



DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Ryan "PB" #1-19

19-5s-31w Rawlins,KS

Start Date: 2012.12.18 @ 18:56:00

End Date: 2012.12.19 @ 03:43:15

Job Ticket #: 51389 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.24 @ 09:38:30

Murfin Drilling Co., Inc.

19-5s-31w Rawlins,KS

Ryan "PB" #1-19

DST # 1

Lecompton

2012.12.18



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

19-5s-31w Rawlins, KS
Ryan "PB" #1-19
 Job Ticket: 51389 **DST#: 1**
 Test Start: 2012.12.18 @ 18:56:00

GENERAL INFORMATION:

Formation: **Lecompton**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 20:52:30 Tester: Ryan Nichols
 Time Test Ended: 03:43:15 Unit No: 40
 Interval: **3768.00 ft (KB) To 3793.00 ft (KB) (TVD)** Reference Elevations: 2917.00 ft (KB)
 Total Depth: 3793.00 ft (KB) (TVD) 2913.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 4.00 ft

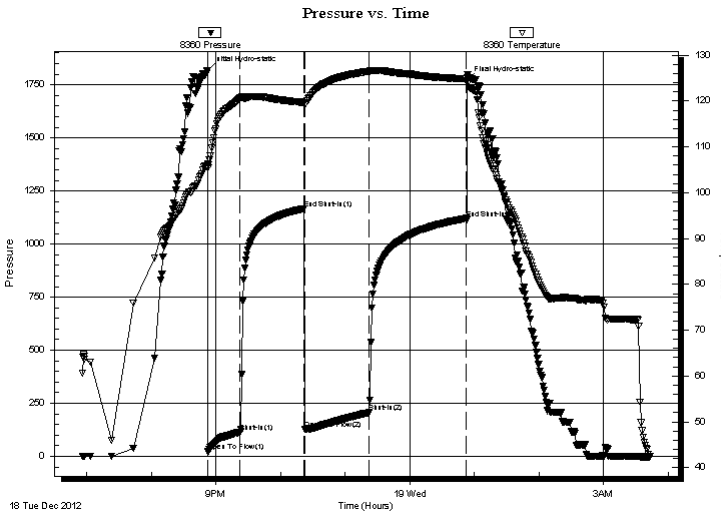
Serial #: 8360

Inside

Press @ Run Depth: 205.86 psig @ 3769.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.12.18 End Date: 2012.12.19 Last Calib.: 2012.12.19
 Start Time: 18:56:05 End Time: 03:43:15 Time On Btm: 2012.12.18 @ 20:52:15
 Time Off Btm: 2012.12.19 @ 00:53:00

TEST COMMENT: 38 IF - Surface blow built to BoB in 13 mins
 60 ISI - Surface blow started @ 1 min built to 1 3/4"
 60 FF - Surface blow started @ 1 min built to BoB in 15 mins
 90 FSI - Surface blow started @ 2 mins built to 6"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1817.81	106.24	Initial Hydro-static
1	21.84	105.44	Open To Flow (1)
31	114.65	120.65	Shut-In(1)
90	1167.08	119.72	End Shut-In(1)
91	125.99	119.18	Open To Flow (2)
150	205.86	126.50	Shut-In(2)
241	1120.42	124.85	End Shut-In(2)
241	1771.03	125.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOMCW - 5%G - 20%o - 60%W - 20%M	0.30
60.00	GOWCM - 5%G - 20%o - 25%W - 50%W	0.30
124.00	GMCWO - 15%M - 20%G - 20%W - 45%o	1.22
186.00	GO - 45%G - 55%o	2.61
37.00	GO - 20%G - 80%o	0.52

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

19-5s-31w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Ryan "PB" #1-19

Job Ticket: 51389

DST#: 1

ATTN: Rocky Milford

Test Start: 2012.12.18 @ 18:56:00

Tool Information

Drill Pipe:	Length: 3569.00 ft	Diameter: 3.80 inches	Volume: 50.06 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: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 54000.00 lb
			<u>Total Volume: 50.93 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 45000.00 lb
Depth to Top Packer:	3768.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: RW = .298 @ 37 DEG F - 50,000 ppm

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3742.00	
Shut In Tool	5.00			3747.00	
Hydraulic tool	5.00			3752.00	
Jars	5.00			3757.00	
Safety Joint	2.00			3759.00	
Packer	5.00			3764.00	27.00 Bottom Of Top Packer
Packer	4.00			3768.00	
Stubb	1.00			3769.00	
Recorder	0.00	8360	Inside	3769.00	
Recorder	0.00	8353	Outside	3769.00	
Perforations	21.00			3790.00	
Bullnose	3.00			3793.00	25.00 Bottom Packers & Anchor

Total Tool Length: 52.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

19-5s-31w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Ryan "PB" #1-19

Job Ticket: 51389

DST#: 1

ATTN: Rocky Milford

Test Start: 2012.12.18 @ 18:56:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

29 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

50000 ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	GOMCW - 5%G - 20%o - 60%W - 20%M	0.295
60.00	GOWCM - 5%G - 20%o - 25%W - 50%W	0.295
124.00	GMCWO - 15%M - 20%G - 20%W - 45%o	1.220
186.00	GO - 45%G - 55%o	2.609
37.00	GO - 20%G - 80%o	0.519

Total Length: 467.00 ft Total Volume: 4.938 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API = 27 @ 58 DEG F - COR 29

RW = .298 @ 37 DEG F

Salinity = 50,000 PPM

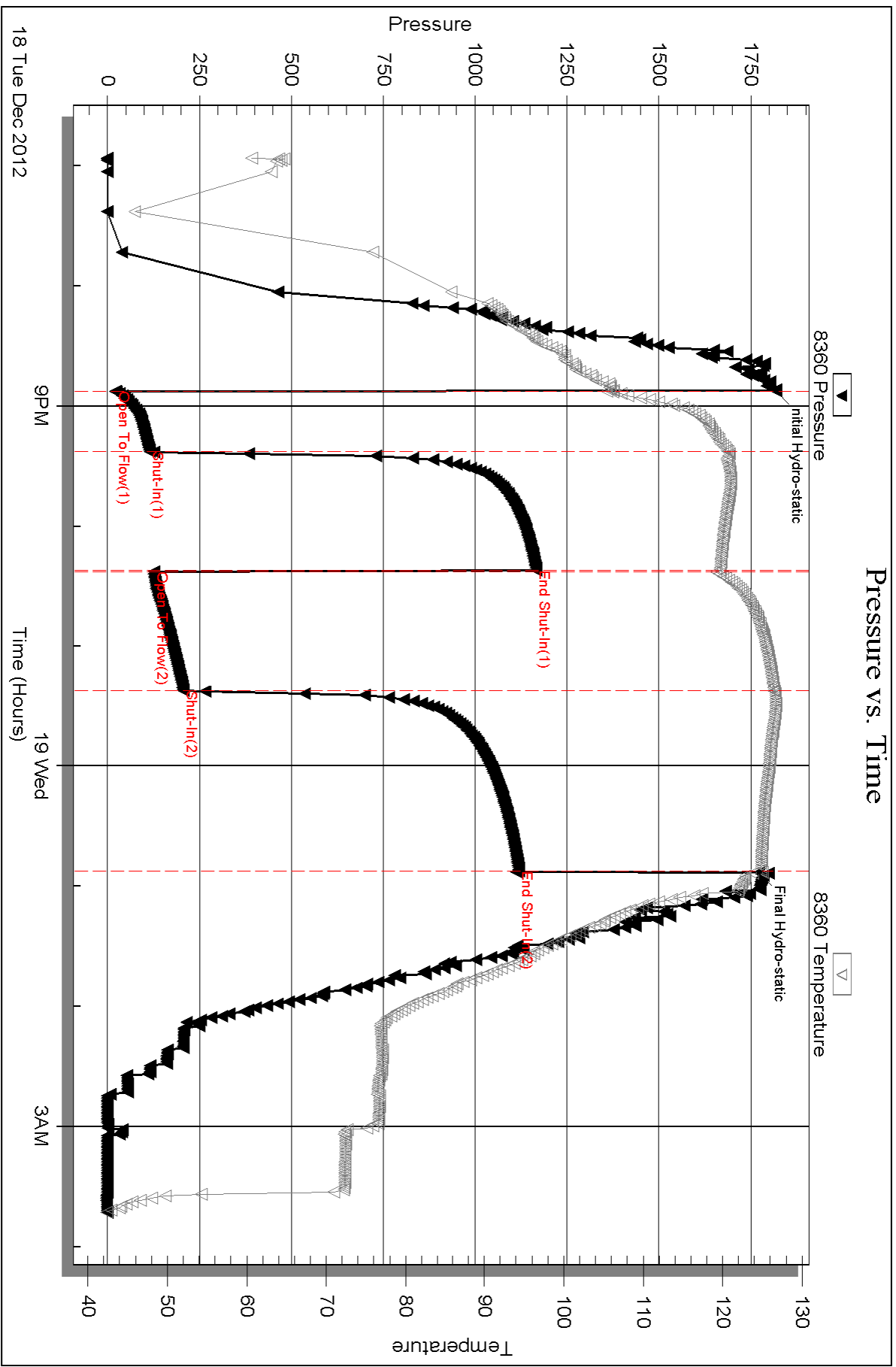
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Ryan "PB" #1-19

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 51389

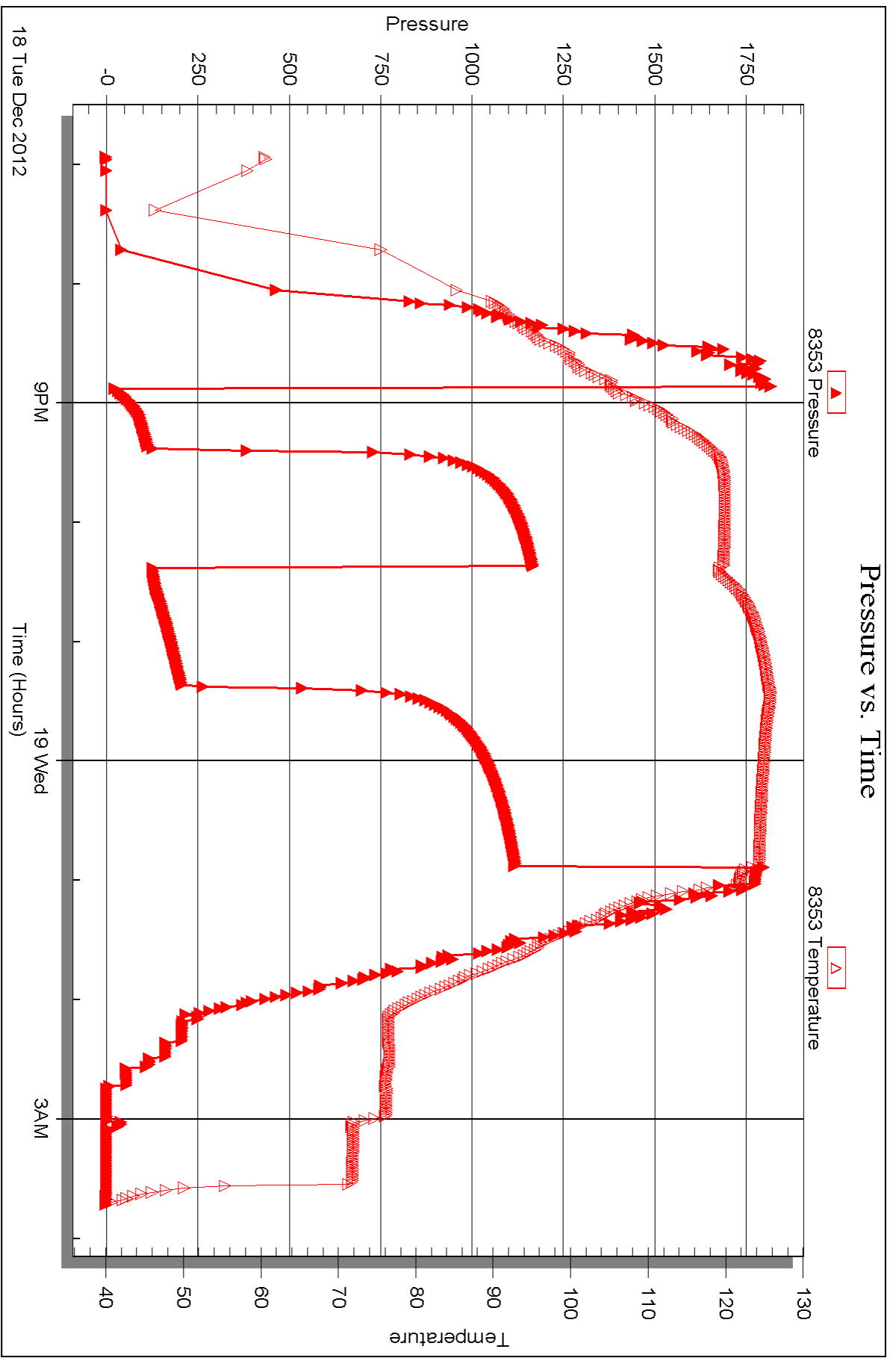
Printed: 2012.12.24 @ 09:38:34

Serial #: 8353

Outside Murfin Drilling Co., Inc.

Ryan "PB" #1-19

DST Test Number: 1





DRILL STEM TEST REPORT

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

250 N Water STE 300
Wichita KS 67202

ATTN: Rocky Milford

Ryan "PB" #1-19

19-5s-31w Rawlins,KS

Start Date: 2012.12.20 @ 22:45:00

End Date: 2012.12.21 @ 06:50:00

Job Ticket #: 51098 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.24 @ 09:37:46

Murfin Drilling Co., Inc.

19-5s-31w Rawlins,KS

Ryan "PB" #1-19

DST # 2

Lower Pawnee/Verdigr

2012.12.20



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

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

19-5s-31w Rawlins, KS
Ryan "PB" #1-19
Job Ticket: 51098 **DST#: 2**
Test Start: 2012.12.20 @ 22:45:00

GENERAL INFORMATION:

Formation: **Lower Pawnee/Verdigr**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 01:06:45 Tester: Wilbur Steinbeck
 Time Test Ended: 06:50:00 Unit No: 40
 Interval: **4254.00 ft (KB) To 4350.00 ft (KB) (TVD)** Reference Elevations: 2917.00 ft (KB)
 Total Depth: 4350.00 ft (KB) (TVD) 2913.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 4.00 ft

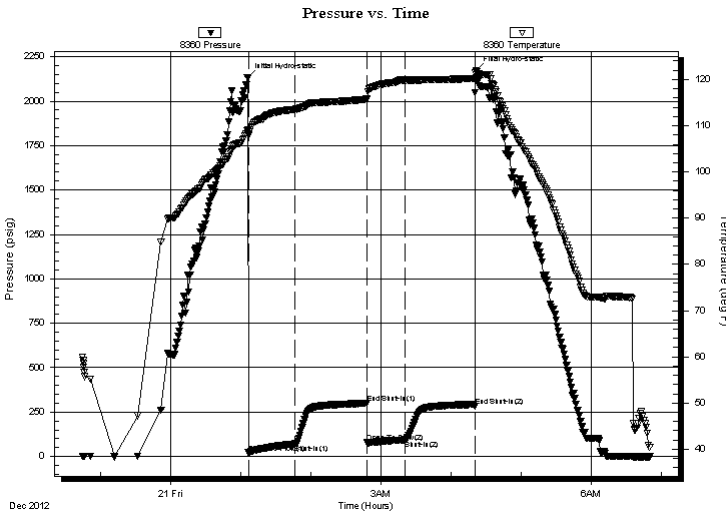
Serial #: 8360

Inside

Press @ Run Depth: 93.33 psig @ 4255.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.12.20 End Date: 2012.12.21 Last Calib.: 2012.12.21
 Start Time: 22:45:05 End Time: 06:49:59 Time On Btm: 2012.12.21 @ 01:06:15
 Time Off Btm: 2012.12.21 @ 04:21:15

TEST COMMENT: IF; Built to 8" in 30 min.
 IS; No Blow
 FF; No Blow
 FS; No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2130.83	109.14	Initial Hydro-static
1	20.47	107.93	Open To Flow (1)
40	70.30	113.53	Shut-In(1)
102	299.31	115.72	End Shut-In(1)
102	81.36	115.93	Open To Flow (2)
135	93.33	119.86	Shut-In(2)
194	284.13	120.27	End Shut-In(2)
195	2173.61	121.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
58.00	GOCM 5%G 40%O 55%M	0.29
62.00	GMCO 5%G 35%M 60%O	0.30
86.00	GO 5%O 95%O	0.69

* 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.

19-5s-31w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Ryan "PB" #1-19

Job Ticket: 51098

DST#: 2

ATTN: Rocky Milford

Test Start: 2012.12.20 @ 22:45:00

Tool Information

Drill Pipe:	Length: 4076.00 ft	Diameter: 3.80 inches	Volume: 57.18 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: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: lb
			<u>Total Volume: 58.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	4254.00 ft			Final lb
Depth to Bottom Packer:	ft			
Interval between Packers:	96.00 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			4228.00	
Shut In Tool	5.00			4233.00	
Hydraulic tool	5.00			4238.00	
Jars	5.00			4243.00	
Safety Joint	2.00			4245.00	
Packer	5.00			4250.00	27.00 Bottom Of Top Packer
Packer	4.00			4254.00	
Stubb	1.00			4255.00	
Recorder	0.00	8360	Inside	4255.00	
Recorder	0.00	8353	Outside	4255.00	
Perforations	21.00			4276.00	
blank spacing	64.00			4340.00	
perforations	7.00			4347.00	
Bullnose	3.00			4350.00	96.00 Bottom Packers & Anchor

Total Tool Length: 123.00



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250 N Water STE 300
Wichita KS 67202

Ryan "PB" #1-19

Job Ticket: 51098

DST#: 2

ATTN: Rocky Milford

Test Start: 2012.12.20 @ 22:45:00

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:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
58.00	GOCM 5%G 40%O 55%M	0.285
62.00	GMCO 5%G 35%M 60%O	0.305
86.00	GO 5%O 95%O	0.687

Total Length: 206.00 ft Total Volume: 1.277 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity 37.6@60=37.6

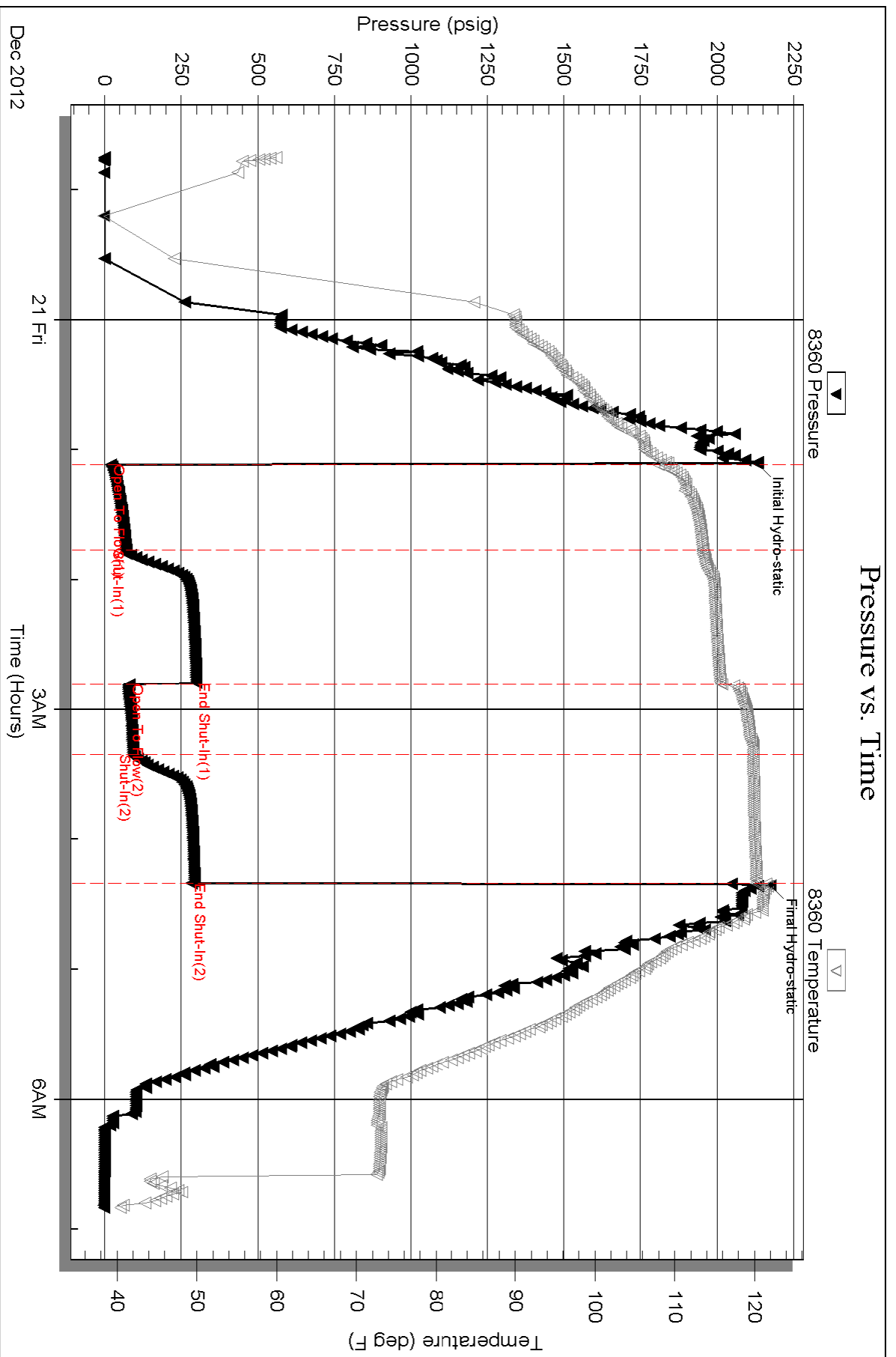
Serial #: 8360

Inside

Murfin Drilling Co., Inc.

Ryan "PB" #1-19

DST Test Number: 2

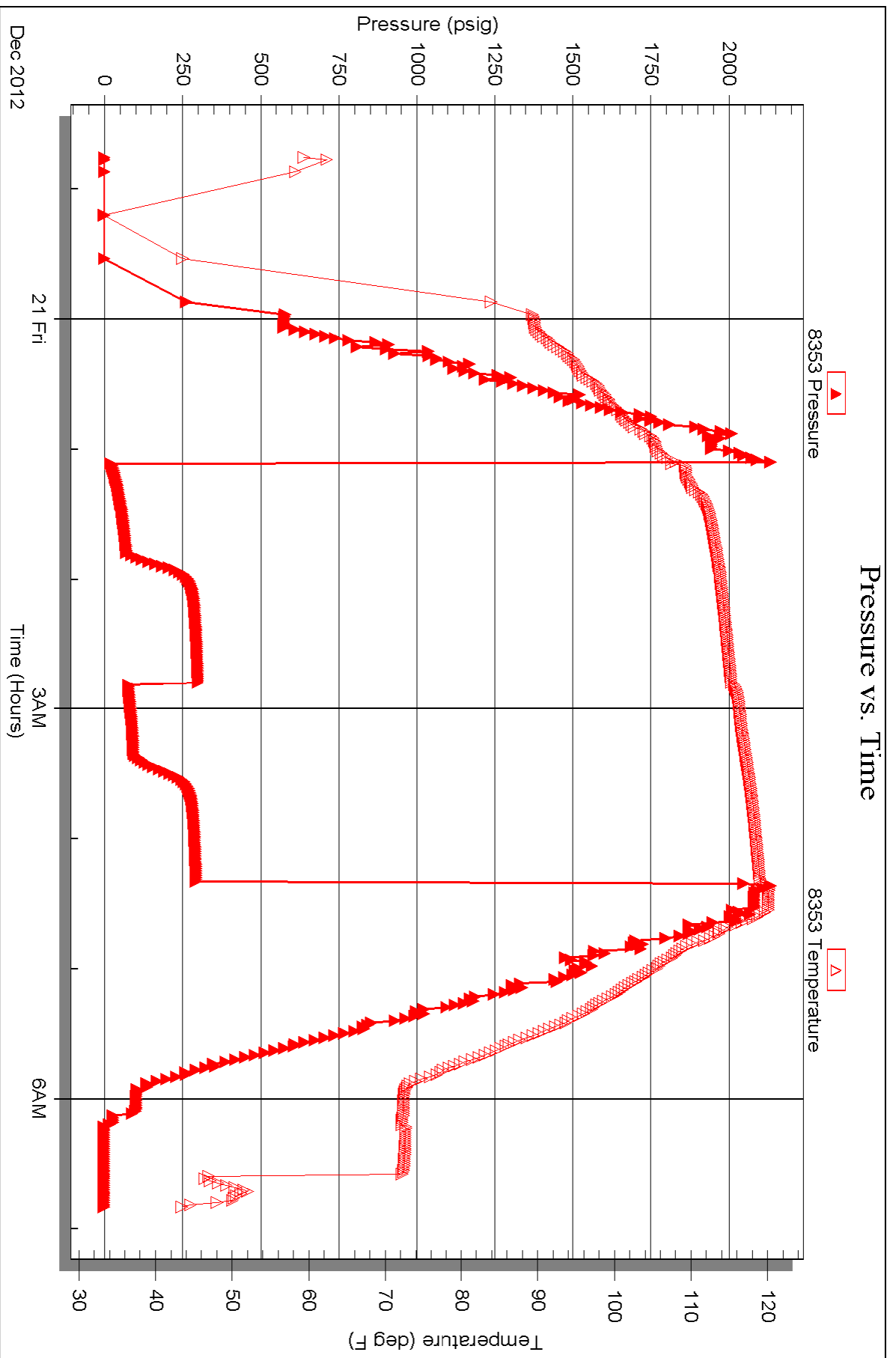


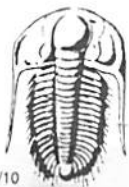
Serial #: 8353

Outside Murfin Drilling Co., Inc.

Ryan "PB" #1-19

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51389

Well Name & No. Martin Drilling Co. Inc 5 Test No. 1 Date 12/18/12
 Company Ryan "PB" #1-19 Elevation 2917 KB 2912 GL
 Address 250 Water STE 300 Wichita KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Martin #8
 Location: Sec. 19 Twp. 5S Rge. 31W Co. Rawlins State KS

Interval Tested 3768-3793 Zone Tested Lecompton
 Anchor Length 25' Drill Pipe Run 3569 Mud Wt. 8.7
 Top Packer Depth 3763 Drill Collars Run 177 Vis 60
 Bottom Packer Depth 3768 Wt. Pipe Run 0 WL 5.2
 Total Depth 3793 Chlorides 1400 ppm System LCM 5

Blow Description IF-Surface blow built to BoB in 13 mins
ISL-Surface blow started @ 1 min built to 1 3/4"
FF-Surface blow @ 1 min built to BoB in 15 mins
FST-Surface blow @ 2 mins built to 6"

Rec	Feet of	%gas	%oil	%water	%mud
37'	GO	20	80		
186'	GO	45	55		
124'	GMCWO	20	45	20	15
60'	GOMCM	5	20	25	50
60'	GOMCW	5	20	60	20

Rec Total 465' BHT 125° Gravity 29 API RW 298 @ 37 °F Chlorides 50,000 ppm

(A) Initial Hydrostatic 1818 Test 1150 T-On Location 17:50
 (B) First Initial Flow 22 Jars 250 T-Started 18:56
 (C) First Final Flow 115 Safety Joint 75 T-Open 20:45
 (D) Initial Shut-In 1167 Circ Sub NC T-Pulled 20:53
 (E) Second Initial Flow 126 Hourly Standby _____ T-Out 03:43
 (F) Second Final Flow 206 Mileage 72 RT 111.60 Comments _____
 (G) Final Shut-In 1120 Sampler _____
 (H) Final Hydrostatic 1771 Straddle _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Accessibility _____
 Sub Total 1586.60

Approved By Rocky Milford Our Representative Ryan 2 Nichols

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. 51098

4/10

Well Name & No. Ryan "PB" 1-19 Test No. 2 Date 12-20-12
 Company Murfin Drilling Co Elevation 2917 KB 2912 GL
 Address 250 N Water Stc 300 Wichita Ks 67202
 Co. Rep / Geo. Rocky Rig Murfin 8
 Location: Sec. 19 Twp. 5s Rge. 31w Co. Kowling State Ks

Interval Tested 4254 4350 Zone Tested Lower Power Verdigris
 Anchor Length 96 Drill Pipe Run 4076 Mud Wt. 9.2
 Top Packer Depth 4249 Drill Collars Run 177 Vis 55
 Bottom Packer Depth 4254 Wt. Pipe Run 0 WL 6.0
 Total Depth 4350 Chlorides 2,400 ppm System LCM
 Blow Description 30 IF Built to 8" in 30
60 ISI No Blow
30 FF No Blow
60 FSI No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>86</u>	<u>60</u>	<u>5</u>	<u>95</u>		
<u>62</u>	<u>OMCO</u>	<u>5</u>	<u>60</u>	<u>35</u>	
<u>58</u>	<u>60CM</u>	<u>5</u>	<u>40</u>	<u>55</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 206 BHT 122 Gravity 576 @ 60 = 37.6 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2131</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>20:00</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>22:45</u>
(C) First Final Flow <u>70</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1:18</u>
(D) Initial Shut-In <u>299</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/A</u>	T-Pulled <u>4:18</u>
(E) Second Initial Flow <u>81</u>	<input checked="" type="checkbox"/> Hourly Standby <u>Last test 1AM 12-19-12</u>	T-Out <u>6:40</u>
(F) Second Final Flow <u>93</u>	<input checked="" type="checkbox"/> Mileage <u>RT 72</u> 111.60	Comments <u> </u>
(G) Final Shut-In <u>284</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2174</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>70</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>575</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u>1d 17.25h</u>	Total <u>2261.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't <u> </u>
	Sub Total <u>1686.60</u>	

Approved By _____ Our Representative [Signature]

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