

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1245487
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
-----------------------------------	-----------------	---

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: _____

1245487

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
---	--

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Shuler 'A' 2-20
Doc ID	1245487

All Electric Logs Run

DIL
DUCP
MEL
BHCS



*acct
Pro-MS*

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 148078

Invoice Date: Jan 2, 2015

Page: 1

Voice: (817) 546-7282

Fax: (817) 246-3361

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64633	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jan 2, 2015	2/1/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Shuler A #2-20		
200.00	CEMENT MATERIALS	Class A Common	17.90	3,580.00
564.00	CEMENT MATERIALS	Chloride	1.10	620.40
210.00	CEMENT SERVICE	Cubic Feet Charge	2.48	520.80
387.20	CEMENT SERVICE	Ton Mileage Charge	2.75	1,064.80
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
40.00	CEMENT SERVICE	Pump Truck Mileage	7.70	308.00
1.00	CEMENT SERVICE	Swedge Manifold Rental	275.00	275.00
40.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	176.00
1.00	CEMENT SUPERVISOR	LaRene Wentz		
1.00	EQUIPMENT OPERATOR	Brandon Wilkinson		
1.00	OPERATOR ASSISTANT	Wayne Messalle		

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

\$ ✓ *on 2/10*

ONLY IF PAID ON OR BEFORE

Subtotal	8,057.25
Sales Tax	300.33
Total Invoice Amount	8,357.58
Payment/Credit Applied	
TOTAL	8,357.58

- 2820.03
5,537.55
OK JR



*Acet
Prods*

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 148078
Invoice Date: Jan 2, 2015
Page: 1

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

Federal Tax I.D.#: 20-8651475

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Job Location	Camp Location	Service Date	Due Date
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Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Shuler A #2-20		
200.00	CEMENT MATERIALS	Class A Common	17.90	3,580.00
564.00	CEMENT MATERIALS	Chloride	1.10	620.40
210.00	CEMENT SERVICE	Cubic Feet Charge	2.48	520.80
387.20	CEMENT SERVICE	Ton Mileage Charge	2.75	1,064.80
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40.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	176.00
1.00	CEMENT SUPERVISOR	LaRene Wentz		
1.00	EQUIPMENT OPERATOR	Brandon Wilkinson		
1.00	OPERATOR ASSISTANT	Wayne Messalle		

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

\$ 2,820.03 ✓ *dw*

ONLY IF PAID ON OR BEFORE
Feb 1, 2015

Subtotal	8,057.25
Sales Tax	300.33
Total Invoice Amount	8,357.58
Payment/Credit Applied	
TOTAL	8,357.58

- 2820.03
5,537.58
OK JR

ALLIED OIL & GAS SERVICES, LLC 064633

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:
Oakley, KS

DATE <u>1-2-15</u>	SEC. <u>20</u>	TWP. <u>S</u>	RANGE <u>29</u>	CALLED OUT	ON LOCATION <u>7:00 pm</u>	JOB START <u>10:30p</u>	JOB FINISH <u>11:00 pm</u>
LEASE <u>Shaler 'A'</u>	WELL# <u>2-20</u>	LOCATION <u>Rexford 82CR290W) 2 to</u>			COUNTY <u>Decatur</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>				Casing, W, 2" x 2" V4E, Nicks			

CONTRACTOR Martini ?
TYPE OF JOB Surface
HOLE SIZE 12 1/8" T.D. 219.00
CASING SIZE 9 5/8" DEPTH 219.56
TUBING SIZE DEPTH
DRILL PIPE DEPTH
TOOL DEPTH
PRES. MAX MINIMUM
MEAS. LINE SHOE JOINT
CEMENT LEFT IN CSG. 15'
PERFS.
DISPLACEMENT 1309661

EQUIPMENT

PUMP TRUCK CEMENTER LeRoux & Wente
373/281 HELPER Brandon Wilkinson
BULK TRUCK
918/287 DRIVER Wayne Massalle
BULK TRUCK
DRIVER

REMARKS:

Mix 200 sts cement
Displace with water
Cement did circulate
10 sts to pit

Thank you

CHARGE TO: Martini
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 Fred Withers
SIGNATURE [Signature]

OWNER same
CEMENT
AMOUNT ORDERED 200 sts Cem 3800

COMMON 200 sts @ 17.90 3580.00
POZMIX @ _____
GEL @ _____
CHLORIDE 564# @ 1.10 620.40
ASC @ _____
Material Total @ _____ 4,200.40
(1470.14/35%)

HANDLING 210 ft @ 2.48 520.80
MILEAGE 9687m X 40 X 2.95 1141.80

TOTAL _____

SERVICE

DEPTH OF JOB _____
PUMP TRUCK CHARGE _____ 1512.25
EXTRA FOOTAGE @ _____
MILEAGE MLW 40 @ 7.90 3160.00
MANIFOLD Swage @ _____ 27500
MLW 40 @ 4.90 19600

(1349.89/35%) TOTAL 3,856.85

PLUG & FLOAT EQUIPMENT

TOTAL _____

SALES TAX (If Any) _____
TOTAL CHARGES 8,057.25
DISCOUNT 2,820.03 (35%) IF PAID IN 30 DAYS
5,237.21 Net.



*acct
Prod-MG*

INVOICE

PO Box 93999
Southlake, TX 76092

Invoice Number: 148085

Invoice Date: Jan 10, 2015

Page: 1

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

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64868	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Jan 10, 2015	2/9/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Shuler A #2-20		
255.00	CEMENT MATERIALS	60/40/4% Gel Blend	18.92	4,824.60
63.75	CEMENT MATERIALS	Flo Seal	2.97	189.34
273.87	CEMENT SERVICE	Cubic Feet Charge	2.48	679.20
457.20	CEMENT SERVICE	Ton Mileage Charge	2.75	1,257.30
1.00	CEMENT SERVICE	Plug to Abandon	2,483.59	2,483.59
40.00	CEMENT SERVICE	Pump Truck Mileage	7.70	308.00
40.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	176.00
1.00	EQUIPMENT SALES	8-5/8 Dry Hole Plug	110.00	110.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Brandon Wilkinson		
1.00	OPERATOR ASSISTANT	Wayne Messalle		

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

\$ ✓

ONLY IF PAID ON OR BEFORE

Subtotal	10,028.03
Sales Tax	717.00
Total Invoice Amount	10,745.03
Payment/Credit Applied	
TOTAL	10,745.03

- 3471.29
7,273.74
OK JR

ALLIED OIL & GAS SERVICES, LLC 064868

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Dakney

DATE <u>1-10-15</u>	SEC. <u>20</u>	TWP. <u>5</u>	RANGE <u>29</u>	CALLED OUT	ON LOCATION <u>11:00 AM</u>	JOB START <u>1:30 PM</u>	JOB FINISH <u>2:30 PM</u>
LEASE <u>Shuler A</u>	WELL # <u>2-20</u>	LOCATION <u>Roxford 85.5 N 14 E</u>			COUNTY <u>Decker</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>W1070</u>			

CONTRACTOR Murfin ?
 TYPE OF JOB PTA
 HOLE SIZE 2 7/8 T.D. 4124'
 CASING SIZE _____ DEPTH _____
 TUBING SIZE _____ DEPTH _____
 DRILL PIPE 4 1/2 DEPTH 256.0'
 TOOL _____ DEPTH _____
 PRES. MAX _____ MINIMUM _____
 MEAS. LINE _____ SHOE JOINT _____
 CEMENT LEFT IN CSG. _____
 PERFS. _____
 DISPLACEMENT _____

OWNER Some
 CEMENT AMOUNT ORDERED 255 sks 6 1/4 4096
14 Fluorec L

EQUIPMENT

PUMP TRUCK # 422 CEMENTER Andrew Folsch
 HELPER Brandon Wilkins
 BULK TRUCK # 818 DRIVER Wayne Messelle
 BULK TRUCK # _____ DRIVER _____

COMMON _____ @ _____
 POZMIX _____ @ _____
 GEL _____ @ _____
 CHLORIDE _____ @ _____
 ASC _____ @ _____
40 4096 255 sk @ 18.92 4824.60
Fluorec 6.375 @ 2.97 125.31
Material Total (1779.97 / 35%) @ 4999.97
 HANDLING 2.23 82 cys/ft @ 2.48 6.79 1.9
 MILEAGE 2.25 700/mile 1182.70 185.230

REMARKS:

50 sks @ 256.0'
100 sks @ 1820'
50 sks @ 220'
10 sks @ 40'
15 sks mouse hole
30 sks Rat hole

Thank you

CHARGE TO: Murfin
 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 FRED WILLIAMS
 SIGNATURE [Signature]

SERVICE

DEPTH OF JOB 256.0'
 PUMP TRUCK CHARGE _____ 2483.59
 EXTRA FOOTAGE _____ @ _____
 MILEAGE 40 miles @ 7.70 308.00
 MANIFOLD _____ @ _____
Light vehicle @ 4.40 12.00

(1776.92 / 35%) TOTAL 4,909.08

PLUG & FLOAT EQUIPMENT

8 5/8
1 Dry hole plug @ 110.00
 _____ @ _____
 _____ @ _____
 _____ @ _____

TOTAL 110.00

SALES TAX (If Any) _____
 TOTAL CHARGES 10,013.99
 DISCOUNT 3,466.39 (35%) IF PAID IN 30 DAYS

6,547.59 Net.

Shuler 'A' #2-20
 550 FSL 1320 FWL
 Sec. 20-T5S-R29W
 2825' KB

Formation	Sample top	Datum	Ref	Log Tops	Datum	Ref
Anhydrite	2551	+274	+2	2553	+272	flat
B/Anhydrite	2586	+239	+1	2585	+240	+2
Topeka	3676	-851	+3	3676	-851	+3
Heebner	3852	-1027	flat	3850	-1025	+2
Toronto	3881	-1056	+1	3880	-1055	+2
Lansing	3896	-1071	+2	3896	-1071	+2
Stark	4054	-1229	flat	4051	-1226	+3
BKC	4101	-1276	+3	4101	-1276	+3
RTD	4200	-1375				
LTD						



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS. 67202

ATTN: Rocky Milford

Shuler ' A ' #2-20

20-5s-29w Decatur,KS

Start Date: 2015.01.06 @ 17:00:00

End Date: 2015.01.07 @ 02:10:55

Job Ticket #: 58688 DST #: 1

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

Printed: 2015.01.12 @ 09:22:37



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58688

DST#: 1

ATTN: Rocky Milford

Test Start: 2015.01.06 @ 17:00:00

GENERAL INFORMATION:

Formation: **Toronto / LKC "B"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:07:25
 Time Test Ended: 02:10:55
 Interval: **3850.00 ft (KB) To 3930.00 ft (KB) (TVD)**
 Total Depth: 3930.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Will MacLean
 Unit No: 71
 Reference Elevations: 2825.00 ft (KB)
 2820.00 ft (CF)
 KB to GR/CF: 5.00 ft

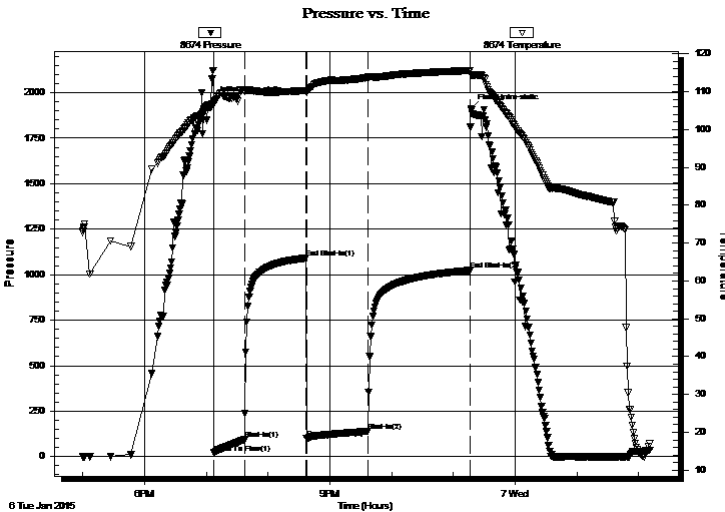
Serial #: 8674

Inside

Press@RunDepth: 139.92 psig @ 3851.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.01.06 End Date: 2015.01.07 Last Calib.: 2015.01.07
 Start Time: 17:00:00 End Time: 02:10:55 Time On Btm: 2015.01.06 @ 19:07:10
 Time Off Btm: 2015.01.06 @ 23:17:09

TEST COMMENT: IF- Weak Surface Blow Built to 5 1/2"
 IS- No Blow
 FF- Weak Surface Blow Built to 3"
 FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1956.01	107.22	Initial Hydro-static
1	20.73	106.64	Open To Flow (1)
30	93.44	110.19	Shut-In(1)
90	1092.11	110.33	End Shut-In(1)
91	99.43	109.70	Open To Flow (2)
150	139.92	113.76	Shut-In(2)
249	1023.83	115.63	End Shut-In(2)
250	1912.09	114.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	WCM 3%w 97%m with Oil Spots	0.30
124.00	WCM 3%w 97%m with a Skim of Oil on	0.61
68.00	WCM 4%w 96% with Oil Spots	0.95

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58688

DST#: 1

ATTN: Rocky Milford

Test Start: 2015.01.06 @ 17:00:00

GENERAL INFORMATION:

Formation: **Toronto / LKC "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:07:25

Time Test Ended: 02:10:55

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Interval: **3850.00 ft (KB) To 3930.00 ft (KB) (TVD)**

Reference Elevations: 2825.00 ft (KB)

Total Depth: 3930.00 ft (KB) (TVD)

2820.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 3851.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.06

End Date:

2015.01.07

Last Calib.:

2015.01.07

Start Time: 17:00:05

End Time:

02:12:15

Time On Btm:

Time Off Btm:

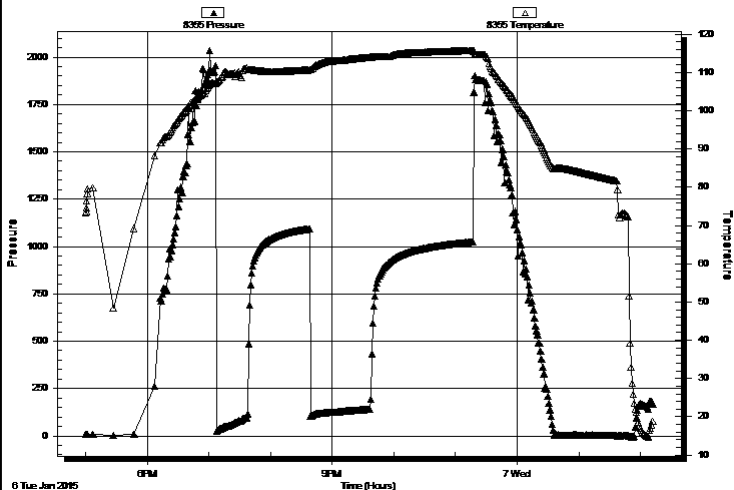
TEST COMMENT: IF- Weak Surface Blow Built to 5 1/2"

IS- No Blow

FF- Weak Surface Blow Built to 3"

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	WCM 3%w 97%m with Oil Spots	0.30
124.00	WCM 3%w 97%m with a Skim of Oil on	0.61
68.00	WCM 4%w 96% with Oil Spots	0.95

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58688

DST#: 1

ATTN: Rocky Milford

Test Start: 2015.01.06 @ 17:00:00

Tool Information

Drill Pipe:	Length: 3645.00 ft	Diameter: 3.80 inches	Volume: 51.13 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 16000.00 lb
			<u>Total Volume: 52.04 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3850.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	107.00 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			3824.00	
Shut In Tool	5.00			3829.00	
Hydraulic tool	5.00			3834.00	
Jars	5.00			3839.00	
Safety Joint	2.00			3841.00	
Packer	5.00			3846.00	27.00 Bottom Of Top Packer
Packer	4.00			3850.00	
Stubb	1.00			3851.00	
Recorder	0.00	8355	Outside	3851.00	
Recorder	0.00	8674	Inside	3851.00	
Perforations	9.00			3860.00	
Change Over Sub	1.00			3861.00	
Drill Pipe	63.00			3924.00	
Change Over Sub	1.00			3925.00	
Bullnose	5.00			3930.00	80.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58688

DST#: 1

ATTN: Rocky Milford

Test Start: 2015.01.06 @ 17:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.74 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	WCM 3%w 97%m with Oil Spots	0.305
124.00	WCM 3%w 97%m with a Skim of Oil on To	0.610
68.00	WCM 4%w 96% with Oil Spots	0.954

Total Length: 254.00 ft

Total Volume: 1.869 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

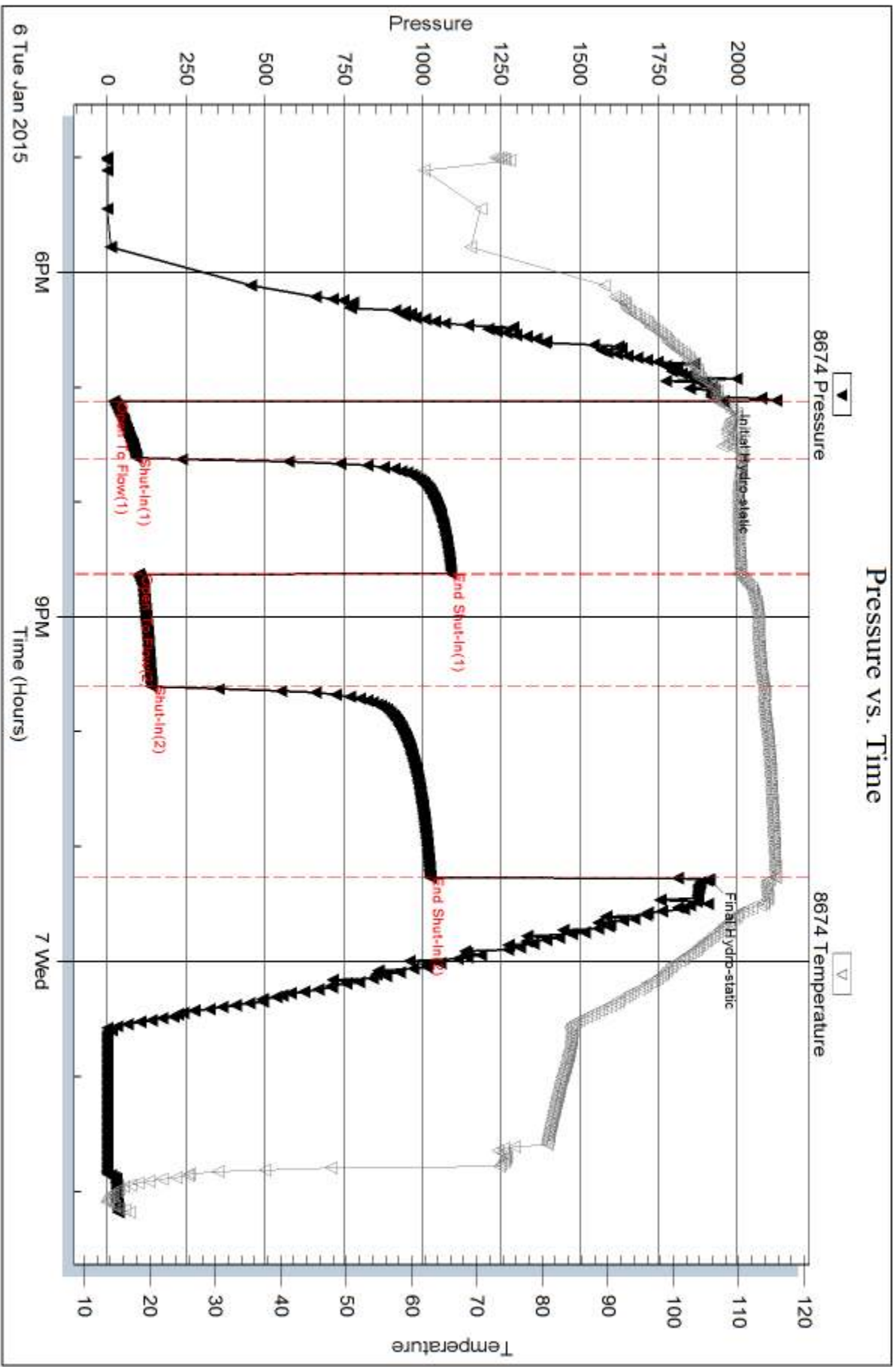
Serial #: 8674

Inside

Murfin Drilling Co.

Shuler 'A' #2-20

DST Test Number: 1

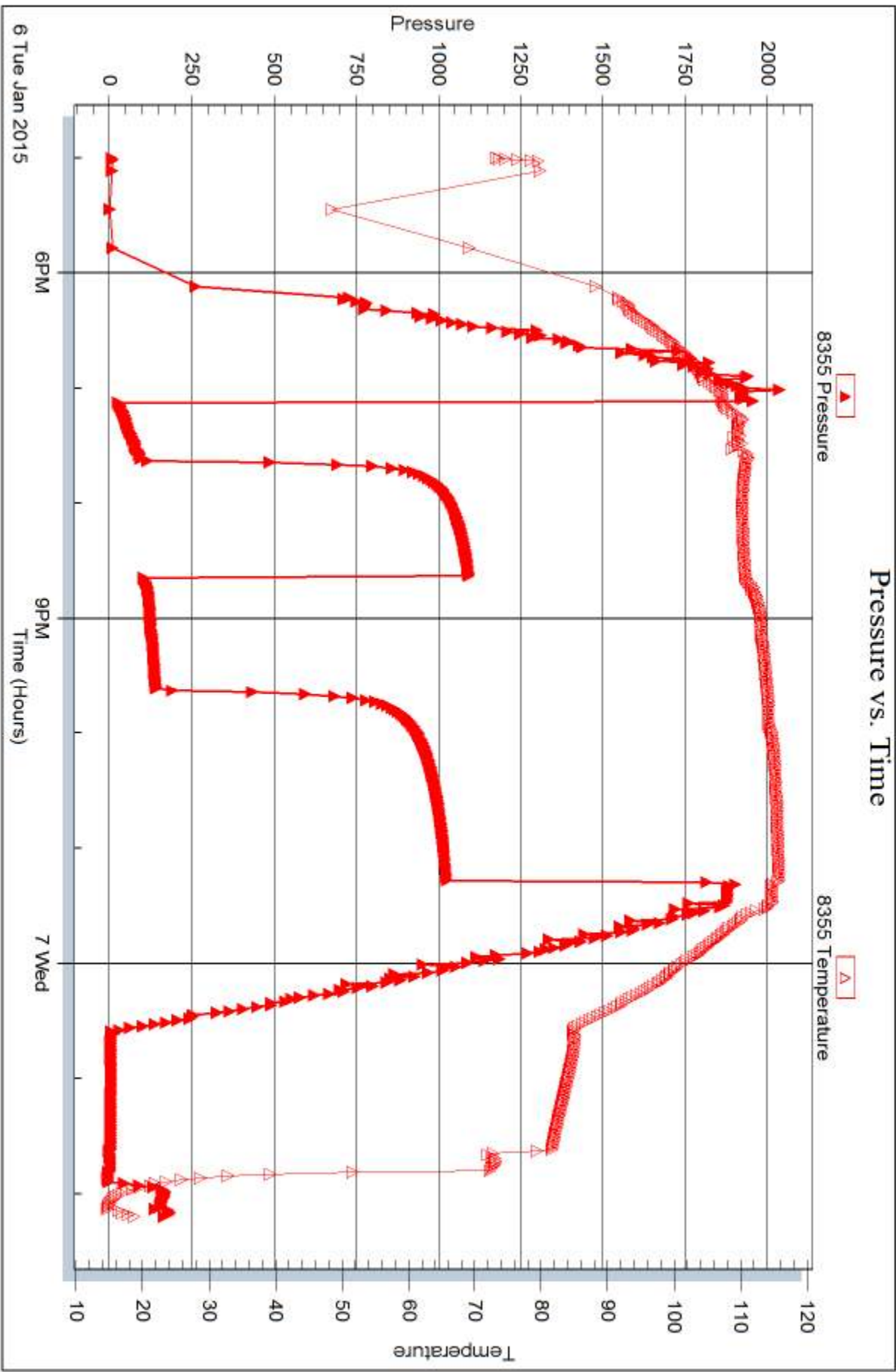


Serial #: 8355

Outside Murfin Drilling Co.

Shuler 'A' #2-20

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS. 67202

ATTN: Rocky Milford

Shuler ' A ' #2-20

20-5s-29w Decatur,KS

Start Date: 2015.01.07 @ 11:18:00

End Date: 2015.01.07 @ 19:32:54

Job Ticket #: 58689 DST #: 2

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

Printed: 2015.01.12 @ 09:22:13



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58689

DST#: 2

ATTN: Rocky Milford

Test Start: 2015.01.07 @ 11:18:00

GENERAL INFORMATION:

Formation: **LKC " D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:32:10

Time Test Ended: 19:32:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 3926.00 ft (KB) To 3947.00 ft (KB) (TVD)

Reference Elevations: 2825.00 ft (KB)

Total Depth: 3947.00 ft (KB) (TVD)

2820.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8674

Inside

Press@RunDepth: 67.95 psig @ 3927.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.07

End Date:

2015.01.07

Last Calib.:

2015.01.07

Start Time: 11:18:00

End Time:

19:32:54

Time On Btm:

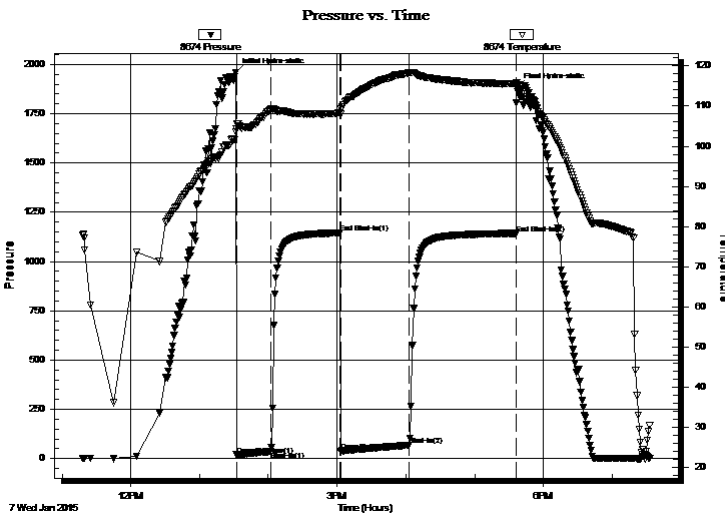
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Time Off Btm:

2015.01.07 @ 17:37:09

TEST COMMENT: IF- Weak nSurface Blow Built to 1"
IS- Very Weak Surface Blow in 20 min
FF- Weak Surface Blow Built to 1 1/4"
FS- Weak Surface Blow in 10min Built to 1/4"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1959.90	103.64	Initial Hydro-static
1	18.41	104.28	Open To Flow (1)
31	36.17	109.18	Shut-In(1)
91	1145.75	108.39	End Shut-In(1)
92	37.57	107.97	Open To Flow (2)
152	67.95	118.34	Shut-In(2)
245	1142.87	115.48	End Shut-In(2)
246	1880.62	115.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GMCW 5%g 18%m 77%w with a Skin	0.30
30.00	GOWCM 4%g 7%oil 26%w 63%m	0.15
0.00	94' of Weak GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur, KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58689

DST#: 2

ATTN: Rocky Milford

Test Start: 2015.01.07 @ 11:18:00

GENERAL INFORMATION:

Formation: **LKC " D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:32:10

Time Test Ended: 19:32:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 3926.00 ft (KB) To 3947.00 ft (KB) (TVD)

Total Depth: 3947.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2825.00 ft (KB)

2820.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 3927.00 ft (KB)

Start Date: 2015.01.07

End Date:

2015.01.07

Start Time: 11:18:05

End Time:

19:34:29

Capacity: 8000.00 psig

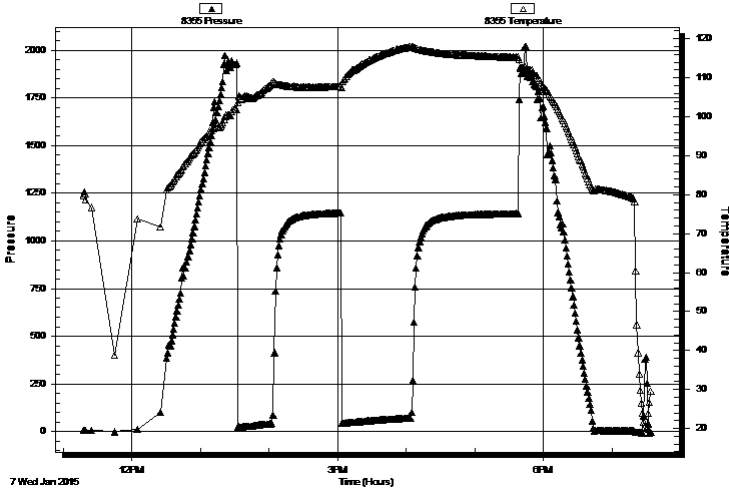
Last Calib.: 2015.01.07

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Weak nSurface Blow Built to 1"
IS- Very Weak Surface Blow in 20 min
FF- Weak Surface Blow Built to 1 1/4"
FS- Weak Surface Blow in 10min Built to 1/4"

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	GMCW 5%g 18%m 77%w with a Skin	0.30
30.00	GOWCM 4%g 7%oil 26%w 63%m	0.15
0.00	94' of Weak GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58689

DST#: 2

ATTN: Rocky Milford

Test Start: 2015.01.07 @ 11:18:00

Tool Information

Drill Pipe:	Length: 3737.00 ft	Diameter: 3.80 inches	Volume: 52.42 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	300000.0 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	20000.00 lb
			<u>Total Volume: 53.33 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	3926.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	107.00 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			3900.00	
Shut In Tool	5.00			3905.00	
Hydraulic tool	5.00			3910.00	
Jars	5.00			3915.00	
Safety Joint	2.00			3917.00	
Packer	5.00			3922.00	27.00 Bottom Of Top Packer
Packer	4.00			3926.00	
Stubb	1.00			3927.00	
Recorder	0.00	8355	Outside	3927.00	
Recorder	0.00	8674	Inside	3927.00	
Perforations	9.00			3936.00	
Change Over Sub	1.00			3937.00	
Drill Pipe	63.00			4000.00	
Change Over Sub	1.00			4001.00	
Bullnose	5.00			4006.00	80.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58689

DST#: 2

ATTN: Rocky Milford

Test Start: 2015.01.07 @ 11:18:00

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:

71000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.74 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	GMCW 5%g 18%m 77%w with a Skim of O	0.305
30.00	GOWCM 4%g 7%oil 26%w 63%m	0.148
0.00	94' of Weak GIP	0.000

Total Length: 92.00 ft Total Volume: 0.453 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .381 @ 18f = 71000

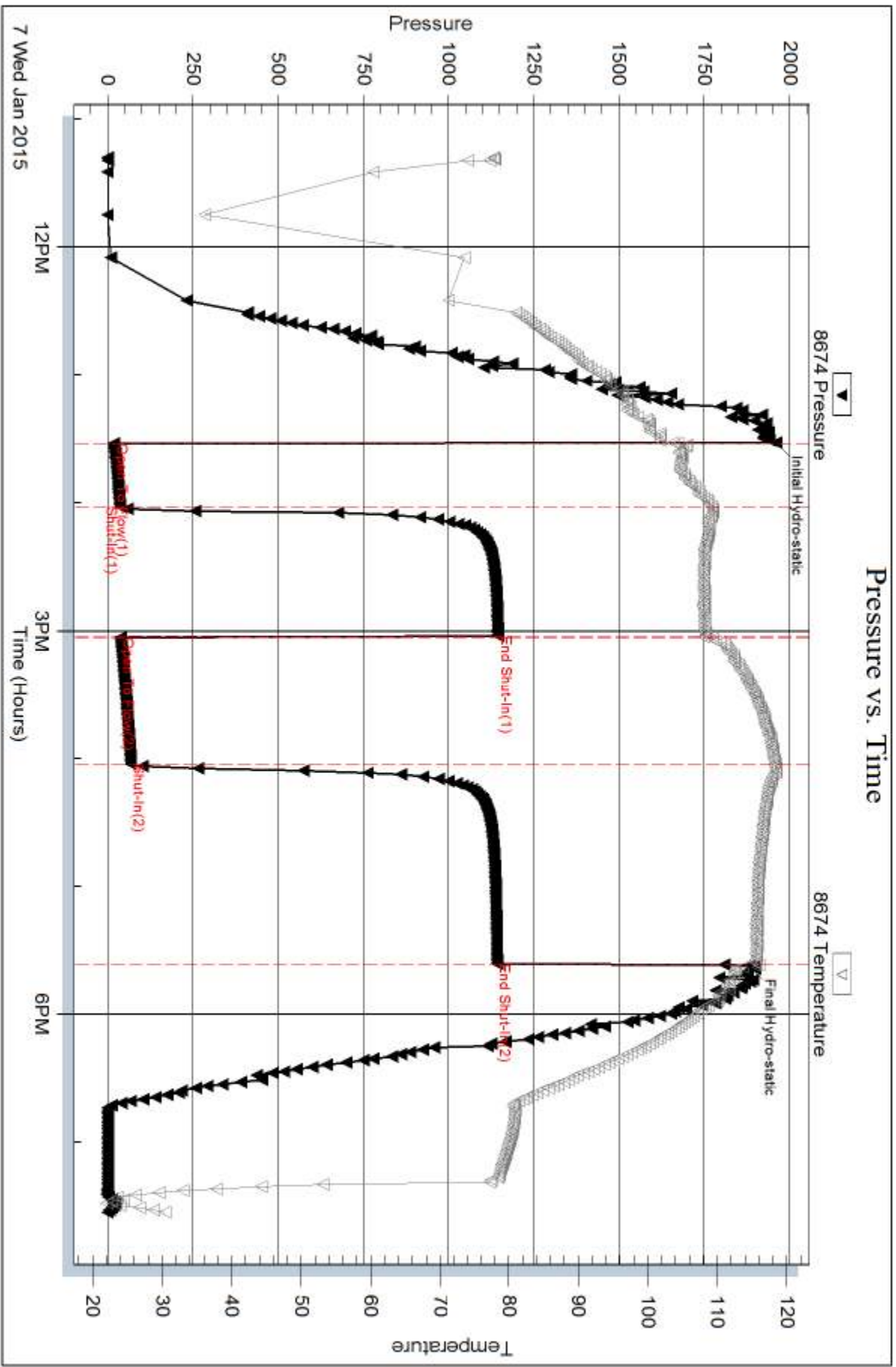
Serial #: 8674

Inside

Murfin Drilling Co.

Shuler 'A' #2-20

DST Test Number: 2

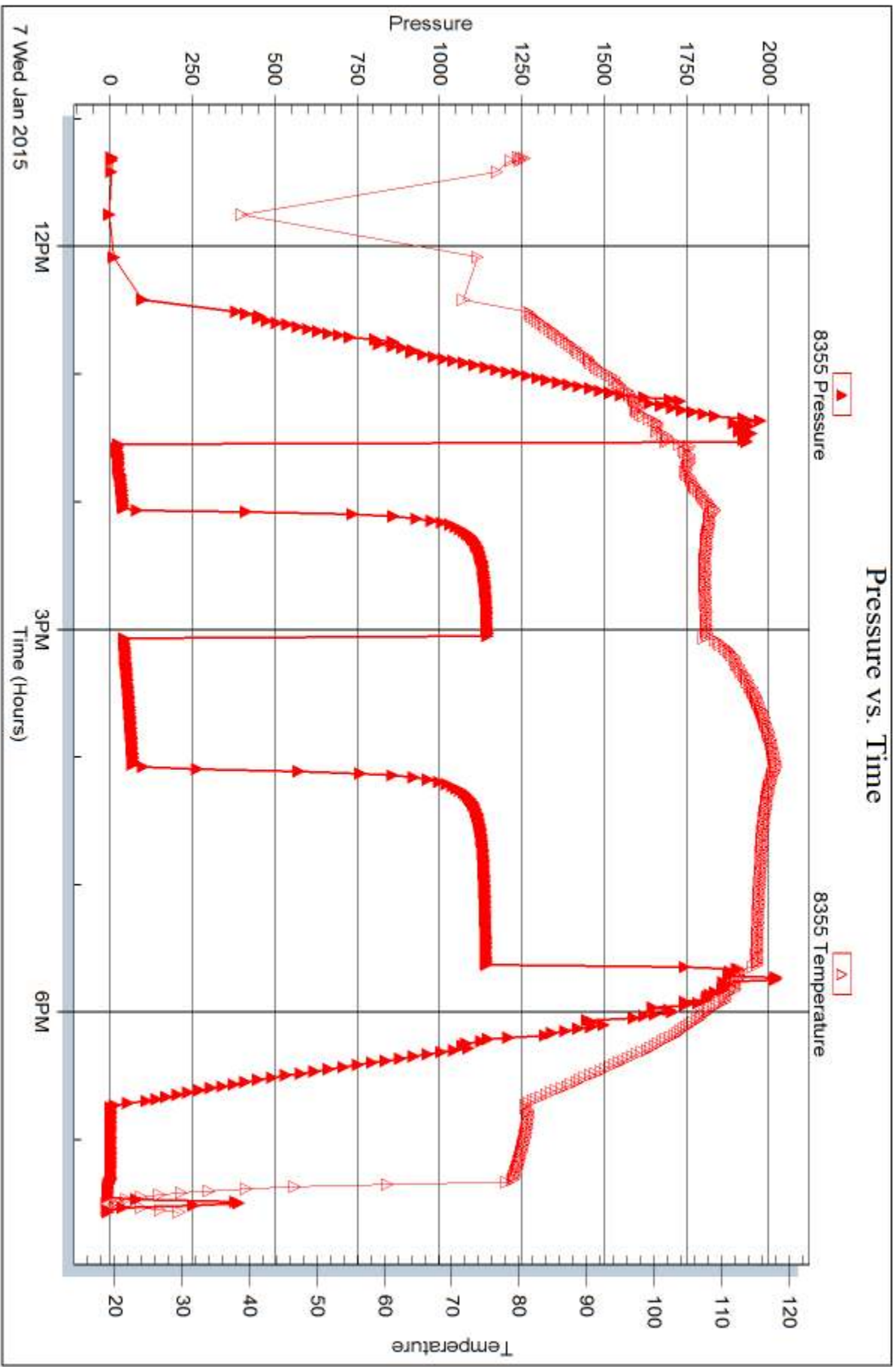


Serial #: 8355

Outside Murfin Drilling Co.

Shuler 'A' #2-20

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 59689

Printed: 2015.01.12 @ 09:22:15



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS. 67202

ATTN: Rocky Milford

Shuler ' A ' #2-20

20-5s-29w Decatur,KS

Start Date: 2015.01.08 @ 07:12:00

End Date: 2015.01.08 @ 15:33:09

Job Ticket #: 58690 DST #: 3

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

Printed: 2015.01.12 @ 09:21:46



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58690

DST#: 3

ATTN: Rocky Milford

Test Start: 2015.01.08 @ 07:12:00

GENERAL INFORMATION:

Formation: **LKC " E - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:17:10

Time Test Ended: 15:33:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 3945.00 ft (KB) To 3995.00 ft (KB) (TVD)

Reference Elevations: 2825.00 ft (KB)

Total Depth: 3995.00 ft (KB) (TVD)

2820.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8674

Inside

Press@RunDepth: 108.29 psig @ 3947.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.08

End Date:

2015.01.08

Last Calib.:

2015.01.08

Start Time: 07:12:00

End Time:

15:33:09

Time On Btm:

2015.01.08 @ 09:16:25

Time Off Btm:

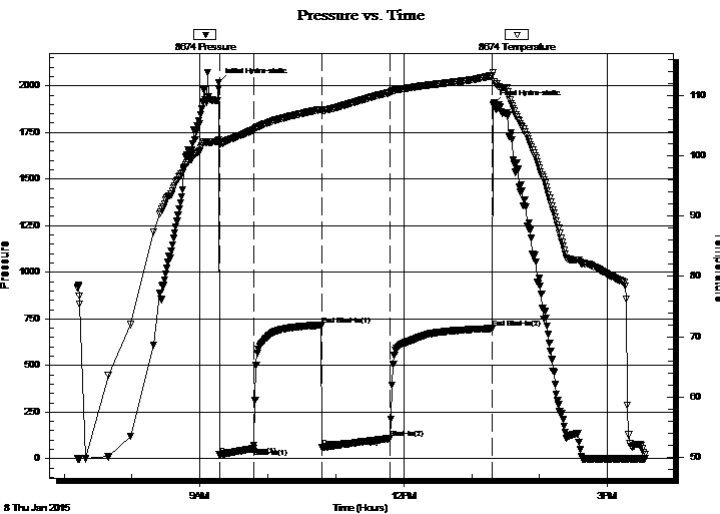
2015.01.08 @ 13:18:39

TEST COMMENT: IF- Weak Surface Blow Built to 1 1/2"

IS- No Blow

FF- Weak Surface Blow Built to 3/4"

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2016.80	102.73	Initial Hydro-static
1	20.55	101.86	Open To Flow (1)
31	54.23	104.33	Shut-In(1)
91	716.26	107.70	End Shut-In(1)
92	59.41	107.44	Open To Flow (2)
152	108.29	110.51	Shut-In(2)
242	698.29	113.28	End Shut-In(2)
243	1897.80	113.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WCM 4%w 96%m with a Skim of Oil	0.61
64.00	WCM 2%w 98%m with Oil Spots	0.33

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58690

DST#: 3

ATTN: Rocky Milford

Test Start: 2015.01.08 @ 07:12:00

GENERAL INFORMATION:

Formation: **LKC " E - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:17:10

Time Test Ended: 15:33:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: **3945.00 ft (KB) To 3995.00 ft (KB) (TVD)**

Total Depth: 3995.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2825.00 ft (KB)

2820.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 3947.00 ft (KB)

Start Date: 2015.01.08 End Date: 2015.01.08

Start Time: 07:12:05 End Time: 15:34:44

Capacity: 8000.00 psig

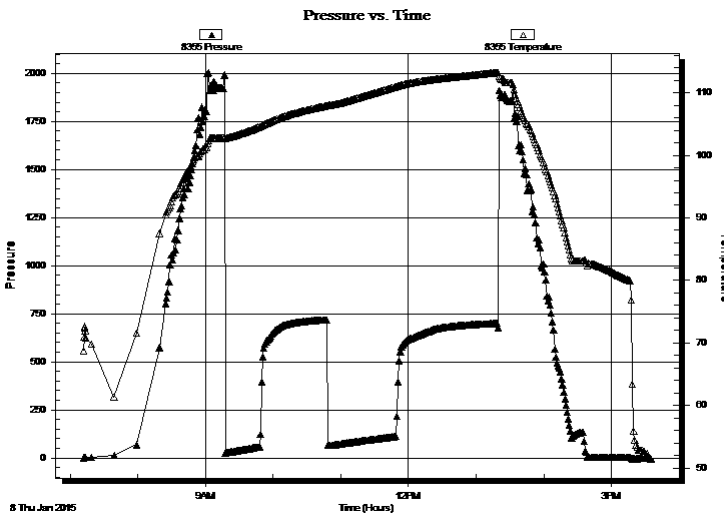
Last Calib.: 2015.01.08

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow Built to 1 1/2"
IS- No Blow
FF- Weak Surface Blow Built to 3/4"
FS- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	WCM 4%w 96%m with a Skim of Oil	0.61
64.00	WCM 2%w 98%m with Oil Spots	0.33

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58690

DST#: 3

ATTN: Rocky Milford

Test Start: 2015.01.08 @ 07:12:00

Tool Information

Drill Pipe:	Length: 3744.00 ft	Diameter: 3.80 inches	Volume: 52.52 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 32000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 14000.00 lb
			<u>Total Volume: 53.43 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3945.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	77.00 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			3919.00	
Shut In Tool	5.00			3924.00	
Hydraulic tool	5.00			3929.00	
Jars	5.00			3934.00	
Safety Joint	2.00			3936.00	
Packer	5.00			3941.00	27.00 Bottom Of Top Packer
Packer	4.00			3945.00	
Stubb	1.00			3946.00	
Perforations	1.00			3947.00	
Recorder	0.00	8355	Outside	3947.00	
Recorder	0.00	8674	Inside	3947.00	
Perforations	10.00			3957.00	
Change Over Sub	1.00			3958.00	
Drill Pipe	31.00			3989.00	
Change Over Sub	1.00			3990.00	
Bullnose	5.00			3995.00	50.00 Bottom Packers & Anchor
Total Tool Length:	77.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58690

DST#: 3

ATTN: Rocky Milford

Test Start: 2015.01.08 @ 07:12:00

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: 56.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
124.00	WCM 4%w 96%m with a Skim of Oil	0.610
64.00	WCM 2%w 98%m with Oil Spots	0.333

Total Length: 188.00 ft Total Volume: 0.943 bbf

Num Fluid Samples: 0

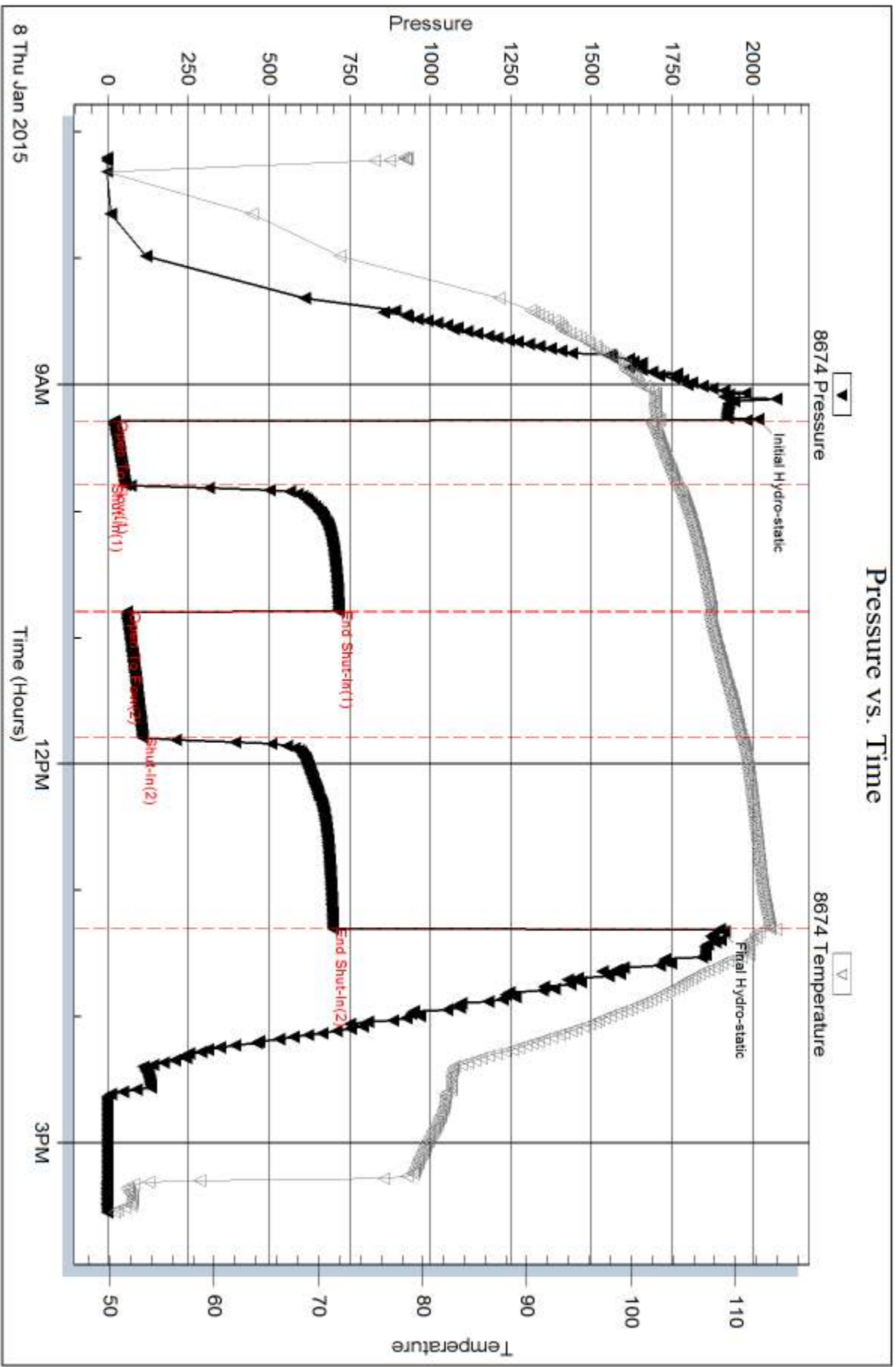
Num Gas Bombs: 0

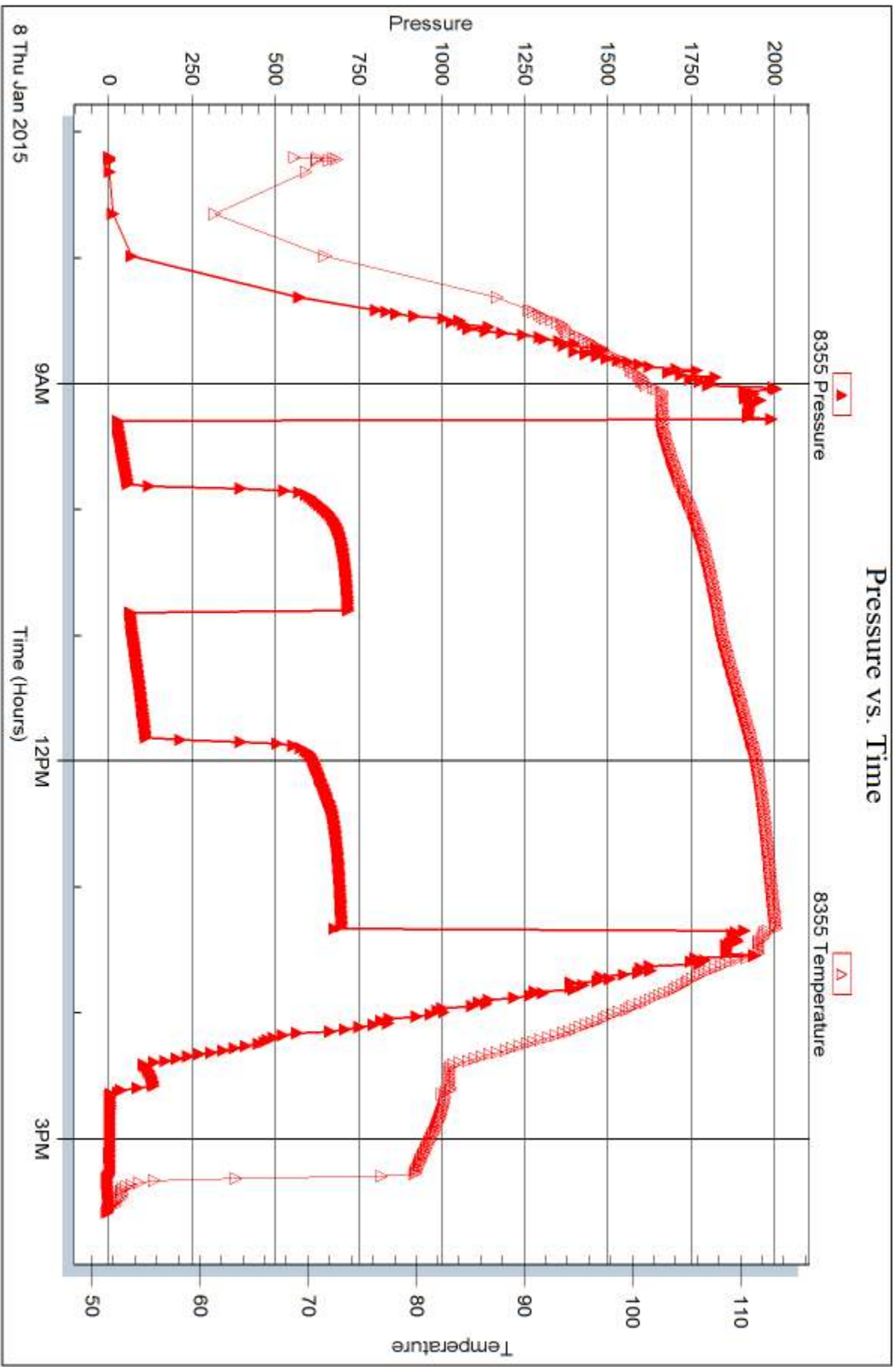
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS. 67202

ATTN: Rocky Milford

Shuler ' A ' #2-20

20-5s-29w Decatur,KS

Start Date: 2015.01.09 @ 04:18:00

End Date: 2015.01.09 @ 12:03:54

Job Ticket #: 58691 DST #: 4

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

Printed: 2015.01.12 @ 09:20:52



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58691

DST#: 4

ATTN: Rocky Milford

Test Start: 2015.01.09 @ 04:18:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:35:55

Time Test Ended: 12:03:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 3990.00 ft (KB) To 4085.00 ft (KB) (TVD)

Reference Elevations: 2825.00 ft (KB)

Total Depth: 4085.00 ft (KB) (TVD)

2820.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8674

Inside

Press@RunDepth: 33.59 psig @ 3992.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.09

End Date:

2015.01.09

Last Calib.:

2015.01.09

Start Time: 04:18:00

End Time:

12:03:54

Time On Btm:

2015.01.09 @ 06:35:40

Time Off Btm:

2015.01.09 @ 09:41:39

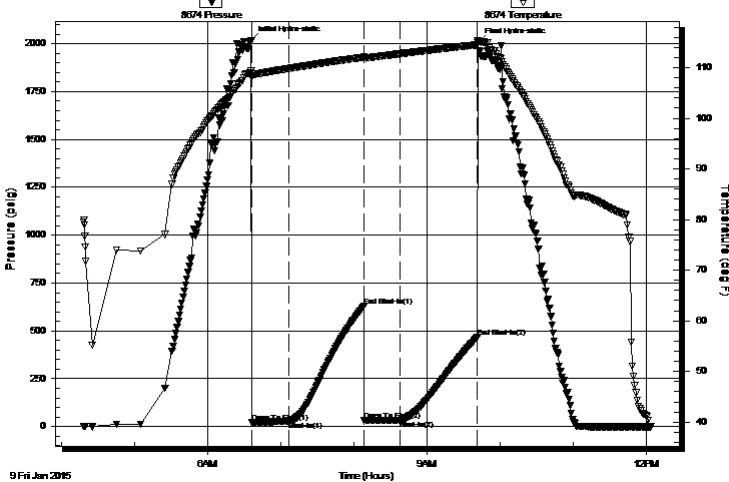
TEST COMMENT: IF- Weak Surface Blow Built to 1/2"

IS- No Blow

FF- No Blow

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2017.23	109.39	Initial Hydro-static
1	22.26	108.02	Open To Flow (1)
31	27.40	109.83	Shut-In(1)
93	628.63	112.06	End Shut-In(1)
93	31.15	111.76	Open To Flow (2)
123	33.59	112.74	Shut-In(2)
186	467.18	114.52	End Shut-In(2)
186	2005.57	115.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% m with Oil Spots in Tool	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58691

DST#: 4

ATTN: Rocky Milford

Test Start: 2015.01.09 @ 04:18:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:35:55

Time Test Ended: 12:03:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 3990.00 ft (KB) To 4085.00 ft (KB) (TVD)

Reference Elevations: 2825.00 ft (KB)

Total Depth: 4085.00 ft (KB) (TVD)

2820.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 3992.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.09

End Date: 2015.01.09

Last Calib.: 2015.01.09

Start Time: 04:18:05

End Time: 12:05:29

Time On Btm:

Time Off Btm:

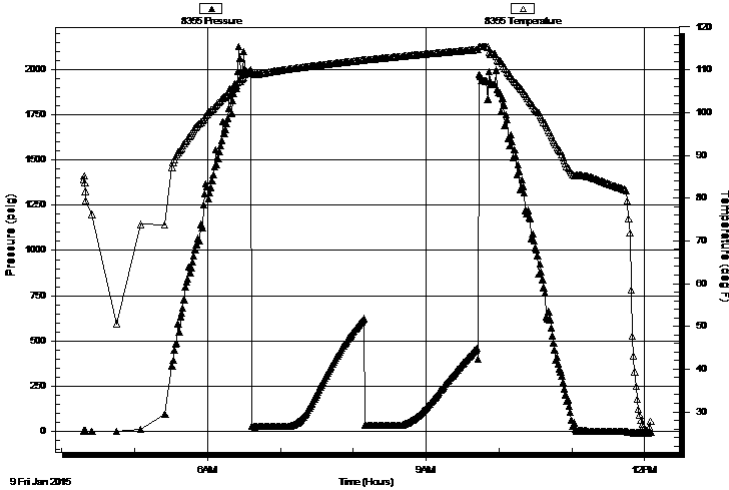
TEST COMMENT: IF- Weak Surface Blow Built to 1/2"

IS- No Blow

FF- No Blow

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100%m with Oil Spots in Tool	0.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58691

DST#: 4

ATTN: Rocky Milford

Test Start: 2015.01.09 @ 04:18:00

Tool Information

Drill Pipe:	Length: 3811.00 ft	Diameter: 3.80 inches	Volume: 53.46 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose:	18000.00 lb
			<u>Total Volume: 54.37 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	34.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	3990.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	95.00 ft				
Tool Length:	122.00 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			3964.00	
Shut In Tool	5.00			3969.00	
Hydraulic tool	5.00			3974.00	
Jars	5.00			3979.00	
Safety Joint	2.00			3981.00	
Packer	5.00			3986.00	27.00 Bottom Of Top Packer
Packer	4.00			3990.00	
Stubb	1.00			3991.00	
Perforations	1.00			3992.00	
Recorder	0.00	8355	Outside	3992.00	
Recorder	0.00	8674	Inside	3992.00	
Perforations	23.00			4015.00	
Change Over Sub	1.00			4016.00	
Drill Pipe	63.00			4079.00	
Change Over Sub	1.00			4080.00	
Bullnose	5.00			4085.00	95.00 Bottom Packers & Anchor
Total Tool Length:	122.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

20-5s-29w Decatur,KS

250 N. Water Ste 300
Wichita KS. 67202

Shuler ' A ' #2-20

Job Ticket: 58691

DST#: 4

ATTN: Rocky Milford

Test Start: 2015.01.09 @ 04:18:00

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: 50.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.75 in³

Gas Cushion Type:

Resistivity: 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	100% m with Oil Spots in Tool	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbf

Num Fluid Samples: 0

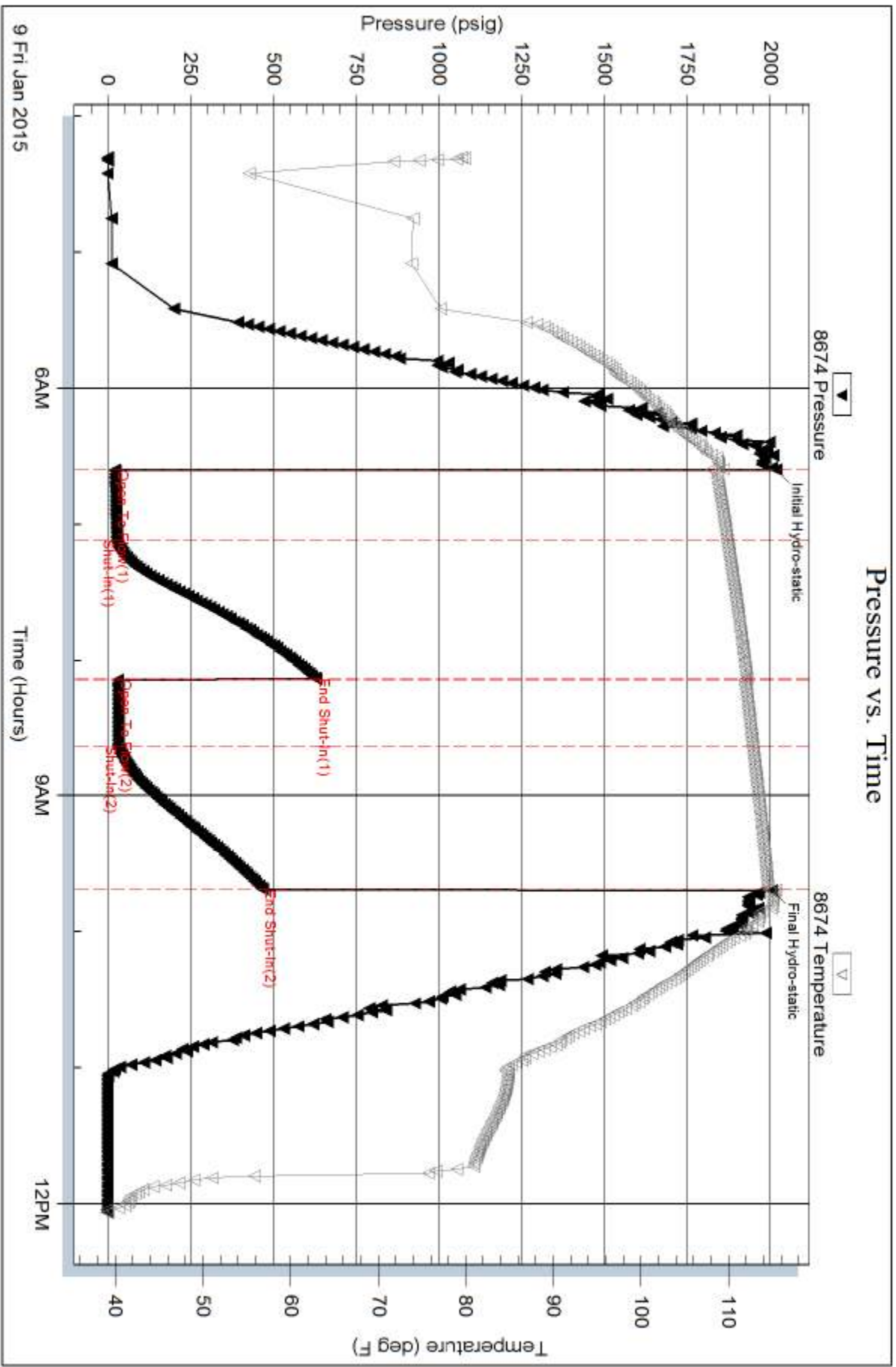
Num Gas Bombs: 0

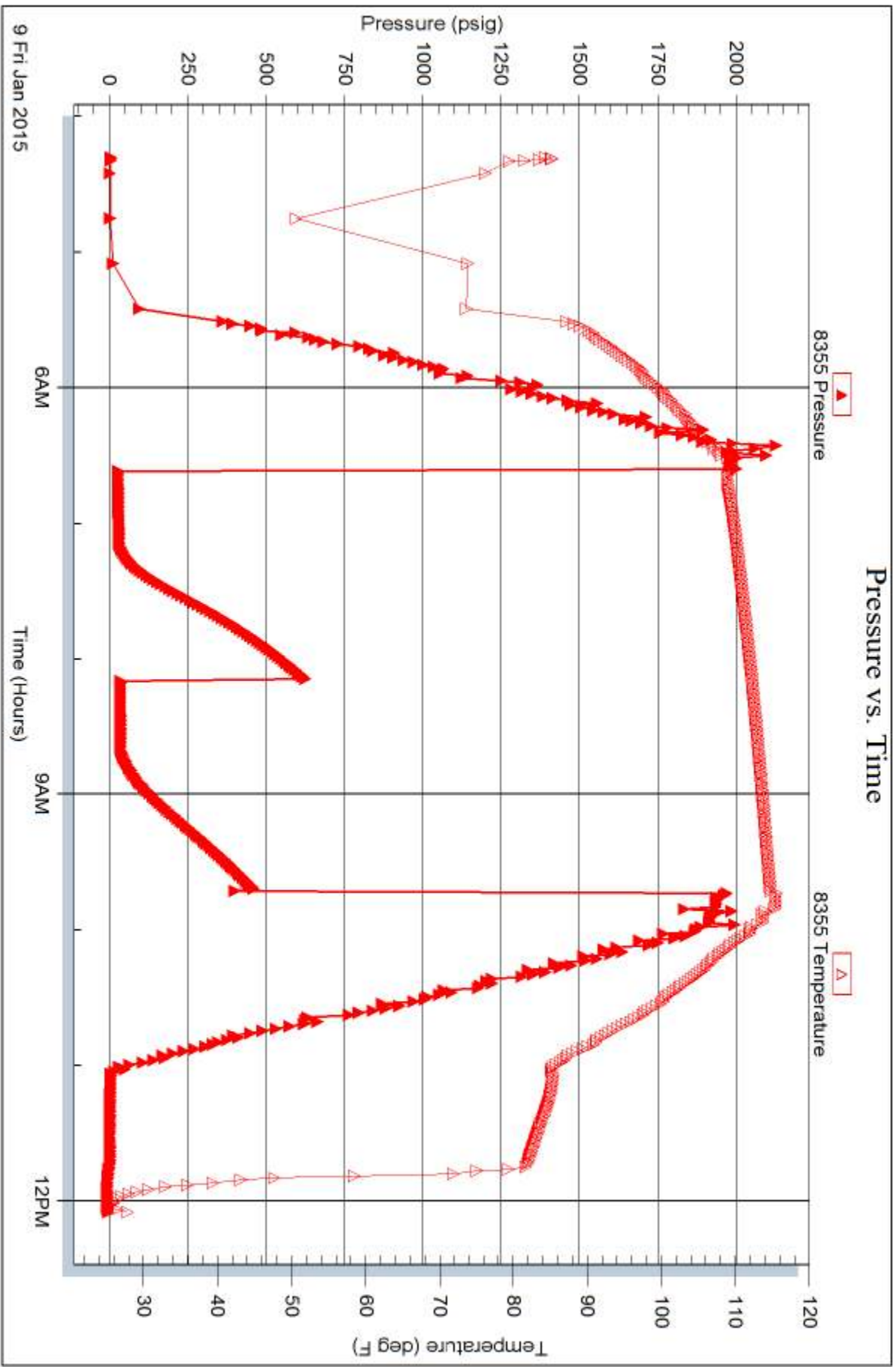
Serial #:

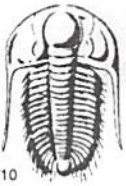
Laboratory Name:

Laboratory Location:

Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58688

4/10

Well Name & No. Shuler "A" # 2-20 Test No. DST #1 Date 1-6-15
 Company Murfin Drilling Co. Elevation 2825 KB 2820 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. _____ Rig Murfin 7
 Location: Sec. 20 Twp. 5S Rge. 29W Co. Decatur State KS

Interval Tested 3850 - 3930 Zone Tested Toronto - LRC "B"
 Anchor Length 80 Drill Pipe Run 3645 Mud Wt. 9.3
 Top Packer Depth 3846 Drill Collars Run 186 Vis 50
 Bottom Packer Depth 3850 Wt. Pipe Run 0 WL 6.8
 Total Depth 39.30 Chlorides 1000 ppm System LCM 1 1/2 lb
 Blow Description IF - Weak Surface Blow Built to 5 1/2"
ISI - No Blow
FF - Weak Surface Blow Built to 3"
PSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>68</u>	<u>WCM with oil spots</u>		<u>4</u>	<u>96</u>	
<u>124</u>	<u>WCM with slickensided oil</u>		<u>3</u>	<u>97</u>	
<u>62</u>	<u>WCM with oil spots</u>		<u>3</u>	<u>97</u>	
_____	_____				
_____	_____				

Rec Total 254 BHT 115 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1956 Test 1050 T-On Location 15:18
 (B) First Initial Flow 20 Jars 250 T-Started 17:00
 (C) First Final Flow 93 Safety Joint 75 T-Open 19:07
 (D) Initial Shut-In 1092 Circ Sub N/C T-Pulled 23:17
 (E) Second Initial Flow 99 Hourly Standby _____ T-Out 2:10
 (F) Second Final Flow 139 Mileage 184 R/T 40rt 40 Comments Stay at Oberlin Shop
 (G) Final Shut-In 1023 Sampler _____
 (H) Final Hydrostatic 1912 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 36 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1415
 Final Flow 60 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 90 Sub Total 1415

Approved By Rocky Milford Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58689

Well Name & No. Shuler "A" # 2-20 Test No. DST # 2 Date 1-7-15
 Company Murfin Drilling Co. Elevation 2825 KB 2820 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murten 7
 Location: Sec. 20 Twp. 5S Rge. 29W Co. _____ State KS

Interval Tested 3926-3947 Zone Tested LRC "D"
 Anchor Length 21 Drill Pipe Run 3737 Mud Wt. 9.1
 Top Packer Depth 3922 Drill Collars Run 186 Vis 52
 Bottom Packer Depth 3926 Wt. Pipe Run 0 WL 6.4
 Total Depth 3947 Chlorides 1060 ppm System LCM 116

Blow Description IF - Well Surface Blow Built to 1"
IST - Very Well Surface Blow in 20m
FF - Well Surface Blow Built to 1 1/4"
FSI - Well Surface Blow in 10m - Built to 1/4"

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>GOWCM</u>	<u>4</u>	<u>7</u>	<u>26</u>	<u>63</u>
<u>62</u>	<u>G-MCW with GRM oil</u>	<u>5</u>		<u>77</u>	<u>18</u>
	<u>94' of WOTP</u>				

Rec Total 92 BHT 114 Gravity _____ API RW 381 @ 18 °F Chlorides 71000 ppm

(A) Initial Hydrostatic 1959 Test 1050 T-On Location 10:34
 (B) First Initial Flow 18 Jars 250 T-Started 11:18
 (C) First Final Flow 36 Safety Joint 75 T-Open 13:32
 (D) Initial Shut-In 1145 Circ Sub NIC T-Pulled 17:37
 (E) Second Initial Flow 37 Hourly Standby _____ T-Out 19:32
 (F) Second Final Flow 67 Mileage 184 RIT 40 Comments _____
 (G) Final Shut-In 1142 Sampler _____ Shop at Oberlin Shop
 (H) Final Hydrostatic 1850 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1665
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1665

Approved By Rocky Milford Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58690

4/10

Well Name & No. <u>Shuler "A" # 2-20</u>	Test No. <u>DST #3</u>	Date <u>1-8-15</u>
Company <u>Murfin Drilling Co</u>	Elevation <u>2825</u>	KB <u>2820</u> GL
Address <u>250 N. Water St. 300 Wichita KS 67202</u>		
Co. Rep / Geo. <u>Rocky Milford</u>	Rig <u>Murfin 7</u>	
Location: Sec. <u>20</u> Twp. <u>5S</u> Rge. <u>29W</u> Co. <u>Decatur</u> State <u>KS</u>		

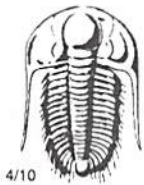
Interval Tested <u>3945 - 3995</u>	Zone Tested <u>LRC "E-G"</u>
Anchor Length <u>50</u>	Drill Pipe Run <u>3744</u> Mud Wt. <u>9.2</u>
Top Packer Depth <u>3941</u>	Drill Collars Run <u>186</u> Vis <u>56</u>
Bottom Packer Depth <u>3945</u>	Wt. Pipe Run <u>0</u> WL <u>6.0</u>
Total Depth <u>3995</u>	Chlorides <u>1400</u> ppm System LCM <u>116</u>
Blow Description <u>IF - Weak Surface Blow Built to 1 1/2"</u>	
<u>ISF - No Blow</u>	
<u>FF - Weak Surface Blow Built to 3/4"</u>	
<u>FST - No Blow</u>	

Rec	Feet of	%gas	%oil	%water	%mud
<u>64</u>	<u>WCM with oil spots</u>			<u>2</u>	<u>98</u>
<u>124</u>	<u>WCM with a glk of oil</u>			<u>4</u>	<u>96</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total <u>188</u>	BHT <u>124</u>	Gravity	API RW	@	F Chlorides	ppm
(A) Initial Hydrostatic <u>2016</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>5:46</u>				
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>7:12</u>				
(C) First Final Flow <u>54</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>9:17</u>				
(D) Initial Shut-In <u>716</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>13:18</u>				
(E) Second Initial Flow <u>59</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>15:33</u>				
(F) Second Final Flow <u>108</u>	<input checked="" type="checkbox"/> Mileage <u>184 RIT 40</u>	Comments <u>Shop Oberlin Shop</u>				
(G) Final Shut-In <u>698</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer				
(H) Final Hydrostatic <u>1897</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer				
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies				
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>				
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Total <u>1415</u>				
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't				
	<input type="checkbox"/> Accessibility	Sub Total <u>1415</u>				

Approved By Rocky Milford Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58691

Well Name & No. Shuler A #2-20 Test No. DST#4 Date 1-9-15
 Company Murfin Drilling Co. Elevation 2825 KB 2820 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin 7
 Location: Sec. 20 Twp. 5S Rge. 29W Co. Decatur State KS

Interval Tested 3990 - 4085 Zone Tested LRC "H-R"
 Anchor Length 95 Drill Pipe Run 3811 Mud Wt. 9.2
 Top Packer Depth 3986 Drill Collars Run 186 Vis 56
 Bottom Packer Depth 3990 Wt. Pipe Run 0 WL 6.0
 Total Depth 4085 Chlorides 1400 ppm System LCM 115

Blow Description IF- Weal Surface Blow Bolt to 52"
TSI- No Blow
FF- No Blow
FSI- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud with oil spts in Tool</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 115 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2017 Test 1150 T-On Location 3:26
 (B) First Initial Flow 22 Jars 250 T-Started 4:18
 (C) First Final Flow 27 Safety Joint 75 T-Open 6:35
 (D) Initial Shut-In 628 Circ Sub NIC T-Pulled 9:41
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 12:03
 (F) Second Final Flow 33 Mileage 184 RIT 40 Comments Stayed at obelie shop
 (G) Final Shut-In 467 Sampler _____
 (H) Final Hydrostatic 2005 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1515
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1515

Approved By Rocky Milford Our Representative Nim
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Robert L. Milford

PETROLEUM GEOLOGIST
Wichita, Kansas

GEOLOGISTS REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR Murfin Drilling Company, Inc.
 LEASE Shuler 'A' #2-20
 LOC. SPOT 110'S of C S2 SW

LOC. FOOTAGE 550' FSL 1320' FWL
 SEC. 20 TWP. 5S R. 29W
 COUNTY Decatur STATE Kansas
 API 15-039-21216-00-00

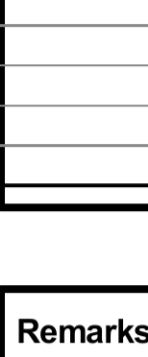
CONTRACTOR Murfin Drilling Co., Inc. RIG NO. 7
 DRILLING STARTED 1-2-2015 COMPLETED 1-9-2015
 MUD DISPLACED 2,977 MUD TYPE Chemical
 DRILLING TIME KEPT FROM 3,580' TO RTD
 SAMPLES SAVED FROM 3,580' TO RTD
 SAMPLES EXAMINED FROM 3,580' TO RTD
 GEOLOGICAL SUPERVISION FROM 3,580' TO RTD

FORMATION NAME	LOG TOP	DATUM	SAMPLE TOP	DATUM
Stone Corral	2,553'	+272	2,551'	+274
Base Stone Corral	2,586'	+239	2,584'	+241
Topoka	3,676'	-851	3,678'	-853
Heebner	3,849'	-1024	3,851'	-1026
Toronto	3,880'	-1055	3,882'	-1057
Lansing	3,896'	-1071	3,898'	-1073
Stark	4,051'	-1226	4,053'	-1228
B/KC	4,101'	-1276	4,103'	-1278
Total Depth	4,198'	-1373	4,200'	-1375

MEASUREMENTS/FOURK
 ELEVATIONS
 KB 2,825'
 GL 2,820'

CASINO RECORD
 Conductor _____
 Surface 8-5/8" @ 219'
 w/ 200 sacks cement
 Production none

ELECTRICAL SURVEYS:
 Pioneer Wireline:
 Dual Induction Log
 Dual Compensated -
 Porosity Log
 Microresistivity Log
 Borehole Compensated -
 Sonic Log



DATE	7:00 AM DEPTH	REMARKS
1-2-15	0'	Spud @ 6:00 pm. Plug down @ 11:00 pm. Dev.: 0.75° @ 219'
1-3-15	219'	Cut 219' in last 24 hrs. Drilled out plug @ 7:00 am. Shut down 10 hrs for weather @ 1297'
1-4-15	1,423'	Cut 1,204' in last 24 hrs; 13.5 hrs drlg.
1-5-15	3,225'	Cut 1,802' in last 24 hrs; 21.5 hrs drlg. Bit trip @ 3547' (replaced PDC with button bit)
1-6-15	3,825'	Cut 600' in last 24 hrs; 17 hrs drlg. DST #1 @ 3930'
1-7-15	3,930'	Cut 105' in last 24 hrs; 3 hrs drlg. DST #2 @ 3947', DST #3 @ 3995'
1-8-15	3,995'	Cut 65' in last 24 hrs; 2.25 hrs drlg. DST #4 @ 4085'
1-9-15	4,085'	Cut 90' in last 24 hrs; 5.25 hrs drlg. RTD 4200' @ 9:12 pm
1-10-15	4,200'	Cut 115' in last 24 hrs; 5.75 hrs drlg. P&A

Remarks

The electric log measurements correlate from 2' lower over the Stone Corral and 2' higher in sample portion to the drilling measurements.

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

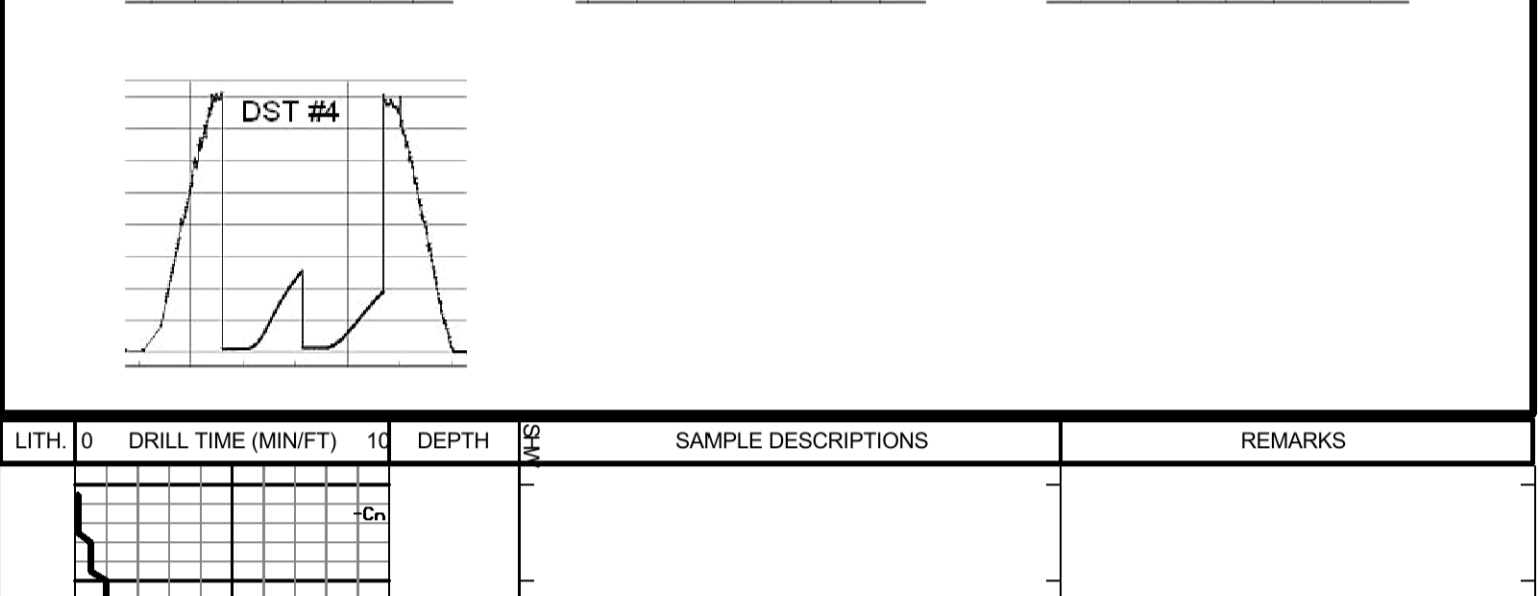
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford

Drill Stem Test Charts

Drill Stem Test by Trilobite Testing, Inc.



LITH.	DRILL TIME (MIN/FT)	DEPTH (ft)	SAMPLE DESCRIPTIONS	REMARKS
		2550		Stone Corral 2553' (+272) EL
		2586		B/Stone Corral 2586' (+239) EL
		2600		

		3550		Mud displaced from 2977' to 3009' Call depth 3280' @ 7:10 am on 1-5-15 Morgan Mud check @ 3547': 64 Vis, 9.4 Wt, 6.4 WL, 1,000 ppm Chl, 2# LCM (taken @ 11:00 am, while TOH) Bit trip at 3547'. Replaced PDC bit with button bit. Pipe Strap @ 3547': Strap long 2.53' Straight Hole Survey @ 3547': 1° Dev. Samples start 3580' @ 6:56 pm on 1-5-15
		3600	LS: crm-med gry, fxln, fos in prt, some sli shly, sub chky-prtly dns, pr por, NS Sh: red-brn, gry, grn LS: crm-lt gry, fxln, fos in prt, sub chky-prtly dns, pr por, NS	
		3650	LS: crm, fxln, fos-ool in prt, sub chky-prtly dns, pr-fr intrprtal por, NS Sh: red-brn, gry & grn LS: crm-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS Sh: red-brn, gry, grn LS: crm-gry, fxln, fos in prt, some shly, sub chky-prtly dns w/ some chky-vry chky, pr por, NS Sh: red-brn (some soft & gummy) w/ some gry & grn LS: wh-lt gry, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS	Topeka 3676' (-851) EL
		3700	LS: wh-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS LS: wh-tan, fxln, fos in prt, vry chky-prtly dns, pr w/ tr fr fos por, NS Sdy LS: crm-lt gry, fxln, vry fr grain sd, sub chky, pr vis por, NS Sh: red-brn (some soft & gummy), w/ gry & grn & Sdy Sh: lt gry & red-brn LS: wh-crm, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr w/ tr fr fos por, NS	
		3750	Sh: red-brn, gry, grn LS: wh-crm, fxln, fos in prt, chky-prtly dns w/ some vry chky, pr por, NS LS: wh-tan, fxln, fos in prt, vry chky-prtly dns, pr w/ tr fr fos por, NS	
		3800	LS: wh-tan, fxln, fos in prt, sub chky-prtly dns w/ some chky-vry chky, pr por, NS Sh: drk gry w/ tr Blk Carb Sh: red-brn (some soft & gummy) & grn, some gry LS: wh-crm, fxln, fos in prt, vry chky-prtly dns, pr por, NS Sh: red-brn (some soft & gummy) w/ some grn & gry LS: A.A., pr por, NS	
		3850	LS: wh-crm, fxln, fos in prt, chky-prtly dns w/ some vry chky, pr por, NS LS: A.A., pr por, NS LS: wh-tan, fxln, fos in prt, vry chky-prtly dns, pr w/ tr fr fos por, NS LS: A.A., sli chty (crm), tr fr fos por, NS	Heebner 3849' (-1024) EL
		3900	Sh: Blk Carb & drk gry LS: tan, fxln, fos in prt, prtly dns, pr por, NS Sh: mstly lt gry-lt grn (mstly soft & gummy, some sdy) Sh: red-brn (soft & gummy in prt) w/ some gry-gry (soft & gummy in prt) LS: wh-crm, fxln, ool, sli pyr, sub chky-prtly dns, pr-fr intrprtal por, scat med-drk brn & blk patchy-sub sat stn, FSFO (some thk-hvy), some bleeding), fr odor Sh: red-brn, gry, grn	Morgan Mud check @ 3878': 50 Vis, 9.3 Wt, 6.8 WL, 1,000 ppm Chl, 1.5# LCM Toronto 3880' (-1055) EL
		3950	LS: wh-tan, fxln, sli fos-ool, sli pyr, chky-prtly dns, pr w/ some fr intrprtal por, vry scat drk brn-blk sptd-patchy stn, S-FSFO, sli odor Sh: red-brn (mstly soft & gummy), some gry & grn LS: crm-tan, sli fos, sub chky-prtly dns, pr w/ some fr fos-vug por, vry scat brn-blk sptd-patchy stn, SSFO, fr odor (may be from DST #2) Sh: red-brn (soft & gummy in prt), gry & grn LS: wh-tan, fxln, sli fos-ool, some shly (red-brn, mottled), sub chky-prtly dns w/ some chky-vry chky, pr por, tr brn sptd-patchy stn, SSFO, no odor LS: wh-tan, fxln, sli fos, some shly (red-brn, mottled), sub chky-prtly dns w/ some chky-vry chky, pr por, tr brn sptd-patchy stn, SSFO, no odor LS: A.A. w/ some shly (lt gry) & chty (gry), tr brn sptd stn, NSFO, no odor LS: A.A. w/ some Sh: grn LS: crm-tan, fxln, sli fos, sub chky-prtly dns, pr por, NS Sh: red-brn, gry, grn LS: crm-tan, fxln, sli fos, sli pyr, sub chky-prtly dns w/ some chky, pr por, tr brn-blk mstly sptd stn, 1 pc w/ live stn, NSFO, no odor	Morgan Mud check @ 3947': 52 Vis, 9.4 Wt, 6.4 WL, 1,000 ppm Chl, 1# LCM (taken @ 8:00 am while CFS. Added tank of mud after mud check & prior to DST #1) DST #2 3926'-3947' L/KC 'E'-'G' zn IF: blow built to 1" FSI: very weak surface blow in 20" FF: blow built to 1.25" FSI: blow back built to 0.25" Rec: 94' Weak 6IP & 92' TOTAL FLUID: 30' GOWCM (4%G, 7%O, 26%W, 63%M) 62' WCM w/ oil spots (3% W, 97% M) 62' WCM w/ oil spots (3% W, 97% M) IFP: 20-93#/30" ISIP: 1092#/60" FFP: 99-139#/60" FSIP: 1023#/90" Ran 23 stand short trip prior to DST #1 Straight Hole Survey @ 3930': 1° Dev. DST #2 3926'-3947' L/KC 'E'-'G' zn IF: blow built to 1" FSI: very weak surface blow in 20" FF: blow built to 1.25" FSI: blow back built to 0.25" Rec: 94' Weak 6IP & 92' TOTAL FLUID: 30' GOWCM (4%G, 7%O, 26%W, 63%M) 62' WCM w/ oil spots (3% W, 97% M) 62' WCM w/ oil spots (3% W, 97% M) IFP: 20-54#/30" ISIP: 716#/60" FFP: 59-108#/60" FSIP: 698#/90"
		4000	LS: wh-tan, fxln, sli fos, sub chky-prtly dns, pr por, NS Sh: red-brn, gry, grn LS: crm-tan, fxln, sli fos, sli pyr, sub chky-prtly dns w/ some chky, pr por, tr brn-blk mstly sptd stn, 1 pc w/ live stn, NSFO, no odor LS: crm-tan, fxln, sli fos (fusl), sub chky-prtly dns, pr por, NS Sh: red-brn, grn, gry Sh: red-brn, gry, grn	Morgan Mud check @ 3995': 56 Vis, 9.2 Wt, 6.0 WL, 1,400 ppm Chl, 1# LCM (taken @ 8:00 am while TTH for DST #3)
		4050	Sh: red-brn, gry, grn LS: crm-tan, fxln, ool-fos in prt, sub chky-prtly dns w/ some chky, pr w/ some fr intrprtal por, fr amnt lt-med brn patchy-sat stn, F-GSFO, sli odor Sh: red-brn (some soft & gummy), gry, grn Sh: red-brn (soft & gummy in prt) w/ small amnt grn & gry LS: crm-lt gry, fxln, sli fos-ool, some shly (lt gry-grn), sub chky-prtly dns, pr w/ tr fr intrprtal & small vug por, scat lt-med brn patchy w/ tr sat stn, SSFO, no odor Sh: red-brn w/ some gry & grn LS: crm-gry, fxln, sli fos, shly (red-brn, mottled) in prt, sub chky-prtly dns, pr por, NS	DST #3 3945'-3995' L/KC 'E'-'K' zns IF: blow built to 1.5" FSI: no blow back FF: blow built to 0.75" FSI: no blow back Rec: 188' TOTAL FLUID: 64' WCM w/ oil spots (2% W, 98% M) 124' WCM w/ skim oil (4% W, 96% M) IFP: 20-54#/30" ISIP: 716#/60" FFP: 59-108#/60" FSIP: 698#/90"
		4100	Sh: red-brn w/ some gry & grn LS: crm-gry, fxln, fos in prt, sub chky-prtly dns, pr por, NS Sh: red-brn, gry, grn LS: crm-lt gry, fxln, fos-ool in prt, sub chky-prtly dns, pr por, NS Sh: red-brn, gry, grn, w/ some Calc Sh: gry	Morgan Mud check @ 4085': 54 Vis, 9.4 Wt, 6.4 WL, 1,600 ppm Chl, 1# LCM (taken @ 7:15 am while taking DST #4)
		4150	LS: crm-gry, fxln, fos in prt, some shly, sub chky-prtly dns, pr por, NS Calc Sh: lt-med gry w/ Sh: red-brn, gry, grn Sh: red-brn, gry, grn w/ some Calc Sh: A.A. Sh: A.A. w/ some Calc Sh: gry & brn A.A.	
		4200		Ran 10 stand short trip @ TD, then CFS L.T.D. 4198' (-1373) R.T.D. 4200' (-1375) Straight Hole Survey @ 4200': 0.5° Dev.