



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Jacque #1-2

2-4S-33W Rawlins, KS

Start Date: 2014.11.07 @ 00:39:00

End Date: 2014.11.07 @ 10:03:30

Job Ticket #: 60204 DST #: 1

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

Printed: 2014.11.12 @ 14:43:32



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60204

DST#: 1

Test Start: 2014.11.07 @ 00:39:00

GENERAL INFORMATION:

Formation: **Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 03:20:00
 Time Test Ended: 10:03:30
 Interval: **3880.00 ft (KB) To 3975.00 ft (KB) (TVD)**
 Total Depth: 3975.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3077.00 ft (KB)
 3072.00 ft (CF)
 KB to GR/CF: 5.00 ft

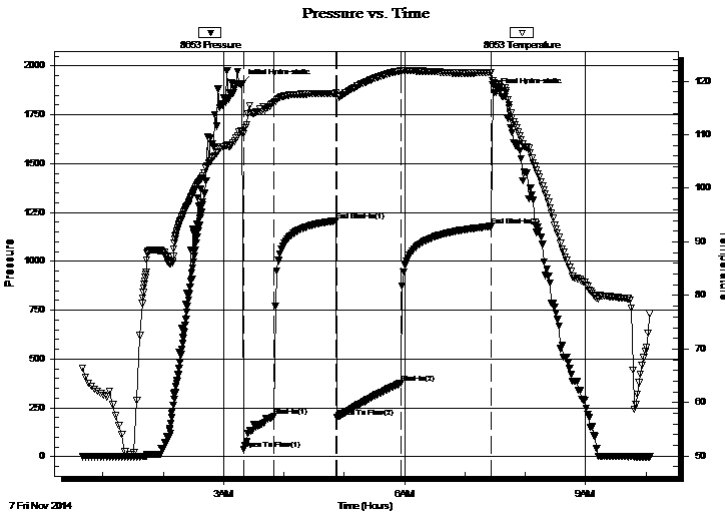
Serial #: 8653

Outside

Press@RunDepth: 376.54 psig @ 3881.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.07 End Date: 2014.11.07 Last Calib.: 2014.11.07
 Start Time: 00:40:00 End Time: 10:03:30 Time On Btm: 2014.11.07 @ 03:18:30
 Time Off Btm: 2014.11.07 @ 07:29:00

TEST COMMENT: 30 - IF- BoB in 12 min.
 60 - IS- No Return
 60 - FF- BoB in 14 min.
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1910.58	110.65	Initial Hydro-static
2	37.41	110.25	Open To Flow (1)
32	206.20	115.94	Shut-In(1)
93	1207.62	117.75	End Shut-In(1)
95	200.63	117.16	Open To Flow (2)
158	376.54	121.90	Shut-In(2)
248	1179.25	121.61	End Shut-In(2)
251	1865.16	119.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
182.00	MW 5M 95W	0.90
126.00	MW 10M 90W	1.77
189.00	MW 30M 70W	2.65
251.00	MW 50M 50W	3.52

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drilling Co., Inc
250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60204

DST#: 1

Test Start: 2014.11.07 @ 00:39:00

GENERAL INFORMATION:

Formation: **Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:20:00

Time Test Ended: 10:03:30

Interval: 3880.00 ft (KB) To 3975.00 ft (KB) (TVD)

Total Depth: 3975.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Reference Elevations: 3077.00 ft (KB)

3072.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8874

Inside

Press@RunDepth: psig @ 3881.00 ft (KB)

Start Date: 2014.11.07 End Date: 2014.11.07

Start Time: 00:40:00 End Time: 10:05:00

Capacity: 8000.00 psig

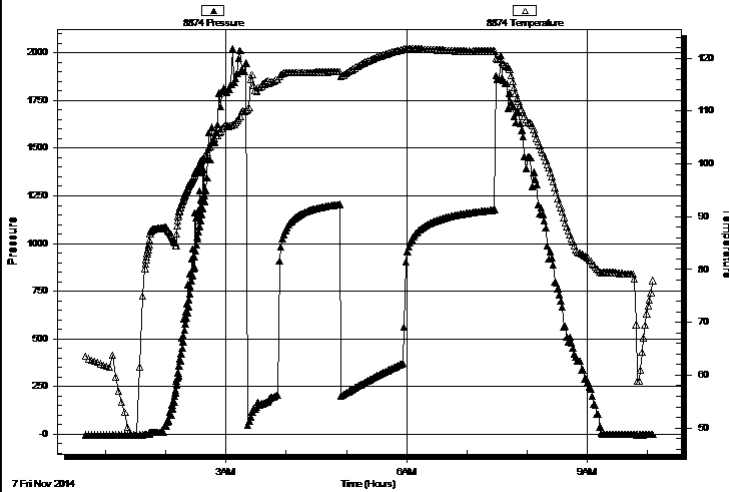
Last Calib.: 2014.11.07

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- BoB in 12 min.
60 - IS- No Return
60 - FF- BoB in 14 min.
90 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
182.00	MW 5M 95W	0.90
126.00	MW 10M 90W	1.77
189.00	MW 30M 70W	2.65
251.00	MW 50M 50W	3.52

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60204
Test Start: 2014.11.07 @ 00:39:00

DST#: 1

Tool Information

Drill Pipe:	Length: 3675.00 ft	Diameter: 3.80 inches	Volume: 51.55 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 52.47 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3880.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	95.00 ft			
Tool Length:	123.00 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			3853.00	
Shut In Tool	5.00			3858.00	
Hydraulic tool	5.00			3863.00	
Jars	5.00			3868.00	
Safety Joint	3.00			3871.00	
Packer	5.00			3876.00	28.00 Bottom Of Top Packer
Packer	4.00			3880.00	
Stubb	1.00			3881.00	
Recorder	0.00	8653	Outside	3881.00	
Recorder	0.00	8874	Inside	3881.00	
Perforations	23.00			3904.00	
Change Over Sub	1.00			3905.00	
Drill Pipe	64.00			3969.00	
Change Over Sub	1.00			3970.00	
Bullnose	5.00			3975.00	95.00 Bottom Packers & Anchor

Total Tool Length: 123.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc

2-4S-33W Rawlins, KS

250 N Water STE #300
Wichita, KS 67202

Jacque #1-2

Job Ticket: 60204

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.11.07 @ 00:39:00

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:

35000 ppm

Viscosity: 195.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud (Heavy) 100M	0.025
182.00	MW 5M 95W	0.895
126.00	MW 10M 90W	1.767
189.00	MW 30M 70W	2.651
251.00	MW 50M 50W	3.521

Total Length: 753.00 ft Total Volume: 8.859 bbl

Num Fluid Samples: 0

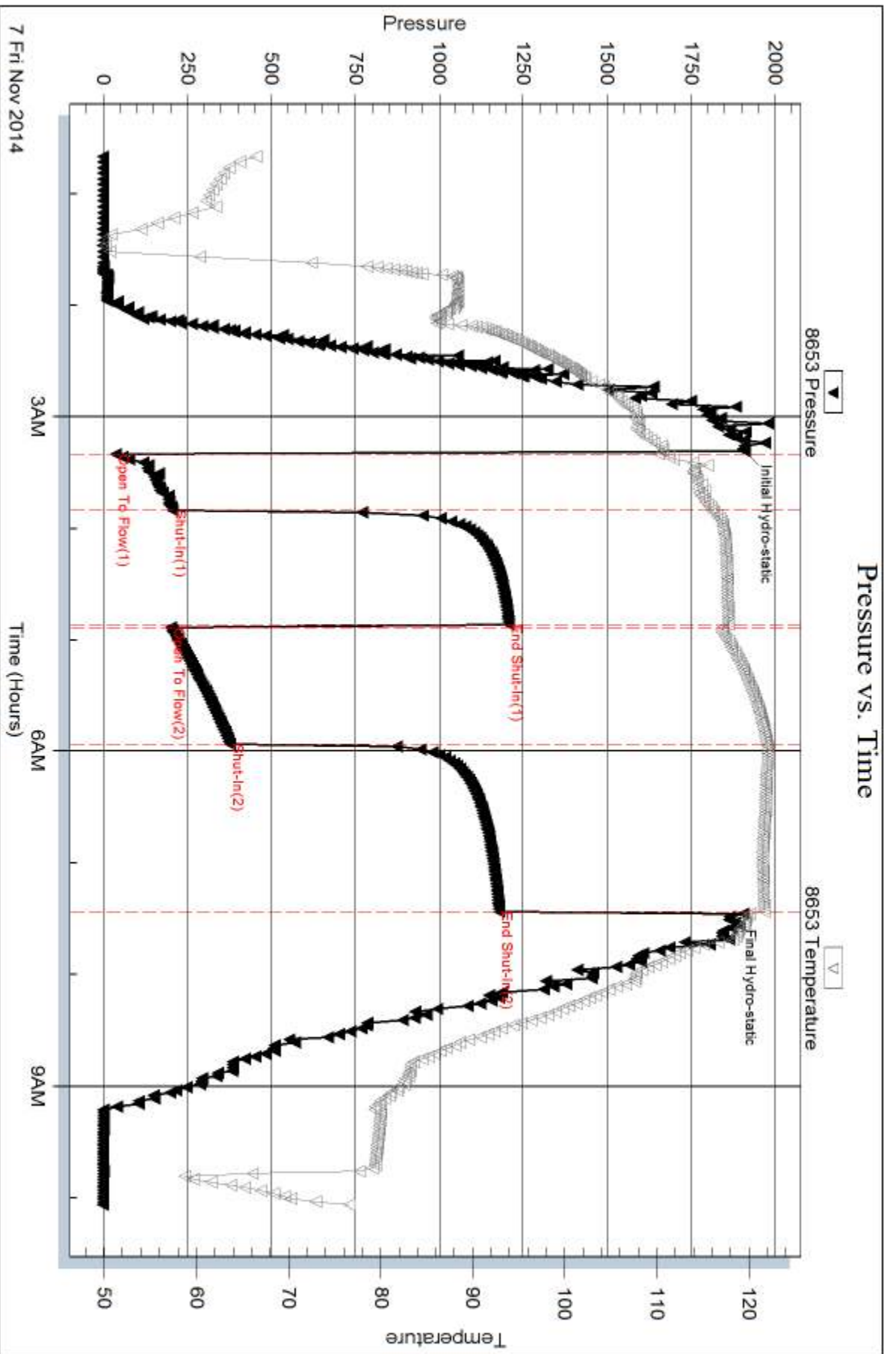
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW.3 @ 52 deg = 35000ppm



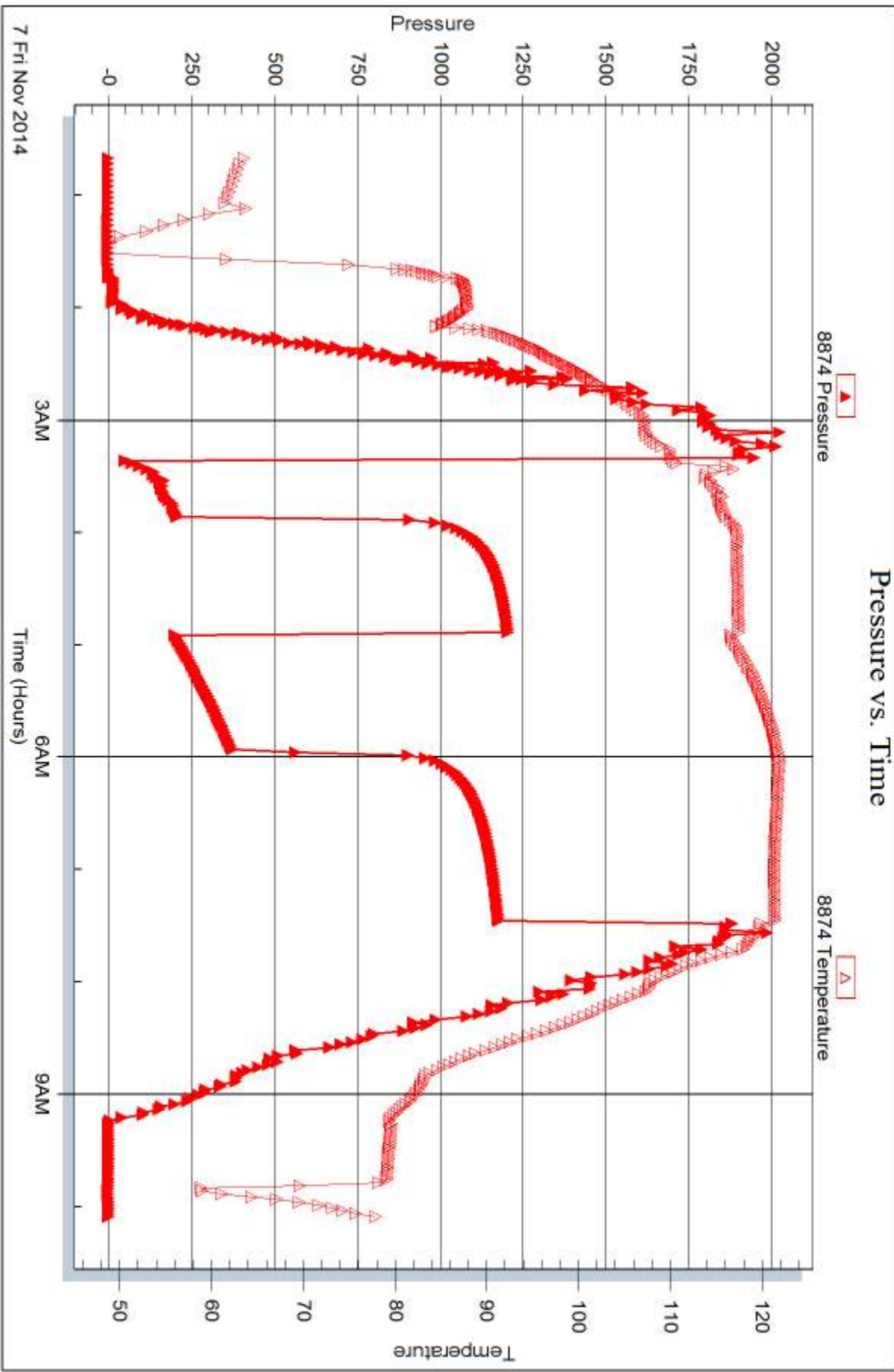
Serial #: 8874

Inside

Murfin Drilling Co., Inc

Jacque #1-2

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60204

Printed: 2014.11.12 @ 14:43:33



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Jacque #1-2

2-4S-33W Rawlins, KS

Start Date: 2014.11.08 @ 00:08:00

End Date: 2014.11.08 @ 08:42:30

Job Ticket #: 60205 DST #: 2

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

Printed: 2014.11.12 @ 14:43:08



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

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

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60205

DST#: 2

Test Start: 2014.11.08 @ 00:08:00

GENERAL INFORMATION:

Formation: **LKC "A-D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:58:10
 Time Test Ended: 08:42:30
 Interval: **3969.00 ft (KB) To 4073.00 ft (KB) (TVD)**
 Total Depth: 4073.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3077.00 ft (KB)
 3072.00 ft (CF)
 KB to GR/CF: 5.00 ft

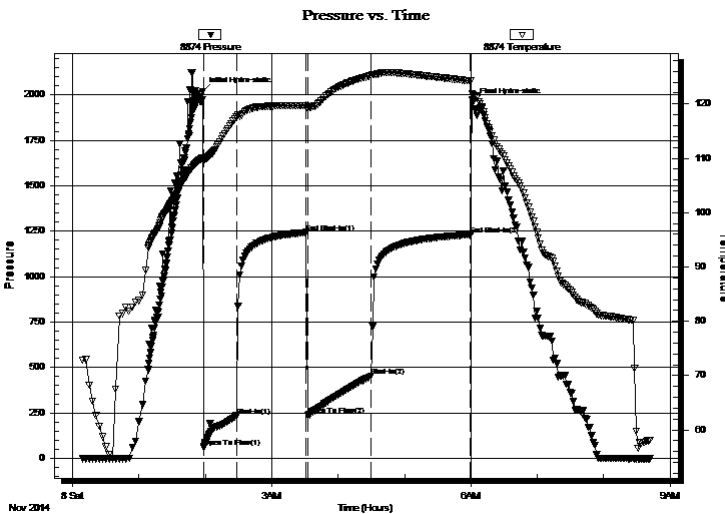
Serial #: 8874

Inside

Press@RunDepth: 452.62 psig @ 3970.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.08 End Date: 2014.11.08 Last Calib.: 2014.11.08
 Start Time: 00:09:00 End Time: 08:42:30 Time On Btm: 2014.11.08 @ 01:57:40
 Time Off Btm: 2014.11.08 @ 06:02:00

TEST COMMENT: 30 - IF- BoB in 9 min.
 60 - IS- No Return
 60 - FF- BoB in 10 Min.
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2017.80	110.09	Initial Hydro-static
1	58.38	109.36	Open To Flow (1)
31	233.69	117.59	Shut-In(1)
94	1243.52	119.68	End Shut-In(1)
95	235.65	119.08	Open To Flow (2)
152	452.62	125.18	Shut-In(2)
242	1231.22	124.22	End Shut-In(2)
245	1957.68	121.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
434.00	Mw 5M 95W	4.43
189.00	MW 10M 90W	2.65
126.00	MW 40M 60W	1.77
219.00	WM 40M 60W (show of oil spots on top)	3.07

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60205
Test Start: 2014.11.08 @ 00:08:00

DST#: 2

Tool Information

Drill Pipe:	Length: 3770.00 ft	Diameter: 3.80 inches	Volume: 52.88 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 53.80 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	3969.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	104.00 ft			
Tool Length:	132.00 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			3942.00	
Shut In Tool	5.00			3947.00	
Hydraulic tool	5.00			3952.00	
Jars	5.00			3957.00	
Safety Joint	3.00			3960.00	
Packer	5.00			3965.00	28.00 Bottom Of Top Packer
Packer	4.00			3969.00	
Packer - Shale	0.00			3969.00	
Stubb	1.00			3970.00	
Recorder	0.00	8653	Outside	3970.00	
Recorder	0.00	8874	Inside	3970.00	
Perforations	1.00			3971.00	
Change Over Sub	1.00			3972.00	
Drill Pipe	95.00			4067.00	
Change Over Sub	1.00			4068.00	
Bullnose	5.00			4073.00	104.00 Bottom Packers & Anchor
Total Tool Length:	132.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60205 **DST#: 2**
Test Start: 2014.11.08 @ 00:08:00

Mud and Cushion Information

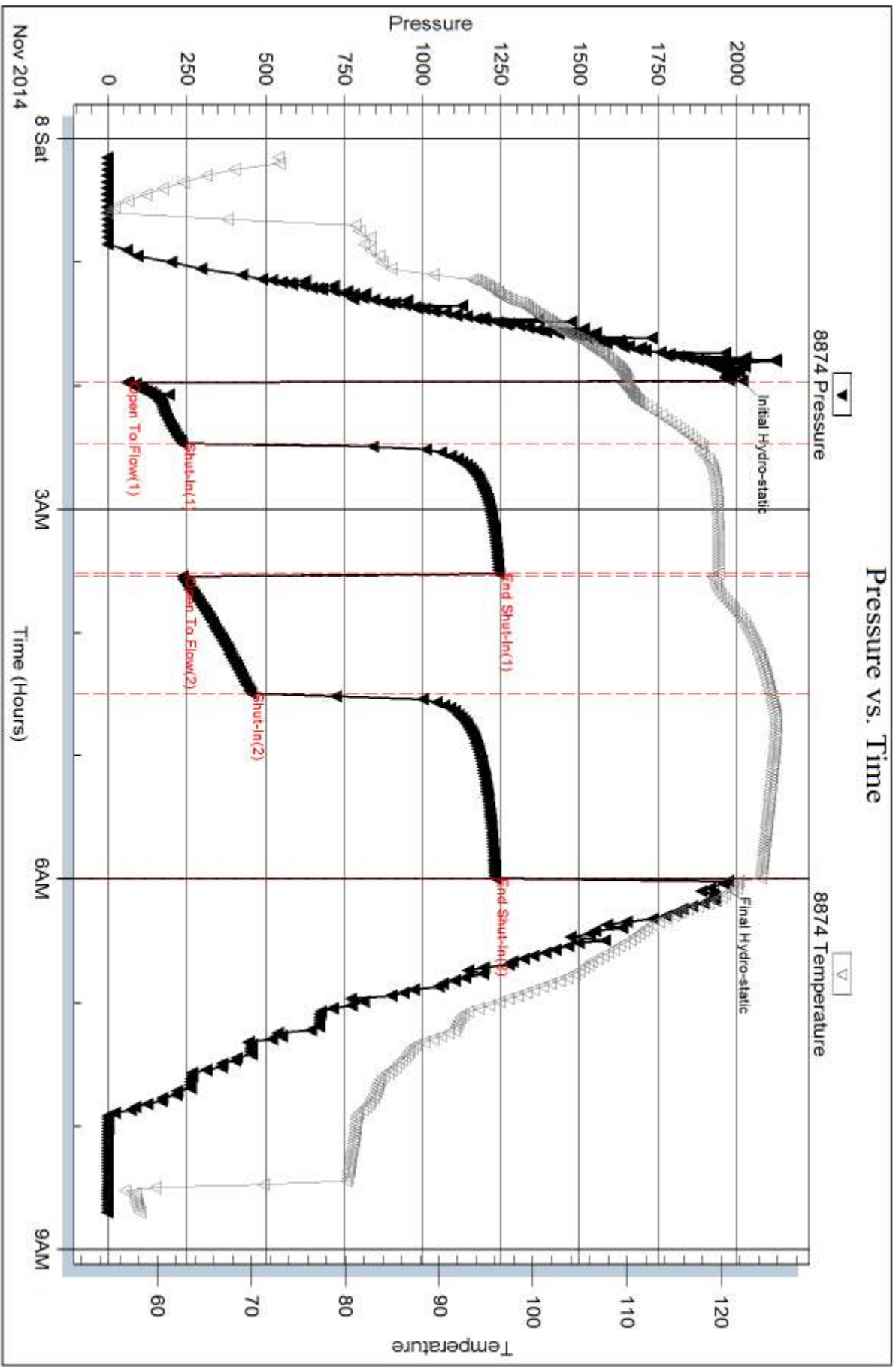
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	68000 ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 1000.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud (Heavy) 100M	0.025
434.00	Mw 5M 95W	4.430
189.00	MW 10M 90W	2.651
126.00	MW 40M 60W	1.767
219.00	WM 40M 60W (show of oil spots on top)	3.072

Total Length: 973.00 ft Total Volume: 11.945 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: Show of oil spots in tool
 RW .21 @ 41 deg = 68000ppm

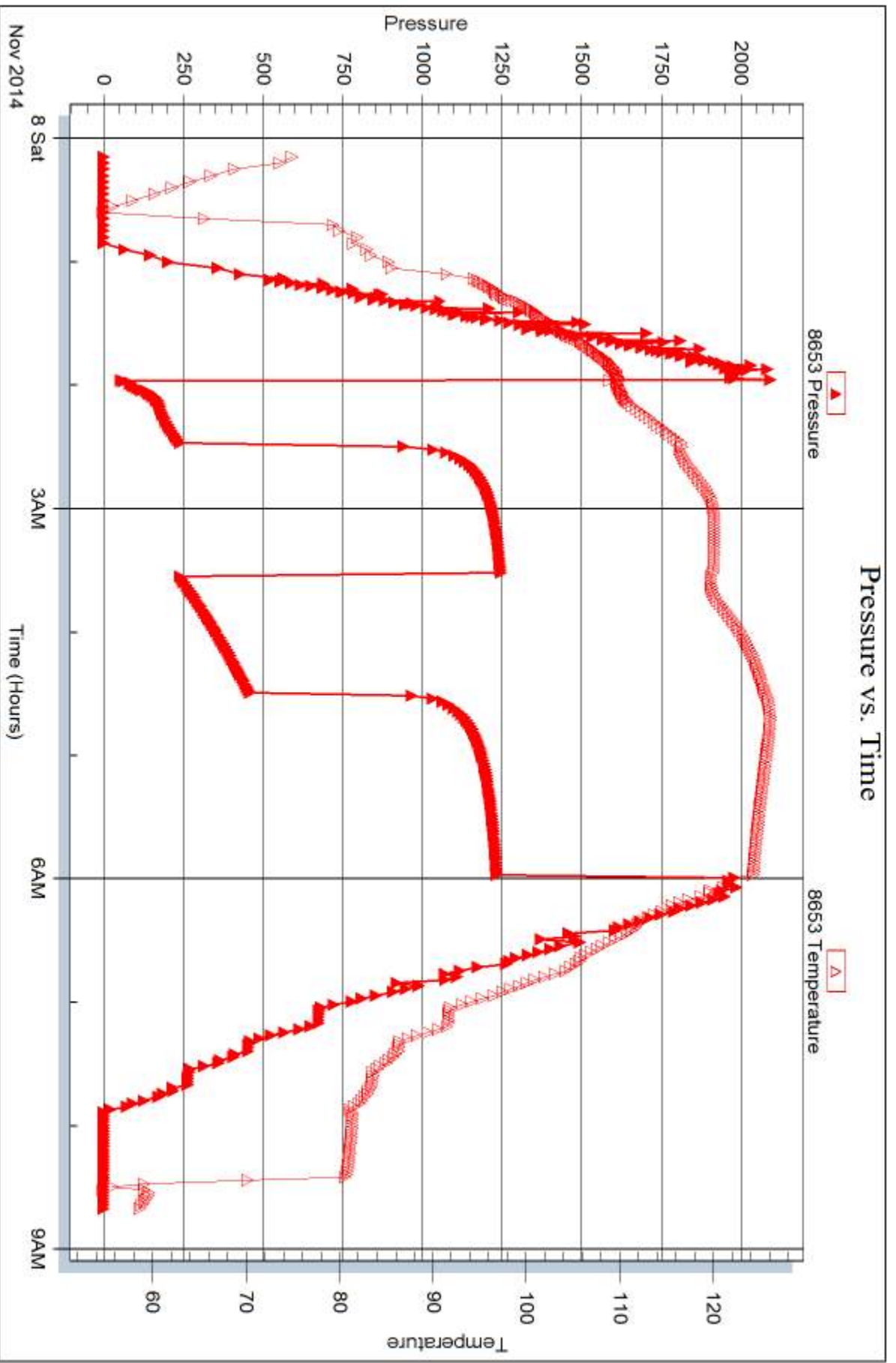


Serial #: 8653

Outside Murfin Drilling Co., Inc

Jacque #1-2

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 60205

Printed: 2014.11.12 @ 14:43:10



DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Jacque #1-2

2-4S-33W Rawlins, KS

Start Date: 2014.11.08 @ 17:04:00

End Date: 2014.11.09 @ 02:17:30

Job Ticket #: 60206 DST #: 3

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

Printed: 2014.11.12 @ 14:42:41



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60206

DST#: 3

Test Start: 2014.11.08 @ 17:04:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:34:30
 Time Test Ended: 02:17:30
 Interval: **4067.00 ft (KB) To 4120.00 ft (KB) (TVD)**
 Total Depth: 4120.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3077.00 ft (KB)
 3072.00 ft (CF)
 KB to GR/CF: 5.00 ft

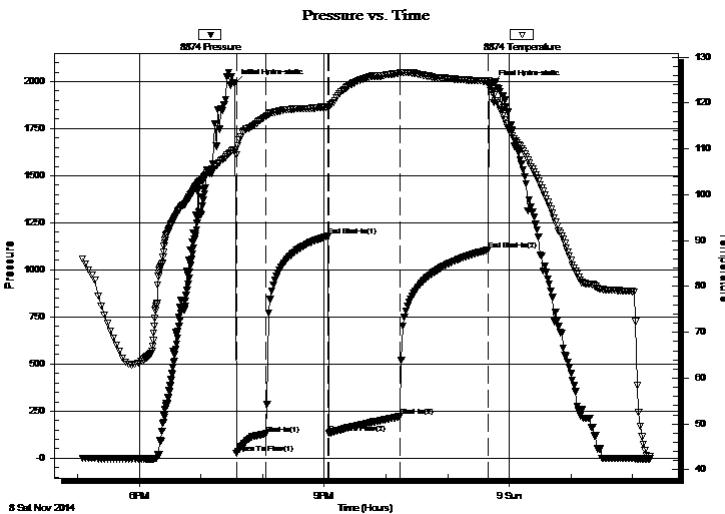
Serial #: 8874

Inside

Press@RunDepth: 220.86 psig @ 4068.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.08 End Date: 2014.11.09 Last Calib.: 2014.11.09
 Start Time: 17:05:00 End Time: 02:17:30 Time On Btm: 2014.11.08 @ 19:33:00
 Time Off Btm: 2014.11.08 @ 23:43:00

TEST COMMENT: 30 - IF- 3/4" Blow built to BoB in 27 min.
 60 - IS- No Return
 60 - FF- Surface Blow Built to BoB in 34 min.
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1989.07	109.82	Initial Hydro-static
2	26.58	108.72	Open To Flow (1)
30	129.29	117.00	Shut-In(1)
90	1178.24	119.07	End Shut-In(1)
92	132.16	118.93	Open To Flow (2)
161	220.86	126.49	Shut-In(2)
246	1104.99	124.75	End Shut-In(2)
250	1986.15	122.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud 100M	0.02
182.00	MW 10M 90W	0.90
126.00	MW 20M 80W	1.77
131.00	MW 50M 50W (Show of OS on top)	1.84

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60206
Test Start: 2014.11.08 @ 17:04:00

DST#: 3

Tool Information

Drill Pipe:	Length: 3863.00 ft	Diameter: 3.80 inches	Volume: 54.19 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 55.11 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	4067.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.00 ft			
Tool Length:	81.00 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			4040.00	
Shut In Tool	5.00			4045.00	
Hydraulic tool	5.00			4050.00	
Jars	5.00			4055.00	
Safety Joint	3.00			4058.00	
Packer	5.00			4063.00	28.00 Bottom Of Top Packer
Packer	4.00			4067.00	
Packer - Shale	0.00			4067.00	
Stubb	1.00			4068.00	
Recorder	0.00	8653	Outside	4068.00	
Recorder	0.00	8874	Inside	4068.00	
Perforations	13.00			4081.00	
Change Over Sub	1.00			4082.00	
Drill Pipe	32.00			4114.00	
Change Over Sub	1.00			4115.00	
Bullnose	5.00			4120.00	53.00 Bottom Packers & Anchor
Total Tool Length:	81.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60206 **DST#: 3**
Test Start: 2014.11.08 @ 17:04:00

Mud and Cushion Information

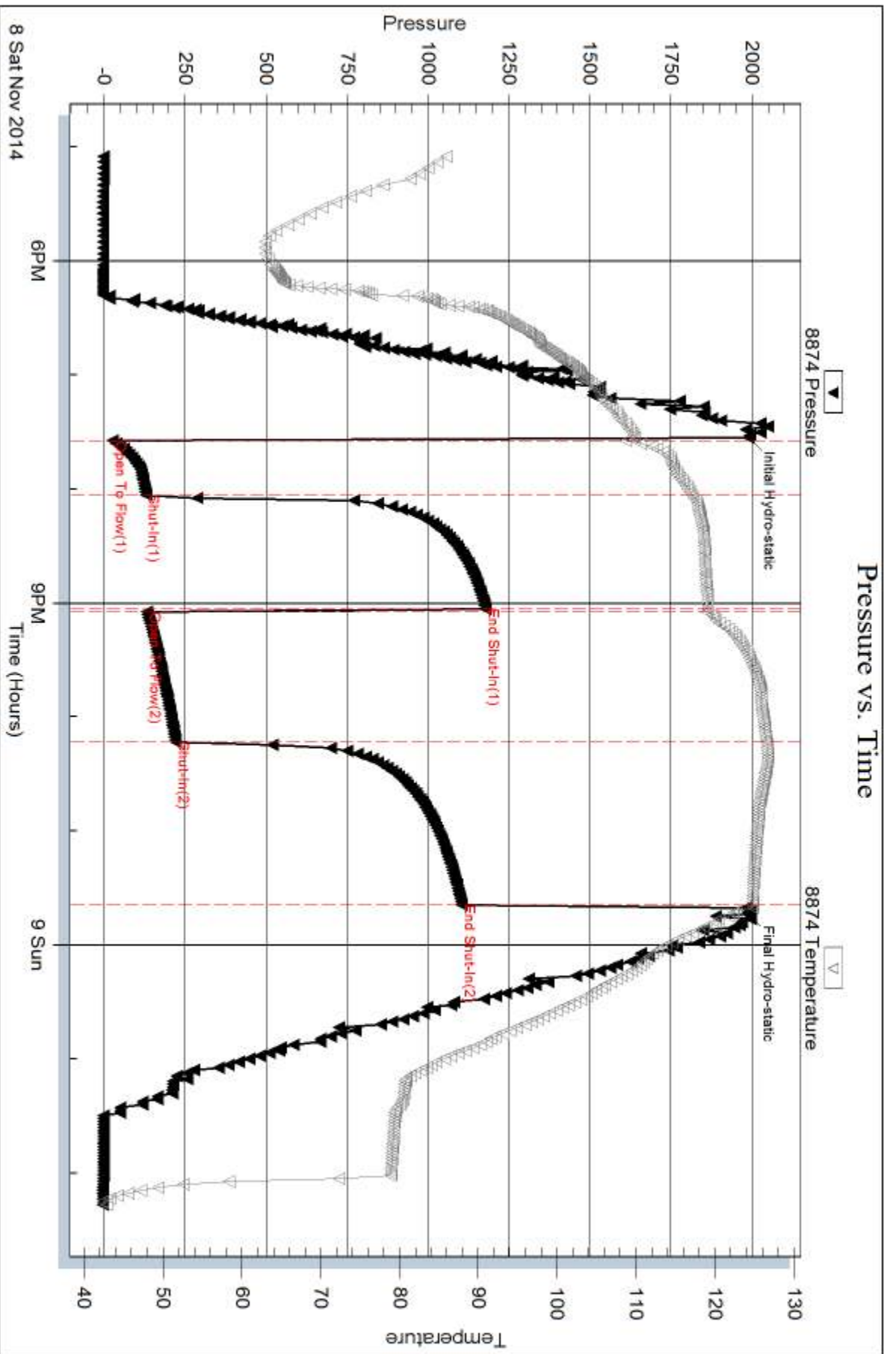
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2100.00 ppm			
Filter Cake: 2.00 inches			

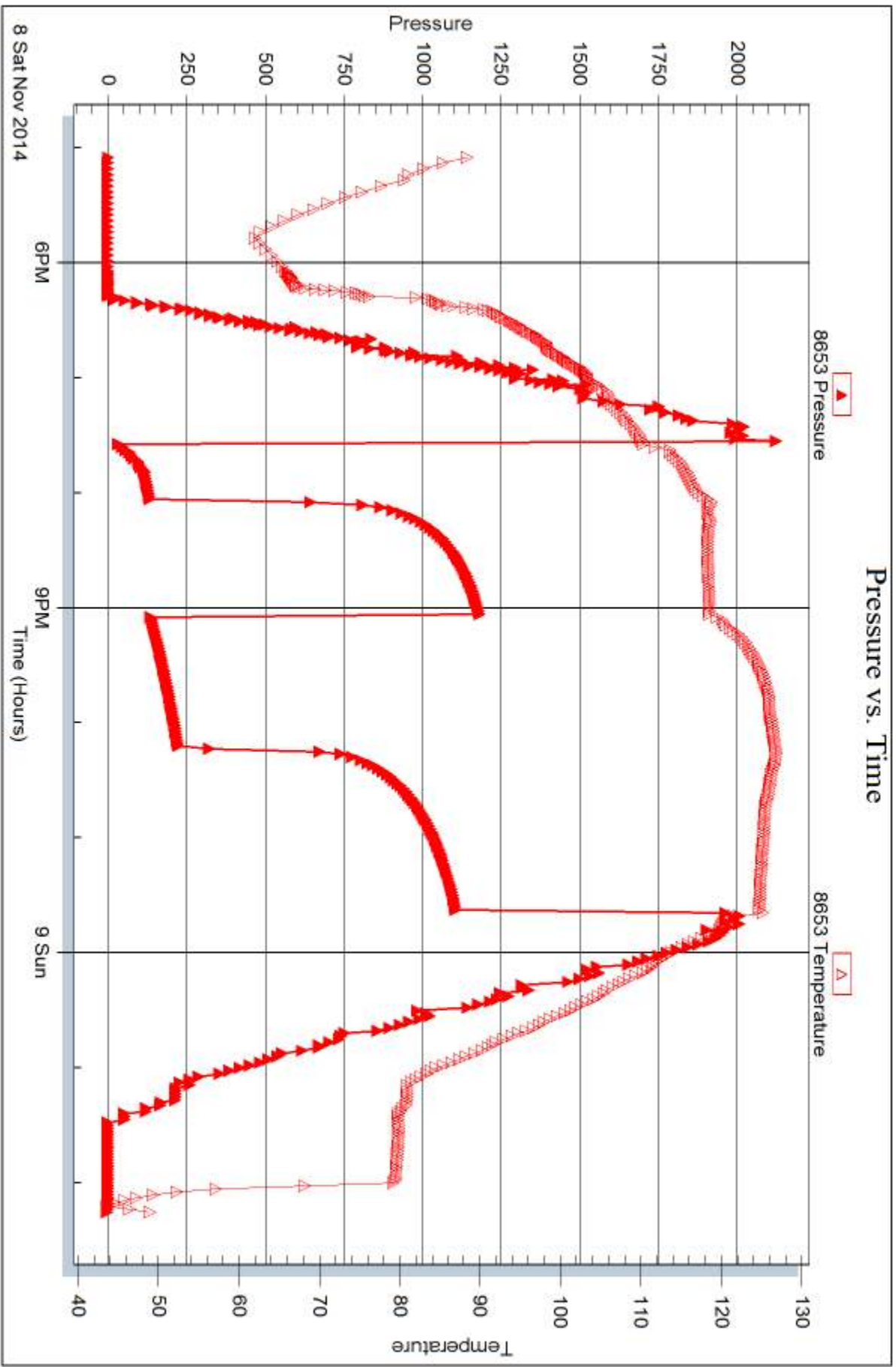
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud 100M	0.025
182.00	MW 10M 90W	0.895
126.00	MW 20M 80W	1.767
131.00	MW 50M 50W (Show of OS on top)	1.838

Total Length: 444.00 ft Total Volume: 4.525 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:







DRILL STEM TEST REPORT

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

250 N Water STE #300
Wichita, KS 67202

ATTN: Rocky Milford

Jacque #1-2

2-4S-33W Rawlins, KS

Start Date: 2014.11.09 @ 12:45:00

End Date: 2014.11.09 @ 21:28:30

Job Ticket #: 60207 DST #: 4

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

Printed: 2014.11.12 @ 14:41:59



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

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

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60207

DST#: 4

Test Start: 2014.11.09 @ 12:45:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 15:06:30
 Time Test Ended: 21:28:30
 Interval: **4115.00 ft (KB) To 4195.00 ft (KB) (TVD)**
 Total Depth: 4195.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Kevin Mack
 Unit No: 66
 Reference Elevations: 3077.00 ft (KB)
 3072.00 ft (CF)
 KB to GR/CF: 5.00 ft

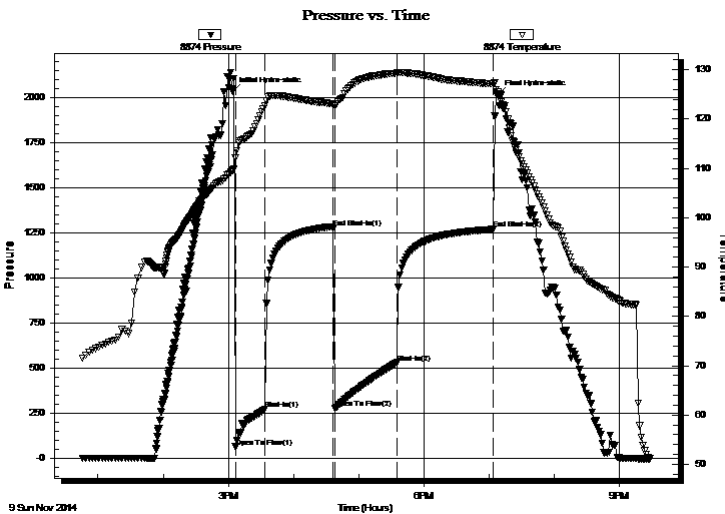
Serial #: 8874

Inside

Press@RunDepth: 530.70 psig @ 4116.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.09 End Date: 2014.11.09 Last Calib.: 2014.11.09
 Start Time: 12:46:00 End Time: 21:28:30 Time On Btm: 2014.11.09 @ 15:04:00
 Time Off Btm: 2014.11.09 @ 19:08:00

TEST COMMENT: 30 - IF- 1" Blow built to BoB in 7 min.
 60 - IS- Surface Return started at 5 min. Died at 20 min.
 60 - FF- Surface Blow Built to BoB in 10 min.
 90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2035.60	109.63	Initial Hydro-static
3	62.73	112.23	Open To Flow (1)
30	272.34	122.81	Shut-In(1)
93	1278.46	123.09	End Shut-In(1)
94	275.12	122.64	Open To Flow (2)
151	530.70	129.36	Shut-In(2)
240	1270.06	127.12	End Shut-In(2)
244	2015.19	125.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud (Heavy) 100M	0.05
431.00	MW 5M 95W	4.43
115.00	MW 20M 80W	1.61
252.00	MW 35M 65W	3.53
307.00	MW 50M 50W	4.31

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

2-4S-33W Rawlins, KS
Jacque #1-2
Job Ticket: 60207
Test Start: 2014.11.09 @ 12:45:00

DST#: 4

Tool Information

Drill Pipe:	Length: 3930.00 ft	Diameter: 3.80 inches	Volume: 55.13 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 66000.00 lb
			<u>Total Volume: 56.05 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4115.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	108.00 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			4088.00	
Shut In Tool	5.00			4093.00	
Hydraulic tool	5.00			4098.00	
Jars	5.00			4103.00	
Safety Joint	3.00			4106.00	
Packer	5.00			4111.00	28.00 Bottom Of Top Packer
Packer	4.00			4115.00	
Stubb	1.00			4116.00	
Recorder	0.00	8653	Outside	4116.00	
Recorder	0.00	8874	Inside	4116.00	
Perforations	8.00			4124.00	
Change Over Sub	1.00			4125.00	
Drill Pipe	64.00			4189.00	
Change Over Sub	1.00			4190.00	
Bullnose	5.00			4195.00	80.00 Bottom Packers & Anchor

Total Tool Length: 108.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

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

2-4S-33W Rawlins, KS

Jacque #1-2

Job Ticket: 60207

DST#: 4

Test Start: 2014.11.09 @ 12:45:00

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:	55000 ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

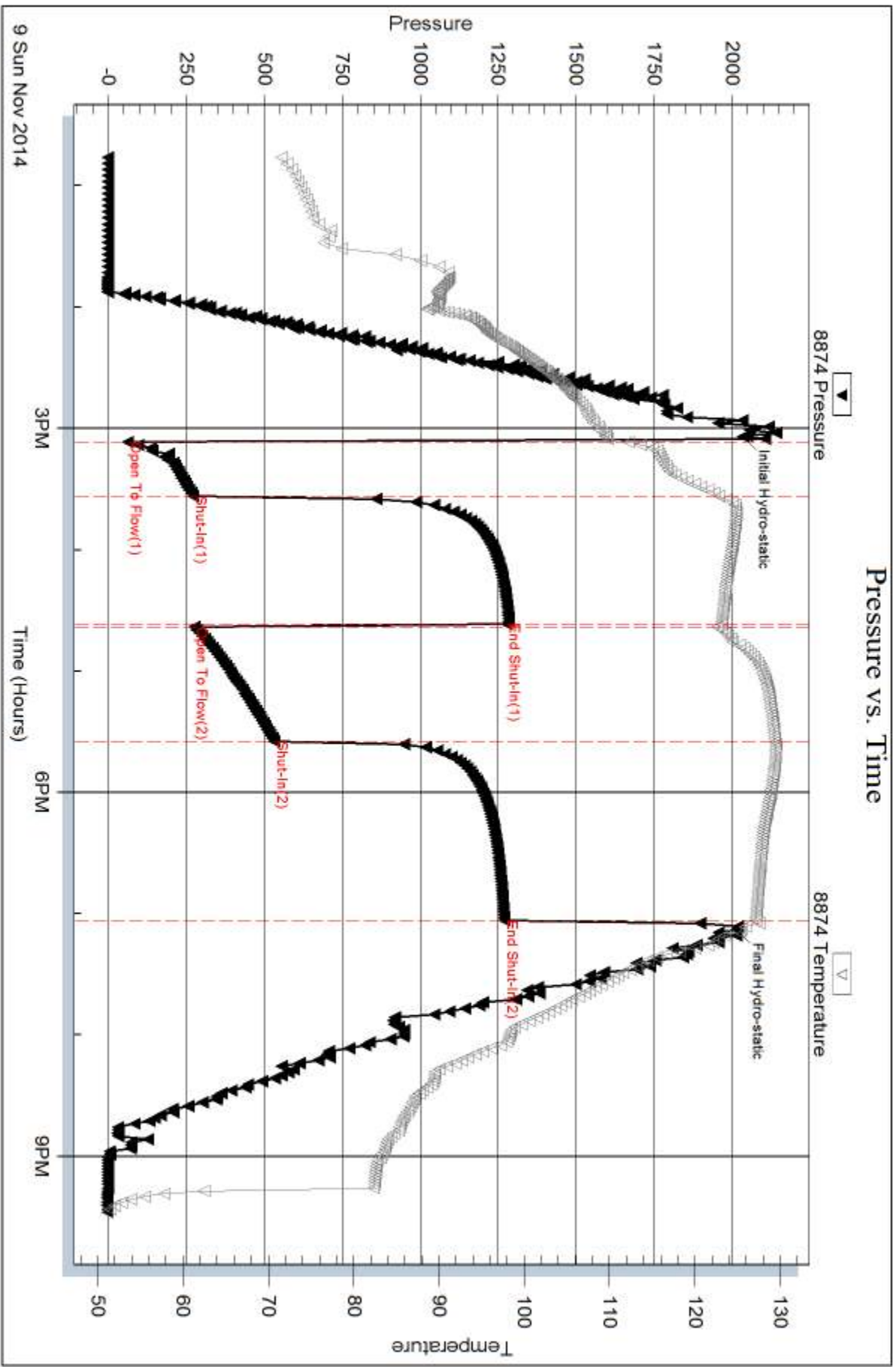
Length ft	Description	Volume bbl
10.00	Mud (Heavy) 100M	0.049
431.00	MW 5M 95W	4.433
115.00	MW 20M 80W	1.613
252.00	MW 35M 65W	3.535
307.00	MW 50M 50W	4.306

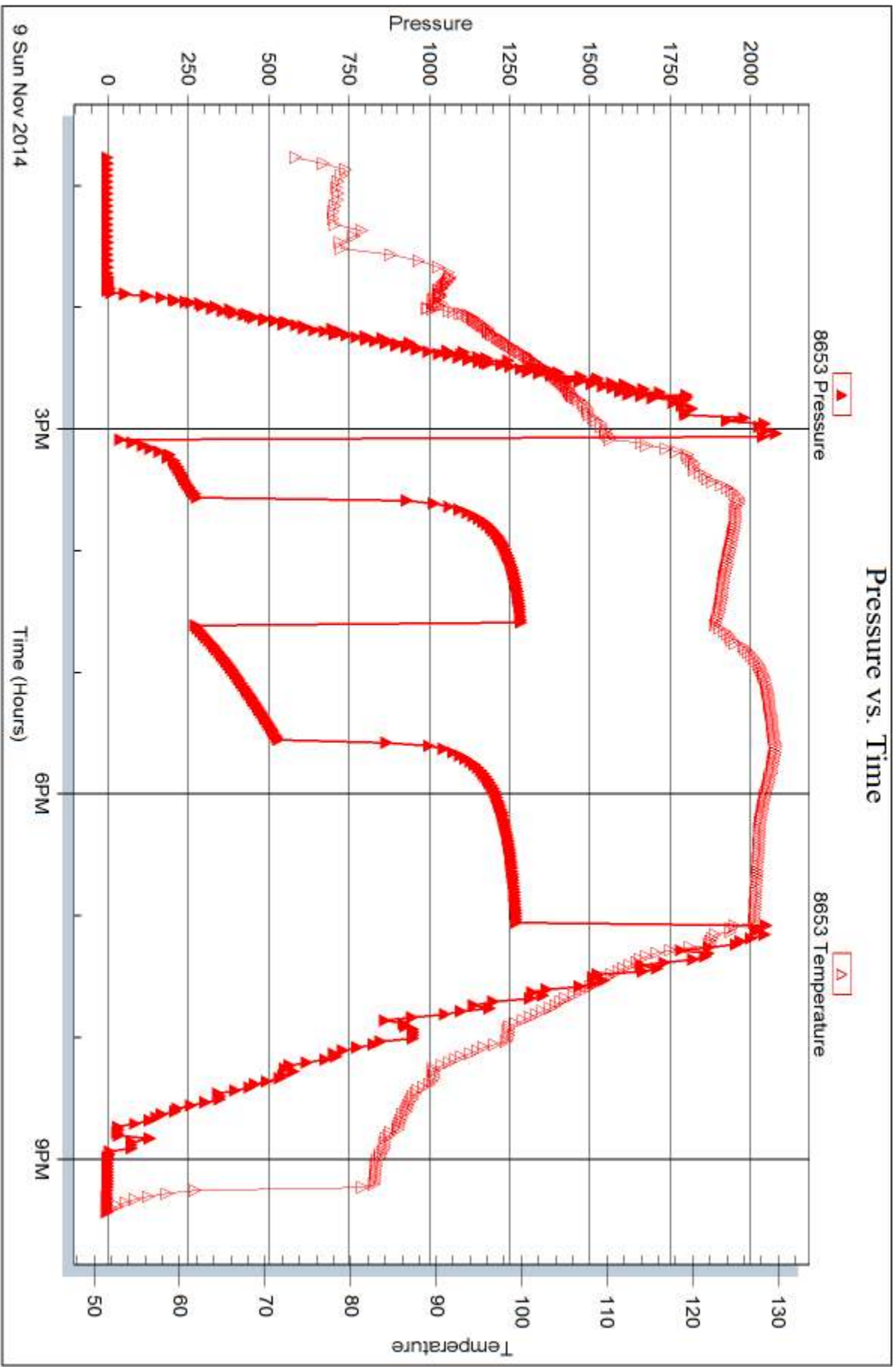
Total Length: 1115.00 ft Total Volume: 13.936 bbl

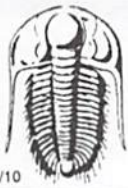
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RW .17 @ 56 deg = 55,000ppm







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60204

Well Name & No. Jacque #1-2 Test No. 1 Date 11-7-14
 Company Murphy Drilling Co., Inc Elevation 3077 KB 3072 GL
 Address 2500 N Wenter STE #3000 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murphy #7
 Location: Sec. 2 Twp. 4S Rge. 33 W Co. Rawlins State KS

Interval Tested 3880-3975 Zone Tested Oreud
 Anchor Length 95' Drill Pipe Run 3675 Mud Wt. 8.9
 Top Packer Depth 3876 Drill Collars Run 187 Vis 195
 Bottom Packer Depth 3880 Wt. Pipe Run 0 WL 6.4
 Total Depth 3975 Chlorides 1,800 ppm System LCM 3#
 Blow Description IE- BOB in 12 min
ISI- No Return
FF- BOB in 14 min.
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>251</u>	<u>MW</u>		<u>50</u>	<u>50</u>	
<u>189</u>	<u>MW</u>		<u>70</u>	<u>30</u>	
<u>126</u>	<u>MW</u>		<u>90</u>	<u>10</u>	
<u>182</u>	<u>MW</u>		<u>95</u>	<u>5</u>	
<u>5</u>	<u>mud (Heavy)</u>			<u>100</u>	

Rec Total 753 BHT 122 Gravity 1150 API RW .3 @ 52 ° F Chlorides 35,000 ppm
 (A) Initial Hydrostatic 1910 Test 1150 T-On Location 12:20 AM
 (B) First Initial Flow 37 Jars 250 T-Started 12:39 AM
 (C) First Final Flow 206 Safety Joint 75 T-Open 3:21 AM
 (D) Initial Shut-In 1207 Circ Sub _____ T-Pulled 7:21 AM
 (E) Second Initial Flow 200 Hourly Standby _____ T-Out 10:00 AM
 (F) Second Final Flow 376 Mileage 800 RT 124 Comments _____
 (G) Final Shut-In 1179 Sampler _____
 (H) Final Hydrostatic 1865 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1599

Approved By _____ Our Representative [Signature]
 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. 60205

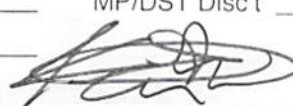
Well Name & No. Jacque #12 Test No. 2 Date 11-8-14
 Company Murrin Drilling Co., Inc. Elevation 3077 KB 3072 GL
 Address 2500 N Water STE #3008 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murrin #8
 Location: Sec. 2 Twp. 4S Rge. 33W Co. Rawlins State KS

Interval Tested 3969-4073 Zone Tested LKC "A-D"
 Anchor Length 104' Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth 3965 Drill Collars Run 187' Vis 61
 Bottom Packer Depth 3964 Wt. Pipe Run 0 WL 7.2
 Total Depth 4073 Chlorides 1,000 ppm System LCM 2#
 Blow Description IF - BoB in 9 min.
ISI - No Return
PF - BoB in
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>219</u>	<u>LN (shown of OS on top)</u>		<u>40</u>	<u>60</u>	
<u>126</u>	<u>MW</u>		<u>60</u>	<u>40</u>	
<u>189</u>	<u>MW</u>		<u>90</u>	<u>10</u>	
<u>434</u>	<u>MW</u>		<u>95</u>	<u>5</u>	
<u>5</u>	<u>Mud (heavy)</u>			<u>100</u>	

Rec Total 973 BHT 124 Gravity — API RW 21 @ 41 °F Chlorides 68,000 ppm
 (A) Initial Hydrostatic 2017 Test 1250 T-On Location 12:05 AM
 (B) First Initial Flow 58 Jars 250 T-Started 12:08 AM
 (C) First Final Flow 233 Safety Joint 75 T-Open 2:00 AM
 (D) Initial Shut-In 1243 Circ Sub _____ T-Pulled 6:00 AM
 (E) Second Initial Flow 235 Hourly Standby _____ T-Out 8:43 AM
 (F) Second Final Flow 452 Mileage 80 RT 124 Comments _____
 (G) Final Shut-In 1231 Sampler _____
 (H) Final Hydrostatic 1957 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 300 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1949
 Final Flow 60 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 90 Sub Total 1949

Approved By _____

Our Representative 



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60206

Well Name & No. Jacque #1-2 Test No. 3 Date 11-8-14
 Company Murfin Drilling Co., Inc Elevation 3077 KB 3072 GL
 Address 250 N Water STE # 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #07
 Location: Sec. 2 Twp. 4S Rge. 33W Co. Rawlins State KS

Interval Tested 4067-4120 Zone Tested LKC "F-6"
 Anchor Length 53' Drill Pipe Run 3863' Mud Wt. 9.4
 Top Packer Depth 4063 Drill Collars Run 187' Vis 51
 Bottom Packer Depth 4067 Wt. Pipe Run 0 WL 7.2
 Total Depth 4120 Chlorides 21000 ppm System LCM 2#

Blow Description IF - 3/4" Blow built to BOB in 27 min.
ISI - NO Return
FF - Surface Blow Built to BOB in 34 min.
PSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud (heavy)</u>			<u>100</u>	
<u>182</u>	<u>MW</u>		<u>90</u>	<u>10</u>	
<u>126</u>	<u>MW</u>		<u>80</u>	<u>20</u>	
<u>131</u>	<u>MW (show of CS on top)</u>	<u>SPOTS</u>	<u>50</u>	<u>50</u>	

Rec Total 444' BHT 125 Gravity — API RW .21 @ 48 °F Chlorides 52,000 ppm
 (A) Initial Hydrostatic 1989 Test 1250 T-On Location 4:30 PM
 (B) First Initial Flow 26 Jars 250 T-Started 5:04 PM
 (C) First Final Flow 129 Safety Joint 75 T-Open 7:35 PM
 (D) Initial Shut-In 1178 Circ Sub _____ T-Pulled 11:35 PM
 (E) Second Initial Flow 132 Hourly Standby _____ T-Out 2:17 AM
 (F) Second Final Flow 220 Mileage 80RT 124 Comments _____
 (G) Final Shut-In 1104 Sampler _____
 (H) Final Hydrostatic 1986 Straddle _____ Ruined Shale Packer _____
 Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 1949
 Total 1949
 MP/DST Disc't _____

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60207

Well Name & No. Jacque #1-2 Test No. 4 Date _____
 Company Murphy Drilling Co., Inc. Elevation 3077 KB 3072 GL _____
 Address 2500 N Water STE#300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murphy #7
 Location: Sec. 2 Twp. 4S Rge. 33W Co. Rawlins State KS

Interval Tested 4115 - 4195 Zone Tested LKC "H-3"
 Anchor Length 80' Drill Pipe Run 3930' Mud Wt. 9.2
 Top Packer Depth 4111 Drill Collars Run 187' Vis 48
 Bottom Packer Depth 4115 Wt. Pipe Run Ø WL 7.2
 Total Depth 4195 Chlorides 3,000 ppm System LCM 3#
 Blow Description IF-1" Blow built to BoB in 7 min.
ISI-Surface Return Started at 5 min. Dird at 20 min.
FF-Surface Blow built to BoB in 10 min.
FSI-No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>307</u>	<u>MW</u>		<u>50</u>	<u>50</u>	
<u>252</u>	<u>MW</u>		<u>65</u>	<u>35</u>	
<u>115</u>	<u>MW</u>		<u>80</u>	<u>20</u>	
<u>431</u>	<u>MW</u>		<u>95</u>	<u>5</u>	
<u>10</u>	<u>Mud (heavy)</u>			<u>100</u>	

Rec Total 1115' BHT 127° Gravity - API RW .17 @ 56 °F Chlorides 55,000 ppm

(A) Initial Hydrostatic <u>2035</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>11:50 AM</u>
(B) First Initial Flow <u>62</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:45 PM</u>
(C) First Final Flow <u>272</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>3:05 PM</u>
(D) Initial Shut-In <u>1278</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>7:05 PM</u>
(E) Second Initial Flow <u>275</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:30 PM</u>
(F) Second Final Flow <u>530</u>	<input checked="" type="checkbox"/> Mileage <u>80 RT</u> <u>124</u>	Comments _____
(G) Final Shut-In <u>1270</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2015</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</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>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1699</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1699</u>	

Approved By _____ Our Representative

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