



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Paul Gunzelman

James "B" #1-23

23-10s-34w Thomas,KS

Start Date: 2015.01.12 @ 17:24:00

End Date: 2015.01.13 @ 01:45:54

Job Ticket #: 58692 DST #: 1

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

Printed: 2015.01.19 @ 13:45:41



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58692

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2015.01.12 @ 17:24:00

GENERAL INFORMATION:

Formation: **LKC "A - B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:31:40

Time Test Ended: 01:45:54

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Interval: 4122.00 ft (KB) To 4183.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4183.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press@RunDepth: 231.04 psig @ 4124.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.12

End Date:

2015.01.13

Last Calib.:

2015.01.13

Start Time: 17:24:00

End Time:

01:45:54

Time On Btm:

2015.01.12 @ 19:31:25

Time Off Btm:

2015.01.12 @ 23:35:09

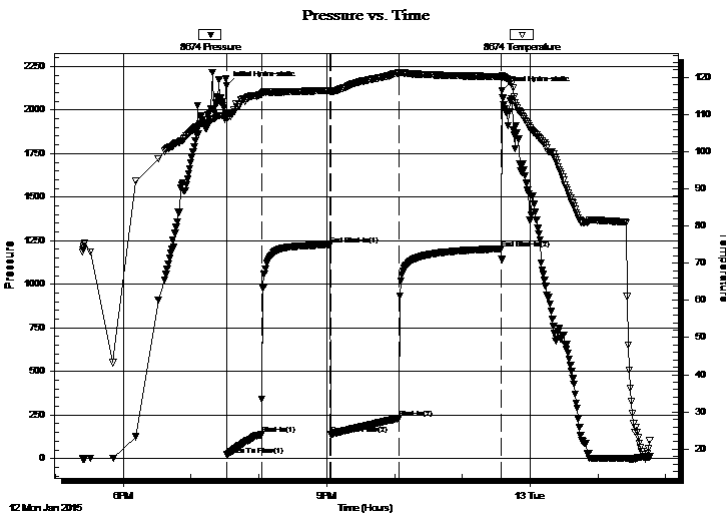
TEST COMMENT: IF- Weak Surface Blow Built to 7 1/2"

IS- No Blow

FF- Weak Surface Blow Built to 3"

FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2140.03	109.97	Initial Hydro-static
1	21.41	109.15	Open To Flow (1)
31	137.47	115.50	Shut-In(1)
92	1226.39	116.53	End Shut-In(1)
92	140.77	116.14	Open To Flow (2)
153	231.04	121.15	Shut-In(2)
243	1203.76	120.22	End Shut-In(2)
244	2110.24	120.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
175.00	MCW 12%m 88%w	0.86
122.00	MCW 28%m 72%w	1.17
126.00	WCM 47%w 53%m	1.77
40.00	WCM 24%w 76%m	0.56

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58692

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2015.01.12 @ 17:24:00

GENERAL INFORMATION:

Formation: **LKC "A - B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:31:40

Time Test Ended: 01:45:54

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 71

Interval: **4122.00 ft (KB) To 4183.00 ft (KB) (TVD)**

Total Depth: 4183.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3206.00 ft (KB)

3195.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8355 **Outside**

Press@RunDepth: psig @ 4124.00 ft (KB)

Start Date: 2015.01.12

End Date:

2015.01.13

Start Time: 17:24:05

End Time:

01:47:29

Capacity: 8000.00 psig

Last Calib.:

2015.01.13

Time On Btm:

Time Off Btm:

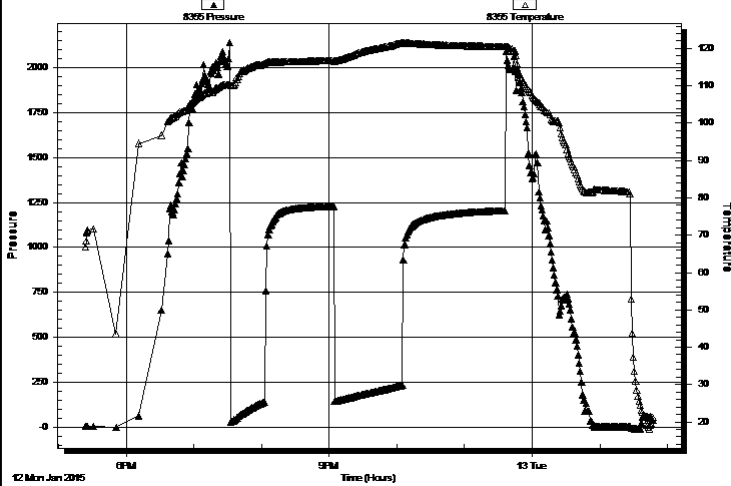
TEST COMMENT: IF- Weak Surface Blow Built to 7 1/2"

IS- No Blow

FF- Weak Surface Blow Built to 3"

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
175.00	MCW 12%m 88%w	0.86
122.00	MCW 28%m 72%w	1.17
126.00	WCM 47%w 53%m	1.77
40.00	WCM 24%w 76%m	0.56

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58692

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2015.01.12 @ 17:24:00

Tool Information

Drill Pipe:	Length: 3881.00 ft	Diameter: 3.80 inches	Volume: 54.44 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 234.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	12000.00 lb
			<u>Total Volume: 55.59 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	4122.00 ft			Final	68000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	61.00 ft				
Tool Length:	88.00 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			4096.00	
Shut In Tool	5.00			4101.00	
Hydraulic tool	5.00			4106.00	
Jars	5.00			4111.00	
Safety Joint	2.00			4113.00	
Packer	5.00			4118.00	27.00 Bottom Of Top Packer
Packer	4.00			4122.00	
Stubb	1.00			4123.00	
Perforations	1.00			4124.00	
Recorder	0.00	8355	Outside	4124.00	
Recorder	0.00	8674	Inside	4124.00	
Perforations	20.00			4144.00	
Change Over Sub	1.00			4145.00	
Drill Pipe	32.00			4177.00	
Change Over Sub	1.00			4178.00	
Bullnose	5.00			4183.00	61.00 Bottom Packers & Anchor
Total Tool Length:	88.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58692

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2015.01.12 @ 17:24:00

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:

62000 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.36 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
175.00	MCW 12%m 88%w	0.861
122.00	MCW 28%m 72%w	1.174
126.00	WCM 47%w 53%m	1.767
40.00	WCM 24%w 76%m	0.561

Total Length: 463.00 ft Total Volume: 4.363 bbl

Num Fluid Samples: 0

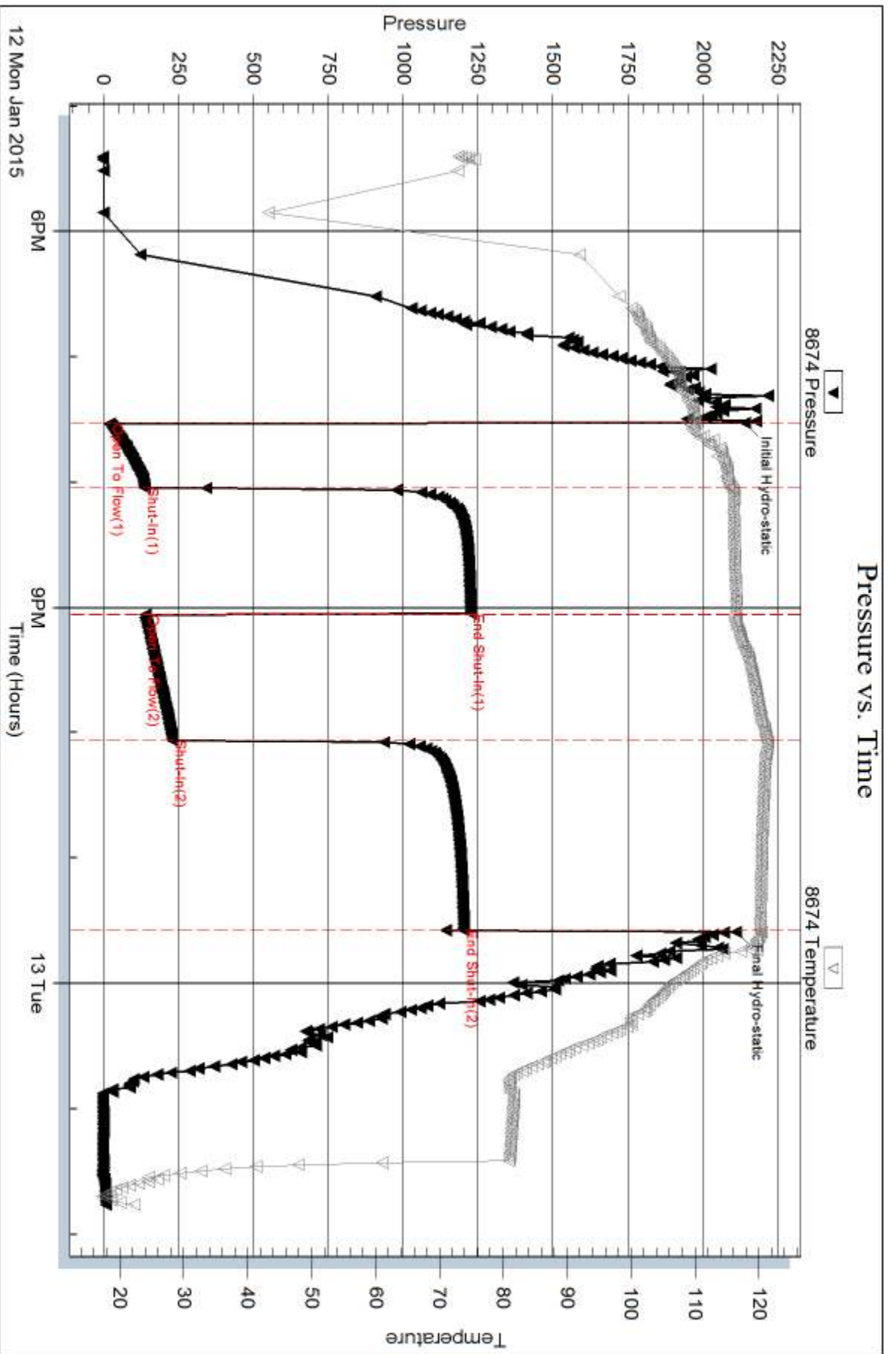
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .381 @ 22f = 62000

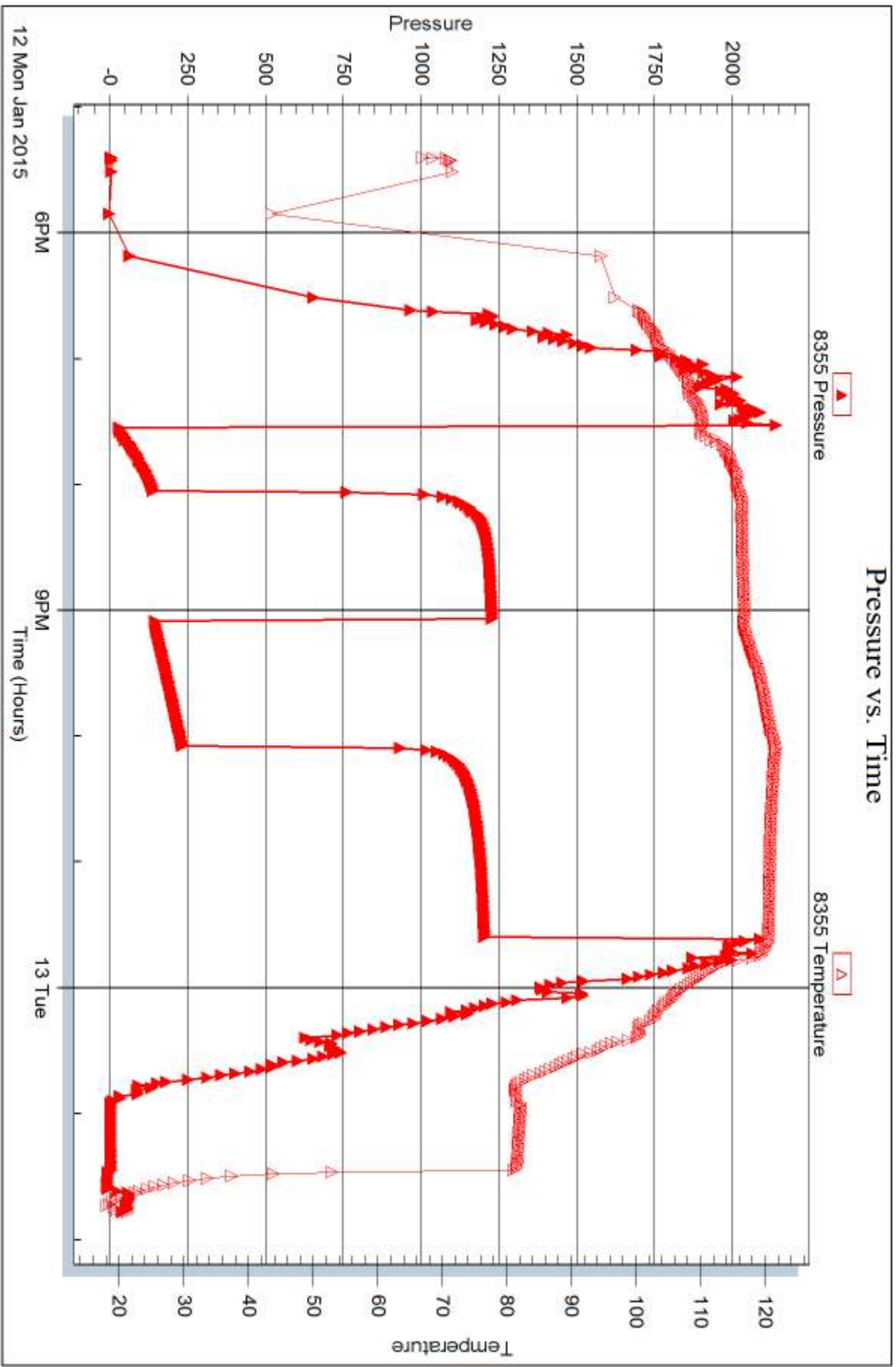


Serial #: 8355

Outside Murfin Drilling Co.

James "B" #1-23

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 58692

Printed: 2015.01.19 @ 13:45:43



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Paul Gunzelman

James "B" #1-23

23-10s-34w Thomas,KS

Start Date: 2015.01.13 @ 18:56:00

End Date: 2015.01.14 @ 03:19:09

Job Ticket #: 58693 DST #: 2

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

Printed: 2015.01.19 @ 13:45:13



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58693

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2015.01.13 @ 18:56:00

GENERAL INFORMATION:

Formation: **LKC "H-1"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:00:25

Time Test Ended: 03:19:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4270.00 ft (KB) To 4331.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4331.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press@RunDepth: 259.78 psig @ 4272.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.13

End Date:

2015.01.14

Last Calib.:

2015.01.14

Start Time: 18:56:00

End Time:

03:19:09

Time On Btm:

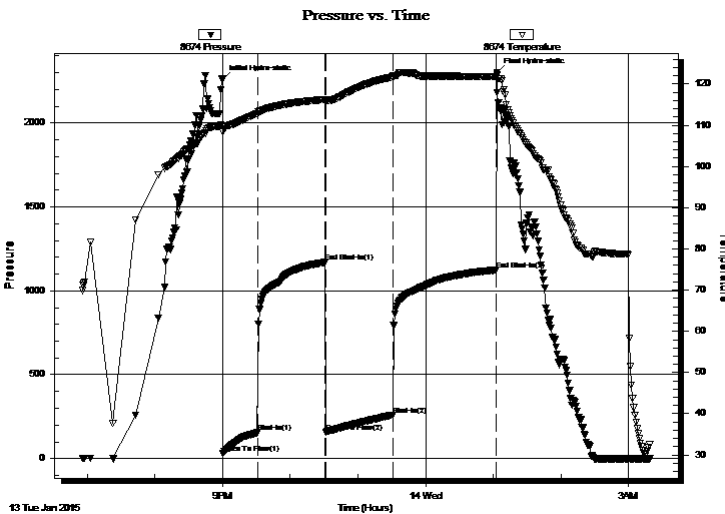
2015.01.13 @ 21:00:10

Time Off Btm:

2015.01.14 @ 01:03:24

TEST COMMENT: IF- Weak Surface Blow Built to BOB in 29 min
IS- No Blow
FF- Weak Surface Blow Built to 9 3/4"
FS- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.39	109.83	Initial Hydro-static
1	32.05	108.50	Open To Flow (1)
31	153.88	112.89	Shut-In(1)
91	1169.37	116.22	End Shut-In(1)
92	157.69	115.92	Open To Flow (2)
151	259.78	121.70	Shut-In(2)
243	1124.50	121.83	End Shut-In(2)
244	2301.77	122.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
234.00	MCW 39%w 61%w	1.15
189.00	WCM 33%w 67%w with Oil Spots	2.65
108.00	WCM 6%w 94%w with Oil Spots	1.51

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas, KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58693 **DST#: 2**

ATTN: Paul Gunzelman

Test Start: 2015.01.13 @ 18:56:00

GENERAL INFORMATION:

Formation: **LKC "H-1"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:00:25

Time Test Ended: 03:19:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4270.00 ft (KB) To 4331.00 ft (KB) (TVD)

Total Depth: 4331.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3206.00 ft (KB)

3195.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4272.00 ft (KB)

Start Date: 2015.01.13

End Date: 2015.01.14

Capacity: 8000.00 psig

Last Calib.: 2015.01.14

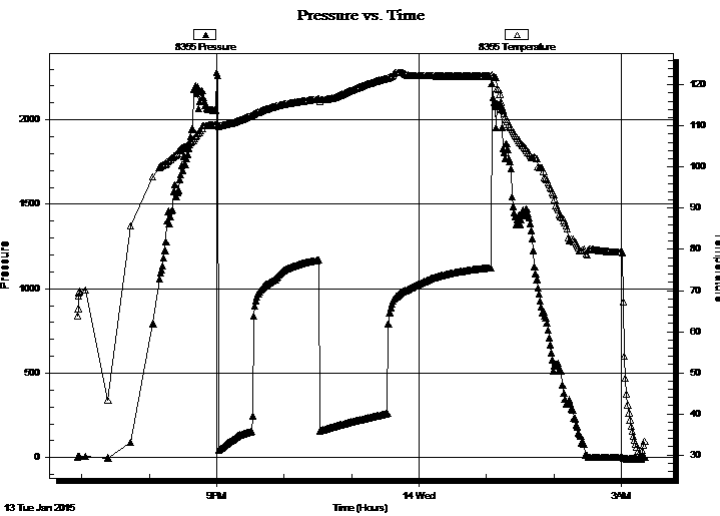
Start Time: 18:56:05

End Time: 03:20:44

Time On Btm:

Time Off Btm:

TEST COMMENT: IF- Weak Surface Blow Built to BOB in 29 min
IS- No Blow
FF- Weak Surface Blow Built to 9 3/4"
FS- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
234.00	MCW 39%m 61%w	1.15
189.00	WCM 33%w 67%m with Oil Spots	2.65
108.00	WCM 6%w 94%m with Oil Spots	1.51

* 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.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58693

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2015.01.13 @ 18:56:00

Tool Information

Drill Pipe:	Length: 4037.00 ft	Diameter: 3.80 inches	Volume: 56.63 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 234.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 10000.00 lb
			<u>Total Volume: 57.78 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	4270.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	61.00 ft			
Tool Length:	88.00 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			4244.00	
Shut In Tool	5.00			4249.00	
Hydraulic tool	5.00			4254.00	
Jars	5.00			4259.00	
Safety Joint	2.00			4261.00	
Packer	5.00			4266.00	27.00 Bottom Of Top Packer
Packer	4.00			4270.00	
Stubb	1.00			4271.00	
Perforations	1.00			4272.00	
Recorder	0.00	8355	Outside	4272.00	
Recorder	0.00	8674	Inside	4272.00	
Perforations	20.00			4292.00	
Change Over Sub	1.00			4293.00	
Drill Pipe	32.00			4325.00	
Change Over Sub	1.00			4326.00	
Bullnose	5.00			4331.00	61.00 Bottom Packers & Anchor
Total Tool Length:	88.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58693

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2015.01.13 @ 18:56:00

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:

80000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.77 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
234.00	MCW 39%m 61%w	1.151
189.00	WCM 33%w 67%m with Oil Spots	2.651
108.00	WCM 6%w 94%m with Oil Spots	1.515

Total Length: 531.00 ft Total Volume: 5.317 bbl

Num Fluid Samples: 0

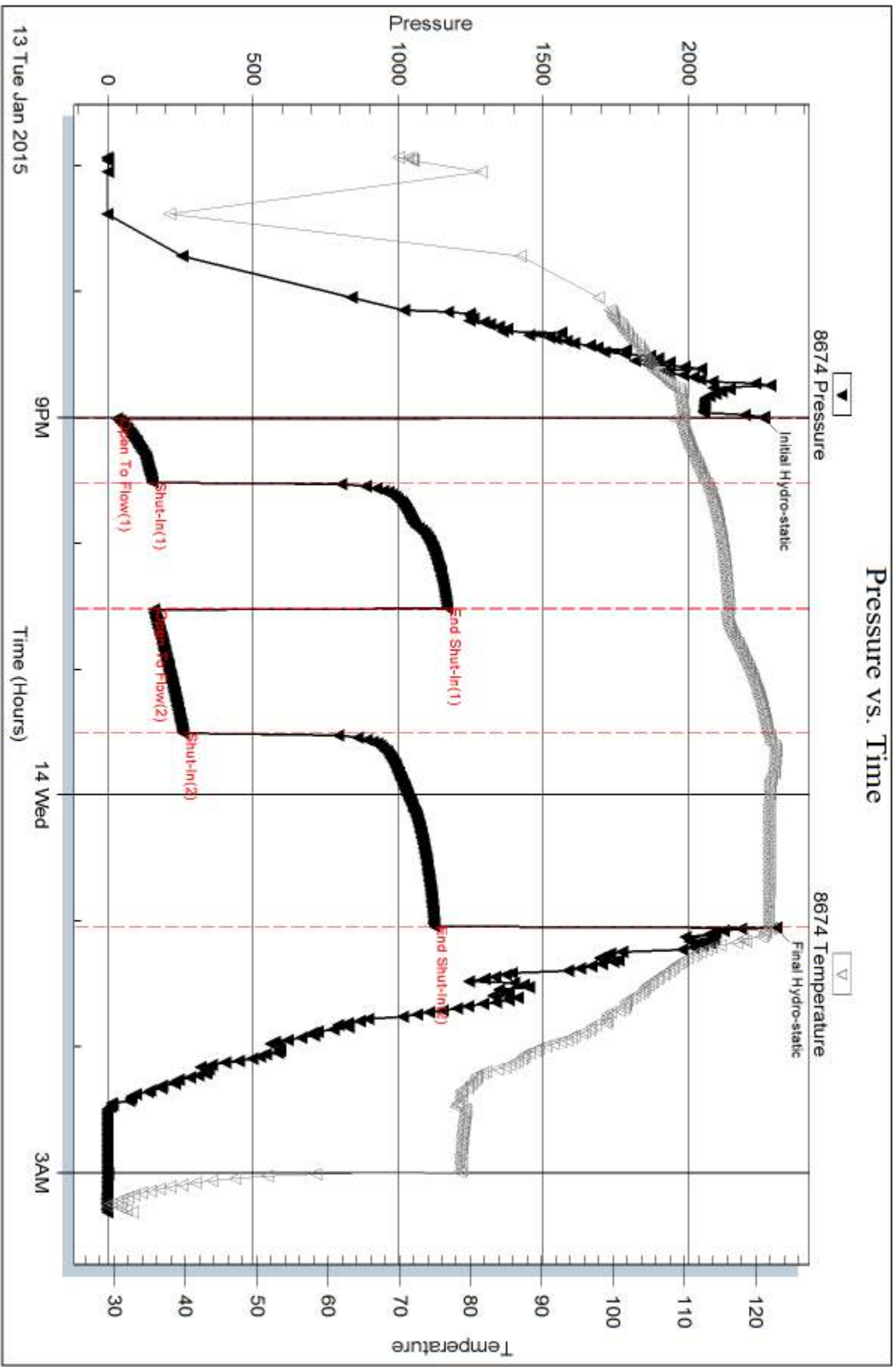
Num Gas Bombs: 0

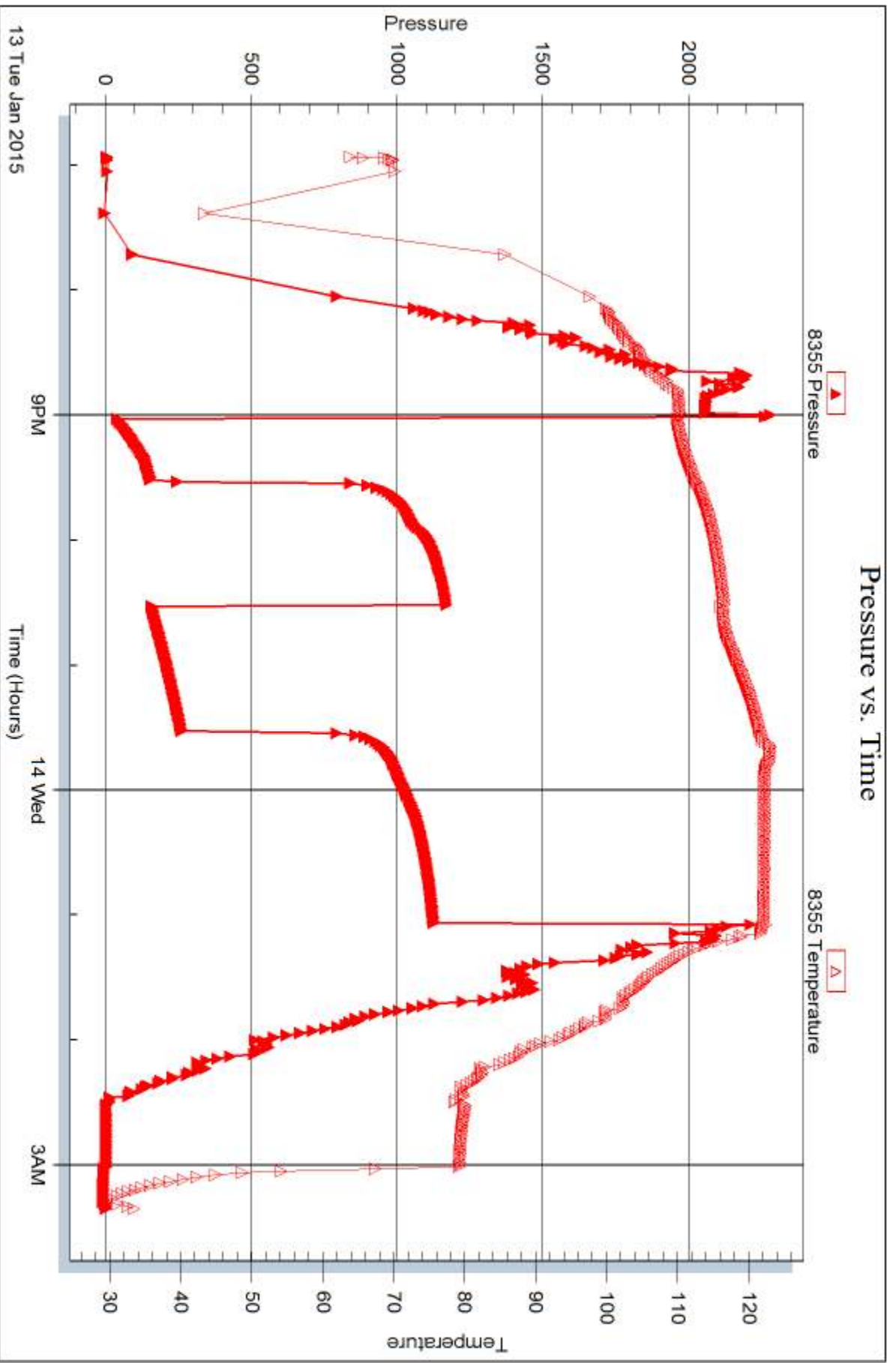
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .221 @ 80f = 80000







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Paul Gunzelman

James "B" #1-23

23-10s-34w Thomas,KS

Start Date: 2015.01.14 @ 13:54:00

End Date: 2015.01.14 @ 22:17:54

Job Ticket #: 58694 DST #: 3

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

Printed: 2015.01.19 @ 13:43:53



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58694

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2015.01.14 @ 13:54:00

GENERAL INFORMATION:

Formation: **LKC "J - K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:47:25

Time Test Ended: 22:17:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4331.00 ft (KB) To 4390.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4390.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press@RunDepth: 134.45 psig @ 4332.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.14

End Date:

2015.01.14

Last Calib.:

2015.01.14

Start Time: 13:54:00

End Time:

22:17:54

Time On Btm:

2015.01.14 @ 15:46:55

Time Off Btm:

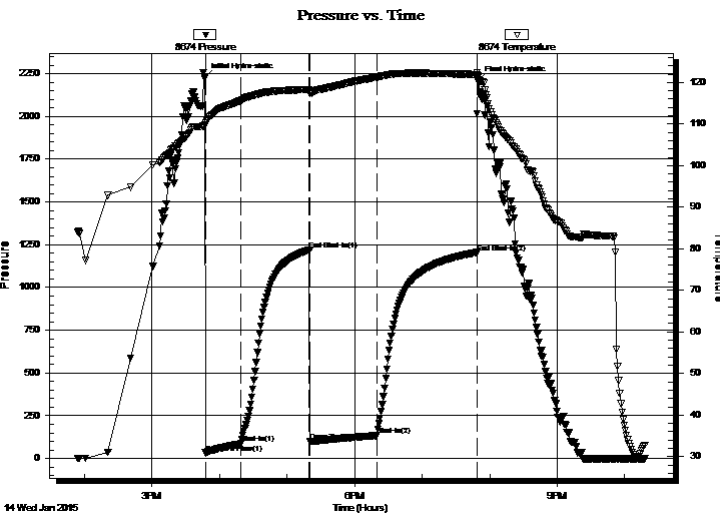
2015.01.14 @ 19:49:24

TEST COMMENT: IF- Weak Surface Blow Built to 9 3/4"

IS- No Blow

FF- Weak Surface Blow Built to 5"

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2225.33	109.75	Initial Hydro-static
1	32.72	109.81	Open To Flow (1)
32	86.52	115.62	Shut-In(1)
93	1219.74	118.22	End Shut-In(1)
94	98.99	117.44	Open To Flow (2)
153	134.45	121.21	Shut-In(2)
242	1204.79	121.89	End Shut-In(2)
243	2207.29	121.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
59.00	WOGCM 7%w 15%oil 19%g 59%m	0.29
177.00	MGCO 9%m 22%g 69%oil	0.89
112.00	GO 3%g 97%oil	1.57
0.00	264' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N. Water Ste 300
Wichita KS 67202
ATTN: Paul Gunzelman

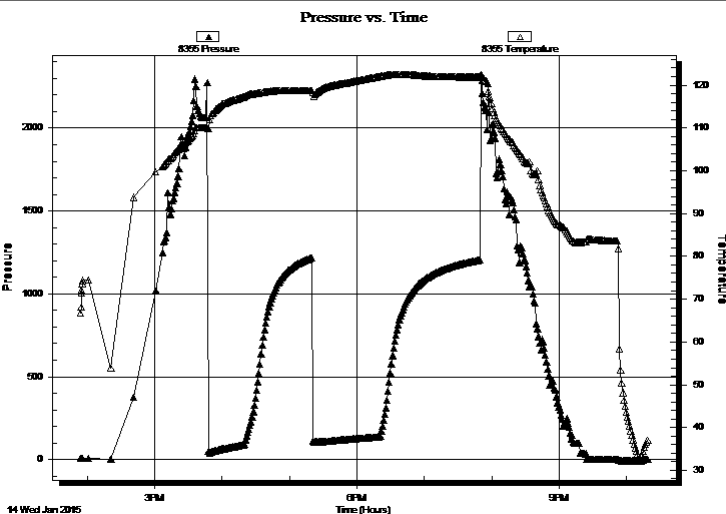
23-10s-34w Thomas,KS
James "B" #1-23
Job Ticket: 58694 **DST#: 3**
Test Start: 2015.01.14 @ 13:54:00

GENERAL INFORMATION:

Formation:	LKC " J - K "				
Deviated:	No	Whipstock:	ft (KB)	Test Type:	Conventional Bottom Hole (Reset)
Time Tool Opened:	15:47:25			Tester:	Will MacLean
Time Test Ended:	22:17:54			Unit No:	71
Interval:	4331.00 ft (KB) To 4390.00 ft (KB) (TVD)			Reference Elevations:	3206.00 ft (KB)
Total Depth:	4390.00 ft (KB) (TVD)				3195.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Good	KB to GR/CF:	11.00 ft

Serial #: 8355	Outside				
Press@RunDepth:	psig @	4332.00 ft (KB)	Capacity:	8000.00 psig	
Start Date:	2015.01.14	End Date:	2015.01.14	Last Calib.:	2015.01.14
Start Time:	13:54:05	End Time:	22:19:29	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: IF- Weak Surface Blow Built to 9 3/4"
IS- No Blow
FF- Weak Surface Blow Built to 5"
FS- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
59.00	WOGCM 7%w 15%oil 19%g 59%m	0.29
177.00	MGCO 9%m 22%g 69%oil	0.89
112.00	GO 3%g 97%oil	1.57
0.00	264' of GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58694

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2015.01.14 @ 13:54:00

Tool Information

Drill Pipe:	Length: 4100.00 ft	Diameter: 3.80 inches	Volume: 57.51 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 234.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	8000.00 lb
			<u>Total Volume: 58.66 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	70000.00 lb
Depth to Top Packer:	4331.00 ft			Final	70000.00 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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4305.00	
Shut In Tool	5.00			4310.00	
Hydraulic tool	5.00			4315.00	
Jars	5.00			4320.00	
Safety Joint	2.00			4322.00	
Packer	5.00			4327.00	27.00 Bottom Of Top Packer
Packer	4.00			4331.00	
Stubb	1.00			4332.00	
Recorder	0.00	8355	Outside	4332.00	
Recorder	0.00	8674	Inside	4332.00	
Perforations	20.00			4352.00	
Change Over Sub	1.00			4353.00	
Drill Pipe	31.00			4384.00	
Change Over Sub	1.00			4385.00	
Bullnose	5.00			4390.00	59.00 Bottom Packers & Anchor

Total Tool Length: 86.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58694

DST#: 3

ATTN: Paul Gunzelman

Test Start: 2015.01.14 @ 13:54:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 74.00 sec/qt
Water Loss: 8.35 in³
Resistivity: ohm.m
Salinity: 12300.00 ppm
Filter Cake: 2.00 inches

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

Oil API: 27 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

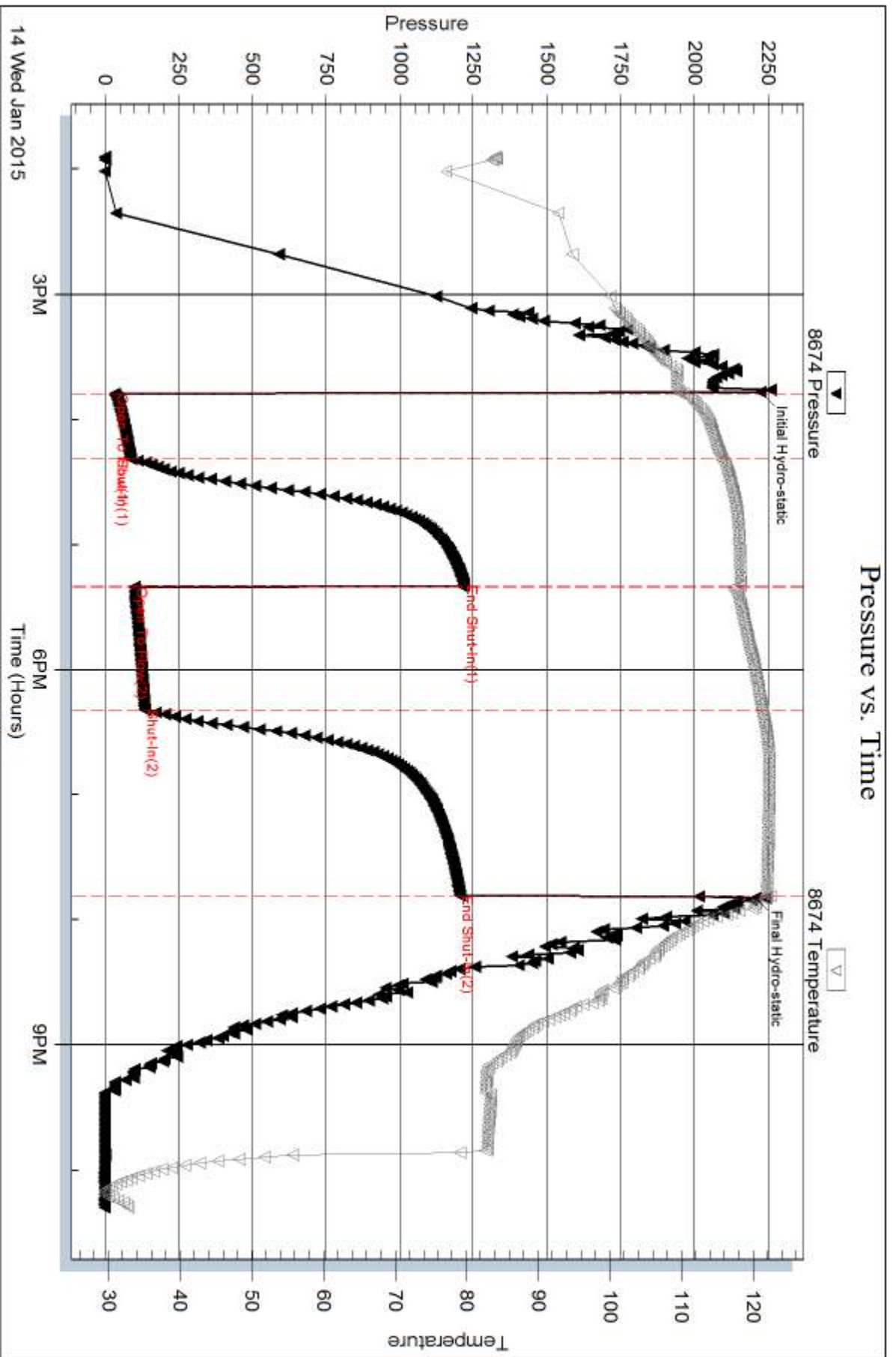
Length ft	Description	Volume bbl
59.00	WOGCM 7%w 15%oil 19%g 59%m	0.290
177.00	MGCO 9%m 22%g 69%oil	0.889
112.00	GO 3%g 97%oil	1.571
0.00	264' of GIP	0.000

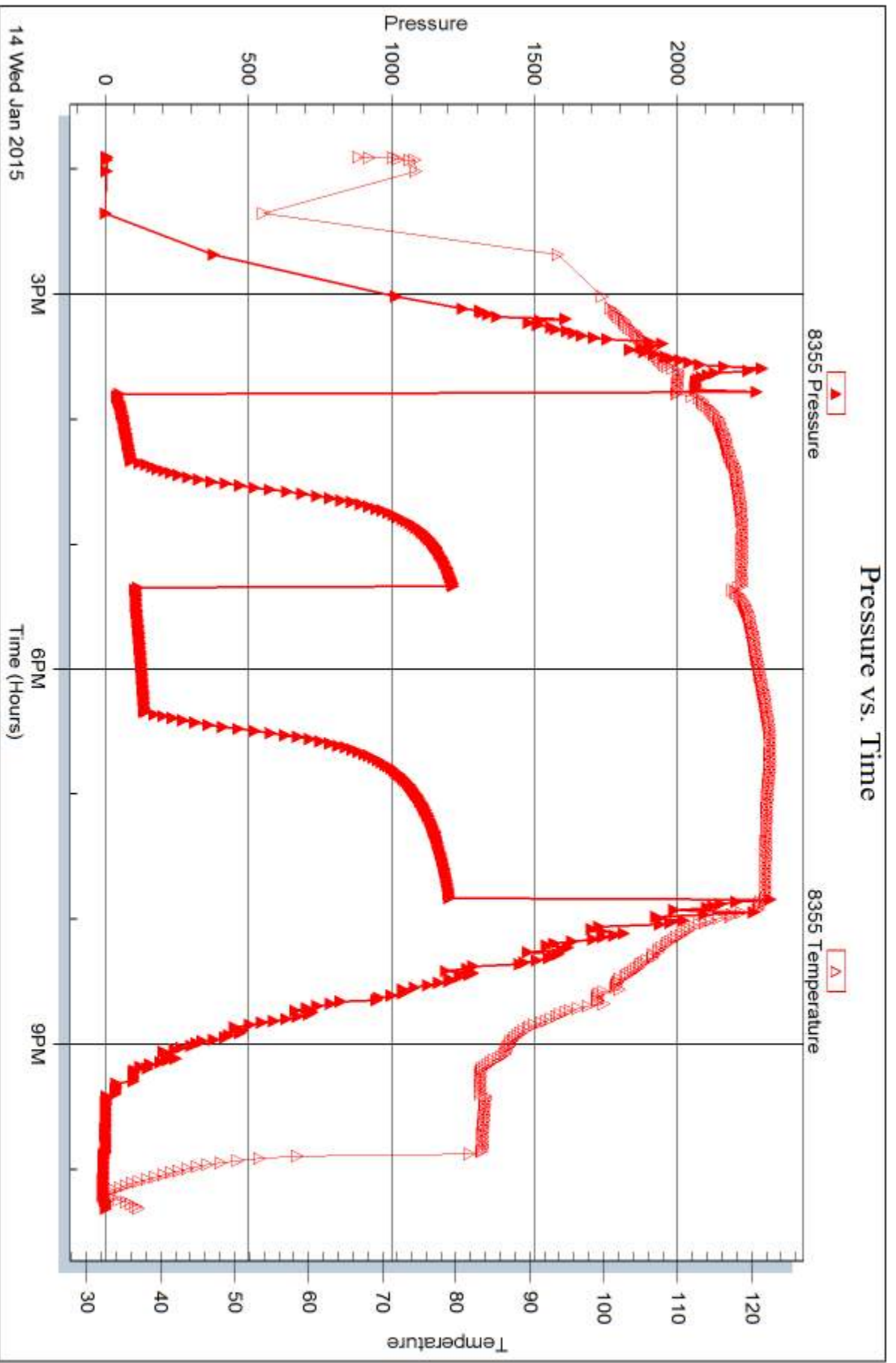
Total Length: 348.00 ft Total Volume: 2.750 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: API is 24 @ 30f = 27







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Paul Gunzelman

James "B" #1-23

23-10s-34w Thomas,KS

Start Date: 2015.01.15 @ 23:00:00

End Date: 2015.01.16 @ 07:59:10

Job Ticket #: 58695 DST #: 4

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

Printed: 2015.01.19 @ 13:43:29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58695

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2015.01.15 @ 23:00:00

GENERAL INFORMATION:

Formation: **Lower Pawnee / Ft Sc**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:28:25

Time Test Ended: 07:59:10

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4570.00 ft (KB) To 4628.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4628.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674

Inside

Press@RunDepth: 71.06 psig @ 4571.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.15

End Date:

2015.01.16

Last Calib.:

2015.01.16

Start Time: 23:00:00

End Time:

07:59:10

Time On Btm:

2015.01.16 @ 01:28:10

Time Off Btm:

2015.01.16 @ 05:33:54

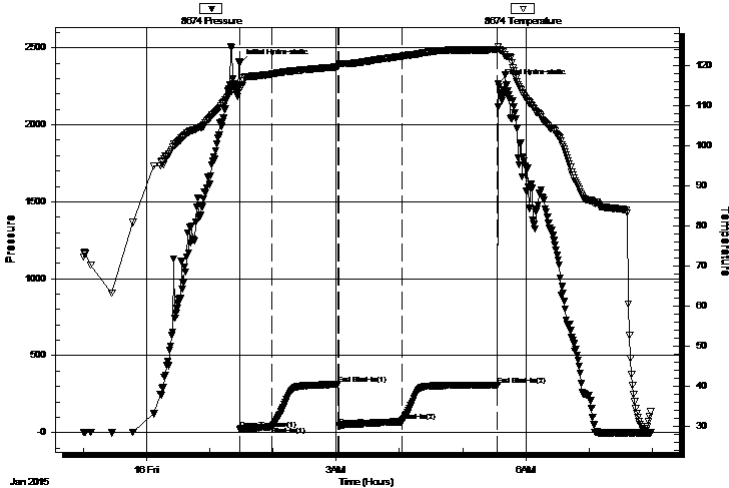
TEST COMMENT: IF- Weak Surface Blow Built to 8"

IS- No Blow

FF- Weak Surface Blow Built to 3 1/4"

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2400.50	115.23	Initial Hydro-static
1	20.23	114.16	Open To Flow (1)
31	39.02	117.93	Shut-In(1)
94	315.05	119.74	End Shut-In(1)
95	43.80	120.05	Open To Flow (2)
154	71.06	122.37	Shut-In(2)
245	308.99	124.05	End Shut-In(2)
246	2264.57	124.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
59.00	WOGCM 3%w 9%oil 11%g 77%m	0.29
59.00	GOCM 4%g 7%oil 89%m	0.29
2.00	GO 3%g 97%oil	0.01
0.00	305' of GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58695

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2015.01.15 @ 23:00:00

GENERAL INFORMATION:

Formation: **Lower Pawnee / Ft Sc**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:28:25

Time Test Ended: 07:59:10

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4570.00 ft (KB) To 4628.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4628.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8355 Outside

Press@RunDepth: psig @ 4571.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.15

End Date:

2015.01.16

Last Calib.:

2015.01.16

Start Time: 23:00:05

End Time:

08:00:45

Time On Btm:

Time Off Btm:

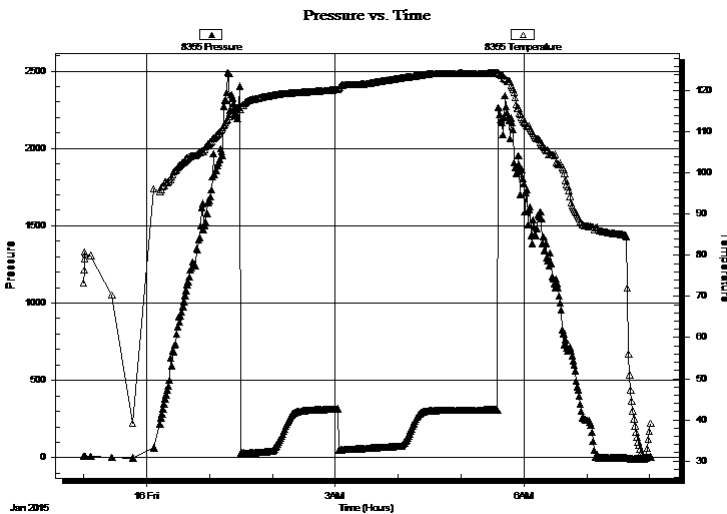
TEST COMMENT: IF- Weak Surface Blow Built to 8"

IS- No Blow

FF- Weak Surface Blow Built to 3 1/4"

FS- No Blow

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
59.00	WOGCM 3%w 9%oil 11%g 77%m	0.29
59.00	GOCM 4%g 7%oil 89%m	0.29
2.00	GO 3%g 97%oil	0.01
0.00	305' of GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58695

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2015.01.15 @ 23:00:00

Tool Information

Drill Pipe:	Length: 4321.00 ft	Diameter: 3.80 inches	Volume: 60.61 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 234.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 16000.00 lb
			<u>Total Volume: 61.76 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4570.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 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			4544.00	
Shut In Tool	5.00			4549.00	
Hydraulic tool	5.00			4554.00	
Jars	5.00			4559.00	
Safety Joint	2.00			4561.00	
Packer	5.00			4566.00	27.00 Bottom Of Top Packer
Packer	4.00			4570.00	
Stubb	1.00			4571.00	
Recorder	0.00	8355	Outside	4571.00	
Recorder	0.00	8674	Inside	4571.00	
Perforations	19.00			4590.00	
Change Over Sub	1.00			4591.00	
Drill Pipe	31.00			4622.00	
Change Over Sub	1.00			4623.00	
Bullnose	5.00			4628.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58695

DST#: 4

ATTN: Paul Gunzelman

Test Start: 2015.01.15 @ 23:00:00

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: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
59.00	WOGCM 3%w 9%oil 11%g 77%m	0.290
59.00	GOCM 4%g 7%oil 89%m	0.290
2.00	GO 3%g 97%oil	0.010
0.00	305' of GIP	0.000

Total Length: 120.00 ft

Total Volume: 0.590 bbf

Num Fluid Samples: 0

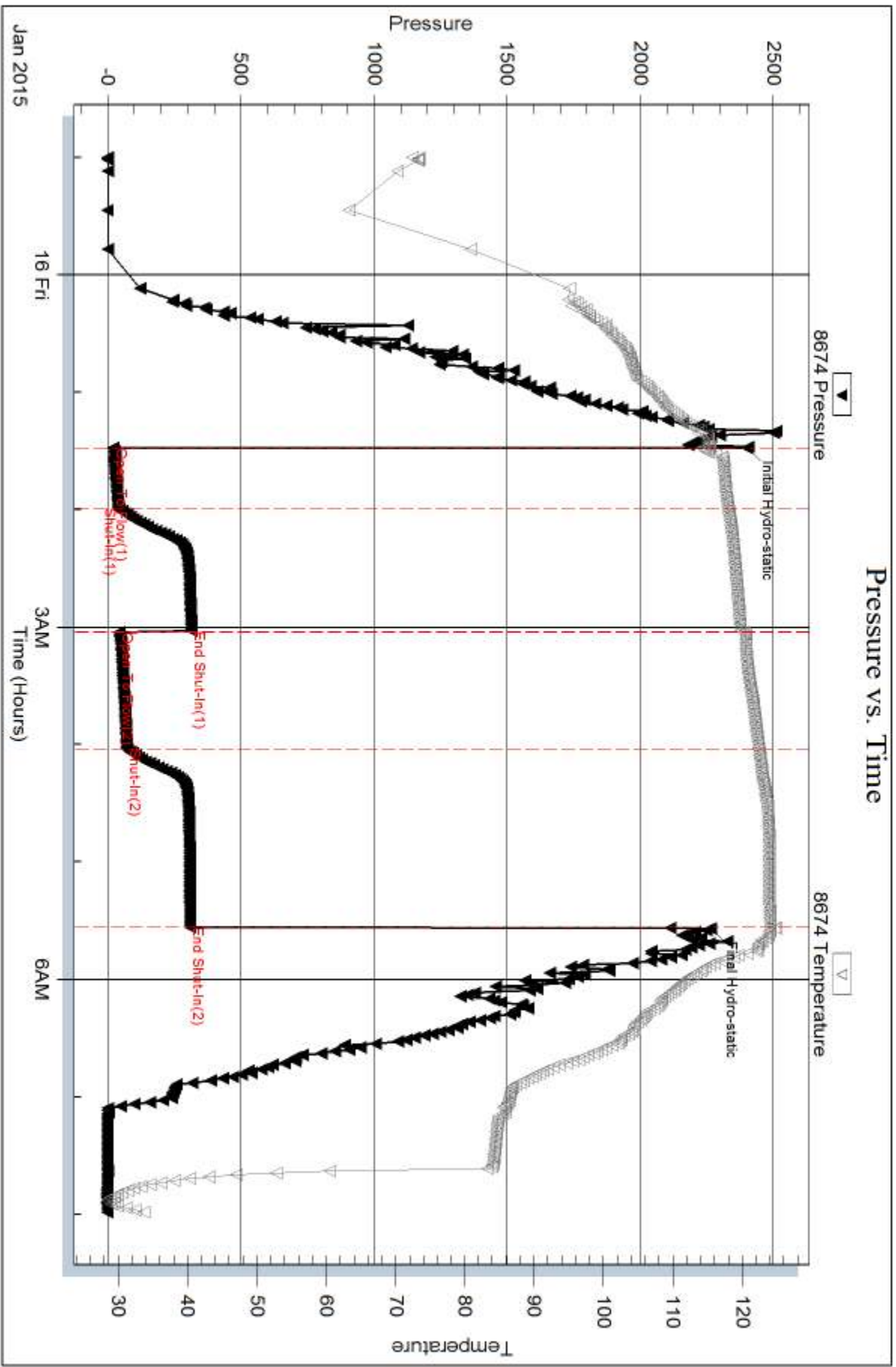
Num Gas Bombs: 0

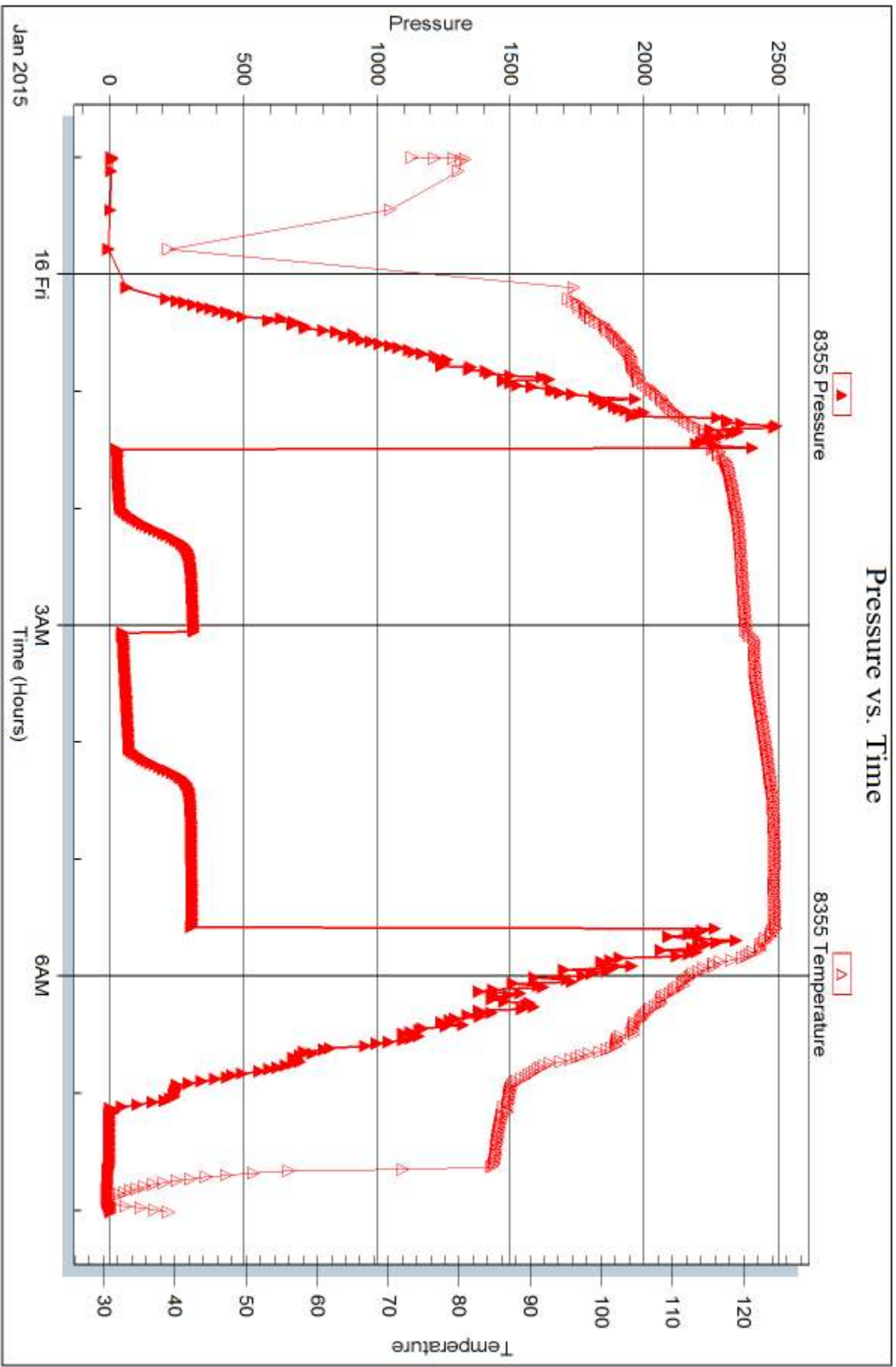
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N. Water Ste 300
Wichita KS 67202

ATTN: Paul Gunzelman

James "B" #1-23

23-10s-34w Thomas,KS

Start Date: 2015.01.16 @ 23:56:00

End Date: 2015.01.17 @ 07:33:54

Job Ticket #: 58696 DST #: 5

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

Printed: 2015.01.19 @ 13:42:48

Murfin Drilling Co. 23-10s-34w Thomas,KS James "B" #1-23 DST # 5 Johnson 2015.01.16



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58696

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2015.01.16 @ 23:56:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:05:40

Time Test Ended: 07:33:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4660.00 ft (KB) To 4718.00 ft (KB) (TVD)

Reference Elevations: 3206.00 ft (KB)

Total Depth: 4718.00 ft (KB) (TVD)

3195.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8674 Inside

Press@RunDepth: 40.72 psig @ 4661.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.16

End Date:

2015.01.17

Last Calib.: 2015.01.17

Start Time: 23:56:00

End Time:

07:33:54

Time On Btm: 2015.01.17 @ 02:05:25

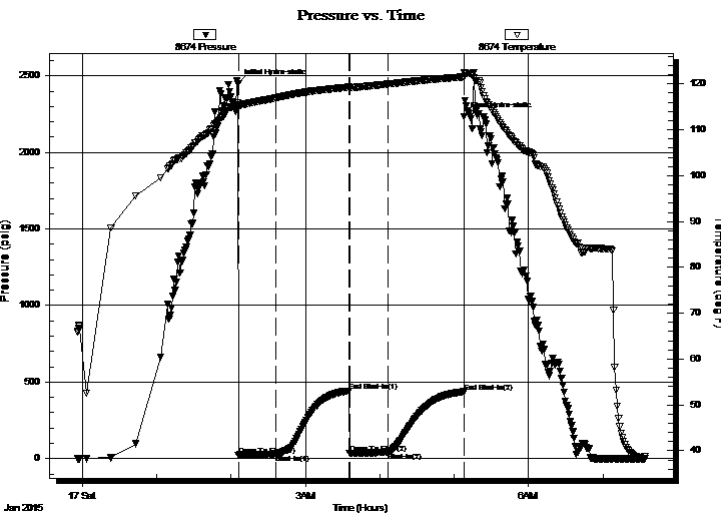
Time Off Btm: 2015.01.17 @ 05:07:54

TEST COMMENT: IF- Weak Surface Blow

IS- No Blow

FF- No Blow

FS- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2448.16	115.89	Initial Hydro-static
1	23.78	114.91	Open To Flow (1)
31	26.62	116.91	Shut-In(1)
90	442.67	119.28	End Shut-In(1)
90	35.09	119.07	Open To Flow (2)
121	40.72	119.94	Shut-In(2)
183	436.26	121.52	End Shut-In(2)
183	2233.77	122.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	100% m with Oil Spots in the Tool	0.30

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

ATTN: Paul Gunzelman

Job Ticket: 58696

DST#: 5

Test Start: 2015.01.16 @ 23:56:00

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:05:40

Time Test Ended: 07:33:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Will MacLean

Unit No: 71

Interval: 4660.00 ft (KB) To 4718.00 ft (KB) (TVD)

Total Depth: 4718.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3206.00 ft (KB)

3195.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8355

Outside

Press@RunDepth: psig @ 4661.00 ft (KB)

Start Date: 2015.01.16 End Date: 2015.01.17

Start Time: 23:56:05 End Time: 07:35:29

Capacity: 8000.00 psig

Last Calib.: 2015.01.17

Time On Btm:

Time Off Btm:

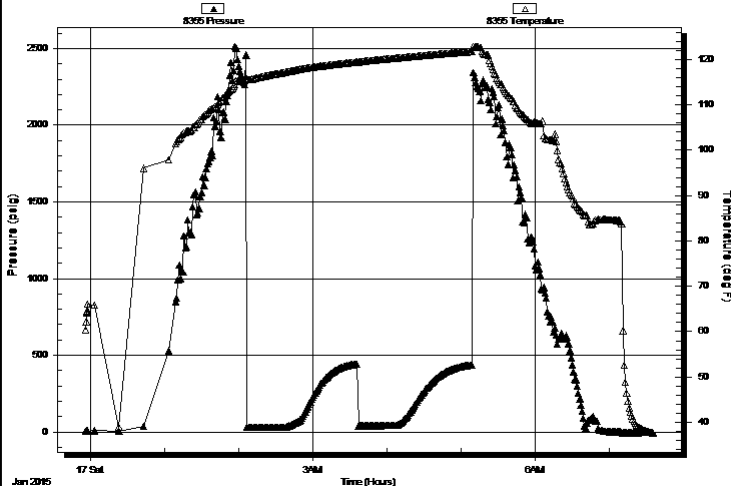
TEST COMMENT: IF- Weak Surface Blow

IS- No Blow

FF- No Blow

FS- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	100%m with Oil Spots in the Tool	0.30

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58696

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2015.01.16 @ 23:56:00

Tool Information

Drill Pipe:	Length: 4415.00 ft	Diameter: 3.80 inches	Volume: 61.93 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	32000.00 lb
Drill Collar:	Length: 234.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	10000.00 lb
			<u>Total Volume: 63.08 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	72000.00 lb
Depth to Top Packer:	4660.00 ft			Final	72000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	85.00 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			4634.00	
Shut In Tool	5.00			4639.00	
Hydraulic tool	5.00			4644.00	
Jars	5.00			4649.00	
Safety Joint	2.00			4651.00	
Packer	5.00			4656.00	27.00 Bottom Of Top Packer
Packer	4.00			4660.00	
Stubb	1.00			4661.00	
Recorder	0.00	8355	Outside	4661.00	
Recorder	0.00	8674	Inside	4661.00	
Perforations	19.00			4680.00	
Change Over Sub	1.00			4681.00	
Drill Pipe	31.00			4712.00	
Change Over Sub	1.00			4713.00	
Bullnose	5.00			4718.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

23-10s-34w Thomas,KS

250 N. Water Ste 300
Wichita KS 67202

James "B" #1-23

Job Ticket: 58696

DST#: 5

ATTN: Paul Gunzelman

Test Start: 2015.01.16 @ 23:56:00

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: 64.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 9000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	100% m with Oil Spots in the Tool	0.295

Total Length: 60.00 ft Total Volume: 0.295 bbf

Num Fluid Samples: 0

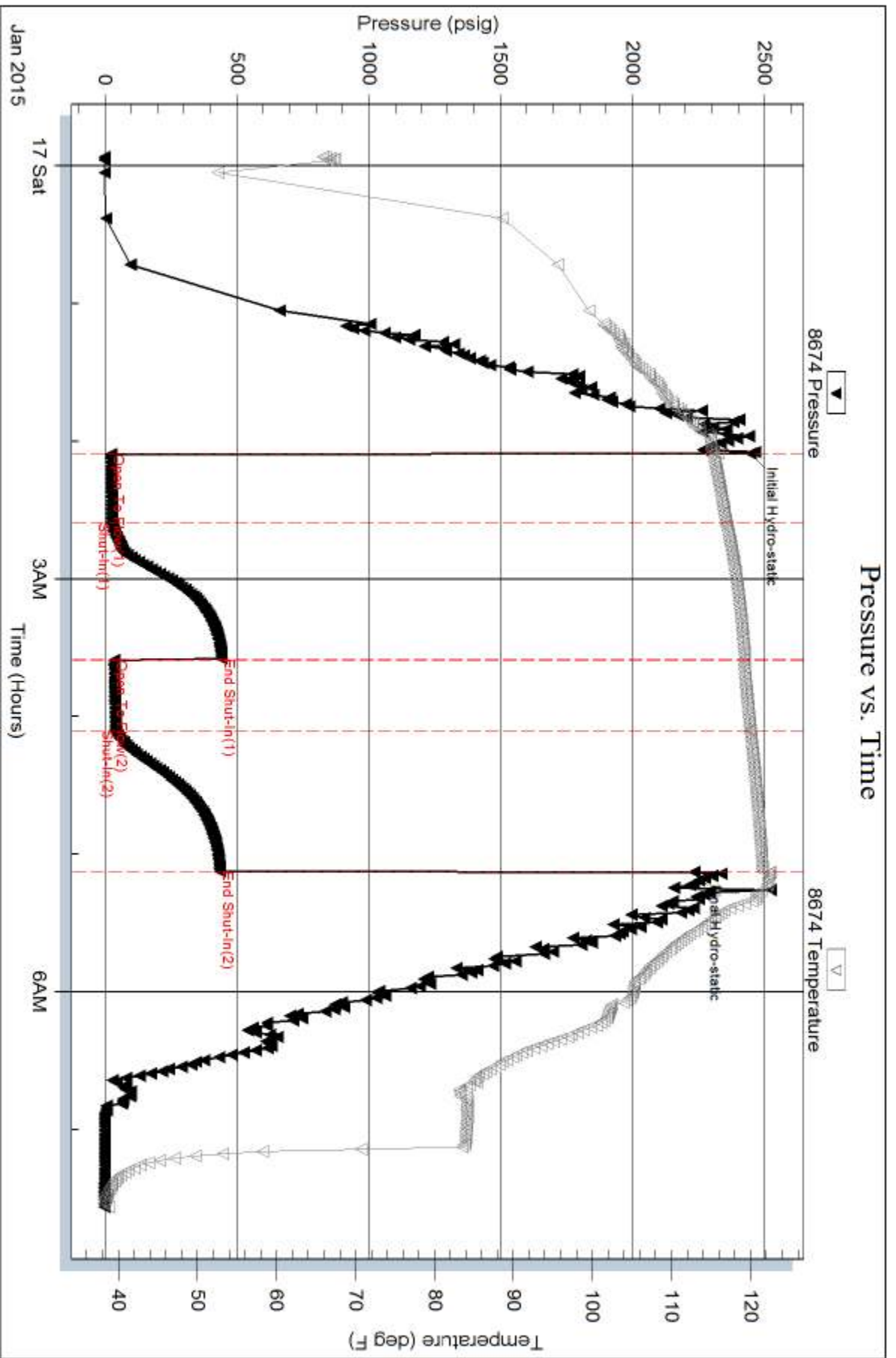
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

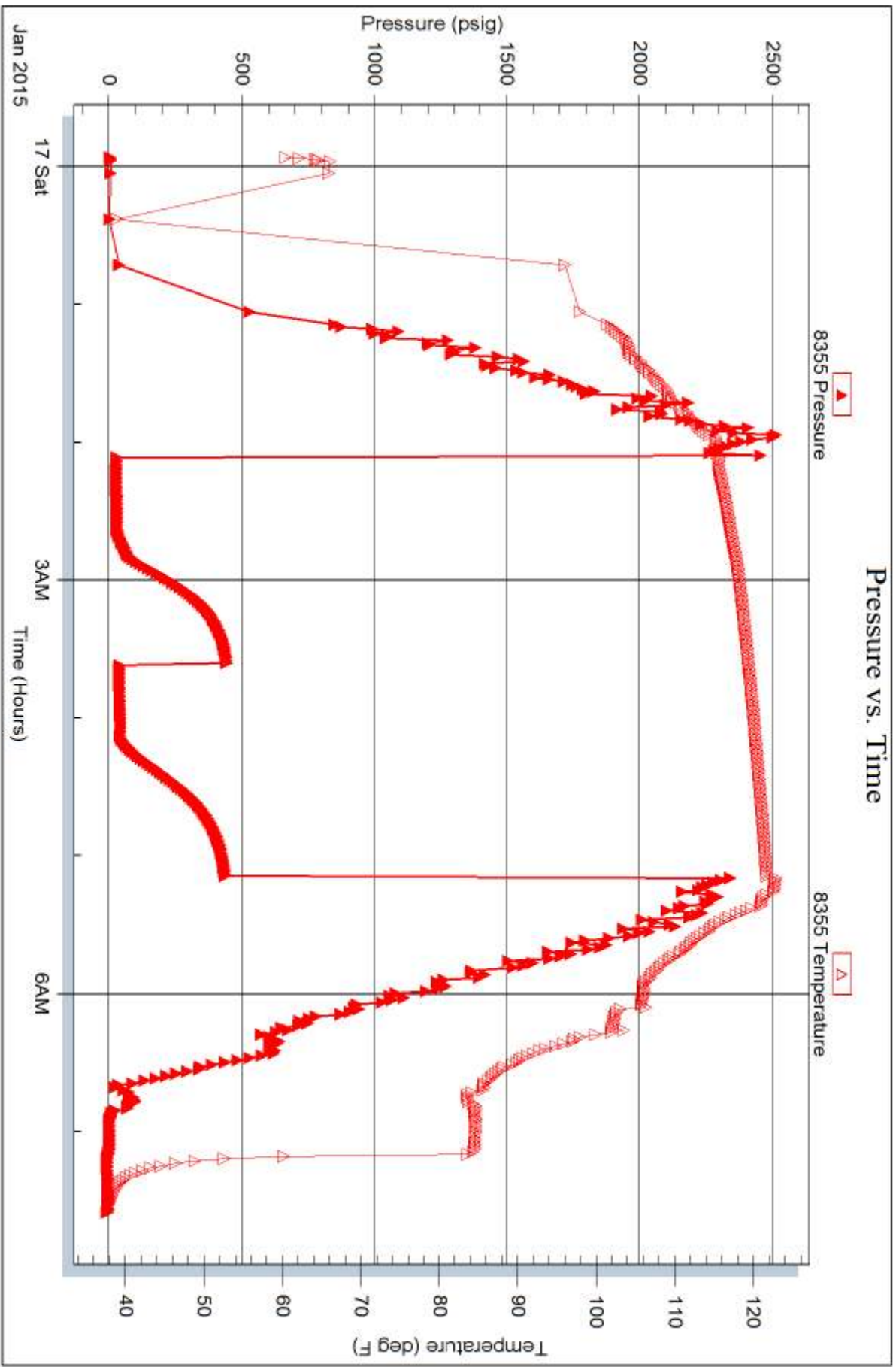


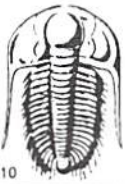
Serial #: 8355

Outside Murfin Drilling Co.

James "B" #1-23

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58692

Well Name & No. James "B" #1-23 Test No. DST #1 Date 1-12-15
 Company Murkin Drilling Co. Elevation 3206 KB _____ GL _____
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Paul Brunzelman Rig Murkin 22
 Location: Sec. 23 Twp. 10S Rge. 34W Co. Thomas State KS

Interval Tested 4122-4183 Zone Tested LRC "A-B"
 Anchor Length 61 Drill Pipe Run 3881 Mud Wt. 9.2
 Top Packer Depth 4118 Drill Collars Run 234 Vis 55
 Bottom Packer Depth 4122 Wt. Pipe Run 0 WL 64
 Total Depth 4183 Chlorides 8900 ppm System LCM 515

Blow Description IF-Weak Surface Blow Built to 7 1/2"
ISJ- No Blow
FF-Weak Surface Blow Built to 3"
FSJ- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>DUCM</u>		<u>24</u>	<u>76</u>	
<u>126</u>	<u>WCM</u>		<u>47</u>	<u>53</u>	
<u>122</u>	<u>MCW</u>		<u>72</u>	<u>28</u>	
<u>175</u>	<u>MCW</u>		<u>88</u>	<u>12</u>	
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

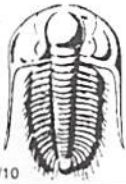
Rec Total 463 BHT 121 Gravity _____ API RW 381 @ 22 °F Chlorides 62000 ppm

(A) Initial Hydrostatic 2140 Test 1150 T-On Location 15:56
 (B) First Initial Flow 21 Jars 250 T-Started 17:24
 (C) First Final Flow 137 Safety Joint 75 T-Open 19:31
 (D) Initial Shut-In 1226 Circ Sub N/C T-Pulled 23:35
 (E) Second Initial Flow 140 Hourly Standby _____ T-Out 1:45
 (F) Second Final Flow 231 Mileage 128 RIT 128
 (G) Final Shut-In 1203 Sampler _____
 (H) Final Hydrostatic 2110 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Extra Packer _____ Ruined Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Accessibility _____
 Sub Total 1603 Sub Total 0
 Total 1603 MP/DST Disc't _____

Approved By _____ Our Representative Jar

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. 58693

Well Name & No. James "B" #1-23 Test No. DST #2 Date 1-13-15
 Company Murkin Drilling Co. Elevation 3206 KB 3195 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murkin 22
 Location: Sec. 23 Twp. 10S Rge. 34W Co. Thomas State KS

Interval Tested 4270 - 4331 Zone Tested LRC "H-I"
 Anchor Length 61 Drill Pipe Run 4037 Mud Wt. 9.2
 Top Packer Depth 4266 Drill Collars Run 234 Vis 6.2
 Bottom Packer Depth 4270 Wt. Pipe Run 0 WL 6.8
 Total Depth 4331 Chlorides 9900 ppm System LCM 6/6

Blow Description IF - Weak Surface Blow Built to BOB in 29 min
ISI - No Blow
FF - Weak Surface Blow Built to 934
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>108</u>	<u>WCM w/ oil spots</u>			<u>6%</u>	<u>94%</u>
<u>189</u>	<u>WCM w/ oil spots</u>			<u>33%</u>	<u>67%</u>
<u>234</u>	<u>MCM</u>			<u>61%</u>	<u>39%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 531 BHT 122 Gravity _____ API RW 221 @ 30 °F Chlorides 80000 ppm

(A) Initial Hydrostatic 2259 Test 1150 T-On Location 17:48
 (B) First Initial Flow 32 Jars 250 T-Started 18:56
 (C) First Final Flow 153 Safety Joint 75 T-Open 21:00
 (D) Initial Shut-In 1169 Circ Sub NIC T-Pulled _____
 (E) Second Initial Flow 157 Hourly Standby _____ T-Out 3:19
 (F) Second Final Flow 259 Mileage 128 KIT 128 Comments _____
 (G) Final Shut-In 1124 Sampler _____
 (H) Final Hydrostatic 2301 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1603
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1603

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

Approved By _____ Our Representative PAW

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. 58694

Well Name & No. James "B" #1-23 Test No. DST #3 Date 1-14-15
 Company Martin Drilling Co Elevation 3206 KB 3195 GL
 Address 250 N. Water Stc 300 Wichita KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Martin 22
 Location: Sec. 23 Twp. 109 Rge. 34W Co. Thomas State KS

Interval Tested 4331-4390 Zone Tested LRC "J+K"
 Anchor Length 59 Drill Pipe Run 4100 Mud Wt. 9.3
 Top Packer Depth 4327 Drill Collars Run 234 Vis 74
 Bottom Packer Depth 4331 Wt. Pipe Run 0 WL 8.4
 Total Depth 4390 Chlorides 12,300 ppm System LCM 416

Blow Description IF- Weak Surface Blow Built 939"
FSI- No Blow
FF- Weak Surface Blow Built to 5"
FSJ- No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>112</u>	<u>60</u>	<u>3</u>	<u>97</u>		
<u>177</u>	<u>MGCCO</u>	<u>22</u>	<u>69</u>		<u>9</u>
<u>59</u>	<u>WOGCM</u>	<u>19</u>	<u>15</u>	<u>7</u>	<u>59</u>
<u>264'</u>	<u>of GIP</u>				

Rec Total 348 BHT 121 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

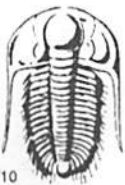
(A) Initial Hydrostatic 2225 Test 1150 T-On Location 13:02
 (B) First Initial Flow 32 Jars 250 T-Started 13:54
 (C) First Final Flow 86 Safety Joint 75 T-Open 15:47
 (D) Initial Shut-In 1219 Circ Sub NIC T-Pulled 19:49
 (E) Second Initial Flow 98 Hourly Standby _____ T-Out 22:17
 (F) Second Final Flow 134 Mileage 128 R/T 128 Comments API 15 24e30t = 27
 (G) Final Shut-In 1204 Sampler _____
 (H) Final Hydrostatic 2207 Straddle _____
 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 0
 Total 1603
 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. 58695

4/10

Well Name & No. James "B" #1-23 Test No. DST #4 Date 1-15-15
 Company Murkin Drilling Co. Elevation 3206 KB 3195 GL
 Address 250 N. Water Ste 300 Wichita KS 67202
 Co. Rep / Geo. Paul Grunzelman Rig Murkin 22
 Location: Sec. 23 Twp. 10S Rge. 34E Co. Thomas State KS

Interval Tested 4570-4628 Zone Tested Lower Pawnee / Ft. Scott
 Anchor Length 58 Drill Pipe Run 4321 Mud Wt. 9.3
 Top Packer Depth 4566 Drill Collars Run 234 Vis 58
 Bottom Packer Depth 4570 Wt. Pipe Run 0 WL 7.6
 Total Depth 4628 Chlorides 10,100 ppm System LCM 416

Blow Description IF-Weak Surface Blow Built to 8"
ISI-No Blow
FF-Weak Surface Blow Built to 3 1/4"
FSI-No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>G-O</u>	<u>3</u>	<u>97</u>		
<u>59</u>	<u>G-OCM</u>	<u>4</u>	<u>7</u>		<u>89</u>
<u>59</u>	<u>WOG-CM</u>	<u>11</u>	<u>9</u>	<u>3</u>	<u>77</u>
Rec	Feet of <u>305' Weak GIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 120 BHT 124 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

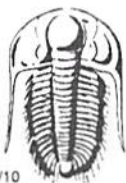
(A) Initial Hydrostatic 2400 Test 1150 T-On Location 21:54
 (B) First Initial Flow 20 Jars 250 T-Started 23:00
 (C) First Final Flow 39 Safety Joint 75 T-Open 1:28
 (D) Initial Shut-In 31.5 Circ Sub MC T-Pulled 5:33
 (E) Second Initial Flow 43 Hourly Standby _____ T-Out 7:59
 (F) Second Final Flow 71 Mileage 125 RIT 128 Comments _____
 (G) Final Shut-In 308 Sampler _____
 (H) Final Hydrostatic 2264 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1603

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 60 Extra Copies _____
 Final Shut-In 90 Sub Total 0
 Total 1603
 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. 58696

Well Name & No. James "B" #1-23 Test No. DST #5 Date 1-16-15
 Company Murkin Drilling Co Elevation 3206 KB 3195 GL
 Address 250 N. Water St. 300 Wichita KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murkin 22
 Location: Sec. 23 Twp. 10S Rge. 34W Co. Thomas State KS

Interval Tested 4660-4718 Zone Tested Johnson
 Anchor Length 58 Drill Pipe Run 4415 Mud Wt. 9.1
 Top Packer Depth 4656 Drill Collars Run 234 Vis 64
 Bottom Packer Depth 4660 Wt. Pipe Run 0 WL 7.2
 Total Depth 4718 Chlorides 9000 ppm System LCM 6/b
 Blow Description IF-Weak Surface Blow
ISD - No Blow
FF - No Blow
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Mud Oil Spots in Test</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 60 BHT 122 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2448 Test 1150 T-On Location 22:50
 (B) First Initial Flow 23 Jars 250 T-Started 23:56
 (C) First Final Flow 26 Safety Joint 75 T-Open 205
 (D) Initial Shut-In 442 Circ Sub NIC T-Pulled 5:07
 (E) Second Initial Flow 35 Hourly Standby _____ T-Out 7:33
 (F) Second Final Flow 40 Mileage 128 R/T 128 Comments _____
 (G) Final Shut-In 436 Sampler _____
 (H) Final Hydrostatic 2233 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1603
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1603

Approved By _____ Our Representative Rim
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