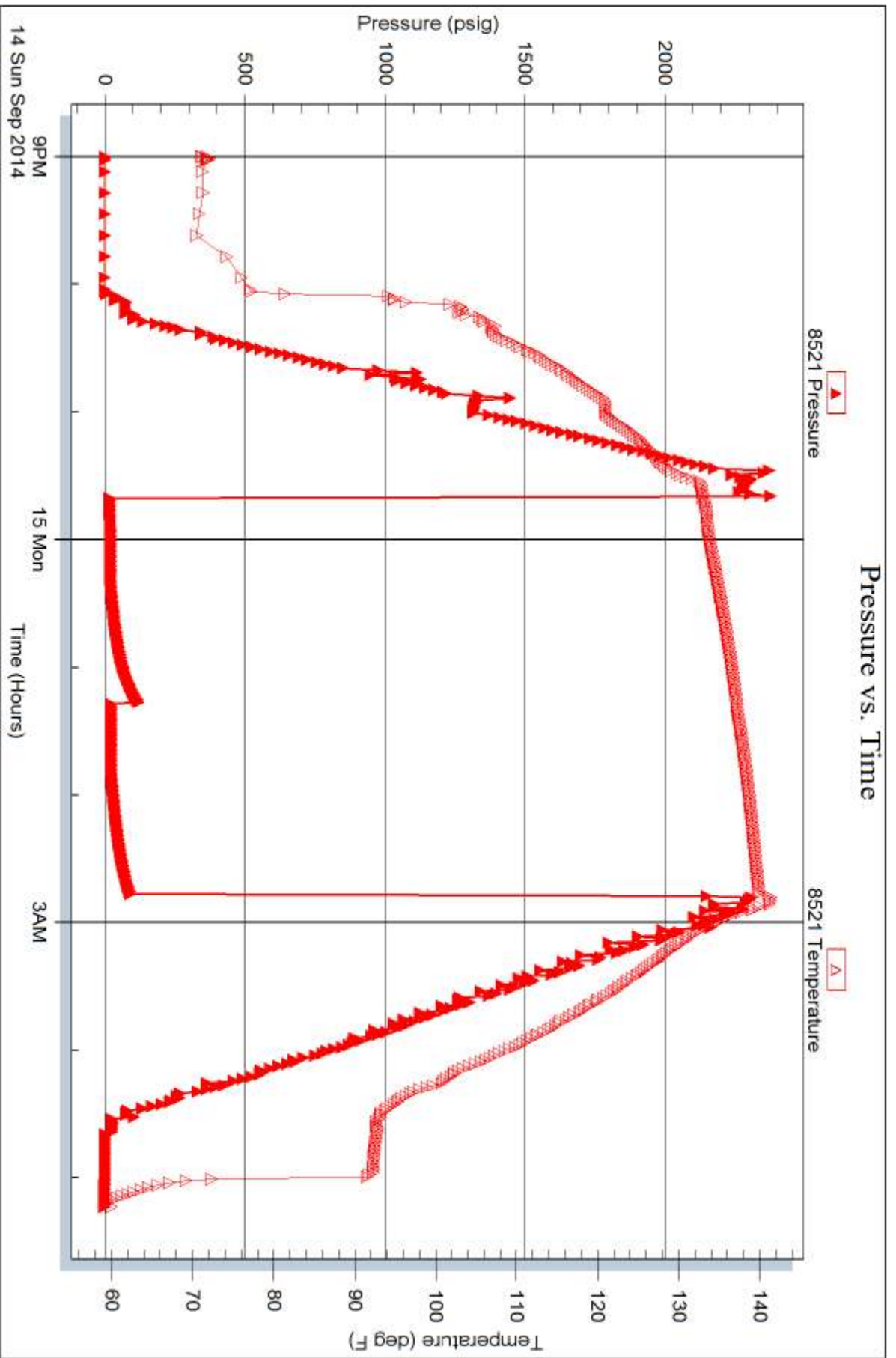
Serial #: 8521

Inside

Murfin Drilling Co., Inc.

Bash #1-29

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60139**

4/10

Well Name & No. Bash # 1-29 Test No. 1 Date 9-9-14
 Company Murfin Drilling CO., Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4055' - 4120' Zone Tested oread
 Anchor Length 65' Drill Pipe Run 3864 Mud Wt. 9.4
 Top Packer Depth 4050' Drill Collars Run 186 Vis 58
 Bottom Packer Depth 4055' Wt. Pipe Run 0 WL 9.2
 Total Depth 4120' Chlorides 600 ppm System LCM 4#

Blow Description IF - No surface blow
ISI - No return
FF - No surface blow
FSI - No return

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

Rec Total 5 BHT 134 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2134 Test 1250 T-On Location 7:15pm
 (B) First Initial Flow 21 Jars 250 T-Started 10:26pm
 (C) First Final Flow 23 Safety Joint 75 T-Open 1:21am
 (D) Initial Shut-In 40 Circ Sub N/C T-Pulled 4:21am
 (E) Second Initial Flow 24 Hourly Standby _____ T-Out 7:36am
 (F) Second Final Flow 25 Mileage 75 150rt 232.50 Comments _____
 (G) Final Shut-In 36 Sampler _____
 (H) Final Hydrostatic 1872 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Shale Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Packer _____ Extra Copies _____
 Final Flow 30 Extra Recorder _____ Sub Total 0
 Final Shut-In 60 Day Standby _____ Total 1807.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1807.50

Approved By _____ Our Representative Denovan Beumann

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. 60140

4/10

Well Name & No. Bash # 1-29 Test No. 2 Date 9-10-14
 Company Murfin Drilling Co., Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4121'-4209' Zone Tested Douglas sand - LKC "A"
 Anchor Length 88' Drill Pipe Run 3928' Mud Wt. 8.8
 Top Packer Depth 4116' Drill Collars Run 186 Vis 111
 Bottom Packer Depth 4121' Wt. Pipe Run Ø WL 7.2
 Total Depth 4209' Chlorides 1,000 ppm System LCM #4

Blow Description IF - weak surface blow dead in 2 min.
ISI - NO return
FF - NO surface blow
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>0cm</u>		<u>35</u>		<u>65</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

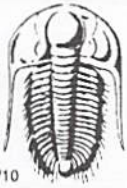
Rec Total 60 BHT 134 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2115</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>7:18p.m.</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>9:04p.m.</u>
(C) First Final Flow <u>33</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:59p.m.</u>
(D) Initial Shut-In <u>1207</u>	<input checked="" type="checkbox"/> Circ Sub <u>n/c</u>	T-Pulled <u>2:59am</u>
(E) Second Initial Flow <u>41</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:20am</u>
(F) Second Final Flow <u>45</u>	<input checked="" type="checkbox"/> Mileage <u>26 R/T</u> 232.50	Comments _____
(G) Final Shut-In <u>1091</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2081</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>1807.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1807.50</u>	

Approved By _____ Our Representative Bonnie Braunmann

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. 60141

Well Name & No. Bash # 1-29 Test No. 3 Date 9-11-14
 Company Murfin Drilling Co., Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 15 Rge. 38W Co. Cheyenne State KS

Interval Tested 4182' - 4240' Zone Tested LKC "D"
 Anchor Length 58' Drill Pipe Run 3991 Mud Wt. 9.2
 Top Packer Depth 4177' Drill Collars Run 186 Vis 76
 Bottom Packer Depth 4182' Wt. Pipe Run 0 WL 8
 Total Depth 4240' Chlorides 800 ppm System LCM #3

Blow Description IF - Surface blow built to 8 1/2 in 30 min
ISI - Return built to 1/4 in 10 min. then stayed
FF - Surface blow built to BoB in 24 min.
FSI - Return built to 1/4 in 8 min. then stayed

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>gassy oil</u>	<u>10</u>	<u>90</u>		
<u>63</u>	<u>OCM</u>	<u>10</u>	<u>40</u>		<u>50</u>
<u>180</u>	<u>OCM</u>		<u>40</u>		<u>60</u>

Rec Total 293 BHT 137 Gravity 28 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2146 Test 1250 T-On Location 1:03pm
 (B) First Initial Flow 27 Jars 250 T-Started 2:50pm
 (C) First Final Flow 108 Safety Joint 75 T-Open 5:44pm
 (D) Initial Shut-In 1315 Circ Sub n/c T-Pulled 9:44pm
 (E) Second Initial Flow 113 Hourly Standby _____ T-Out 12:57am
 (F) Second Final Flow 145 Mileage 26 R/T 232.56 comments _____
 (G) Final Shut-In 1310 Sampler _____
 (H) Final Hydrostatic 2127 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 1807.50
 Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative Honorable Dr. [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60142**

4/10

Well Name & No. Bash #1-29 Test No. 4 Date 9-12-14
 Company Murfin Drilling CO, Inc. Elevation 3216 KB 3211 GL
 Address 250 N Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 1S Rge. 39W Co. Cheyenne State KS

Interval Tested 4238' - 4345' Zone Tested LKC "E-H"
 Anchor Length 107' Drill Pipe Run 4054' Mud Wt. ~~8.8~~ 9.2
 Top Packer Depth 4233' Drill Collars Run 186 Vis 58
 Bottom Packer Depth 4238' Wt. Pipe Run Ø WL 8.4
 Total Depth 4345' Chlorides 600 ppm System LCM #2

Blow Description IF - weak surface blow built to 1" in 30 min.
ISI - No return
FF - No surface blow
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OCM</u>	<u>35</u>		<u>65</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 10 BHT 157 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2198 Test 1250 T-On Location 4:40pm
 (B) First Initial Flow 24 Jars 250 T-Started 6:47pm
 (C) First Final Flow 27 Safety Joint 75 T-Open 9:42pm
 (D) Initial Shut-In 643 Circ Sub n/c T-Pulled 12:42am
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 3:44am
 (F) Second Final Flow 34 Mileage 26R/T 232.50 Comments _____
 (G) Final Shut-In 157 Sampler _____
 (H) Final Hydrostatic 2156 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 2057.50
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 2057.50

Approved By _____

Our Representative Donovan Newman



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60160**

Well Name & No. Bash #1-29 Test No. 5 Date 9-13-2014
 Company Murfin Drilling Co, Inc. Elevation 3216 KB 3211 GL
 Address 250 N water STE. 300 Wichita KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 1S Rge. 38 W Co. Cheyenne State KS

Interval Tested 4327 - 4448 Zone Tested LKC "J-L"
 Anchor Length 121 Drill Pipe Run 4116 Mud Wt. 9.2
 Top Packer Depth 4323 Drill Collars Run 186 Vis 61
 Bottom Packer Depth 4327 Wt. Pipe Run 0 WL 8.4
 Total Depth 4448 Chlorides 600 ppm System LCM 2.0

Blow Description IF - Blow burst to 1"
ISF - NO return
FF - NO blow
FSE - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

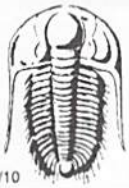
Rec Total 10 BHT 132 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2219 Test 1250 T-On Location 16:30 9-13
 (B) First Initial Flow 25 Jars 250 T-Started 17:00 9-13
 (C) First Final Flow 37 Safety Joint 75 T-Open 19:53 9-13
 (D) Initial Shut-In 1321 Circ Sub _____ T-Pulled 22:53 9-13
 (E) Second Initial Flow 41 Hourly Standby _____ T-Out 01:22 9-14
 (F) Second Final Flow 51 Mileage 148 RT 232.50 Comments _____
 (G) Final Shut-In 1270 Sampler _____
 (H) Final Hydrostatic 2148 Straddle _____ Ruined Shale Packer _____

Initial Open 30 Extra Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Recorder _____ Extra Copies _____
 Final Flow 30 Day Standby _____ Sub Total 0
 Final Shut-In 60 Accessibility _____ Total 2057.50
 Sub Total 2057.50 MP/DST Disc't _____

Approved By Rocky Milford Our Representative Robert Zocher

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60161

Well Name & No. Bash # 1-29 Test No. 6 Date 9-14-2014
 Company Murfin Drilling Co, Inc Elevation 326 KB 3211 GL
 Address 250 A water STE, 300 Wichita KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 29 Twp. 1S Rge. 38W Co. cheyenne State KS

Interval Tested 4547 - 4596 Zone Tested Pawnee
 Anchor Length 49 Drill Pipe Run 4339 Mud Wt. 9.3
 Top Packer Depth 4543 Drill Collars Run 186 Vis 78
 Bottom Packer Depth 4547 Wt. Pipe Run 0 WL 7.2
 Total Depth 4596 Chlorides 700 ppm System LCM 4.0

Blow Description IF - Blow built to 1" died back to 1/4"
ISI - NO return
FF - NO blow
FSI - NO return

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

Rec Total 5 BHT 140 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2344 Test 1250 T-On Location 20:30 9-14
 (B) First Initial Flow 21 Jars 250 T-Started 21:00 9-14
 (C) First Final Flow 24 Safety Joint 75 T-Open 23:41 9-14
 (D) Initial Shut-In 125 Circ Sub _____ T-Pulled 02:47 9-15
 (E) Second Initial Flow 25 Hourly Standby _____ T-Out 05:14 9-15
 (F) Second Final Flow 26 Mileage 148 RT 232.50 Comments _____
 (G) Final Shut-In 96 Sampler _____
 (H) Final Hydrostatic 2323 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 2057.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 2057.50

Approved By Rocky Milford Our Representative Robert Zoolow
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Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGISTS' REPORT

DRILLING TIME AND SAMPLE LOGS

OPERATOR: **Murfin Drilling Company, Inc.**
 LEASE: **Bush #41-29**
 LOC SPOT: **15 S & 140 W of C N2 SE NE**

LOC FOOTAGE: **1665' FNL 800' FEL**
 SEC: **29** TWP: **1S** RNG: **38W**
 COUNTY: **Cheyenne** STATE: **Kansas**

APR: **15-023 21409-00-00**
 CONTRACTOR: **Murfin Drilling Co., Inc.** FIG. NO. **7**
 DRILLING STARTED: **9/5/2014** COMPLETED: **9/16/2014**
 MOD. DIRECTION: **3/21E** MOD. TYPE: **Gravel**
 DRILLING TIME (MIN): **3/250** TO: **RID**
 SAMPLES SAVED FROM: **3/350** TO: **RID**
 SAMPLES EXAMINED FROM: **3/350** TO: **RID**
 GEOLOGICAL SUPERVISION FROM: **3/312** TO: **RID**

MEASUREMENTS:
 SURFACE: **8 5/8" @ 19'**
 W/ 225 sacks cement
 CONDUIT:
 CASING RECORD

ELEVATIONS
 KB: **3 216'**
 GL: **3 211'**

FORMATION
 NAME: TOP DATUM TOP DATUM

LOG
 DATE TIME DATE TIME

STONE CORRAL
 Nava 3165' -399 3164' -398
 Oread 4094' -878 4092' -876
 Loring 4164' -948 4162' -946
 B/KC 4443' -1227 4441' -1225
 Pawnee 4571' -1355 4568' -1352
 Cherokee 4566' -1440 4563' -1437

MISSOURI
 Total Depth: 5000' -1786 5000' -1882

SOIL SAMPLES
 Porosity Log
 Microresistivity Log
 Borehole Compartmented

SOIL SAMPLES
 29

SOIL SAMPLES
 29

SOIL SAMPLES
 29

SOIL SAMPLES
 29

SOIL SAMPLES
 29

DATE	7:00 AM DEPTH	REMARKS
9-5-14	0'	Spud @ 5:30 pm. Plug down @ 11:30 pm. Dev: 0.5' @ 219'
9-6-14	219'	Cut 219' in last 24 hrs. Drilled out plug @ 7:30 am w/ PDC bit
9-7-14	2,530'	Cut 2,311' in last 24 hrs; 22.5 hrs drlg. Bit trip @ 3512' (ran button bit)
9-8-14	3,620'	Cut 1,090' in last 24 hrs; 16.75 hrs drlg.
9-9-14	4,020'	Cut 400' in last 24 hrs; 22 hrs drlg. DST #1 @ 4120'
9-10-14	4,120'	Cut 100' in last 24 hrs; 6.5 hrs drlg. DST #2 @ 4209'
9-11-14	4,209'	Cut 89' in last 24 hrs; 5.5 hrs drlg. DST #3 @ 4240'
9-12-14	4,267'	Cut 58' in last 24 hrs; 3.75 hrs drlg. DST #4 @ 4345'
9-13-14	4,345'	Cut 78' in last 24 hrs; 5 hrs drlg. DST #5 @ 4448'
9-14-15	4,465'	Cut 120' in last 24 hrs; 7.5 hrs drlg. DST #6 @ 4596'
9-15-14	4,596'	Cut 131' in last 24 hrs; 7.75 hrs drlg. RTD 5000' @ 6:40 am on 9-16-14
9-16-14	5,000'	Cut 404' in last 24 hrs; 19 hrs drlg. Ran production casing.

Remarks

The electric log measurements correlate from 1' to 3' lower to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

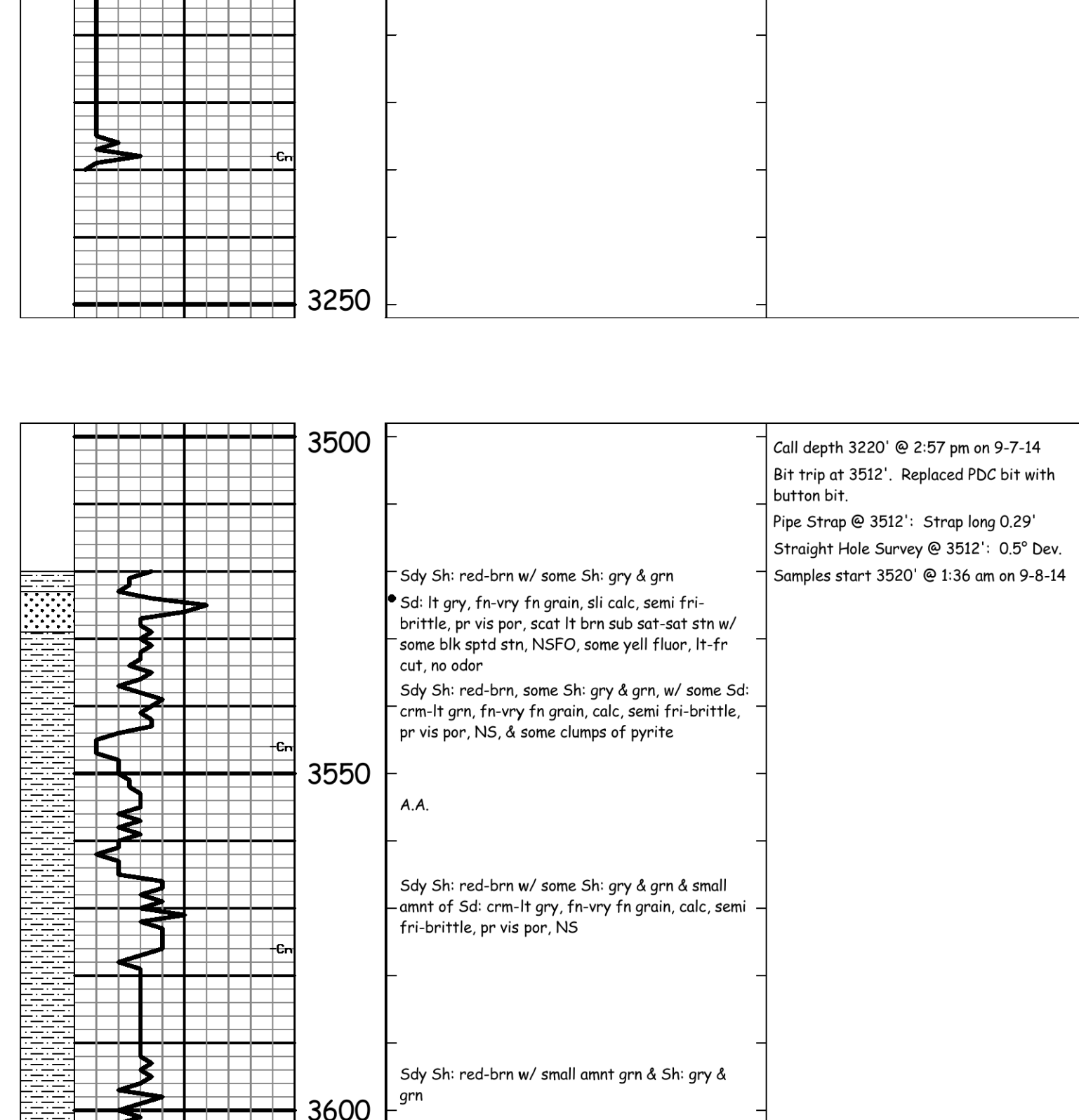
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford

Drill Stem Test Charts

Drill Stem Test by Trilobite Testing, Inc.



LITH.	DRILL TIME (MIN/FT)	DEPTH	SAMPLE DESCRIPTIONS	REMARKS
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Stone Corral 3168' (+48) EL

B/Stone Corral 3203' (+13) EL

3500

Call depth 3220' @ 2:57 pm on 9-7-14
 Bit trip at 3512'. Replaced PDC bit with button bit.
 Pipe Strap @ 3512': Strap loop 0.29'
 Straight Hole Survey @ 3512': 0.5' Dev.
 Samples start 3520' @ 1:36 am on 9-8-14

Sdy Sh: red-brn w/ some Sh: gry & gm
 Sd: lt gry, fn-vry fn grain, sli calc, semi fri-brITTLE, pr vis por, scat lt brn sub-sat-stn w/ some blk spdt-stn, NSFO, some yell flour, lt-fr color, no odor
 Sdy Sh: red-brn, some Sh: gry & gm, w/ some Sd: crm-lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, NS, & some clumps of pyrite

A.A.
 Sdy Sh: red-brn w/ some Sh: gry & gm & small amt of Sd: crm-lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, NS

Sdy Sh: red-brn w/ small amt of gm & Sh: gry & gm
 LS: crm, fxln, fos, mostly sub chky w/ some chky & some prtylty dns, pr por, NS
 Sdy Sh: red-brn w/ some Sd: crm, fn-vry fn grain, sli calc, soft-semi brittle, pr vis por, NS

Sdy Sh: red-brn w/ some Sh: gry & gm
 A.A.

Sd: lt gry-lt gry, fn-vry fn grain, soft-semi brittle, pr vis por, NS
 Sdy Sh: red-brn w/ some Sh: gry-grn

LS: wh-crm, fxln, fos, sub chky-prtylty dns w/ some chky-vry chky, pr vis por, NS
 Sdy Sh: red-brn w/ some Sh: gry-grn & small amt of Sd: lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, NS

Sdy Sh: red-brn w/ some Sh: gry
 LS: crm-tan, fxln, fos in prt, some sdy, some shly, sub chky-prtylty dns, pr por, NS
 Calc Sh-shly LS: purple-gry
 LS: brn-drk gry, fxln, sli fos, some shly, gritty-prtylty dns, pr por, NS

LS: crm-tan, fxln, fos in prt, sub chky-prtylty dns, pr por, NS
 LS: crm-tan, fxln, fos in prt, some granular, sub chky-prtylty dns, pr w/ tr fr intrptical-pin point por, NS
 Calc Sh: gry w/ some Sh: gry-grn, some red-brn
 LS: tan-gry, fxln, fos in prt, sli shly in prt, prtylty dns, pr por, NS
 Sh: red-brn & gry

LS: crm-lt gry, fxln, sli fos, chy (crm-org), sub chky-prtylty dns, pr por, NS
 Sh: red-brn (some sdy) & gry-grn
 Sdy LS: crm-lt red-brn, fxln, vry fn grain sd, sub chky-grnity, pr por, NS
 Sh: red-brn (some sdy) & drk gry
 Sh: red-brn (some sdy) & lt-drk gry

LS: crm, fxln, fos, mostly prtylty dns, pr por, NS
 Sh: lt-drk gry & red-brn
 LS: crm-tan, fxln, fos, sub chky-prtylty dns, pr w/ tr fr fos por, fr amt blk (some tarry-asp) spdt-sub sat stn, NSFO, no odor
 Sh: red-brn & gry, some gm

LS: crm, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, vry scat blk (some tarry-asp) spdt-patchy stn, NSFO, no odor
 LS: crm-tan, fxln, sli fos, sub chky-prtylty dns, pr por, vry scat blk spdt-patchy stn, NSFO, no odor
 Sh: red-brn & gry-grn

LS: crm-tan, fxln, fos-ool, sub chky-prtylty dns, pr por, abund blk (mostly tarry-asp) spdt-patchy stn, NSFO, no odor
 Sd: lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, NS
 LS: lt gry, fxln, sli shly in prt, prtylty dns, pr por, NS
 Sh: red-brn (some sdy) & gry-grn

Sh: A.A.
 LS: wh-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 LS: wh-crm, fxln, fos in prt, sub chky-prtylty dns w/ some sat stn, FSFO (some bleeding), no odor
 LS: lt gry, fxln, sli shly in prt, prtylty dns, pr por, NS
 Sh: red-brn & gry-grn

LS: wh-crm, fxln, sli fos, some shly (red-brn, mottled), sub chky-prtylty dns w/ some blk, pr por, tr blk tarry-asp spdt-patchy stn, NSFO, no odor
 Sh: red-brn (some sily-sdy) & gry-grn
 Sh: A.A. w/ tr Sd: lt gry, fn-vry fn grain, semi brittle, pr vis por, NS
 LS: crm-tan, fxln, sli fos, some shly (red-brn, mottled), sub chky-prtylty dns, pr por, some blk spdt-patchy stn & tr edge stn, NSFO, no odor
 LS: A.A. pr por, w/ tr stn, NSFO, no odor
 Calc Sh: lt purple
 Sh: gry, red-brn, gm

LS: brn, fxln, sli fos, prtylty dns, pr por, NS
 Sh: red-brn, gry, gm & Calc Sh: gry
 LS: crm-tan, fxln, fos-ool in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 Sd: lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, fr amt lt-drk brn & blk spdt-patchy w/ some sat stn, FSFO (some bleeding), no odor
 LS: crm-drk tan, fxln, sub chky-prtylty dns, pr por, NS
 LS: A.A.

LS: crm-tan, fxln, sli fos, sub chky-prtylty dns, pr por, fr amt med-drk brn & blk spdt-patchy w/ some sat stn, FSFO (some bleeding), no odor
 LS: lt gry, fxln, sli shly in prt, prtylty dns, pr por, NS
 Sh: red-brn (some sdy) w/ some gry & gm

Sh: red-brn (some sdy), w/ some gry & gm
 LS: wh-tan, fxln, fos-ool in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 LS: wh-crm, fxln, fos in prt, sub chky-prtylty dns w/ some sat stn, FSFO (some bleeding), no odor
 LS: lt gry, fxln, sli shly in prt, prtylty dns, pr por, NS
 Sh: red-brn & gry-grn

LS: crm-tan, fxln, fos-ool, sub chky-prtylty dns, pr por, gd amt lt-drk brn & blk spdt-patchy stn, VSSFO (mstly pin point beads), no odor
 Sh: red-brn (some soft & gummy) w/ some gry-grn
 Sh: red-brn & gry-grn w/ some LS: crm-tan, fxln, fos-ool in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 Sd: lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, fr amt lt-drk brn & blk spdt-patchy w/ some sat stn, FSFO (some bleeding), no odor
 LS: lt gry, fxln, sli shly in prt, sub chky-prtylty dns, pr por, NS
 Sh: red-brn (some sdy) w/ some gry & gm

Sh: A.A.
 Sh: red-brn (some sdy) w/ some gry & gm
 LS: wh-tan, fxln, sli fos, sub chky-prtylty dns w/ some chky, pr por, fr med-drk brn & blk spdt-patchy w/ 1 pc sat stn, cp pcs w/ VSSFO (pin point beads), no odor
 LS: lt gry-tan, fxln, sli shly in prt, prtylty dns, pr por, NS
 Sh: gry-grn & red-brn

Sdy Sh: red-brn, calc
 Sh: red-brn & gry-grn
 LS: wh-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky-vry chky, pr por, NS
 LS: crm-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky-vry chky, pr por, few pcs w/ blk (some tarry) spdt stn, NSFO, no odor
 LS: med gry, fxln, sli shly, prtylty dns, pr por, NS
 Sh: red-brn & gry-grn

LS: wh-crm, fxln, fos in prt, chky-prtylty dns w/ some vry chky, pr por, NS
 LS: crm-tan, fxln, sub chky-prtylty dns, pr por, NS
 Sh: red-brn (some soft & gummy) w/ some gry-grn
 Sh: red-brn (some sdy) & gry-grn
 LS: crm-tan, fxln, fos in prt, sub chky-prtylty dns, pr por, NS

Sh: red-brn & gry (some calc)
 Sh: red-brn & gry w/ some gm
 Sh: red-brn (some sdy) & gry-grn
 LS: crm-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 LS: crm-tan, fxln, sli shly in prt, sub chky-prtylty dns, pr por, NS
 Sh: red-brn (some sdy) & gry-grn

LS: crm-tan, fxln, sub chky-prtylty dns, pr por, few pcs w/ blk spdt stn, NSFO, no odor
 Sd: lt gry, fn-vry fn grain, sli calc, semi fri, pr vis por, tr blk spdt-patchy stn, NSFO, no odor
 Sh: red-brn (some sdy) w/ some gry
 Sh: red-brn (some sdy) & gry-grn
 LS: crm-tan, fxln, fos in prt (tr bryozoon), sub chky-prtylty dns, pr w/ tr gd bryozoon por, vry scat med-drk brn & blk spdt-patchy stn, NSFO, no odor, bryozoon por is barren
 LS: crm-lt brn, fxln, shly in prt, gritty-prtylty dns, pr por, NS, w/ Calc Sh: lt-med gry w/ some Sh: red-brn & gm
 Sh: red-brn & gry (some lt gry, soft & gummy)
 Sh: red-brn & gry-grn

LS: crm, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, scat blk tarry-asp spdt-patchy stn, NSFO, no odor
 Sd: lt gry, fn-vry fn grain, calc, semi fri-brITTLE, pr vis por, fr amt lt-med brn patchy-sat stn, NSFO, no odor
 LS: crm-tan, fxln, sli shly in prt, sub chky-prtylty dns, pr por, NS
 Sh: blk Carb (20' circ emp)
 LS: blk Carb, fxln, fos, prtylty dns, pr por, NS (40' emp)
 LS: A.A. w/ some crm sub chky, pr por, NS
 LS: wh-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, NS
 LS: A.A. pr por, NS
 Sh: gry (some drk) & red-brn, some gm
 Sh: blk Carb
 Sh: gry & red-brn, some gm
 LS: wh-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, NS
 LS: A.A. little more chky, pr por, NS

Sh: gry & red-brn, some gm
 Sh: blk Carb
 LS: wh-tan, fxln, fos in prt, sub chky-prtylty dns w/ some chky, pr por, NS
 LS: A.A. little more chky, pr por, NS
 Sh: gry & red-brn, some gm
 LS: crm-tan, fxln, sli fos, sub chky-prtylty dns, pr por, NS
 LS: crm-tan, fxln, fos in prt, sdy (fn-med grain) in prt, sub chky-prtylty dns w/ some chky, pr por, NS
 LS: crm-tan, fxln, sli fos, sli chy (crm-tan-org), sub chky-prtylty dns w/ some chky, pr por, NS
 Sh: red-brn, gm & gry

LS: crm-tan, fxln, sli fos, sub chky-prtylty dns, pr por, NS
 Sh: red-brn, gry, gm w/ some Sd: crl-crm, fn-med grain, some sly, calc, sli glauc & pyr, some shly, semi fri-brITTLE, pr vis por, NS, & loose crs grains, A.A.
 Sh: A.A. w/ dcrs amt Sd clusters & loose grains
 Sdy Sh: red-brn (some sdy), some gry & gm, w/ some Sd: A.A. & incrs amt of loose crs grains, clr-ogr, sub md-sub-ong
 Sh: red-brn (some sdy) w/ some gry, w/ some Sd: crl-crm, fn-med grain, some shly, semi fri-brITTLE, pr-fr intrptical, w/ dcrs amt of loose crs grains A.A.
 Sh: A.A. w/ sli incrs Sd clusters & loose grains A.A.
 Sh: red-brn (some sdy) w/ small amt gm & gry, & small amt Sd clusters and loose grains A.A.
 LS: tan-brn, fxln, prtylty dns, pr por, NS
 Sh: red-brn, some gry-grn & small amt yell, w/ Sdy Sh: red-brn w/ some gry & gm, & small amt of Sd: crl-crm, fn-med grain, mstly brittle, pr vis por, NS
 Sh & Sdy Sh: A.A. w/ small amt of Sd: crl-crm, fn-med grain, fr-semi brittle, pr-fr por, NS
 A.A. w/ tr Sh: yell & brick red

LS: crm-tan, fxln, sub chky-prtylty dns, pr por, NS
 Shly LS: lt-drk gry, fxln, some mottled, gritty-prtylty dns, pr por, NS
 Sh: red-brn & gry-grn
 Sh: red-brn, gry, gm, purple & tr yell, some woxy
 Sd: crl-lt gry, fn-med grain, semi fri-brITTLE, pr vis por, NS, & Chert: wh-crm w/ some chky & tan, mstly fresh w/ some weathered, NS & Sh: red-brn, gry, gm
 Dol: lt-med gry, fxln, gritty, hard, pr por, NS

Dol: crm-lt gry, fxln, sli chy (crm-tan), sub chky-prtylty dns, pr por, NS
 Dol: crm-lt gry, fxln, some mottled, chy (crm-lt gry), sub chky-prtylty dns, pr por, NS
 Dol: crm, fxln, chy (wh-crm), sub chky w/ some prtylty dns, pr w/ some fr pin point por, NS
 LS: crm-tan, fxln, sli chy (tan), prtylty dns w/ some sub chky, pr por, NS
 Dol: tan-lt brn, fxln, prtylty dns, pr por, NS
 Dol: ls-med-drk brn, fxln, prtylty dns, pr por, NS
 LS: crm-tan, fxln, sli fos-ool, sub chky-prtylty dns w/ some chky, pr w/ some fr mollic por, NS
 Dol: tan-brn, fxln, prtylty dns, pr por, NS

3000
 Ran 10 stand short trip @ 5000' after CFS
 R.T.D. 5000' (-1784)
 L.T.D. 5002' (-1786)
 Straight Hole Survey @ 5000': 1' Dev.

3500
 Call depth 3220' @ 2:57 pm on 9-7-14
 Bit trip at 3512'. Replaced PDC bit with button bit.
 Pipe Strap @ 3512': Strap loop 0.29'
 Straight Hole Survey @ 3512': 0.5' Dev.
 Samples start 3520' @ 1:36 am on 9-8-14

3500
 Call depth 3220' @ 2:57 pm on 9-7-14
 Bit trip at 3512'. Replaced PDC bit with button bit.
 Pipe Strap @ 3512': Strap loop 0.29'
 Straight Hole Survey @ 3512': 0.5' Dev.
 Samples start 3520' @ 1:36 am on 9-8-14