

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1251349
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: _____

1251349



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

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

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

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

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

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Culwell 'F' 1-14
Doc ID	1251349

All Electric Logs Run

DIL
DUCP
MEL
BHCS

ALLIED OIL & GAS SERVICES, LLC 064674

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Saklay

DATE <u>4-6-15</u>	SEC. <u>14</u>	TWP. <u>1</u>	RANGE <u>37</u>	CALLED OUT	ON LOCATION <u>6:30 pm</u>	JOB START <u>7:30p</u>	JOB FINISH <u>3:00 pm</u>
LEASE <u>Culwell</u>	WELL# <u>1-14</u>	LOCATION <u>Bird City Wb A, Sta 32</u>	COUNTY <u>Cheyenne W</u>	STATE <u>KS</u>			
OLD OR <input checked="" type="radio"/> NEW (Circle one)				<u>2N, N, E, N, E, N, E, S imp</u>			

CONTRACTOR Martin 2 OWNER Same

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 222 CEMENT AMOUNT ORDERED 240 sfs cum 3% cc

CASING SIZE 8 7/8 DEPTH 221.05

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 13.18

EQUIPMENT

PUMP TRUCK CEMENTER Lakone Edwards

422 HELPER Wayne McLaughly

BULK TRUCK

818/287 DRIVER Brandon Wilkinson

BULK TRUCK

DRIVER

REMARKS:

Mix 240 sfs cement

Displace with water

Cement did coagulate

4 bbl's to pit.

Thank you

CHARGE TO: Martin

STREET

CITY STATE ZIP

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

SIGNATURE Arans Cabezas

COMMON	<u>240 sfs</u>	@	<u>17.90</u>	<u>4296.00</u>
POZMIX		@		
GEL		@		
CHLORIDE	<u>677#</u>	@	<u>1.10</u>	<u>744.70</u>
ASC		@		

Material Total @ 5040.70

(2267.32/45%)

HANDLING 252 sfs @ 2.48 624.96

MILEAGE 11.62 tax 100 x 2.75 3195.50

TOTAL

SERVICE

DEPTH OF JOB 221.05'

PUMP TRUCK CHARGE 1512.25

EXTRA FOOTAGE @

MILEAGE 11.62 @ 7.70 795.00

MANIFOLD 500 @ 275.00

11.62 @ 4.90 579.00

(3067.96/45%) TOTAL 6,817.71

PLUG & FLOAT EQUIPMENT

@

@

@

@

TOTAL

SALES TAX (If Any)

TOTAL CHARGES 11,858.41

DISCOUNT 5,336.28 (45%) IF PAID IN 30 DAYS

6,522.12 net



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



Invoice

DATE	INVOICE #
4/14/2015	27074

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661
USED FOR <u>IC 103</u>
APPROVED <u>JS NK</u>

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-14	Culwell F	Cheyenne	Company Tools	Oil	Development	Cement Top To ...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				150	Miles	5.00	750.00
579D	Pump Charge - Top To Bottom LongString - 4731 Feet				1	Job	1,700.00	1,700.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
403-5	5 1/2" Cement Basket				3	Each	250.00	750.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	225.00	225.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	300.00	300.00T
409-5	5 1/2" Turbolizer				15	Each	75.00	1,125.00T
413-5	5 1/2" Roto Wall Scratcher				20	Each	35.00	700.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				200	Sacks	12.25	2,450.00T
276	Flocele				50	Lb(s)	2.25	112.50T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				10	Sack(s)	30.00	300.00T
285	CFR-1				141	Lb(s)	4.50	634.50T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	15.75	4,725.00T
276	Flocele				75	Lb(s)	2.25	168.75T
581D	Service Charge Cement				500	Sacks	1.50	750.00
583D	Drayage				3,808.08	Ton Miles	0.75	2,856.06
Subtotal								18,881.81
Sales Tax Cheyenne County							8.15%	1,045.30
IC103 Z 1255.0001.1				19,927.11	Cement Prod Log #1-14			

We Appreciate Your Business!

Total

\$19,927.11



CHARGE TO: Martin Dry Co.
 ADDRESS
 CITY, STATE, ZIP CODE

TICKET 27074

PAGE 1 OF 2

1. SERVICE LOCATION: HWY 81 WELLPROJECT NO.: 1-14 LEASE: Culwell F' COUNTY/PARISH: Cheyenne STATE: KS CITY: HWY 81 DATE: 4-14-15 OWNER: 1/2

2. Ness City, KS TICKET TYPE: SERVICE SALES CONTRACTOR: Co RIG NAME NO.: #2 SHIPPED: DELIVERED TO: N/A Donald, KS ORDER NO.: 1992711

WELL TYPE: Oil WELL CATEGORY: in field JOB PURPOSE: Cement Top To Bottom Longstring WELL PERMIT NO.: WELL LOCATION:

4. REFERRAL LOCATION: INVOICE INSTRUCTIONS:

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC ACCT DF	DESCRIPTION	QTY	UM	QTY	UM	UNIT PRICE	AMOUNT
575		1	MILEAGE #113	150	Mi			500	75000
579		1	Pump Charge - CMT EP & BATH - L.S.	100		1731	ft	170000	170000
221		1	Liquid RCL	4	bed			2500	10000
221		1	Wet Flush	500	gal			1.25	62500
220		1	D-Air	5	gal			4900	24500
403		1	Cement Baskets	3	ea	5 1/2 in		25000	75000
406		1	Lotel Druss Plug & Baffle	1	ea	5 1/2 in		22500	22500
407		1	Insert Fastener w/ Ash-Pill	1	ea	5 1/4 in		30000	30000
409		1	Turbolizers	15	ea	5 1/2 in		7200	112500
413		1	Rth Well Scratches	20	ea	5 1/4 in		3500	70000
419		1	Rotating Head Reel	1	ea	5 1/2 in		20000	20000

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: 4-14-15 TIME SIGNED: 1900 A.M. P.M.

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

SURVEY: 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? YES NO

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL: 2 TOTAL: 19,927.11

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

SWIFT OPERATOR: Paul Lemmon APPROVAL: Paul Lemmon

Thank You!



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

TICKET CONTINUATION

TICKET No. 87074

CUSTOMER *Murphy D & Co.* WELL *1-14 Calwell F#1*

DATE *9-14-15*

PRICE *2* OF *2*

PRICE REFERENCE	SECONDARY REFERENCE / PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL				UNIT PRICE	AMOUNT
		LOC	ACCT	OF			QTY	U/M	QTY	U/M		
285		2				Standard Cement E-M-2	200	SKS	18800	Lbs	18.85	3750.00
276		2				Flocele 1/4" / sk	50	Lbs			23.5	1175.00
283		2				Salt 10% / sk	1000	Lbs			2.00	2000.00
284		2				Caload 5% / sk	940	Lbs			30.00	28200.00
285		2				CER-1 3/4" / sk	141	Lbs			4.50	634.50
330		2				SHUD Cement	300	SKS	29700	Lbs	15.75	4725.00
296		2				Flocele 1/4" / sk	75	Lbs			2.25	168.75
581		2				SERVICE CHARGE Cement	500	SKS			1.50	750.00
583		2				MILEAGE TOTAL WEIGHT CHARGE	589.84		1.50		75	88.516

CUBIC FEET *500 SKS*
TOM MILES *3828.08 TM*
CONTINUATION TOTAL *1-8-19-15*

12,196.81

MDCI
 Culwell 'F' #1-14
 330' FNL 660' FWL
 Sec. 14-T1S-R37W
 3214' KB

Formation	Sample top	Datum	Ref	Log Top	Datum	Ref
Anhydrite	3165	+49	-6	3162	+52	-3
B/Anhydrite	3200	+14	-11	3195	+19	-6
Neva	3611	-397	+2	3621	-407	-8
Red Eagle	3678	-464	+1	3687	-473	-8
Foraker	3720	-506	+4	3733	-519	-9
Topeka	3942	-728	+3	3954	-740	-9
Oread	4078	-864	+4	4088	-874	-6
Lansing	4158	-944	+5	4171	-957	-8
Stark	4375	-1161	+5	4385	-1171	-5
BKC	4428	-1214	+7	4438	-1224	-3
Pawnee	4454	-1340	+5	4560	-1346	-1
Cherokee	4640	-1426	+10	4652	-1438	-2
RTD	4740	-1526				
LTD				4738	-1524	



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman Sharifaie

Culwell "F" #1-14

14-1s-37w Cheyenne,KS

Start Date: 2015.04.10 @ 10:05:00

End Date: 2015.04.10 @ 18:03:30

Job Ticket #: 62229 DST #: 1

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

Printed: 2015.04.16 @ 10:45:04



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62229

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2015.04.10 @ 10:05:00

GENERAL INFORMATION:

Formation: **LKC "B-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:16:00

Time Test Ended: 18:03:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Interval: 4170.00 ft (KB) To 4230.00 ft (KB) (TVD)

Reference Elevations: 3214.00 ft (KB)

Total Depth: 4230.00 ft (KB) (TVD)

3203.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8653 Outside

Press@RunDepth: 78.86 psig @ 4171.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.04.10

End Date:

2015.04.10

Last Calib.:

2015.04.10

Start Time: 10:06:00

End Time:

18:03:30

Time On Btm:

2015.04.10 @ 12:11:00

Time Off Btm:

2015.04.10 @ 16:18:00

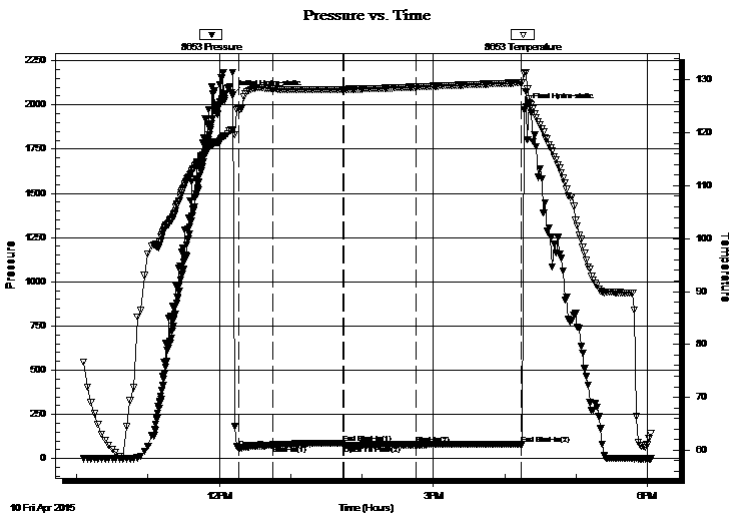
TEST COMMENT: 30 - IF- 1" Blow built to 7"

60 - IS- No Return

60 - FF- Surface Blow started at 7 min. Built to 1/4", then died back to Surface Blow

90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2056.32	120.53	Initial Hydro-static
5	60.37	124.55	Open To Flow (1)
34	76.73	128.32	Shut-In(1)
93	87.39	128.20	End Shut-In(1)
94	76.68	128.20	Open To Flow (2)
154	78.86	128.69	Shut-In(2)
243	81.98	129.52	End Shut-In(2)
247	1987.03	131.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	MCO 40M 60o	0.39
80.00	Free Oil 100o	0.39

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62229

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2015.04.10 @ 10:05:00

GENERAL INFORMATION:

Formation: **LKC "B-D"**

Deviated: No Whipstock: ft (KB)

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Total Depth: 4230.00 ft (KB) (TVD)

3203.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8874 Inside

Press@RunDepth: psig @ 4171.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.04.10

End Date:

2015.04.10

Last Calib.:

2015.04.10

Start Time: 10:06:00

End Time:

18:05:00

Time On Btm:

Time Off Btm:

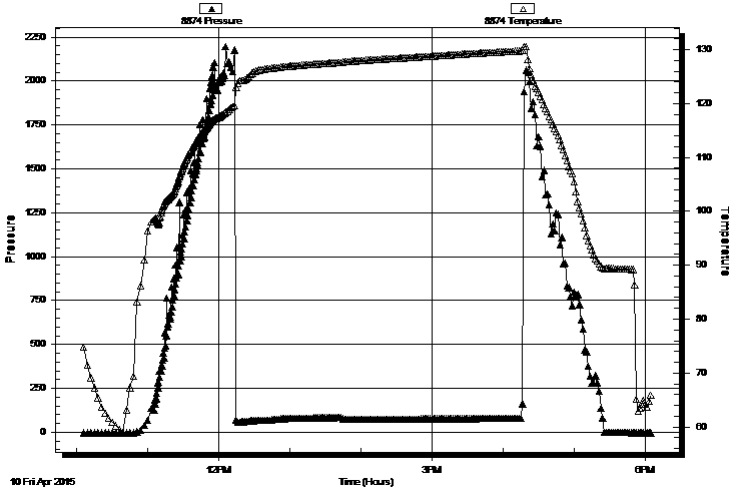
TEST COMMENT: 30 - IF- 1" Blow built to 7"

60 - IS- No Return

60 - FF- Surface Blow started at 7 min. Built to 1/4", then died back to Surface Blow

90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
80.00	MCO 40M 60o	0.39
80.00	Free Oil 100o	0.39

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62229

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2015.04.10 @ 10:05:00

Tool Information

Drill Pipe:	Length: 3942.00 ft	Diameter: 3.80 inches	Volume: 55.30 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: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 56.33 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4170.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	88.00 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			4143.00	
Shut In Tool	5.00			4148.00	
Hydraulic tool	5.00			4153.00	
Jars	5.00			4158.00	
Safety Joint	3.00			4161.00	
Packer	5.00			4166.00	28.00 Bottom Of Top Packer
Packer	4.00			4170.00	
Stubb	1.00			4171.00	
Recorder	0.00	8653	Outside	4171.00	
Recorder	0.00	8874	Inside	4171.00	
Perforations	20.00			4191.00	
Change Over Sub	1.00			4192.00	
Drill Pipe	32.00			4224.00	
Change Over Sub	1.00			4225.00	
Bullnose	5.00			4230.00	60.00 Bottom Packers & Anchor

Total Tool Length: 88.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62229

DST#: 1

ATTN: Saman Sharifaie

Test Start: 2015.04.10 @ 10:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 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
80.00	MCO 40M 60o	0.393
80.00	Free Oil 100o	0.393

Total Length: 160.00 ft Total Volume: 0.786 bbl

Num Fluid Samples: 0

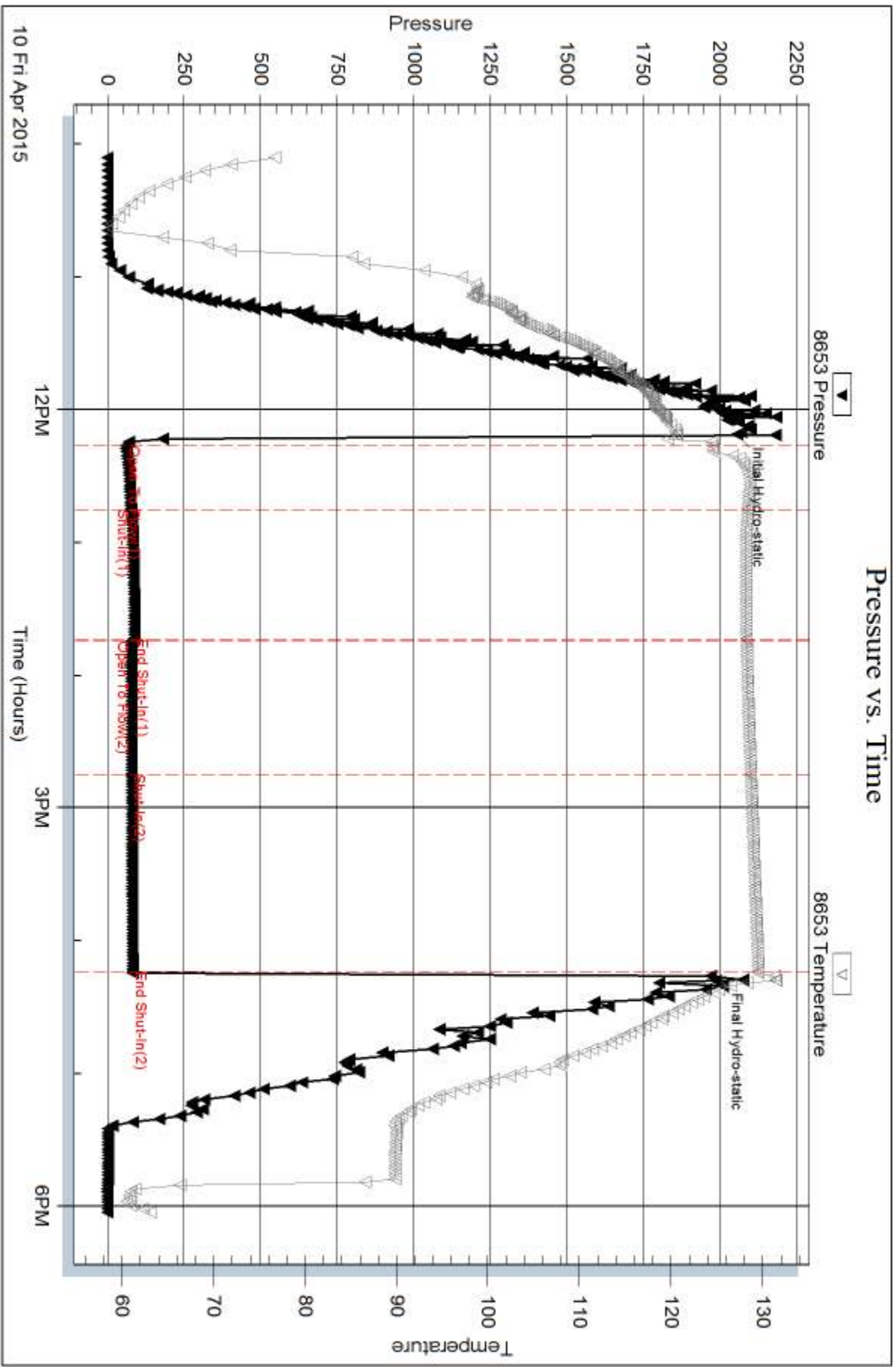
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 31 @ 90 deg = 28 corrected



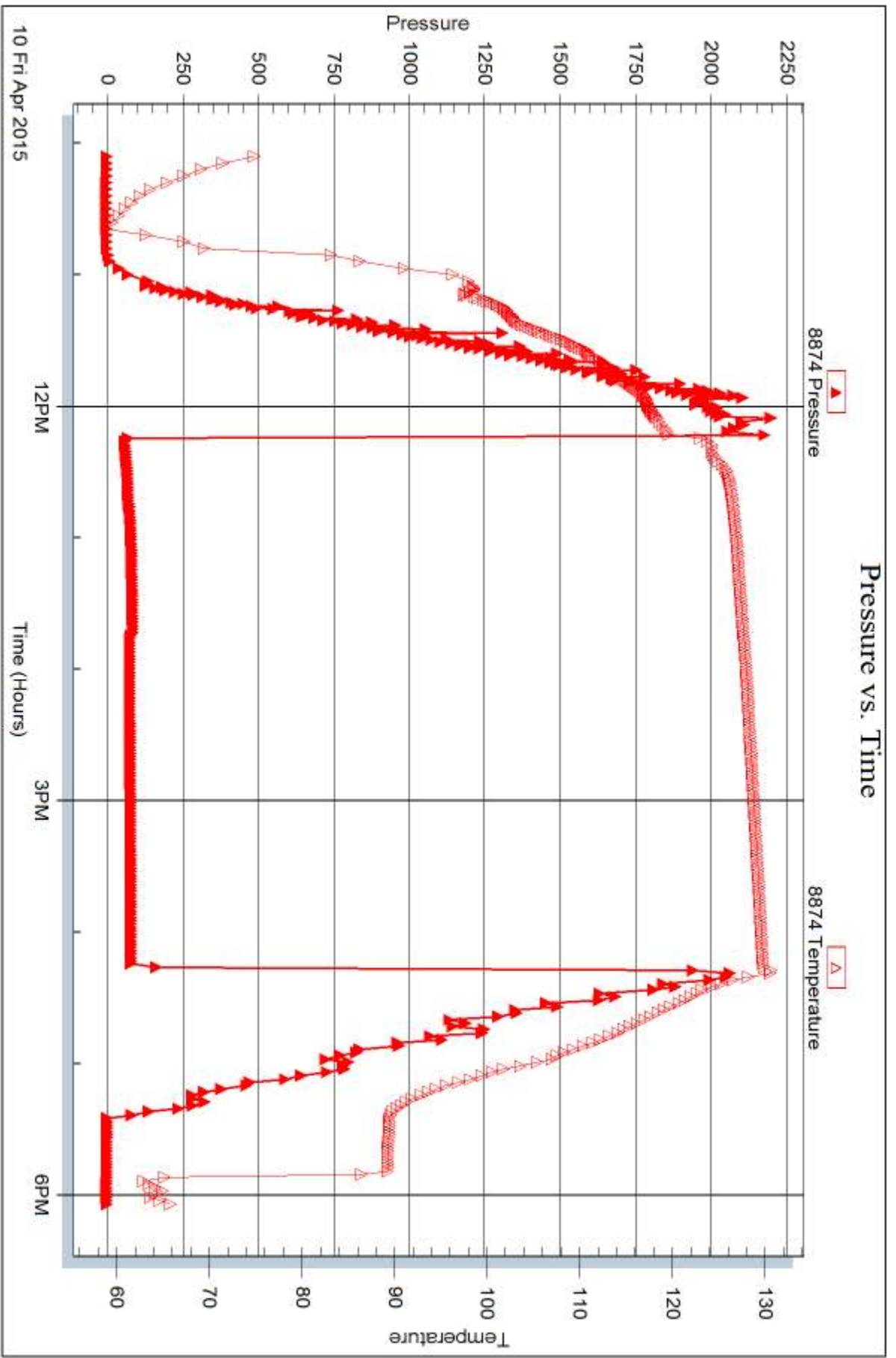
Serial #: 8874

Inside

Murfin Drilling Co., Inc.

Oilwell "P" #1-14

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 62229

Printed: 2015.04.16 @ 10:45:06



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman Sharifaie

Culwell "F" #1-14

14-1s-37w Cheyenne,KS

Start Date: 2015.04.11 @ 13:55:00

End Date: 2015.04.11 @ 17:46:30

Job Ticket #: 62230 DST #: 2

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

Printed: 2015.04.16 @ 10:43:02

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

Culwell "F" #1-14

DST # 2

LKC "E-J"

2015.04.11



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62230

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 13:55:00

GENERAL INFORMATION:

Formation: **LKC "E-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 17:46:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Interval: 4226.00 ft (KB) To 4370.00 ft (KB) (TVD)

Total Depth: 4370.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3214.00 ft (KB)

3203.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8874 Inside

Press@RunDepth: psig @ 4227.00 ft (KB)

Start Date: 2015.04.11

End Date:

2015.04.11

Start Time: 13:56:00

End Time:

17:46:30

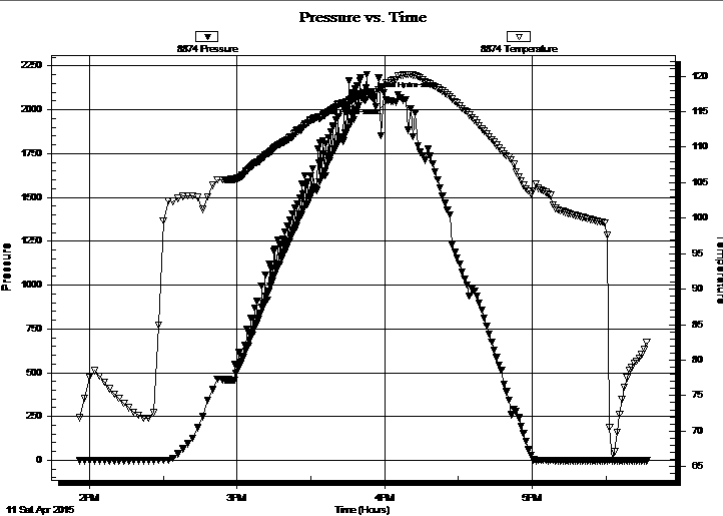
Capacity: 8000.00 psig

Last Calib.: 2015.04.11

Time On Btm: 2015.04.11 @ 15:54:30

Time Off Btm: 2015.04.11 @ 16:01:30

TEST COMMENT: PACKER FAILURE



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2076.56	117.79	Initial Hydro-static
7	2052.77	119.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	Mud 100M	2.30

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
ATTN: Saman Sharifaie

14-1s-37w Cheyenne, KS

Culwell "F" #1-14

Job Ticket: 62230

DST#: 2

Test Start: 2015.04.11 @ 13:55:00

GENERAL INFORMATION:

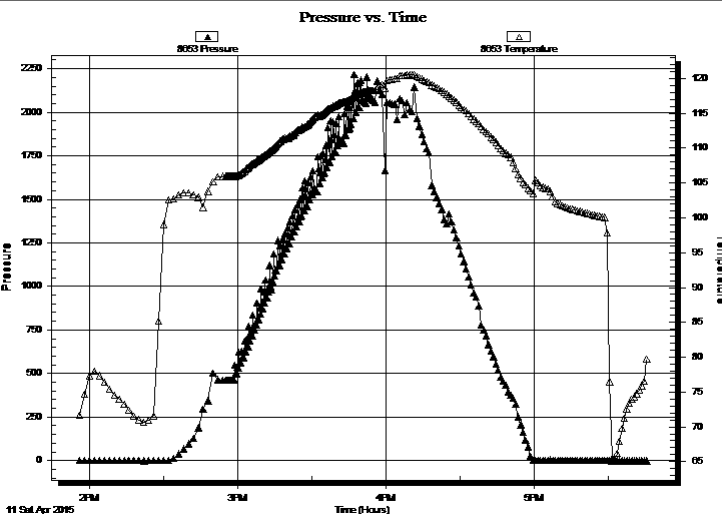
Formation: **LKC "E-J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 17:46:30
Interval: **4226.00 ft (KB) To 4370.00 ft (KB) (TVD)**
Total Depth: 4370.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 82
Reference Elevations: 3214.00 ft (KB)
3203.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8653

Outside

Press@RunDepth: psig @ 4227.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2015.04.11 End Date: 2015.04.11 Last Calib.: 2015.04.11
Start Time: 13:56:00 End Time: 17:45:30 Time On Btm:
Time Off Btm:

TEST COMMENT: PACKER FAILURE



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
300.00	Mud 100M	2.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62230

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 13:55:00

Tool Information

Drill Pipe:	Length: 4008.00 ft	Diameter: 3.80 inches	Volume: 56.22 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: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 57.25 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4226.00 ft			Final 77000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	144.00 ft			
Tool Length:	172.00 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			4199.00	
Shut In Tool	5.00			4204.00	
Hydraulic tool	5.00			4209.00	
Jars	5.00			4214.00	
Safety Joint	3.00			4217.00	
Packer	5.00			4222.00	28.00 Bottom Of Top Packer
Packer	4.00			4226.00	
Stubb	1.00			4227.00	
Recorder	0.00	8653	Outside	4227.00	
Recorder	0.00	8874	Inside	4227.00	
Perforations	9.00			4236.00	
Change Over Sub	1.00			4237.00	
Drill Pipe	127.00			4364.00	
Change Over Sub	1.00			4365.00	
Bullnose	5.00			4370.00	144.00 Bottom Packers & Anchor

Total Tool Length: 172.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62230

DST#: 2

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 13:55:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 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
300.00	Mud 100M	2.295

Total Length: 300.00 ft Total Volume: 2.295 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8874

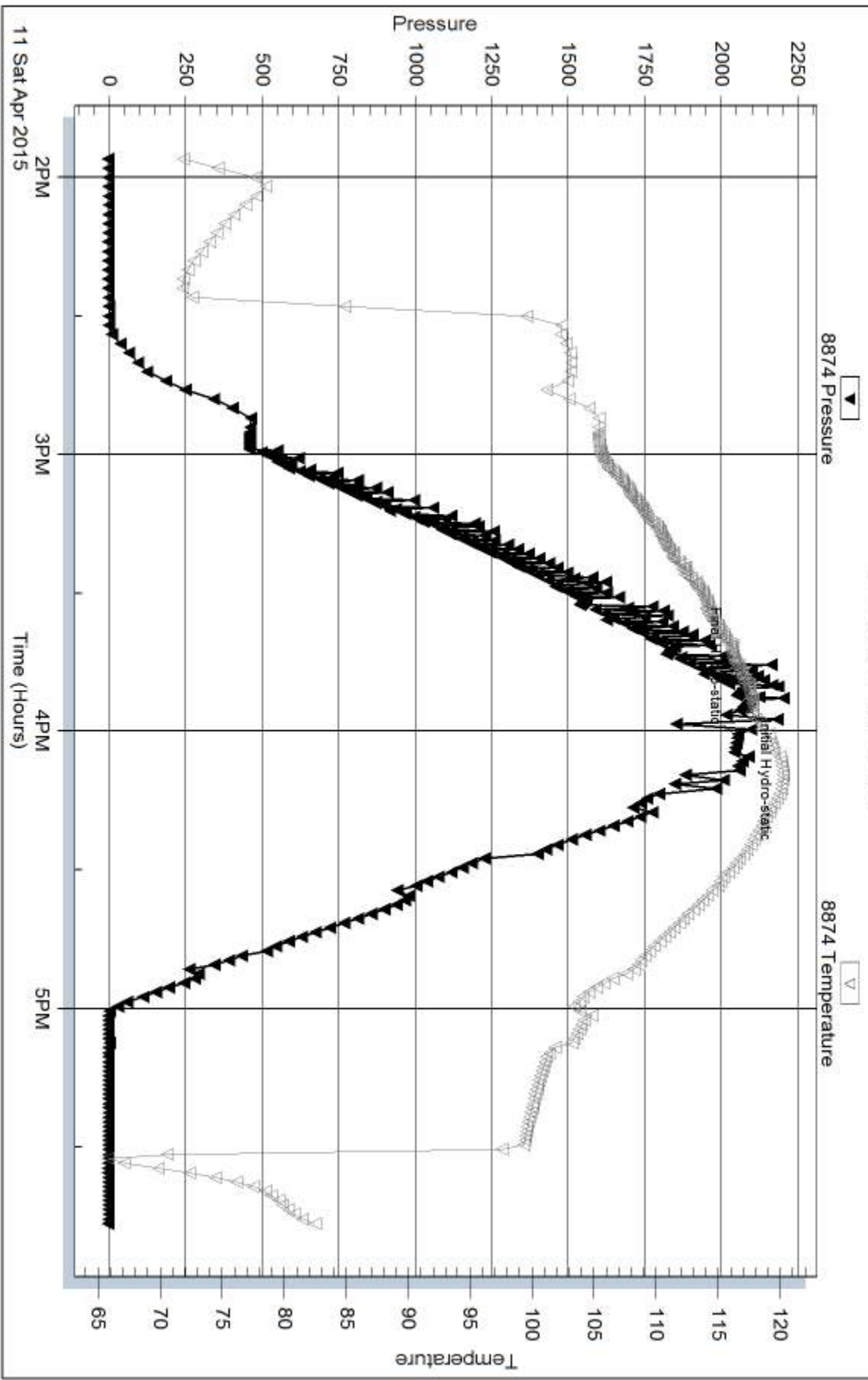
Inside

Murfin Drilling Co., Inc.

Oilwell "P" #1-14

DST Test Number: 2

Pressure vs. Time

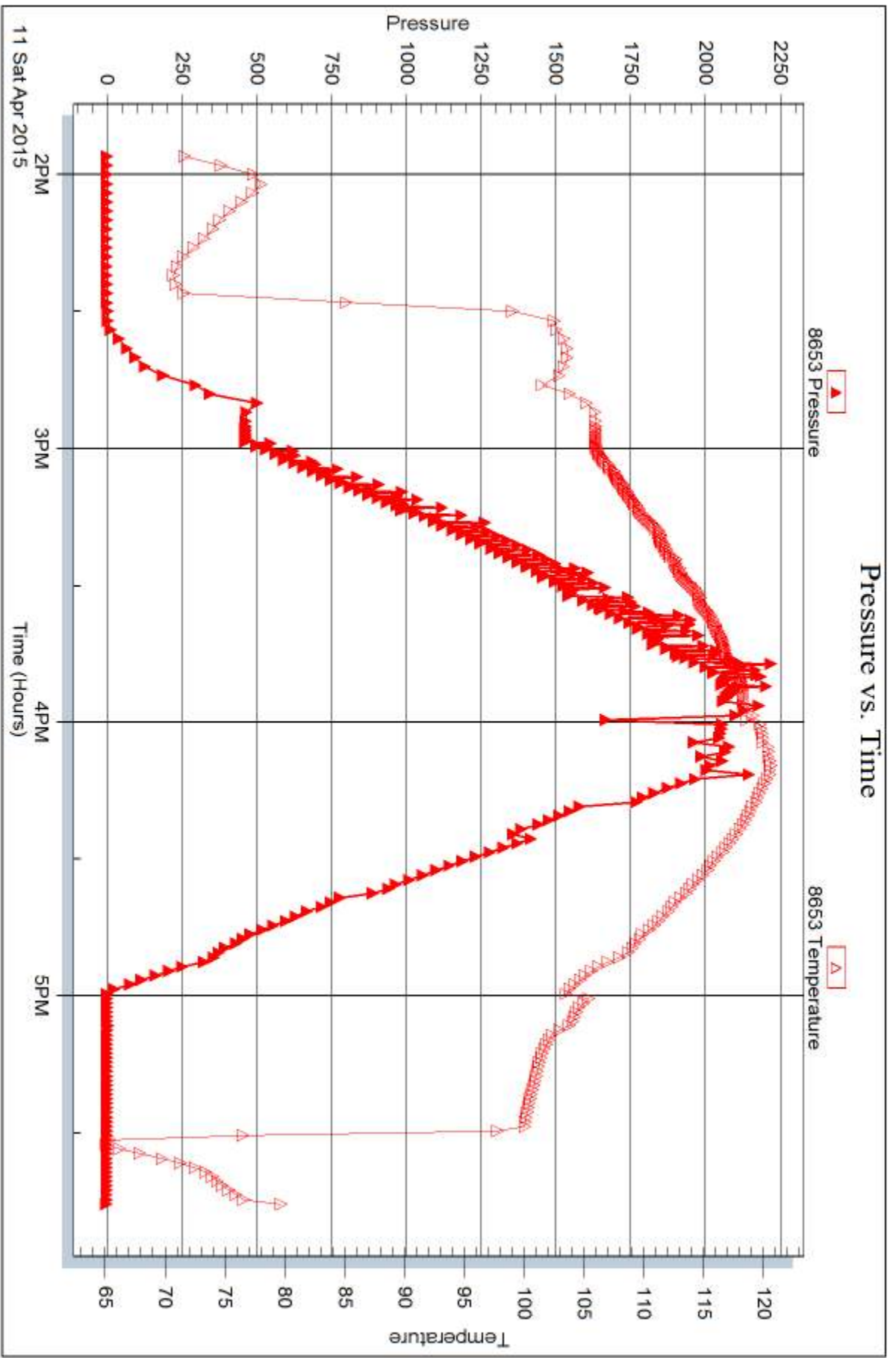


Serial #: 8653

Outside Murfin Drilling Co., Inc.

Oilwell "P" #1-14

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62230

Printed: 2015.04.16 @ 10:43:15



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman Sharifaie

Culwell "F" #1-14

14-1s-37w Cheyenne,KS

Start Date: 2015.04.11 @ 18:00:00

End Date: 2015.04.11 @ 19:31:50

Job Ticket #: 62231 DST #: 3

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

Printed: 2015.04.16 @ 10:36:56



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62231

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 18:00:00

GENERAL INFORMATION:

Formation: **LKC "G-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 19:31:50

Interval: 4241.00 ft (KB) To 4370.00 ft (KB) (TVD)

Total Depth: 4370.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Reference Elevations: 3214.00 ft (KB)

3203.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8874 **Inside**

Press@RunDepth: psig @ 4242.00 ft (KB)

Start Date: 2015.04.11

End Date: 2015.04.11

Start Time: 18:01:00

End Time: 19:31:50

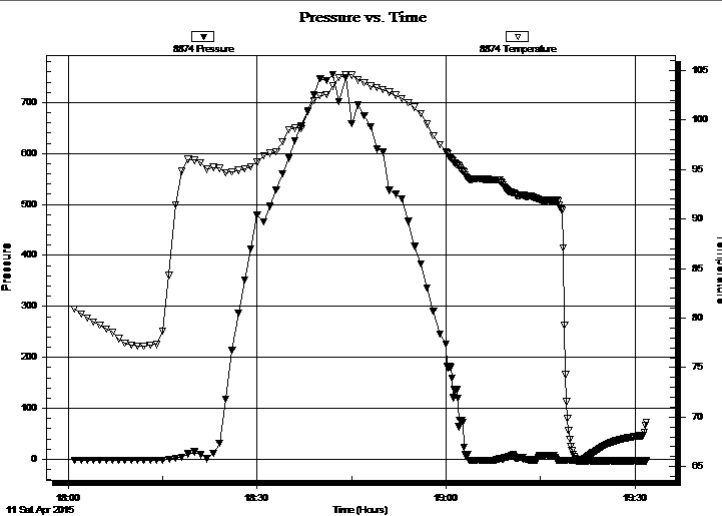
Capacity: 8000.00 psig

Last Calib.: 2015.04.12

Time On Btm:

Time Off Btm:

TEST COMMENT: Tool hit bridge at approx. 1650'. Tripped out to recondition hole for test.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62231

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 18:00:00

GENERAL INFORMATION:

Formation: **LKC "G-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 19:31:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Interval: 4241.00 ft (KB) To 4370.00 ft (KB) (TVD)

Reference Elevations: 3214.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3203.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition:

KB to GR/CF: 11.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4242.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.04.11

End Date:

2015.04.11

Last Calib.:

2015.04.12

Start Time: 18:01:00

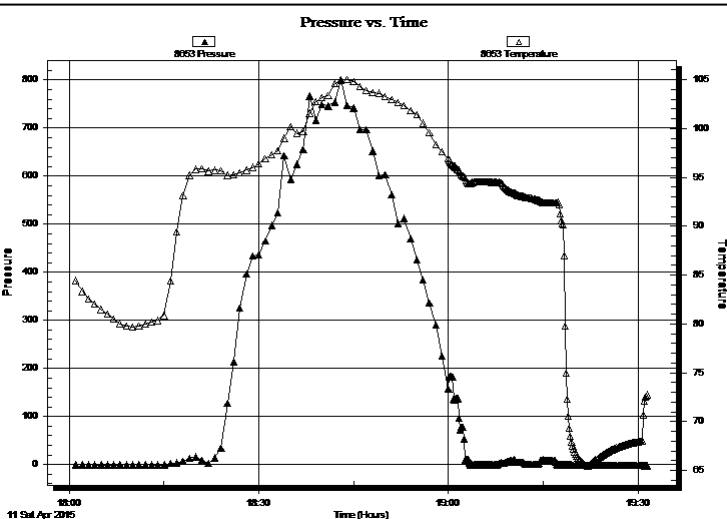
End Time:

19:31:30

Time On Btm:

Time Off Btm:

TEST COMMENT: Tool hit bridge at approx. 1650'. Tripped out to recondition hole for test.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62231

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 18:00:00

Tool Information

Drill Pipe:	Length: 4004.00 ft	Diameter: 3.80 inches	Volume: 56.17 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: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight to Pull Loose:	lb
			<u>Total Volume: 57.20 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	1.00 ft			String Weight: Initial	75000.00 lb
Depth to Top Packer:	4241.00 ft			Final	lb
Depth to Bottom Packer:	ft				
Interval between Packers:	129.00 ft				
Tool Length:	157.00 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			4214.00	
Shut In Tool	5.00			4219.00	
Hydraulic tool	5.00			4224.00	
Jars	5.00			4229.00	
Safety Joint	3.00			4232.00	
Packer	5.00			4237.00	28.00 Bottom Of Top Packer
Packer	4.00			4241.00	
Packer - Shale	0.00			4241.00	
Stubb	1.00			4242.00	
Recorder	0.00	8653	Outside	4242.00	
Recorder	0.00	8874	Inside	4242.00	
Perforations	26.00			4268.00	
Change Over Sub	1.00			4269.00	
Drill Pipe	95.00			4364.00	
Change Over Sub	1.00			4365.00	
Bullnose	5.00			4370.00	129.00 Bottom Packers & Anchor
Total Tool Length:	157.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62231

DST#: 3

ATTN: Saman Sharifaie

Test Start: 2015.04.11 @ 18:00:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 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 bbbl

Total Length: ft

Total Volume: bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

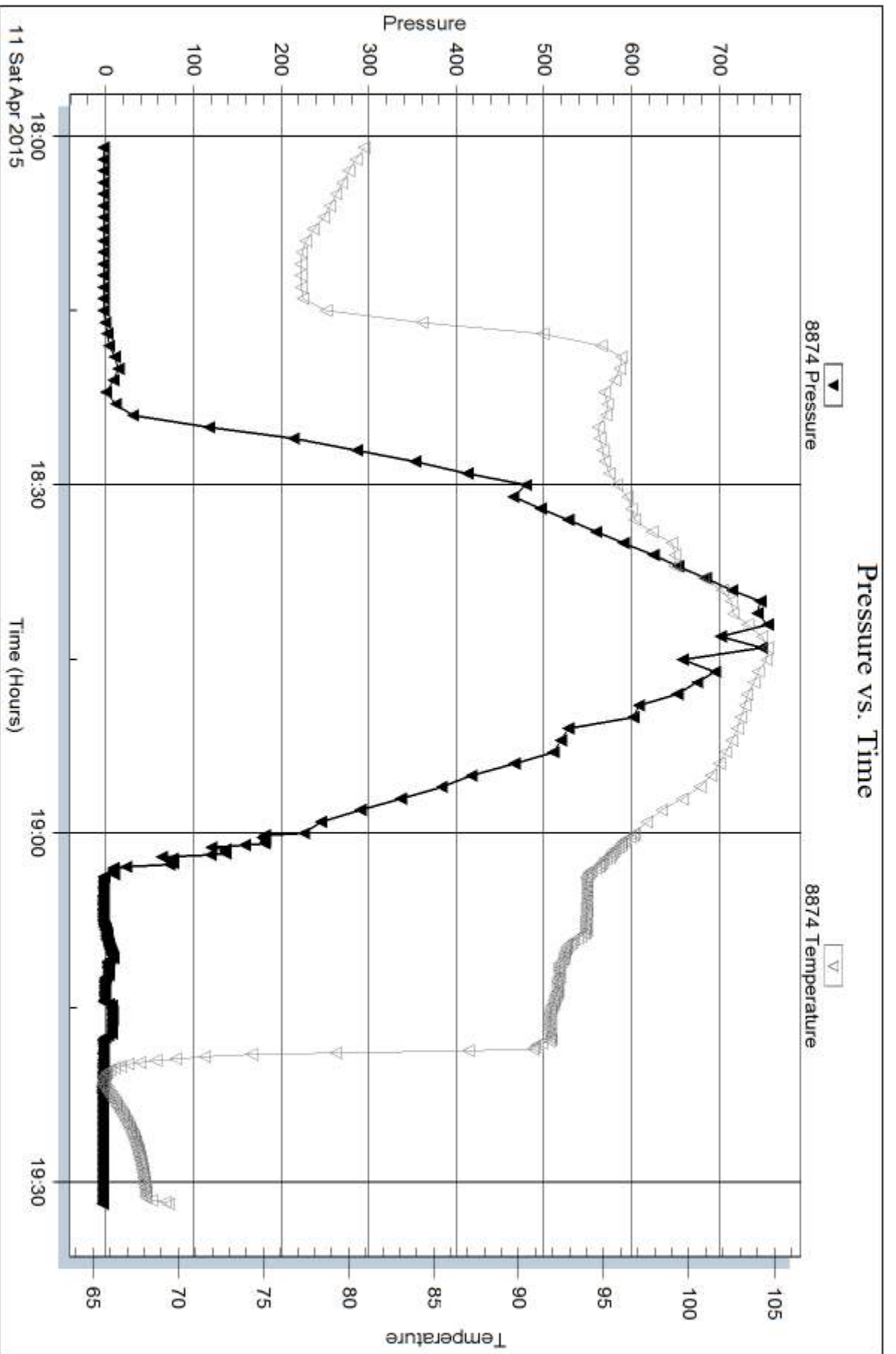
Serial #: 8874

Inside

Murfin Drilling Co., Inc.

Oilwell "F" #1-14

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 62231

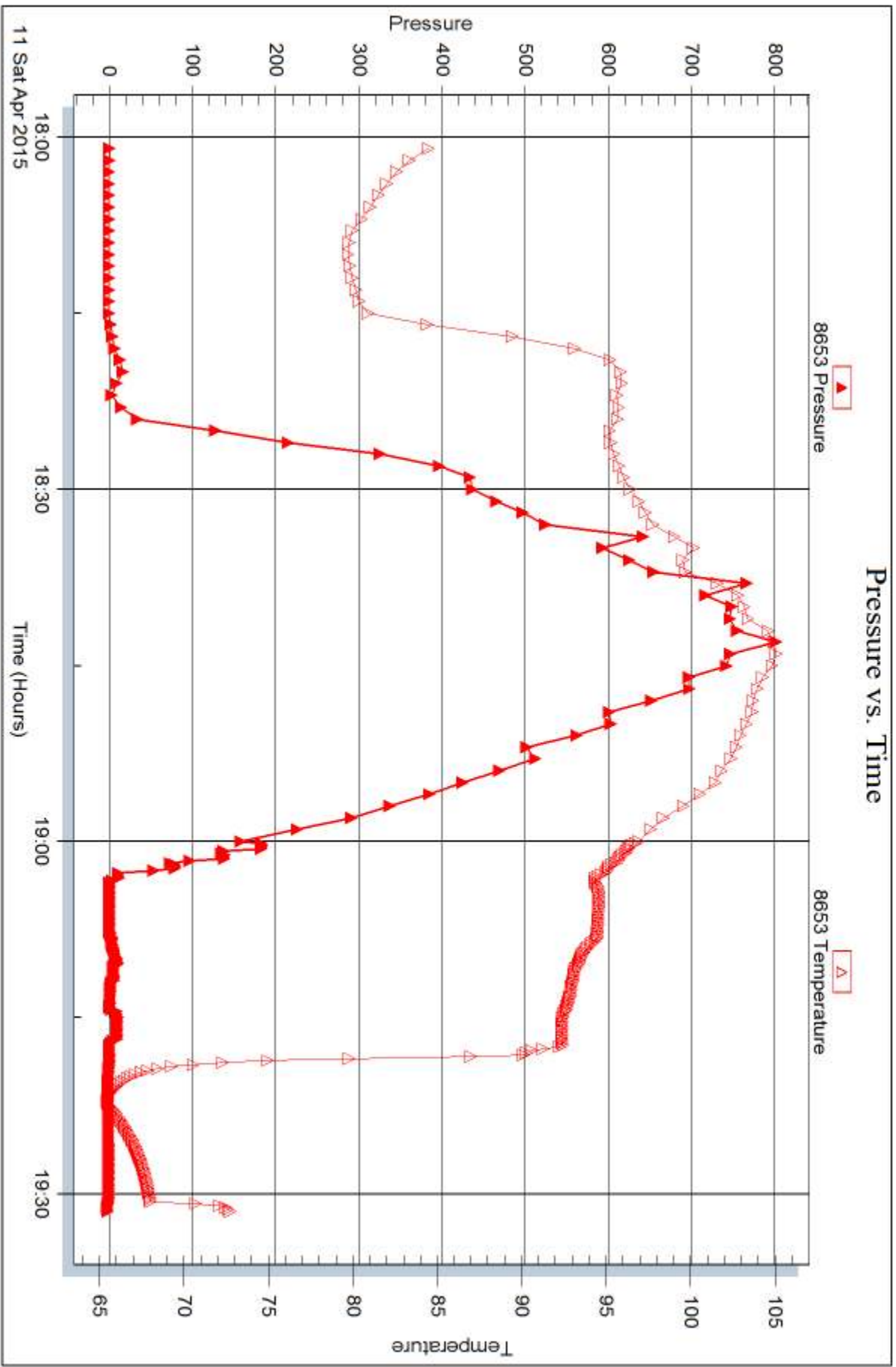
Printed: 2015.04.16 @ 10:36:58

Serial #: 8653

Outside Murfin Drilling Co., Inc.

Oilwell "F" #1-14

DST Test Number: 3





DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman Sharifaie

Culwell "F" #1-14

14-1s-37w Cheyenne,KS

Start Date: 2015.04.12 @ 02:27:00

End Date: 2015.04.12 @ 08:58:00

Job Ticket #: 62232 DST #: 4

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

Printed: 2015.04.16 @ 10:29:25

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

Culwell "F" #1-14

DST # 4

LKC "G-J"

2015.04.12



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62232

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2015.04.12 @ 02:27:00

GENERAL INFORMATION:

Formation: **LKC "G-J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:09:40
 Time Test Ended: 08:58:00
 Interval: **4241.00 ft (KB) To 4370.00 ft (KB) (TVD)**
 Total Depth: 4370.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 82
 Reference Elevations: 3214.00 ft (KB)
 3203.00 ft (CF)
 KB to GR/CF: 11.00 ft

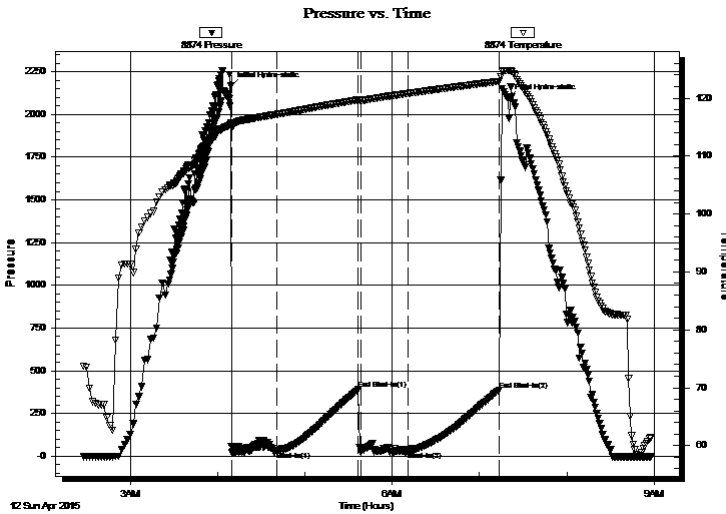
Serial #: 8874

Inside

Press@RunDepth: 27.15 psig @ 4242.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.04.12 End Date: 2015.04.12 Last Calib.: 2015.04.12
 Start Time: 02:28:00 End Time: 08:58:00 Time On Btm: 2015.04.12 @ 04:09:10
 Time Off Btm: 2015.04.12 @ 07:19:30

TEST COMMENT: 30 - IF- 1/4" Blow built to 1/2" then died back to Surface Blow
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2165.35	115.75	Initial Hydro-static
1	19.73	114.91	Open To Flow (1)
32	27.92	117.18	Shut-In(1)
88	390.15	119.69	End Shut-In(1)
90	23.83	119.56	Open To Flow (2)
122	27.15	120.78	Shut-In(2)
185	387.67	122.89	End Shut-In(2)
191	2090.65	124.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 10o 90M	0.05

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62232 **DST#: 4**

ATTN: Saman Sharifaie

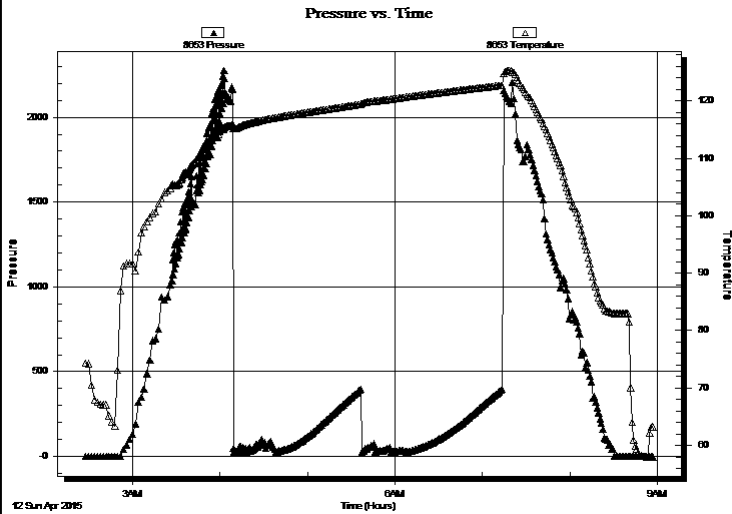
Test Start: 2015.04.12 @ 02:27:00

GENERAL INFORMATION:

Formation: LKC "G-J"	Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock: ft (KB)	Tester: Kevin Mack
Time Tool Opened: 04:09:40	Unit No: 82
Time Test Ended: 08:58:00	Reference Elevations: 3214.00 ft (KB)
Interval: 4241.00 ft (KB) To 4370.00 ft (KB) (TVD)	3203.00 ft (CF)
Total Depth: 4370.00 ft (KB) (TVD)	KB to GR/CF: 11.00 ft
Hole Diameter: 7.88 inches	Hole Condition: Good

Serial #: 8653	Outside	Capacity: 8000.00 psig
Press@RunDepth: psig @ 4242.00 ft (KB)		Last Calib.: 2015.04.12
Start Date: 2015.04.12	End Date: 2015.04.12	Time On Btm:
Start Time: 02:28:00	End Time: 08:56:30	Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 1/2" then died back to Surface Blow
 60 - ISI- No Return
 30 - FF- No Blow
 60 - FS- No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM 10o 90M	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.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62232

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2015.04.12 @ 02:27:00

Tool Information

Drill Pipe:	Length: 4030.00 ft	Diameter: 3.80 inches	Volume: 56.53 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: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 57.56 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4241.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	129.00 ft			
Tool Length:	157.00 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			4214.00	
Shut In Tool	5.00			4219.00	
Hydraulic tool	5.00			4224.00	
Jars	5.00			4229.00	
Safety Joint	3.00			4232.00	
Packer	5.00			4237.00	28.00 Bottom Of Top Packer
Packer	4.00			4241.00	
Packer - Shale	0.00			4241.00	
Stubb	1.00			4242.00	
Recorder	0.00	8653	Outside	4242.00	
Recorder	0.00	8874	Inside	4242.00	
Perforations	26.00			4268.00	
Change Over Sub	1.00			4269.00	
Drill Pipe	95.00			4364.00	
Change Over Sub	1.00			4365.00	
Bullnose	5.00			4370.00	129.00 Bottom Packers & Anchor
Total Tool Length:	157.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62232

DST#: 4

ATTN: Saman Sharifaie

Test Start: 2015.04.12 @ 02:27:00

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: 57.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.59 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 bbf
10.00	OCM 10o 90M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

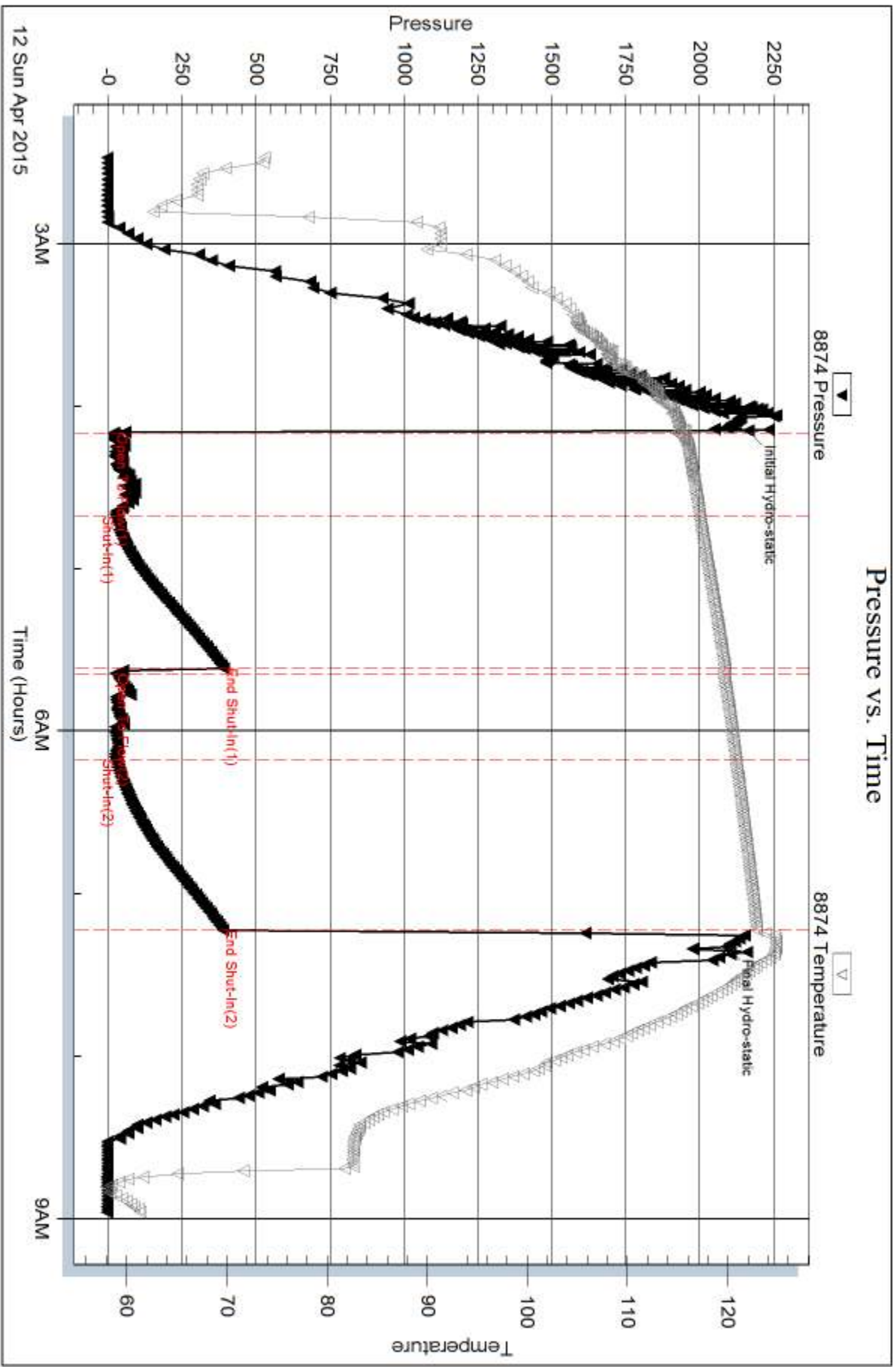
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

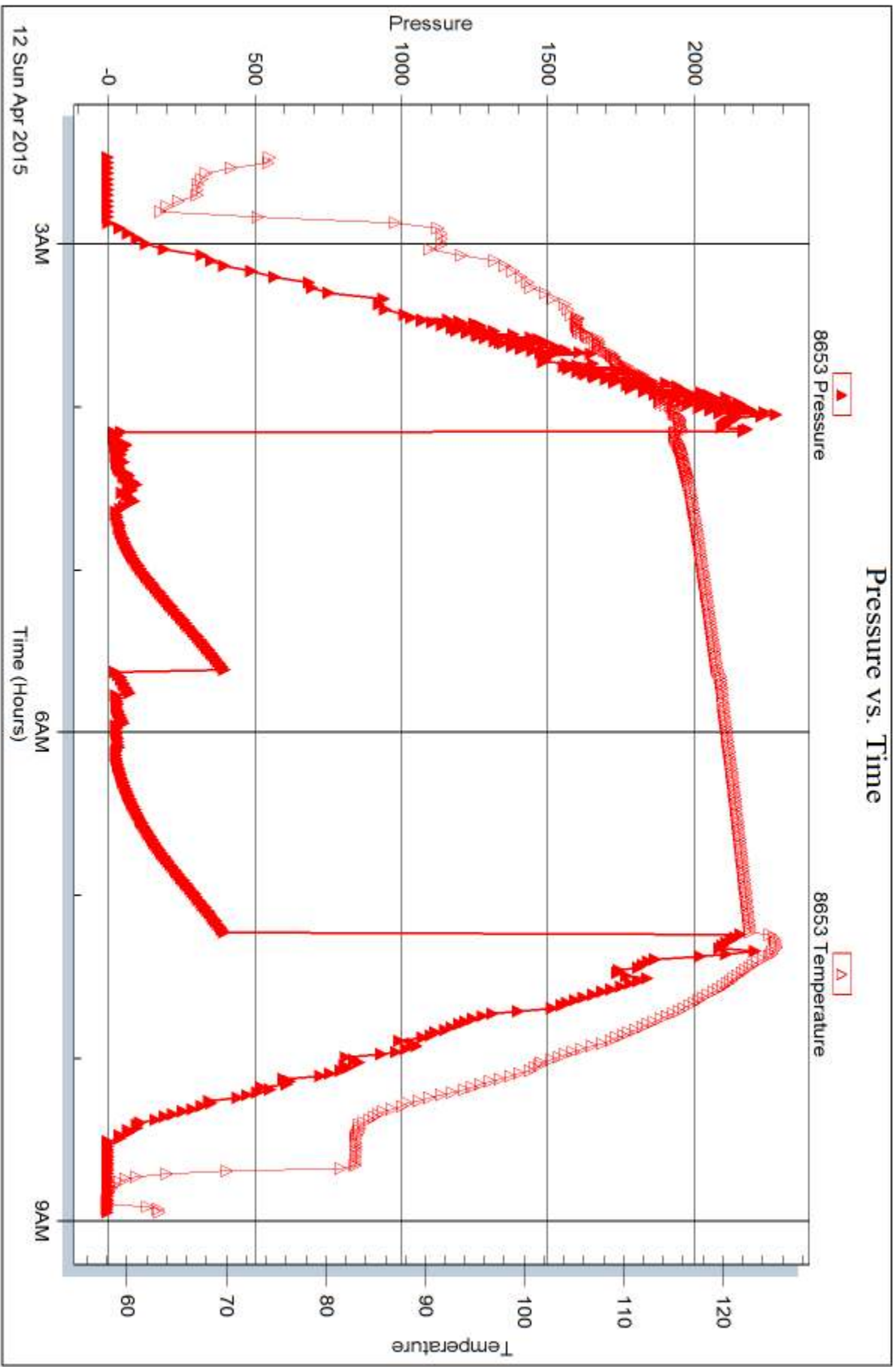


Serial #: 8653

Outside Murfin Drilling Co., Inc.

Oilwell "P" #1-14

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 62232

Printed: 2015.04.16 @ 10:29:27



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman Sharifaie

Culwell "F" #1-14

14-1s-37w Cheyenne,KS

Start Date: 2015.04.13 @ 05:00:00

End Date: 2015.04.13 @ 13:09:00

Job Ticket #: 62233 DST #: 5

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

Printed: 2015.04.16 @ 10:09:12



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62233

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2015.04.13 @ 05:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:53:30

Time Test Ended: 13:09:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Interval: 4528.00 ft (KB) To 4570.00 ft (KB) (TVD)

Reference Elevations: 3214.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

3203.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8653 Outside

Press@RunDepth: 71.97 psig @ 4529.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.04.13

End Date: 2015.04.13

Last Calib.: 2015.04.13

Start Time: 05:01:00

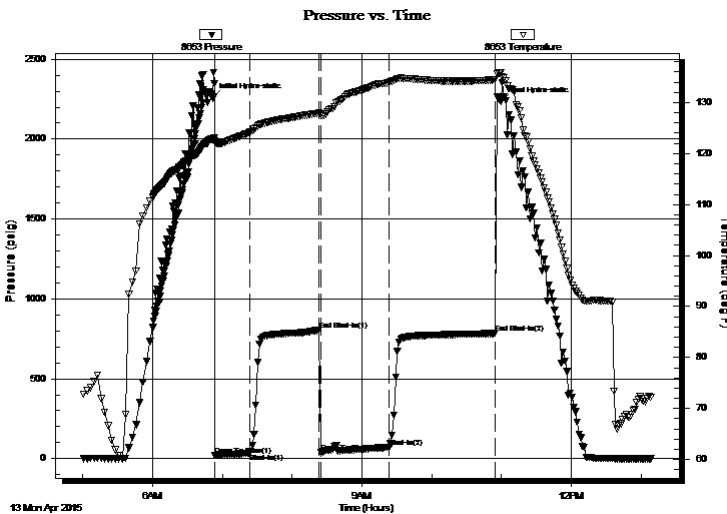
End Time: 13:09:00

Time On Btm: 2015.04.13 @ 06:52:10

Time Off Btm: 2015.04.13 @ 10:59:30

TEST COMMENT: 30 - IF- 1/4" Blow built to 6 3/4"
60 - IS- No Return
60 - FF- Surface Blow started at 4 min. BoB in 55 min.
90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2257.21	122.87	Initial Hydro-static
2	20.70	122.27	Open To Flow (1)
32	34.61	124.17	Shut-In(1)
91	804.77	127.94	End Shut-In(1)
93	37.45	127.65	Open To Flow (2)
152	71.97	133.98	Shut-In(2)
243	784.09	134.46	End Shut-In(2)
248	2235.88	135.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OCM 30o 70M	0.30
100.00	CGO 20G 80o	0.49
0.00	300' GIP	0.00

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62233

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2015.04.13 @ 05:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:53:30

Time Test Ended: 13:09:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 82

Interval: 4528.00 ft (KB) To 4570.00 ft (KB) (TVD)

Reference Elevations: 3214.00 ft (KB)

Total Depth: 4570.00 ft (KB) (TVD)

3203.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8874 Inside

Press@RunDepth: psig @ 4529.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.04.13

End Date:

2015.04.13

Last Calib.:

2015.04.13

Start Time: 05:01:00

End Time:

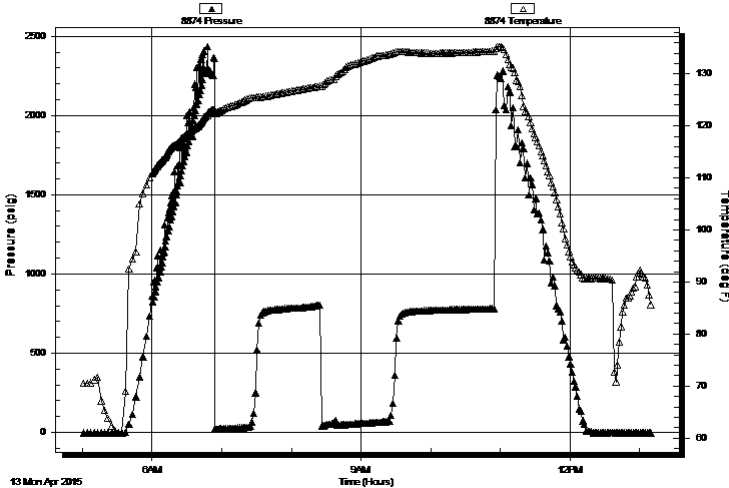
13:10:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 6 3/4"
60 - IS- No Return
60 - FF- Surface Blow started at 4 min. BoB in 55 min.
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
60.00	OCM 30o 70M	0.30
100.00	CGO 20G 80o	0.49
0.00	300' GIP	0.00

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62233

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2015.04.13 @ 05:00:00

Tool Information

Drill Pipe:	Length: 4315.00 ft	Diameter: 3.80 inches	Volume: 60.53 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: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight to Pull Loose: 84000.00 lb
			<u>Total Volume: 61.56 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4528.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	70.00 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			4501.00	
Shut In Tool	5.00			4506.00	
Hydraulic tool	5.00			4511.00	
Jars	5.00			4516.00	
Safety Joint	3.00			4519.00	
Packer	5.00			4524.00	28.00 Bottom Of Top Packer
Packer	4.00			4528.00	
Packer - Shale	0.00			4528.00	
Stubb	1.00			4529.00	
Recorder	0.00	8653	Outside	4529.00	
Recorder	0.00	8874	Inside	4529.00	
Perforations	2.00			4531.00	
Change Over Sub	1.00			4532.00	
Drill Pipe	32.00			4564.00	
Change Over Sub	1.00			4565.00	
Bullnose	5.00			4570.00	42.00 Bottom Packers & Anchor
Total Tool Length:	70.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

14-1s-37w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Culwell "F" #1-14

Job Ticket: 62233

DST#: 5

ATTN: Saman Sharifaie

Test Start: 2015.04.13 @ 05:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 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 30o 70M	0.295
100.00	CGO 20G 80o	0.492
0.00	300' GIP	0.000

Total Length: 160.00 ft Total Volume: 0.787 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

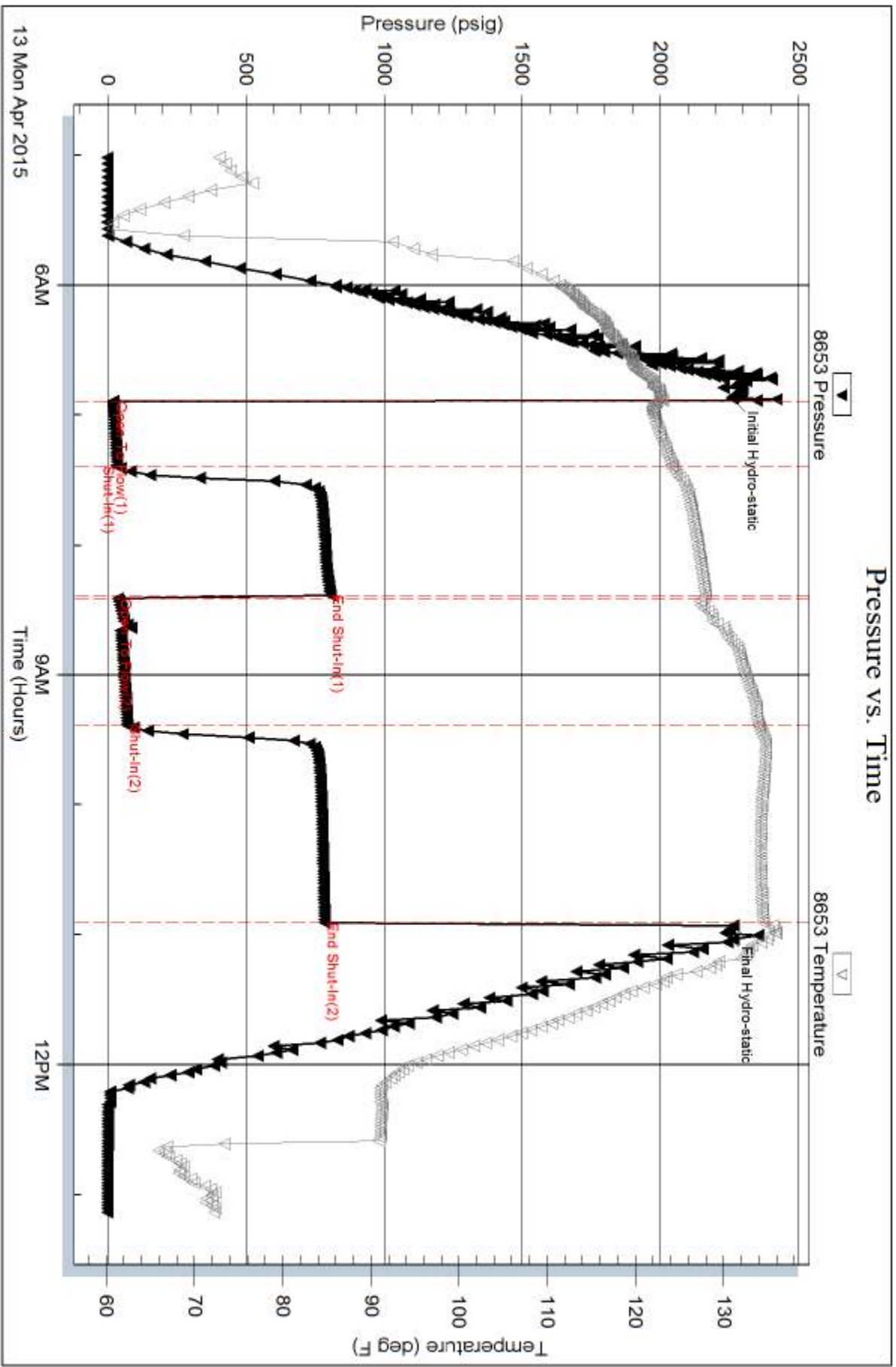
Recovery Comments: OIL API 37 @ 90 deg. = 34 corrected

Serial #: 8653

Outside Murfin Drilling Co., Inc.

Oilwell "P" #1-14

DST Test Number: 5



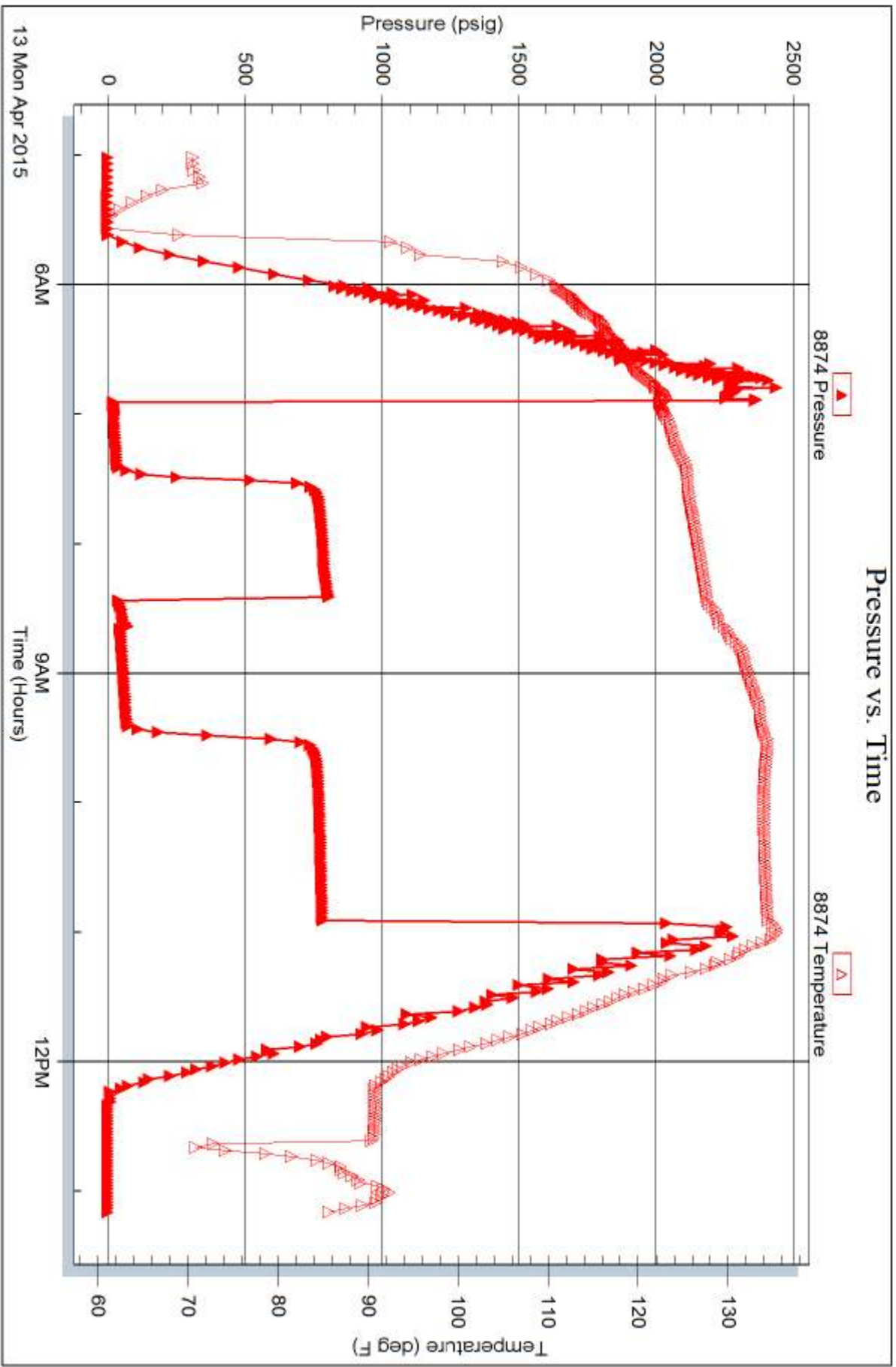
Serial #: 8874

Inside

Murfin Drilling Co., Inc.

Oilwell "F" #1-14

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62229

Well Name & No. Culwell "F" #1-14 Test No. 1 Date 4-10-15
 Company Murphy Drilling Co. Inc Elevation 3214 KB 3203 GL
 Address 250 N Water Wichita, KS 67202
 Co. Rep / Geo. Samun Sharifaie Rig Murphy #2
 Location: Sec. 14 Twp. 1S Rge. 37 W Co. Cheyeme State KS

Interval Tested 4170 - 4230' Zone Tested LKC "B-D"
 Anchor Length 60' Drill Pipe Run 3942' Mud Wt. 9.4
 Top Packer Depth 4166 Drill Collars Run 210' Vis 55
 Bottom Packer Depth 4170 Wt. Pipe Run 0 WL 8.0
 Total Depth 4230 Chlorides 1,000 ppm System LCM 10*
 Blow Description IF = 1" Blow built to 7"
ISI - No Return
FF - Surface Blow started at 7 min. Built to
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>Free Oil</u>	<u>100</u>			
<u>80</u>	<u>Mud</u>	<u>60</u>		<u>40</u>	

Rec Total 160 BHT 130 Gravity 29 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2056 Test 1150 T-On Location 9:50 AM
 (B) First Initial Flow 60 Jars 250 T-Started 10:05 AM
 (C) First Final Flow 76 Safety Joint 75 T-Open 12:15 PM
 (D) Initial Shut-In 87 Circ Sub T-Pulled 4:15 PM
 (E) Second Initial Flow 76 Hourly Standby T-Out 6:04 PM
 (F) Second Final Flow 78 Mileage 136 RT 128
 (G) Final Shut-In 81 Sampler
 (H) Final Hydrostatic 1987 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1603

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 1603
 MP/DST Disc't

Approved By _____ Our Representative

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. 62230

Well Name & No. Culwell "F" #1-14 Test No. 2 Date 4-11-15
 Company Murphy Drilling Co., Inc Elevation 3214 KB 3203 GL
 Address 250 N Water STE #3000 Wichita, KS 67202
 Co. Rep / Geo. Samuel Shurifaire Rig Murphy #2
 Location: Sec. 14 Twp. 15 Rge. 37 W Co. Cherokee State KS

Interval Tested 4226-4370 Zone Tested LKC "E-S"
 Anchor Length 144' Drill Pipe Run 40008 Mud Wt. 9.1
 Top Packer Depth 4222 Drill Collars Run 210' Vis 57
 Bottom Packer Depth 4226 Wt. Pipe Run 0 WL 5.6
 Total Depth 4370 Chlorides 10000 ppm System LCM 12[#]

Blow Description IF -
ISI -
FF - packer failure
FSI -

Rec	Feet of	%gas	%oil	%water	%mud
<u>300</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 <u>300</u>	BHT <u>118</u>	Gravity	API RW	@	°F Chlorides ppm

(A) Initial Hydrostatic 2097 Test 950 T-On Location 1:45 PM
 (B) First Initial Flow Jars 250 T-Started 1:55 PM
 (C) First Final Flow Safety Joint 75 T-Open 3:55 PM
 (D) Initial Shut-In Circ Sub 4:40 PM T-Pulled 5:46 PM
 (E) Second Initial Flow Hourly Standby 136 RT 128 T-Out
 (F) Second Final Flow Mileage 136 RT 128 Comments
 (G) Final Shut-In Sampler
 (H) Final Hydrostatic 2052 Straddle Shale Packer
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1403

Initial Open
 Initial Shut-In
 Final Flow
 Final Shut-In

Sub Total 1403
 Total 1403
 MP/DST Disc't

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62231

Well Name & No. Culwell "F" #14 Test No. 3 Date 4-11-15
 Company Murfin Drilling Co, Inc. Elevation 3214 KB 3243 GL
 Address 250 N Water St #3000 Wichita, KS 67202
 Co. Rep / Geo. Samir Sharifaie Rig Murfin #2
 Location: Sec. 14 Twp. 1S Rge. 37W Co. Cheyeme State KS

Interval Tested 4241-4370 Zone Tested LKC "G-J"
 Anchor Length 129' Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 4237 Drill Collars Run 210' Vis 57
 Bottom Packer Depth 4241 - Shale Packer Wt. Pipe Run 0 WL 5.6
 Total Depth 4370 Chlorides 40000 ppm System LCM 12#
 Blow Description IF - Hit Bridge @ 1650
FF -
PSI - Tripped out to condition Hole.

Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic _____ Test 850 T-On Location 1:45 PM
 (B) First Initial Flow _____ Jars 250 T-Started 6:00 PM
 (C) First Final Flow _____ Safety Joint 75 T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out 7:32 PM
 (F) Second Final Flow _____ Mileage _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1425
 Sub Total 1425 MP/DST Disc't _____

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62232

Well Name & No. Culwell "F" #14 Test No. 4 Date 4-12-15
 Company MURKIN Drilling CO., Inc. Elevation 3214 KB 3203 GL
 Address 2508 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig MURKIN #2
 Location: Sec. 14 Twp. 1S Rge. 37W Co. Cheyenne State KS

Interval Tested 4241-4370 Zone Tested LKC "G-5"
 Anchor Length 129' Drill Pipe Run 4030 Mud Wt. 9.1
 Top Packer Depth 4237 Drill Collars Run 210 Vis 57
 Bottom Packer Depth 4241 - shale Packer Wt. Pipe Run 0 WL 5.6
 Total Depth 4370 Chlorides 10000 ppm System LCM 12#

Blow Description IE - 1/4" Blow built to 1/2" Then died back to Surface Blow
ISI - NO Return
FF - NO Blow
PSE - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>CCM</u>	<u>10</u>		<u>90</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 123 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2165 Test 1150 T-On Location 2:10 Am
 (B) First Initial Flow 19 Jars 250 T-Started 2:27 Am
 (C) First Final Flow 27 Safety Joint 75 T-Open 4:10 Am
 (D) Initial Shut-In 390 Circ Sub - T-Pulled 7:10 Am
 (E) Second Initial Flow 23 Hourly Standby - T-Out 8:58 Am
 (F) Second Final Flow 27 Mileage 136 RT 128 Comments -
 (G) Final Shut-In 387 Sampler -
 (H) Final Hydrostatic 2090 Straddle -
 Shale Packer 250 Ruined Shale Packer -
 Extra Packer - Ruined Packer -
 Extra Recorder - Extra Copies -
 Day Standby - Sub Total 0
 Accessibility - Total 1853
 Sub Total 1853 MP/DST Disc't -

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62233

Well Name & No. Culwell "F" #1-14 Test No. 5 Date 4-13-14
 Company Murrin Drilling Co., Inc. Elevation 3214 KB 3203 GL
 Address 250 N Water STE #3000 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murrin #2
 Location: Sec. 14 Twp. 15 Rge. 37W Co. Cheyenne State KS

Interval Tested 4528-4570 Zone Tested Pawnee
 Anchor Length 42' Drill Pipe Run 4315' Mud Wt. 9.3
 Top Packer Depth 4524 Drill Collars Run 210 Vis 58
 Bottom Packer Depth 4528 - shale packer Wt. Pipe Run 0 WL 60
 Total Depth 4570 Chlorides 10000 ppm System LCM 12#
 Blow Description IF - 1/4" Blow built to 6 3/4"
ISI - NO Return
FF - Surface Blow started at 4 min. Built to BoB in 55 min.
FSI - ~~NO Return~~ NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1000</u>	<u>C60</u>	<u>20</u>	<u>80</u>		
<u>60</u>	<u>CCM</u>		<u>30</u>	<u>70</u>	
<u>3000</u>	<u>GIP</u>	<u>1000</u>			
Rec Total	<u>1600'</u>	BHT	<u>135</u>	Gravity	<u>34</u>

(A) Initial Hydrostatic 2257 Test 1150 T-On Location 4:55: AM
 (B) First Initial Flow 20 Jars 250 T-Started 5:00 AM
 (C) First Final Flow 34 Safety Joint 75 T-Open 6:54 AM
 (D) Initial Shut-In 804 Circ Sub T-Pulled 10:54 AM
 (E) Second Initial Flow 37 Hourly Standby T-Out 1:10 PM
 (F) Second Final Flow 71 Mileage 136 RT 128 Comments loaded tools
 (G) Final Shut-In 784 Sampler at end of test
 (H) Final Hydrostatic 2235 Straddle Ruined Shale Packer X1 350
 Ruined Packer
 Extra Copies
 Initial Open 30 Extra Recorder Sub Total 350
 Initial Shut-In 60 Day Standby Total 2203
 Final Flow 60 Accessibility MP/DST Disc't
 Final Shut-In 90 Sub Total 1853

Approved By _____ Our Representative [Signature]

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Saman Sharifaie

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**
LEASE: **Culwell - #1-14**

FIELD: **Wildcat**
LOCATION: **330' FNL & 660' FWTL**
SEC: **14** TWP: **1S** RGE: **31W**

COUNTY: **Cheyenne** STATE: **Kansas**
CONTRACTOR: **Martin Drilling #2**
RTPD: **04/06/15** COMP: **04/15/15**

SPUD: **4/7/15** TYPE MUD: **Chemical**
MUD UP: **3.252** LTD: **4742'**

SAMPLES SAVED FROM: **3310'** TO RTD
DRILLING TIME KEPT FROM: **3510'** TO RTD
SAMPLES EXAMINED FROM: **3310'** TO RTD

GEOLOGICAL SUPERVISION FROM: **3210'**
REFERENCE WELL: **MDCT - Therton #3-10**

CONDUCTOR: **8-5/8" at 221'**
SURFACE: **5-1/2" at 731'**
PRODUCTION: **5-1/2" at 731'**

ELECTRICAL SURVEYS
CND: D.L. MEL. Somic
Pioneer Wireline

Formation	Sample Tops	E-log Tops	Strat Pos.
Anhydrite	3165 (+49)	3162 (+52)	-3
Base Anhydrite	3200 (+14)	3195 (+19)	-6
Neva	3611 (-397)	3621 (-407)	8
TOPEKA	3942 (-728)	3954 (-740)	-9
Oredal	4078 (-864)	4088 (-876)	-9
Starke	4158 (-944)	4171 (-957)	-8
Stark	4373 (-1161)	4385 (-1171)	-5
Pawnee	4554 (-1340)	4560 (-1346)	-1
Cherokee	4640 (-1426)	4652 (-1438)	-2



REMARKS Due to poor to fair shows of oil in multiple pay zones and positive DST results, it is recommended and agreed upon by all parties that production casing be set to further evaluate this well.

Respectfully Submitted,

API #15-023-21424

Saman Sharifaie
Petroleum Geologist

*Tops have been adjusted to electric logs

