



DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita KS 67202

ATTN: Brad Rine

Patricia #2-16

16-01s-37w Cheyenne,KS

Start Date: 2014.01.21 @ 05:06:00

End Date: 2014.01.21 @ 12:46:15

Job Ticket #: 55160 DST #: 1

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

Printed: 2014.01.27 @ 16:39:13



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Suite 300
Wichita KS 67202
ATTN: Brad Rine

16-01s-37w Cheyenne,KS

Patricia #2-16

Job Ticket: 55160

DST#: 1

Test Start: 2014.01.21 @ 05:06:00

GENERAL INFORMATION:

Formation: **Foraker**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:53:15

Time Test Ended: 12:46:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #44

Interval: 3741.00 ft (KB) To 3800.00 ft (KB) (TVD)

Reference Elevations: 3264.00 ft (KB)

Total Depth: 3800.00 ft (KB) (TVD)

3251.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8879

Inside

Press@RunDepth: 14.17 psig @ 3742.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.01.21

End Date:

2014.01.21

Last Calib.:

2014.01.21

Start Time: 05:06:05

End Time:

12:46:14

Time On Btm:

2014.01.21 @ 07:53:00

Time Off Btm:

2014.01.21 @ 10:55:15

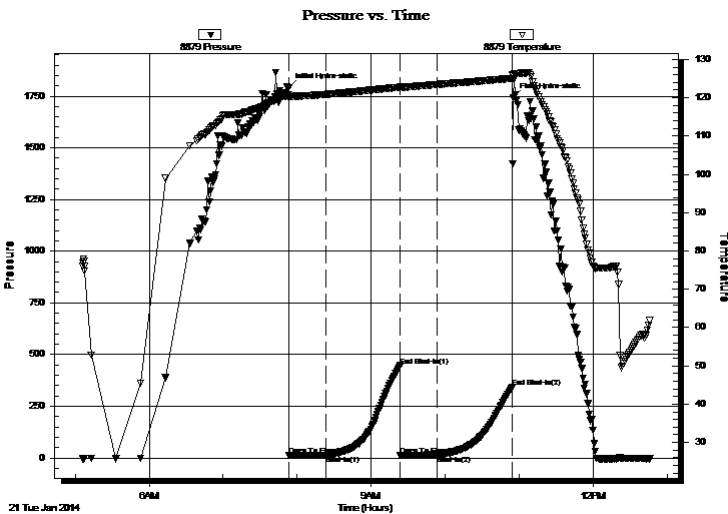
TEST COMMENT: 30 - IF - Surface blow built to 1/4"

60 - ISI - No Return

30 - FF - No surface blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1792.67	120.67	Initial Hydro-static
1	11.71	120.07	Open To Flow (1)
31	12.33	120.88	Shut-In(1)
91	445.74	122.76	End Shut-In(1)
91	12.92	122.52	Open To Flow (2)
121	14.17	123.45	Shut-In(2)
182	342.41	125.03	End Shut-In(2)
183	1741.66	125.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
6.00	OCM - 70M - 30o	0.08

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne, KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55160

DST#: 1

ATTN: Brad Rine

Test Start: 2014.01.21 @ 05:06:00

Tool Information

Drill Pipe:	Length: 3735.00 ft	Diameter: 3.80 inches	Volume: 52.39 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 52.39 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3741.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	59.00 ft			
Tool Length:	86.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			3719.00	
Hydraulic tool	5.00			3724.00	
Jars	5.00			3729.00	
Safety Joint	3.00			3732.00	
Packer	4.00			3736.00	27.00 Bottom Of Top Packer
Packer	5.00			3741.00	
Stubb	1.00			3742.00	
Recorder	0.00	6669	Inside	3742.00	
Recorder	0.00	8879	Inside	3742.00	
Perforations	22.00			3764.00	
Change Over Sub	1.00			3765.00	
Drill Pipe	31.00			3796.00	
Change Over Sub	1.00			3797.00	
Bullnose	3.00			3800.00	59.00 Bottom Packers & Anchor

Total Tool Length: 86.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55160

DST#: 1

ATTN: Brad Rine

Test Start: 2014.01.21 @ 05:06:00

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: 140.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
6.00	OCM - 70M - 30o	0.084

Total Length: 6.00 ft Total Volume: 0.084 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

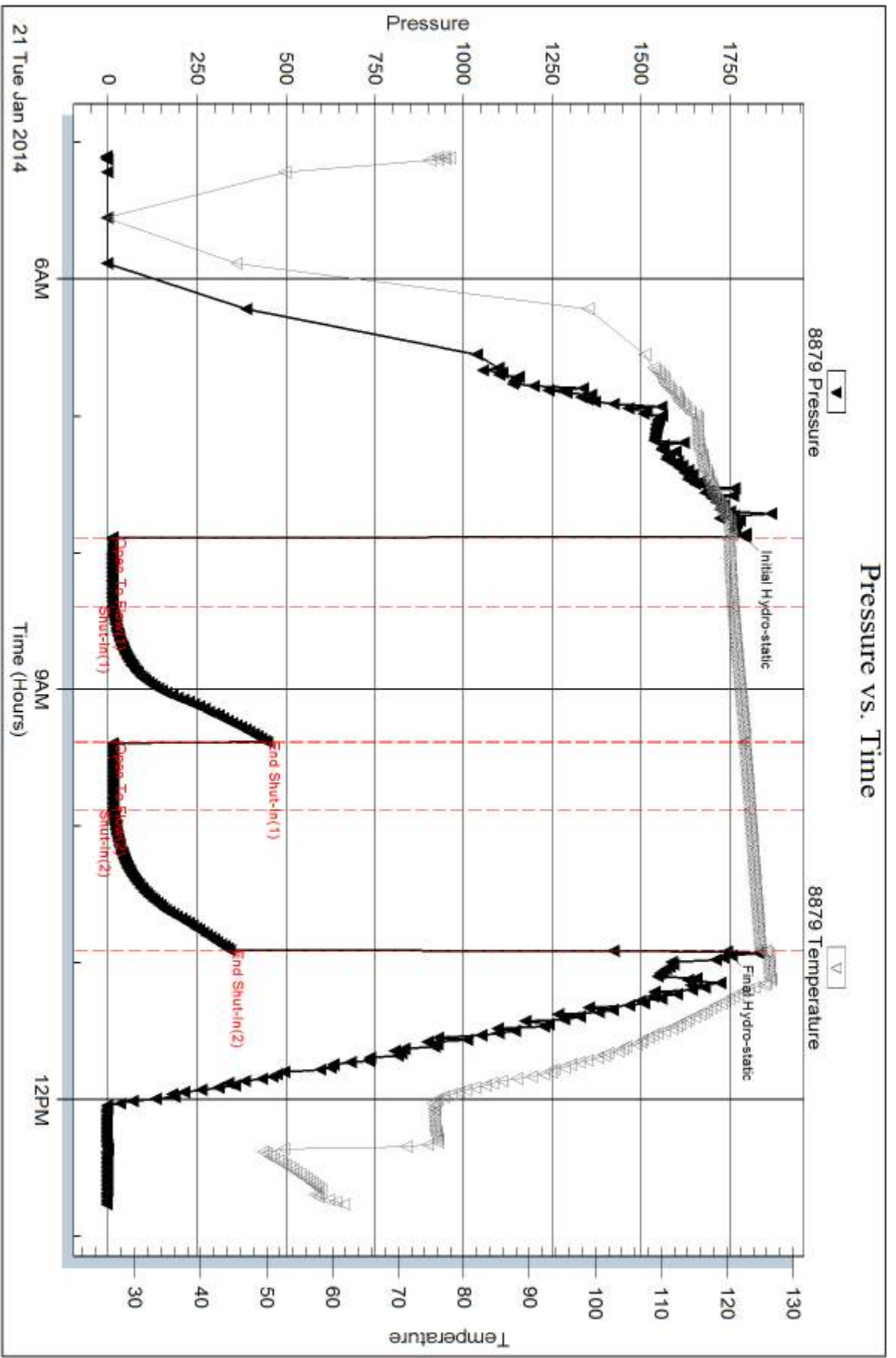
Serial #: 8879

Inside

Murfin Drilling Co., Inc.

Patricia #2-16

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 55160

Printed: 2014.01.27 @ 16:39:15

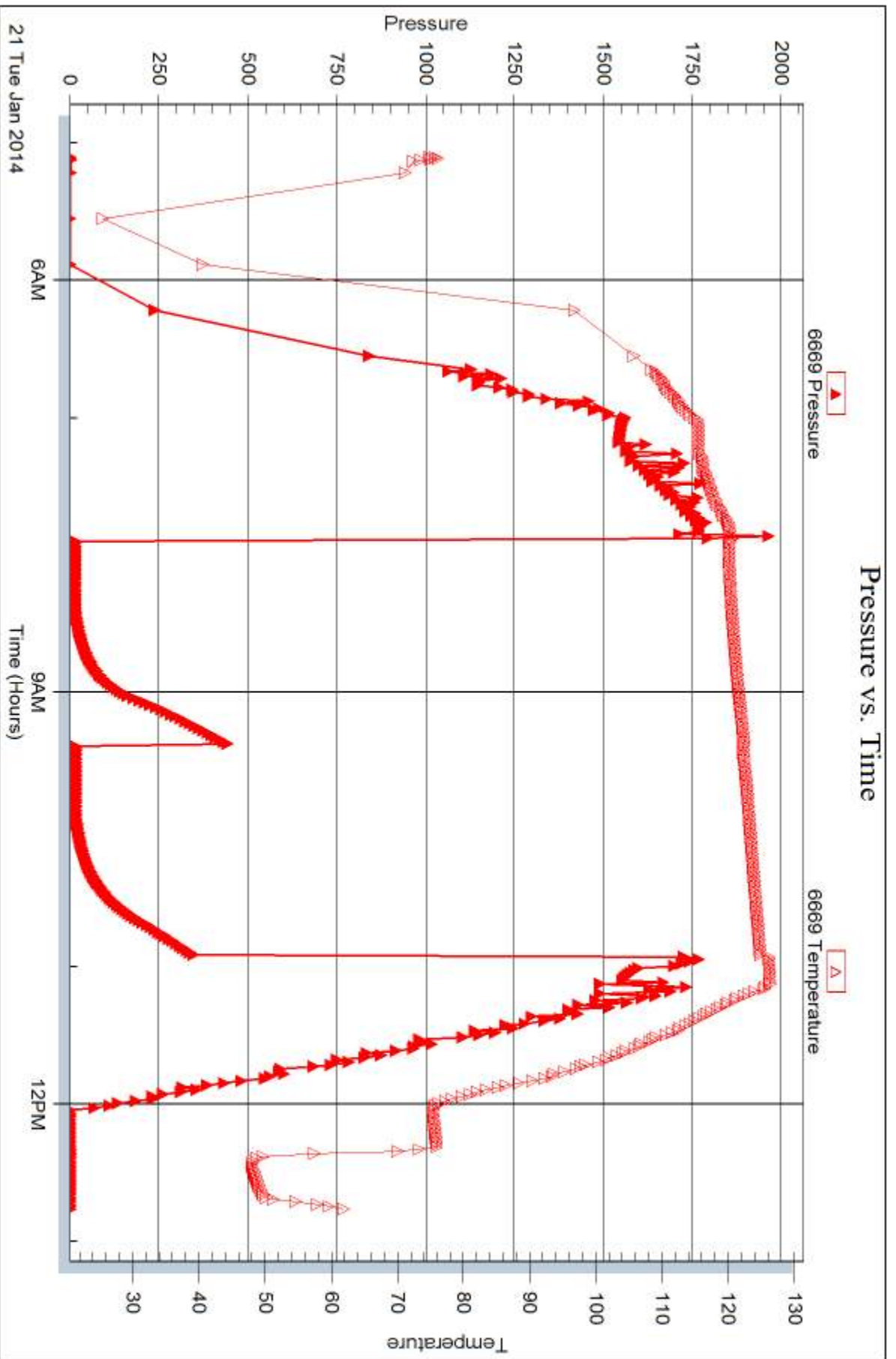
Serial #: 6669

Inside

Murfin Drilling Co., Inc.

Patricia #2-16

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 55160

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DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita KS 67202

ATTN: Brad Rine

Patricia #2-16

16-01s-37w Cheyenne,KS

Start Date: 2014.01.22 @ 20:20:00

End Date: 2014.01.23 @ 05:16:30

Job Ticket #: 55161 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.01.27 @ 16:27:48



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Suite 300
Wichita KS 67202
ATTN: Brad Rine

16-01s-37w Cheyenne,KS

Patricia #2-16

Job Ticket: 55161

DST#: 2

Test Start: 2014.01.22 @ 20:20:00

GENERAL INFORMATION:

Formation: **LKC A-D**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 23:49:45 Tester: Royal Fisher
 Time Test Ended: 05:16:30 Unit No: #44
 Interval: **4173.00 ft (KB) To 4300.00 ft (KB) (TVD)** Reference Elevations: 3264.00 ft (KB)
 Total Depth: 4300.00 ft (KB) (TVD) 3251.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 13.00 ft

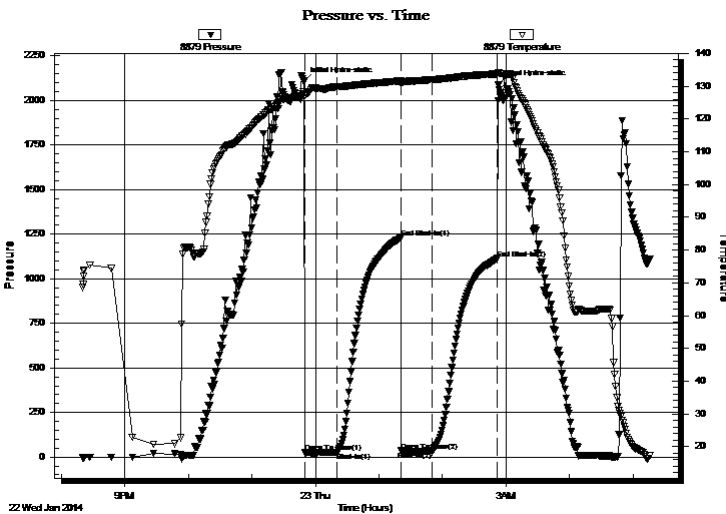
Serial #: 8879

Inside

Press@RunDepth: 34.27 psig @ 4174.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.01.22 End Date: 2014.01.23 Last Calib.: 2014.01.23
 Start Time: 20:20:05 End Time: 05:16:30 Time On Btm: 2014.01.22 @ 23:49:15
 Time Off Btm: 2014.01.23 @ 02:53:00

TEST COMMENT: 30 - IF - Surface blow built to 1/2" then died to a weak surface blow
 60 - ISI - No Return
 30 - FF - Had a weak surface blow
 60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2104.09	128.16	Initial Hydro-static
1	23.66	127.26	Open To Flow (1)
32	27.33	129.90	Shut-In(1)
92	1229.31	131.59	End Shut-In(1)
92	34.51	130.89	Open To Flow (2)
121	34.27	131.93	Shut-In(2)
183	1113.58	133.74	End Shut-In(2)
184	2087.13	134.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OCM - 65M - 35o	0.14

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne, KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55161

DST#: 2

ATTN: Brad Rine

Test Start: 2014.01.22 @ 20:20:00

Tool Information

Drill Pipe:	Length: 4152.00 ft	Diameter: 3.80 inches	Volume: 58.24 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 58.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4173.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	127.00 ft			
Tool Length:	154.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4151.00	
Hydraulic tool	5.00			4156.00	
Jars	5.00			4161.00	
Safety Joint	3.00			4164.00	
Packer	4.00			4168.00	27.00 Bottom Of Top Packer
Packer	5.00			4173.00	
Stubb	1.00			4174.00	
Recorder	0.00	6669	Inside	4174.00	
Recorder	0.00	8879	Inside	4174.00	
Perforations	28.00			4202.00	
Change Over Sub	1.00			4203.00	
Drill Pipe	93.00			4296.00	
Change Over Sub	1.00			4297.00	
Bullnose	3.00			4300.00	127.00 Bottom Packers & Anchor

Total Tool Length: 154.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55161

DST#: 2

ATTN: Brad Rine

Test Start: 2014.01.22 @ 20:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 55.00 sec/qt

Water Loss: 5.98 in³

Resistivity: 0.00 ohm.m

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM - 65M - 35o	0.140

Total Length: 10.00 ft Total Volume: 0.140 bbl

Num Fluid Samples: 0

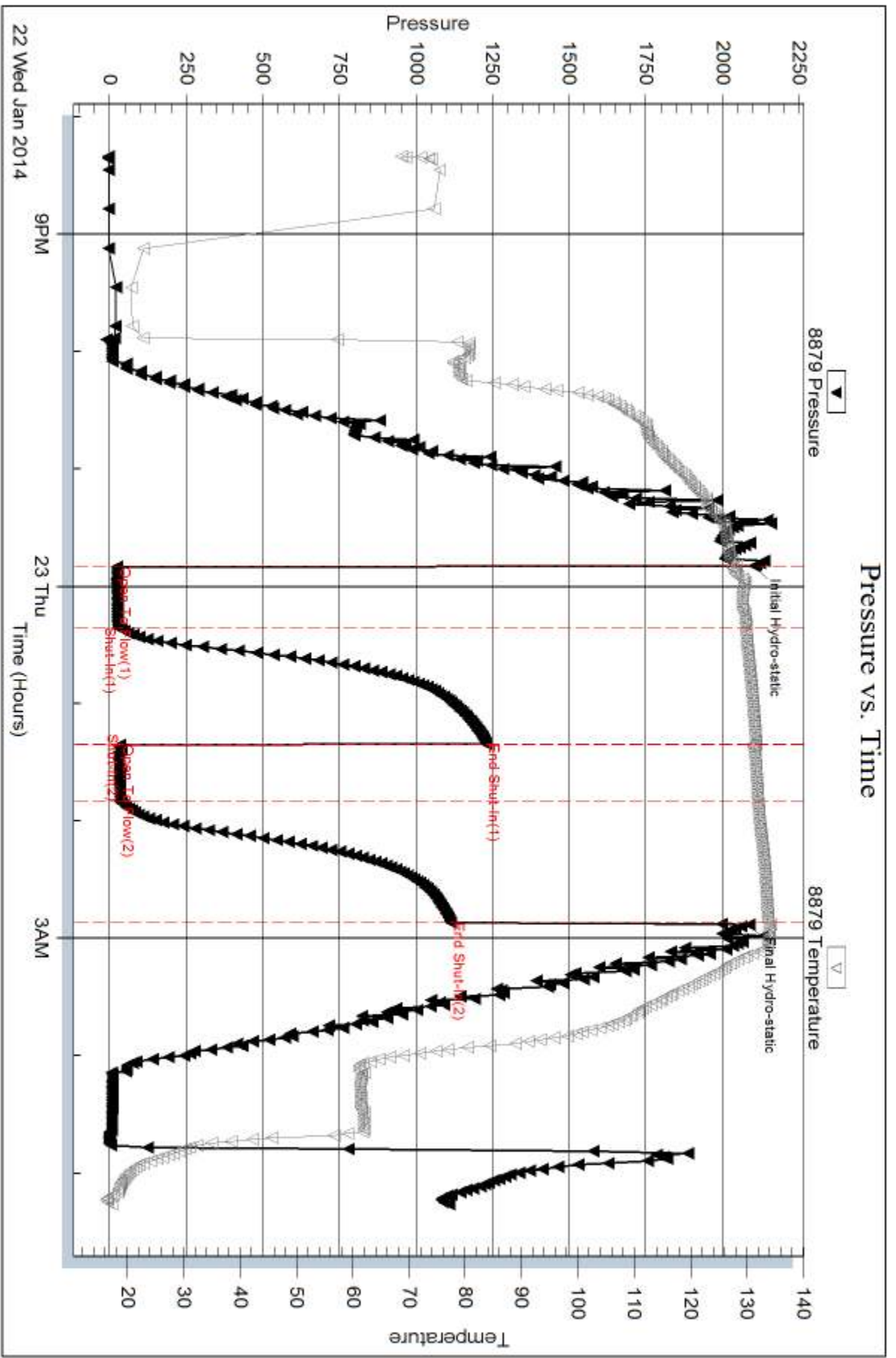
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



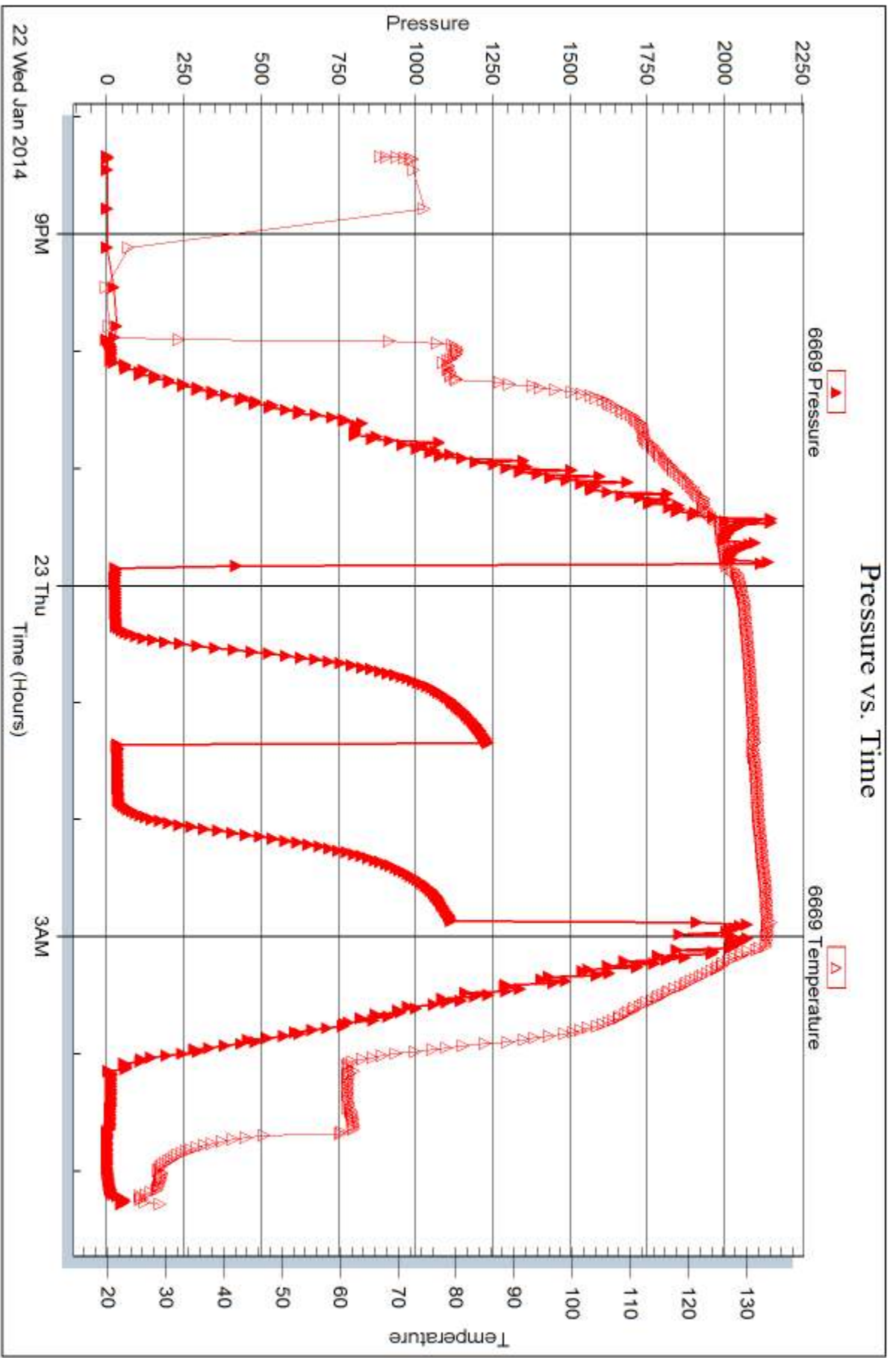
Serial #: 6669

Inside

Murfin Drilling Co., Inc.

Patricia #2-16

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 55161

Printed: 2014.01.27 @ 16:27:51



DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita KS 67202

ATTN: Brad Rine

Patricia #2-16

16-01s-37w Cheyenne,KS

Start Date: 2014.01.23 @ 20:43:00

End Date: 2014.01.24 @ 06:04:30

Job Ticket #: 55162 DST #: 3

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

Printed: 2014.01.27 @ 16:27:20

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

Patricia #2-16

DST # 3

LKC - G-J

2014.01.23



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne, KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55162

DST#: 3

ATTN: Brad Rine

Test Start: 2014.01.23 @ 20:43:00

GENERAL INFORMATION:

Formation: **LKC - G-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:13:00

Time Test Ended: 06:04:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #44

Interval: 4291.00 ft (KB) To 4450.00 ft (KB) (TVD)

Reference Elevations: 3264.00 ft (KB)

Total Depth: 4450.00 ft (KB) (TVD)

3251.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 13.00 ft

Serial #: 8879

Inside

Press@RunDepth: 26.05 psig @ 4292.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.01.23

End Date:

2014.01.24

Last Calib.:

2014.01.24

Start Time: 20:43:05

End Time:

06:04:30

Time On Btm:

2014.01.24 @ 00:12:45

Time Off Btm:

2014.01.24 @ 03:15:30

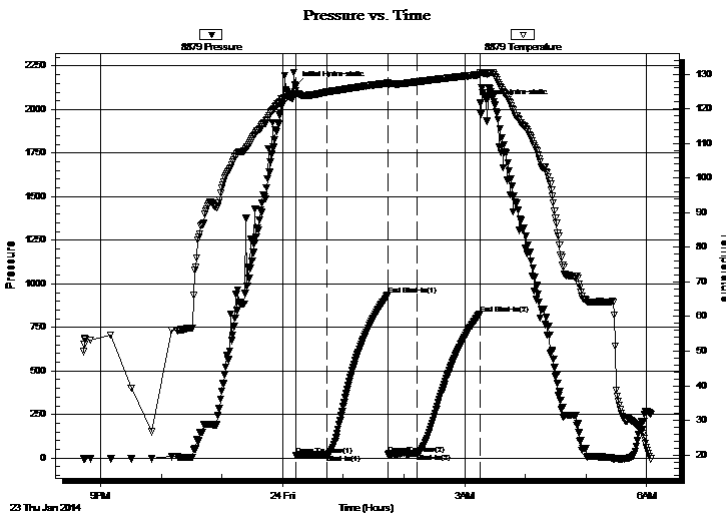
TEST COMMENT: 30 - IF - Surface blow built to 1"

60 - ISI - No Return

30 - FF - Had a weak surface blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2135.82	125.15	Initial Hydro-static
1	17.17	124.35	Open To Flow (1)
31	22.09	124.84	Shut-In(1)
91	934.76	127.39	End Shut-In(1)
92	23.73	126.84	Open To Flow (2)
120	26.05	127.79	Shut-In(2)
182	826.70	129.85	End Shut-In(2)
183	2036.38	130.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	OSM - 100M - oil spots	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne, KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55162

DST#: 3

ATTN: Brad Rine

Test Start: 2014.01.23 @ 20:43:00

Tool Information

Drill Pipe:	Length: 4275.00 ft	Diameter: 3.80 inches	Volume: 59.97 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 59.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	4291.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	159.00 ft			
Tool Length:	186.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4269.00	
Hydraulic tool	5.00			4274.00	
Jars	5.00			4279.00	
Safety Joint	3.00			4282.00	
Packer	4.00			4286.00	27.00 Bottom Of Top Packer
Packer	5.00			4291.00	
Stubb	1.00			4292.00	
Recorder	0.00	6669	Inside	4292.00	
Recorder	0.00	8879	Inside	4292.00	
Perforations	28.00			4320.00	
Change Over Sub	1.00			4321.00	
Drill Pipe	125.00			4446.00	
Change Over Sub	1.00			4447.00	
Bullnose	3.00			4450.00	159.00 Bottom Packers & Anchor

Total Tool Length: 186.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55162

DST#: 3

ATTN: Brad Rine

Test Start: 2014.01.23 @ 20:43:00

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: 66.00 sec/qt

Cushion Volume:

bbl

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	OSM - 100M - oil spots	0.421

Total Length: 30.00 ft Total Volume: 0.421 bbl

Num Fluid Samples: 0

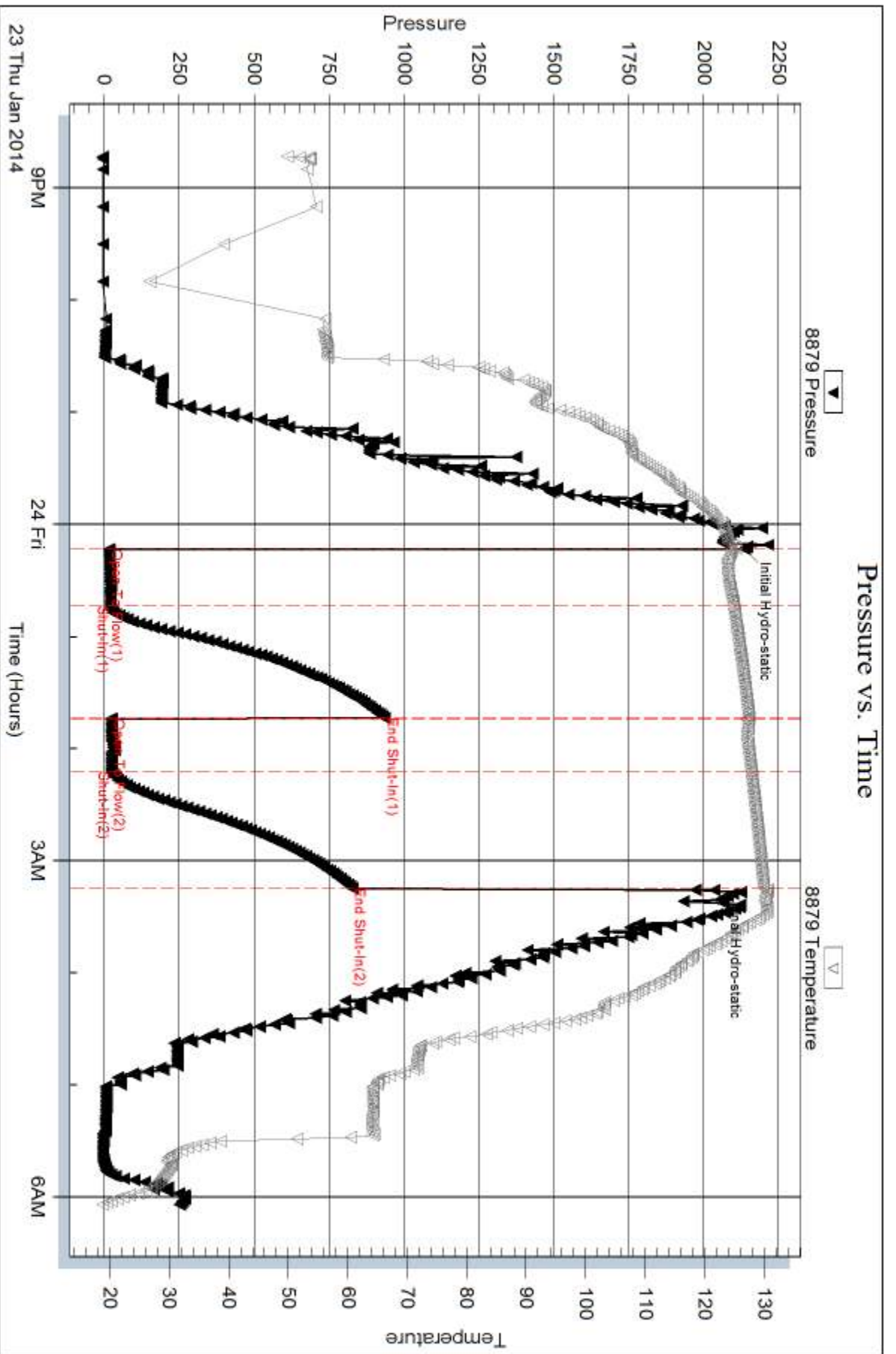
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



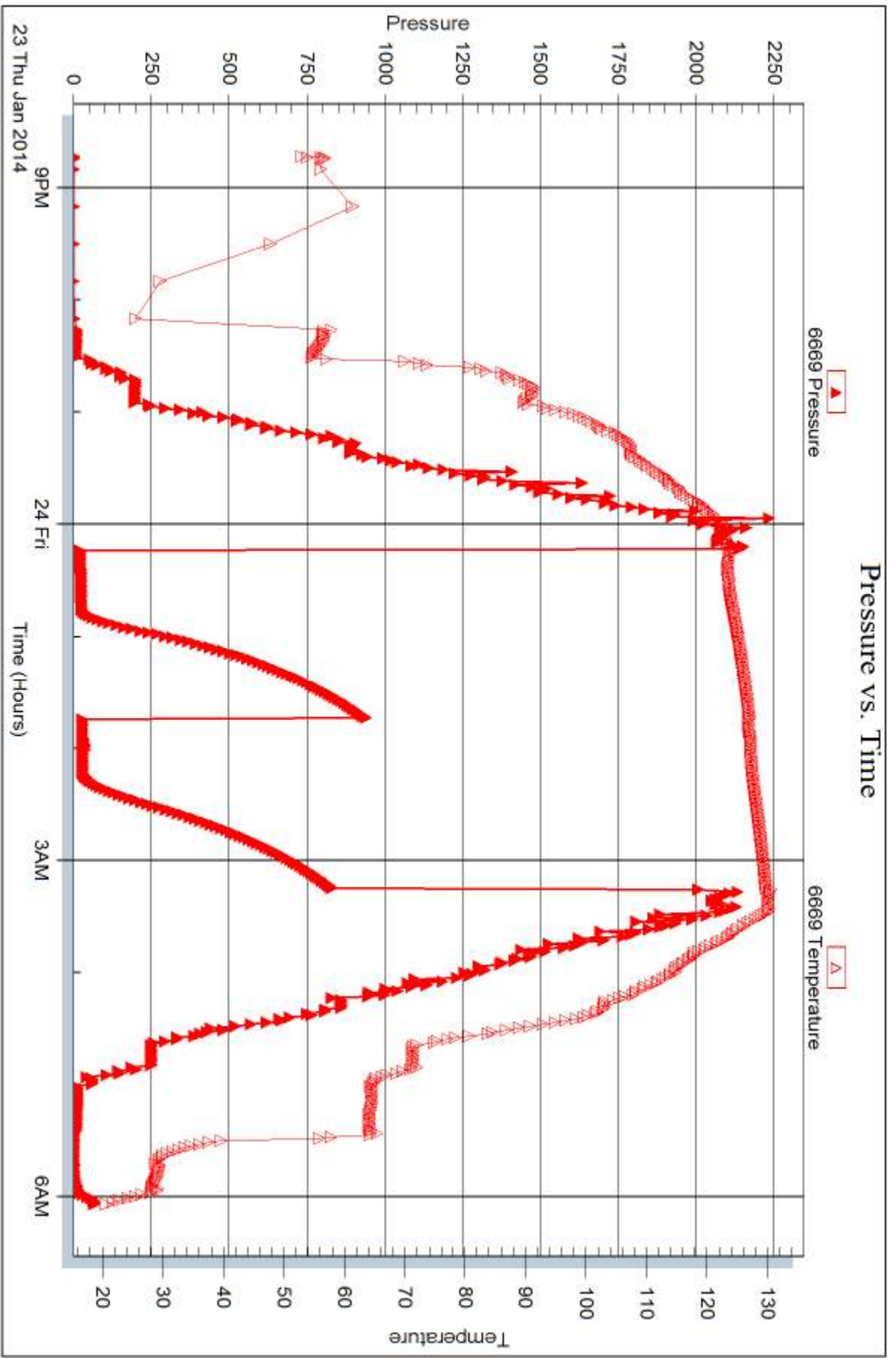
Serial #: 6669

Inside

Murfin Drilling Co., Inc.

Patricia #2-16

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 55162

Printed: 2014.01.27 @ 16:27:23



DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita KS 67202

ATTN: Brad Rine

Patricia #2-16

16-01s-37w Cheyenne,KS

Start Date: 2014.01.24 @ 23:34:00

End Date: 2014.01.25 @ 20:42:30

Job Ticket #: 55163 DST #: 4

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

Printed: 2014.01.27 @ 16:19:45



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Suite 300
 Wichita KS 67202
 ATTN: Brad Rine

16-01s-37w Cheyenne, KS

Patricia #2-16

Job Ticket: 55163

DST#: 4

Test Start: 2014.01.24 @ 23:34:00

GENERAL INFORMATION:

Formation: **Pawnee**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 01:56:00
 Tester: Royal Fisher/ Bob Ha
 Time Test Ended: 20:42:30
 Unit No: #44
 Interval: **4599.00 ft (KB) To 4645.00 ft (KB) (TVD)**
 Reference Elevations: 3264.00 ft (KB)
 Total Depth: 4645.00 ft (KB) (TVD)
 3251.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 13.00 ft

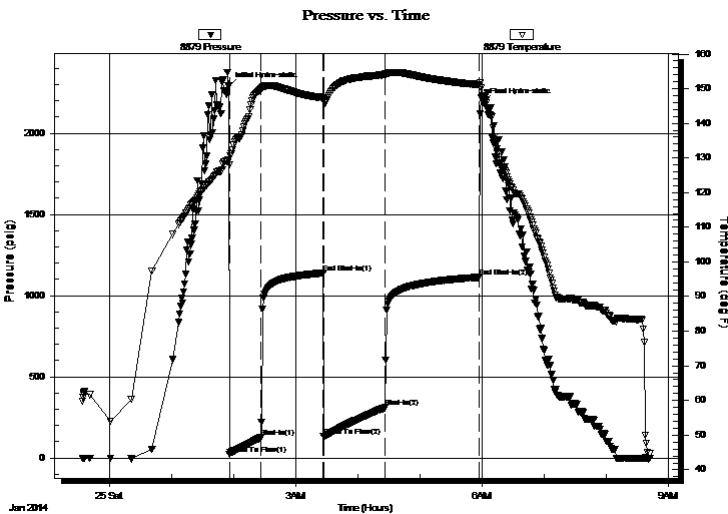
Serial #: 8879

Inside

Press@RunDepth: 309.91 psig @ 4600.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.01.24 End Date: 2014.01.25 Last Calib.: 2014.01.24
 Start Time: 23:34:05 End Time: 08:42:30 Time On Btm: 2014.01.25 @ 01:54:45
 Time Off Btm: 2014.01.25 @ 06:01:15

TEST COMMENT: 30 - IF - Bottom of the bucket surface blow in 4 min.
 60 - ISI - Return built up to 1 1/2"
 60 - FF - Bottom of the bucket surface blow in 8 min.
 90 - FSI - Return built up to 2"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2291.02	129.52	Initial Hydro-static
1	23.52	127.99	Open To Flow (1)
32	126.34	149.78	Shut-In(1)
92	1138.79	147.32	End Shut-In(1)
92	135.49	146.67	Open To Flow (2)
152	309.91	153.99	Shut-In(2)
243	1112.93	151.09	End Shut-In(2)
247	2187.48	147.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
94.00	S,M,C,O 10%MUD 90%OIL	1.32
721.00	CLEAN OIL 100%	10.11

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55163

DST#: 4

ATTN: Brad Rine

Test Start: 2014.01.24 @ 23:34:00

Tool Information

Drill Pipe:	Length: 4587.00 ft	Diameter: 3.80 inches	Volume: 64.34 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 64.34 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	4599.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4577.00	
Hydraulic tool	5.00			4582.00	
Jars	5.00			4587.00	
Safety Joint	3.00			4590.00	
Packer	4.00			4594.00	27.00 Bottom Of Top Packer
Packer	5.00			4599.00	
Stubb	1.00			4600.00	
Recorder	0.00	6669	Inside	4600.00	
Recorder	0.00	8879	Inside	4600.00	
Perforations	9.00			4609.00	
Change Over Sub	1.00			4610.00	
Drill Pipe	31.00			4641.00	
Change Over Sub	1.00			4642.00	
Bullnose	3.00			4645.00	46.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

16-01s-37w Cheyenne,KS

250 N. Water Suite 300
Wichita KS 67202

Patricia #2-16

Job Ticket: 55163

DST#: 4

ATTN: Brad Rine

Test Start: 2014.01.24 @ 23:34:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 0.00 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
94.00	S,M,C,O 10%MUD 90%OIL	1.319
721.00	CLEAN OIL 100%	10.114

Total Length: 815.00 ft Total Volume: 11.433 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

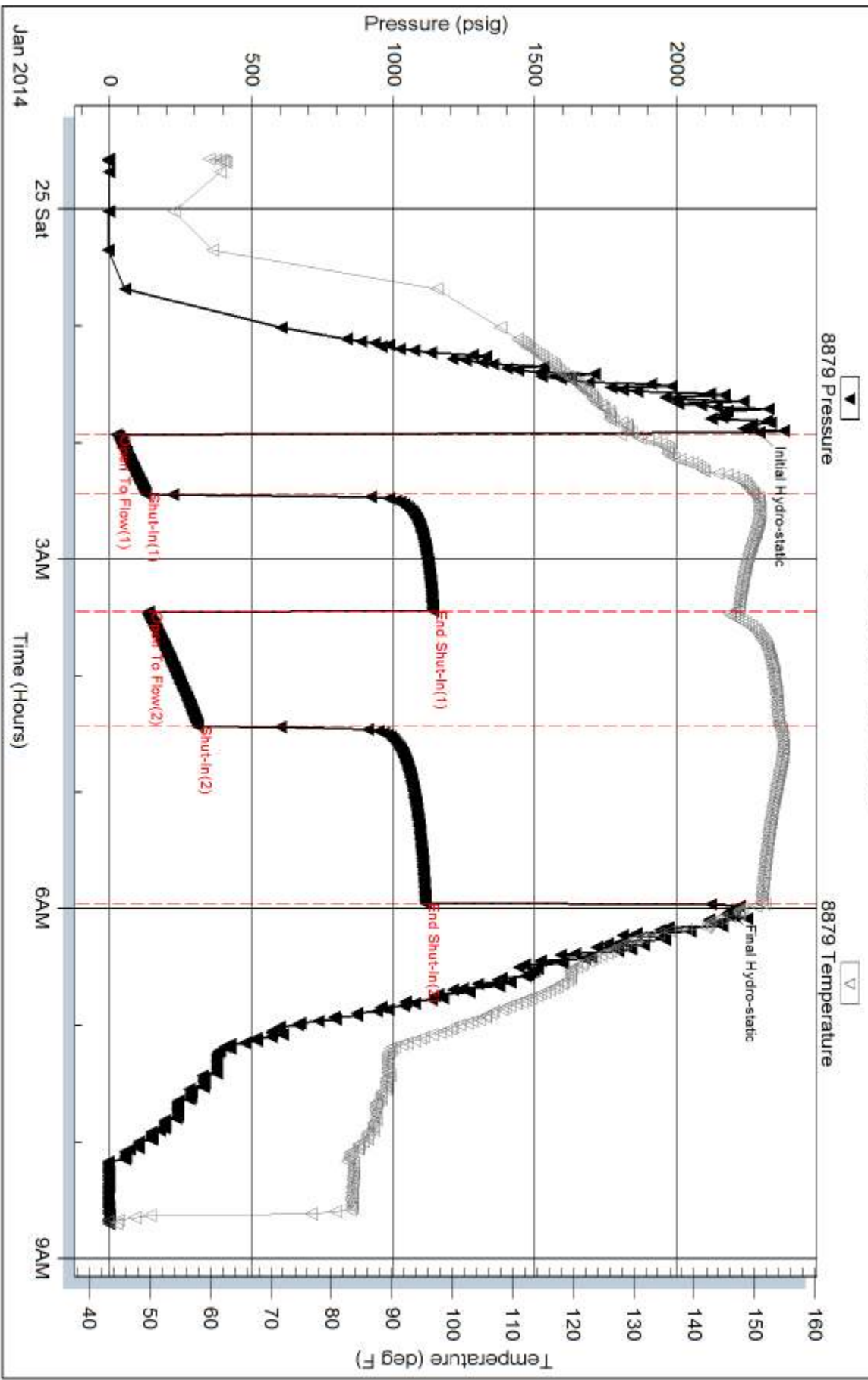
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: OIL GRAVITY = 37 API @ 60 DEG.

Pressure vs. Time



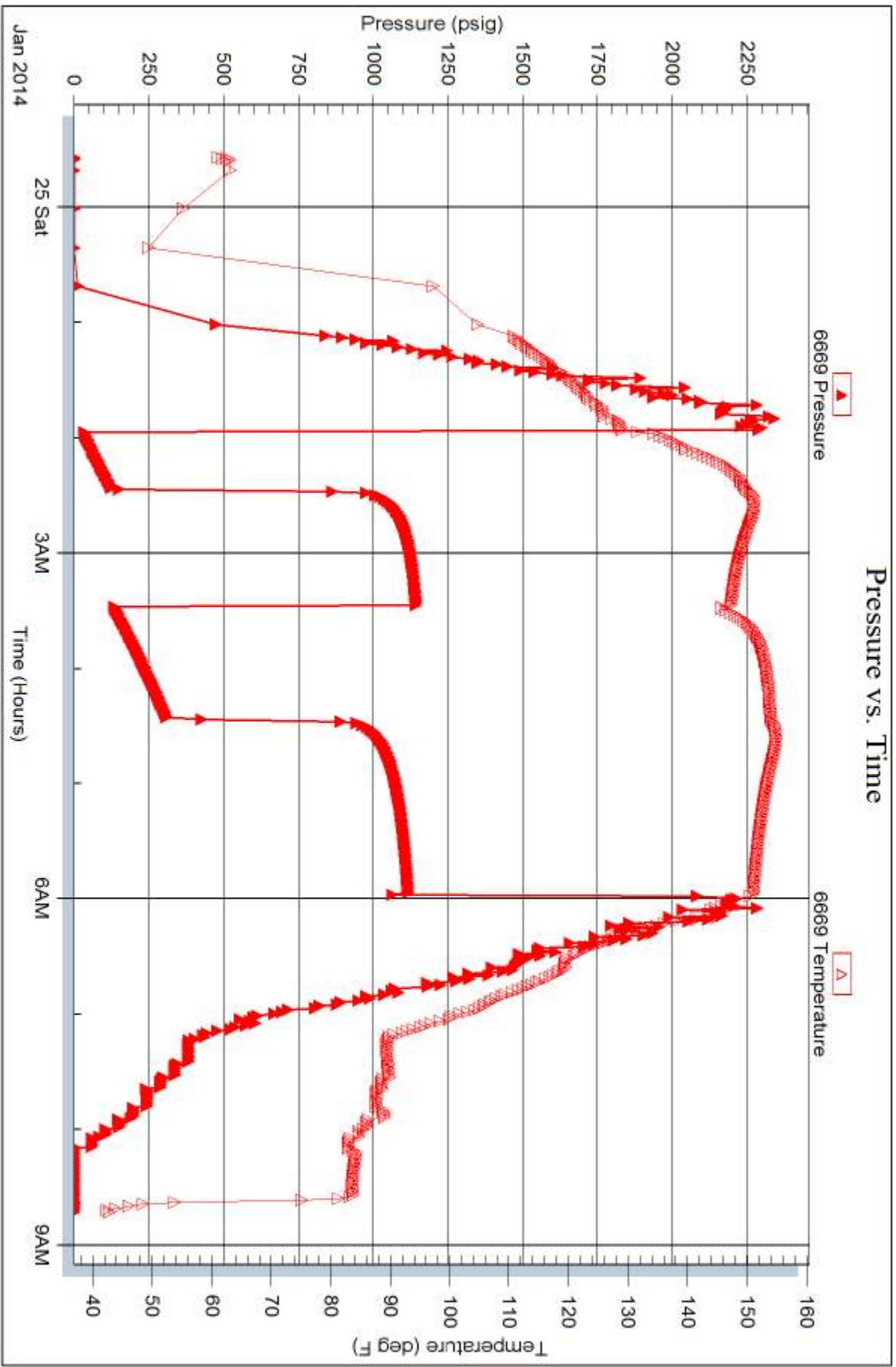
Serial #: 6669

Inside

Murfin Drilling Co., Inc.

Patricia #2-16

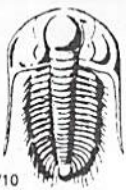
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 55163

Printed: 2014.01.27 @ 16:19:48



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **55160**

Well Name & No. Patricia #2-16 Test No. 1 Date 1-21-14
 Company Murfin Drilling Co, Inc. Elevation 3264 KB 3251 GL
 Address 250 N. Water Suite 300 Wichita, KS 67202
 Co. Rep / Geo. Brad Rine Rig Murfin #25
 Location: Sec. 16 Twp. D S Rge. 37W Co. Cheyenne State KS

Interval Tested 3741-3800 Zone Tested Foreaker
 Anchor Length 59 Drill Pipe Run 3735 Mud Wt. 8.7
 Top Packer Depth 3737 Drill Collars Run 0 Vis 140
 Bottom Packer Depth 3741 Wt. Pipe Run 0 WL 5.2
 Total Depth 3800 Chlorides 500 ppm System LCM 7#

Blow Description IF - Surface blow built to 1/4"
ESI - No Return
FF - No Surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>6'</u>	<u>0cm</u>	<u>30</u>		<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

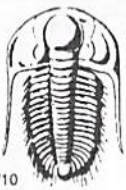
Rec Total 6' BHT 125F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1792 Test 1150 T-On Location 3:54am
 (B) First Initial Flow 11 Jars 250 T-Started 5:06am
 (C) First Final Flow 12 Safety Joint 75 T-Open 7:53am
 (D) Initial Shut-In 445 Circ Sub N/C T-Pulled 10:53am
 (E) Second Initial Flow 12 Hourly Standby _____ T-Out 12:46pm
 (F) Second Final Flow 4 Mileage 160 R/T 248 Comments _____
 (G) Final Shut-In 342 Sampler _____
 (H) Final Hydrostatic 1741 Straddle _____ Ruined Shale Packer _____

Shale Packer 250 Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1973
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1973

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. **55161**

Well Name & No. Patricia #2-16 Test No. 2 Date 1-22-14
 Company Murfin Drilling Co., Inc. Elevation 3264 KB 3251 GL
 Address 250 N. Water Suite 300 Wichita KS 67202
 Co. Rep / Geo. Brad Rine Rig Murfin #25
 Location: Sec. 16 Twp. 01S Rge. 37W Co. Cheyenne State KS

Interval Tested ~~333~~ 4173 - 4300 Zone Tested Lansing A, B, D
 Anchor Length 127 Drill Pipe Run 4152 Mud Wt. 8.9
 Top Packer Depth ~~4173~~ 4169 Drill Collars Run 0 Vis 55
 Bottom Packer Depth 4173 Wt. Pipe Run 0 WL 6.0
 Total Depth 4300 Chlorides 900 ppm System LCM 7#

Blow Description IF - Surface bbw built to 1/2" then died to weak surface blow
ISI - No Return
FF - Had a weak surface bbw
FSI - No Return

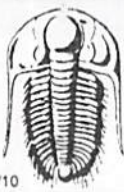
Rec	Feet of	%gas	%oil	%water	%mud
10'	OCM	35		65	

Rec Total _____ BHT 133°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2104</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>7:20 pm</u>
(B) First Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>8:20 pm</u>
(C) First Final Flow <u>27</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:50 pm</u>
(D) Initial Shut-In <u>1229</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>2:50 am</u>
(E) Second Initial Flow <u>34</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>5:17 am</u>
(F) Second Final Flow <u>34</u>	<input checked="" type="checkbox"/> Mileage <u>160 R/T</u> 248	Comments _____
(G) Final Shut-In <u>1113</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2087</u>	<input type="checkbox"/> Straddle _____	
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>216.67</u>
Initial Shut-In <u>60</u>	<input checked="" type="checkbox"/> Day Standby <u>1-Day</u> 1d 6.5h	Total <u>2289.67</u>
Final Flow <u>30</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
Final Shut-In <u>60</u>	Sub Total <u>2073</u>	

Approved By _____ Our Representative Brad Rine

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55162

Well Name & No. Patricia #2-16 Test No. 3 Date 1-23-14
 Company Murfin Drilling Co., Inc. Elevation 3264 KB 3251 GL
 Address 250 N. Water Suite 300 Wichita KS, 67202
 Co. Rep / Geo. Brad Pine Rig Murfin #25
 Location: Sec. 16 Twp. 01S Rge. 37 W Co. Cheyenne State KS

Interval Tested 4291 - 4450 Zone Tested LKC G, H, I, J
 Anchor Length 159' Drill Pipe Run 4275' Mud Wt. 9.4
 Top Packer Depth 4287 Drill Collars Run 0 Vis 660
 Bottom Packer Depth 4291 Wt. Pipe Run 0 WL 5.2
 Total Depth 4450 Chlorides 1500 ppm System LCM 7#
 Blow Description IF - Surface blow built to 1"
ISI - No Return
FF - Surface blow had a weak blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>30'</u>	<u>0sm</u>	<u>spots</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30' BHT 129°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2135 Test 1250 T-On Location 7:40pm
 (B) First Initial Flow 17 Jars 250 T-Started 8:43pm
 (C) First Final Flow 22 Safety Joint 75 T-Open 8:12:13am
 (D) Initial Shut-In 934 Circ Sub N/C T-Pulled 3:13am
 (E) Second Initial Flow 23 Hourly Standby _____ T-Out 6:05am
 (F) Second Final Flow 26 Mileage 160 R/T 248 Comments _____
 (G) Final Shut-In 826 Sampler _____
 (H) Final Hydrostatic 2036 Straddle _____
 Shale Packer 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 2073
 Accessibility _____ MP/DST Disc't _____
 Sub Total 2073

Approved By _____ Our Representative Brad Pine

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. **55163**

Well Name & No. Patricia #2-16 Test No. 4 Date 1-24-14
 Company Murfin Drilling Co., Inc. Elevation 3264 KB 3251 GL
 Address 250 N. Water Suite 300 Wichita Ks 67202
 Co. Rep / Geo. Brad Rine Rig Murfin #25
 Location: Sec. 16 Twp. 01S Rge. 37W Co. Cheyenne State Ks

Interval Tested 4599-4645 Zone Tested Bawnee
 Anchor Length 46' Drill Pipe Run 4,587 Mud Wt. 9.1
 Top Packer Depth 4595 Drill Collars Run 0 Vis 47
 Bottom Packer Depth 4599 Wt. Pipe Run 0 WL 0
 Total Depth 4645 Chlorides 900 ppm System LCM 7#

Blow Description IF - bottom of the bucket surface blow in 4 min.
ISI - Return built to 1 1/2"
FF - bottom of the bucket surface blow in 8 min.
FSI - Return built to 2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>721</u>	<u>clean oil</u>	<u>100</u>			
<u>94</u>	<u>S, M, C, O</u>	<u>90</u>		<u>10</u>	

Rec Total 815 BHT 151 Gravity 37 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2,291</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>10:20 pm</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:34 pm</u>
(C) First Final Flow <u>126</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1:56 am</u>
(D) Initial Shut-In <u>4,139</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>4:55 am</u>
(E) Second Initial Flow <u>135</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>08:51:00</u>
(F) Second Final Flow <u>310</u>	<input checked="" type="checkbox"/> Mileage <u>1100 R/T</u> 248	Comments
(G) Final Shut-In <u>1,113</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2,187</u>	<input type="checkbox"/> Straddle	
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Initial Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>2073</u>
Final Flow <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
Final Shut-In <u>90</u>	Sub Total <u>2073</u>	

Approved By _____ Our Representative [Signature]

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