

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1243391
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: _____

1243391

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> _____
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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	Sandlin 1-32
Doc ID	1243391

All Electric Logs Run

DIL
DUCP
MEL
BHCS



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. LLC**

250 N Water STE 300
Wichita KS 67202

ATTN: Steve Miler

Sandlin #1-32

32-10s-23w,Graham,KS

Start Date: 2014.12.06 @ 02:05:00

End Date: 2014.12.06 @ 11:46:45

Job Ticket #: 62543 DST #: 1

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

Printed: 2014.12.10 @ 16:52:31



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62543

DST#: 1

ATTN: Steve Miller

Test Start: 2014.12.06 @ 02:05:00

GENERAL INFORMATION:

Formation: **Toronto - LKC B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:59:30

Time Test Ended: 11:46:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 3631.00 ft (KB) To 3704.00 ft (KB) (TVD)

Reference Elevations: 2368.00 ft (KB)

Total Depth: 3704.00 ft (KB) (TVD)

2363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Outside

Press@RunDepth: 268.65 psig @ 3632.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.06

End Date:

2014.12.06

Last Calib.:

2014.12.06

Start Time: 02:05:05

End Time:

11:46:45

Time On Btm:

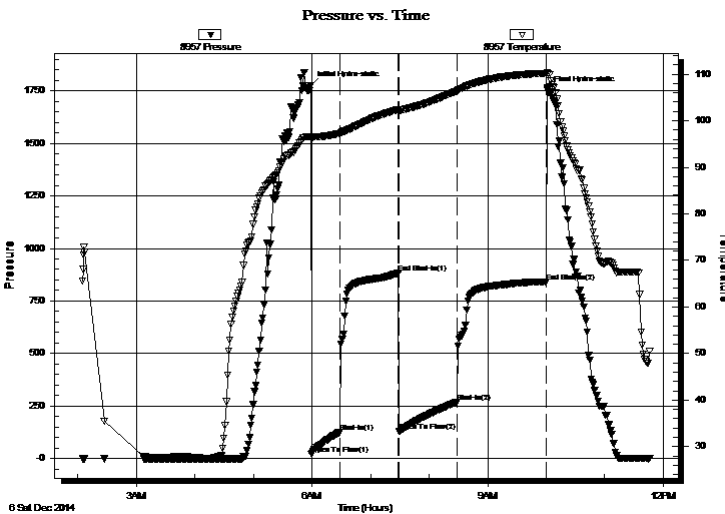
2014.12.06 @ 05:58:30

Time Off Btm:

2014.12.06 @ 10:01:15

TEST COMMENT: IF-BOB in 10 min
IS-No blow
FF-BOB in 13 min
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1774.62	96.59	Initial Hydro-static
1	20.33	95.89	Open To Flow (1)
30	123.72	97.28	Shut-In(1)
90	881.79	102.38	End Shut-In(1)
91	127.64	101.91	Open To Flow (2)
151	268.65	106.41	Shut-In(2)
241	840.84	110.20	End Shut-In(2)
243	1753.31	110.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
300.00	Water	3.94
180.00	MCW 40%M 60%W	2.52
60.00	OS Mud	0.84

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62543

DST#: 1

ATTN: Steve Miller

Test Start: 2014.12.06 @ 02:05:00

Tool Information

Drill Pipe:	Length: 3610.00 ft	Diameter: 3.80 inches	Volume: 50.64 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3631.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	93.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3616.00	
Hydraulic tool	5.00			3621.00	
Packer	5.00			3626.00	20.00 Bottom Of Top Packer
Packer	5.00			3631.00	
Stubb	1.00			3632.00	
Recorder	0.00	8736	Inside	3632.00	
Recorder	0.00	8957	Outside	3632.00	
Perforations	4.00			3636.00	
Change Over Sub	1.00			3637.00	
Drill Pipe	63.00			3700.00	
Change Over Sub	1.00			3701.00	
Bullnose	3.00			3704.00	73.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62543

DST#: 1

ATTN: Steve Miller

Test Start: 2014.12.06 @ 02:05:00

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:

32000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
300.00	Water	3.944
180.00	MCW 40%M 60%W	2.525
60.00	OS Mud	0.842

Total Length: 540.00 ft Total Volume: 7.311 bbl

Num Fluid Samples: 0

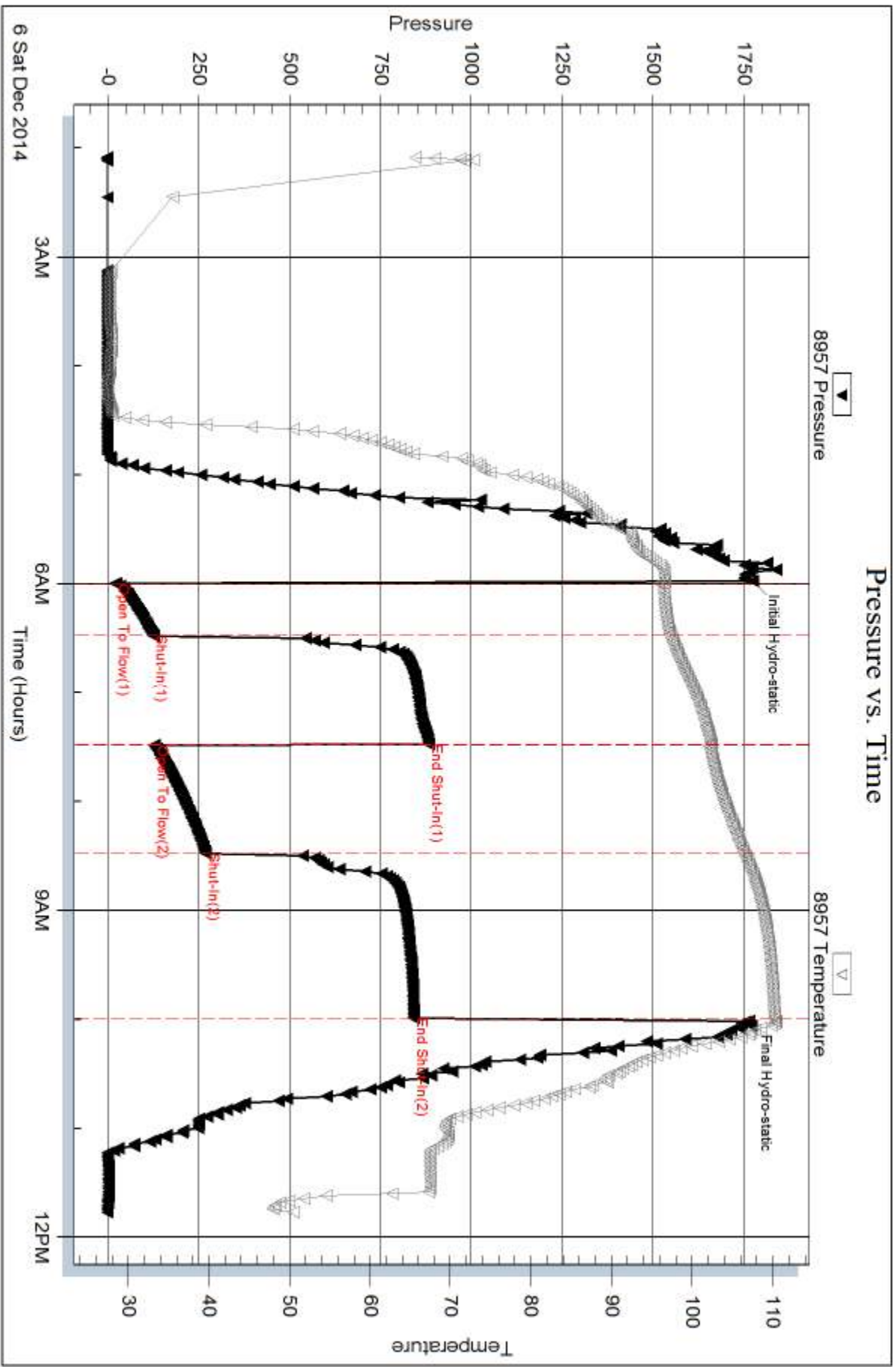
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



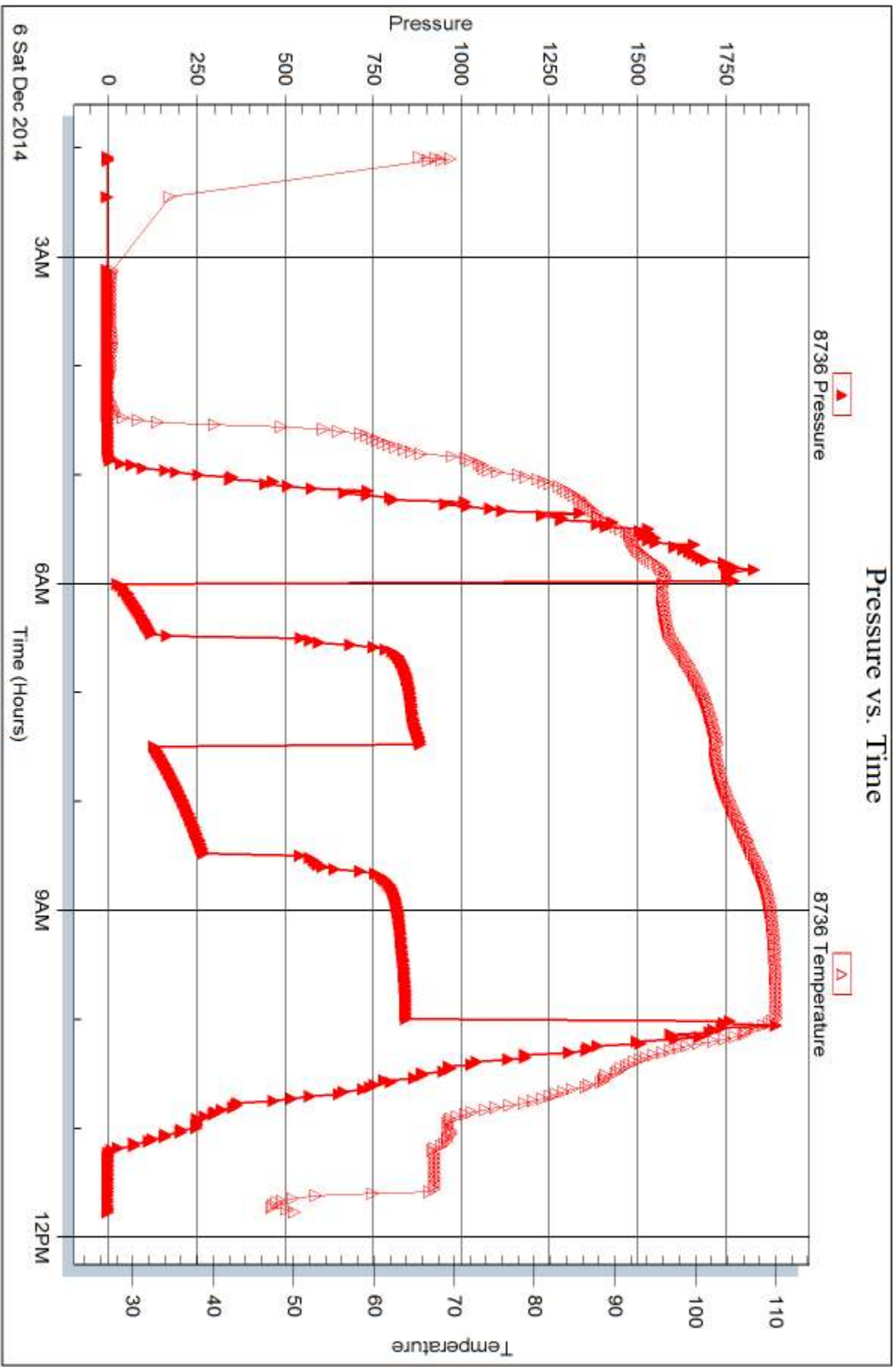
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Inside

Murfin Drilling Co. LLC

Sandlin #1-32

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 62543

Printed: 2014.12.10 @ 16:52:32



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. LLC**

250 N Water STE 300
Wichita KS 67202

ATTN: Steve Miler

Sandlin #1-32

32-10s-23w,Graham,KS

Start Date: 2014.12.06 @ 17:25:00

End Date: 2014.12.06 @ 22:45:45

Job Ticket #: 62544 DST #: 2

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

Printed: 2014.12.10 @ 16:51:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62544

DST#: 2

ATTN: Steve Miller

Test Start: 2014.12.06 @ 17:25:00

GENERAL INFORMATION:

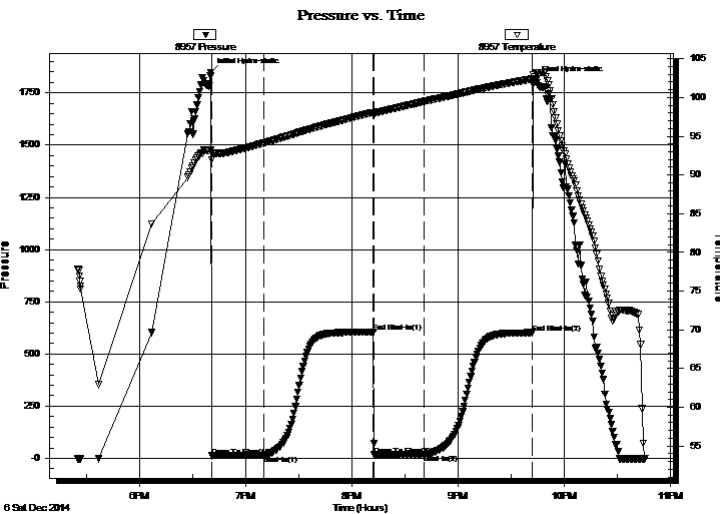
Formation: **KC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:40:45
 Time Test Ended: 22:45:45
 Interval: **3700.00 ft (KB) To 3718.00 ft (KB) (TVD)**
 Total Depth: 3718.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2368.00 ft (KB)
 2363.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8957

Outside

Press@RunDepth: 18.66 psig @ 3701.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.06 End Date: 2014.12.06 Last Calib.: 2014.12.06
 Start Time: 17:25:05 End Time: 22:45:44 Time On Btm: 2014.12.06 @ 18:40:15
 Time Off Btm: 2014.12.06 @ 21:43:15

TEST COMMENT: IF-1 1/4" blow
 IS-No blow
 FF-No blow
 FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1848.30	93.19	Initial Hydro-static
1	11.72	91.93	Open To Flow (1)
30	15.95	94.10	Shut-In(1)
92	605.41	98.08	End Shut-In(1)
93	16.70	97.93	Open To Flow (2)
121	18.66	99.47	Shut-In(2)
182	602.00	102.39	End Shut-In(2)
183	1807.48	102.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62544

DST#: 2

ATTN: Steve Miler

Test Start: 2014.12.06 @ 17:25:00

Tool Information

Drill Pipe:	Length: 3676.00 ft	Diameter: 3.80 inches	Volume: 51.56 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	46000.00 lb
Drill Pipe Above KB:	25.00 ft			Final	46000.00 lb
Depth to Top Packer:	3700.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	18.00 ft				
Tool Length:	38.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3685.00	
Hydraulic tool	5.00			3690.00	
Packer	5.00			3695.00	20.00 Bottom Of Top Packer
Packer	5.00			3700.00	
Stubb	1.00			3701.00	
Recorder	0.00	8736	Inside	3701.00	
Recorder	0.00	8957	Outside	3701.00	
Perforations	14.00			3715.00	
Bullnose	3.00			3718.00	18.00 Bottom Packers & Anchor
Total Tool Length:	38.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62544

DST#: 2

ATTN: Steve Miller

Test Start: 2014.12.06 @ 17:25:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

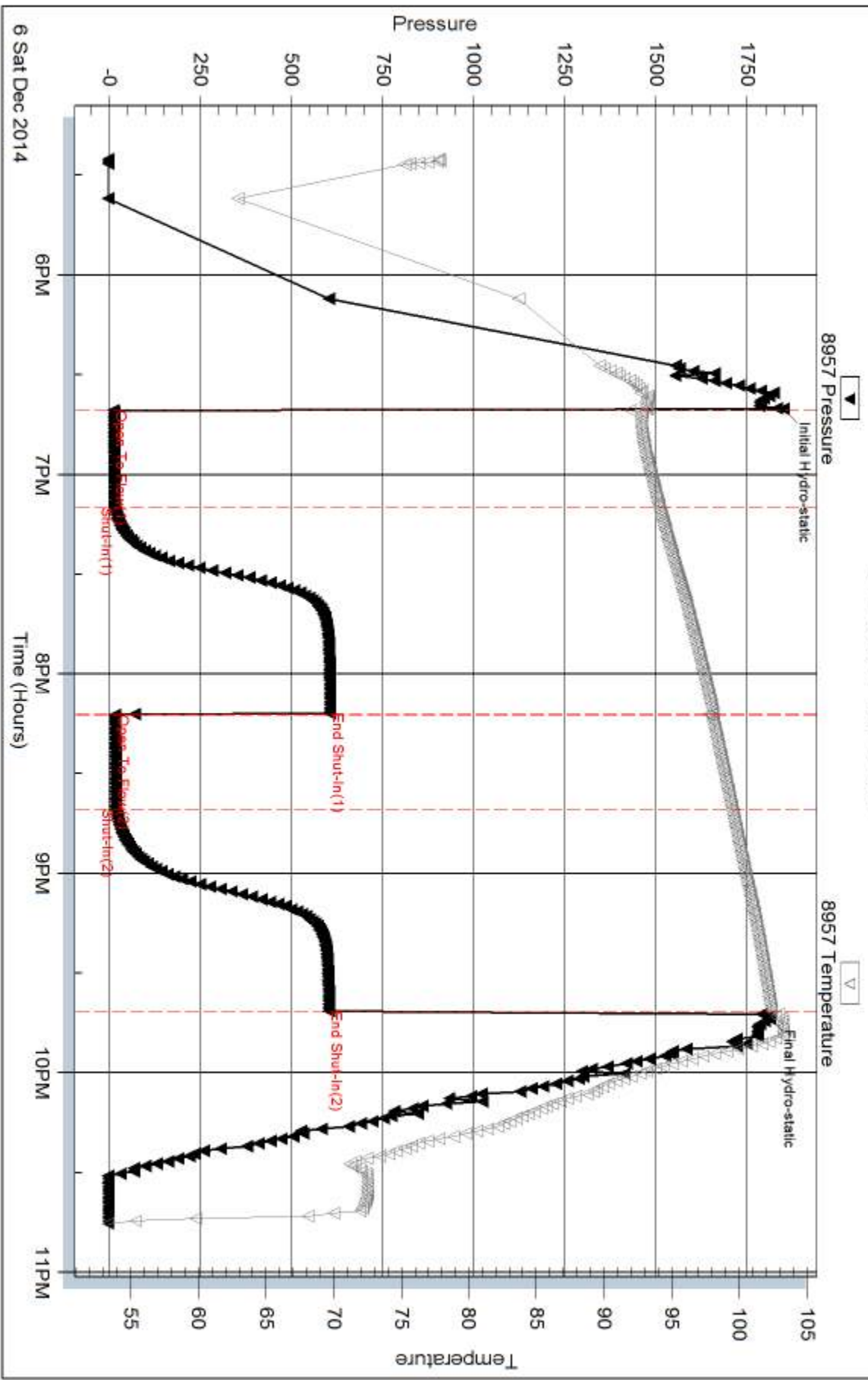
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



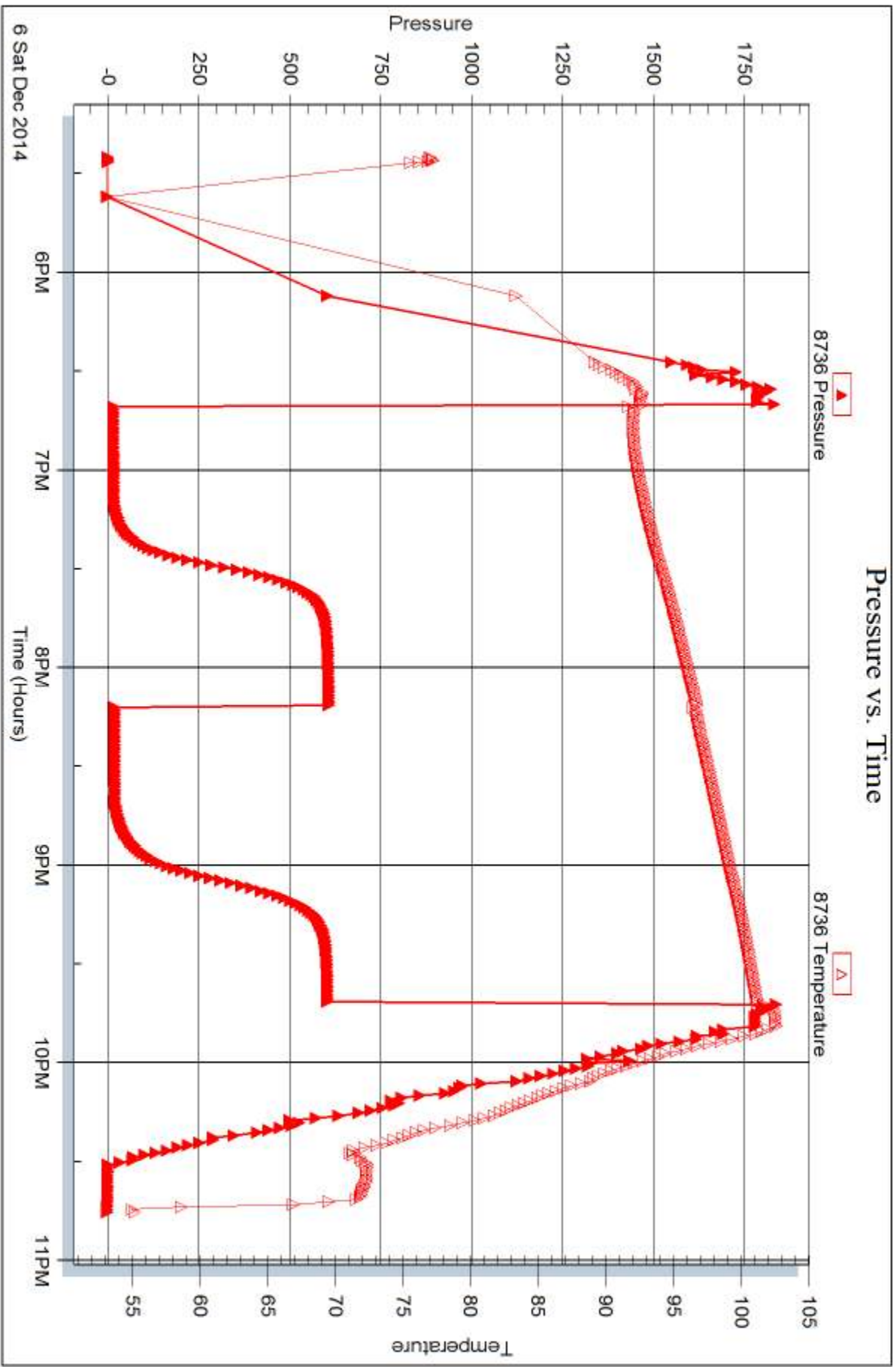
Serial #: 8736

Inside

Murfin Drilling Co. LLC

Sandlin #1-32

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. LLC**

250 N Water STE 300
Wichita KS 67202

ATTN: Steve Miler

Sandlin #1-32

32-10s-23w,Graham,KS

Start Date: 2014.12.07 @ 04:45:00

End Date: 2014.12.07 @ 10:45:15

Job Ticket #: 62545 DST #: 3

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

Printed: 2014.12.10 @ 16:51:18

Murfin Drilling Co. LLC
32-10s-23w,Graham,KS
Sandlin #1-32
DST # 3
KC
2014.12.07



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62545

DST#: 3

ATTN: Steve Miller

Test Start: 2014.12.07 @ 04:45:00

GENERAL INFORMATION:

Formation: **KC**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:25:15
 Time Test Ended: 10:45:15
 Interval: **3722.00 ft (KB) To 3752.00 ft (KB) (TVD)**
 Total Depth: 3752.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 59
 Reference Elevations: 2368.00 ft (KB)
 2363.00 ft (CF)
 KB to GR/CF: 5.00 ft

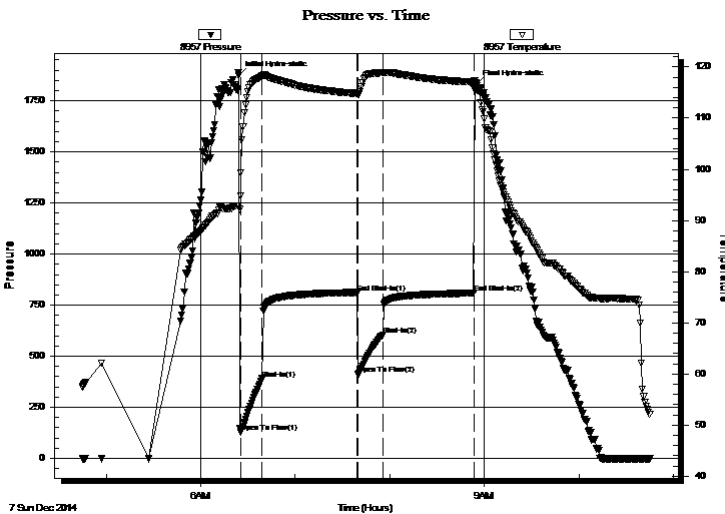
Serial #: 8957

Outside

Press@RunDepth: 603.90 psig @ 3723.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07
 Start Time: 04:45:05 End Time: 10:45:14 Time On Btm: 2014.12.07 @ 06:24:15
 Time Off Btm: 2014.12.07 @ 08:54:30

TEST COMMENT: IF-BOB in 1 min
 IS-No blow
 FF-BOB in 1 1/2 min
 FS-No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1874.73	92.98	Initial Hydro-static
1	129.10	94.87	Open To Flow (1)
15	389.97	118.23	Shut-In(1)
76	811.95	114.84	End Shut-In(1)
76	411.28	114.66	Open To Flow (2)
92	603.90	118.86	Shut-In(2)
150	808.70	117.02	End Shut-In(2)
151	1831.08	116.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1080.00	Water	14.89
240.00	OS MCW 35%M 65%W	3.37

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62545

DST#: 3

ATTN: Steve Miller

Test Start: 2014.12.07 @ 04:45:00

Tool Information

Drill Pipe:	Length: 3703.00 ft	Diameter: 3.80 inches	Volume: 51.94 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 52.08 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3722.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	30.00 ft				
Tool Length:	50.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3707.00	
Hydraulic tool	5.00			3712.00	
Packer	5.00			3717.00	20.00 Bottom Of Top Packer
Packer	5.00			3722.00	
Stubb	1.00			3723.00	
Recorder	0.00	8736	Inside	3723.00	
Recorder	0.00	8957	Outside	3723.00	
Perforations	26.00			3749.00	
Bullnose	3.00			3752.00	30.00 Bottom Packers & Anchor
Total Tool Length:	50.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62545

DST#: 3

ATTN: Steve Miller

Test Start: 2014.12.07 @ 04:45:00

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:

68000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1080.00	Water	14.885
240.00	OS MCW 35%M 65%W	3.367

Total Length: 1320.00 ft Total Volume: 18.252 bbl

Num Fluid Samples: 0

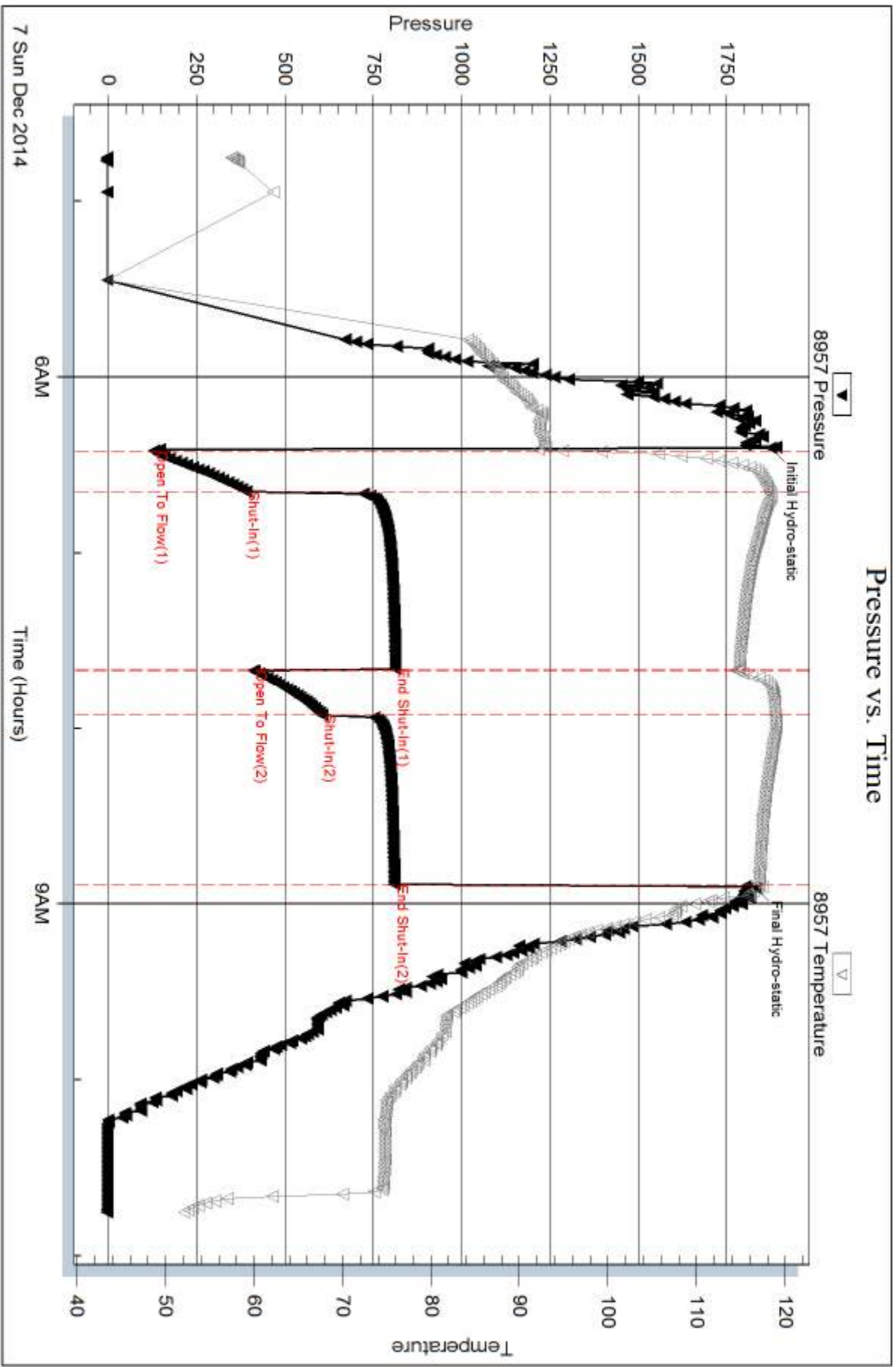
Num Gas Bombs: 0

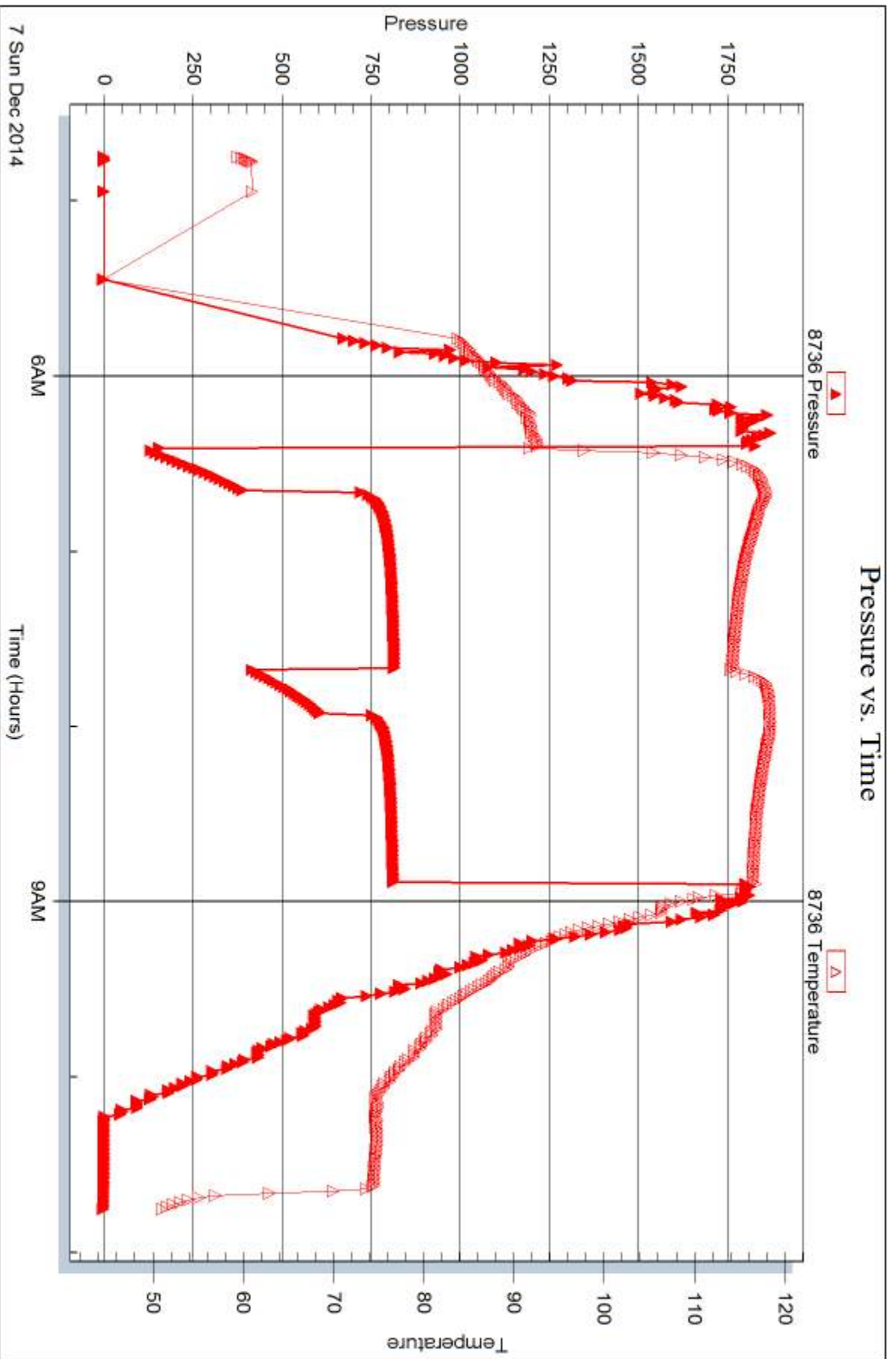
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. LLC**

250 N Water STE 300
Wichita KS 67202

ATTN: Steve Miler

Sandlin #1-32

32-10s-23w,Graham,KS

Start Date: 2014.12.07 @ 20:10:00

End Date: 2014.12.08 @ 02:57:30

Job Ticket #: 62546 DST #: 4

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

Printed: 2014.12.10 @ 16:50:38



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62546

DST#: 4

ATTN: Steve Miller

Test Start: 2014.12.07 @ 20:10:00

GENERAL INFORMATION:

Formation: **KC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:28:30

Time Test Ended: 02:57:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3782.00 ft (KB) To 3846.00 ft (KB) (TVD)

Reference Elevations: 2368.00 ft (KB)

Total Depth: 3846.00 ft (KB) (TVD)

2363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Outside

Press@RunDepth: 338.97 psig @ 3783.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.07

End Date: 2014.12.08

Last Calib.: 2014.12.08

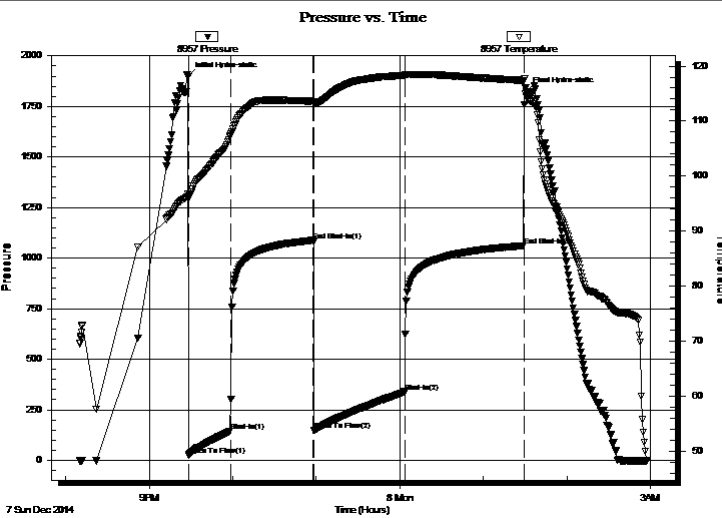
Start Time: 20:10:05

End Time: 02:57:29

Time On Btm: 2014.12.07 @ 21:28:00

Time Off Btm: 2014.12.08 @ 01:30:45

TEST COMMENT: IF-BOB in 6 min
IS- No blow
FF-BOB in 13 min
FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1897.20	96.68	Initial Hydro-static
1	23.74	95.96	Open To Flow (1)
31	144.03	107.32	Shut-In(1)
90	1087.54	113.59	End Shut-In(1)
91	149.13	113.19	Open To Flow (2)
156	338.97	118.28	Shut-In(2)
241	1061.32	117.38	End Shut-In(2)
243	1821.83	114.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
759.00	MW 20%M 80%W	10.38
1.00	Free Oil	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62546

DST#: 4

ATTN: Steve Miler

Test Start: 2014.12.07 @ 20:10:00

Tool Information

Drill Pipe:	Length: 3736.00 ft	Diameter: 3.80 inches	Volume: 52.41 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3782.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3767.00	
Hydraulic tool	5.00			3772.00	
Packer	5.00			3777.00	20.00 Bottom Of Top Packer
Packer	5.00			3782.00	
Stubb	1.00			3783.00	
Recorder	0.00	8736	Inside	3783.00	
Recorder	0.00	8957	Outside	3783.00	
Perforations	4.00			3787.00	
Change Over Sub	1.00			3788.00	
Drill Pipe	31.00			3819.00	
Change Over Sub	1.00			3820.00	
Perforations	23.00			3843.00	
Bullnose	3.00			3846.00	64.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62546

DST#: 4

ATTN: Steve Miller

Test Start: 2014.12.07 @ 20:10:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
759.00	MW 20%M 80%W	10.383
1.00	Free Oil	0.014

Total Length: 760.00 ft Total Volume: 10.397 bbl

Num Fluid Samples: 0

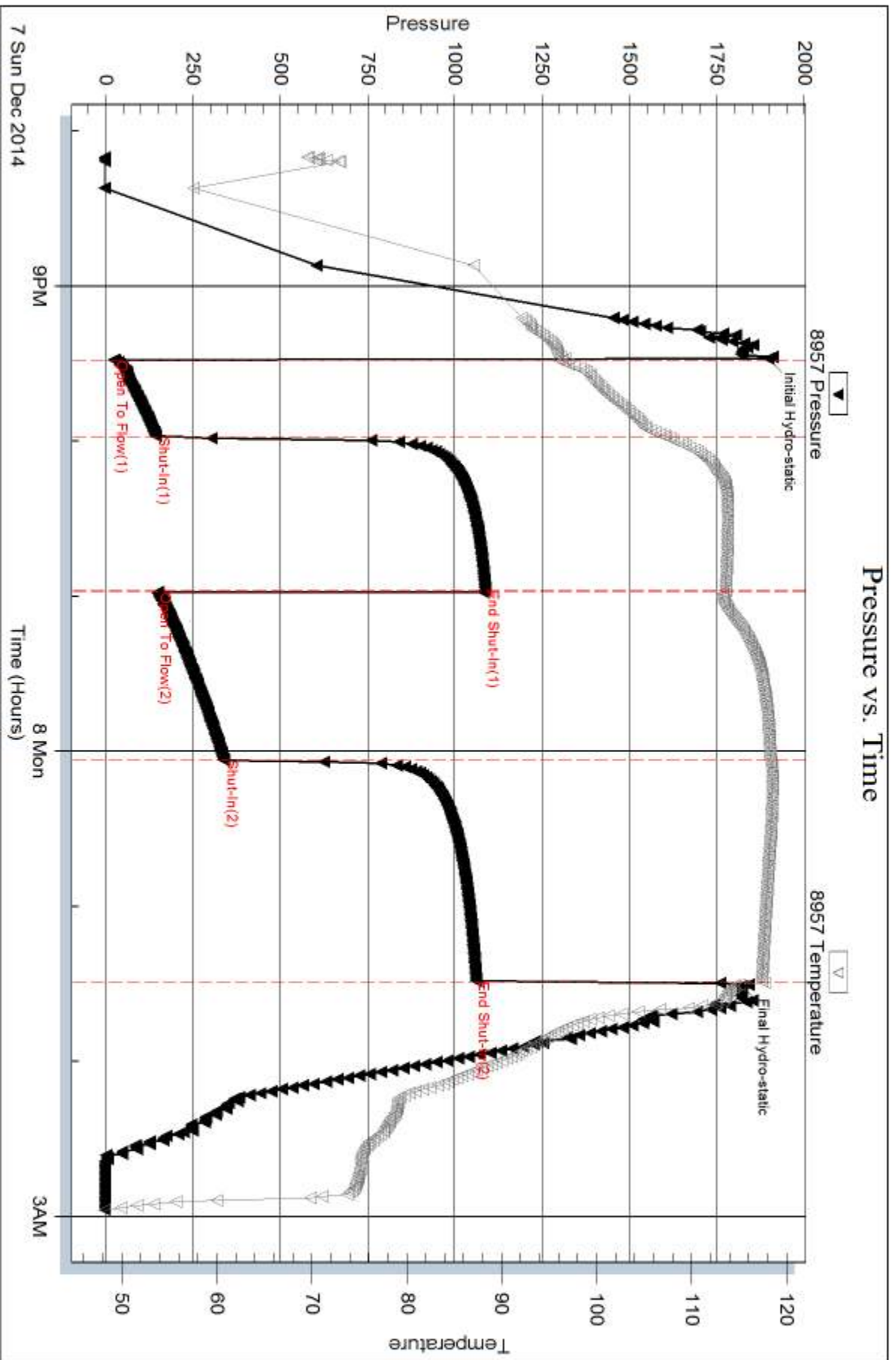
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



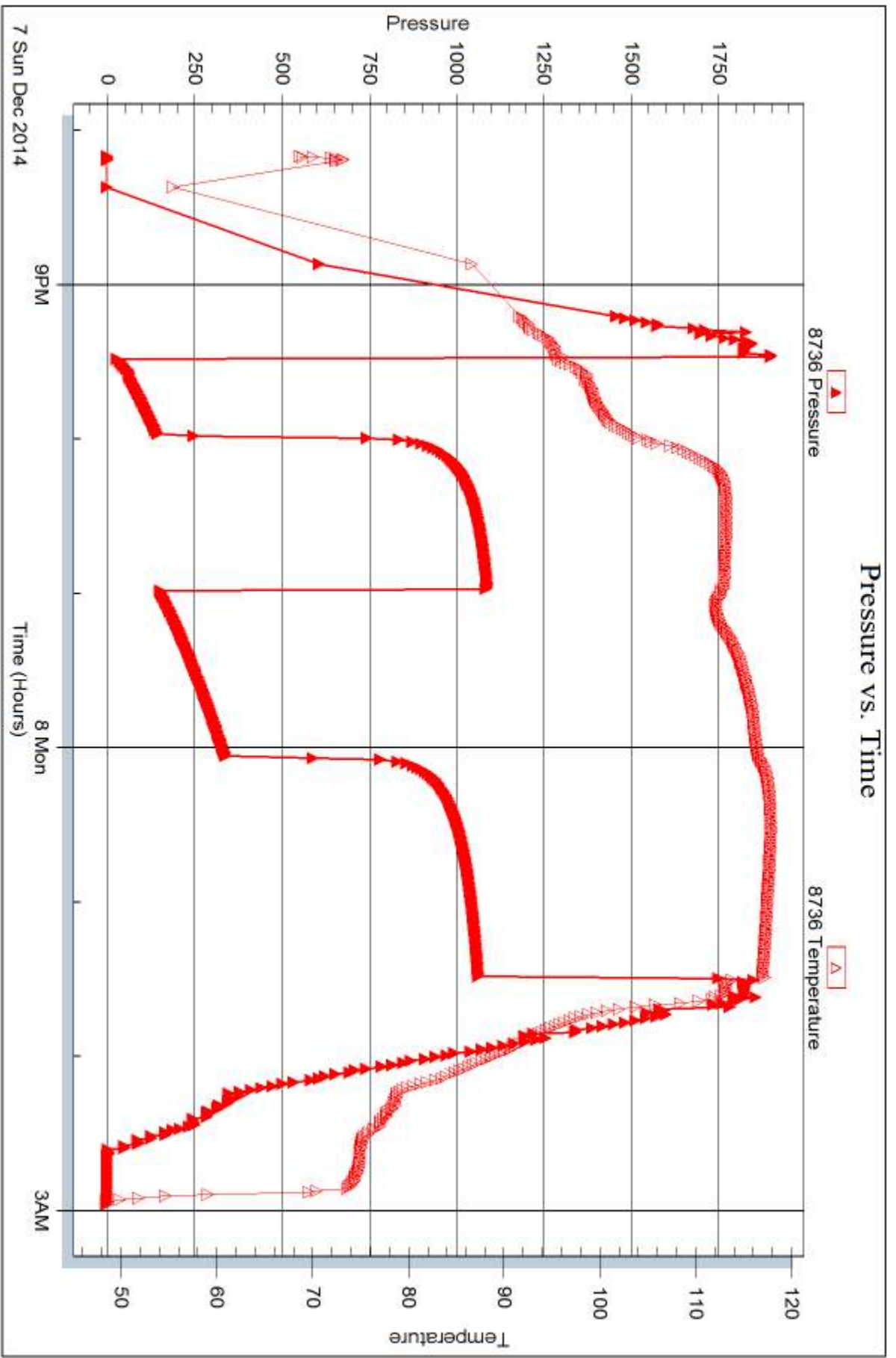
Serial #: 8736

Inside

Murfin Drilling Co. LLC

Sandlin #1-32

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 62546

Printed: 2014.12.10 @ 16:50:39



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. LLC**

250 N Water STE 300
Wichita KS 67202

ATTN: Steve Miler

Sandlin #1-32

32-10s-23w,Graham,KS

Start Date: 2014.12.08 @ 08:35:00

End Date: 2014.12.08 @ 15:54:00

Job Ticket #: 62547 DST #: 5

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

Printed: 2014.12.10 @ 16:49:37



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62547

DST#: 5

ATTN: Steve Miller

Test Start: 2014.12.08 @ 08:35:00

GENERAL INFORMATION:

Formation: **KC"K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:44:45

Time Test Ended: 15:54:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3848.00 ft (KB) To 3868.00 ft (KB) (TVD)

Reference Elevations: 2368.00 ft (KB)

Total Depth: 3868.00 ft (KB) (TVD)

2363.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Outside

Press@RunDepth: 106.97 psig @ 3849.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 2014.12.08

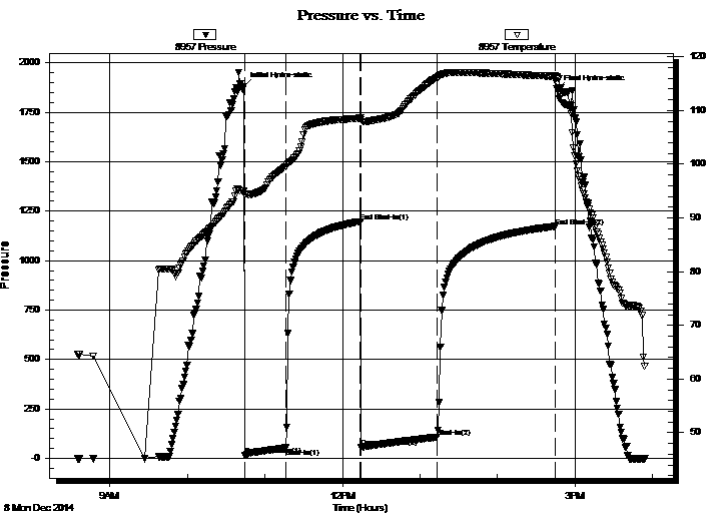
Start Time: 08:35:05

End Time: 15:53:59

Time On Btm: 2014.12.08 @ 10:43:45

Time Off Btm: 2014.12.08 @ 14:46:00

TEST COMMENT: IF-6 1/2" blow
IS-No blow
FF-6 1/2" blow
FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1878.34	94.95	Initial Hydro-static
1	15.26	94.36	Open To Flow (1)
32	53.04	99.56	Shut-In(1)
90	1197.40	108.58	End Shut-In(1)
91	56.65	108.26	Open To Flow (2)
150	106.97	116.14	Shut-In(2)
241	1172.84	116.38	End Shut-In(2)
243	1864.23	116.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
195.00	water	2.47

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. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62547

DST#: 5

ATTN: Steve Miler

Test Start: 2014.12.08 @ 08:35:00

Tool Information

Drill Pipe:	Length: 3828.00 ft	Diameter: 3.80 inches	Volume: 53.70 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 29.00 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	47000.00 lb
Drill Pipe Above KB:	29.00 ft			Final	48000.00 lb
Depth to Top Packer:	3848.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	40.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3833.00	
Hydraulic tool	5.00			3838.00	
Packer	5.00			3843.00	20.00 Bottom Of Top Packer
Packer	5.00			3848.00	
Stubb	1.00			3849.00	
Recorder	0.00	8736	Inside	3849.00	
Recorder	0.00	8957	Outside	3849.00	
Perforations	16.00			3865.00	
Bullnose	3.00			3868.00	20.00 Bottom Packers & Anchor
Total Tool Length:	40.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. LLC

32-10s-23w, Graham, KS

250 N Water STE 300
Wichita KS 67202

Sandlin #1-32

Job Ticket: 62547

DST#: 5

ATTN: Steve Miller

Test Start: 2014.12.08 @ 08:35:00

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:

75000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
195.00	water	2.471

Total Length: 195.00 ft Total Volume: 2.471 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

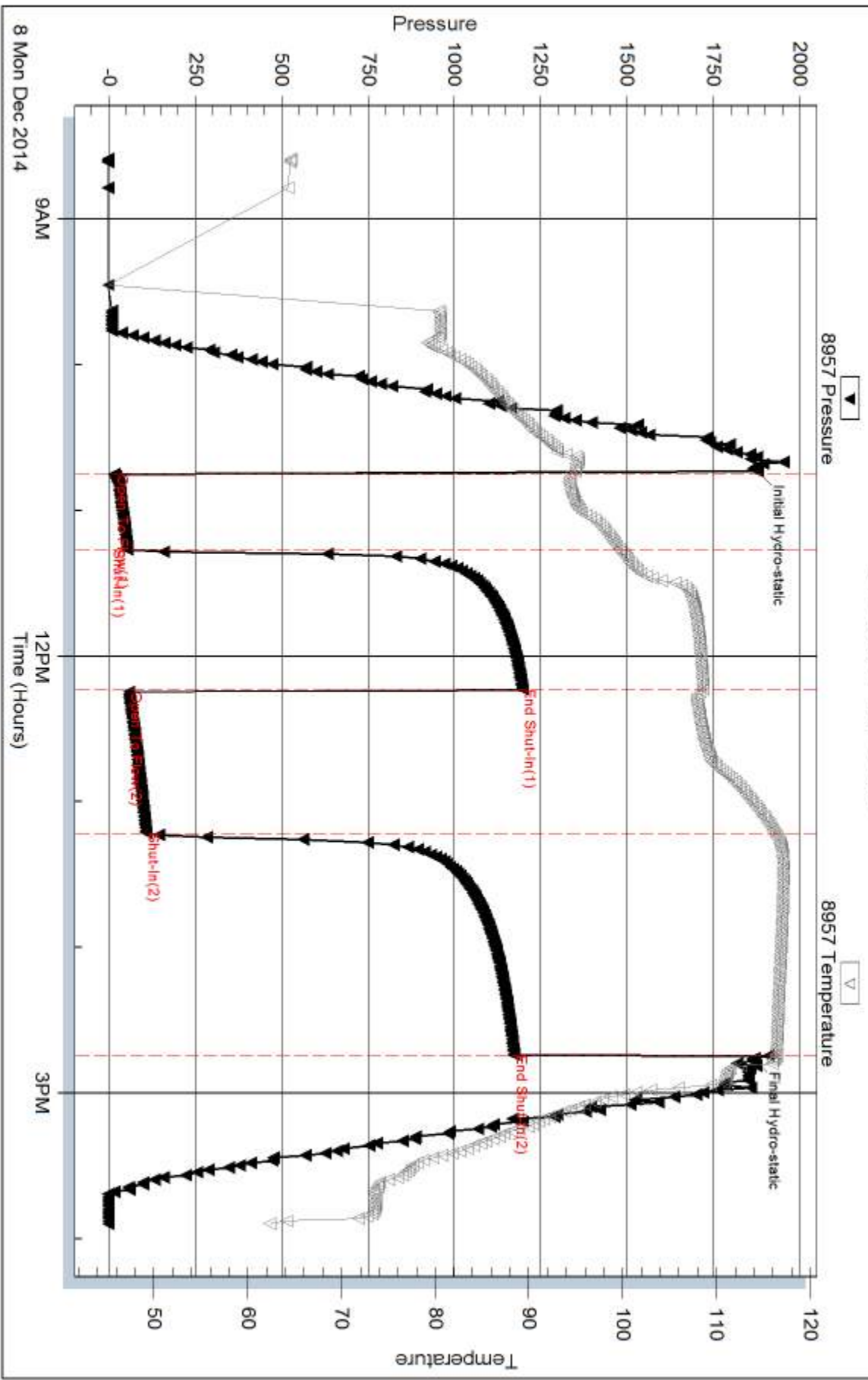
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



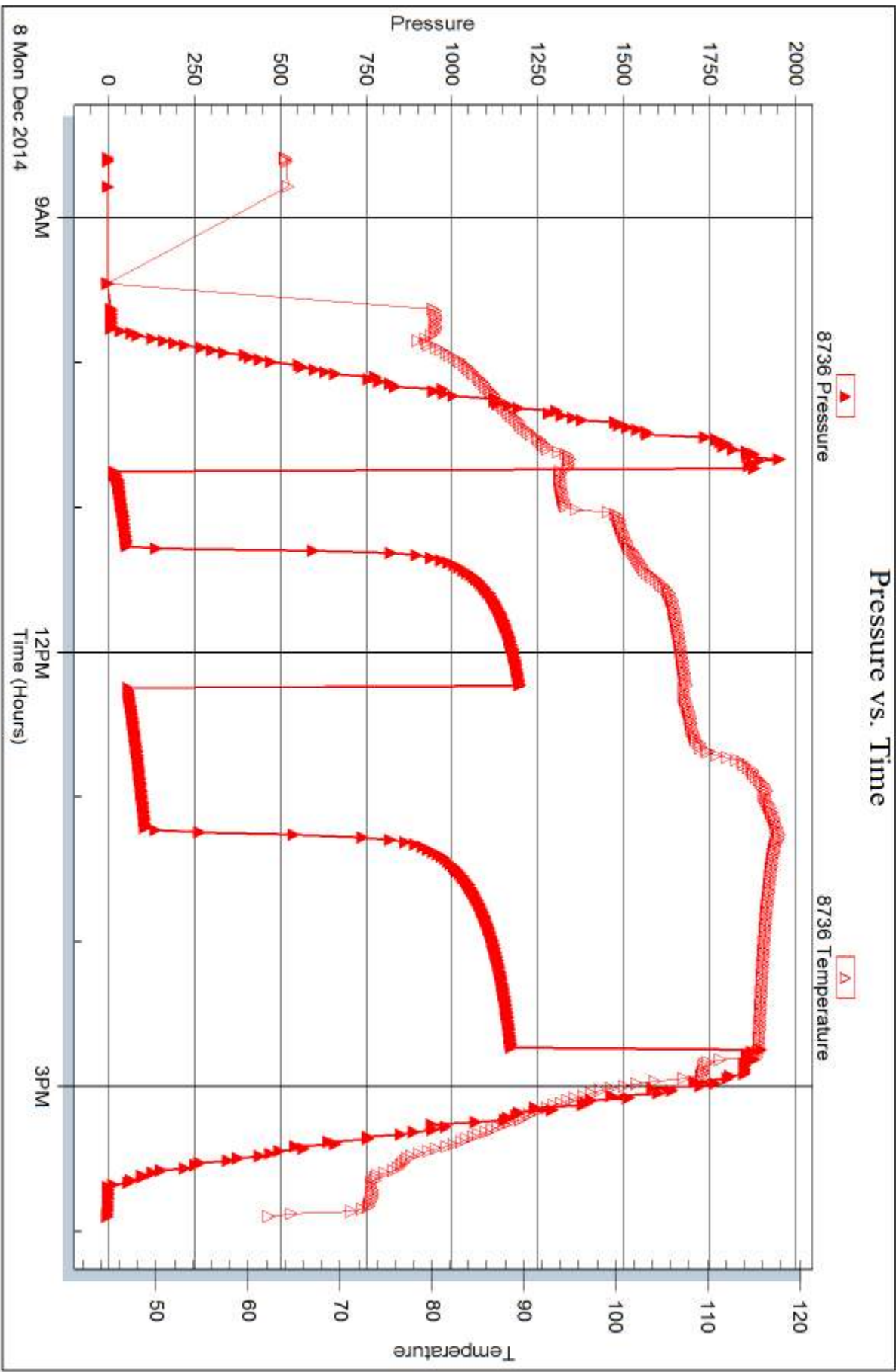
Serial #: 8736

Inside

Murfin Drilling Co. LLC

Sandlin #1-32

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 62547

Printed: 2014.12.10 @ 16:49:38



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Brett

785-639-1270

Test Ticket

NO. 62543

Well Name & No. Sandlin #1-32 Test No. 1 Date 12/6/14
 Company Murfin Drilling Co. Inc. Elevation 2368 KB 2363 GL
 Address 250 N Water STE 300 Wichita KS 67202
 Co. Rep / Geo. _____ Rig Murfin #16
 Location: Sec. 32 Twp. B10S Rge. 23w Co. Graham State KS

Interval Tested 3631-3704 Zone Tested KC
 Anchor Length 73 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3626 Drill Collars Run 29 Vis 55
 Bottom Packer Depth 3631 Wt. Pipe Run - WL 6.8
 Total Depth 3704 Chlorides 2,200 ppm System LCM -
 Blow Description IF-BOB in 10min
ISF-No blow
FF-BOB in 13min
FSI-No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>OS Mud</u>				
<u>180</u>	<u>MW</u>		<u>60</u>		<u>40</u>
<u>300</u>	<u>water</u>				
_____	_____				
_____	_____				

Rec Total 540 BHT 110 Gravity _____ API RW .4 @ 90 °F Chlorides 32,000 ppm
 (A) Initial Hydrostatic 1,725 Test 1150 T-On Location 1:12
 (B) First Initial Flow 20 Jars _____ T-Started 2:05
 (C) First Final Flow 124 Safety Joint _____ T-Open 6:00
 (D) Initial Shut-In 882 Circ Sub _____ T-Pulled 10:00
 (E) Second Initial Flow 128 Hourly Standby .75h 75 T-Out 11:45
 (F) Second Final Flow 269 Mileage 92rt 142.60
 (G) Final Shut-In 841 Sampler _____
 (H) Final Hydrostatic 1,753 Straddle _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Shale Packer _____
 Final Flow 60 Extra Packer _____
 Final Shut-In 90 Extra Recorder _____
 Sub Total 1367.60 Day Standby _____
 Total 1367.60 Accessibility _____
 Sub Total 1367.60 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1367.60
 MP/DST Disc't _____

Approved By _____ Our Representative Brett Dickman

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62544

Well Name & No. Sandlin # 1-32 Test No. 2 Date 12/6/14
 Company Murkin Drilling Co. Inc. Elevation 2368 KB 2363 GL
 Address _____
 Co. Rep / Geo. Steve Miller Rig Murkin #16
 Location: Sec. 32 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3700-3718 Zone Tested KL
 Anchor Length 18 Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3695 Drill Collars Run 29 Vis 55
 Bottom Packer Depth 3700 Wt. Pipe Run _____ WL 6.8
 Total Depth 3718 Chlorides 2,200 ppm System LCM _____
 Blow Description IF - 1 1/4 in blow
ISI - No blow
FF - No blow
FSI - No blow

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

Rec Total 10 BHT 107 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1,848 Test 1150 T-On Location 17:45
 (B) First Initial Flow 12 Jars _____ T-Started 17:25
 (C) First Final Flow 16 Safety Joint _____ T-Open 18:40
 (D) Initial Shut-In 605 Circ Sub _____ T-Pulled 21:40
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 22:45
 (F) Second Final Flow 19 Mileage 92r 7 142.60 Comments _____
 (G) Final Shut-In 602 Sampler _____
 (H) Final Hydrostatic 1,807 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1292.60
 Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1292.60
 MP/DST Disc't _____

Approved By _____ Our Representative Burd

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62545

Well Name & No. Sandlin #1-32 Test No. 3 Date 12/7/14
 Company Martin Drilling Co Inc. Elevation 2368 KB 2363 GL
 Address _____
 Co. Rep / Geo. _____ Rig Martin #16
 Location: Sec. 32 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3720 - 3752 Zone Tested KC
 Anchor Length 30 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth ~~3717~~ 3717 Drill Collars Run 29 Vis _____
 Bottom Packer Depth ~~3722~~ 3722 Wt. Pipe Run - WL _____
 Total Depth 3752 Chlorides _____ ppm System LCM _____
 Blow Description IF - BOB in 1min
ISF - No blow
FF - BOB in 1 1/2 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>240</u>	<u>OS MCW</u>			<u>65</u>	<u>35</u>
<u>1080</u>	<u>water</u>				
_____	_____				
_____	_____				
_____	_____				

Rec Total 1320 BHT _____ Gravity _____ API RW 2 @ 40 °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1,875</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>4:35</u>
(B) First Initial Flow <u>129</u>	<input type="checkbox"/> Jars _____	T-Started <u>4:45</u>
(C) First Final Flow <u>390</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>6:25</u>
(D) Initial Shut-In <u>812</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>8:55</u>
(E) Second Initial Flow <u>411</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>10:43</u>
(F) Second Final Flow <u>604</u>	<input checked="" type="checkbox"/> Mileage <u>92rt</u> 142.60	Comments _____
(G) Final Shut-In <u>808</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1,831</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>15</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1292.60</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1292.60</u>	

Approved By _____ Our Representative Burton

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62546

Well Name & No. Sandlin #1-32 Test No. 4 Date 12/7/14
 Company Murkin Drilling Co Inc Elevation 2368 KB 2363 GL
 Address _____
 Co. Rep / Geo. Steve M. Rig Murkin #16
 Location: Sec. 32 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3782-3846 Zone Tested KC" H-J"
 Anchor Length 64 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3777 Drill Collars Run 29 Vis _____
 Bottom Packer Depth 3782 Wt. Pipe Run _____ WL _____
 Total Depth 3846 Chlorides _____ ppm System _____ LCM _____
 Blow Description FF- BOB in 6min
ISI- No blow
FF- BOB in 13min
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free Oil</u>				
<u>759</u>	<u>MW</u>		<u>80</u>	<u>20</u>	
_____	_____				
_____	_____				
_____	_____				

Rec Total 760 BHT 117 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,897 Test 1150 T-On Location 20:00
 (B) First Initial Flow 24 Jars _____ T-Started 20:10
 (C) First Final Flow 144 Safety Joint _____ T-Open 21:28
 (D) Initial Shut-In 1,087 Circ Sub _____ T-Pulled 1:28
 (E) Second Initial Flow 149 Hourly Standby _____ T-Out 2:55
 (F) Second Final Flow 339 Mileage 142.60 Comments _____
 (G) Final Shut-In 1,061 Sampler _____
 (H) Final Hydrostatic 1,822 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

Sub Total 1292.60

MP/DST Disc't _____

Approved By _____ Our Representative Buth

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62547

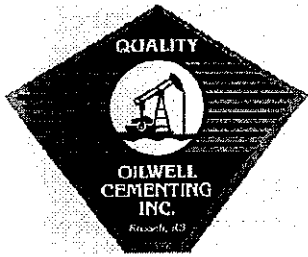
Well Name & No. Sandlin # 1-32 Test No. 5 Date 12/8/14
 Company Martin Drilling Co Inc Elevation 2369 KB 2363 GL
 Address _____
 Co. Rep / Geo. Steve M Rig Martin #16
 Location: Sec. 32 Twp. 10s Rge. 23w Co. Graham State KS

Interval Tested 3848-3868 Zone Tested KC "K"
 Anchor Length 20 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3843 Drill Collars Run 29 Vis _____
 Bottom Packer Depth 3848 Wt. Pipe Run _____ WL _____
 Total Depth 3868 Chlorides _____ ppm System LCM _____
 Blow Description IF - 6 1/2 in blow
ISI - No blow
FF - 6 1/2 in blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>195</u>	<u>water</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 195 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1828 Test 1150 T-On Location 5
 (B) First Initial Flow 15 Jars _____ T-Started 8:35
 (C) First Final Flow 53 Safety Joint _____ T-Open 10:43
 (D) Initial Shut-In 4,197 Circ Sub _____ T-Pulled 14:45
 (E) Second Initial Flow 57 Hourly Standby _____ T-Out 15:55
 (F) Second Final Flow 107 Mileage 92- JXZ Comments Leaked Tool 13
 (G) Final Shut-In 1,173 Sampler 142.60+142.60 12/9/14
 (H) Final Hydrostatic 1,884 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Accessibility _____
 Sub Total 1435.20 MP/DST Disc't _____

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



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665
 Phone: 785-324-1041 fax: 785-483-1087
 Email: cementing@ruraltel.net

acct Prod-MG
 Date: 12/2/2014
 Invoice # 1056
 P.O.#:
 Due Date: 1/1/2015
 Division: *Russell*

Invoice

Contact:
 Murfin Drilling Company
Address/Job Location:
 Murfin Drilling Company
 P.O. Box 288
 Russell Ks 67665

OPERATOR PAY MDC
LEASE: Bm

USED FOR _____
 APPROVED _____

Reference:
SANGLIN 1-32

Description of Work:
 SURFACE

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 1,020.55	No				
Common-Class A	150	\$ 2,766.18	Yes				
Pump Truck Mileage-Job to Nearest Camp	50	\$ 557.71	No				
Bulk Truck Matl-Material Service Charge	158	\$ 353.18	No				
Calcium Chloride	5	\$ 311.04	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	50	\$ 326.35	No				
Premium Gel (Bentonite)	3	\$ 54.59	Yes				

Invoice Terms:
 Net 30

	<i>SubTotal:</i>	\$ 5,389.58
	<i>Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:</i>	\$ (808.44)
		SubTotal for Taxable Items: \$ 2,662.03
		SubTotal for Non-Taxable Items: \$ 1,919.11
		Total: \$ 4,581.14
		Tax: \$ 196.99
		Amount Due: \$ 4,778.13
		Applied Payments:
		Balance Due: \$ 4,778.13

7.40% Graham County Sales Tax

Thank You For Your Business!

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.
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[Handwritten signature]

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1056

Date	Sec.	Twp.	Range	County	State	On Location	Finish
12-2-2014	32	10	23	GRAHAM	KANSAS		7:30 PM.
Lease				Well No.		Owner	
SANDLIN				1-32		2 1/4 W 1/4 S1NTO	
Contractor				To Quality Oilwell Cementing, Inc.			
MURFIN DALLAS RIG #16 "ANDY"				You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job				Charge To			
Cement Surface				MURFIN Drilling Co. Inc.			
Hole Size		T.D.		Street			
12 1/4		222'					
Csg.		Depth		City			
8 5/8 New		22		State			
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.			
23# CSG.				Cement Amount Ordered			
Tool		Shoe Joint		150 sx Com.			
Cement Left in Csg.		Displace		3% cc 2% Gel			
15'		13.4/BBL		Common			
EQUIPMENT				150			
Pumptrk	No.	Cementer	Glenn G.		Poz. Mix		
18		Helper	Cody B.				
Bulktrk	No.	Driver	Doug H.		Gel. 3		
3		Driver			Calcium 5		
Bulktrk	No.	Driver			Hulls		
		Driver			Salt		
JOB SERVICES & REMARKS				Flowseal			
Remarks:				Kol-Seal			
Rat Hole				Mud CLR 48			
Mouse Hole				CFL-117 or CD110 CAF 38			
Centralizers				Sand			
Baskets				Handling 158			
D/V or Port Collar				Mileage			
				FLOAT EQUIPMENT			
				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
Set 8 5/8 @ 221'				Pumptrk Charge			
Cement w/ 150 sx com. 3% cc				Surface			
Displace 13.4/BBL 42%				Mileage 50			
SHUT IN @ 250#							
Cement did circulate TO SURFACE.							
THANKS!							
Signature				Tax			
[Signature]				Discount			
				Total Charge			



QUALITY OILWELL CEMENTING, INC.
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665
 Phone: 785-324-1041 fax: 785-483-1087
 Email: cementing@ruraltel.net

Date: 12/9/2014
 Invoice # 1060

act
Prod-mg

P.O.#:

Due Date: 1/8/2015

Division: Russell

Invoice

OPERATOR PAY MDC
LEASE: Sandlin 1-32

Contact:
 Murfin Drilling Company
Address/Job Location:
 Murfin Drilling Company
 P.O. Box 288
 Russell Ks 67665

USED FOR _____

APPROVED _____

Reference:
 SANDLIM 1-32

Description of Work:
PLUG JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 1,020.55	Yes				
Common-Class A	153	\$ 2,821.50	Yes				
POZ Mix-Standard	102	\$ 718.20	Yes				
Bulk Truck Matl-Material Service Charge	264	\$ 590.12	Yes				
Pump Truck Mileage-Job to Nearest Camp	50	\$ 557.71	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	50	\$ 326.35	Yes				
Premium Gel (Bentonite)	9	\$ 163.76	Yes				
Flo Seal	56	\$ 125.18	Yes				
Dry Hole Plug	1	\$ 62.59	Yes				

Invoice Terms:

Net 30

	SubTotal:	\$	6,385.94
	Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice:	\$	(957.89)
<hr/>			
	SubTotal for Taxable Items:	\$	5,428.05
	SubTotal for Non-Taxable Items:	\$	-
<hr/>			
	Total:	\$	5,428.05
	Tax:	\$	401.68
	7.40% Graham County Sales Tax		

Thank You For Your Business!

Amount Due: \$ 5,829.73
Applied Payments:
Balance Due: \$ 5,829.73

Past Due Invoices are subject to a service charge (annual rate of 24%)
 This does not include any applicable taxes unless it is listed.

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ml

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1060

Date	12-9-14	Sec.	32	Twp.	10	Range	23	County	Graham	State	KANSAS	On Location		Finish	4:00 PM
Lease								Well No.		Owner					
SANDLIN								1-32		To Quality Oilwell Cementing, Inc.					
Contractor								Rig #16 "Andy"		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
MURFIN DRILLING															
Type Job								T.D.		Charge To					
Rotary Plug								3990'		MURFIN DRILLING Co. INC.					
Hole Size								Depth		Street					
7 7/8								220'							
Csg.								Depth		City					
8 5/8 SURFACE										State					
Tbg. Size								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
										Cement Amount Ordered					
Tool								Shoe Joint		2.55 SX @ 40' 4% GEL VAFD					
Cement Left in Csg.															
Meas Line								Displace							

EQUIPMENT

Pumptrk	18	No.	Cementer	
			Helper	Glenn G.
Bulktrk	13	No.	Driver	Lody B.
			Driver	Tyler O.
Bulktrk		No.	Driver	
			Driver	

Common	153
Poz. Mix	102
Gel.	9
Calcium	
Hulls	
Salt	
Flowseal	56#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	264
Mileage	

- 50 SX @ 1930'
- 100 SX @ 1090'
- 50 SX @ 280'
- 10 SX @ 40' w/ Plug
- 30 SX @ Rat Hole
- 15 SX @ Mouse Hole

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
8 5/8 WOODEN WIPER PLUG	
Pumptrk Charge	plug
Mileage	50

THANKS!

X Signature *ay [unclear]*

Tax	
Discount	
Total Charge	

Sandlin #1-32
 854' FNL 1461' FEL
 Sec. 32-T10S-R23W
 2368' KB

Formation	Sample tops	Datum	Ref	Log Tops	Datum	Ref		
Anhydrite	1910	+458	-1	1910	+458	-1		
B/Anhydrite	1949	+419	-1	1952	+416	-4		
Topeka	3411	-1043	+9	3405	-1037	+15		
Heebner	3624	-1256	Flat	3623	-1255	+1		
Toronto	3647	-1279	flat	3645	-1277	+2		
Lansing	3662	-1294	-1	3659	-1291	+2		
BKC	3893	-1525	-3	3889	-1521	+1		
RTD	3990							
LTD				3992				

