

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1236720  
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: \_\_\_\_\_

1236720

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

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

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

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

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

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

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

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

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

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

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

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

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

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Brown-Engle Unit 1-6
Doc ID	1236720

All Electric Logs Run

DIL
DUCP
MEL
BHCS



# ALLIED OIL & GAS SERVICES, LLC 064249

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:  
Calday KS

DATE <u>9-29-14</u>	SEC. <u>6</u>	TWP. <u>5s</u>	RANGE <u>30w</u>	CALLED OUT	ON LOCATION <u>8:00pm</u>	JOB START <u>10:00pm</u>	JOB FINISH <u>10:30pm</u>
LEASE <u>Brown Eagle</u>	WELL # <u>1-6</u>	LOCATION <u>Rexford T1N1E5N</u>	COUNTY <u>Decatur</u>	STATE <u>KS</u>			
OLD OR NEW (Circle one) <u>NEW</u>				<u>Winta</u>			

CONTRACTOR Murfin 7

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 223'

CASING SIZE 8 5/8 DEPTH 223.43'

TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

DRILL PIPE \_\_\_\_\_ DEPTH \_\_\_\_\_

TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_

PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_

MEAS. LINE \_\_\_\_\_ SHOE JOINT \_\_\_\_\_

CEMENT LEFT IN CSG. 15'

PERFS. \_\_\_\_\_

DISPLACEMENT 13 bbl water

EQUIPMENT \_\_\_\_\_

OWNER Same

CEMENT AMOUNT ORDERED 230 stks Com 3% CC

COMMON 230 stks @ 17.96 4119.00

POZMIX @ \_\_\_\_\_

GEL @ \_\_\_\_\_

CHLORIDE 649# @ 1.10 713.90

ASC @ \_\_\_\_\_

Material Total @ \_\_\_\_\_ 4830.90

(16.90.81/35%) @ \_\_\_\_\_

HANDLING 241.50-47 @ 2.48 598.92

MILEAGE 11.13 hrs @ 40mi @ 2.75 1224.30

TOTAL \_\_\_\_\_

PUMP TRUCK CEMENTER Paul Beaver

# 422 HELPER Ramero (TWS)

BULK TRUCK DRIVER Chris (TWS)

# 373/308

BULK TRUCK DRIVER \_\_\_\_\_

# \_\_\_\_\_

REMARKS:

Mix 230 stks Com 3% CC

Displace w/ water

cement did circulate

(10 bbl to pit)

plug down @ 10:30pm.

CHARGE TO: Murfin Drilling

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB 223'

PUMP TRUCK CHARGE 1512.25

EXTRA FOOTAGE @ \_\_\_\_\_

MILEAGE MILV 40 @ 7.70 308.00

MANIFOLD swedge MILV 40 @ 4.40 176.00

TOTAL 4094.17

(1433.06/35%)

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 8923.31

DISCOUNT 3123.87 (35%) IF PAID IN 30 DAYS

5,801.44 Net



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



# Invoice

DATE	INVOICE #
10/8/2014	27945

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

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	<del>#1-6</del> #1-16	<del>Brown - Eagle</del> Brown - Eagle	Decatur	Murfin Drilling	Oil	Development	5-1/2" LongString	Jason
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				120	Miles	6.00	720.00
579D	Pump Charge - Top To Bottom LongString				1	Job	2,000.00	2,000.00
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				10	Each	40.00	400.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
276	Flocele				125	Lb(s)	2.50	312.50T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				9	Sack(s)	35.00	315.00T
285	CFR-1				150	Lb(s)	4.50	675.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
325	Standard Cement				200	Sacks	14.50	2,900.00T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	18.50	5,550.00T
581D	Service Charge Cement				500	Sacks	2.00	1,000.00
583D	Drayage				3,046.5	Ton Miles	1.00	3,046.50
	Subtotal							21,154.00
	Sales Tax Decatur County						7.15%	1,028.71
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$22,182.71



Services, Inc. 1-6

CHARGE TO: MURFIN DRILLING  
 ADDRESS  
 CITY, STATE, ZIP CODE

WELL FILE

TICKET 27945

PAGE 1 OF 2

SERVICE LOCATIONS  
 1. NESS CITY, KS  
 WELL/PROJECT NO. 476  
 LEASE Brown - Eagle  
 CONTRACTOR MURFIN DRILLING TRIG #7  
 COUNTY/PARISH DECATUR  
 RIG NAME/NO  
 STATE KS CITY REXFORD, KS DATE 800714  
 SHIPPED VIA DELIVERED TO ORDER NO.  
 WELL TYPE OIL WELL CATEGORY DEVELOPMENT JOB PURPOSE S&K LONGSTRING  
 WELL PERMIT NO. 7N/16 SW WITS  
 REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575					115	120	mil				6.00	720.00
579					Pump Charge	1	JOB				200.00	200.00
403					Lemest BASKETS	3	BA.				300.00	900.00
406					LARGA DOWN PLUG & BAPPLE	1	BA.				275.00	275.00
407					INSERT FLDAT SHD W/FILL	1	BA.				375.00	375.00
409					TURBOUZERS	1	BA.				90.00	1350.00
413					ROTOVALU SCRATCHERS	1	BA.				400.00	400.00
419					ROTATING HEAD RENTAL	1	BA.				200.00	200.00
281					MUD FLUSH	500	gal.				1.25	625.00
221					LIQUID KCL	4	gal.				25.00	100.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.  
 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS  
 DATE SIGNED: 8/14/00 TIME SIGNED: 1400 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?  
 AGREE UN-DECIDED DIS-AGREE  
 TOTAL 22,162.71

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.  
 SWIFT OPERATOR: [Signature]  
 APPROVAL: [Signature]  
 Thank You!



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

TICKET CONTINUATION

TICKET No. 27945

CUSTOMER MURFIN DRILLING

WELL Brown-Eagle 1-16

DATE 8 OCT 14 PAGE 2 OF 2

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY		UNIT		UNIT PRICE	AMOUNT	
		LOC	ACCT	DR			QTY	U/M	QTY	U/M			
276						FLOCELE	125	lbs			2.50	312.50	
283						SALT	1800	lbs			.25	450.00	
284						CAUSEAL	9	bx			35.00	315.00	
285						CFR-1	150	lbs			4.50	675.00	
290						D-AIR	5	gal			42.00	210.00	
325						STANDARD EA-2	200	bx			14.50	2900.00	
330						SMD CEMENT	300	bx			18.50	5550.00	
581						SERVICE CHARGE					2.00	1000.00	
583						MILEAGE CHARGE					7.00	3046.50	
							TOTAL WEIGHT	50775		LOADED MILES	120		
							CUBIC FEET			500	bx		
							TON MILES			3046.50			
CONTINUATION TOTAL												14209.00	



**JOB LOG**

**SWIFT Services, Inc.**

DATE **8 OCT 14** PAGE NO.

CUSTOMER **MURFIN DRILLING**

WELL NO.

LEASE **BROWN EAGLE 1-16**

JOB TYPE **5 1/2" LONG STRING**

TICKET NO. **27945**

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0445							ON LOCATION
	0830							START PIPE - 5 1/2" - 15.5" RID @ 4430 SHOE JT. 20.93 CENTRALIZERS, 1, 2, 3, 5, 6, 7, 8, 10, 13, 14, 15, 16, 18, 43, 65 BASKETS - 16, 44, 66
	1110							DROP BALL - CIRCULATE.
	1211	6	12				400	Pump 500 gal MUD FLUSH Pump 20 BBL KIL SPACER
		6	20					
	1219		7.5					PLUG RH-30SX - MH-20SX
	1223	6	139				200	MIX 250SX SMD
		4	48				200	MIX 200SX EA-2
	1305							WASH OUT Pump & LINES.
	1307	6						START DISPLACING PLUG.
	1326	8	105				1700	PLUG DOWN LATCH PLUG IN.
	1328							RELEASE PSI - DRY CIRCULATE 30SX TO PIT
	1330							WASH TRUCK
	1400							JOB COMPLETE
								THANKS #115
								JASON DAVE ROB JARED



CHARGE TO: Murtas Drig Co.  
 ADDRESS  
 CITY, STATE, ZIP CODE

**WELL FILE**

TICKET 26967  
 PAGE 1 OF 1

SERVICE LOCATIONS  
 1. Chops, KS WELLS/PROJECT NO. 1-6 LEASE Brown/Engle Unit COUNTY/PARISH Decatur STATE KS CITY 11-18-14 DATE  
 2. Ness City, KS TICKET TYPE  SERVICE CONTRACTOR Co RIG NAME/NO. W/Reed, KS ORDER NO.  
 3. WELLS TYPE  SALES WELLS CATEGORY Wildcat JOB PURPOSE Squeeze Perfs WELLS PERMIT NO.  
 4. REFERRAL LOCATION Delta INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	LOC	ACCT	DF	DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT	ACCOUNTING	
												ACCT	DF
575		1			MILEAGE # 113	120	mi			6000	720000		
578		1			Ring Charge - Deep Squeeze	100		<1035	ft	1500000	15000000		
290		1			D-Air	2	gal			52000	84000		
325		2			Structural Cement (28cc)	150	skt	14000	lbs	14500	217500		
278		2			Calcium Chloride	3	skt	240	lbs	50000	150000		
581		2			Service Charge - Cement	150	skt	14340	lbs	2000	300000		
583		2			Drillage	8604	ft	130	in	100	860400		

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

DATE SIGNED 11-18-14 TIME SIGNED 10:00  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?  
 CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 5789.40  
 TAX 172.24  
 TOTAL 5961.64

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

Thank You!

**JOB LOG**

**SWIFT Services, Inc.**

DATE 11-18-14

PAGE NO. 1

CUSTOMER *Murphy Drilling Co.*

WELL NO. 1-6

LEASE *Brown-Engle Unit* JOB TYPE *Squeeze Perfs*

TICKET NO. 26967

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0945					2 3/8	5 1/2	DN location - 150 sts std cut 2 1/2 cc
	10:00							Setup TMs.
		2 1/2	105					Circulate Hole @ 3893'
	1055	2 1/2				600	500	PKR @ 3893 - Ann 500 /inj rate
		2 1/2				600		Start cut
		2 1/2	15/20			300	100	Pressure decrease slowly
		2 1/2	27			100	700	Pressure incr @ 27 BBL cut
	11:10	2 1/2	33/1			500	600	Fin cut - Start Displ
		2 1/2	10/13			800	900	Pressure slowly incr - slow rate
	11:20	1 1/2	16 1/2			1200	1150	Stop Displ -
						1000		Holding - Let stand
	11:40							Release pressure - not holding
		1/2	17 1/2			1050	1000	Repressure - pump 1 BBL
	11:45					closed		Washup PT.
	12:00					900		Open up valve - 900*
						1250	1100	Bump pressure to 1250 - slow bleed
						1500	1500	Bump to 1500* twice & holding
	12:20					1500		Release to Dry
		2 1/2					700	Rev-out Hg - no flow
	12:40		25					Fin Rev-out
								Pull 3 JTs
						300	300	PKR swing - close in 300*
								Job complete
								Packup P.T.
	1315							Thanks Don, Tom, Steve & Gerald

Brown-Engle Unit #1-6  
 Daily Drilling Report  
 Page Three

Brown-Engle Unit #1-6 405' FSL 1320' FEL Sec. 6-5S-30W 2874' KB							Juenemann #1-7 1210' FNL 550' FEL Sec. 7-5S-30W 2929' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	2630	+244	-29	2607	+267	-6	2656	+273
B/Anhydrite	2650	+224	-43	2643	+231	-36	2692	+267
Topeka	3703	-829	Flat	3701	-827	+2	3758	-829
Heebner	3872	-998	+3	3871	-997	+4	3930	-1001
Lansing	3918	-1044	+2	3921	-1047	-1	3975	-1046
Stark	4084	-1210	+2	4085	-1211	+1	4141	-1212
BKC	4132	-1258	+3	4133	-1259	+2	4190	-1261
Pawnee	4240	-1366	+5	4247	-1373	-2	4300	-1371
Ft Scott	4317	-1443	+6	4320	-1446	+3	4378	-1449
Cherokee	4328	-1454	+7	4331	-1457	+4	4390	-1461
Mississippi	NR			NR			4507	-1578
RTD	4430	-1556					4600	-1671
LTD				4443	-1569		4603	-1674

# Saman Sharifaie

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY **Martin Drilling Co., Inc.**  
LEASE **Brown Eagle Unit #1-6**

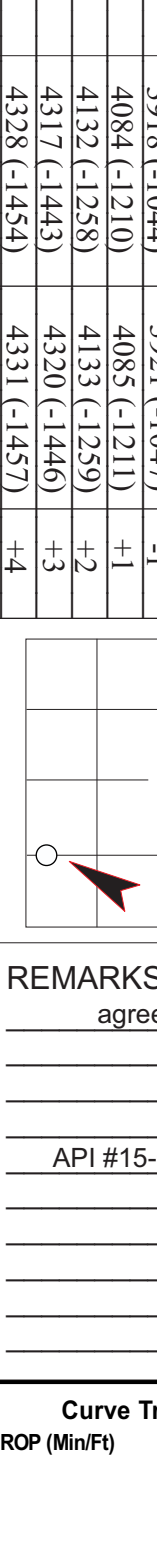
FIELD **Elna East**  
LOCATION **405 F.S. & 1320 FEL**  
SEC **6** TWP **S5** RGE **30W**  
COUNTY **Decatur** STATE **Kansas**  
CONTRACTOR **Martin Drilling #7**  
RTD **09/29/14** COMP **10/08/14**  
SPUD **4430'** LTD **4433'**  
MUD UP **3.223'** TYPE MUD **Chemical**

SAMPLES SAVED FROM **3600'** TO RTD  
DRILLING TIME KEPT FROM **3600'** TO RTD  
SAMPLES EXAMINED FROM **3600'** TO RTD  
GEOLOGICAL SUPERVISION FROM **3300'**  
REFERENCE WELL **MDC1 - Luennemann #1-7**

ELEVATIONS  
KB **2874'**  
DF \_\_\_\_\_  
GL **2869'**  
Measurements Are All From Kelly Bushing  
CASING  
CONDUCTOR \_\_\_\_\_  
SURFACE **8-5/8" at 223'**  
PRODUCTION **5-1/2" at 429'**  
ELECTRICAL SURVEYS  
CND; DIL; MEL; SWIC

FORMATION **MDC1 - Luennemann #1-7**

Formation	Sample Tops	E-log Tops	Strat Pos.
Anhydrite	2630 (+244)	2607 (+267)	-6
Base Anhydrite	2650 (+224)	2743 (+211)	-36
Togus	3703 (+820)	3701 (+827)	-2
Hedberg	3872 (+998)	3871 (+997)	-4
Leising	3918 (+1044)	3921 (+1047)	-1
Stark	4084 (+1210)	4051 (+1211)	-1
BKC	4152 (+1258)	4153 (+1259)	-2
Ft Scott	4317 (+1443)	4320 (+1446)	+3
Cherokee	4328 (+1454)	4331 (+1457)	+4



REMARKS Due 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 #15-039-21213  
Saman Sharifaie  
Petroleum Geologist

\*Tops have been adjusted to electric logs

Depth	Lithology	Geological Descriptions	Engineering Data
2600 - 2650	Anhydrite	Anhydrite 2607 (+267)  Base 2743 (+231)	
3600 - 3650	Conn	<b>DAILY PENETRATION @ 7:00 AM</b> 09/29/14 - Spudded at 4:45 PM 09/30/14 - WOC at 223' 10/01/14 - Drilling at 2570' 10/02/14 - TIH after DST#1 at 3920' 10/03/14 - TIH after DST#2 at 3950' 10/05/14 - Drilling at 4050' 10/06/14 - Drilling at 4135' 10/07/14 - TIH after DST#5 at 4358'	Deviation Survey @ 3579: 1/2
3650 - 3700	Conn	La, crm/gry, fn xln, foss IP, pr por, pyrc IP, shly, n/s Sh, gry/varic, sly IP, fri to sft	
3700 - 3750	Conn	La, crm/lt gry/tan, fn xln, foss, pr pp micr-Oolc por, pt dns, sli fri, sbang to blkly, n/s La, crm/lt gry, fn xln, foss, pr por, dns, sly IP, Tr calc, chky, blkly, scat gry/blk Sh, n/s Sh, rd/bm/gn, sly to gmy/sft	
3750 - 3800	Conn	La, crm/tan, fn xln, foss IP, pr vis por, dolc IP, dns to sli fri, sub-chky IP, blkly, n/s La, a, lt gry IP, sli, molt, calc	
3800 - 3850	Conn	La, crm/gry, fn xln, foss IP, Tr micr-Oolc & intoss por, pt dns, dolc IP, chky, Tr pyr, shly, n/s Sh, gry/gn/bm/ormg, fri to gmy, sly IP	
3850 - 3900	Conn	<b>Topeka 3701 (-827)</b> La, crm/tan/lt gry, fn xln, foss IP, pr vis por, sli gran to dolc, v chky, Tr fr gr Sd, n/s La, crm/lt gry, fn xln, sli foss, pr intbn por, sli gran, dns, sli fri to chky, sbang, n/s Sat, cln/lt gry, vf gr, pr intgran por, dns, calc, reazd, intbdd foss, sli fri, const, sbang, n/s Sh, gry/bn/varic, sly to mdy, sft to fri	
3900 - 3950	Conn	<b>Deer Creek 3755 (-881)</b> La, crm/tan, sing, fn xln, foss, no-pr vis por, rr dolc pcs, dns, sub-chky IP, sbang to blkly, n/s Sh, brn, sft to gmy La, crm/tan, fn xln, foss, no-pr vis por, v dns, ti, calc cmt, hd, blkly, chky IP, n/s La, a, a, Tr gry pcs, ang to blkly, incr calc Sh, blk carb	
3950 - 4000	Conn	Sh, gry/gn/bm, sly IP, fri to sli brit, incr gmy w/ dpth <b>LeCompton 3813 (-938)</b> La, crm/lt gry, sing, fn xln, sli foss, pr por, dns, calc, chky IP, Tr dd spdt stn, no odr, NSLO Sh, brn, gry, sly IP, pred sft to gmy La, crm/lt gry, fn xln, sli foss, no-pr vis por, dns, calc, hd to chky, scat dd spkld stn, no odr, NSLO Sh, brn/lt gn/gry/blk, fiss IP, sft to brit	Morgan Mud @ 3814' Wt: 8.9 Vis: 62 WI: 7.6 Chl: 1,300 LCM: 2#
4000 - 4050	Conn	<b>Oread 3850 (-976)</b> La, crm/lt gry, fn xln, sli foss, pr intOolc por, pred dns w/ NVP, dns, calc cmt, hd to chky, Tr dd blk spkld stn, no odr, NSLO La, crm, sing, vf-in xln, Tr foss, v pr vis por, dns, sli calc, v chky, Tr sly pcs, n/s <b>Heebner 3871 (-997)</b> Sh, blk carb, fiss IP, pyrc Sh, gry/dk gry, fiss IP, sli carb, brit, pyrc IP	DST #1 (Toronto) 3870'-3920' 30-60-30-60 IF: Weak blow, built to 3/4" FF: No blow Rec: 10' M (100%M) IFP: 19 - 25 FFP: 27 - 32 ISIP: 1084 FSIP: 998 IHP: 1936 FHP: 1891 BHT: 116°
4050 - 4100	Conn	Sh, gry/bn/gn, sly to sndy, scat gmy pcs <b>Toronto 3904 (-1030)</b> La, crm, fn xln, foss, pr-fr intbn & foss por, Tr xln vugs, dns to chky, sbang, scat dk brn/blk stn, pt-mod sat, pyrc IP, sli irid OCW fnt odr, SSFO	
4100 - 4150	Conn	<b>Lansing 3921 (-1047)</b> La, crm/wh/lt gry, fn xln, sli foss, pr-fr intOolc por, pt dns, blkly, sly, sub-chky to chky IP, pyrc IP, scat dk brn/blk ptch spdt stn, It pt sat, Tr irid, no odr, NSFO Sh, gry/gn, sli sly, brit to fri Sh, brn/dk org, gmy to sft La, crm/tan, fn xln, foss, pr-fr intOolc por, pt dns, fri, hd/blkly IP, fr amt dk brn spdt stn, mod sat to sub-sat, pyrc IP, slw bid pp FO, rr G Bubb, irid OCW bri yel fluor, fr odr, SF/SFO La, crm/wh/lt gry, sing, vf xln, foss IP, Tr pr intOolc por, pred dns w/ NVP, Tr calc, blkly, ti, chky, pyrc IP, Tr dk brn/blk spdt stn, It sat, Tr irid, no odr, VSSFO	Deviation Survey @ 3920: 1/2 DST #2 (LKC A-B) 3911'-3950' 30-60-30-60 IF: Built to 1" FF: Built to 3/4" Rec: 63' OCWM (10%O, 5%W, 85%M) IFP: 19 - 33 FFP: 37 - 47 ISIP: 1107 FSIP: 1053 IHP: 1982 FHP: 1873 BHT: 114°
4150 - 4200	Conn	La, a, a, deer Shw abund, Tr gry Sh, v chky, NSFO Sh, brn/ormg/gn/gry, sly IP, pred gmy & sft La, crm/tan, fn xln, foss, pr-fr intOolc por, Tr vugs, dns, fri IP, blkly, shly, dk brn spdt stn, It sat, rr pp FO & G Bubb, sli ti, irid OCW Tr di yel fluor, fnt odr, VSSFO La, wh/lt crm/tan, micr-vf xln, foss IP, no-pr vis por, dns, calc IP, blkly, ti, chky, Tr Cht, pyrc IP, rr dk brn/blk spdt & surf stn, It sub-sat, Tr irid, no odr, VSSFO La, wh/lt gry/lt brn, vf-in xln, foss, pr vis por, dns, calc, pyrc IP, dolc IP, chky, scat gry Sh, n/s Sh, blk carb Sh, gry/lt gn/bm, fiss IP, fri to brit	Morgan Mud @ 4006' Wt: 9.0 Vis: 52 WI: 8.0 Chl: 1,500 LCM: 4# Pipe Strap @ 4006: 1.36' Long to Board Deviation Survey: 1/2 DST #3 (LKC D-G) 3948'-4006' 30-60-60-90 IF: BOB in 6 mins ISI: 4" return FF: BOB in 7 mins FSI: BOB in 48 mins Rec: 1004' Total Fluid, 819' GIP, 383' CGO (30%G, 70%O), 189' GOCM (30%G, 10%O, 60%M), 252' OSMW (90%W, 10%M), 180' OSMW (95%W, 5%M) IFP: 42 - 253 FFP: 256 - 487 ISIP: 1325 FSIP: 1274 IHP: 2039 FHP: 1894 BHT: 122° Gravity: 27 API RW: 0.14 @ 55°F Chl: 72,000 PPM
4200 - 4250	Conn	Sh, blk carb Sh, varic, sft to gmy La, crm, vf xln, Tr foss, rr intbn & Oolc por, pred dns w/ NVP, ti sli calc, hd to chky, blkly, Tr brn spdt stn, v It sub-sat, Tr irid, gn min fluor, v fnt odr, VSSFO La, a, a, tan IP, decr Shw abund, incr calc, NSFO Sh, gry/gn/blk carb, fiss, brit, pyrc IP La, It gry/orm/tan, molt IP, vf-in xln, Tr foss, no-pr vis por, dns, ti, sub-chky IP, sli calc, blkly, n/s <b>BKC 4133 (-1259)</b> Sh, varic, sly IP, fiss IP, fri to sft Sh, gry/gn, fiss, brit to sft/gmy	Morgan Mud @ 4110' Wt: 9.0 Vis: 50 WI: 8.0 Chl: 2,000 LCM: 2# DST #4 (LKC H-K) 4019'-4110' 30-60-60-90 IF: BOB in 5 mins FF: BOB in 6 mins FSI: BOB in 28 mins Rec: 691' Total Fluid, 2802' GIP, 504' CGO (20%G, 80%O), 187' GOCM (20%G, 10%O, 70%M) IFP: 90 - 161 FFP: 187 - 282 ISIP: 1242 FSIP: 1240 IHP: 2049 FHP: 1956 BHT: 120°
4250 - 4300	Conn	La, crm/wh/lt gry, fn xln, sli foss, no-pr vis por, dns, calc, hd to chky, shly, n/s <b>Lenapah 4161 (-1287)</b> La, It gry/crm/tan, fm-med xln, pr intbn por, pred NVP, pt dns, fri, sly IP, sub-midd, chky, Tr Sd, n/s Sh, brn/lt gry/lt gn, gmy, sft Sh, brn/gry/lt gry, gmy/sft to brit Sh, gry/dk gry/gn, fiss, fri to brit, pyrc IP La, crm/wh/lt gry, fn xln, sli foss, pr por, dns, calc, chky IP, pred Sh, Tr Sd, rr dolc pcs, n/s Sh, brn, gmy to sft Sh, gry/varic, fiss, fri to brit, gmy IP, Tr Sd Sh, varic, sly IP, sft to brit, Tr gmy	Morgan Mud @ 4211' Wt: 9.1 Vis: 67 WI: 7.6 Chl: 2,500 LCM: 3#
4300 - 4350	Conn	<b>Pawnee 4247 (-1373)</b> La, crm/tan, vf-in xln, foss, Tr pr pp intOolc por, pred dns w/ NVP, calc cmt, blkly, chky IP, shly, n/s La, a, a, gry/purp IP, sli sly, incr chky to sub-chky pcs Sh, varic/bm, sft to gmy Sh, dk gry/blk carb, pyrc IP, fiss, brit Sh, gry, fiss IP, brit	
4350 - 4400	Conn	<b>Lower Pawnee 4283 (-1409)</b> La, crm/tan/lt gry, fn xln, foss IP, Tr pr intOolc por, pt dns, calc IP, blkly, chky to sub-chky IP, Tr gran/sly pcs, pred gry Sh a, a, n/s Sh, gry/gn/bm, mica, brit Sh, blk carb/gry, fiss, brit	DST #5 (Verdigris) 4322'-4358' 30-60-30-60 IF: 1/8" blow, died in 5 mins FF: No blow Rec: 5' M (100%M) IFP: 21 - 25 FFP: 29 - 35 ISIP: 41 FSIP: 39 IHP: 2321 FHP: 2277 BHT: 121°
4400 - 4450	Conn	<b>Ft Scott 4320 (-1446)</b> La, crm/lt gry, sing, tan, vf-in xln, Tr pr intOolc por, pred dns w/ NVP, ti, dns, hd, calc cmt, blkly, chky IP, scat lt brn stn, sub-sat, Tr irid, no odr, NSFO <b>Cherokee 4331 (-1457)</b> Sh, varic, gmy to sly IP <b>Verdigris 4339 (-1465)</b> La, a, a, Tr glauc Sat, sli fri IP, n/s Sh, blk carb/gry Sh, blk carb/gry/bm/gn, fiss IP, sft to brit Sh, varic/blk carb, mica, brit La, crm/lt gry/tan, molt, fn xln, sli foss, pr vis por, dns, calc, intbdd Sh, Tr Sd, n/s Sat, cln/whit, fn gr, mod srted, pr intgran por, dns, calc, reazd, sli fri, pt const, scat crm/lt gry La, n/s La, a, a, pred gry/bm Sh Sh, gry/bm, sft to sli gmy	Deviation Survey @ 4338: 1/2 Morgan Mud @ 4376' Wt: 9.3 Vis: 62 WI: 8.4 Chl: 2,700 LCM: 4#
4450 - 4450	CFS	<b>RTD 4430 (-1556)</b>	Deviation Survey @ 4430: 1/2

Curve Track 1 ROP (Min/Ft) Gammma (API) Caliper (Inches)





## DRILL STEM TEST REPORT

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

250 N Water STE #300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Brown-Engle Unit 1-6**

### **6-5s-30w Decatur,KS**

Start Date: 2014.10.03 @ 00:25:00

End Date: 2014.10.03 @ 09:13:30

Job Ticket #: 60187                      DST #: 1

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

Printed: 2014.10.15 @ 16:30:28



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60187

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.10.03 @ 00:25:00

## GENERAL INFORMATION:

Formation: **Toronto**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:43:30

Time Test Ended: 09:13:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

**Interval: 3870.00 ft (KB) To 3920.00 ft (KB) (TVD)**

Reference Elevations: 2874.00 ft (KB)

Total Depth: 3920.00 ft (KB) (TVD)

2869.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8653 Outside**

Press@RunDepth: 32.50 psig @ 3871.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.03

End Date:

2014.10.03

Last Calib.: 2014.10.03

Start Time: 00:26:00

End Time:

09:13:30

Time On Btm: 2014.10.03 @ 03:42:30

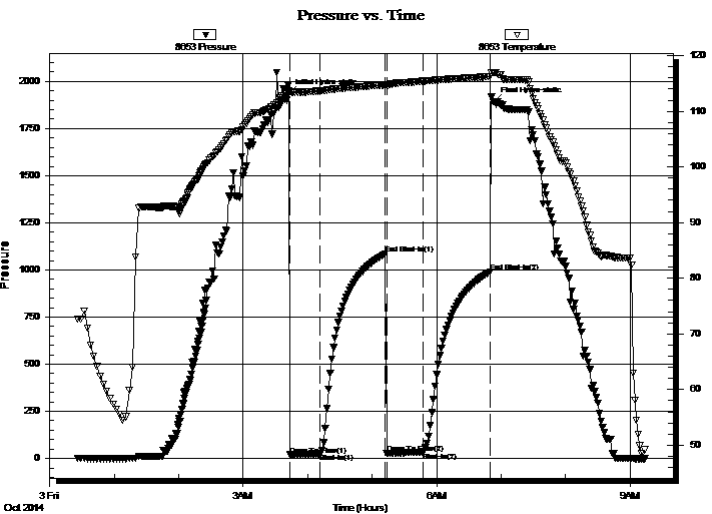
Time Off Btm: 2014.10.03 @ 06:53:30

TEST COMMENT: 30 - 1/8" Blow built to 3/4"

60 - ISI- No Return

30 - FF- No Blow

60 - FSI- No Return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1936.59	113.66	Initial Hydro-static
1	19.48	113.51	Open To Flow (1)
29	25.77	113.69	Shut-In(1)
90	1084.84	114.76	End Shut-In(1)
91	27.59	114.62	Open To Flow (2)
125	32.50	115.43	Shut-In(2)
187	988.86	116.25	End Shut-In(2)
191	1891.47	117.00	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud 100M	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.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60187

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.10.03 @ 00:25:00

## Tool Information

Drill Pipe:	Length: 3675.00 ft	Diameter: 3.80 inches	Volume: 51.55 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 77000.00 lb
			<u>Total Volume: 52.47 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	3870.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 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			3843.00	
Shut In Tool	5.00			3848.00	
Hydraulic tool	5.00			3853.00	
Jars	5.00			3858.00	
Safety Joint	3.00			3861.00	
Packer	5.00			3866.00	28.00 Bottom Of Top Packer
Packer	4.00			3870.00	
Stubb	1.00			3871.00	
Recorder	0.00	8653	Outside	3871.00	
Recorder	0.00	8874	Inside	3871.00	
Perforations	10.00			3881.00	
Change Over Sub	1.00			3882.00	
Drill Pipe	32.00			3914.00	
Change Over Sub	1.00			3915.00	
Bullnose	5.00			3920.00	50.00 Bottom Packers & Anchor

**Total Tool Length: 78.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60187

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.10.03 @ 00:25:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud 100M	0.049

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

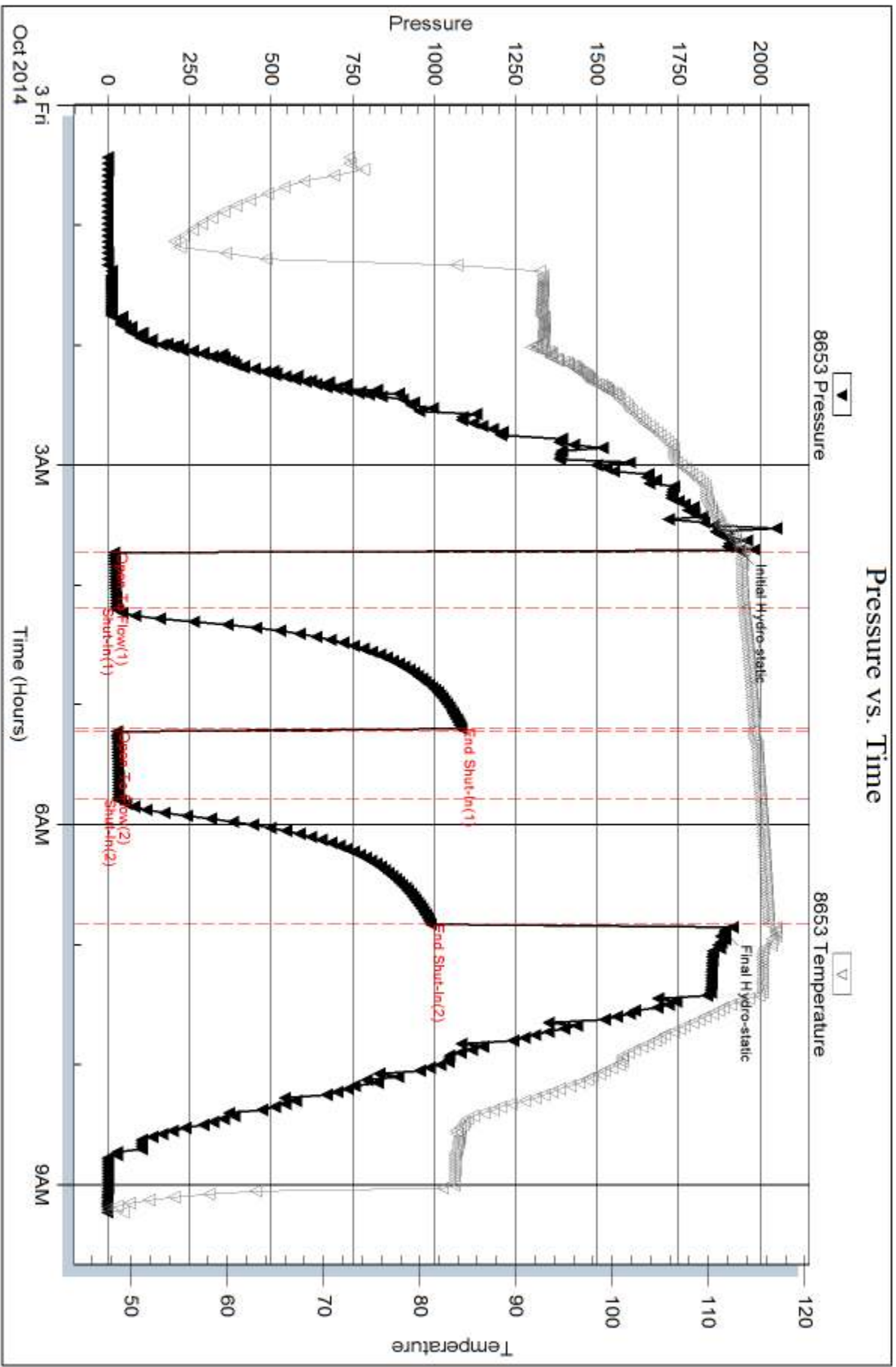
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



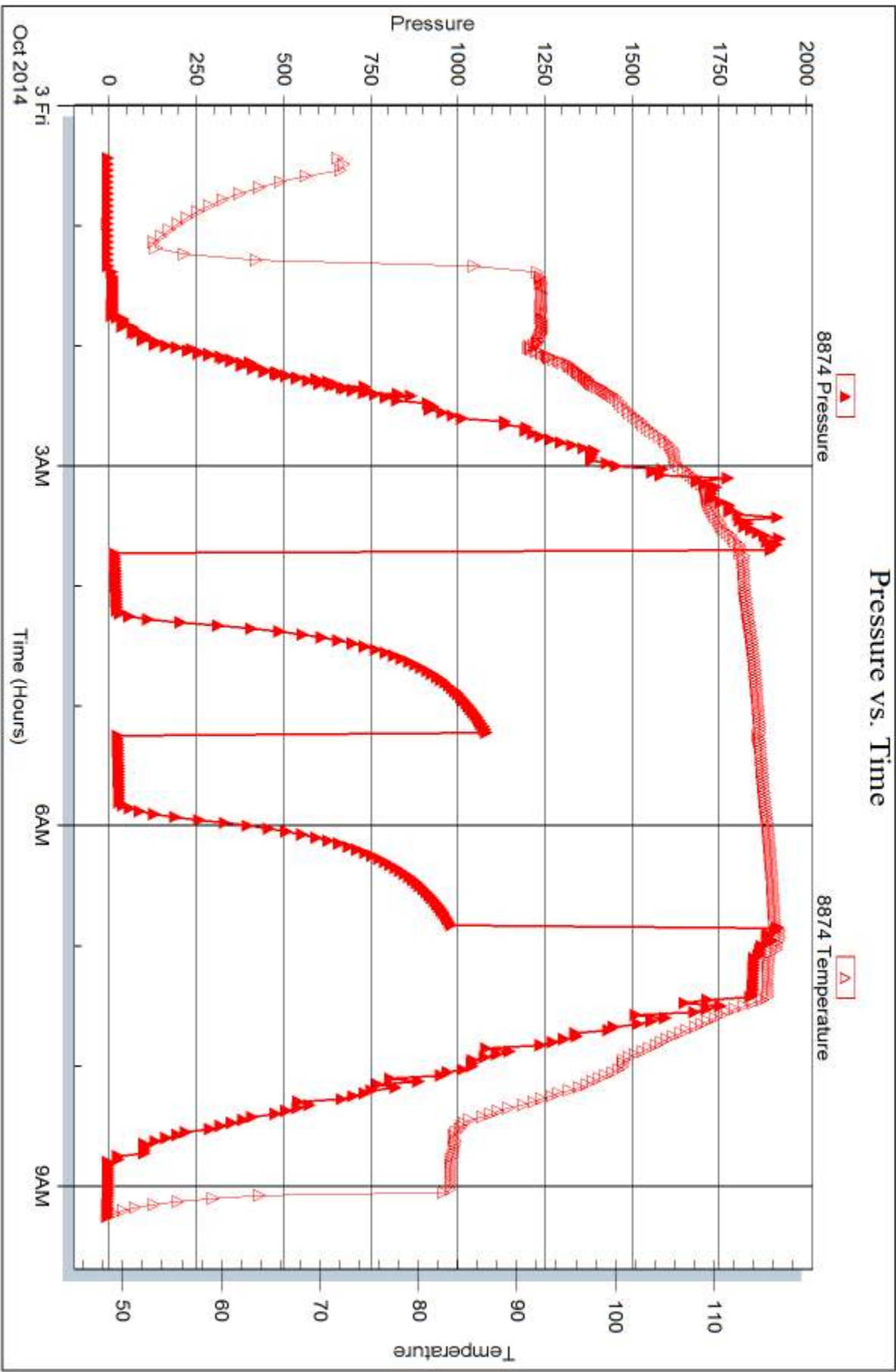
Serial #: 8874

Inside

Murfin Drilling Co., Inc.

Brown-Engle Unit 1-6

DST Test Number: 1





## DRILL STEM TEST REPORT

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

250 N Water STE #300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Brown-Engle Unit 1-6**

### **6-5s-30w Decatur,KS**

Start Date: 2014.10.03 @ 16:30:00

End Date: 2014.10.04 @ 02:52:00

Job Ticket #: 60188                      DST #: 2

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

Printed: 2014.10.15 @ 16:30:06



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

ATTN: Saman Sharifaie

Job Ticket: 60188

**DST#: 2**

Test Start: 2014.10.03 @ 16:30:00

## GENERAL INFORMATION:

Formation: **LKC "A-B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:14:00

Time Test Ended: 02:52:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

**Interval: 3911.00 ft (KB) To 3950.00 ft (KB) (TVD)**

Reference Elevations: 2874.00 ft (KB)

Total Depth: 950.00 ft (KB) (TVD)

2869.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8874**

**Inside**

Press@RunDepth: 47.88 psig @ 3912.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.03

End Date:

2014.10.04

Last Calib.: 2014.10.03

Start Time: 16:31:00

End Time:

02:52:00

Time On Btm: 2014.10.03 @ 21:13:00

Time Off Btm: 2014.10.04 @ 00:35:00

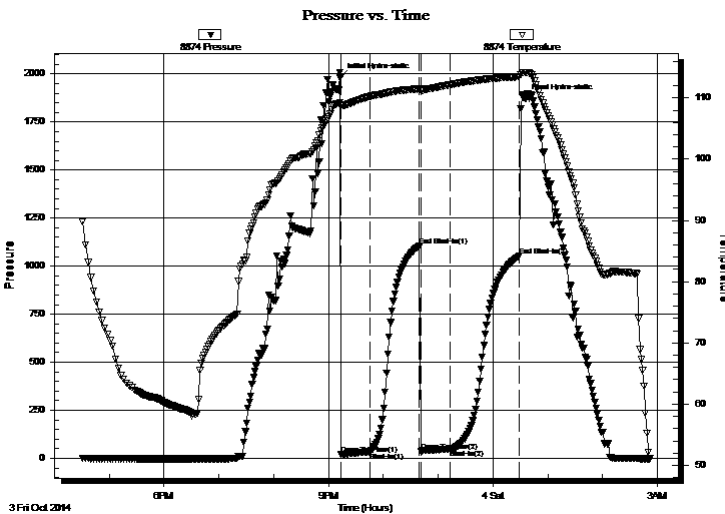
TEST COMMENT: 30 - IF- 1/4" Blow built to 1" then died back to 3/4"

60 - IS- No Return

30 - FF- Surface Blow started at 2 min. Built to 3/4"

60 - FS- No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1982.52	109.27	Initial Hydro-static
1	19.56	108.71	Open To Flow (1)
32	33.36	110.24	Shut-In(1)
87	1107.07	111.51	End Shut-In(1)
88	37.43	111.20	Open To Flow (2)
120	47.88	112.15	Shut-In(2)
196	1053.32	113.48	End Shut-In(2)
202	1873.88	114.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
63.00	OCWM 10o 5W 85M	0.31

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60188

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.10.03 @ 16:30:00

## Tool Information

Drill Pipe:	Length: 3706.00 ft	Diameter: 3.80 inches	Volume: 51.99 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 52.91 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	65000.00 lb
Depth to Top Packer:	3911.00 ft			Final	65000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	67.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3884.00	
Shut In Tool	5.00			3889.00	
Hydraulic tool	5.00			3894.00	
Jars	5.00			3899.00	
Safety Joint	3.00			3902.00	
Packer	5.00			3907.00	28.00 Bottom Of Top Packer
Packer	4.00			3911.00	
Stubb	1.00			3912.00	
Recorder	0.00	8653	Outside	3912.00	
Recorder	0.00	8874	Inside	3912.00	
Perforations	2.00			3914.00	
Change Over Sub	1.00			3915.00	
Drill Pipe	31.00			3946.00	
Change Over Sub	1.00			3947.00	
Bullnose	3.00			3950.00	39.00 Bottom Packers & Anchor

**Total Tool Length: 67.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60188

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.10.03 @ 16:30:00

### 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: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
63.00	OCWM 10o 5W 85M	0.310

Total Length: 63.00 ft      Total Volume: 0.310 bbl

Num Fluid Samples: 0

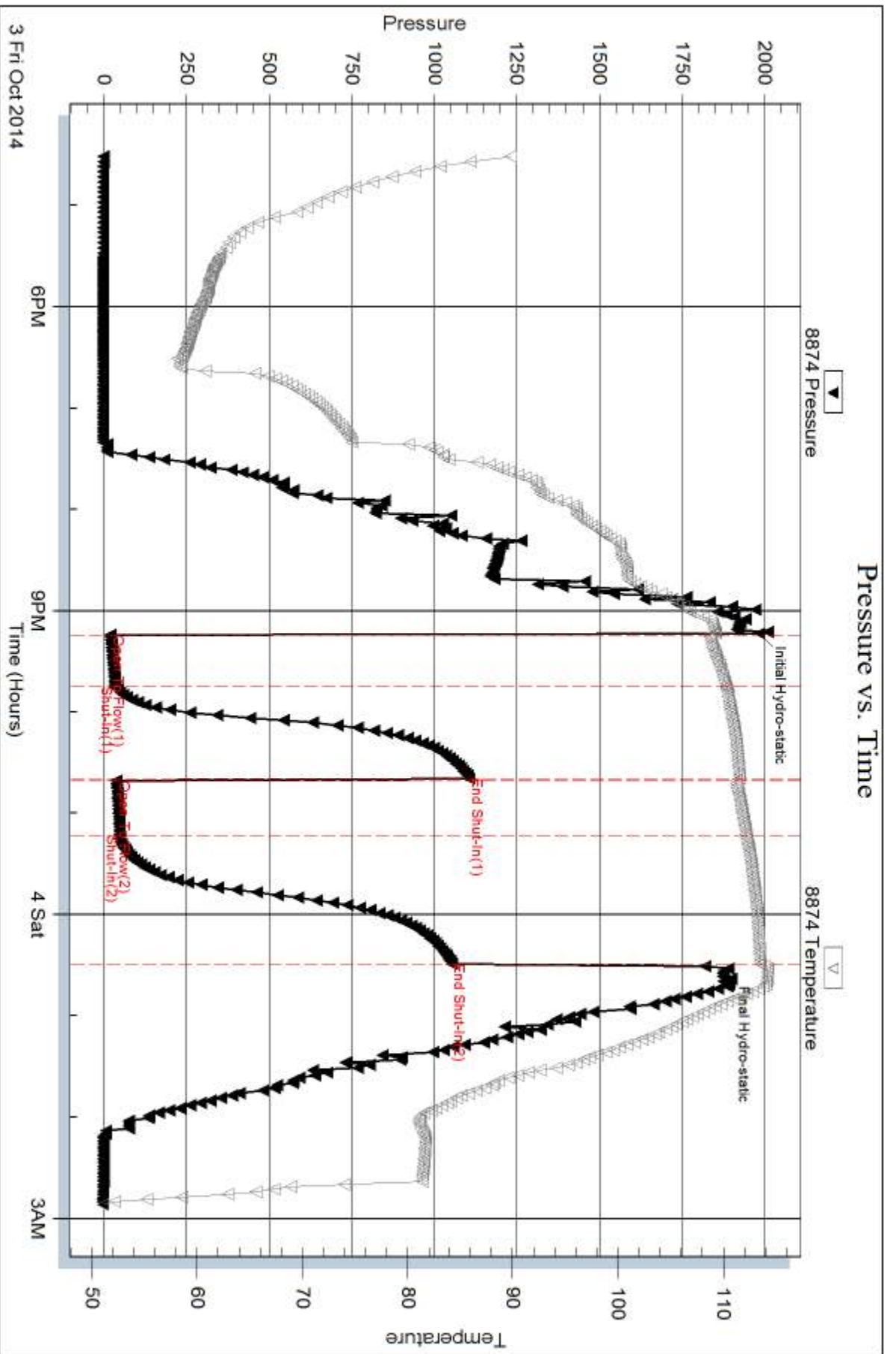
Num Gas Bombs: 0

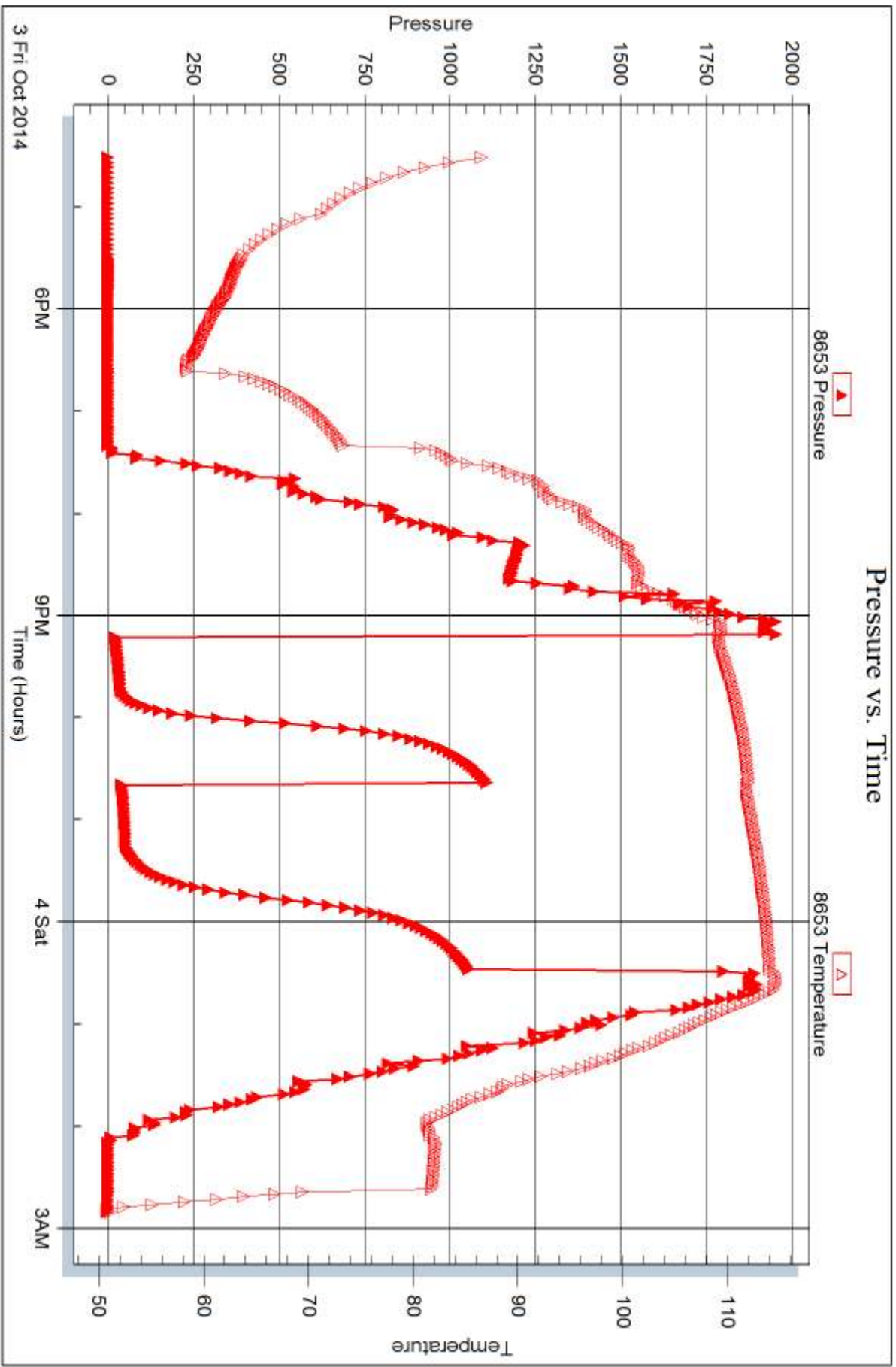
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

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

250 N Water STE #300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Brown-Engle Unit 1-6**

### **6-5s-30w Decatur,KS**

Start Date: 2014.10.04 @ 14:15:00

End Date: 2014.10.05 @ 00:52:30

Job Ticket #: 60189                      DST #: 3

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

Printed: 2014.10.15 @ 16:29:45

Murfin Drilling Co., Inc.

6-5s-30w Decatur,KS

Brown-Engle Unit 1-6

DST # 3

LKC "D-G

2014.10.04



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

ATTN: Saman Sharifaie

Job Ticket: 60189

**DST#: 3**

Test Start: 2014.10.04 @ 14:15:00

## GENERAL INFORMATION:

Formation: **LKC "D-G**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:09:30

Time Test Ended: 00:52:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

**Interval: 3948.00 ft (KB) To 4006.00 ft (KB) (TVD)**

Reference Elevations: 2874.00 ft (KB)

Total Depth: 4006.00 ft (KB) (TVD)

2869.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8653**

**Outside**

Press@RunDepth: 487.00 psig @ 3949.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.04

End Date:

2014.10.05

Last Calib.: 2014.10.05

Start Time: 14:16:00

End Time:

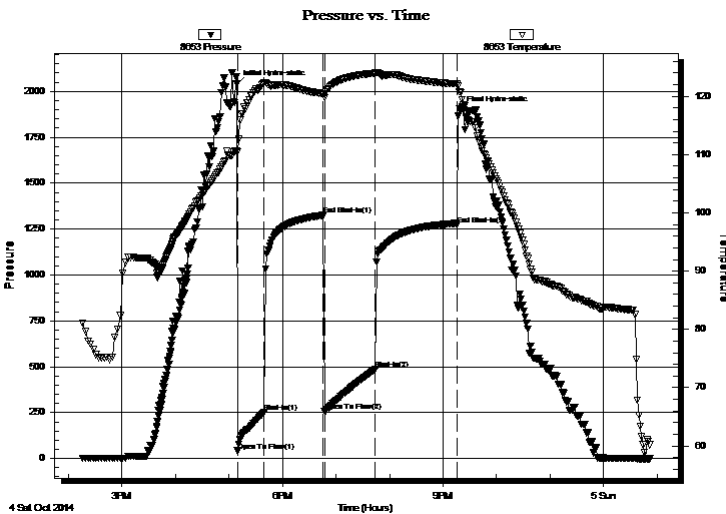
00:52:30

Time On Btm: 2014.10.04 @ 17:09:00

Time Off Btm: 2014.10.04 @ 21:19:00

**TEST COMMENT:** 30 - IF- BoB in 6 min.  
60 - IS- Surface Return started at 2 min. Built to 4"  
60 - FF- BoB in 7 min.  
90 - FS- BoB in 48 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2039.09	110.70	Initial Hydro-static
1	42.01	110.48	Open To Flow (1)
31	253.00	122.39	Shut-In(1)
97	1325.27	120.45	End Shut-In(1)
98	256.83	119.77	Open To Flow (2)
155	487.00	123.96	Shut-In(2)
247	1274.22	122.11	End Shut-In(2)
250	1894.28	120.75	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
180.00	OSMW 95W 5M (oil spots)	0.89
252.00	OSMW 90W 10M (oil spots)	3.47
189.00	GOCM 30G 10o 60M	2.65
383.00	Clean Gassy Oil 30G 70o	5.37
0.00	819' GIP	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60189

**DST#: 3**

ATTN: Saman Sharifaie

Test Start: 2014.10.04 @ 14:15:00

## Tool Information

Drill Pipe:	Length: 3736.00 ft	Diameter: 3.80 inches	Volume: 52.41 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 53.33 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	3948.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	86.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3921.00	
Shut In Tool	5.00			3926.00	
Hydraulic tool	5.00			3931.00	
Jars	5.00			3936.00	
Safety Joint	3.00			3939.00	
Packer	5.00			3944.00	28.00 Bottom Of Top Packer
Packer	4.00			3948.00	
Stubb	1.00			3949.00	
Recorder	0.00	8653	Outside	3949.00	
Recorder	0.00	8874	Inside	3949.00	
Perforations	20.00			3969.00	
Change Over Sub	1.00			3970.00	
Drill Pipe	32.00			4002.00	
Change Over Sub	1.00			4003.00	
Bullnose	3.00			4006.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 86.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60189

**DST#: 3**

ATTN: Saman Sharifaie

Test Start: 2014.10.04 @ 14:15:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

27 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

72000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
180.00	OSMW 95W 5M (oil spots)	0.885
252.00	OSMW 90W 10M (oil spots)	3.471
189.00	GOCM 30G 10o 60M	2.651
383.00	Clean Gassy Oil 30G 70o	5.372
0.00	819' GIP	0.000

Total Length: 1004.00 ft      Total Volume: 12.379 bbl

Num Fluid Samples: 0

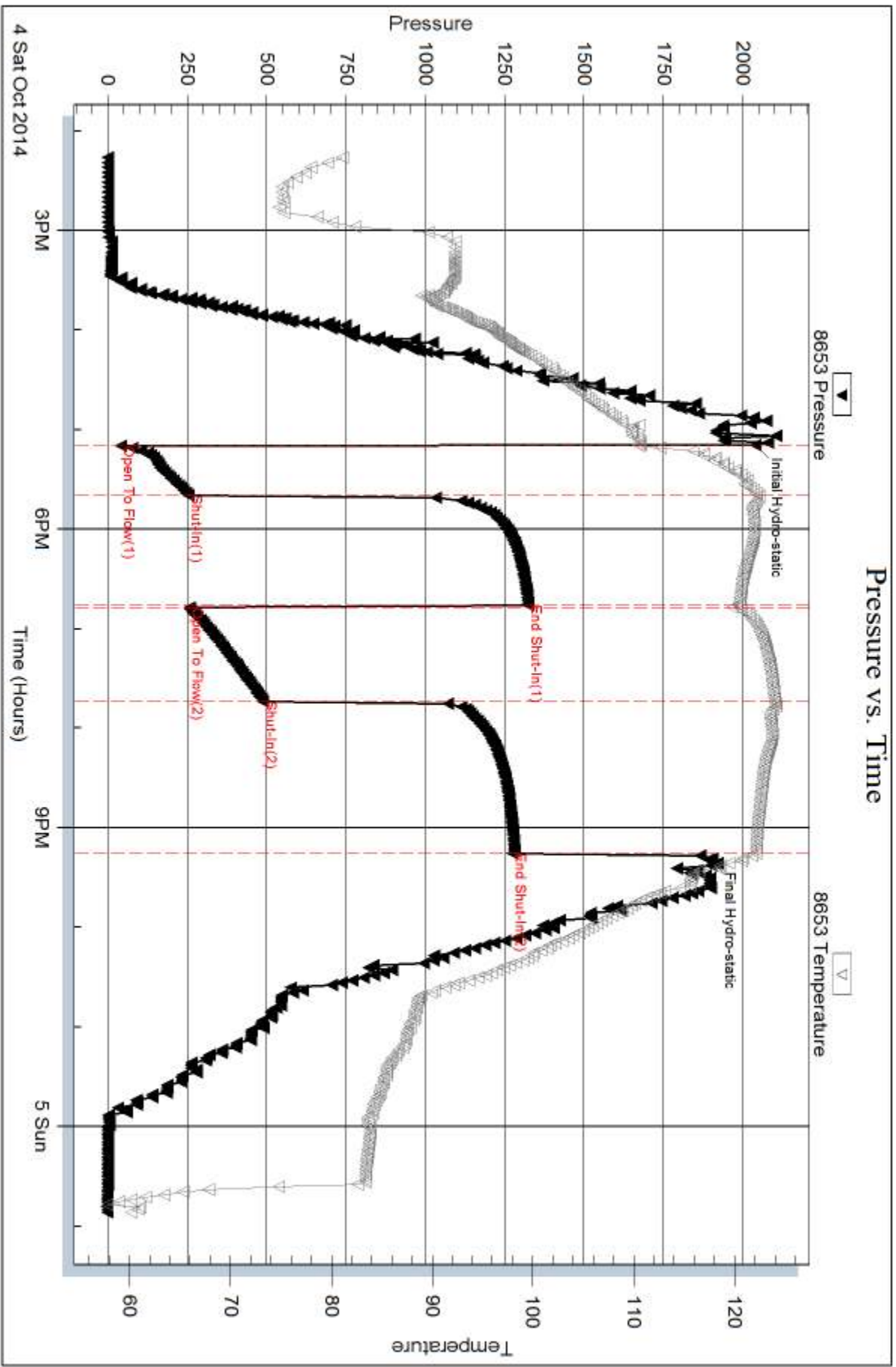
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 27 @ 60 deg = 27 corrected  
RW .14 @ 55 deg. = 72,000ppm







## DRILL STEM TEST REPORT

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

250 N Water STE #300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Brown-Engle Unit 1-6**

### **6-5s-30w Decatur,KS**

Start Date: 2014.10.05 @ 14:00:00

End Date: 2014.10.05 @ 23:47:30

Job Ticket #: 60190                      DST #: 4

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

Printed: 2014.10.15 @ 16:29:19



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60190

**DST#: 4**

ATTN: Saman Sharifaie

Test Start: 2014.10.05 @ 14:00:00

## GENERAL INFORMATION:

Formation: **LKC "H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:31:30

Time Test Ended: 23:47:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

**Interval: 4019.00 ft (KB) To 4110.00 ft (KB) (TVD)**

Reference Elevations: 2874.00 ft (KB)

Total Depth: 4110.00 ft (KB) (TVD)

2869.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8874**

**Inside**

Press@RunDepth: 281.73 psig @ 4020.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.05

End Date:

2014.10.05

Last Calib.: 2014.10.05

Start Time: 14:01:00

End Time:

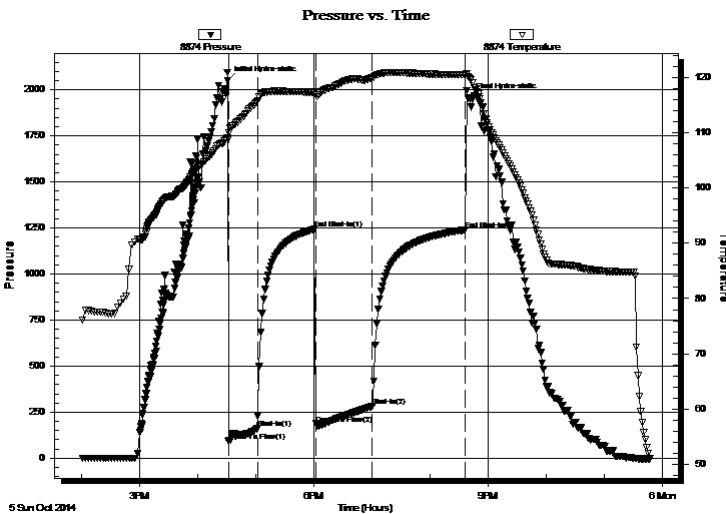
23:47:30

Time On Btm: 2014.10.05 @ 16:31:00

Time Off Btm: 2014.10.05 @ 20:40:30

**TEST COMMENT:** 30 - IF- BoB in 5 min.  
60 - IS- Surface Return built to BoB in 21 min.  
60 - FF- BoB in 6 min.  
90 - FS- Surface Return built to BoB in 28 min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2048.80	109.01	Initial Hydro-static
1	89.88	108.85	Open To Flow (1)
31	161.04	115.60	Shut-In(1)
90	1242.46	117.31	End Shut-In(1)
91	187.09	116.82	Open To Flow (2)
150	281.73	119.93	Shut-In(2)
246	1239.76	120.43	End Shut-In(2)
250	1956.18	119.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
187.00	GOCM 20G 10o 70M	0.92
504.00	Clean Gassy Oil 20G 80o	7.07
0.00	2802' GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60190

**DST#: 4**

ATTN: Saman Sharifaie

Test Start: 2014.10.05 @ 14:00:00

## Tool Information

Drill Pipe:	Length: 3832.00 ft	Diameter: 3.80 inches	Volume: 53.75 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 54.67 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4019.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	91.00 ft			
Tool Length:	119.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3992.00	
Shut In Tool	5.00			3997.00	
Hydraulic tool	5.00			4002.00	
Jars	5.00			4007.00	
Safety Joint	3.00			4010.00	
Packer	5.00			4015.00	28.00 Bottom Of Top Packer
Packer	4.00			4019.00	
Stubb	1.00			4020.00	
Recorder	0.00	8653	Outside	4020.00	
Recorder	0.00	8874	Inside	4020.00	
Perforations	20.00			4040.00	
Change Over Sub	1.00			4041.00	
Drill Pipe	63.00			4104.00	
Change Over Sub	1.00			4105.00	
Bullnose	5.00			4110.00	91.00 Bottom Packers & Anchor

**Total Tool Length: 119.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60190

**DST#: 4**

ATTN: Saman Sharifaie

Test Start: 2014.10.05 @ 14:00:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

25 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
187.00	GOCM 20G 10o 70M	0.920
504.00	Clean Gassy Oil 20G 80o	7.070
0.00	2802' GIP	0.000

Total Length: 691.00 ft      Total Volume: 7.990 bbl

Num Fluid Samples: 0

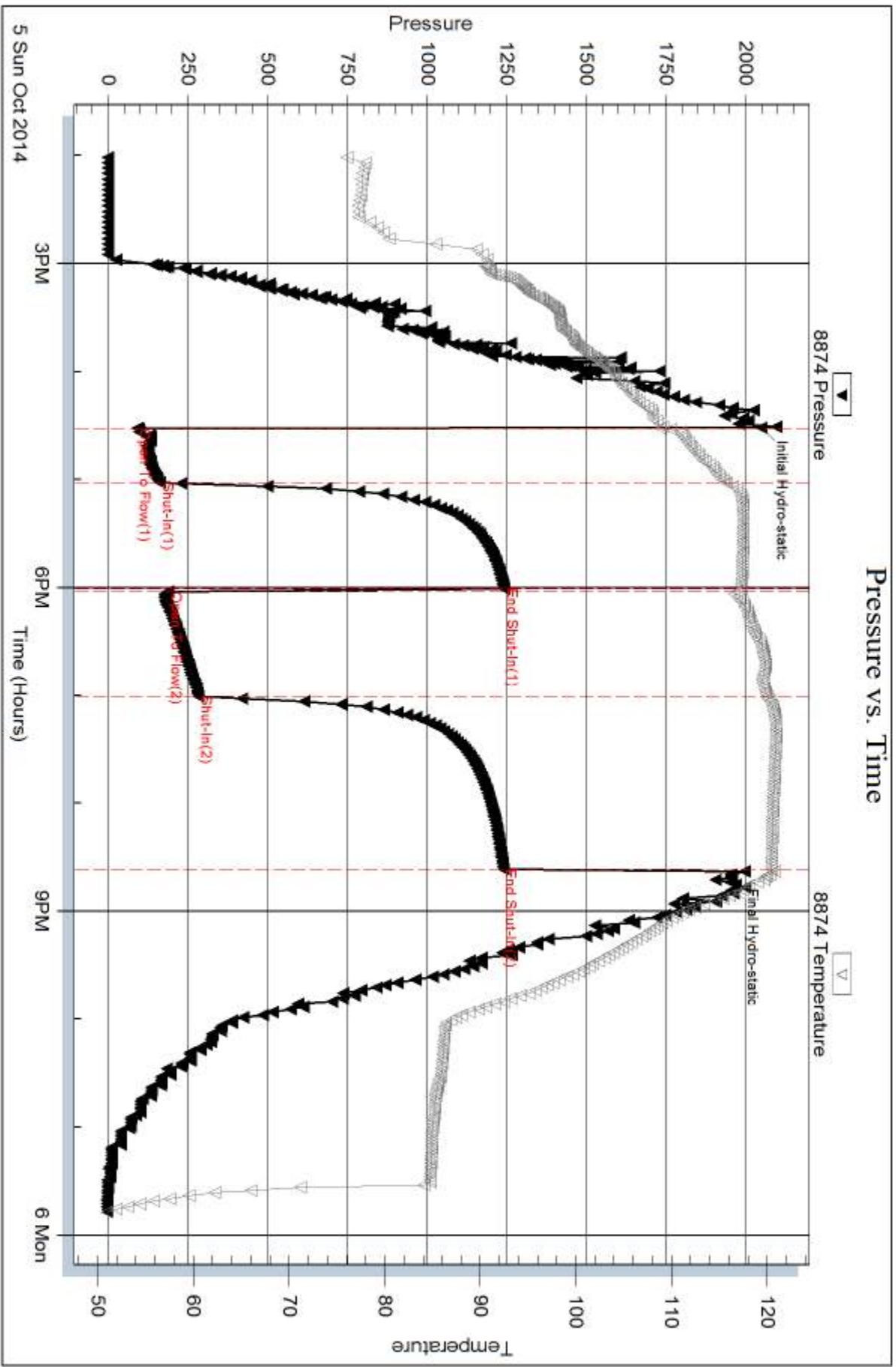
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 35 @ 60 deg = 25 corrected

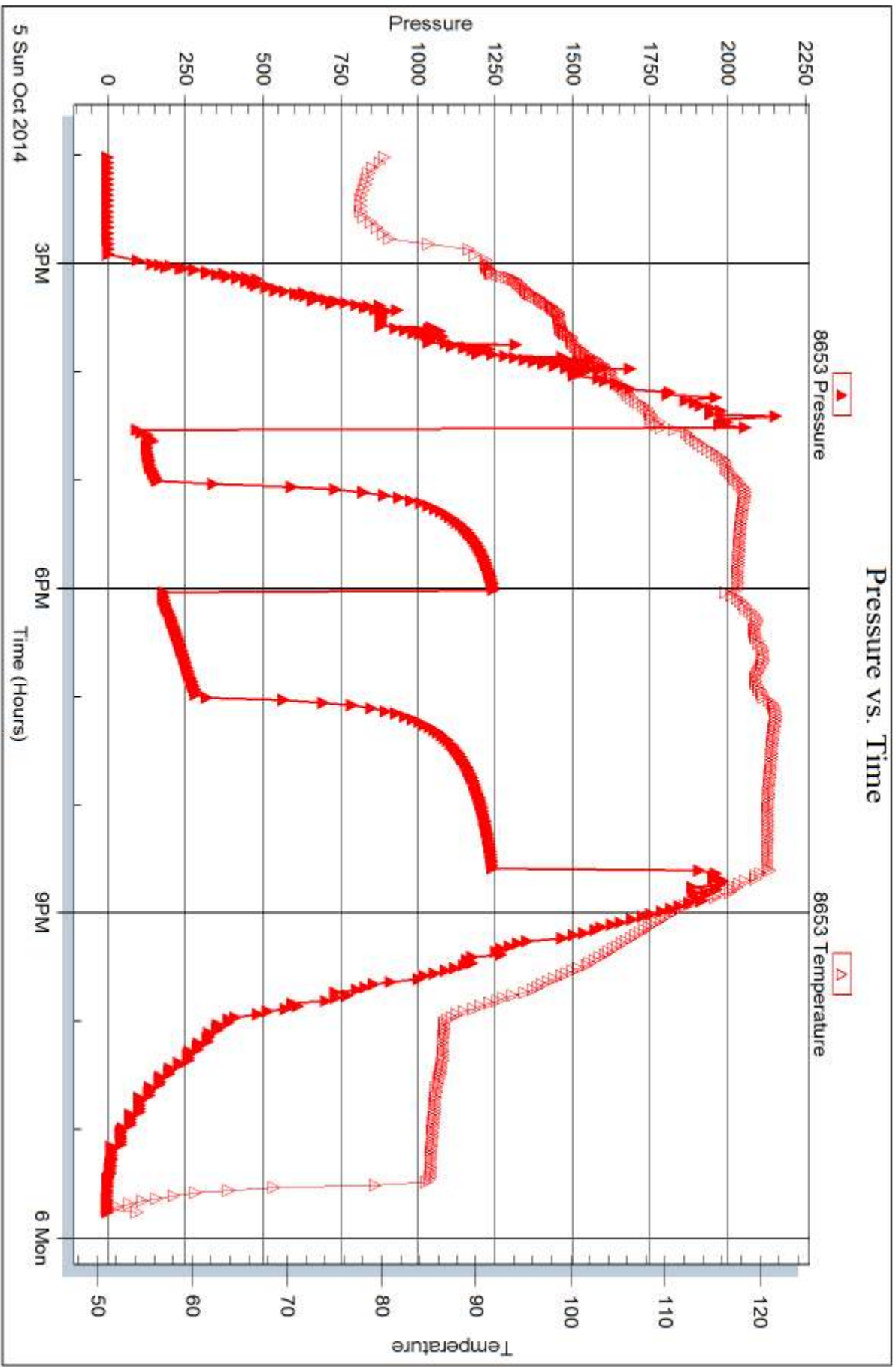


Serial #: 8653

Outside Murfin Drilling Co., Inc.

Brown-Engle Unit 1-6

DST Test Number: 4





## DRILL STEM TEST REPORT

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

250 N Water STE #300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Brown-Engle Unit 1-6**

### **6-5s-30w Decatur,KS**

Start Date: 2014.10.06 @ 23:25:00

End Date: 2014.10.07 @ 07:50:30

Job Ticket #: 60191                      DST #: 5

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

Printed: 2014.10.15 @ 16:28:32





**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

ATTN: Saman Sharifaie

Job Ticket: 60191

**DST#: 5**

Test Start: 2014.10.06 @ 23:25:00

## GENERAL INFORMATION:

Formation: **Verdigis**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:15:00

Time Test Ended: 07:50:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

**Interval: 4322.00 ft (KB) To 4358.00 ft (KB) (TVD)**

Reference Elevations: 2874.00 ft (KB)

Total Depth: 4358.00 ft (KB) (TVD)

2869.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

**Serial #: 8653 Outside**

Press@RunDepth: 35.43 psig @ 4323.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.10.06

End Date:

2014.10.07

Last Calib.: 2014.10.07

Start Time: 23:26:00

End Time:

07:50:30

Time On Btm: 2014.10.07 @ 02:14:30

Time Off Btm: 2014.10.07 @ 05:19:00

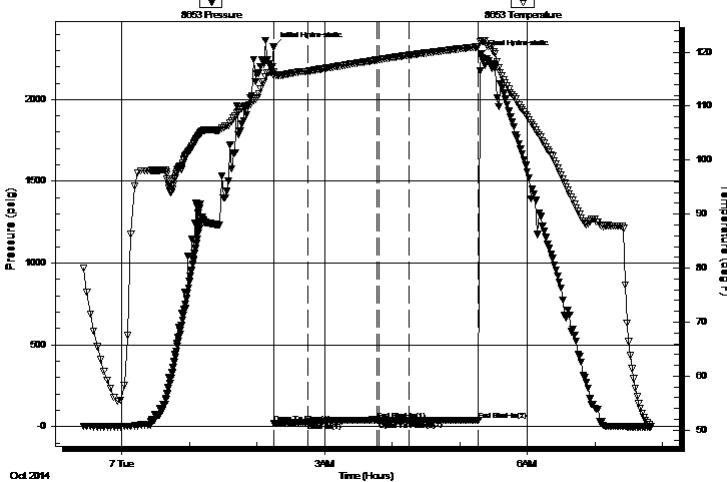
TEST COMMENT: 30 - IF- 1/8" Blow died in 5 min.

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2321.32	116.29	Initial Hydro-static
1	20.83	115.65	Open To Flow (1)
31	25.19	116.46	Shut-In(1)
92	40.77	118.57	End Shut-In(1)
94	29.13	118.61	Open To Flow (2)
121	35.43	119.45	Shut-In(2)
182	39.38	121.01	End Shut-In(2)
185	2277.48	122.20	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.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60191

**DST#: 5**

ATTN: Saman Sharifaie

Test Start: 2014.10.06 @ 23:25:00

## Tool Information

Drill Pipe:	Length: 4114.00 ft	Diameter: 3.80 inches	Volume: 57.71 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 58.63 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4322.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	35.00 ft			
Tool Length:	63.00 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			4295.00	
Shut In Tool	5.00			4300.00	
Hydraulic tool	5.00			4305.00	
Jars	5.00			4310.00	
Safety Joint	3.00			4313.00	
Packer	5.00			4318.00	28.00 Bottom Of Top Packer
Packer	4.00			4322.00	
Stubb	1.00			4323.00	
Recorder	0.00	8653	Outside	4323.00	
Recorder	0.00	8874	Inside	4323.00	
Perforations	29.00			4352.00	
Bullnose	5.00			4357.00	35.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur, KS**

250 N Water STE #300  
Wichita, KS 67202

**Brown-Engle Unit 1-6**

Job Ticket: 60191

**DST#: 5**

ATTN: Saman Sharifaie

Test Start: 2014.10.06 @ 23:25:00

## 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: 67.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	Mud 100M	0.025

Total Length: 5.00 ft      Total Volume:                      bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

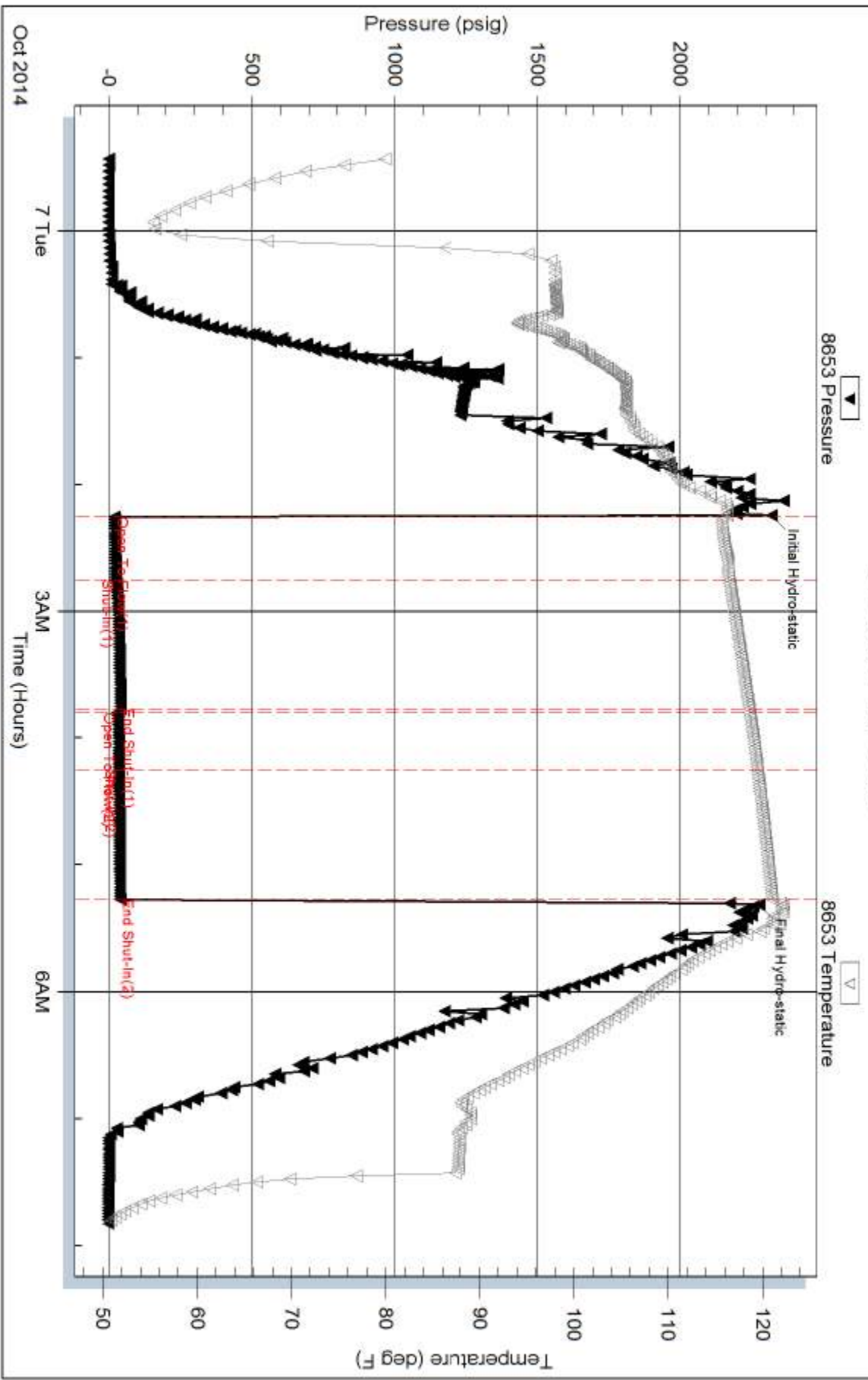
Serial #: 8653

Outside Murfin Drilling Co., Inc.

Brown-Engle Unit 1-6

DST Test Number: 5

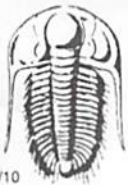
### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 60191

Printed: 2014, 10, 15 @ 16:28:33



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60187

4/10

Well Name & No. Brown-Engle Unit #1-6 Test No. 1 Date 10-2-14  
 Company Murfin Drilling Co., Inc Elevation 2874 KB 2869 GL  
 Address 250 N Water STE #300 Wichita, KS 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #7  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 3870-3920 Zone Tested Turonto  
 Anchor Length 50' Drill Pipe Run 3675' Mud Wt. 8.9  
 Top Packer Depth 3866 Drill Collars Run 187' Vis 62  
 Bottom Packer Depth 3870 Wt. Pipe Run 0 WL 7.6  
 Total Depth 3920 Chlorides 1,300 ppm System LCM 2 #  
 Blow Description IF - 1/8" Blow built to 3/4"  
ISI - No Return  
FF - No Blow  
FSP - 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	<u>10</u>				

BHT 116 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic 1936  Test 1150 T-On Location 11:15 pm  
 (B) First Initial Flow 19  Jars 250 T-Started 12:25 AM  
 (C) First Final Flow 25  Safety Joint 75 T-Open 3:40 AM  
 (D) Initial Shut-In 1084  Circ Sub — T-Pulled 6:40 AM  
 (E) Second Initial Flow 27  Hourly Standby — T-Out 9:15 AM  
 (F) Second Final Flow 32  Mileage 48 RT 74.40 Comments —  
 (G) Final Shut-In 988  Sampler —  
 (H) Final Hydrostatic 1891  Straddle —  Ruined Shale Packer —  
 Shale Packer —  Ruined Packer —  
 Extra Packer —  Extra Copies —  
 Extra Recorder — Sub Total 0  
 Day Standby — Total 1549.40  
 Accessibility — MP/DST Disc't —  
 Sub Total 1549.40

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60188

Well Name & No. Brown-Engle Unit #1-6 Test No. 2 Date 10-3-14  
 Company Murkin Drilling Co., Inc. Elevation 2874 KB 2869 GL  
 Address 250 N Water STE #300 Wichita, KS 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murkin #7  
 Location: Sec. 6 Twp. 5S Rge. 30 W Co. Decatur State KS

Interval Tested 3911-3950 Zone Tested LKC "A-B"  
 Anchor Length 39' Drill Pipe Run 3706' Mud Wt. 91  
 Top Packer Depth 3907 Drill Collars Run 187' Vis 65  
 Bottom Packer Depth 3911 Wt. Pipe Run 0 WL 6-8  
 Total Depth 3950 Chlorides 2,000 ppm System LCM 4#  
 Blow Description IF-1/4" Blow built to 1" then died back to 3/4"  
ISI- No Return  
FF- Surface Blow started at 2 min. Built to 3/4"  
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>63</u>	<u>OCWM</u>	<u>10</u>	<u>5</u>	<u>85</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

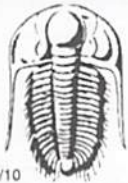
Rec Total 63' BHT 114° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1982</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>3:55 PM</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>4:30 PM</u>
(C) First Final Flow <u>33</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>9:10 PM</u>
(D) Initial Shut-In <u>1107</u>	<input type="checkbox"/> Circ Sub <u>—</u>	T-Pulled <u>12:10 AM</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby <u>3.25h 325</u>	T-Out <u>2:50 AM</u>
(F) Second Final Flow <u>47</u>	<input checked="" type="checkbox"/> Mileage <u>48 RT 74.40</u>	Comments <u>Rigs Rusty chain broke when crew got to collars</u>
(G) Final Shut-In <u>1053</u>	<input type="checkbox"/> Sampler <u>—</u>	<input type="checkbox"/> Ruined Shale Packer <u>—</u>
(H) Final Hydrostatic <u>1873</u>	<input type="checkbox"/> Straddle <u>—</u>	<input type="checkbox"/> Ruined Packer <u>—</u>

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u>—</u>	<input type="checkbox"/> Extra Copies <u>—</u>
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer <u>—</u>	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder <u>—</u>	Total <u>1874.40</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u>—</u>	MP/DST Disc't <u>—</u>
	<input type="checkbox"/> Accessibility <u>—</u>	
	Sub Total <u>1874.40</u>	

Approved By \_\_\_\_\_ Our Representative

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **60189**

4/10

Well Name & No. Brown-Engle Unit #1-6 Test No. 3 Date 10-4-14  
 Company Murfin Drilling Co., Inc Elevation 2874 KB 2869 GL  
 Address 250 N Water STE #300 Wichita, KS 67202  
 Co. Rep / Geo. Samen Sharifuie Rig Murfin #7  
 Location: Sec. 6 Twp. 5S Rge. 300 W Co. Decatur State KS

Interval Tested 3948-4006 Zone Tested LKC "D-5"  
 Anchor Length 58' Drill Pipe Run 3736' Mud Wt. 9.0  
 Top Packer Depth 3944 Drill Collars Run 187' Vis 52  
 Bottom Packer Depth 3948 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4006 Chlorides 4,500 ppm System LCM 4#

Blow Description IF - BoB in 6 min.  
ISI - Surface Return started at 2 min built to 4"  
PF - BoB in 7 min.  
FSI - BoB in 48 min.

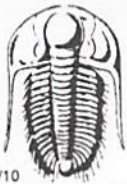
Rec	Feet of	%gas	%oil	%water	%mud
<u>383</u>	<u>Clean Gassy Oil</u>	<u>30</u>	<u>70</u>		
<u>189</u>	<u>GOCM</u>	<u>30</u>	<u>10</u>	<u>60</u>	
<u>252</u>	<u>OSMW</u>	<u>Spots</u>	<u>90</u>	<u>10</u>	
<u>180</u>	<u>OSMW</u>	<u>Spots</u>	<u>95</u>	<u>5</u>	

Rec Total 1004 BHT 122 Gravity 27 API RW 14 @ 55 ° F Chlorides 72,000 ppm  
 (A) Initial Hydrostatic 2039  Test 1250 T-On Location 1:15 PM  
 (B) First Initial Flow 42  Jars 250 T-Started 2:15 PM  
 (C) First Final Flow 253  Safety Joint 75 T-Open 5:10 PM  
 (D) Initial Shut-In 1325  Circ Sub \_\_\_\_\_ T-Pulled 9:10 PM  
 (E) Second Initial Flow 256  Hourly Standby .5h 50 T-Out 12:53 AM  
 (F) Second Final Flow 487  Mileage 48 RT 74.40 Comments 819' GIP  
 (G) Final Shut-In 1274  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1894  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 0  
 Total 1699.40  
 Sub Total 1699.40  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60190

4/10

Well Name & No. Brown-Engle #1-6 Test No. 4 Date 10-5-14  
 Company Murfin Drilling Co, Inc Elevation 2874 KB 2869 GL  
 Address 2508 N Water STE #300 Wichita, KS 67202  
 Co. Rep / Geo. Suman SharifAie Rig Murfin #7  
 Location: Sec. 6 Twp. 5S Rge. 30 W Co. Decatur State KS

Interval Tested 4019-4110 Zone Tested LKC "H-K"  
 Anchor Length 91' Drill Pipe Run 3832' Mud Wt. 9.0  
 Top Packer Depth 4015 Drill Collars Run 187 Vis 50  
 Bottom Packer Depth 4019 Wt. Pipe Run 0 WL 8.0  
 Total Depth 4110 Chlorides 2,000 ppm System LCM 2#

Blow Description IF - BoB in 5 min.  
ISI - Surface Return built to BoB in 21 min.  
PF - BoB in 6 min.  
FST - BoB in 28 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>504</u>	<u>Clean Gassy Oil</u>	<u>20</u>	<u>80</u>		
<u>187</u>	<u>60cm</u>	<u>20</u>	<u>10</u>		<u>70</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 691 BHT 120 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2048  Test 1250 T-On Location 1:45 PM  
 (B) First Initial Flow 89  Jars 250 T-Started 2:00 PM  
 (C) First Final Flow 161  Safety Joint 75 T-Open 4:32 PM  
 (D) Initial Shut-In 1242  Circ Sub \_\_\_\_\_ T-Pulled 8:32 PM  
 (E) Second Initial Flow 187  Hourly Standby \_\_\_\_\_ T-Out 11:50 PM  
 (F) Second Final Flow 281  Mileage 48 RT 74.40 Comments 2802' GEP  
 (G) Final Shut-In 1239  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1956  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1649.40  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1649.40

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

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

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60191

4/10

Well Name & No. Brown-Engle Unit #1-6 Test No. 5 Date 10-16-10-6-14  
 Company Murphy Drilling Co., Inc. Elevation 2874 KB 2869 GL  
 Address 2508 N Water STE # 3008 Wichita, KS 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murch #7  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 4322-4358 Zone Tested Vendigic  
 Anchor Length 36' Drill Pipe Run 4114' Mud Wt. 9.1  
 Top Packer Depth 4318 Drill Collars Run 187' Vis 67  
 Bottom Packer Depth 4322 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4358 Chlorides 2,500 ppm System LCM 3#

Blow Description IP - 1/8" Blow ditch in 5 min.  
ISI - NO Return  
PF - NO Blow  
FSD - 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 \_\_\_\_\_ BHT 121 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2321  Test 1250 T-On Location 11:00pm  
 (B) First Initial Flow 200  Jars 250 T-Started 11:25pm  
 (C) First Final Flow 25  Safety Joint 75 T-Open 2:15 Am  
 (D) Initial Shut-In 40  Circ Sub \_\_\_\_\_ T-Pulled 5:15 Am  
 (E) Second Initial Flow 29  Hourly Standby \_\_\_\_\_ T-Out 7:53 Am  
 (F) Second Final Flow 35  Mileage 48 RT X2 Comments Loaded tools  
 (G) Final Shut-In 39  Sampler 74.40+74.40 12:00 Am 10-7-14  
 (H) Final Hydrostatic 2277  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1723.80  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_

Initial Open 300  
 Initial Shut-In 600  
 Final Flow 300  
 Final Shut-In 600

Sub Total 1723.80

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

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