



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.10 @ 20:27:00

End Date: 2016.11.11 @ 05:15:15

Job Ticket #: 61200 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:50:21

Murfin Drilling Co., Inc. 15-5s-32w Rawlins,KS Almut #1-15 DST # 1 LKC "A" 2016.11.10



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

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

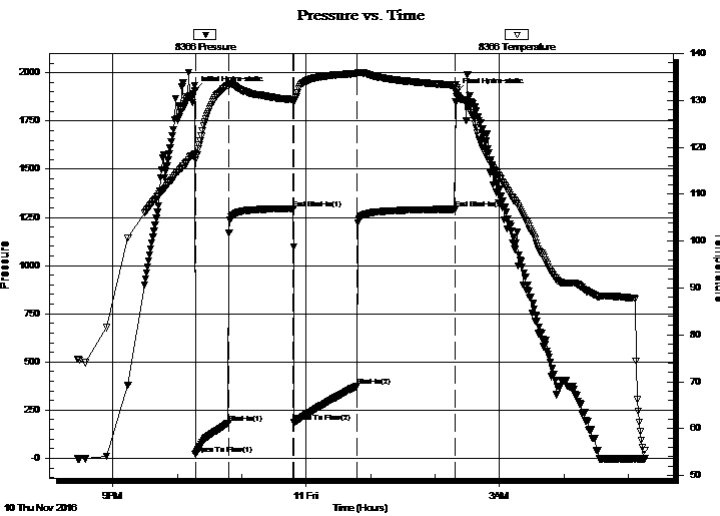
15-5s-32w Rawlins,KS
Almut #1-15
 Job Ticket: 61200 **DST#: 1**
 Test Start: 2016.11.10 @ 20:27:00

GENERAL INFORMATION:

Formation: **LKC "A"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:16:45
 Time Test Ended: 05:15:15
 Interval: **3916.00 ft (KB) To 3947.00 ft (KB) (TVD)**
 Total Depth: 3947.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8366 Outside
 Press@RunDepth: 375.39 psig @ 3917.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.10 End Date: 2016.11.11 Last Calib.: 2016.11.11
 Start Time: 20:27:05 End Time: 05:15:15 Time On Btm: 2016.11.10 @ 22:16:30
 Time Off Btm: 2016.11.11 @ 02:20:00

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 11 3/4 min.
 60 - IS: No blow back
 60 - FF: Blow started at 1 1/4 min., built to BOB at 15 1/4 min.
 90 - FS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1909.01	118.57	Initial Hydro-static
1	20.37	117.42	Open To Flow (1)
31	183.05	133.15	Shut-In(1)
92	1296.40	130.17	End Shut-In(1)
92	186.95	129.84	Open To Flow (2)
151	375.39	135.73	Shut-In(2)
242	1292.40	133.24	End Shut-In(2)
244	1895.32	132.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
510.00	Water 98%w , 2%m	5.45
190.00	MCW 83%w , 17%m	2.67
125.00	MW 58%w , 42%m	1.75

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

15-5s-32w Rawlins, KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61200

DST#: 1

ATTN: Rocky Milford

Test Start: 2016.11.10 @ 20:27:00

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:16:45

Time Test Ended: 05:15:15

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 83

Interval: 3916.00 ft (KB) To 3947.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 3947.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 3917.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.10

End Date: 2016.11.11

Last Calib.: 2016.11.11

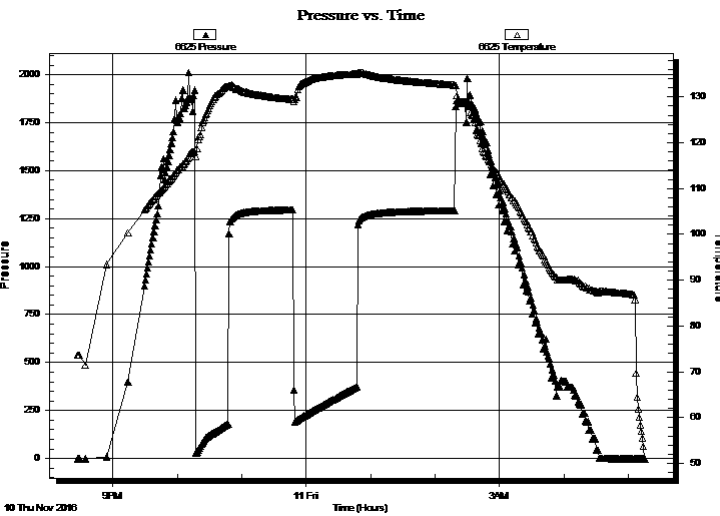
Start Time: 20:27:05

End Time: 05:16:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 11 3/4 min.
60 - ISI: No blow back
60 - FF: Blow started at 1 1/4 min., built to BOB at 15 1/4 min.
90 - FSI: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
510.00	Water 98%w, 2%m	5.45
190.00	MCW 83%w, 17%m	2.67
125.00	MW 58%w, 42%m	1.75

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61200

DST#: 1

ATTN: Rocky Milford

Test Start: 2016.11.10 @ 20:27:00

Tool Information

Drill Pipe:	Length: 3708.00 ft	Diameter: 3.80 inches	Volume: 52.01 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 52.93 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3916.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	60.00 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			3888.00	
Shut In Tool	5.00			3893.00	
Hydraulic tool	5.00			3898.00	
Jars	5.00			3903.00	
Safety Joint	3.00			3906.00	
Packer	5.00			3911.00	29.00 Bottom Of Top Packer
Packer	5.00			3916.00	
Packer - Shale	0.00			3916.00	
Stubb	1.00			3917.00	
Recorder	0.00	6625	Inside	3917.00	
Recorder	0.00	8366	Outside	3917.00	
Perforations	27.00			3944.00	
Bullnose	3.00			3947.00	31.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61200

DST#: 1

ATTN: Rocky Milford

Test Start: 2016.11.10 @ 20:27:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

150000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
510.00	Water 98%w , 2%m	5.450
190.00	MCW 83%w , 17%m	2.665
125.00	MW 58%w , 42%m	1.753

Total Length: 825.00 ft Total Volume: 9.868 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

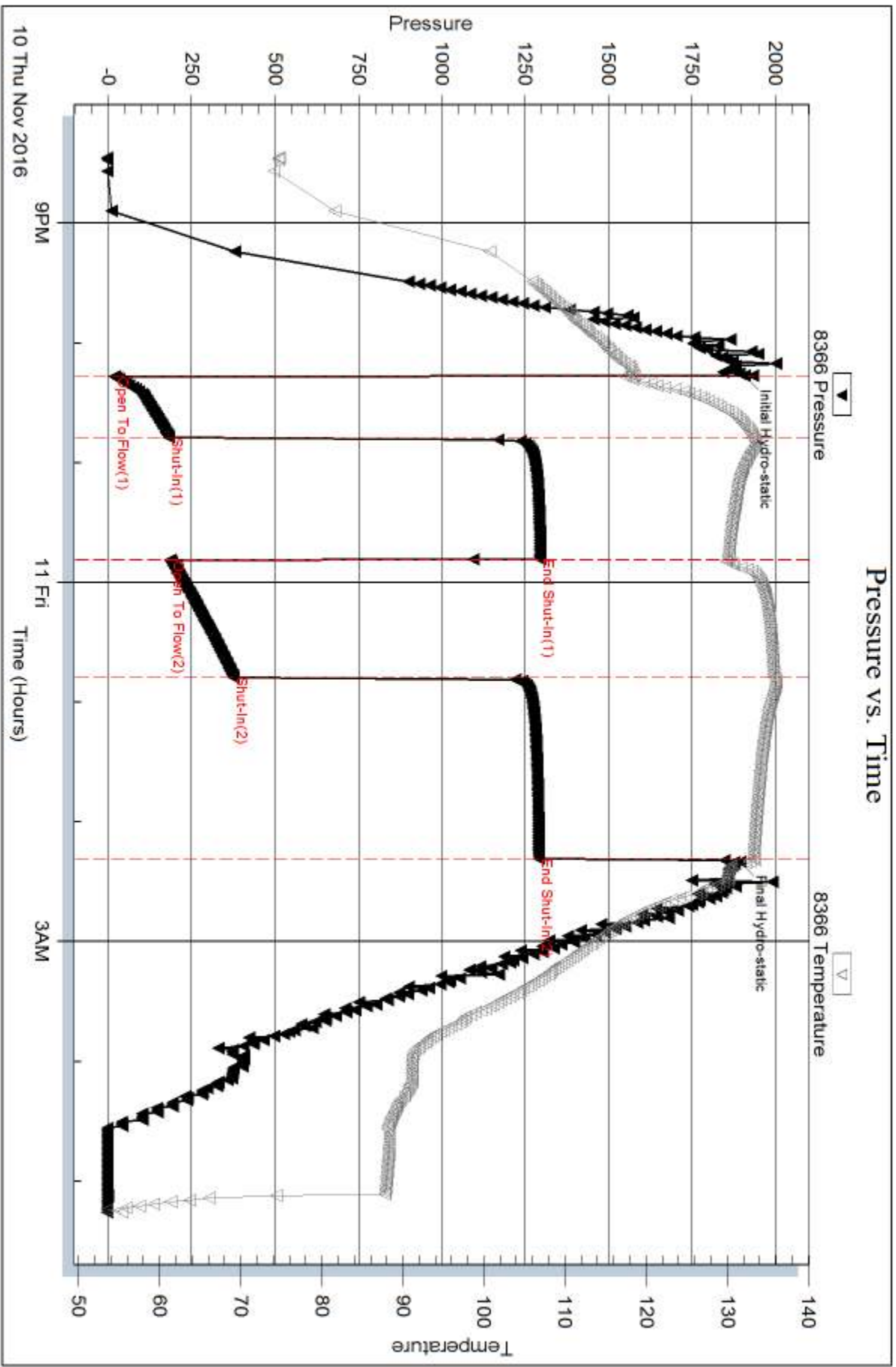
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .110 ohms @ 37.7 deg F

Chlorides = 150,000 ppm



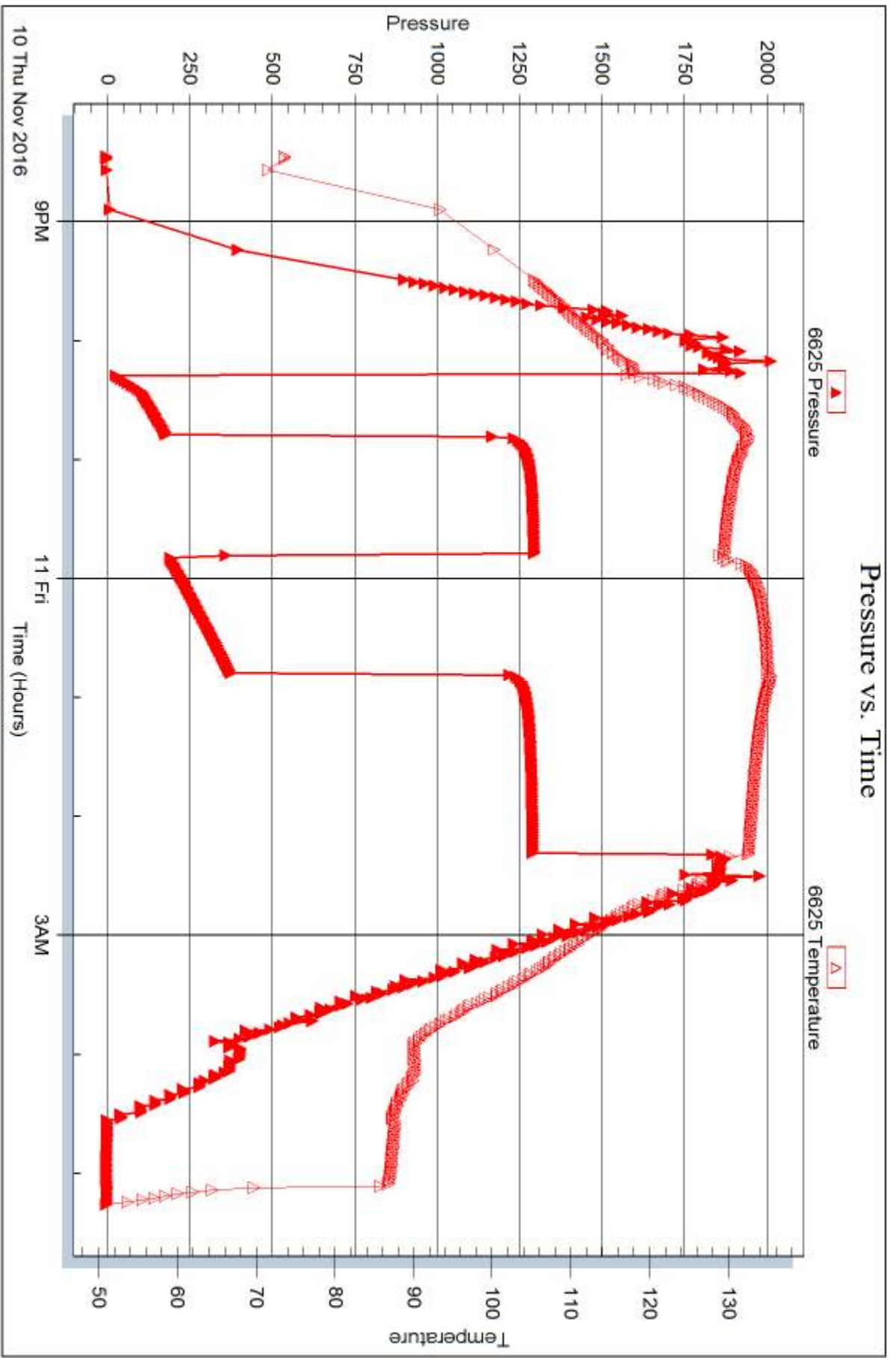
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61200

Printed: 2016.11.15 @ 16:50:23



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.11 @ 14:15:00

End Date: 2016.11.11 @ 21:02:30

Job Ticket #: 61251 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:49:58



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

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

15-5s-32w Rawlins,KS
Almut #1-15
 Job Ticket: 61251 **DST#: 2**
 Test Start: 2016.11.11 @ 14:15:00

GENERAL INFORMATION:

Formation: **LKC "B - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:02:00
 Time Test Ended: 21:02:30
 Interval: **3941.00 ft (KB) To 3985.00 ft (KB) (TVD)**
 Total Depth: 3985.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

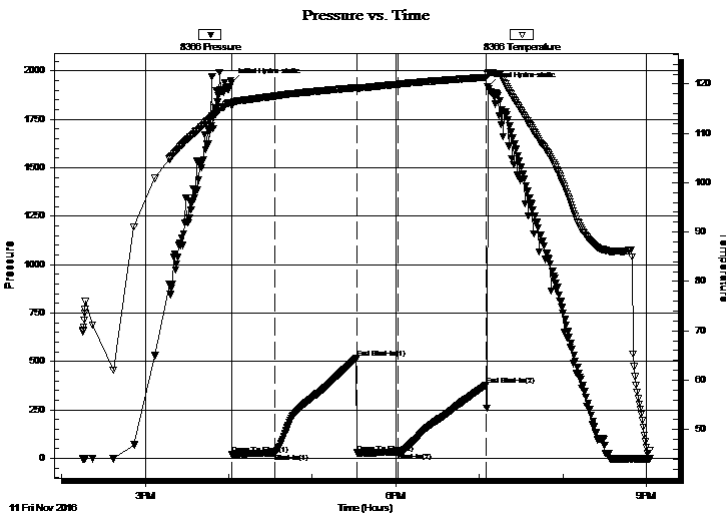
Serial #: 8366

Outside

Press@RunDepth: 29.94 psig @ 3942.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.11 End Date: 2016.11.11 Last Calib.: 2016.11.11
 Start Time: 14:15:05 End Time: 21:02:29 Time On Btm: 2016.11.11 @ 16:01:45
 Time Off Btm: 2016.11.11 @ 19:06:00

TEST COMMENT: 30 - IF: Blow built to 1 1/4", slowly died back to 1" at close
 60 - IS: No blow
 30 - FF: No blow
 60 - FS: No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1938.66	116.23	Initial Hydro-static
1	21.06	115.51	Open To Flow (1)
31	27.04	117.51	Shut-In(1)
90	516.71	119.24	End Shut-In(1)
91	28.19	119.03	Open To Flow (2)
120	29.94	119.94	Shut-In(2)
184	376.96	121.35	End Shut-In(2)
185	1921.33	121.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud w/oil spots 99%m, 1%o	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61251

DST#: 2

ATTN: Rocky Milford

Test Start: 2016.11.11 @ 14:15:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:02:00

Time Test Ended: 21:02:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 3941.00 ft (KB) To 3985.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 3985.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 3942.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.11

End Date:

2016.11.11

Last Calib.:

2016.11.11

Start Time: 14:15:05

End Time:

21:02:59

Time On Btm:

Time Off Btm:

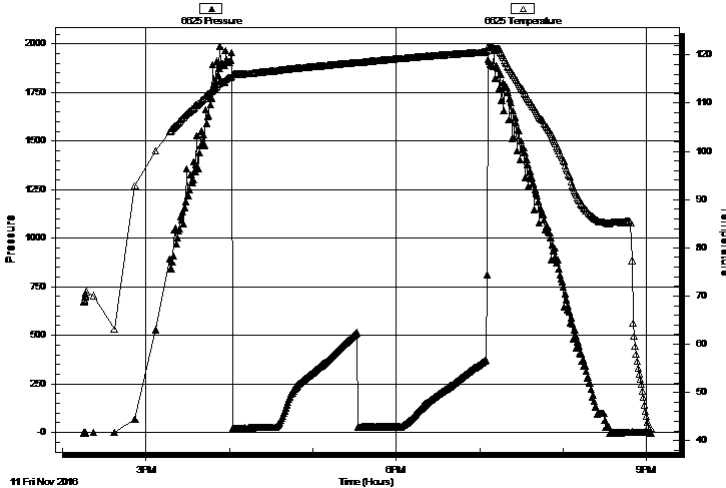
TEST COMMENT: 30 - IF: Blow built to 1 1/4", slowly died back to 1" at close

60 - IS: No blow

30 - FF: No blow

60 - FS: No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
15.00	Mud w/oil spots 99%o, 1%o	0.07

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61251

DST#: 2

ATTN: Rocky Milford

Test Start: 2016.11.11 @ 14:15:00

Tool Information

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 53.37 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3941.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	73.00 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			3913.00	
Shut In Tool	5.00			3918.00	
Hydraulic tool	5.00			3923.00	
Jars	5.00			3928.00	
Safety Joint	3.00			3931.00	
Packer	5.00			3936.00	29.00 Bottom Of Top Packer
Packer	5.00			3941.00	
Packer - Shale	0.00			3941.00	
Stubb	1.00			3942.00	
Recorder	0.00	6625	Inside	3942.00	
Recorder	0.00	8366	Outside	3942.00	
Perforations	6.00			3948.00	
Blank Spacing	34.00			3982.00	
Bullnose	3.00			3985.00	44.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61251

DST#: 2

ATTN: Rocky Milford

Test Start: 2016.11.11 @ 14:15:00

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: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.96 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	Mud w /oil spots 99%m, 1%o	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

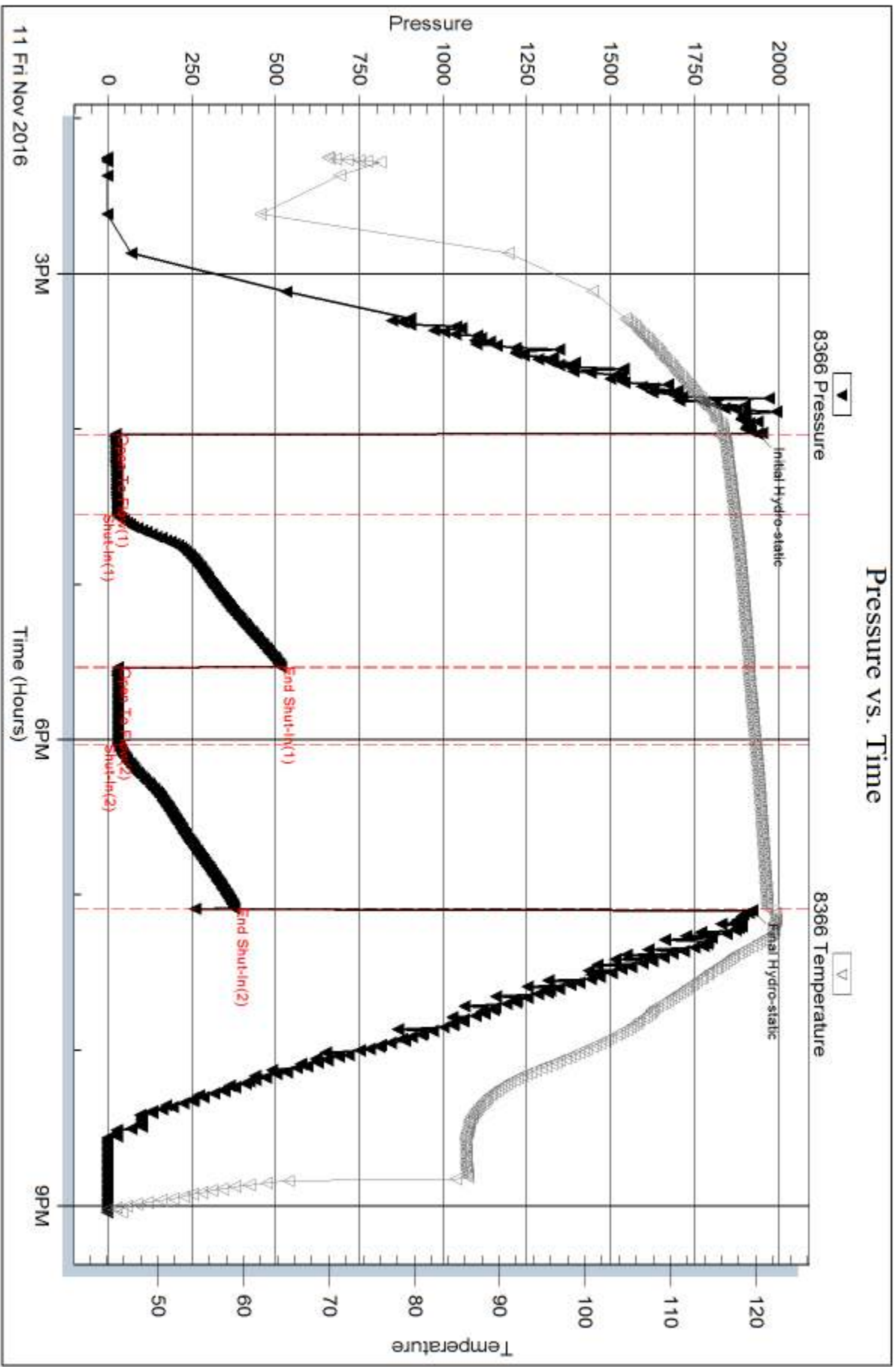
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



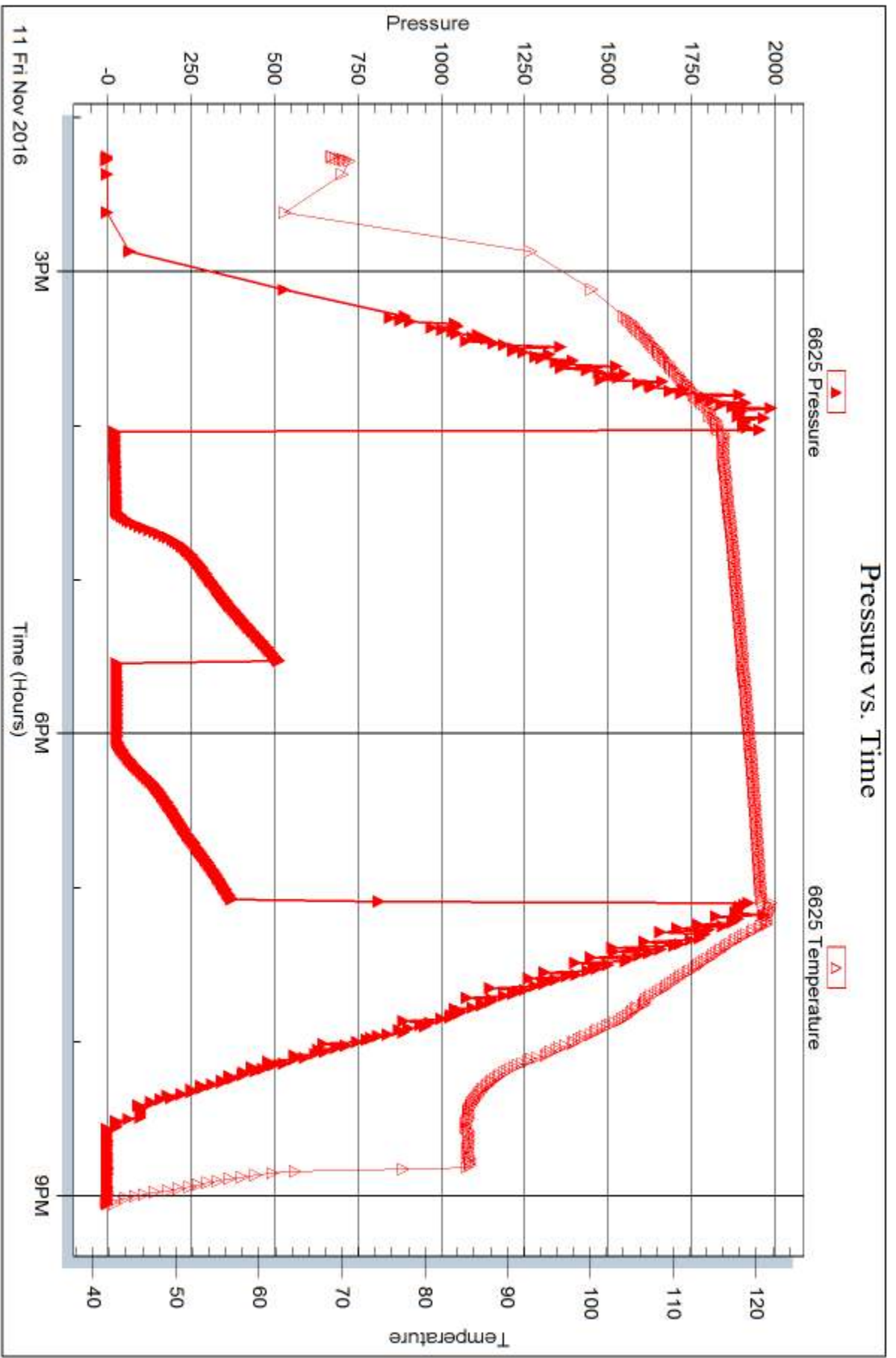
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 61251

Printed: 2016.11.15 @ 16:50:00



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.12 @ 07:15:00

End Date: 2016.11.12 @ 15:16:15

Job Ticket #: 61252 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:49:36



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

15-5s-32w Rawlins, KS
Almut #1-15
 Job Ticket: 61252 **DST#: 3**
 Test Start: 2016.11.12 @ 07:15:00

GENERAL INFORMATION:

Formation: **LKC "E - G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:00:30
 Time Test Ended: 15:16:15
 Interval: **3982.00 ft (KB) To 4024.00 ft (KB) (TVD)**
 Total Depth: 4024.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

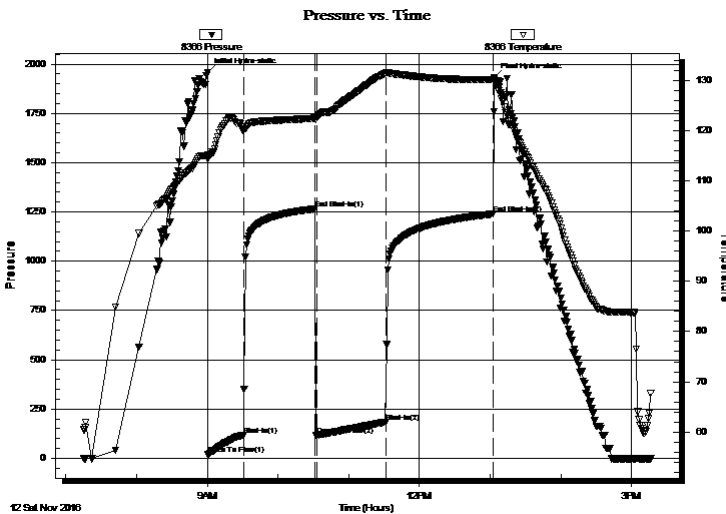
Serial #: 8366

Outside

Press@RunDepth: 184.21 psig @ 3983.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.12 End Date: 2016.11.12 Last Calib.: 2016.11.12
 Start Time: 07:15:05 End Time: 15:16:14 Time On Btm: 2016.11.12 @ 09:00:15
 Time Off Btm: 2016.11.12 @ 13:03:30

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 30 min.
 60 - IS: No blow back
 60 - FF: Blow built to BOB at 36 1/2 min.
 90 - FS: Weak surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1957.72	115.21	Initial Hydro-static
1	17.84	114.27	Open To Flow (1)
31	116.66	119.90	Shut-In(1)
92	1264.72	122.45	End Shut-In(1)
93	117.17	122.32	Open To Flow (2)
152	184.21	131.34	Shut-In(2)
243	1239.41	130.16	End Shut-In(2)
244	1932.17	130.22	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	MCW w/trace oil 71%w , 29%m	0.61
242.00	SO/WCM 70%m, 23%w , 5%g, 2%o	2.82
10.00	SWMCO 88%o, 8%m, 4%w	0.14

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

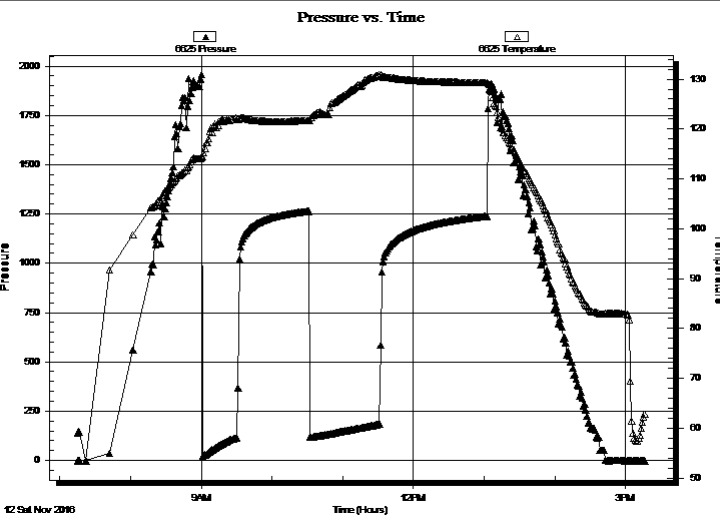
15-5s-32w Rawlins, KS
Almut #1-15
 Job Ticket: 61252 **DST#: 3**
 Test Start: 2016.11.12 @ 07:15:00

GENERAL INFORMATION:

Formation: **LKC "E - G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:00:30
 Time Test Ended: 15:16:15
 Interval: **3982.00 ft (KB) To 4024.00 ft (KB) (TVD)**
 Total Depth: 4024.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6625 Inside
 Press@RunDepth: psig @ 3983.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.12 End Date: 2016.11.12 Last Calib.: 2016.11.12
 Start Time: 07:15:05 End Time: 15:16:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 30 min.
 60 - IS!: No blow back
 60 - FF: Blow built to BOB at 36 1/2 min.
 90 - FS!: Weak surface blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	MCW w/trace oil 71%w , 29%m	0.61
242.00	SO/WCM 70%m, 23%w , 5%g, 2%o	2.82
10.00	SWMCO 88%o, 8%m, 4%w	0.14

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61252

DST#: 3

ATTN: Rocky Milford

Test Start: 2016.11.12 @ 07:15:00

Tool Information

Drill Pipe:	Length: 3771.00 ft	Diameter: 3.80 inches	Volume: 52.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 53.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3982.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	71.00 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			3954.00	
Shut In Tool	5.00			3959.00	
Hydraulic tool	5.00			3964.00	
Jars	5.00			3969.00	
Safety Joint	3.00			3972.00	
Packer	5.00			3977.00	29.00 Bottom Of Top Packer
Packer	5.00			3982.00	
Stubb	1.00			3983.00	
Recorder	0.00	6625	Inside	3983.00	
Recorder	0.00	8366	Outside	3983.00	
Perforations	5.00			3988.00	
Blank Spacing	33.00			4021.00	
Bullnose	3.00			4024.00	42.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61252

DST#: 3

ATTN: Rocky Milford

Test Start: 2016.11.12 @ 07:15:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 60.00 sec/qt
Water Loss: 5.57 in³
Resistivity: ohm.m
Salinity: 600.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 22.2 deg API
Water Salinity: 21000 ppm

Recovery Information

Recovery Table

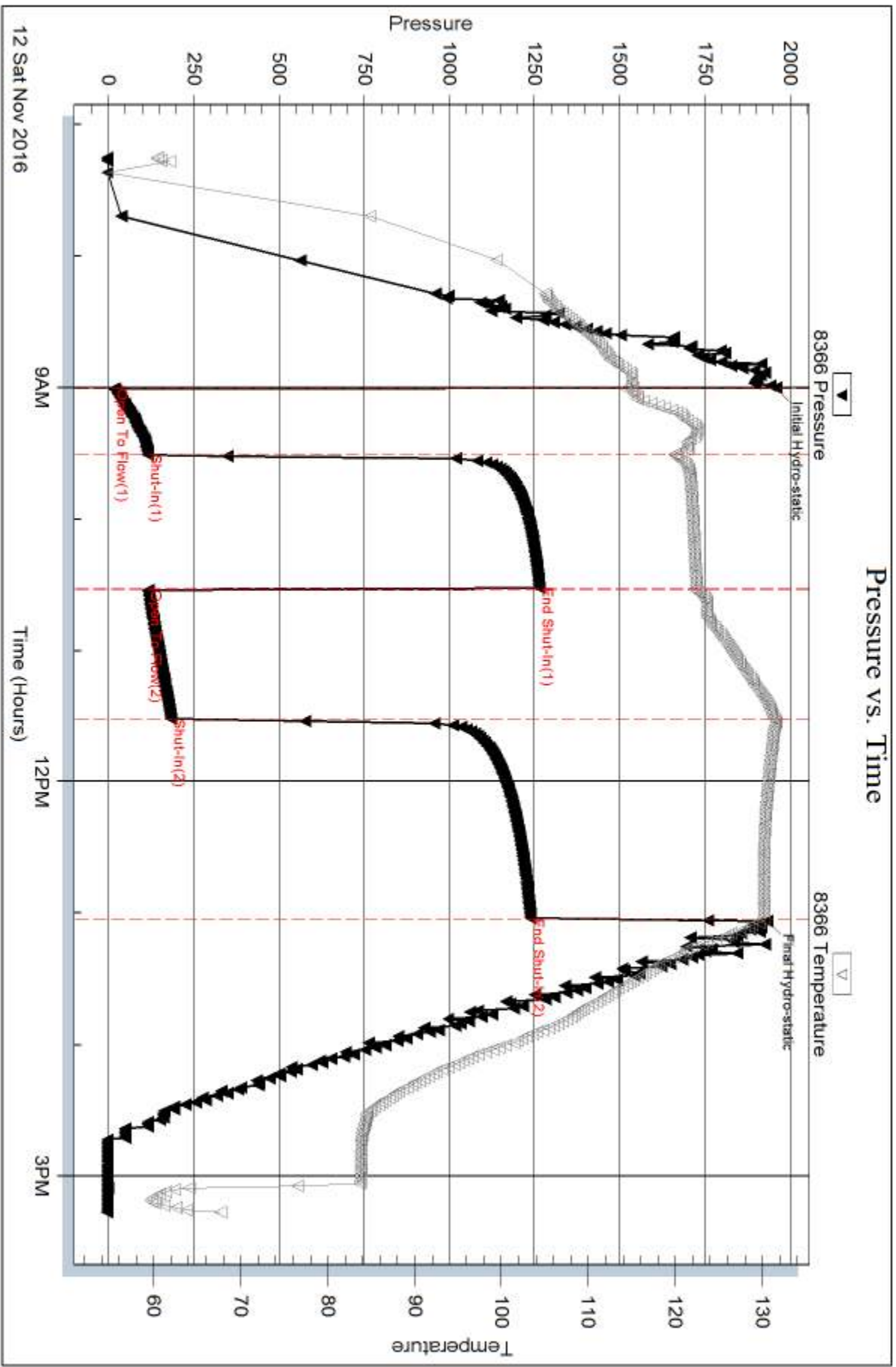
Length ft	Description	Volume bbl
124.00	MCW w /trace oil 71%w , 29%m	0.610
242.00	SO/WCM 70%m, 23%w , 5%g, 2%o	2.821
10.00	SWMCO 88%o, 8%m, 4%w	0.140

Total Length: 376.00 ft Total Volume: 3.571 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity = 23.2 api @ 70 deg F Corrected Gravity = 22.2 api
RW = .336 ohms @ 69.6 deg F Chlorides = 21,000 ppm



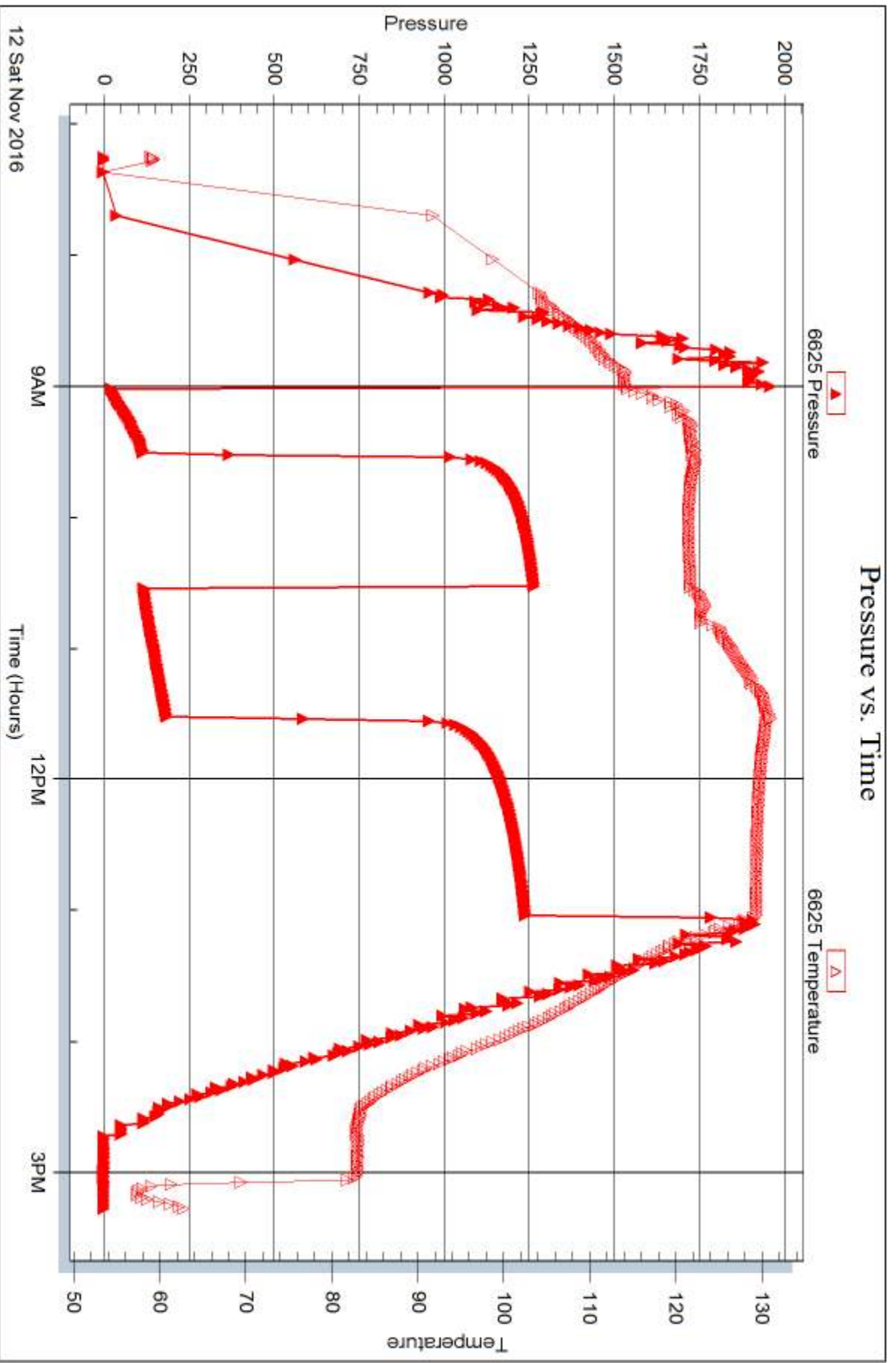
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 61252

Printed: 2016.11.15 @ 16:49:37



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.13 @ 02:30:00

End Date: 2016.11.13 @ 10:53:15

Job Ticket #: 61253 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:49:12



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

15-5s-32w Rawlins,KS

Almut #1-15

Job Ticket: 61253

DST#: 4

Test Start: 2016.11.13 @ 02:30:00

GENERAL INFORMATION:

Formation: **LKC "J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:39:15
 Time Test Ended: 10:53:15
 Interval: **4070.00 ft (KB) To 4114.00 ft (KB) (TVD)**
 Total Depth: 4114.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

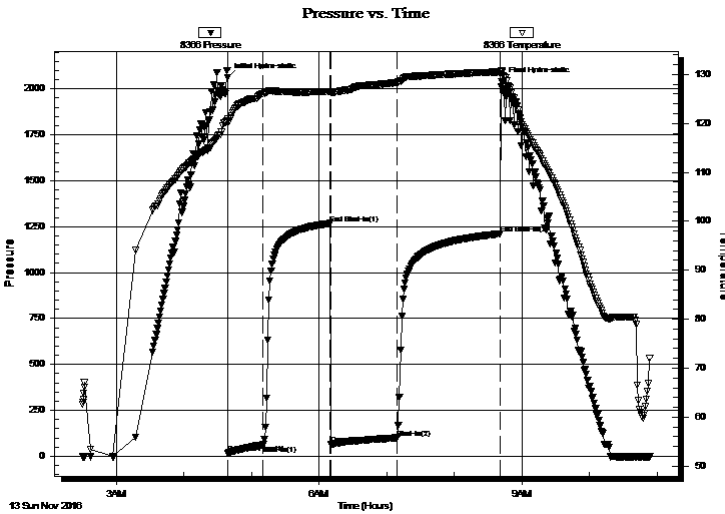
Serial #: 8366

Outside

Press@RunDepth: 100.69 psig @ 4071.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.13 End Date: 2016.11.13 Last Calib.: 2016.11.13
 Start Time: 02:30:05 End Time: 10:53:14 Time On Btm: 2016.11.13 @ 04:39:00
 Time Off Btm: 2016.11.13 @ 08:42:00

TEST COMMENT: 30 - IF: Blow built to 10 1/2"
 60 - IS: Weak surface blow for a few minutes then dead
 60 - FF: Blow built to BOB (11") at 29 1/4 min.
 90 - FS: Weak surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.56	120.85	Initial Hydro-static
1	17.74	120.17	Open To Flow (1)
32	62.06	126.08	Shut-In(1)
91	1267.90	126.56	End Shut-In(1)
92	64.76	126.29	Open To Flow (2)
150	100.69	128.35	Shut-In(2)
242	1211.28	130.51	End Shut-In(2)
243	2040.25	130.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	GOM 48% _m , 37% _o , 15% _g	0.46
31.00	MCO 86% _o , 10% _m , 4% _g	0.15
93.00	GO 87% _o , 11% _g , 2% _m	0.73
0.00	GIP = 280'+	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., Inc.
250 N. Water STE 300
Wichita, KS 67202
ATTN: Rocky Milford

15-5s-32w Rawlins,KS

Almut #1-15

Job Ticket: 61253

DST#: 4

Test Start: 2016.11.13 @ 02:30:00

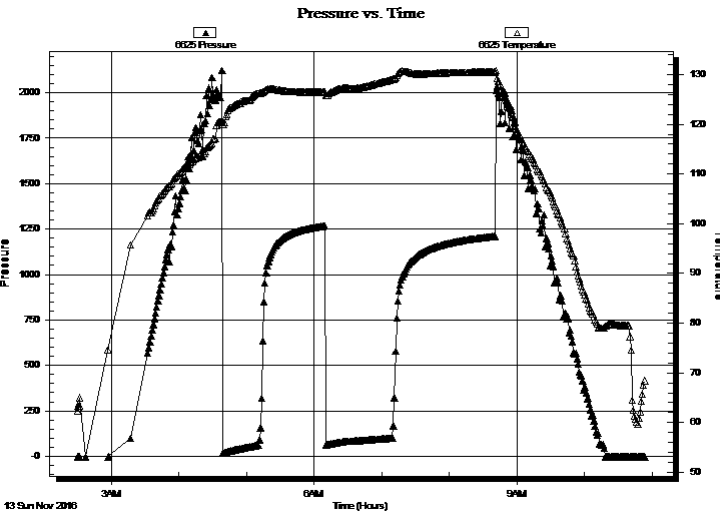
GENERAL INFORMATION:

Formation: **LKC "J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:39:15
 Time Test Ended: 10:53:15
 Interval: **4070.00 ft (KB) To 4114.00 ft (KB) (TVD)**
 Total Depth: 4114.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 4071.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.13 End Date: 2016.11.13 Last Calib.: 2016.11.13
 Start Time: 02:30:05 End Time: 10:53:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 10 1/2"
 60 - IS: Weak surface blow for a few minutes then dead
 60 - FF: Blow built to BOB (11") at 29 1/4 min.
 90 - FS: Weak surface blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
93.00	GOM 48% _m , 37% _o , 15% _g	0.46
31.00	MCO 86% _o , 10% _m , 4% _g	0.15
93.00	GO 87% _o , 11% _g , 2% _m	0.73
0.00	GIP = 280'+	0.00

* 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., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61253

DST#: 4

ATTN: Rocky Milford

Test Start: 2016.11.13 @ 02:30:00

Tool Information

Drill Pipe:	Length: 3866.00 ft	Diameter: 3.80 inches	Volume: 54.23 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 55.15 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4070.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	73.00 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			4042.00	
Shut In Tool	5.00			4047.00	
Hydraulic tool	5.00			4052.00	
Jars	5.00			4057.00	
Safety Joint	3.00			4060.00	
Packer	5.00			4065.00	29.00 Bottom Of Top Packer
Packer	5.00			4070.00	
Packer - Shale	0.00			4070.00	
Stubb	1.00			4071.00	
Recorder	0.00	6625	Inside	4071.00	
Recorder	0.00	8366	Outside	4071.00	
Perforations	7.00			4078.00	
Blank Spacing	33.00			4111.00	
Bullnose	3.00			4114.00	44.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61253

DST#: 4

ATTN: Rocky Milford

Test Start: 2016.11.13 @ 02:30:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 61.00 sec/qt
Water Loss: 5.97 in³
Resistivity: ohm.m
Salinity: 700.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 35 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

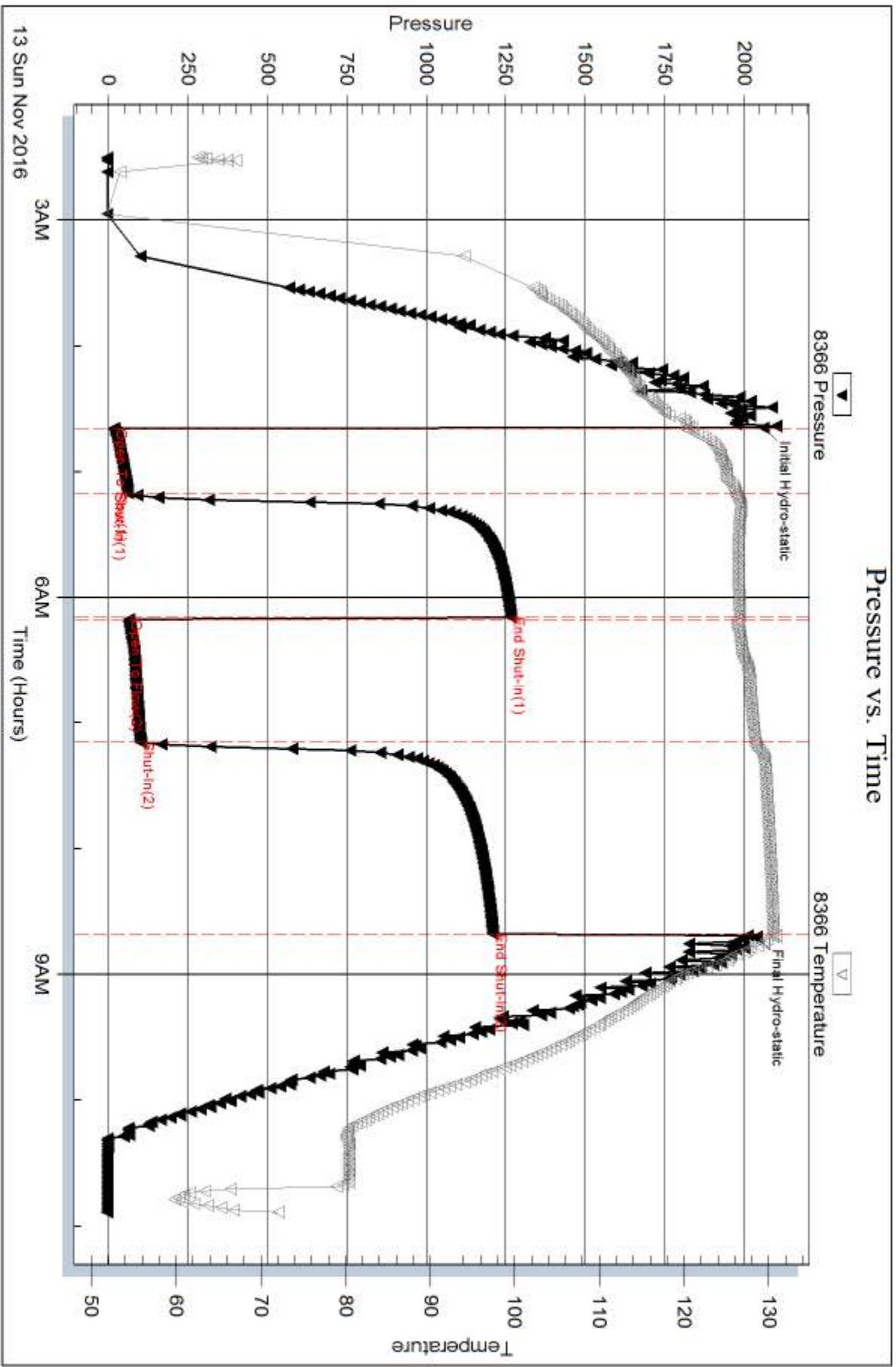
Length ft	Description	Volume bbl
93.00	GOM 48% <i>m</i> , 37% <i>o</i> , 15% <i>g</i>	0.457
31.00	MCO 86% <i>o</i> , 10% <i>m</i> , 4% <i>g</i>	0.152
93.00	GO 87% <i>o</i> , 11% <i>g</i> , 2% <i>m</i>	0.731
0.00	GIP = 280'+	0.000

Total Length: 217.00 ft Total Volume: 1.340 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity = 36.4 api @ 74 deg F
Corrected Gravity = 35 api



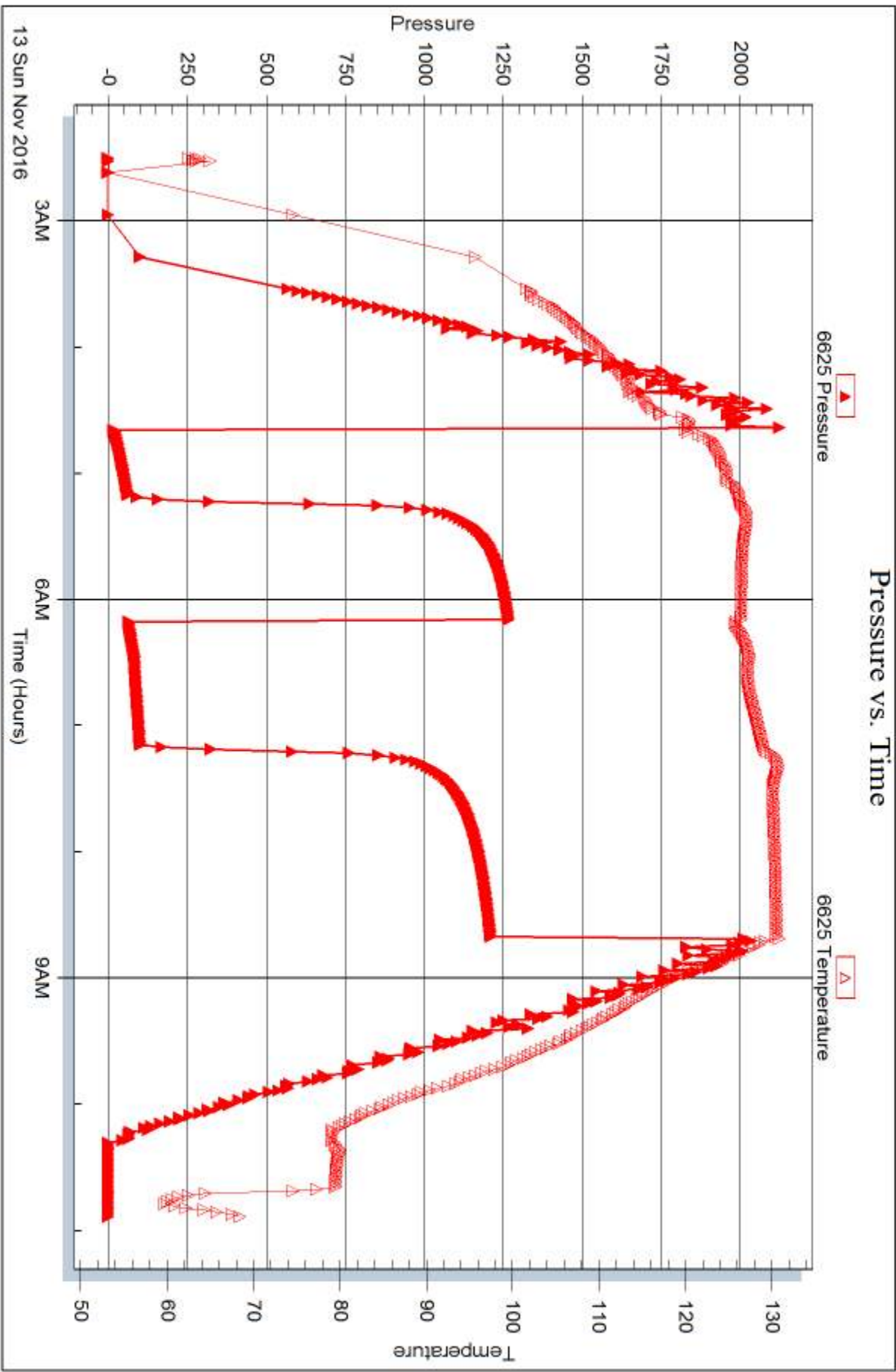
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 4





DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.13 @ 20:28:00

End Date: 2016.11.14 @ 03:57:15

Job Ticket #: 61254 DST #: 5

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:48:49



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

15-5s-32w Rawlins,KS

Almut #1-15

Job Ticket: 61254

DST#: 5

Test Start: 2016.11.13 @ 20:28:00

GENERAL INFORMATION:

Formation: **LKC "K - L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:15:45

Time Test Ended: 03:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4107.00 ft (KB) To 4171.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 4171.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 26.19 psig @ 4108.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.13

End Date:

2016.11.14

Last Calib.:

2016.11.14

Start Time:

20:28:05

End Time:

03:57:14

Time On Btm:

2016.11.13 @ 22:15:30

Time Off Btm:

2016.11.14 @ 01:23:30

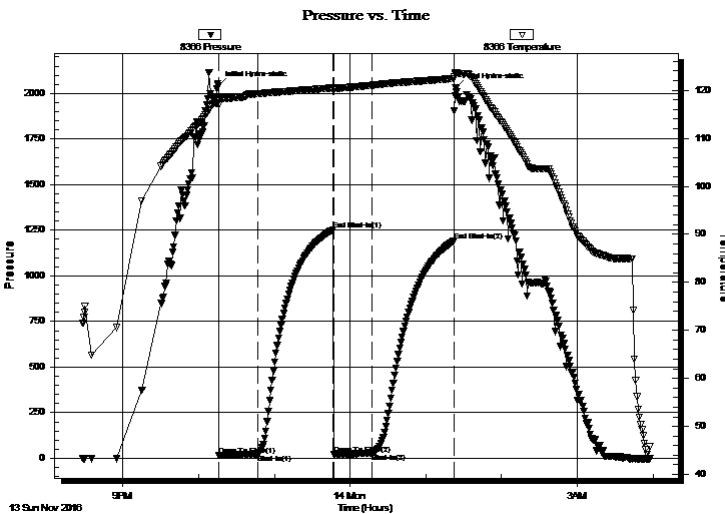
TEST COMMENT: 30 - IF: Blow built to 1 1/8"

60 - ISI: No blow back

30 - FF: No blow

60 - FSI: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2042.40	117.87	Initial Hydro-static
1	15.83	116.90	Open To Flow (1)
31	20.65	119.24	Shut-In(1)
91	1252.29	120.50	End Shut-In(1)
92	23.09	120.13	Open To Flow (2)
122	26.19	121.03	Shut-In(2)
187	1190.56	122.43	End Shut-In(2)
188	2029.36	123.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w/oil spots 97% _m , 3% _o	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., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61254

DST#: 5

ATTN: Rocky Milford

Test Start: 2016.11.13 @ 20:28:00

GENERAL INFORMATION:

Formation: **LKC "K - L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:15:45

Time Test Ended: 03:57:15

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4107.00 ft (KB) To 4171.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 4171.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 4108.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.13

End Date:

2016.11.14

Last Calib.:

2016.11.14

Start Time: 20:28:05

End Time:

03:57:44

Time On Btm:

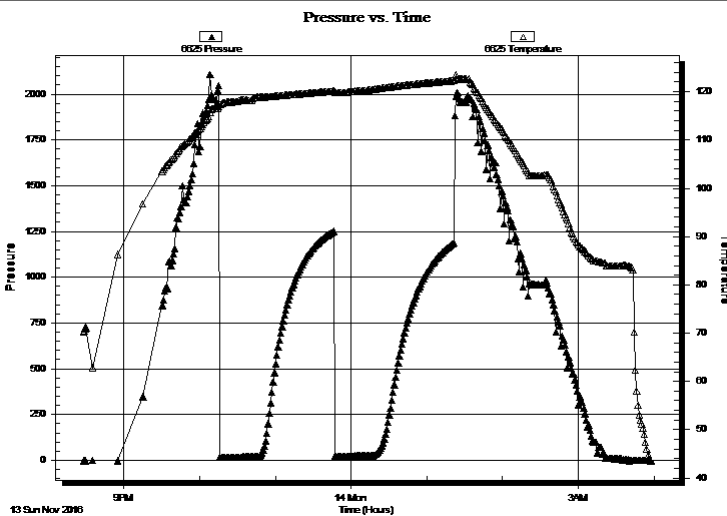
Time Off Btm:

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

60 - ISI: No blow back

30 - FF: No blow

60 - FSI: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud w /oil spots 97%m, 3%o	0.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61254

DST#: 5

ATTN: Rocky Milford

Test Start: 2016.11.13 @ 20:28:00

Tool Information

Drill Pipe:	Length: 3898.00 ft	Diameter: 3.80 inches	Volume: 54.68 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 55.60 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4107.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	93.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Change Over Sub	1.00			4079.00	
Shut In Tool	5.00			4084.00	
Hydraulic tool	5.00			4089.00	
Jars	5.00			4094.00	
Safety Joint	3.00			4097.00	
Packer	5.00			4102.00	29.00 Bottom Of Top Packer
Packer	5.00			4107.00	
Stubb	1.00			4108.00	
Recorder	0.00	6625	Inside	4108.00	
Recorder	0.00	8366	Outside	4108.00	
Perforations	27.00			4135.00	
Blank Spacing	33.00			4168.00	
Bullnose	3.00			4171.00	64.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61254

DST#: 5

ATTN: Rocky Milford

Test Start: 2016.11.13 @ 20:28:00

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: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 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
10.00	Mud w /oil spots 97% _m , 3% _o	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

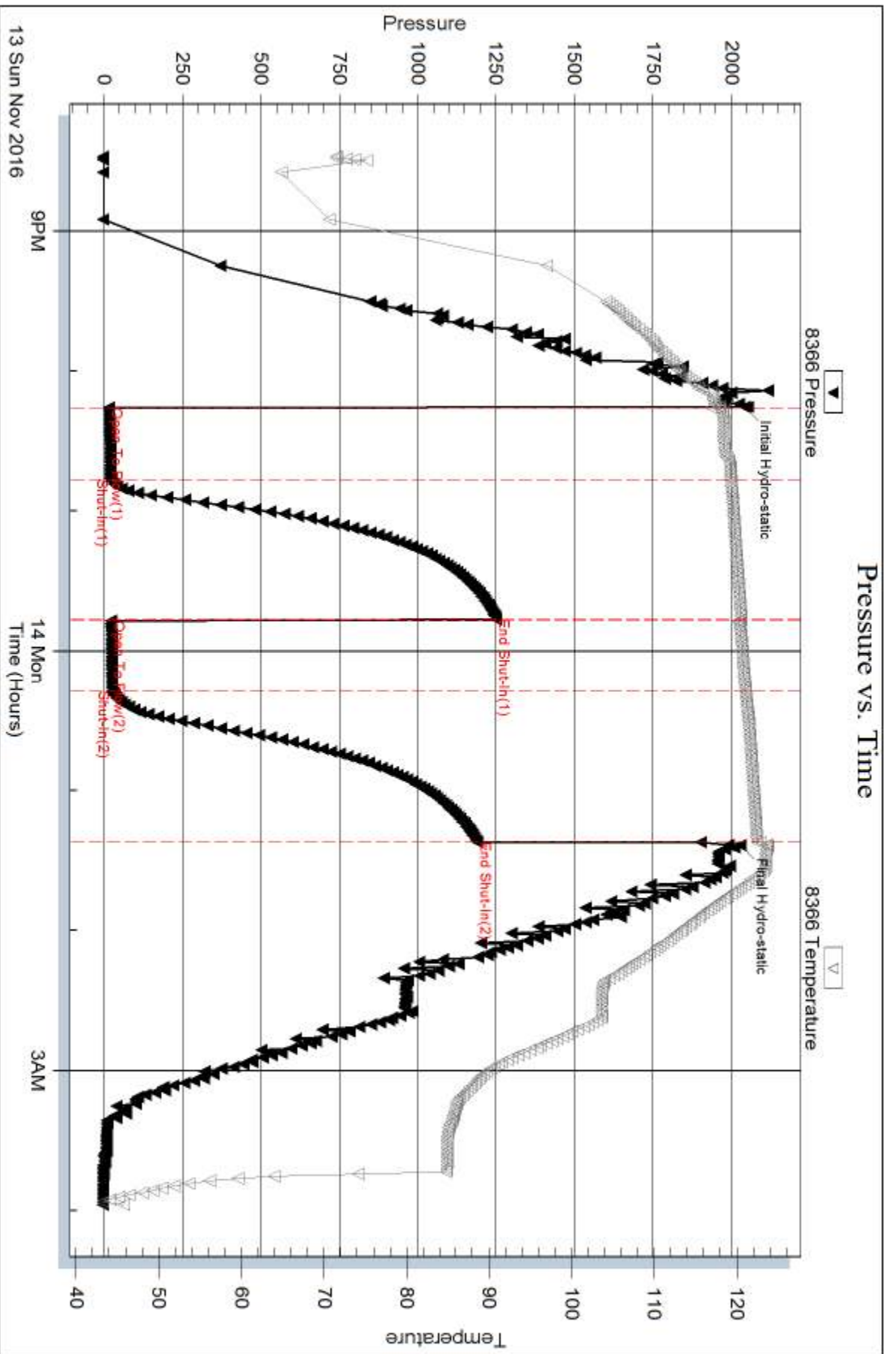
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



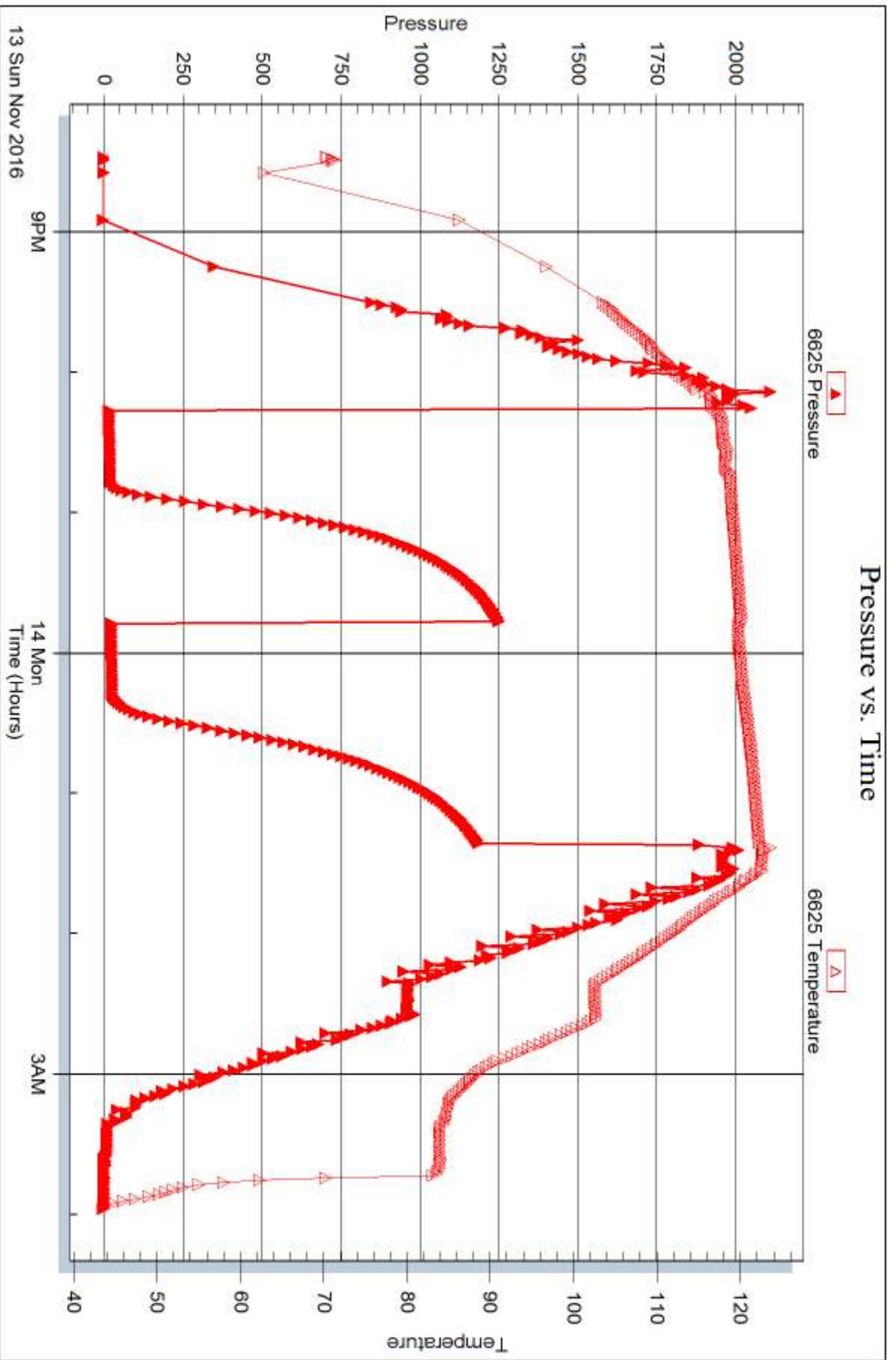
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 61254

Printed: 2016.11.15 @ 16:48:50



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15-5s-32w Rawlins,KS

Start Date: 2016.11.14 @ 19:47:00

End Date: 2016.11.15 @ 03:02:30

Job Ticket #: 61255 DST #: 6

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.15 @ 16:47:35



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

15-5s-32w Rawlins,KS

Almut #1-15

Job Ticket: 61255

DST#: 6

Test Start: 2016.11.14 @ 19:47:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:42:15

Time Test Ended: 03:02:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4298.00 ft (KB) To 4340.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 4340.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 50.92 psig @ 4299.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.14

End Date:

2016.11.15

Last Calib.:

2016.11.15

Start Time: 19:47:05

End Time:

03:02:29

Time On Btm:

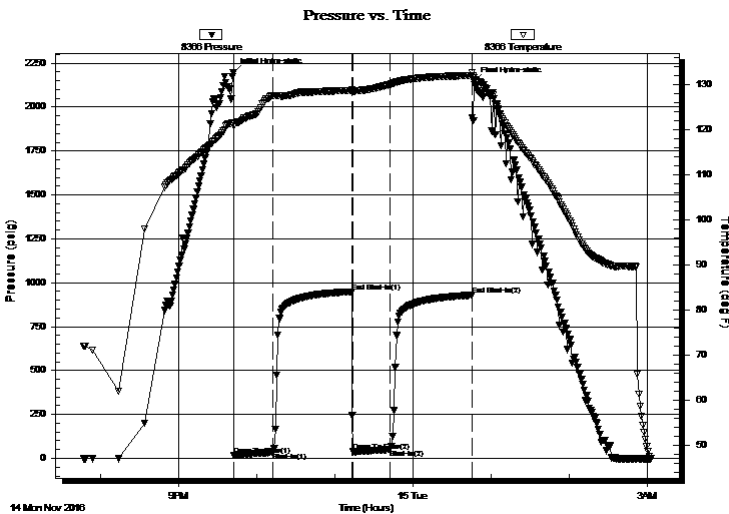
2016.11.14 @ 21:42:00

Time Off Btm:

2016.11.15 @ 00:46:45

TEST COMMENT: 30 - IF: 1/4" Blow at open, built to 2 1/4"
60 - IS: No blow back
30 - FF: Weak surface blow started at 27 min.
60 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2197.58	121.54	Initial Hydro-static
1	16.70	120.73	Open To Flow (1)
31	34.33	127.50	Shut-In(1)
91	949.19	128.66	End Shut-In(1)
92	37.81	128.33	Open To Flow (2)
121	50.92	129.95	Shut-In(2)
183	929.29	131.94	End Shut-In(2)
185	2143.20	131.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	WCM 83% _m , 17% _w	0.30
5.00	WM 55% _m , 45% _w	0.02
0.00	trace of oil in tool	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61255

DST#: 6

ATTN: Rocky Milford

Test Start: 2016.11.14 @ 19:47:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:42:15

Time Test Ended: 03:02:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 83

Interval: 4298.00 ft (KB) To 4340.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 4340.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 4299.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.14

End Date:

2016.11.15

Last Calib.:

2016.11.15

Start Time: 19:47:05

End Time:

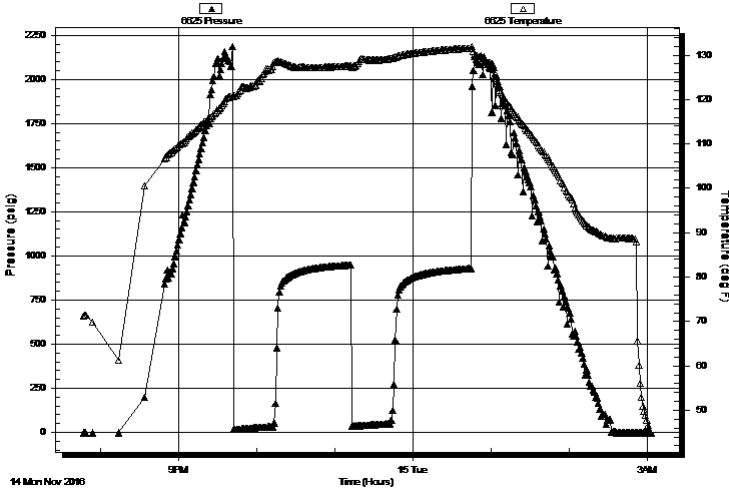
03:02:59

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: 1/4" Blow at open, built to 2 1/4"
60 - ISI: No blow back
30 - FF: Weak surface blow started at 27 min.
60 - FSI: No blow back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	WCM 83% _m , 17% _w	0.30
5.00	WM 55% _m , 45% _w	0.02
0.00	trace of oil in tool	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., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61255

DST#: 6

ATTN: Rocky Milford

Test Start: 2016.11.14 @ 19:47:00

Tool Information

Drill Pipe:	Length: 4087.00 ft	Diameter: 3.80 inches	Volume: 57.33 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 58.25 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4298.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	71.00 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			4270.00	
Shut In Tool	5.00			4275.00	
Hydraulic tool	5.00			4280.00	
Jars	5.00			4285.00	
Safety Joint	3.00			4288.00	
Packer	5.00			4293.00	29.00 Bottom Of Top Packer
Packer	5.00			4298.00	
Stubb	1.00			4299.00	
Recorder	0.00	6625	Inside	4299.00	
Recorder	0.00	8366	Outside	4299.00	
Perforations	5.00			4304.00	
Blank Spacing	33.00			4337.00	
Bullnose	3.00			4340.00	42.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15-5s-32w Rawlins,KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61255

DST#: 6

ATTN: Rocky Milford

Test Start: 2016.11.14 @ 19:47:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 65.00 sec/qt
Water Loss: 5.56 in³
Resistivity: ohm.m
Salinity: 1000.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: 12000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	WCM 83% <i>m</i> , 17% <i>w</i>	0.305
5.00	WM 55% <i>m</i> , 45% <i>w</i>	0.025
0.00	trace of oil in tool	0.000

Total Length: 67.00 ft Total Volume: 0.330 bbl

Num Fluid Samples: 0

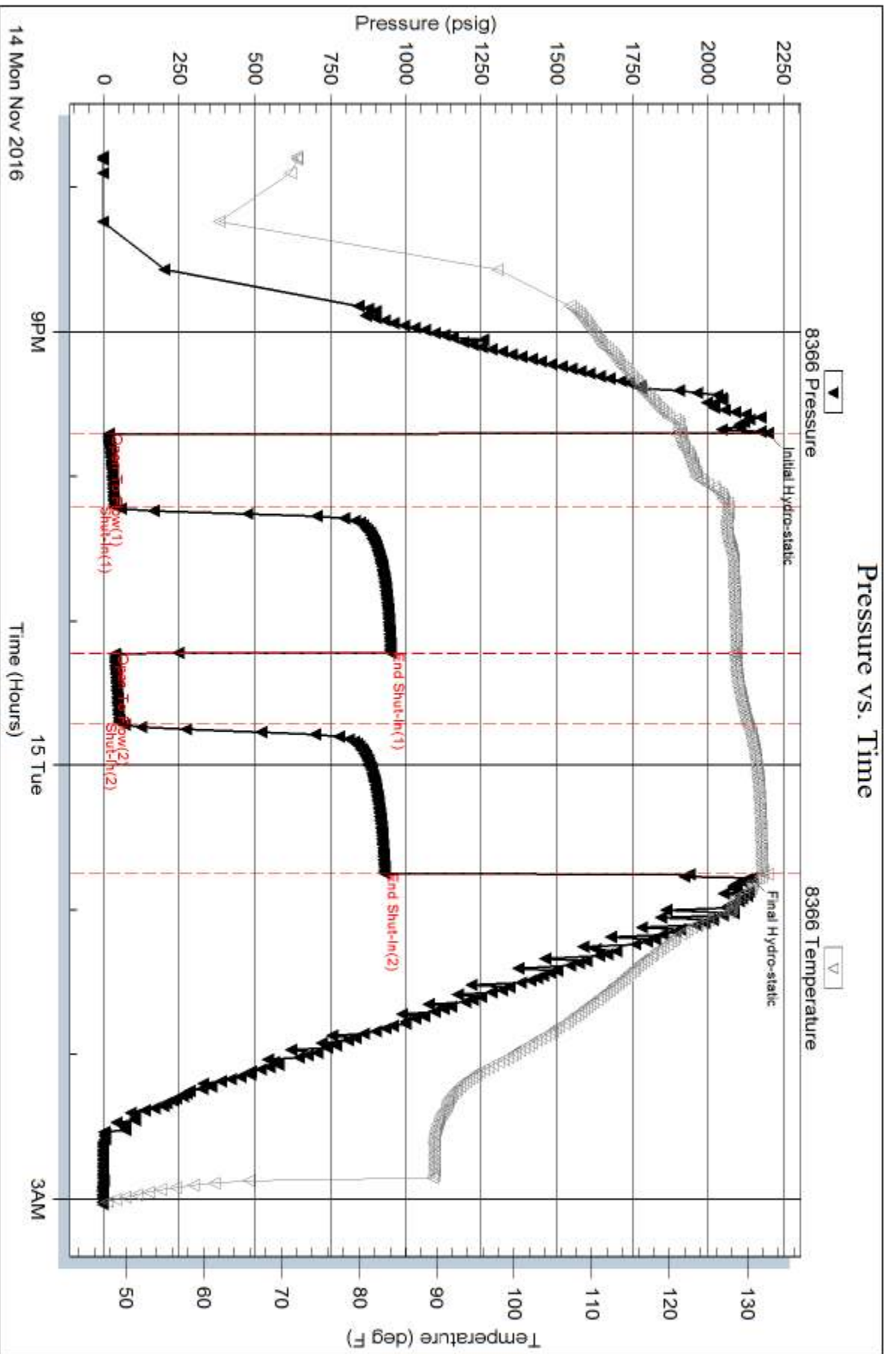
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .889 ohms @ 43.5 deg F
Chlorides = 12,000 ppm



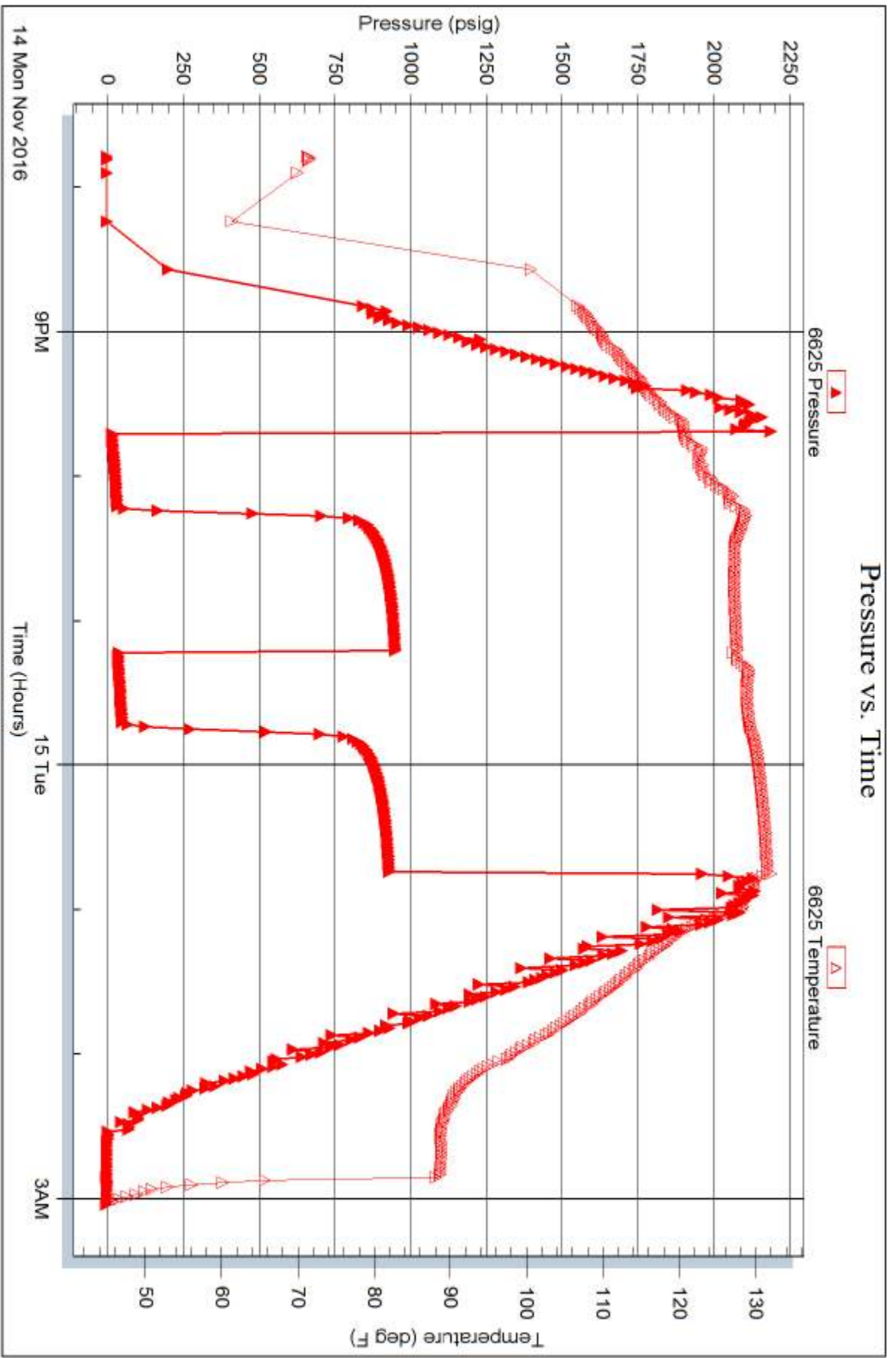
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 61255

Printed: 2016.11.15 @ 16:47:38



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Rocky Milford

Almut #1-15

15/5s/32w Rawlins KS

Start Date: 2016.11.16 @ 05:17:00

End Date: 2016.11.16 @ 14:01:45

Job Ticket #: 61256 DST #: 7

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.16 @ 15:24:48

Murfin Drilling Co., Inc. 15/5s/32w Rawlins KS Almut #1-15 DST # 7 Upper Ft Scott 2016.11.16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

15/5s/32w Rawlins KS
Almut #1-15
 Job Ticket: 61256 **DST#: 7**
 Test Start: 2016.11.16 @ 05:17:00

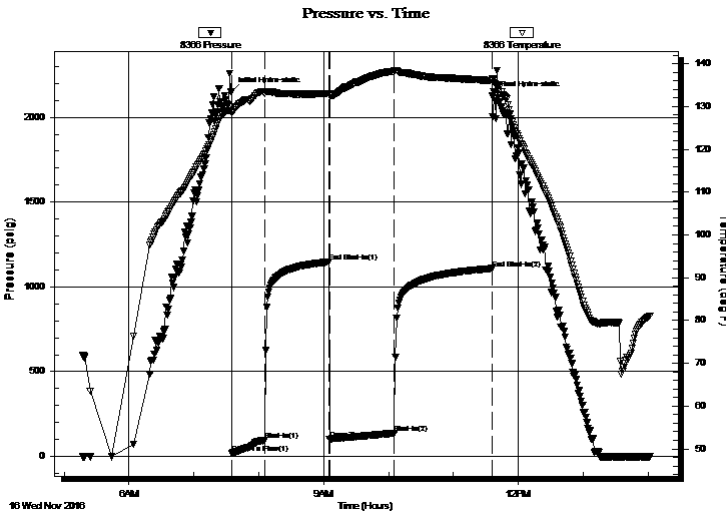
GENERAL INFORMATION:

Formation: **Upper Ft Scott**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:35:00
 Time Test Ended: 14:01:45
 Interval: **4264.00 ft (KB) To 4296.00 ft (KB) (TVD)**
 Total Depth: 4580.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8366 Outside
 Press@RunDepth: 136.63 psig @ 4265.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.16 End Date: 2016.11.16 Last Calib.: 2016.11.16
 Start Time: 05:17:05 End Time: 14:01:45 Time On Btm: 2016.11.16 @ 07:34:30
 Time Off Btm: 2016.11.16 @ 11:36:00

TEST COMMENT: 30 - IF: Blow built to 7" (had a surge around 20 min.)
 60 - IS: No blow back
 60 - FF: Blow built to 7 1/4"
 90 - FS: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2152.71	129.09	Initial Hydro-static
1	17.88	128.54	Open To Flow (1)
31	97.05	133.11	Shut-In(1)
91	1147.26	132.95	End Shut-In(1)
91	99.35	132.62	Open To Flow (2)
151	136.63	138.27	Shut-In(2)
241	1107.68	136.03	End Shut-In(2)
242	2130.00	136.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	MCW 89%w, 11%m	0.61
62.00	MW 60%w, 40%m	0.30
62.00	WCM 75%m, 25%w	0.87
15.00	Mud 100%	0.21

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

15/5s/32w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61256

DST#: 7

ATTN: Rocky Milford

Test Start: 2016.11.16 @ 05:17:00

GENERAL INFORMATION:

Formation: **Upper Ft Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:35:00

Time Test Ended: 14:01:45

Test Type: Conventional Straddle (Reset)

Tester: James Winder

Unit No: 83

Interval: 4264.00 ft (KB) To 4296.00 ft (KB) (TVD)

Reference Elevations: 2955.00 ft (KB)

Total Depth: 4580.00 ft (KB) (TVD)

2950.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6625 Inside

Press@RunDepth: psig @ 4265.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.16 End Date: 2016.11.16

Last Calib.: 2016.11.16

Start Time: 05:17:05 End Time: 14:02:15

Time On Btm:

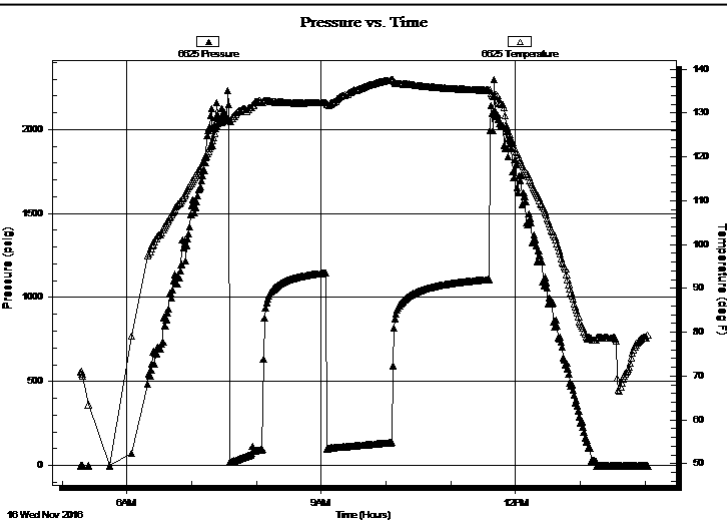
Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 7" (had a surge around 20 min.)

60 - IS: No blow back

60 - FF: Blow built to 7 1/4"

90 - FS: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
125.00	MCW 89%w, 11%m	0.61
62.00	MW 60%w, 40%m	0.30
62.00	WCM 75%m, 25%w	0.87
15.00	Mud 100%	0.21

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

15/5s/32w Rawlins KS
Almut #1-15
 Job Ticket: 61256 **DST#: 7**
 Test Start: 2016.11.16 @ 05:17:00

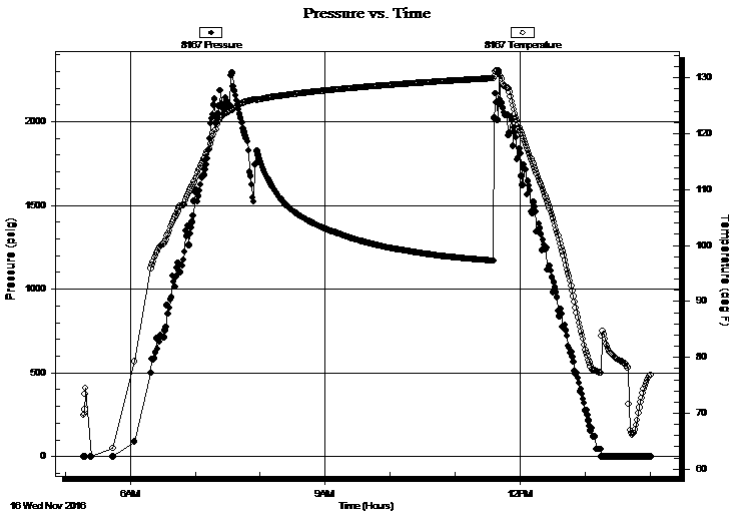
GENERAL INFORMATION:

Formation: **Upper Ft Scott**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:35:00
 Time Test Ended: 14:01:45
 Interval: **4264.00 ft (KB) To 4296.00 ft (KB) (TVD)**
 Total Depth: 4580.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Straddle (Reset)
 Tester: James Winder
 Unit No: 83
 Reference Elevations: 2955.00 ft (KB)
 2950.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8167 Below (Straddle)

Press@RunDepth: psig @ 4297.00 ft (KB)
 Start Date: 2016.11.16 End Date: 2016.11.16
 Start Time: 05:17:05 End Time: 14:00:45
 Capacity: 8000.00 psig
 Last Calib.: 2016.11.16
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 7" (had a surge around 20 min.)
 60 - IS: No blow back
 60 - FF: Blow built to 7 1/4"
 90 - FS: No blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
125.00	MCW 89%w, 11%m	0.61
62.00	MW 60%w, 40%m	0.30
62.00	WCM 75%m, 25%w	0.87
15.00	Mud 100%	0.21

* 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., Inc.

15/5s/32w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61256

DST#: 7

ATTN: Rocky Milford

Test Start: 2016.11.16 @ 05:17:00

Tool Information

Drill Pipe:	Length: 4055.00 ft	Diameter: 3.80 inches	Volume: 56.88 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 57.80 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4264.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	4296.00 ft			
Interval between Packers:	32.00 ft			
Tool Length:	345.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments: tool settled down w hile on IF - had a surge around 20 min.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4236.00	
Shut In Tool	5.00			4241.00	
Hydraulic tool	5.00			4246.00	
Jars	5.00			4251.00	
Safety Joint	3.00			4254.00	
Packer	5.00			4259.00	29.00 Bottom Of Top Packer
Packer	5.00			4264.00	
Packer - Shale	0.00			4264.00	
Stubb	1.00			4265.00	
Recorder	0.00	6625	Inside	4265.00	
Recorder	0.00	8366	Outside	4265.00	
Perforations	26.00			4291.00	
Blank Off Sub	1.00			4292.00	
Blank spacing	4.00			4296.00	32.00 Tool Interval
Packer	0.00			4296.00	
Packer - Shale	0.00			4296.00	
Stubb	1.00			4297.00	
Recorder	0.00	8167	Below	4297.00	
Perforations	24.00			4321.00	
Drill Pipe	256.00			4577.00	
Bullnose	3.00			4580.00	284.00 Bottom Packers & Anchor
Total Tool Length:	345.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

15/5s/32w Rawlins KS

250 N. Water STE 300
Wichita, KS 67202

Almut #1-15

Job Ticket: 61256

DST#: 7

ATTN: Rocky Milford

Test Start: 2016.11.16 @ 05:17:00

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:

18000 ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 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
125.00	MCW 89%w , 11%m	0.615
62.00	MW 60%w , 40%m	0.305
62.00	WCM 75%m, 25%w	0.870
15.00	Mud 100%	0.210

Total Length: 264.00 ft Total Volume: 2.000 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

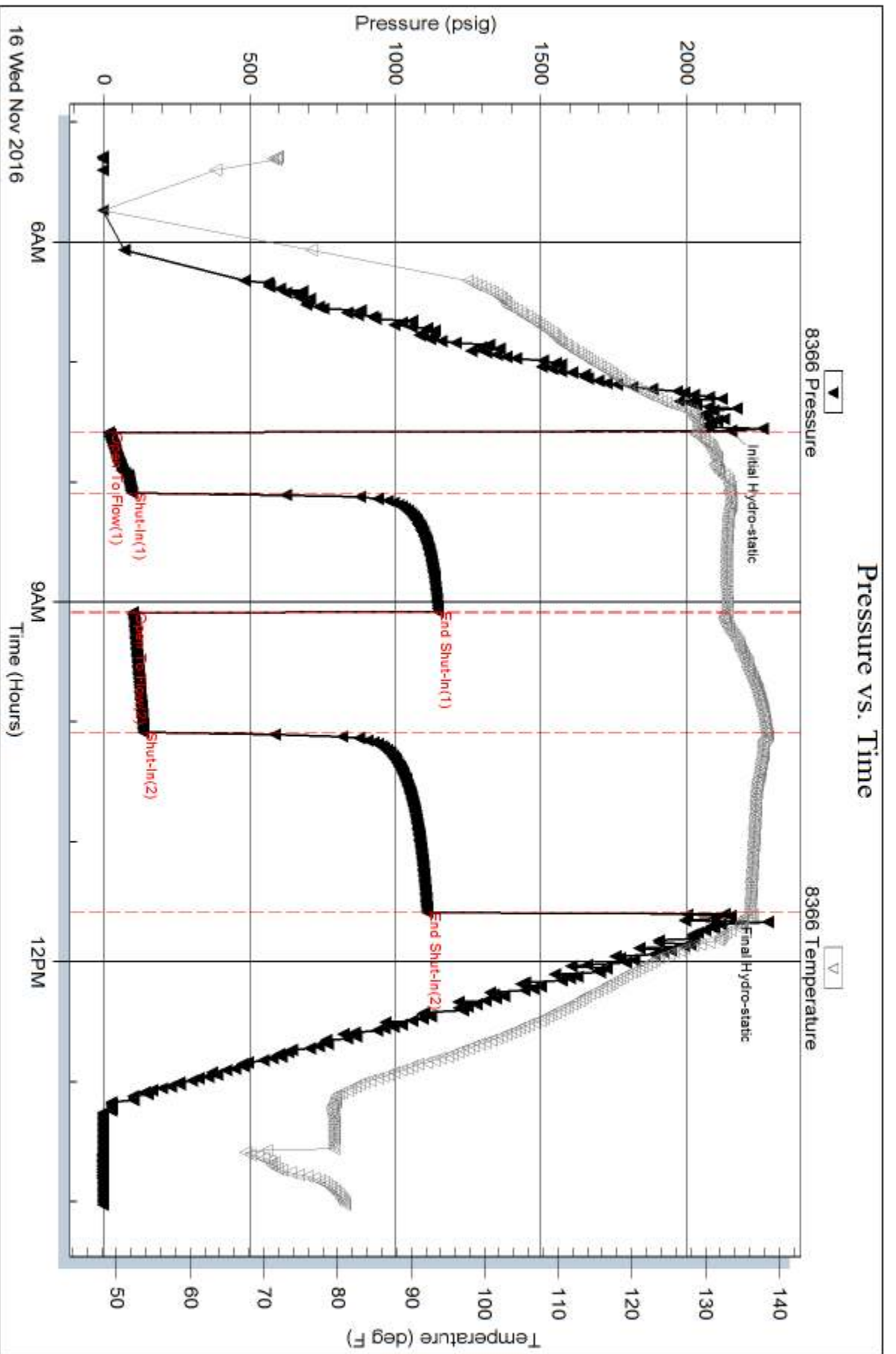
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .339 ohms @ 79.5 deg F

Chlorides = 18,000 ppm



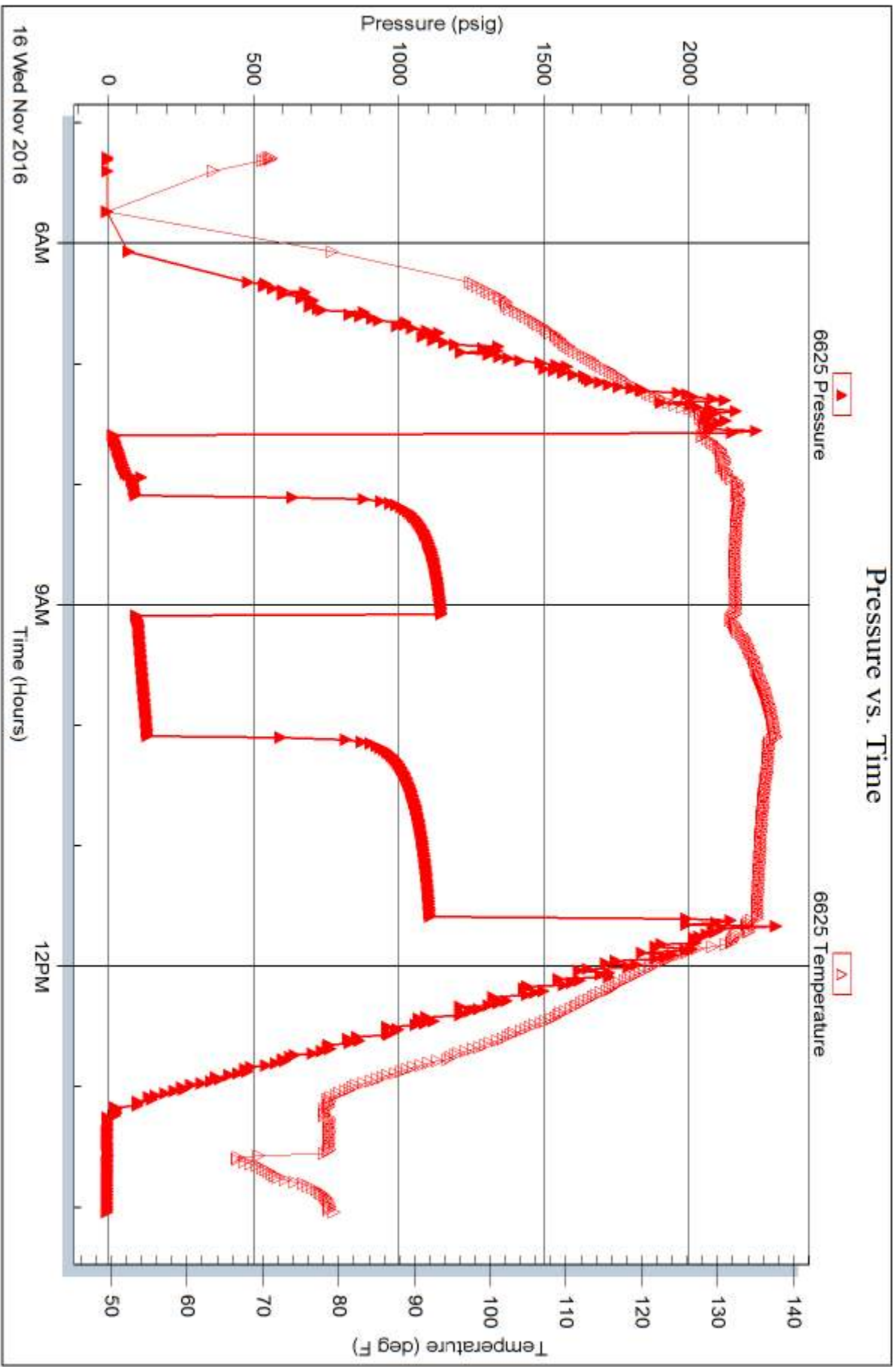
Serial #: 6625

Inside

Murfin Drilling Co., Inc.

Almut #1-15

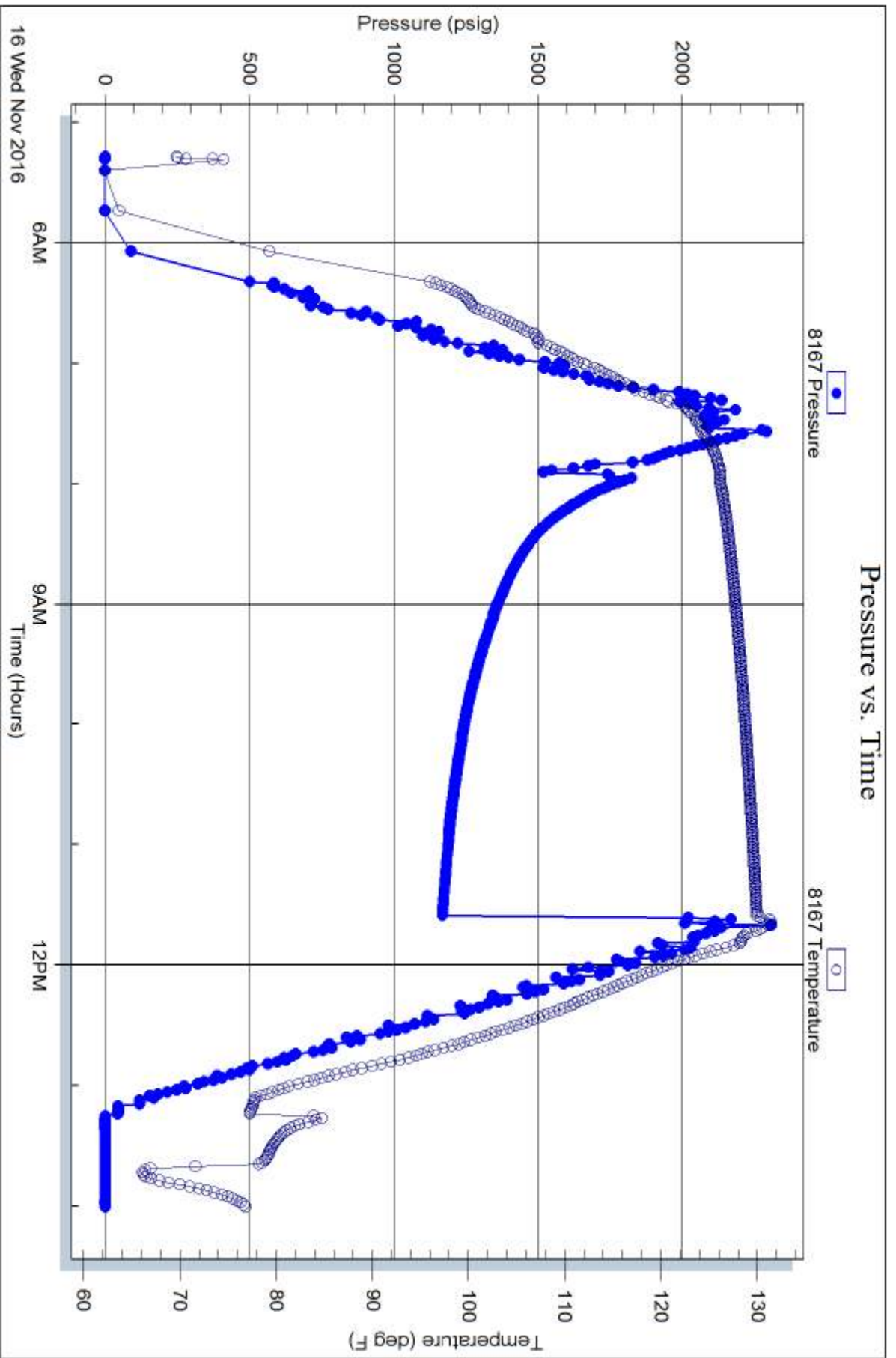
DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 61256

Printed: 2016.11.16 @ 15:24:51





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **61200** 23348

Well Name & No. Almut #1-15 Test No. 1 Date 11-10-16
 Company Murfin Drilling Co Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State Ks

Interval Tested 3916 - 3947 Zone Tested LKC "A"
 Anchor Length 31 Drill Pipe Run 3708 Mud Wt. 9.0
 Top Packer Depth 3911 Drill Collars Run 187 Vis 60
 Bottom Packer Depth 3916 (shale) Wt. Pipe Run - WL 5.6
 Total Depth 3947 Chlorides 600 ppm System LCM 4

Blow Description IF: Blow built to BOB(11") at 11 3/4 min.
ISI: No blowback
FF: Blow started at 1 1/4 min, built to BOB at 15 1/4 min.
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>MW</u>		<u>58</u>	<u>42</u>	
<u>190</u>	<u>MCW</u>		<u>83</u>	<u>17</u>	
<u>510</u>	<u>Water</u>		<u>98</u>	<u>2</u>	

Rec Total 825 BHT 133 Gravity _____ API RW 110 @ 37.7 °F Chlorides 150,000 ppm

(A) Initial Hydrostatic 1909 Test 1050 T-On Location 19:00 1/10
 (B) First Initial Flow 20 Jars 250 T-Started 20:27
 (C) First Final Flow 183 Safety Joint 75 T-Open 22:16
 (D) Initial Shut-In 1296 Circ Sub _____ T-Pulled 2:18
 (E) Second Initial Flow 187 Hourly Standby _____ T-Out 5:10 1/11
 (F) Second Final Flow 375 Mileage 72RT 54 Comments _____
 (G) Final Shut-In 1292 Sampler _____
 (H) Final Hydrostatic 1895 Straddle _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 60 Extra Copies _____
 Final Shut-In 90 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1679
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1679

Approved By Rocky Milford

Our Representative James Winder

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 of 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. 61251

Well Name & No. Almut #1-15 Test No. 2 Date 11-11-16
 Company Murfin Drilling Co Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State KS

Interval Tested 3941 - 3985 Zone Tested LKC "B-D"
 Anchor Length 44 Drill Pipe Run 3739 Mud Wt. 8.9
 Top Packer Depth 3936 Drill Collars Run 187 Vis 59
 Bottom Packer Depth 3941 (shale) Wt. Pipe Run - WL 6.0
 Total Depth 3985 Chlorides 700 ppm System LCM 3

Blow Description IF: Blow built to 1 1/4", slowly died back to 1" at close
ISI: No blowback
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud w/oil spots</u>	<u>1</u>		<u>99</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 15 BHT 121 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1939 Test 1050 T-On Location 13:10
 (B) First Initial Flow 21 Jars 250 T-Started 14:15
 (C) First Final Flow 27 Safety Joint 75 T-Open 16:02
 (D) Initial Shut-In 517 Circ Sub _____ T-Pulled 19:05
 (E) Second Initial Flow 28 Hourly Standby _____ T-Out 21:00
 (F) Second Final Flow 30 Mileage 72RT 54 Comments _____
 (G) Final Shut-In 377 Sampler _____
 (H) Final Hydrostatic 1921 Straddle _____

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1679 MP/DST Disc't _____

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

Approved By Rocky Milford Our Representative James Winder
 Trilobite Testing Inc. shall not be liable for damages 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 of 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. 61252

Well Name & No. Almut #1-15 Test No. 3 Date 11-12-16
 Company Murfin Drilling Co Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State KS

Interval Tested 3982 - 4024 Zone Tested LKC "E-G"
 Anchor Length 42 Drill Pipe Run 3771 Mud Wt. 9.0
 Top Packer Depth 3977 Drill Collars Run 187 Vis 62
 Bottom Packer Depth 3982 Wt. Pipe Run - WL 6.0
 Total Depth 4024 Chlorides 700 ppm System LCM 3

Blow Description IF: Blow built to BOB (11") at 30 min.
ISI: No blowback
FF: Blow built to BOB at 36 1/2 min.
FSI: Weak surface blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>SWMC 0</u>	<u>88</u>	<u>4</u>	<u>8</u>	
<u>242</u>	<u>SO/WCM</u>	<u>5</u>	<u>23</u>	<u>70</u>	
<u>124</u>	<u>MCW w/trace oil</u>	<u>trace</u>	<u>71</u>	<u>29</u>	

Rec Total 376 BHT 130 Gravity 22.2 API RW .336 @ 69.6 °F Chlorides 21,000 ppm

(A) Initial Hydrostatic 1958 Test 1150 T-On Location 6:00
 (B) First Initial Flow 18 Jars 250 T-Started 7:15
 (C) First Final Flow 117 Safety Joint 75 T-Open 9:00
 (D) Initial Shut-In 1265 Circ Sub _____ T-Pulled 13:02
 (E) Second Initial Flow 117 Hourly Standby _____ T-Out 15:10
 (F) Second Final Flow 184 Mileage 72 RT 54 Comments _____
 (G) Final Shut-In 1239 Sampler _____
 (H) Final Hydrostatic 1932 Straddle _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 60 Extra Copies _____
 Final Shut-In 90 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1529
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1529

Approved By Rocky Milford Our Representative James Winder
 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 of 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. 61253

Well Name & No. Almut #1-15 Test No. 4 Date 11-13-16
 Company Murfin Drilling Co, Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State KS

Interval Tested 4070 - 4014 Zone Tested LKC "J"
 Anchor Length 44 Drill Pipe Run 3866 Mud Wt. 9.0
 Top Packer Depth 4065 Drill Collars Run 187 Vis 61
 Bottom Packer Depth 4070 (shale) Wt. Pipe Run - WL 6.0
 Total Depth 4014 Chlorides 700 ppm System LCM 4

Blow Description IF: Blow built to 10 1/2"
ISI: Weak surface blowback for a few minutes then dead
FF: Blow built to BOB (11") at 29 1/4 minutes
FSI: Weak surface blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>93</u>	<u>GO</u>	<u>11</u>	<u>87</u>	<u>2</u>	<u>0</u>
<u>31</u>	<u>MCO</u>	<u>4</u>	<u>86</u>	<u>10</u>	<u>0</u>
<u>93</u>	<u>60M</u>	<u>15</u>	<u>37</u>	<u>48</u>	<u>0</u>
<u>5IP = 280'</u>					

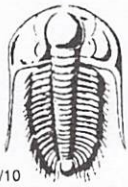
Rec Total 217 BHT 131 Gravity 35 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 2063 Test 1150 T-On Location 1:15
 (B) First Initial Flow 18 Jars 250 T-Started 2:30
 (C) First Final Flow 62 Safety Joint 75 T-Open 4:39
 (D) Initial Shut-In 1268 Circ Sub _____ T-Pulled 8:40
 (E) Second Initial Flow 65 Hourly Standby _____ T-Out 10:45
 (F) Second Final Flow 101 Mileage 72 RT 54 Comments _____
 (G) Final Shut-In 1211 Sampler _____
 (H) Final Hydrostatic 2040 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____

Initial Open 30 Extra Packer _____
 Initial Shut-In 60 Extra Recorder _____
 Final Flow 60 Day Standby _____
 Final Shut-In 90 Accessibility _____
 Sub Total 1779 MP/DST Disc't _____

Approved By Rocky Milford Our Representative James Winder

Trilobite Testing Inc. shall not be liable for damages 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. 61254

Well Name & No. Almut #1-15 Test No. 5 Date 11-13-16
 Company Murfin Drilling Co. Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State KS

Interval Tested 4107 - 4171 Zone Tested LKC "K-L"
 Anchor Length 64 Drill Pipe Run 3898 Mud Wt. 9.0
 Top Packer Depth 4102 Drill Collars Run 187 Vis 63
 Bottom Packer Depth 4107 Wt. Pipe Run - WL 6.4
 Total Depth 4171 Chlorides 1000 ppm System LCM 4

Blow Description IF: Blow built to 1 1/8"
ISI: No blowback
FF: No blow
FSI: No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>Mud w/oil spots</u>		<u>3</u>		<u>97</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 122 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic 2042 Test 1150 T-On Location 19:20 1/13
 (B) First Initial Flow 16 Jars 250 T-Started 20:28
 (C) First Final Flow 21 Safety Joint 75 T-Open 22:15
 (D) Initial Shut-In 1252 Circ Sub _____ T-Pulled 1:22
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 3:55 1/14
 (F) Second Final Flow 26 Mileage 72 RT 54 Comments _____
 (G) Final Shut-In 1191 Sampler _____
 (H) Final Hydrostatic 2029 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

Sub Total 0
 Total 1529
 MP/DST Disc't _____

Approved By Rocky Milford Our Representative James Winder
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61255

4/10

Well Name & No. Almut #1-15 Test No. 6 Date 11-14-16
 Company Murfin Drilling Co. Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5S Rge. 32W Co. Rawlins State KS

Interval Tested 4298 - 4340 Zone Tested Ft. Scott
 Anchor Length 42 Drill Pipe Run 4087 Mud Wt. 9.1
 Top Packer Depth 4293 Drill Collars Run 187 Vis 65
 Bottom Packer Depth 4298 Wt. Pipe Run - WL 5.6
 Total Depth 4340 Chlorides 1000 ppm System LCM 3
 Blow Description IF: 1/4" Blow at open, built to 2 1/4"
ISI: No blowback
FF: Weak surface blow started at 27 min.
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>WM</u>		<u>45</u>	<u>55</u>	
<u>62</u>	<u>Wcm</u>		<u>17</u>	<u>83</u>	
	<u>trace of oil in tool</u>				

Rec Total 67 BHT 132 Gravity API RW .889 @ 43.5 °F Chlorides 12,000 ppm
 (A) Initial Hydrostatic 2198 Test 1150 T-On Location 19:10 1/14
 (B) First Initial Flow 17 Jars 250 T-Started 19:47
 (C) First Final Flow 34 Safety Joint 75 T-Open 21:42
 (D) Initial Shut-In 949 Circ Sub _____ T-Pulled 00:45
 (E) Second Initial Flow 38 Hourly Standby _____ T-Out 3:00 1/15
 (F) Second Final Flow 51 Mileage 72 RTX2 54+54 Comments _____
 (G) Final Shut-In 929 Sampler _____
 (H) Final Hydrostatic 2143 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1583
 Total 1583
 MP/DST Disc't _____

Approved By Rocky Milford

Our Representative James Winkler

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61256

4/10

Well Name & No. Almut # 1-15 Test No. 7 Date 11-16-17
 Company Murfin Drilling Co. Inc Elevation 2955 KB 2950 GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 15 Twp. 5s Rge. 32w Co. Rawlins State KS

Interval Tested 4264-4296 Zone Tested UPPER Ft Scott
 Anchor Length 32 Anchor 284 Tail Drill Pipe Run 4055 Mud Wt. 9.1
 Top Packer Depth 4259-4264 (shale) Drill Collars Run 187 Vis 68
 Bottom Packer Depth 4296 (shale) Wt. Pipe Run - WL 6.0
 Total Depth 4580 Chlorides 1000 ppm System LCM 3

Blow Description IF: Blow built to 7' (had a surge around 20min)
ISI: No blowback
FF: Blow built to 7 1/4"
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>Mud</u>			<u>100</u>	
<u>63</u>	<u>wcm</u>		<u>25</u>	<u>75</u>	
<u>62</u>	<u>62 mw</u>		<u>60</u>	<u>40</u>	
<u>125</u>	<u>mcw</u>		<u>89</u>	<u>11</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 265 BHT 136 Gravity API RW 339 @ 79.5° F Chlorides 18,000 ppm

(A) Initial Hydrostatic <u>2153</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>4:40</u>
(B) First Initial Flow <u>18</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>5:17</u>
(C) First Final Flow <u>97</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>7:35</u>
(D) Initial Shut-In <u>1147</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>11:35</u>
(E) Second Initial Flow <u>99</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:55</u>
(F) Second Final Flow <u>137</u>	<input checked="" type="checkbox"/> Mileage <u>72 RT 54</u>	Comments <u>tool settled down</u>
(G) Final Shut-In <u>1108</u>	<input type="checkbox"/> Sampler	<u>while on IF-had a surge</u>
(H) Final Hydrostatic <u>2130</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<u>around 20 min.</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>2379</u>
	Sub Total <u>2379</u>	MP/DST Disc't

Approved By Rocky Milford Our Representative Jamie Winkler

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