



DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman ShariFaie

Zweygartd 'HP' #1-3

3-3s-41w Cheyenne,KS

Start Date: 2013.12.14 @ 02:53:00

End Date: 2013.12.14 @ 10:42:00

Job Ticket #: 53559 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.12.23 @ 10:14:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53559

DST#: 1

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 02:53:00

GENERAL INFORMATION:

Formation: **LKC "A-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:35:40

Time Test Ended: 10:42:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4391.00 ft (KB) To 4500.00 ft (KB) (TVD)

Reference Elevations: 3601.00 ft (KB)

Total Depth: 4500.00 ft (KB) (TVD)

3591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8874

Inside

Press@RunDepth: 340.23 psig @ 4392.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.14

End Date:

2013.12.14

Last Calib.: 2013.12.14

Start Time: 02:54:00

End Time:

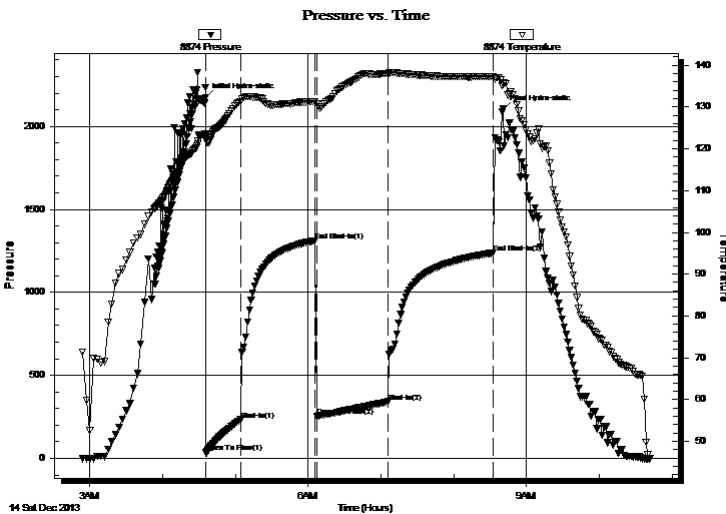
10:42:00

Time On Btm: 2013.12.14 @ 04:35:30

Time Off Btm: 2013.12.14 @ 08:40:30

TEST COMMENT: 30 - IF- BoB in 13 min.
60 - IS- No Return
60 - FF- BoB in 15 min
90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2173.91	123.48	Initial Hydro-static
1	33.30	122.08	Open To Flow (1)
29	232.05	131.36	Shut-In(1)
90	1311.53	131.29	End Shut-In(1)
92	250.94	130.74	Open To Flow (2)
150	340.23	137.98	Shut-In(2)
237	1237.17	137.28	End Shut-In(2)
245	2103.56	135.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
270.00	MCO 50M 50o	1.33
180.00	MCO 40M 60o	0.89
180.00	MCO 20M 80o	1.52
150.00	Free Oil 100o	2.10

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53559

DST#: 1

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 02:53:00

Tool Information

Drill Pipe:	Length: 3833.00 ft	Diameter: 3.80 inches	Volume: 53.77 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: 560.00 ft	Diameter: 2.25 inches	Volume: 2.75 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 56.52 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4391.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	109.00 ft			
Tool Length:	137.00 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			4364.00	
Shut In Tool	5.00			4369.00	
Hydraulic tool	5.00			4374.00	
Jars	5.00			4379.00	
Safety Joint	3.00			4382.00	
Packer	5.00			4387.00	28.00 Bottom Of Top Packer
Packer	4.00			4391.00	
Stubb	1.00			4392.00	
Recorder	0.00	8520	Outside	4392.00	
Recorder	0.00	8874	Inside	4392.00	
Perforations	6.00			4398.00	
Change Over Sub	1.00			4399.00	
Drill Pipe	95.00			4494.00	
Change Over Sub	1.00			4495.00	
Bullnose	5.00			4500.00	109.00 Bottom Packers & Anchor

Total Tool Length: 137.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53559

DST#: 1

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 02:53:00

Mud and Cushion Information

Mud Type: Polymer	Cushion Type:	Oil API: 29 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.59 in ³	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 600.00 ppm		
Filter Cake: 2.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
270.00	MCO 50M 50o	1.328
180.00	MCO 40M 60o	0.885
180.00	MCO 20M 80o	1.523
150.00	Free Oil 100o	2.104

Total Length: 780.00 ft Total Volume: 5.840 bbl

Num Fluid Samples: 0

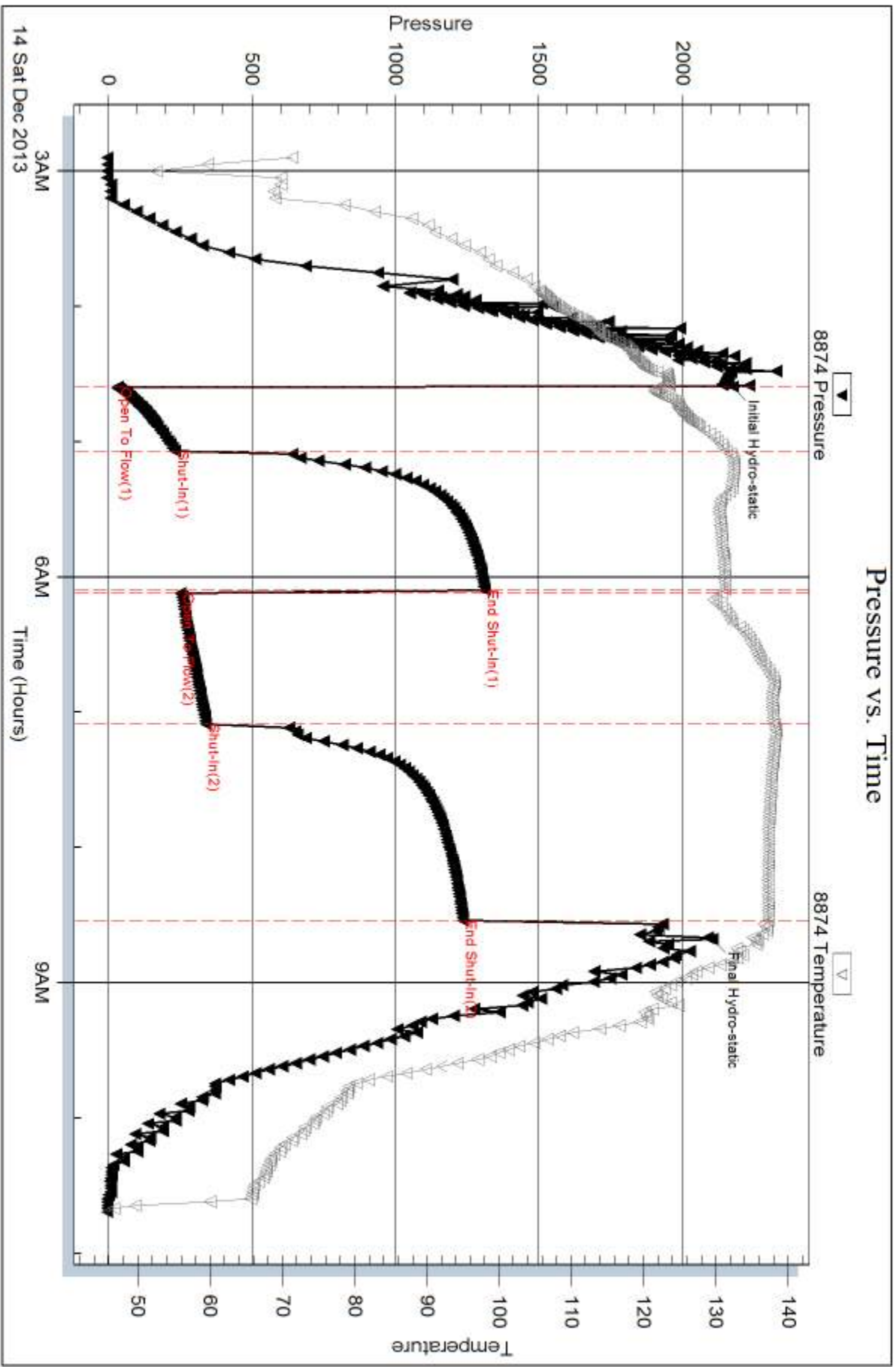
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Oil API 29 @ 60 deg = 29

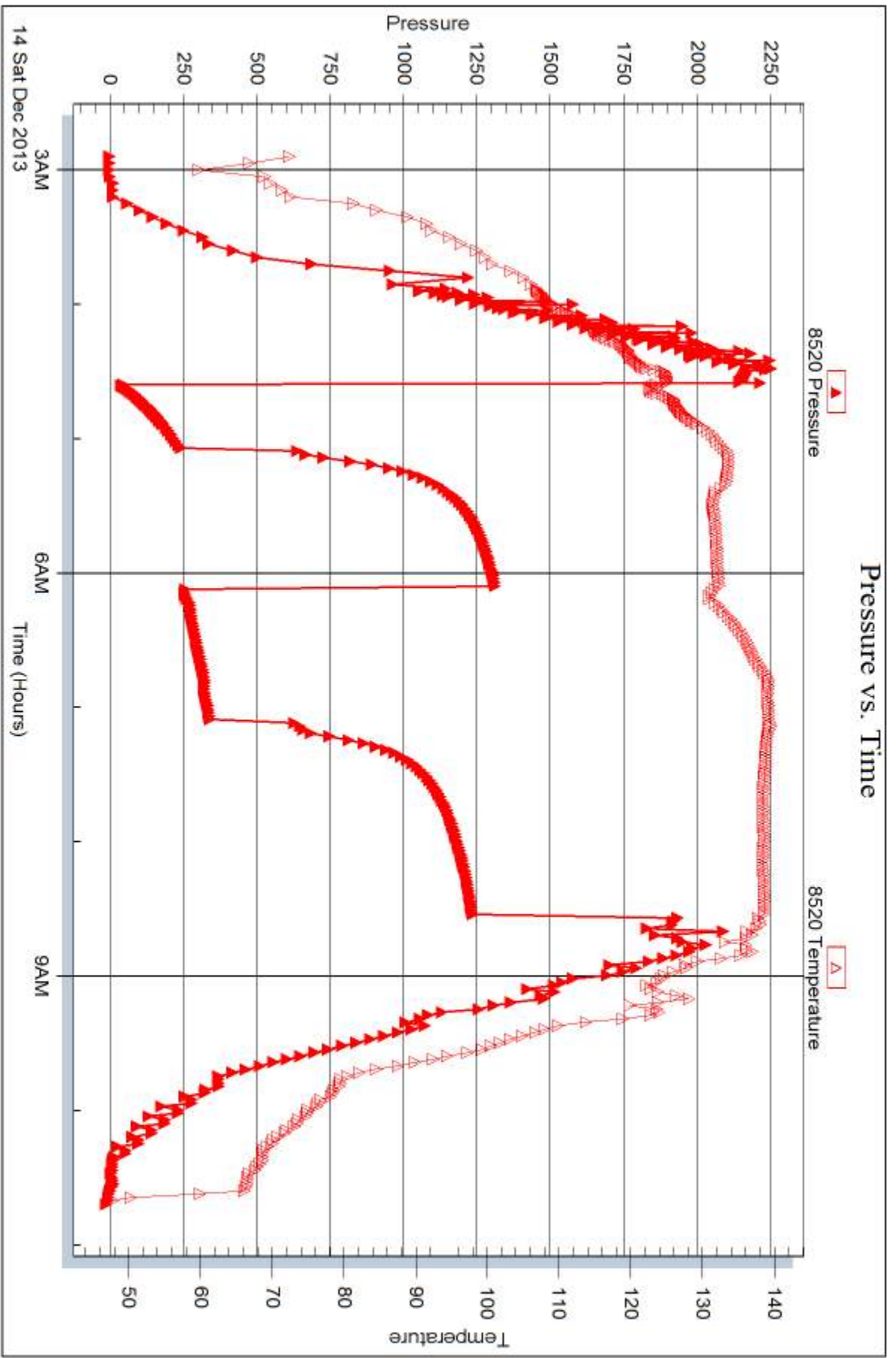


Serial #: 8520

Outside Murfin Drilling Co.

Zweygardt HP #1-3

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman ShariFaie

Zweygardt 'HP' #1-3

3-3s-41w Cheyenne,KS

Start Date: 2013.12.14 @ 21:55:00

End Date: 2013.12.15 @ 06:49:30

Job Ticket #: 53560 DST #: 2

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

Printed: 2013.12.23 @ 10:13:31



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53560

DST#: 2

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 21:55:00

GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:58:30

Time Test Ended: 06:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4507.00 ft (KB) To 4580.00 ft (KB) (TVD)

Reference Elevations: 3601.00 ft (KB)

Total Depth: 4580.00 ft (KB) (TVD)

3591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8874

Inside

Press@RunDepth: 1162.29 psig @ 4508.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.14

End Date:

2013.12.15

Last Calib.: 2013.12.15

Start Time: 21:56:00

End Time:

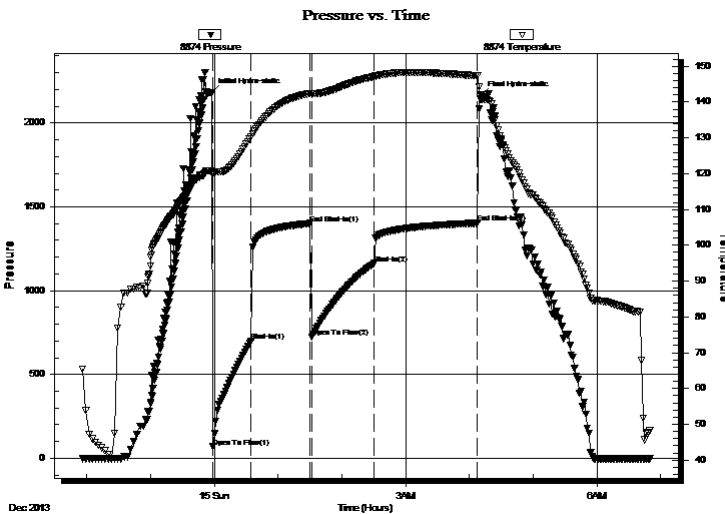
06:49:30

Time On Btm: 2013.12.14 @ 23:57:00

Time Off Btm: 2013.12.15 @ 04:11:00

TEST COMMENT: 30 - IF- BoB in 2 min.
60 - IS- No Return
60 - FF- BoB in 3 1/2 min.
90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2179.05	120.79	Initial Hydro-static
2	68.03	119.80	Open To Flow (1)
38	700.11	130.27	Shut-In(1)
93	1400.52	142.42	End Shut-In(1)
95	721.69	142.28	Open To Flow (2)
153	1162.29	147.14	Shut-In(2)
251	1402.92	147.33	End Shut-In(2)
254	2163.79	140.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
1495.00	MW 5M 95W	15.92
376.00	MW 30M 70W	5.27
282.00	MW 50M 50W	3.96
470.00	WM 80M 20W	6.59

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53560

DST#: 2

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 21:55:00

Tool Information

Drill Pipe:	Length: 3929.00 ft	Diameter: 3.80 inches	Volume: 55.11 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: 560.00 ft	Diameter: 2.25 inches	Volume: 2.75 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 57.86 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4507.00 ft			Final 84000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	73.00 ft			
Tool Length:	101.00 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			4480.00	
Shut In Tool	5.00			4485.00	
Hydraulic tool	5.00			4490.00	
Jars	5.00			4495.00	
Safety Joint	3.00			4498.00	
Packer	5.00			4503.00	28.00 Bottom Of Top Packer
Packer	4.00			4507.00	
Stubb	1.00			4508.00	
Recorder	0.00	8653	Outside	4508.00	
Recorder	0.00	8874	Inside	4508.00	
Perforations	1.00			4509.00	
Change Over Sub	1.00			4510.00	
Drill Pipe	64.00			4574.00	
Change Over Sub	1.00			4575.00	
Bullnose	5.00			4580.00	73.00 Bottom Packers & Anchor

Total Tool Length: 101.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53560

DST#: 2

ATTN: Saman ShariFaie

Test Start: 2013.12.14 @ 21:55:00

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:

30000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	Mud (Heavy) 100M	0.025
1495.00	MW 5M 95W	15.915
376.00	MW 30M 70W	5.274
282.00	MW 50M 50W	3.956
470.00	WM 80M 20W	6.593

Total Length: 2628.00 ft Total Volume: 31.763 bbl

Num Fluid Samples: 0

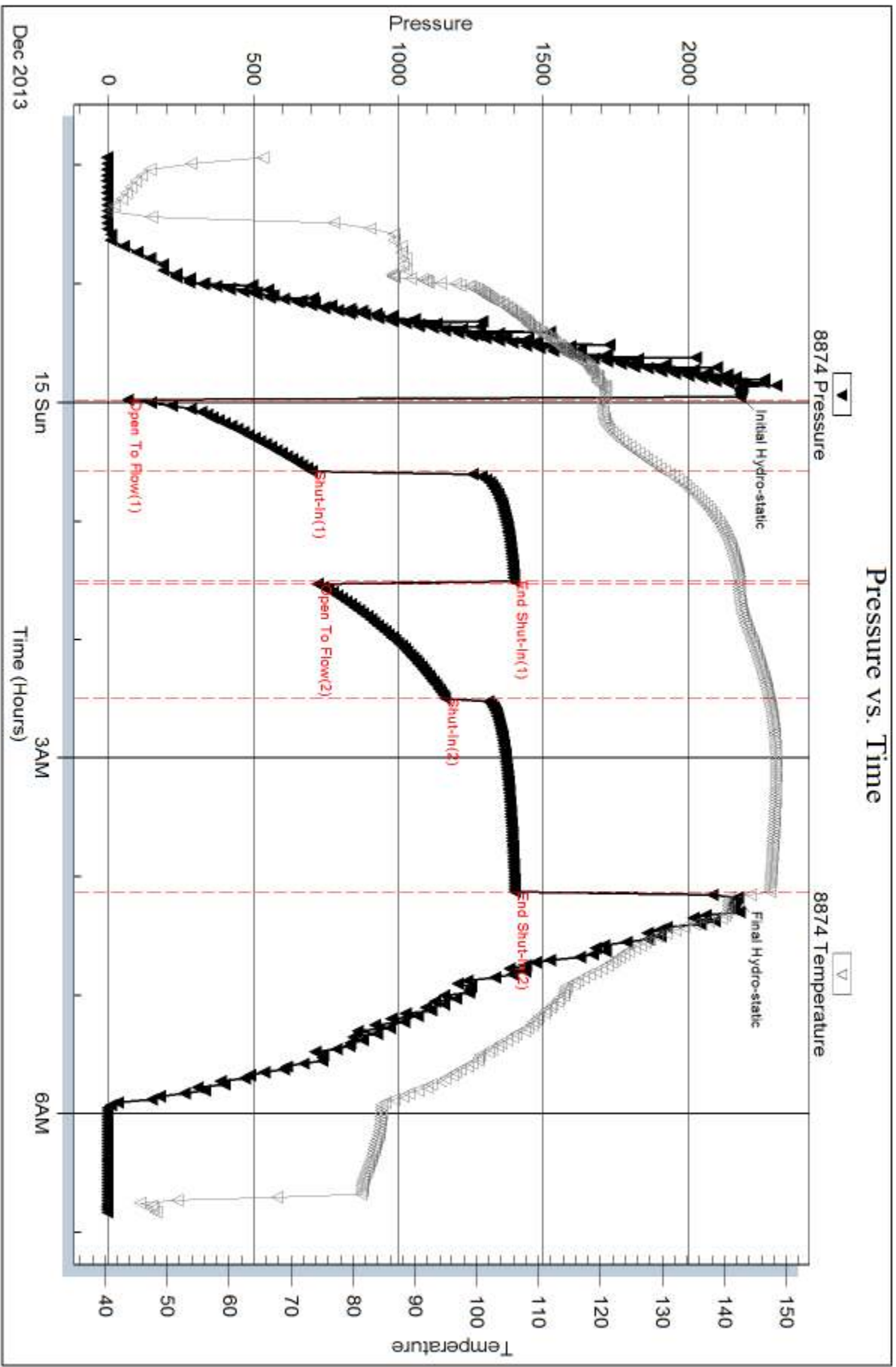
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW . 423 @ 38 deg = 30,000ppm

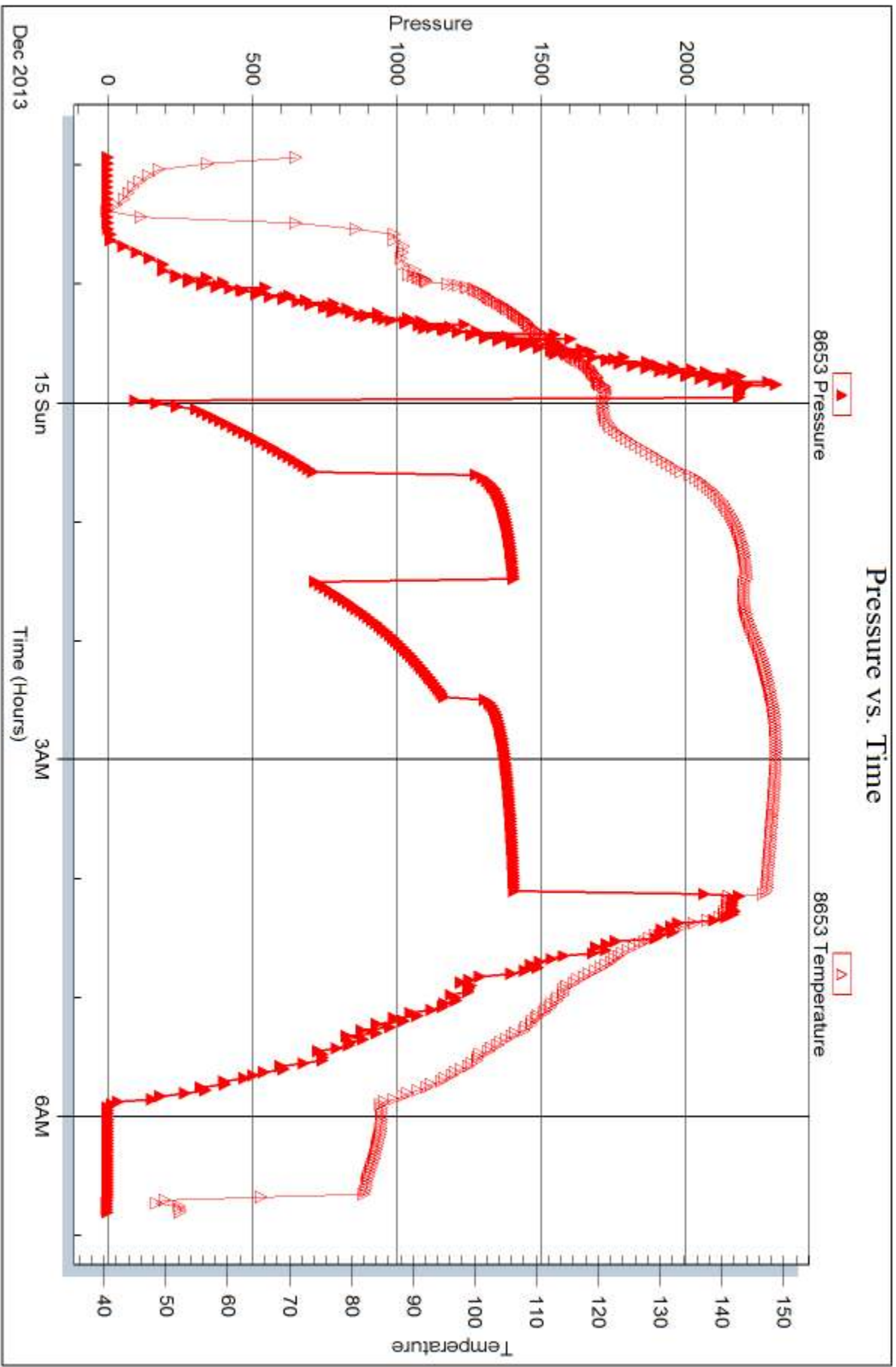


Serial #: 8653

Outside Murfin Drilling Co.

Zweygardt HP #1-3

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 53560

Printed: 2013.12.23 @ 10:13:35



DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman ShariFaie

Zweygartd 'HP' #1-3

3-3s-41w Cheyenne,KS

Start Date: 2013.12.15 @ 09:35:00

End Date: 2013.12.15 @ 18:26:30

Job Ticket #: 53561 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.12.23 @ 10:12:50



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53561

DST#: 3

ATTN: Saman ShariFaie

Test Start: 2013.12.15 @ 09:35:00

GENERAL INFORMATION:

Formation: **LKC "H-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:58:00

Time Test Ended: 18:26:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4575.00 ft (KB) To 4720.00 ft (KB) (TVD)

Reference Elevations: 3601.00 ft (KB)

Total Depth: 4720.00 ft (KB) (TVD)

3591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8874

Inside

Press@RunDepth: 222.08 psig @ 4576.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.15

End Date:

2013.12.16

Last Calib.:

2013.12.16

Start Time: 21:35:00

End Time:

06:25:30

Time On Btm:

2013.12.15 @ 23:55:00

Time Off Btm:

2013.12.16 @ 04:06:00

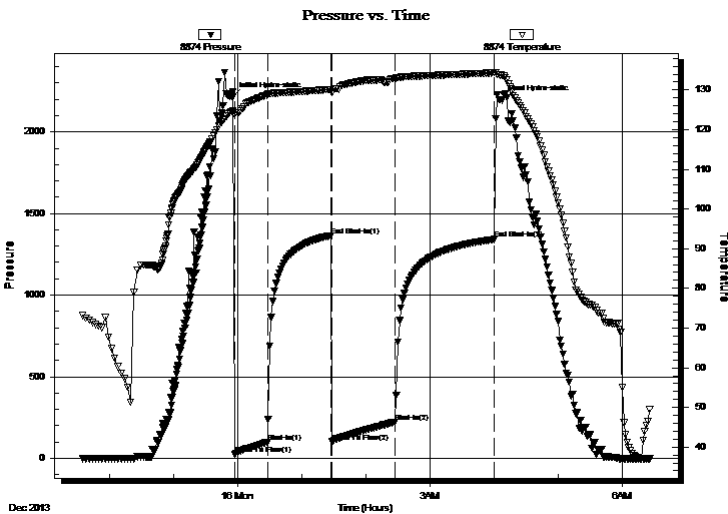
TEST COMMENT: 30 - IF- 1" Blow built to 7 1/4"

60 - IS- No Return

60 - FF- Blow started at 7 min. built to 7"

90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2214.10	124.60	Initial Hydro-static
2	25.29	123.86	Open To Flow (1)
33	99.24	128.81	Shut-In(1)
92	1365.06	130.13	End Shut-In(1)
94	100.65	129.31	Open To Flow (2)
152	222.08	132.93	Shut-In(2)
245	1341.52	134.33	End Shut-In(2)
251	2196.66	133.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	WM 30W 70M	0.89
185.00	Mud 100M	0.91

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53561

DST#: 3

ATTN: Saman ShariFaie

Test Start: 2013.12.15 @ 09:35:00

Tool Information

Drill Pipe:	Length: 3997.00 ft	Diameter: 3.80 inches	Volume: 56.07 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: 560.00 ft	Diameter: 2.25 inches	Volume: 2.75 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 58.82 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 75000.00 lb
Depth to Top Packer:	4575.00 ft			Final 77000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	145.00 ft			
Tool Length:	173.00 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			4548.00	
Shut In Tool	5.00			4553.00	
Hydraulic tool	5.00			4558.00	
Jars	5.00			4563.00	
Safety Joint	3.00			4566.00	
Packer	5.00			4571.00	28.00 Bottom Of Top Packer
Packer	4.00			4575.00	
Stubb	1.00			4576.00	
Recorder	0.00	8653	Outside	4576.00	
Recorder	0.00	8874	Inside	4576.00	
Perforations	11.00			4587.00	
Change Over Sub	1.00			4588.00	
Drill Pipe	126.00			4714.00	
Change Over Sub	1.00			4715.00	
Bullnose	5.00			4720.00	145.00 Bottom Packers & Anchor

Total Tool Length: 173.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53561

DST#: 3

ATTN: Saman ShariFaie

Test Start: 2013.12.15 @ 09:35:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	WM 30W 70M	0.885
185.00	Mud 100M	0.910

Total Length: 365.00 ft

Total Volume: 1.795 bbl

Num Fluid Samples: 0

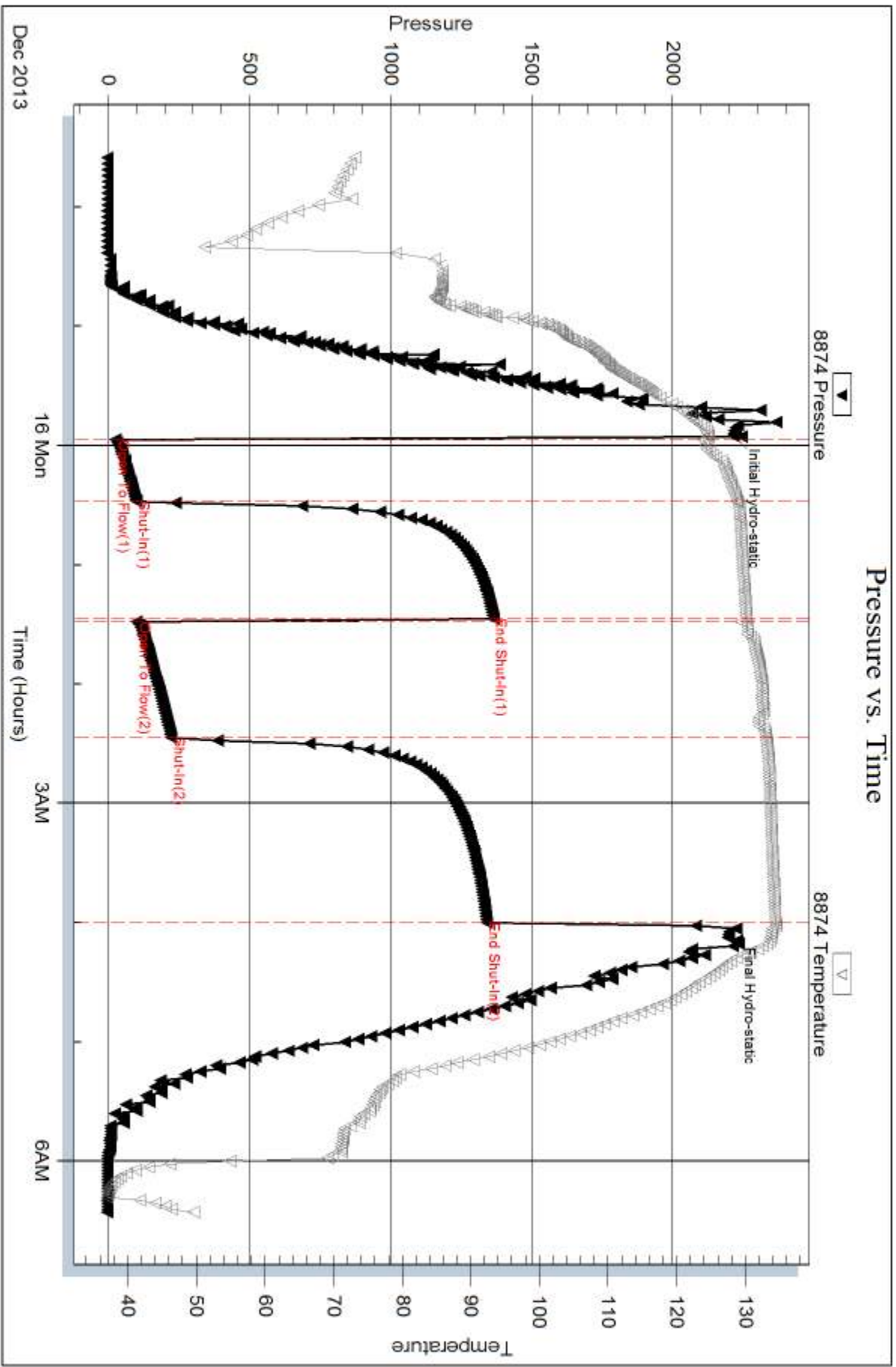
Num Gas Bombs: 0

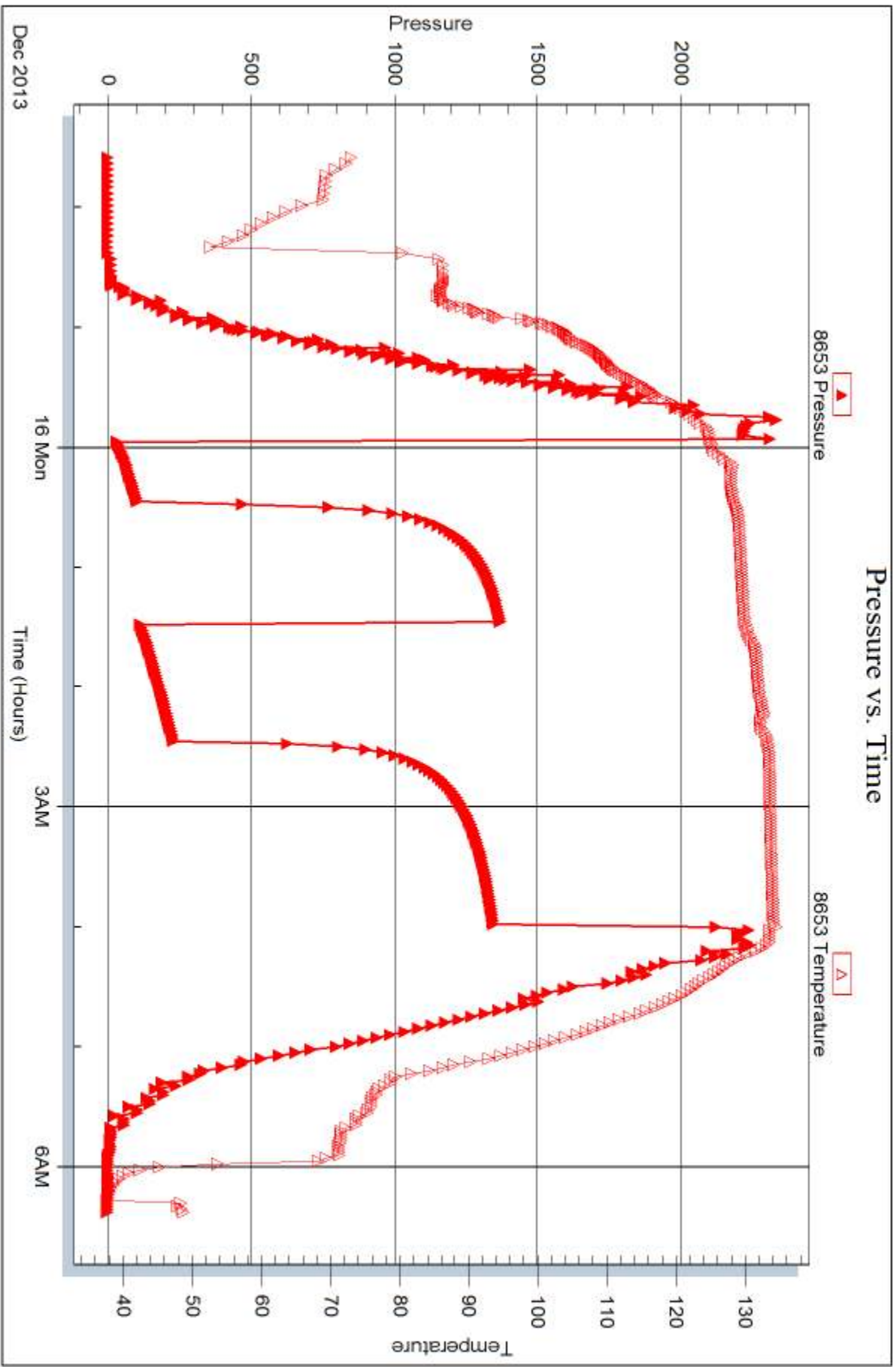
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman ShariFaie

Zweygardt 'HP' #1-3

3-3s-41w Cheyenne,KS

Start Date: 2013.12.16 @ 23:12:00

End Date: 2013.12.17 @ 08:30:00

Job Ticket #: 53562 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.12.23 @ 10:11:03



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co.

3-3s-41w Cheyenne, KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53562

DST#: 4

ATTN: Saman ShariFaie

Test Start: 2013.12.16 @ 23:12:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:05:00

Time Test Ended: 08:30:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4835.00 ft (KB) To 4900.00 ft (KB) (TVD)

Reference Elevations: 3601.00 ft (KB)

Total Depth: 4900.00 ft (KB) (TVD)

3591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8874 Inside

Press@RunDepth: 963.18 psig @ 4836.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.16

End Date:

2013.12.17

Last Calib.:

2013.12.17

Start Time: 23:13:00

End Time:

08:30:00

Time On Btm:

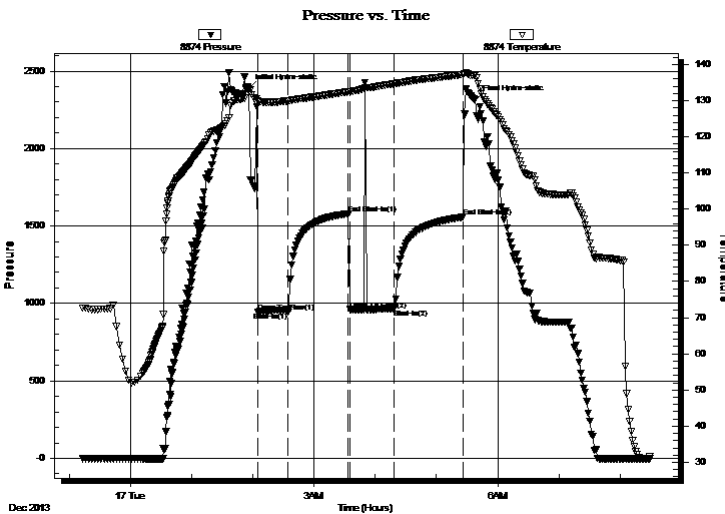
2013.12.17 @ 01:55:30

Time Off Btm:

2013.12.17 @ 05:38:30

TEST COMMENT: 30 - IF- No Blow
60 - IS- No Return
45 - FF- No Blow - Flushed tool at 15 min - No Blow
60 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2388.25	132.96	Initial Hydro-static
10	943.67	129.97	Open To Flow (1)
39	943.30	129.89	Shut-In(1)
98	1581.04	132.46	End Shut-In(1)
100	959.76	132.41	Open To Flow (2)
143	963.18	134.62	Shut-In(2)
211	1556.84	137.21	End Shut-In(2)
223	2314.63	136.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1805.00	Mud 100M	20.22

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53562

DST#: 4

ATTN: Saman ShariFaie

Test Start: 2013.12.16 @ 23:12:00

Tool Information

Drill Pipe:	Length: 4279.00 ft	Diameter: 3.80 inches	Volume: 60.02 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: 560.00 ft	Diameter: 2.25 inches	Volume: 2.75 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 62.77 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4835.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	65.00 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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4808.00	
Shut In Tool	5.00			4813.00	
Hydraulic tool	5.00			4818.00	
Jars	5.00			4823.00	
Safety Joint	3.00			4826.00	
Packer	5.00			4831.00	28.00 Bottom Of Top Packer
Packer	4.00			4835.00	
Stubb	1.00			4836.00	
Recorder	0.00	8653	Outside	4836.00	
Recorder	0.00	8874	Inside	4836.00	
Perforations	25.00			4861.00	
Change Over Sub	1.00			4862.00	
Drill Pipe	32.00			4894.00	
Change Over Sub	1.00			4895.00	
Bullnose	5.00			4900.00	65.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53562

DST#: 4

ATTN: Saman ShariFaie

Test Start: 2013.12.16 @ 23:12:00

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: 5.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1805.00	Mud 100M	20.218

Total Length: 1805.00 ft Total Volume: 20.218 bbl

Num Fluid Samples: 0

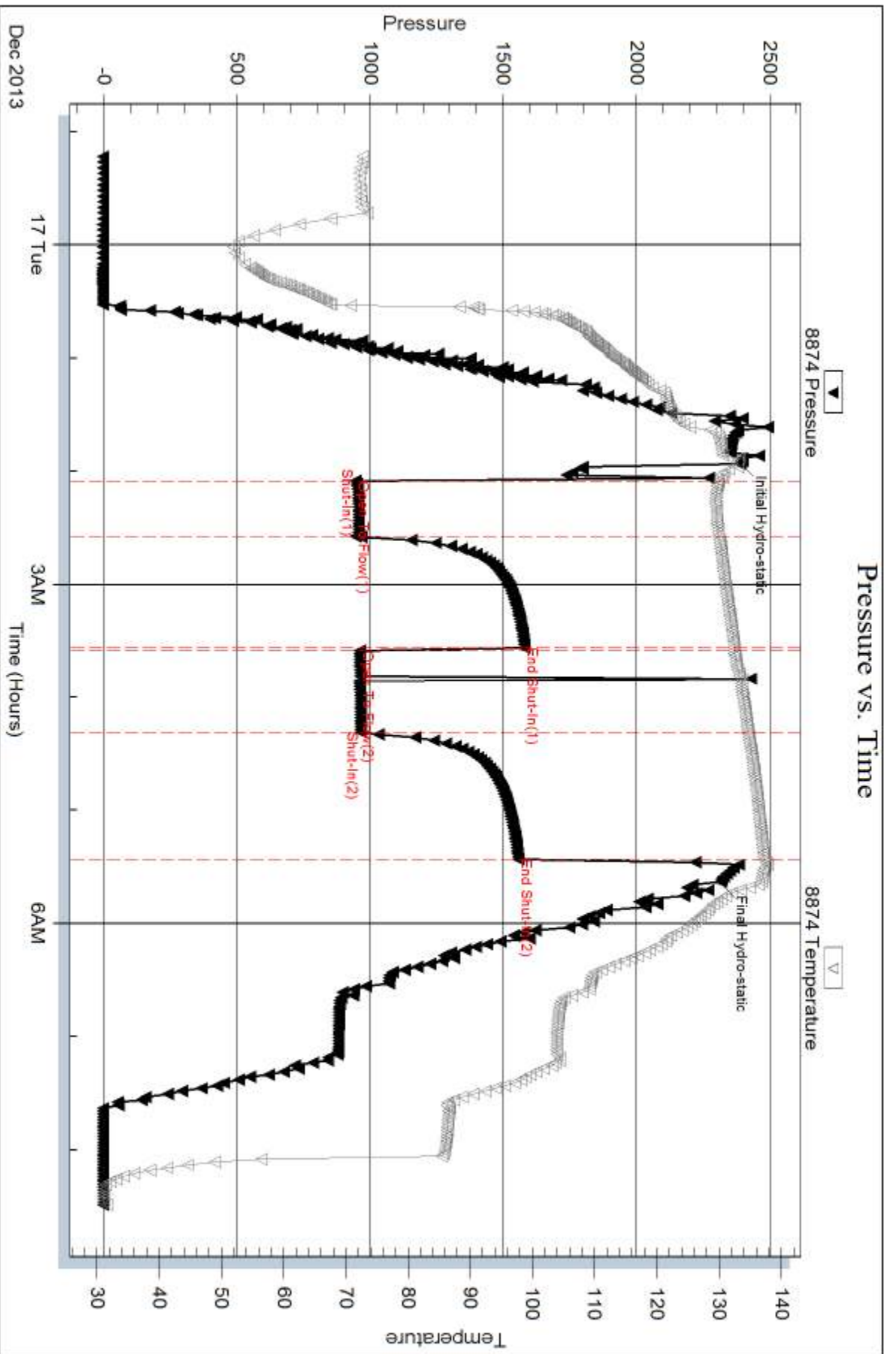
Num Gas Bombs: 0

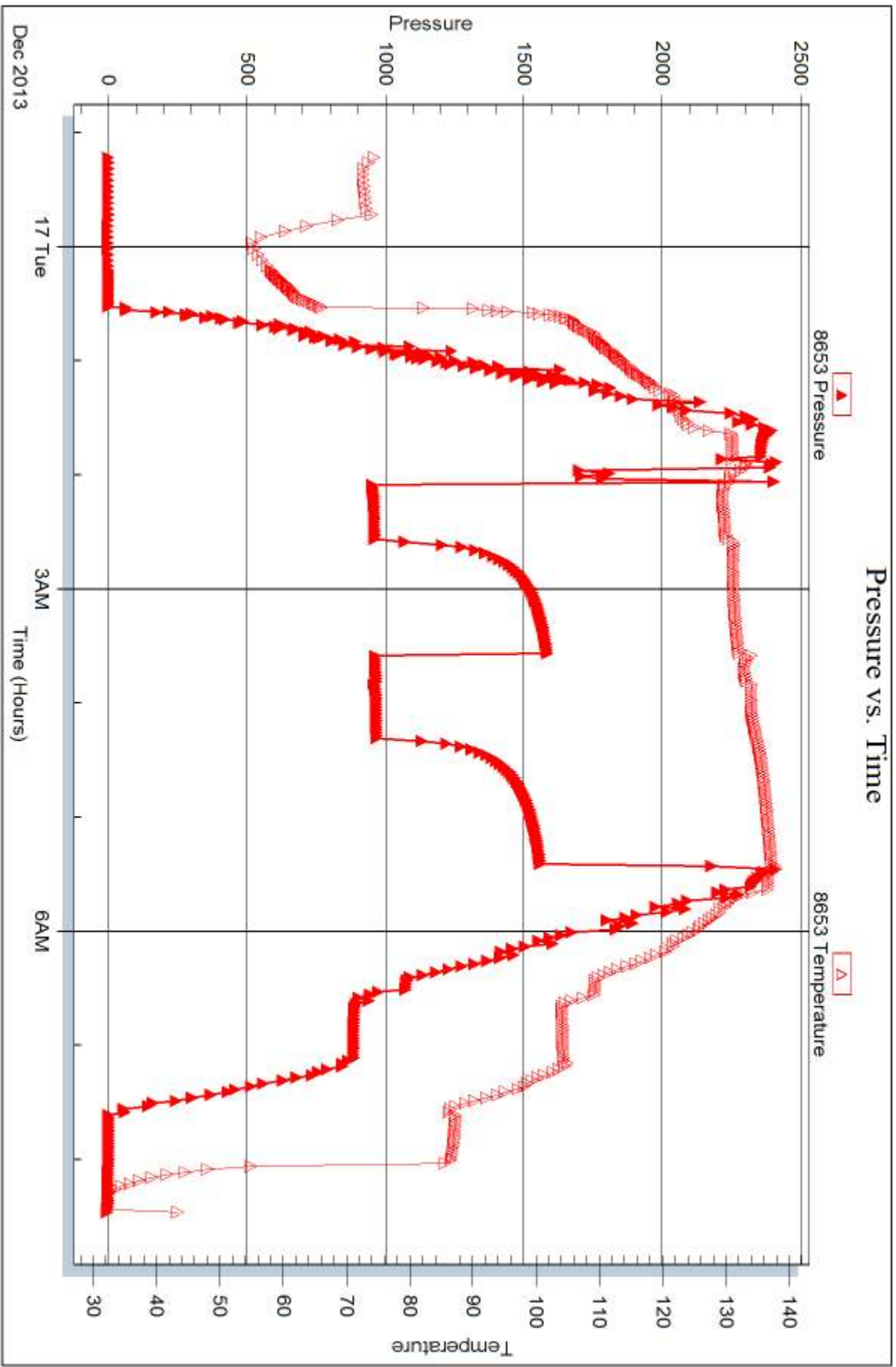
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Driling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Saman ShariFaie

Zweygardt 'HP' #1-3

3-3s-41w Cheyenne,KS

Start Date: 2013.12.17 @ 18:20:00

End Date: 2013.12.18 @ 03:13:00

Job Ticket #: 53564 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.12.23 @ 10:09:08



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53564

DST#: 5

ATTN: Saman ShariFaie

Test Start: 2013.12.17 @ 18:20:00

GENERAL INFORMATION:

Formation: **Pawnee, Ft.Scott, Ch**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:17:10

Time Test Ended: 03:13:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4840.00 ft (KB) To 4950.00 ft (KB) (TVD)

Reference Elevations: 3601.00 ft (KB)

Total Depth: 4950.00 ft (KB) (TVD)

3591.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 10.00 ft

Serial #: 8874 Inside

Press@RunDepth: 238.61 psig @ 4841.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.12.17

End Date:

2013.12.18

Last Calib.:

2013.12.18

Start Time: 18:21:00

End Time:

03:13:00

Time On Btm:

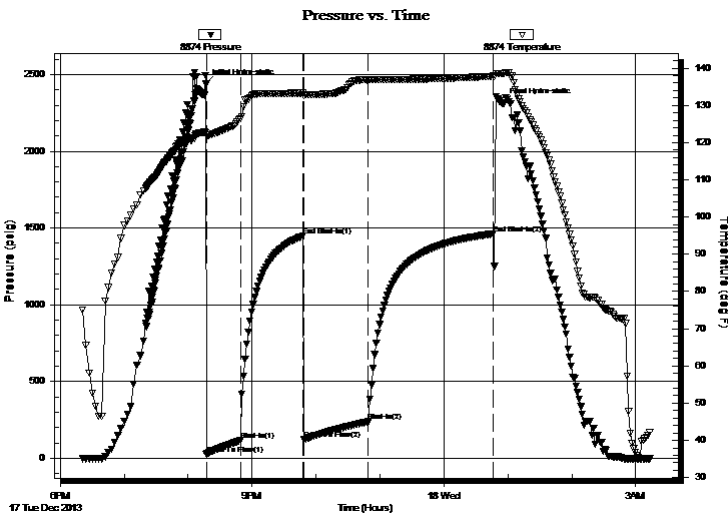
2013.12.17 @ 20:16:40

Time Off Btm:

2013.12.18 @ 00:55:30

TEST COMMENT: 30 - IF- Surface Blow built to 5 1/2"
60 - IS- No Return
60 - FF- Surface Blow started at 6 1/2 min. Built to 7"
90 - FS- No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2437.63	122.67	Initial Hydro-static
1	25.98	122.00	Open To Flow (1)
33	115.30	126.36	Shut-In(1)
91	1447.52	133.34	End Shut-In(1)
93	123.72	132.55	Open To Flow (2)
153	238.61	136.83	Shut-In(2)
270	1461.72	137.83	End Shut-In(2)
279	2312.93	138.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	WM 70M 30W	0.89
275.00	Mud 100M	1.35

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53564

DST#: 5

ATTN: Saman ShariFaie

Test Start: 2013.12.17 @ 18:20:00

Tool Information

Drill Pipe:	Length: 4282.00 ft	Diameter: 3.80 inches	Volume: 60.07 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: 560.00 ft	Diameter: 2.25 inches	Volume: 2.75 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 62.82 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4840.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	110.00 ft			
Tool Length:	138.00 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			4813.00	
Shut In Tool	5.00			4818.00	
Hydraulic tool	5.00			4823.00	
Jars	5.00			4828.00	
Safety Joint	3.00			4831.00	
Packer	5.00			4836.00	28.00 Bottom Of Top Packer
Packer	4.00			4840.00	
Stubb	1.00			4841.00	
Recorder	0.00	8653	Outside	4841.00	
Recorder	0.00	8874	Inside	4841.00	
Perforations	7.00			4848.00	
Change Over Sub	1.00			4849.00	
Drill Pipe	95.00			4944.00	
Change Over Sub	1.00			4945.00	
Bullnose	5.00			4950.00	110.00 Bottom Packers & Anchor

Total Tool Length: 138.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

3-3s-41w Cheyenne,KS

250 N Water STE #300
Wichita, KS 67202

Zweygardt 'HP' #1-3

Job Ticket: 53564

DST#: 5

ATTN: Saman ShariFaie

Test Start: 2013.12.17 @ 18:20:00

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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.19 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	WM 70M 30W	0.885
275.00	Mud 100M	1.352

Total Length: 455.00 ft Total Volume: 2.237 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8874

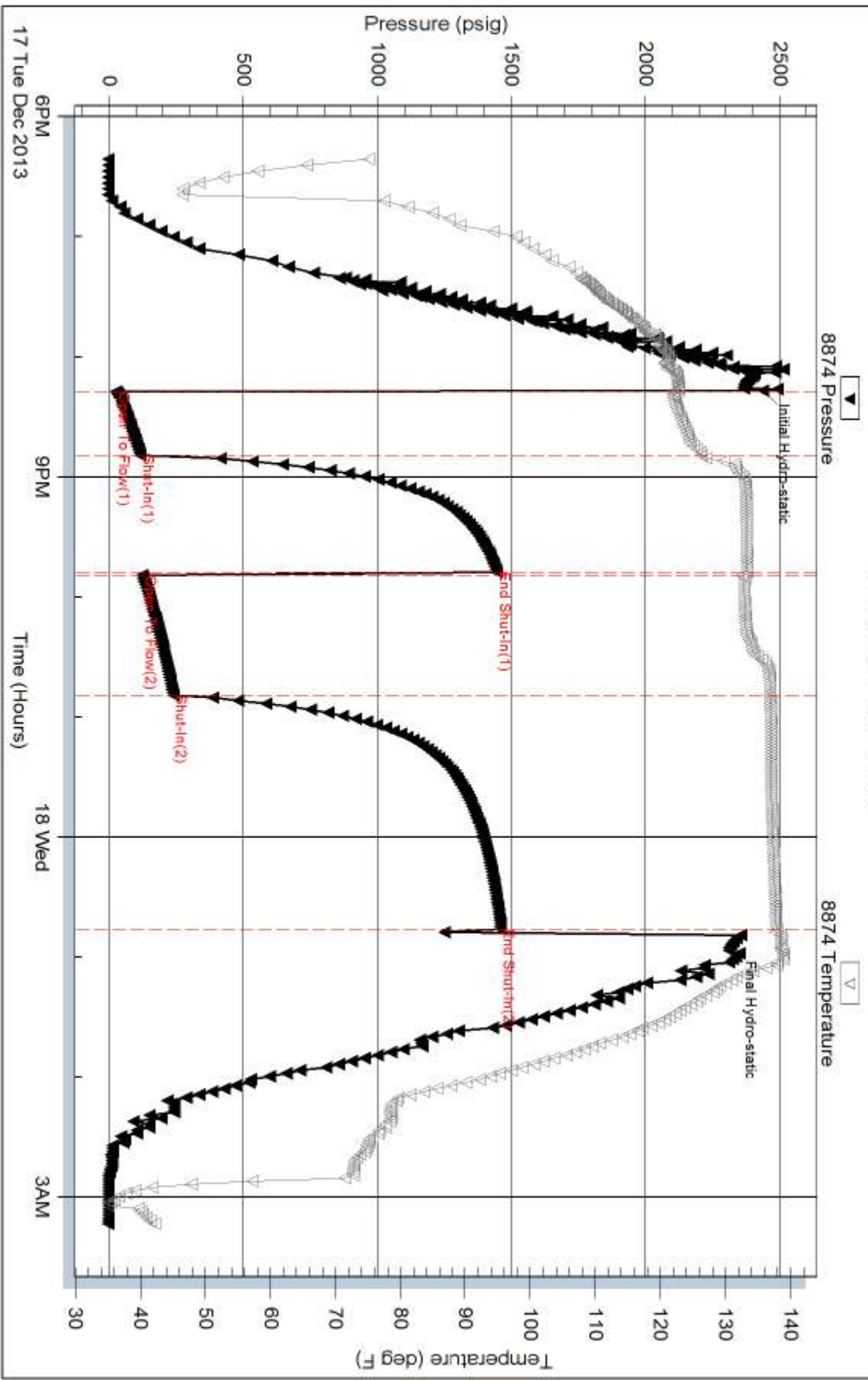
Inside

Murfin Drilling Co.

Zweygardt HP #1-3

DST Test Number: 5

Pressure vs. Time

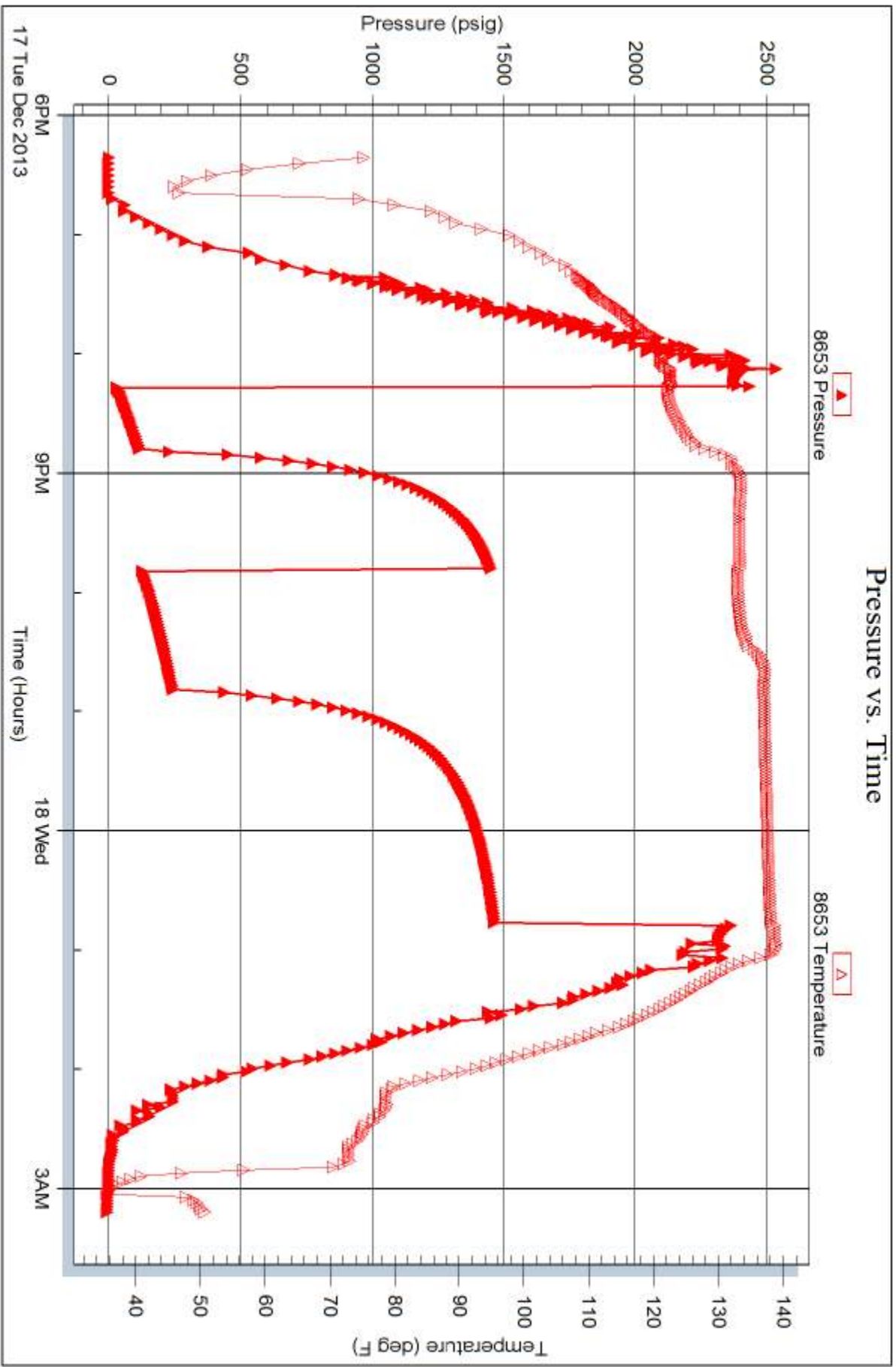


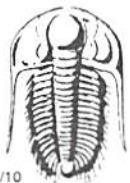
Serial #: 8653

Outside Murfin Drilling Co.

Zweygardt HP #1-3

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53559

Well Name & No. Zweygardt 'HP' #1-3 Test No. 1 Date 12-14-13
 Company Murfin Drilling Co. Elevation 3601 KB 3591 GL
 Address 250 N Water STE # 300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #14
 Location: Sec. 3 Twp. 35 Rge. 41 W Co. Cheyenne State KS

Interval Tested 4391-4500 Zone Tested LKC "A-D"
 Anchor Length 109' Drill Pipe Run 3833" Mud Wt. 9.0
 Top Packer Depth 4387 Drill Collars Run 560' Vis 65
 Bottom Packer Depth 4391 Wt. Pipe Run 0 WL 5.6
 Total Depth 4500 Chlorides 000 ppm System LCM 5#

Blow Description IF - 1/4" Blow built to Bob in 13 min.
ISI - No Return
FF - Bob in 15 min.
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>150</u>	<u>Free oil</u>	<u>100</u>			
<u>180</u>	<u>MCO</u>	<u>80</u>		<u>20</u>	
<u>180</u>	<u>MCO</u>	<u>60</u>		<u>40</u>	
<u>270</u>	<u>MCO</u>	<u>50</u>		<u>50</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 780 BHT 137 Gravity 29 API RW - @ - ° F Chlorides - ppm

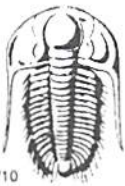
(A) Initial Hydrostatic 2173 Test 1250 T-On Location 1:55 AM
 (B) First Initial Flow 33 Jars 250 T-Started 2:53 AM
 (C) First Final Flow 232 Safety Joint 75 T-Open 4:35 AM
 (D) Initial Shut-In 1311 Circ Sub NIC T-Pulled 8:35 AM
 (E) Second Initial Flow 250 Hourly Standby _____ T-Out 10:43 AM
 (F) Second Final Flow 340 Mileage 156 RT 241.80 Comments _____
 (G) Final Shut-In 1237 Sampler _____
 (H) Final Hydrostatic 2103 Straddle _____
 Shale Packer _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 300
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Sub Total 1816.80
 Total 1816.80
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53560

Well Name & No. Zweygardt 'HP' #1-3 Test No. 2 Date 12-14-13
 Company Murphy Drilling Co. Elevation 3601 KB 3591 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Samman Sharif Rig Murphy #14
 Location: Sec. 3 Twp. 3S Rge. 41W Co. Cherokee State KS

Interval Tested 4507-4580 Zone Tested LKC "G"
 Anchor Length 73' Drill Pipe Run 3929 Mud Wt. 9.1
 Top Packer Depth 4503 Drill Collars Run 568 Vis 59
 Bottom Packer Depth 4507 Wt. Pipe Run 0 WL 5.6
 Total Depth 4580 Chlorides 6000 ppm System LCM 4#

Blow Description IF- BoB in 2 min.
ISI- No Return
FF- BoB in 3 1/2 min.
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>470</u>	<u>WM</u>		<u>20</u>	<u>80</u>	
<u>282</u>	<u>MW</u>		<u>50</u>	<u>50</u>	
<u>376</u>	<u>MW</u>		<u>70</u>	<u>30</u>	
<u>1495</u>	<u>MW</u>		<u>95</u>	<u>5</u>	
<u>5</u>	<u>Mud (heavy)</u>			<u>100</u>	

Rec Total 2628 BHT 147 Gravity - API RW .423 @ 38.2 °F Chlorides 30,000 ppm

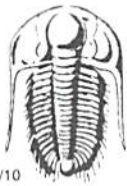
(A) Initial Hydrostatic 2179 Test 1250 T-On Location 9:30 PM
 (B) First Initial Flow 68 Jars 250 T-Started 9:55 PM
 (C) First Final Flow 7000 Safety Joint 75 T-Open 12:00 AM
 (D) Initial Shut-In 1400 Circ Sub NIC T-Pulled 4:00 AM
 (E) Second Initial Flow 721 Hourly Standby T-Out 6:50 AM
 (F) Second Final Flow 1162 Mileage 156 RT 241.80
 (G) Final Shut-In 1402 Sampler
 (H) Final Hydrostatic 2163 Straddle
 Shale Packer
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

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

Sub Total 1816.80
 Total 1816.80
 MP/DST Disc't

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway - Hays, Kansas 67601

Test Ticket

NO. 53561

4/10

Well Name & No. Zweygarde "HP" #1-3 Test No. 3 Date 12-15-13
 Company Murfin Drilling Co. Elevation 3601 KB 3591 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Saman Sherifaic Rig Murfin #14
 Location: Sec. 3 Twp. 3S Rge. 41W Co. Cheyenne State KS

Interval Tested 4575-4720 Zone Tested LKC "H-K"
 Anchor Length 145' Drill Pipe Run 3997 Mud Wt. 9.1
 Top Packer Depth 4571 Drill Collars Run 560' Vis 53
 Bottom Packer Depth 4575 Wt. Pipe Run 0 WL 6.0
 Total Depth 4720 Chlorides 2,000 ppm System LCM 3#
 Blow Description IF-1" Blow built to 7 1/4"
ISI - NO Return
FF - Surface Blow started @ 7 min. Built to 7"
FSI - NO Return

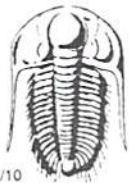
Rec	Feet of	%gas	%oil	%water	%mud
<u>185</u>	<u>Mud</u>			<u>100%</u>	
<u>180</u>	<u>WM</u>		<u>30%</u>	<u>70%</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 365 BHT 134 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2214</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>9:05 PM</u>
(B) First Initial Flow <u>25</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>9:35 PM</u>
(C) First Final Flow <u>99</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:00 AM</u>
(D) Initial Shut-In <u>1365</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/L</u>	T-Pulled <u>4:00 AM</u>
(E) Second Initial Flow <u>1000</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>6:30 AM</u>
(F) Second Final Flow <u>222</u>	<input checked="" type="checkbox"/> Mileage <u>156 RT</u> 241.80	Comments
(G) Final Shut-In <u>1341</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2196</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>1816.80</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1816.80</u>	

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53562

Well Name & No. Zweygardt 'HP' #1-3 Test No. 4 Date 12-16-13
 Company Murrin Drilling, Co. Elevation 3601 KB 3591 GL
 Address 250 N Water STE #3000 Wichita, KS 67202
 Co. Rep / Geo. Saman ShariFaie Rig Murrin #14
 Location: Sec. 3 Twp. 3S Rge. 41W Co. Cheyenne State KS

Interval Tested 4835-4900 Zone Tested Pawnee
 Anchor Length 65' Drill Pipe Run _____ Mud Wt. 9.0
 Top Packer Depth 4831 Drill Collars Run 560' Vis 55
 Bottom Packer Depth 4835 Wt. Pipe Run 0 WL 5.2
 Total Depth 4900 Chlorides 1,7000 ppm System LCM 4#

Blow Description IF - No Blow
ISI - No Return
FF - No Blow - flushed tool at 15 min - NO Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>1805</u>	<u>mud</u>			<u>1000</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

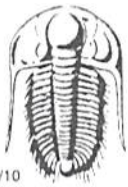
Rec Total 1805 BHT 137 Gravity _____ API RW - @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2388 Test 1050 T-On Location 11:10 PM
 (B) First Initial Flow 943 Jars 250 T-Started 11:12 PM
 (C) First Final Flow 943 Safety Joint 75 T-Open 2:05 AM
 (D) Initial Shut-In 1581 Circ Sub Charge X 50 T-Pulled 5:20 AM
 (E) Second Initial Flow 959 Hourly Standby _____ T-Out 8:30 AM
 (F) Second Final Flow 963 Mileage 156 RT 241.80 Comments Tool slid approx
 (G) Final Shut-In 1556 Sampler _____ 5' to bottom. Had to
 (H) Final Hydrostatic 2314 Straddle _____ reset tool and pick up 1 Jt.
 Shale Packer _____ to make bottom.
 Extra Packer _____ But plug was full of clip
 Extra Recorder _____ pins

Initial Open 300 #1 Extra Copies _____
 Initial Shut-In 60 Sub Total 0
 Final Flow 45 Total 1666.80
 Final Shut-In 60 Day Standby _____ MP/DST Disc't _____
 Accessibility _____
 Sub Total 1666.80

Approved By _____ Our Representative _____

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53564

Well Name & No. Zwegardt 'HP' #1-3 Test No. 5 Date 12-17-13
 Company Murphy Drilling Co. Elevation 3601 KB 3591 GL
 Address 250 N Weyer St #300 Wichita, KS 67202
 Co. Rep / Geo. Samen Sheriffic Rig Murphy #14
 Location: Sec. 3 Twp. 3S Rge. 41W Co. Cheyenne State KS

Interval Tested 4840-4950 Zone Tested Pawnee, Fr. Scott, Cherokee
 Anchor Length 110' Drill Pipe Run 4282 Mud Wt. 9.2
 Top Packer Depth 4836 Drill Collars Run 560 Vis 69
 Bottom Packer Depth 4840 Wt. Pipe Run 0 WL 5.2
 Total Depth 4950 Chlorides 1600 ppm System LCM 4#
 Blow Description IF - Surface Blow built to 5 1/2"
ISI - NO Return
FF - Surface Blow started at 6 1/2 min. Built to 7"
FSI - NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>275</u>	<u>Mud</u>			<u>100</u>	
<u>180</u>	<u>WM</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 Total 455 BHT 138 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic <u>2437</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:15 PM</u>
(B) First Initial Flow <u>25</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:20 PM</u>
(C) First Final Flow <u>115</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>8:20 PM</u>
(D) Initial Shut-In <u>1447</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>12:20 AM</u>
(E) Second Initial Flow <u>123</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>3:15 AM</u>
(F) Second Final Flow <u>238</u>	<input checked="" type="checkbox"/> Mileage <u>156 RT X2</u>	Comments <u>Loaded tools</u>
(G) Final Shut-In <u>1461</u>	<input type="checkbox"/> Sampler <u>483.60</u>	<u>4:00 PM 12-19-13</u>
(H) Final Hydrostatic <u>2312</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>800</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby <u>1d 12.75h</u>	Total <u>2856.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>2058.60</u>	

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged or 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.