



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Robert Hendrix

McClurg #2-12

12 2s 37w Cheyenne,KS

Start Date: 2018.12.11 @ 20:44:00

End Date: 2018.12.12 @ 05:49:00

Job Ticket #: 64166 DST #: 1

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

Printed: 2018.12.18 @ 11:52:01



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Robert Hendrix

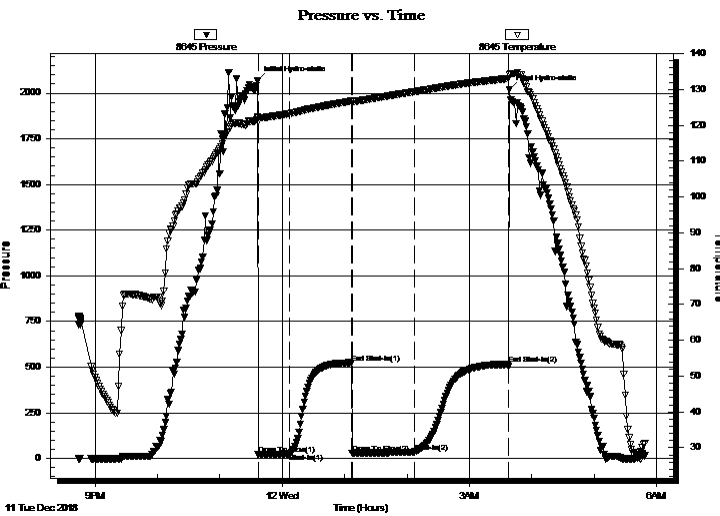
12 2s 37w Cheyenne, KS
McClurg #2-12
 Job Ticket: 64166 **DST#: 1**
 Test Start: 2018.12.11 @ 20:44:00

GENERAL INFORMATION:

Formation: **Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:36:31
 Time Test Ended: 05:49:00
 Interval: **4173.00 ft (KB) To 4244.00 ft (KB) (TVD)**
 Total Depth: 4244.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 3380.00 ft (KB)
 3375.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8645 Outside
 Press@RunDepth: 35.44 psig @ 4179.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.12.11 End Date: 2018.12.12 Last Calib.: 2018.12.12
 Start Time: 20:44:01 End Time: 05:49:01 Time On Btm: 2018.12.11 @ 23:36:16
 Time Off Btm: 2018.12.12 @ 03:38:31

TEST COMMENT: 30-IFP- Surface Blow Built to 2"
 60-ISIP- No Blow
 60-FFP- Surface Blow Built to 1"
 90-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2068.64	122.28	Initial Hydro-static
1	20.77	121.12	Open To Flow (1)
31	25.49	123.27	Shut-In(1)
91	522.94	126.74	End Shut-In(1)
91	28.63	126.45	Open To Flow (2)
151	35.44	129.34	Shut-In(2)
241	514.60	133.00	End Shut-In(2)
243	2020.06	134.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	OCM 10%o 90%m	0.12

Gas Rates

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



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TESTING, INC.**

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Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

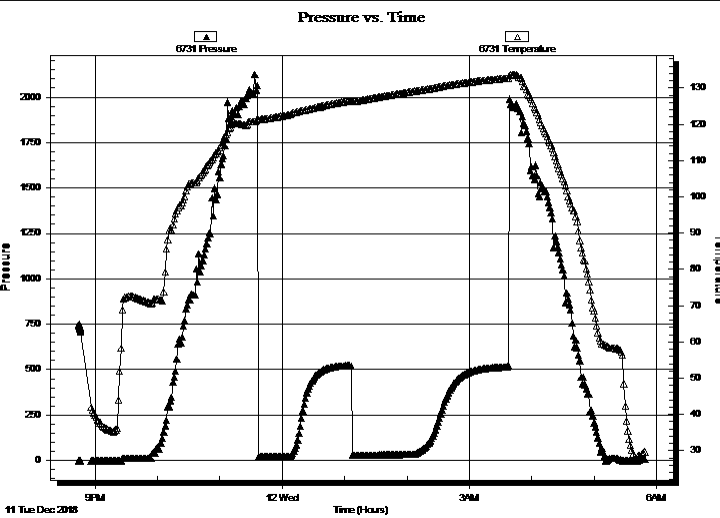
12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64166 **DST#: 1**
Test Start: 2018.12.11 @ 20:44:00

GENERAL INFORMATION:

Formation: **Oread**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:36:31
Time Test Ended: 05:49:00
Interval: **4173.00 ft (KB) To 4244.00 ft (KB) (TVD)**
Total Depth: 4244.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 3380.00 ft (KB)
3375.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6731 **Inside**
Press@RunDepth: psig @ 4179.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.12.11 End Date: 2018.12.12 Last Calib.: 2018.12.12
Start Time: 20:44:01 End Time: 05:48:46 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP- Surface Blow Built to 2"
60-ISIP- No Blow
60-FFP- Surface Blow Built to 1"
90-FSIP- No Blow



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

Recovery		
Length (ft)	Description	Volume (bbl)
25.00	OCM 10%o 90%m	0.12

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64166 **DST#: 1**
Test Start: 2018.12.11 @ 20:44:00

Tool Information

Drill Pipe:	Length: 3974.00 ft	Diameter: 3.80 inches	Volume: 55.74 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 176.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 56.61 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4173.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	99.00 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			4146.00	
Shut In Tool	5.00			4151.00	
Hydraulic tool	5.00		Inside	4156.00	
Jars	5.00			4161.00	
Safety Joint	2.00			4163.00	
Packer	5.00			4168.00	28.00 Bottom Of Top Packer
Packer	5.00			4173.00	
Stubb	1.00			4174.00	
Perforations	4.00			4178.00	
Change Over Sub	1.00			4179.00	
Recorder	0.00	8645	Outside	4179.00	
Recorder	0.00	6731	Inside	4179.00	
Drill Pipe	31.00			4210.00	
Change Over Sub	1.00			4211.00	
Perforations	30.00			4241.00	
Bullnose	3.00			4244.00	71.00 Bottom Packers & Anchor
Total Tool Length:	99.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64166 **DST#: 1**
Test Start: 2018.12.11 @ 20:44:00

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: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.55 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 700.00 ppm			
Filter Cake: 4.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
25.00	OCM 10%o 90%m	0.123

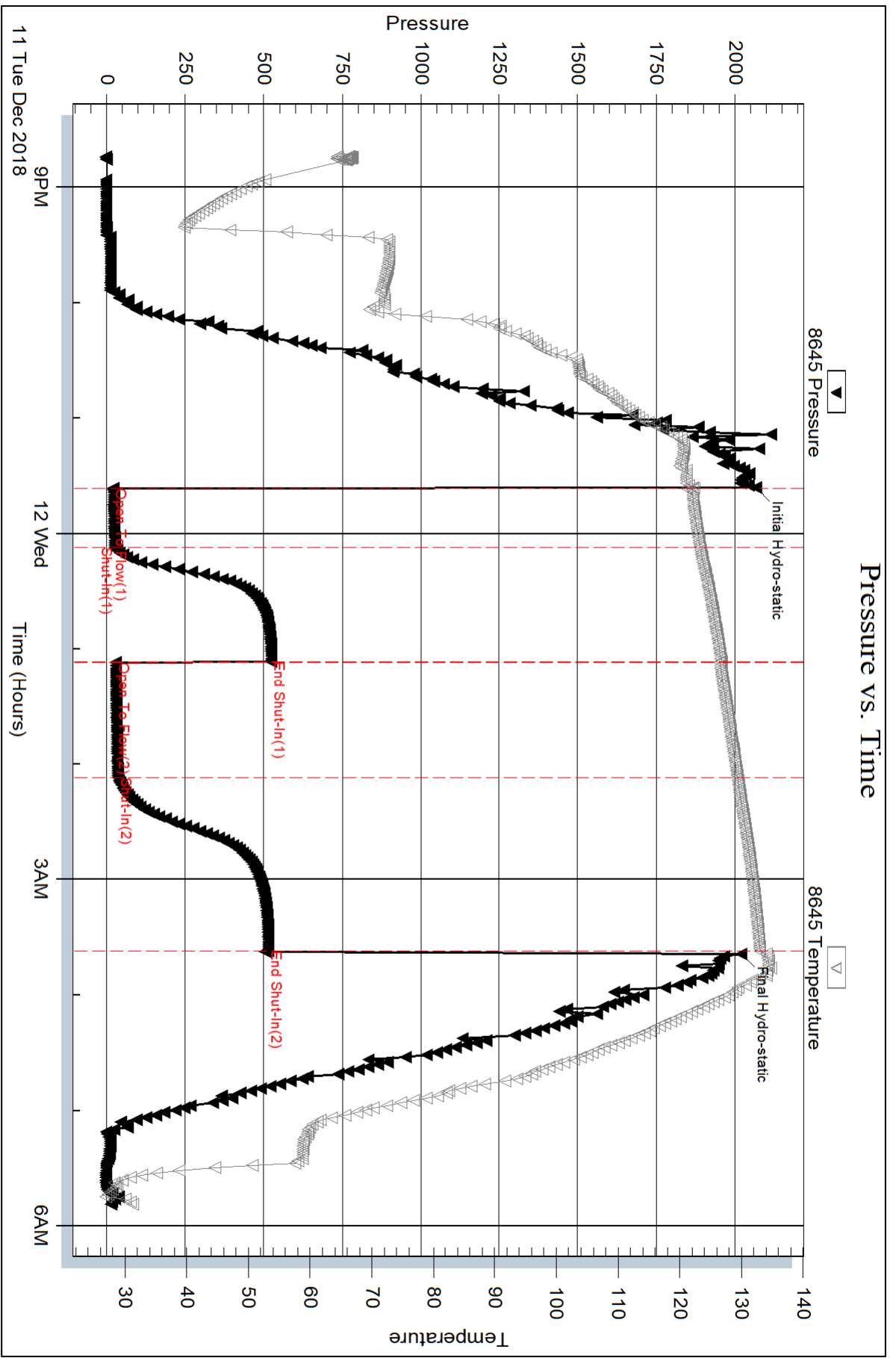
Total Length: 25.00 ft Total Volume: 0.123 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8645

Outside Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 1



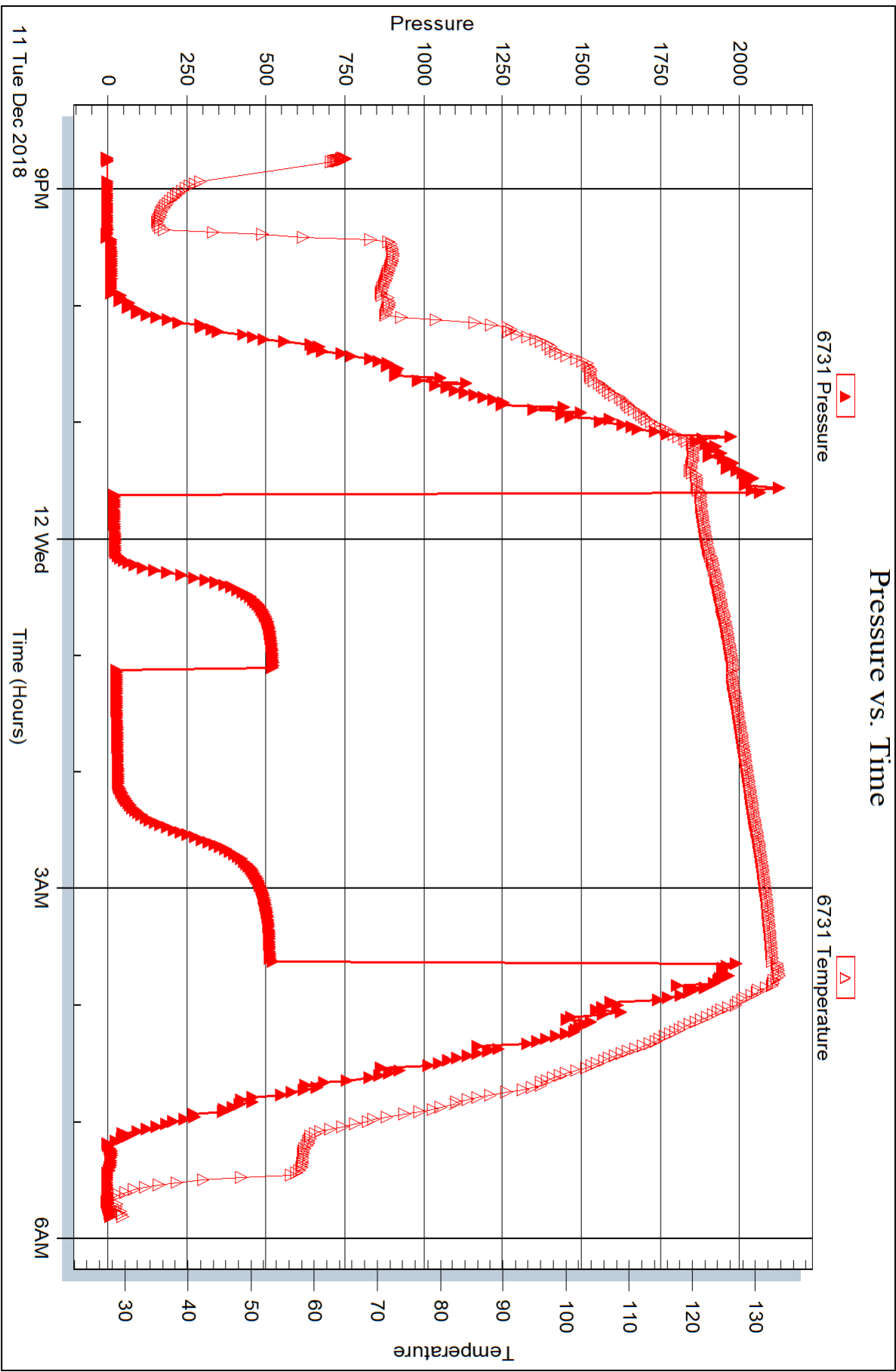
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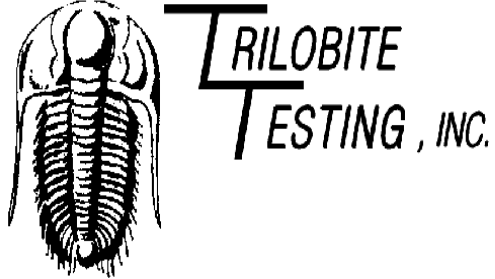
Inside

Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Robert Hendrix

McClurg #2-12

12 2s 37w Cheyenne,KS

Start Date: 2018.12.12 @ 20:15:00

End Date: 2018.12.13 @ 06:06:00

Job Ticket #: 64167 DST #: 2

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

Printed: 2018.12.18 @ 11:51:36



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
 Job Ticket: 64167 **DST#: 2**
 Test Start: 2018.12.12 @ 20:15:00

GENERAL INFORMATION:

Formation: **LKC " A - D "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:05:31
 Time Test Ended: 06:06:00
 Interval: **4315.00 ft (KB) To 4386.00 ft (KB) (TVD)**
 Total Depth: 4386.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 3380.00 ft (KB)
 3375.00 ft (CF)
 KB to GR/CF: 5.00 ft

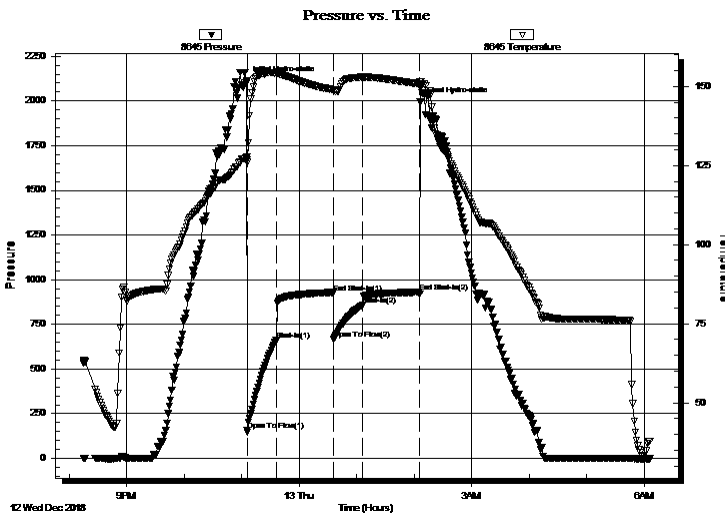
Serial #: 8645

Outside

Press@RunDepth: 855.07 psig @ 4321.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.12.12 End Date: 2018.12.13 Last Calib.: 2018.12.13
 Start Time: 20:15:01 End Time: 06:06:01 Time On Btm: 2018.12.12 @ 23:05:16
 Time Off Btm: 2018.12.13 @ 02:06:01

TEST COMMENT: 30-IFP- BOB in 1 1/2 min. .
 60-ISIP- No Blow
 30-FFP- BOB in 2 3/4 min.
 60-FSIP- No Blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2113.97	127.60	Initial Hydro-static
1	156.35	126.07	Open To Flow (1)
31	659.30	154.15	Shut-In(1)
91	927.92	148.95	End Shut-In(1)
91	668.05	148.75	Open To Flow (2)
121	855.07	152.91	Shut-In(2)
181	929.30	150.85	End Shut-In(2)
181	1993.79	151.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
922.00	Water 100%	11.33
498.00	MCW 30%w 70%w Show of Oil	6.99
425.00	WCM 10%w 90%w Show of Oil	5.96

* Recovery from multiple tests

Gas Rates

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



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Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

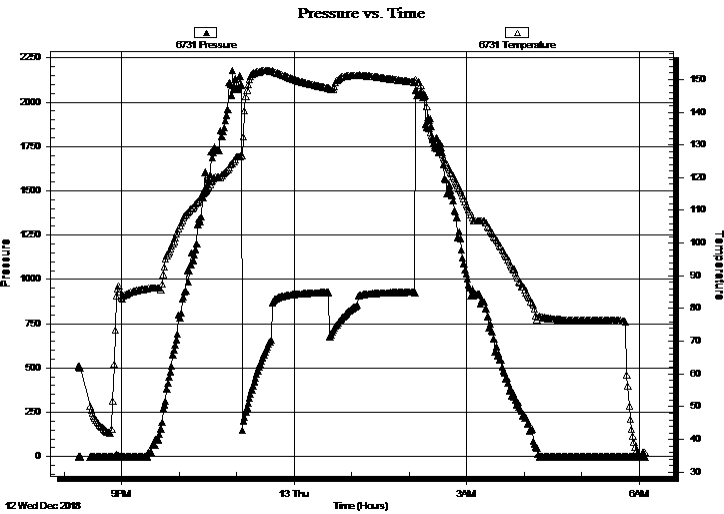
12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64167 **DST#: 2**
Test Start: 2018.12.12 @ 20:15:00

GENERAL INFORMATION:

Formation: **LKC " A - D "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:05:31
Time Test Ended: 06:06:00
Interval: **4315.00 ft (KB) To 4386.00 ft (KB) (TVD)**
Total Depth: 4386.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 3380.00 ft (KB)
3375.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6731 Inside
Press@RunDepth: psig @ 4321.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.12.12 End Date: 2018.12.13 Last Calib.: 2018.12.13
Start Time: 20:15:01 End Time: 06:05:46 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 1 1/2 min. .
60-ISIP- No Blow
30-FFP- BOB in 2 3/4 min.
60-FSIP- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
922.00	Water 100%	11.33
498.00	MCW 30%w 70%w Show of Oil	6.99
425.00	WCM 10%w 90%w Show of Oil	5.96

* 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
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64167 **DST#: 2**
Test Start: 2018.12.12 @ 20:15:00

Tool Information

Drill Pipe:	Length: 4132.00 ft	Diameter: 3.80 inches	Volume: 57.96 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 176.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 58.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4315.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	99.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			4288.00	
Shut In Tool	5.00			4293.00	
Hydraulic tool	5.00		Inside	4298.00	
Jars	5.00			4303.00	
Safety Joint	2.00			4305.00	
Packer	5.00			4310.00	28.00 Bottom Of Top Packer
Packer	5.00			4315.00	
Stubb	1.00			4316.00	
Perforations	4.00			4320.00	
Change Over Sub	1.00			4321.00	
Recorder	0.00	8645	Outside	4321.00	
Recorder	0.00	6731	Inside	4321.00	
Drill Pipe	31.00			4352.00	
Change Over Sub	1.00			4353.00	
Perforations	30.00			4383.00	
Bullnose	3.00			4386.00	71.00 Bottom Packers & Anchor
Total Tool Length:	99.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64167 **DST#: 2**
Test Start: 2018.12.12 @ 20:15:00

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:	34000 ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.57 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 700.00 ppm			
Filter Cake: 4.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
922.00	Water 100%	11.330
498.00	MCW 30%m 70%w Show of Oil	6.986
425.00	WCM 10%w 90%m Show of Oil	5.962

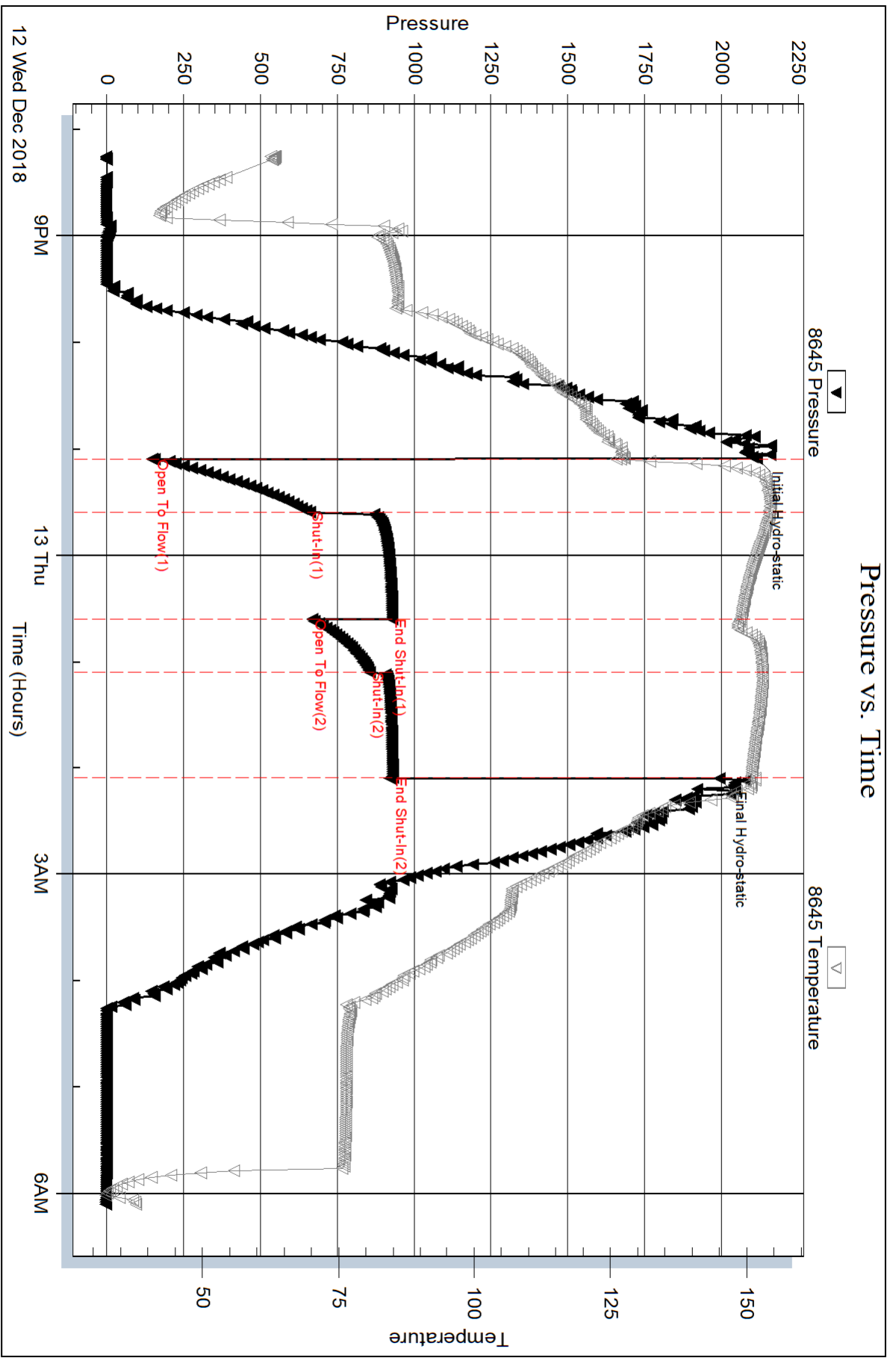
Total Length: 1845.00 ft Total Volume: 24.278 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: .299 @ 49

Serial #: 8645

Outside Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 2



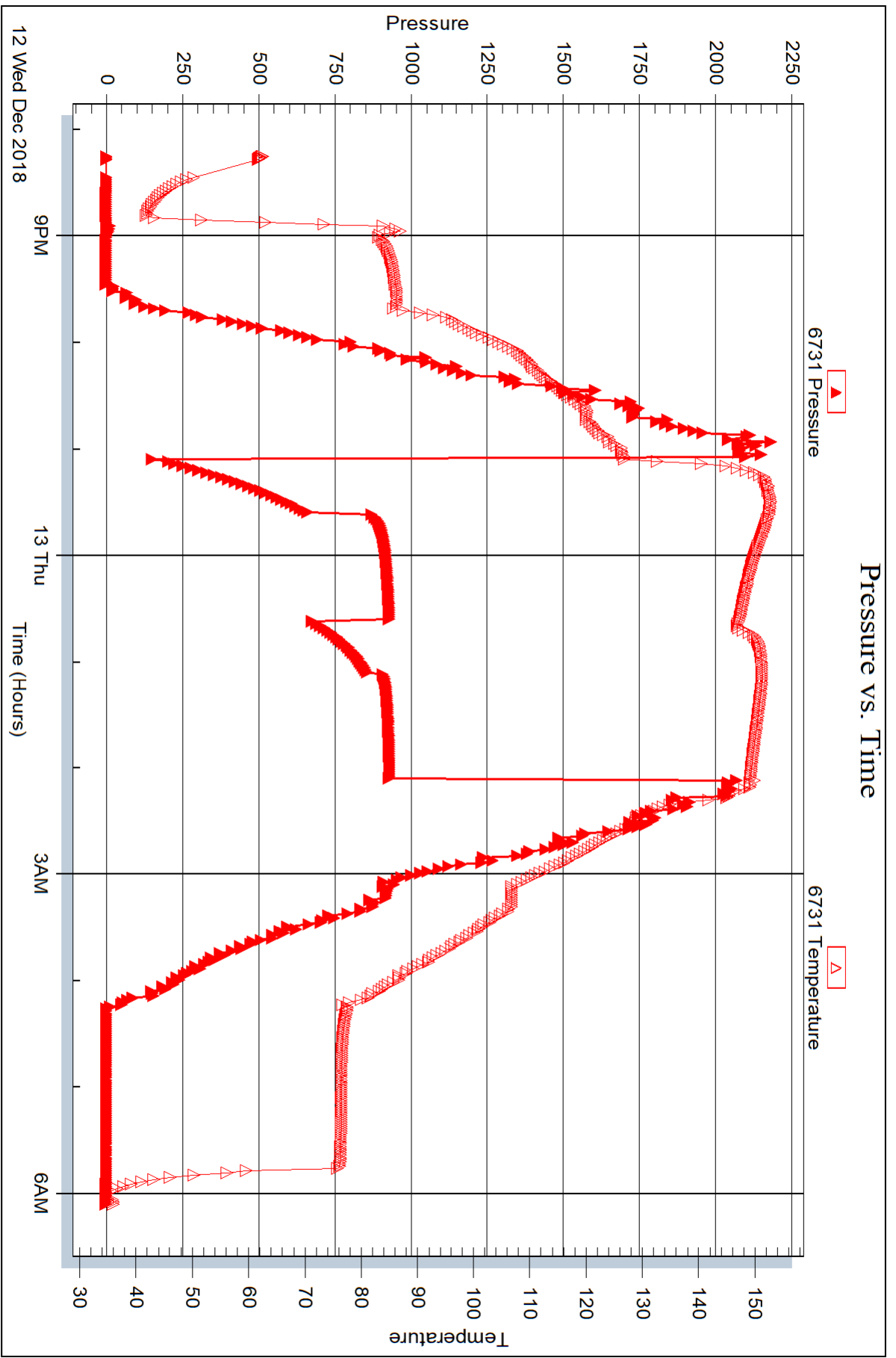
Serial #: 6731

Inside

Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Robert Hendrix

McClurg #2-12

12 2s 37w Cheyenne,KS

Start Date: 2018.12.13 @ 16:40:00

End Date: 2018.12.14 @ 02:14:00

Job Ticket #: 64168 DST #: 3

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

Printed: 2018.12.18 @ 11:51:13

Murfin Drilling Co Inc
12 2s 37w Cheyenne,KS
McClurg #2-12
DST # 3
LKC " G "
2018.12.13



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

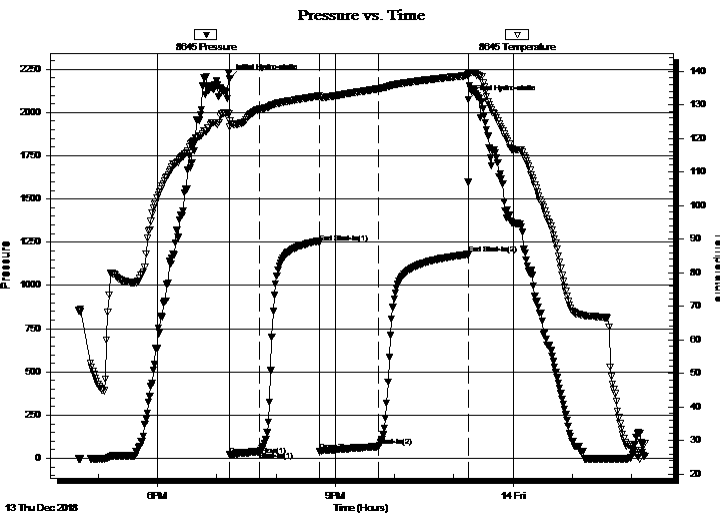
12 2s 37w Cheyenne, KS
McClurg #2-12
Job Ticket: 64168 **DST#: 3**
Test Start: 2018.12.13 @ 16:40:00

GENERAL INFORMATION:

Formation: **LKC " G "**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:13:16
Time Test Ended: 02:14:00
Interval: **4395.00 ft (KB) To 4440.00 ft (KB) (TVD)**
Total Depth: 4440.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 3380.00 ft (KB)
3375.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8645 Outside
Press@RunDepth: 69.62 psig @ 4401.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.12.13 End Date: 2018.12.14 Last Calib.: 2018.12.14
Start Time: 16:40:01 End Time: 02:14:01 Time On Btm: 2018.12.13 @ 19:13:01
Time Off Btm: 2018.12.13 @ 23:14:46

TEST COMMENT: 30-IFP- Surface Blow Built to 4 1/2"
60-ISIP- No Blow
60-FFP- Surface Blow Built to 7 1/2"
90-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2193.82	125.09	Initial Hydro-static
1	21.15	123.40	Open To Flow (1)
31	39.47	128.73	Shut-In(1)
91	1248.51	132.63	End Shut-In(1)
92	43.22	132.10	Open To Flow (2)
151	69.62	134.77	Shut-In(2)
242	1179.63	138.71	End Shut-In(2)
242	2073.93	139.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
118.00	Heavy MCO 30% m 70% o	0.58
0.00	120 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 Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne, KS
McClurg #2-12
Job Ticket: 64168 **DST#: 3**
Test Start: 2018.12.13 @ 16:40:00

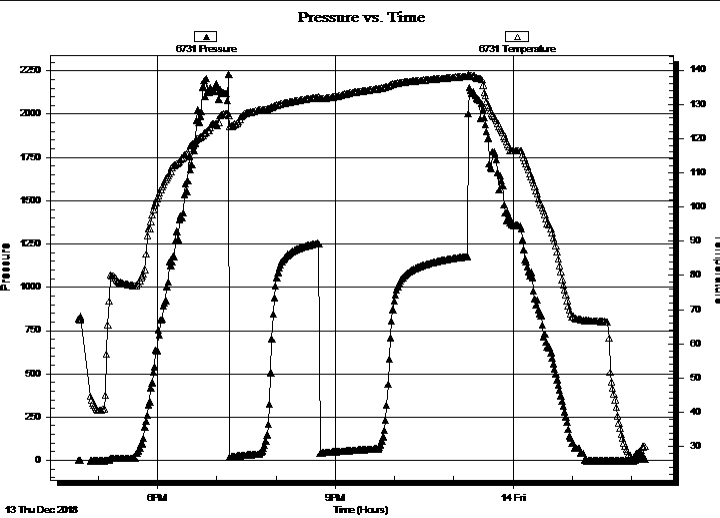
GENERAL INFORMATION:

Formation: LKC " G "			
Deviated: No Whipstock: ft (KB)		Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 19:13:16		Tester: Jim Svaty	
Time Test Ended: 02:14:00		Unit No: 76	
Interval: 4395.00 ft (KB) To 4440.00 ft (KB) (TVD)		Reference Elevations: 3380.00 ft (KB)	
Total Depth: 4440.00 ft (KB) (TVD)		3375.00 ft (CF)	
Hole Diameter: 7.88 inches Hole Condition: Fair		KB to GR/CF: 5.00 ft	

Serial #: 6731 Inside

Press@RunDepth: psig @ 4401.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2018.12.13 End Date: 2018.12.14	Last Calib.: 2018.12.14
Start Time: 16:40:01 End Time: 02:14:01	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30-IFP- Surface Blow Built to 4 1/2"
60-ISIP- No Blow
60-FFP- Surface Blow Built to 7 1/2"
90-FSIP- No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
118.00	Heavy MCO 30% m 70% o	0.58
0.00	120 GIP	0.00

* 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
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64168 **DST#: 3**
Test Start: 2018.12.13 @ 16:40:00

Tool Information

Drill Pipe:	Length: 4224.00 ft	Diameter: 3.80 inches	Volume: 59.25 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 176.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 60.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4395.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	73.00 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			4368.00	
Shut In Tool	5.00			4373.00	
Hydraulic tool	5.00		Inside	4378.00	
Jars	5.00			4383.00	
Safety Joint	2.00			4385.00	
Packer	5.00			4390.00	28.00 Bottom Of Top Packer
Packer	5.00			4395.00	
Stubb	1.00			4396.00	
Perforations	4.00			4400.00	
Change Over Sub	1.00			4401.00	
Recorder	0.00	8645	Outside	4401.00	
Recorder	0.00	6731	Inside	4401.00	
Drill Pipe	31.00			4432.00	
Change Over Sub	1.00			4433.00	
Perforations	4.00			4437.00	
Bullnose	3.00			4440.00	45.00 Bottom Packers & Anchor
Total Tool Length:	73.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64168 **DST#: 3**
Test Start: 2018.12.13 @ 16:40:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 37 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 64.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.58 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 800.00 ppm		
Filter Cake: 6.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	Heavy MCO 30% _m 70% _o	0.580
0.00	120 GIP	0.000

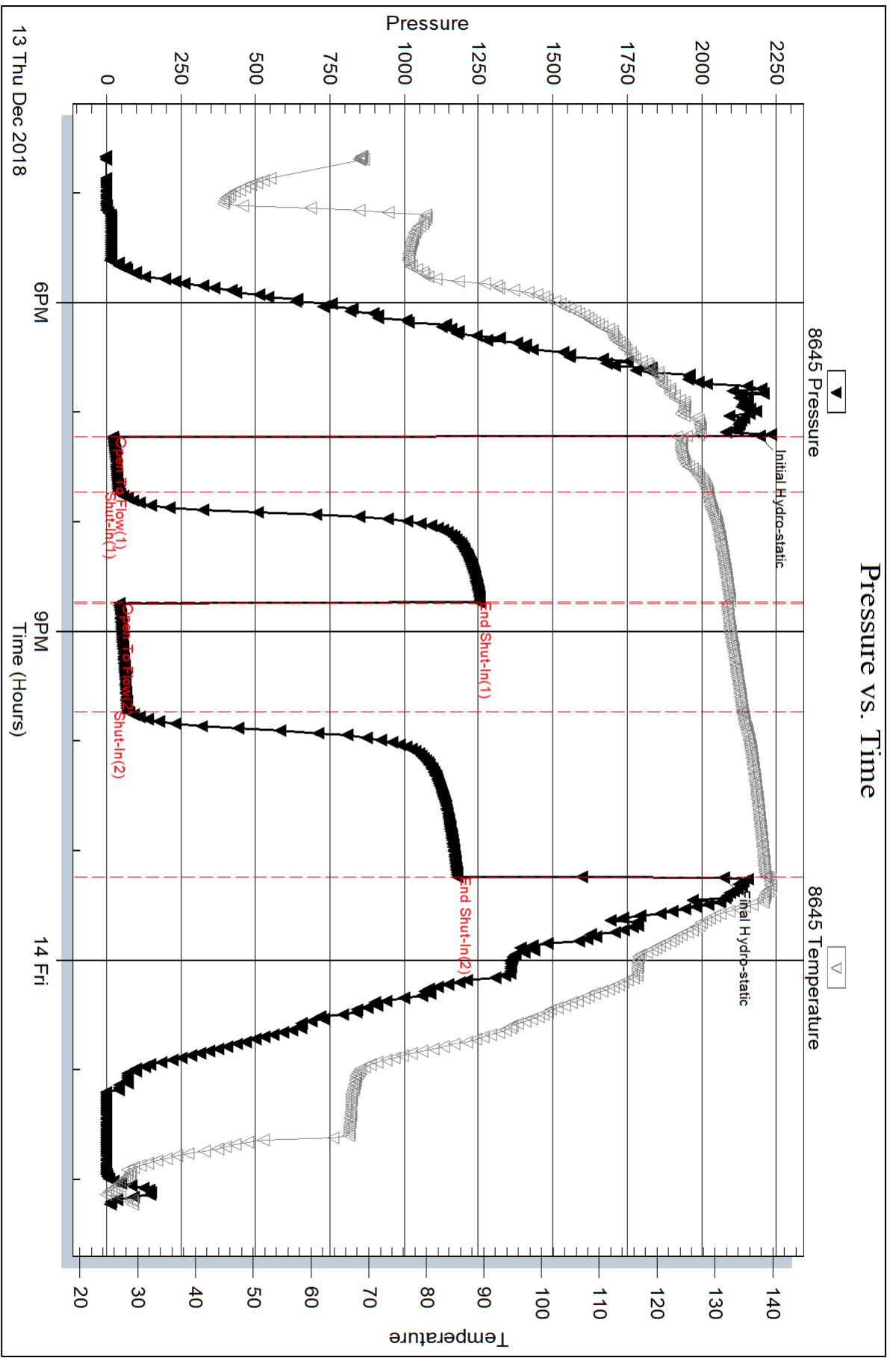
Total Length: 118.00 ft Total Volume: 0.580 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 8645

Outside Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64168

Printed: 2018.12.18 @ 11:51:14

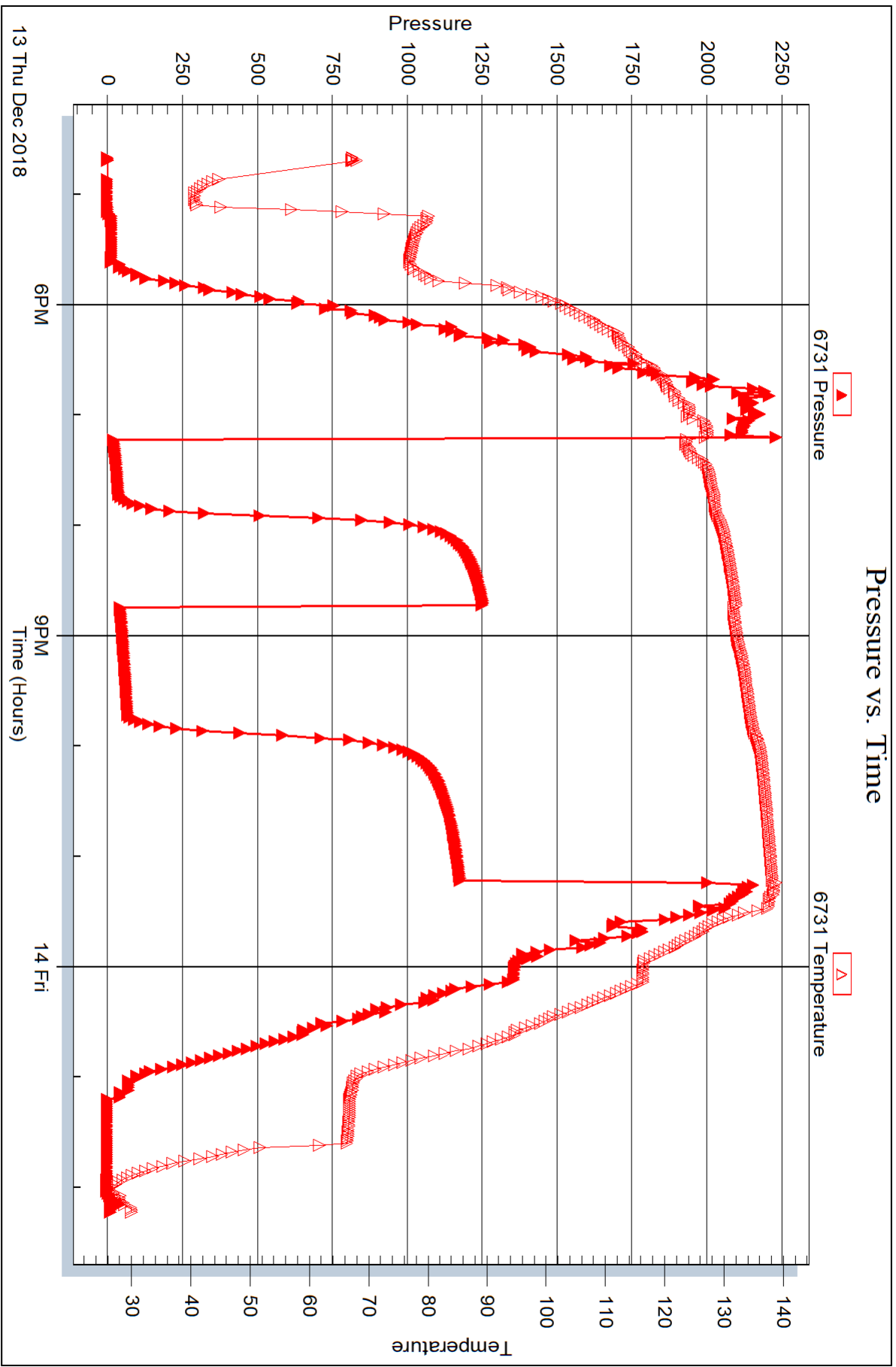
Serial #: 6731

Inside

Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Robert Hendrix

McClurg #2-12

12 2s 37w Cheyenne,KS

Start Date: 2018.12.14 @ 14:50:00

End Date: 2018.12.15 @ 00:22:00

Job Ticket #: 64169 DST #: 4

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

Printed: 2018.12.18 @ 11:50:47



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS

McClurg #2-12

Job Ticket: 64169

DST#: 4

Test Start: 2018.12.14 @ 14:50:00

GENERAL INFORMATION:

Formation: **LKC " H - J "**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:02:01
 Tester: Jim Svaty
 Time Test Ended: 00:22:00
 Unit No: 76
 Interval: **4437.00 ft (KB) To 4525.00 ft (KB) (TVD)**
 Reference Elevations: 3380.00 ft (KB)
 Total Depth: 4525.00 ft (KB) (TVD)
 3375.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 5.00 ft

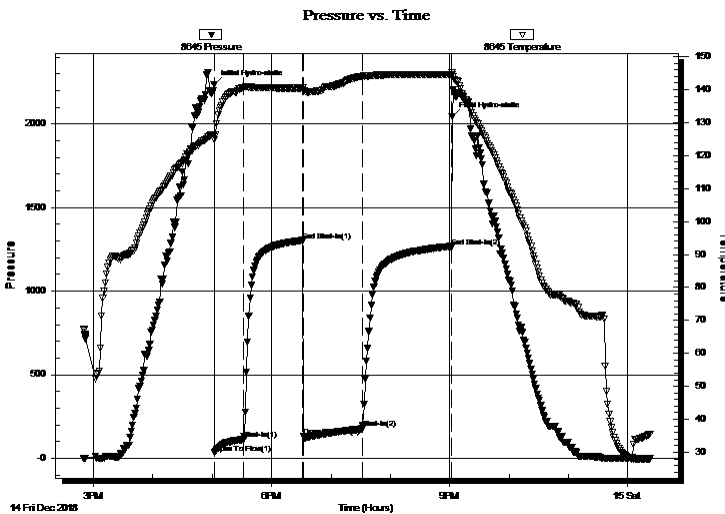
Serial #: 8645

Outside

Press@RunDepth: 177.62 psig @ 4438.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.12.14 End Date: 2018.12.15 Last Calib.: 2018.12.15
 Start Time: 14:50:01 End Time: 00:22:01 Time On Btm: 2018.12.14 @ 17:01:46
 Time Off Btm: 2018.12.14 @ 21:02:16

TEST COMMENT: 30-IFP- BOB in 14 min. IPRO---15.83
 60-ISIP- Surface Blow in 1 1/2 min. Built to 1/2" In 15 min.
 60-FFP- BOB in 18 min. IPRO---23.20
 90-FSIP- Surface Blow Built to 5 3/4"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2236.35	126.36	Initial Hydro-static
1	31.87	124.85	Open to Flow (1)
30	115.22	140.67	Shut-In(1)
90	1303.09	140.47	End Shut-In(1)
91	129.82	139.52	Open To Flow (2)
150	177.62	144.03	Shut-In(2)
241	1267.11	144.60	End Shut-In(2)
241	2043.29	145.20	Final Hydro-static

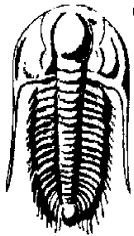
Recovery

Length (ft)	Description	Volume (bbl)
117.00	WOCM 20%w 25%o 55%m	0.58
59.00	GWMCO 20%g 10%w 30%m 40%o	0.29
124.00	GMCO 20%g 30%m 50%o	1.74
87.00	MCO 30%m 70%o	1.22
0.00	285 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 Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne, KS
McClurg #2-12
Job Ticket: 64169 **DST#: 4**
Test Start: 2018.12.14 @ 14:50:00

GENERAL INFORMATION:

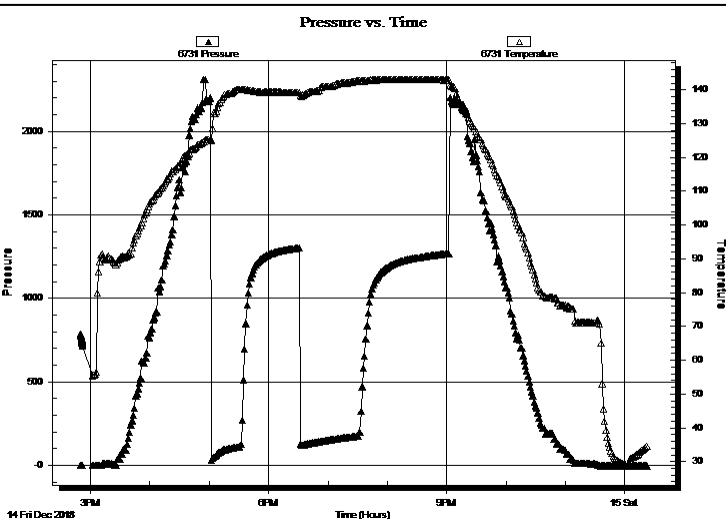
Formation: **LKC " H - J "**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:02:01 Tester: Jim Svaty
 Time Test Ended: 00:22:00 Unit No: 76
 Interval: **4437.00 ft (KB) To 4525.00 ft (KB) (TVD)** Reference Elevations: 3380.00 ft (KB)
 Total Depth: 4525.00 ft (KB) (TVD) 3375.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 6731

Inside

Press@RunDepth: psig @ 4438.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.12.14 End Date: 2018.12.15 Last Calib.: 2018.12.15
 Start Time: 14:50:01 End Time: 00:22:01 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 14 min. IPRO---15.83
 60-ISIP- Surface Blow in 1 1/2 min. Built to 1/2" In 15 min.
 60-FFP- BOB in 18 min. IPRO---23.20
 90-FSIP- Surface Blow Built to 5 3/4"



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
117.00	WOCM 20%w 25%o 55% m	0.58
59.00	GWMCO 20%g 10%w 30%m 40%o	0.29
124.00	GMCO 20%g 30%m 50%o	1.74
87.00	MCO 30%m 70%o	1.22
0.00	285 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 Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64169 **DST#: 4**
Test Start: 2018.12.14 @ 14:50:00

Tool Information

Drill Pipe:	Length: 4255.00 ft	Diameter: 3.80 inches	Volume: 59.69 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 176.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 60.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4437.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	116.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4410.00	
Shut In Tool	5.00			4415.00	
Hydraulic tool	5.00		Inside	4420.00	
Jars	5.00			4425.00	
Safety Joint	2.00			4427.00	
Packer	5.00			4432.00	28.00 Bottom Of Top Packer
Packer	5.00			4437.00	
Stubb	1.00			4438.00	
Recorder	0.00	8645	Outside	4438.00	
Recorder	0.00	6731	Inside	4438.00	
Perforations	20.00			4458.00	
Change Over Sub	1.00			4459.00	
Drill Pipe	62.00			4521.00	
Change Over Sub	1.00			4522.00	
Bullnose	3.00			4525.00	88.00 Bottom Packers & Anchor

Total Tool Length: 116.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64169 **DST#: 4**
Test Start: 2018.12.14 @ 14:50:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 34 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 21000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 800.00 ppm		
Filter Cake: 6.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
117.00	WOCM 20%w 25%o 55%m	0.575
59.00	GWMCO 20%g 10%w 30%m 40%o	0.290
124.00	GMCO 20%g 30%m 50%o	1.739
87.00	MCO 30%m 70%o	1.220
0.00	285 GIP	0.000

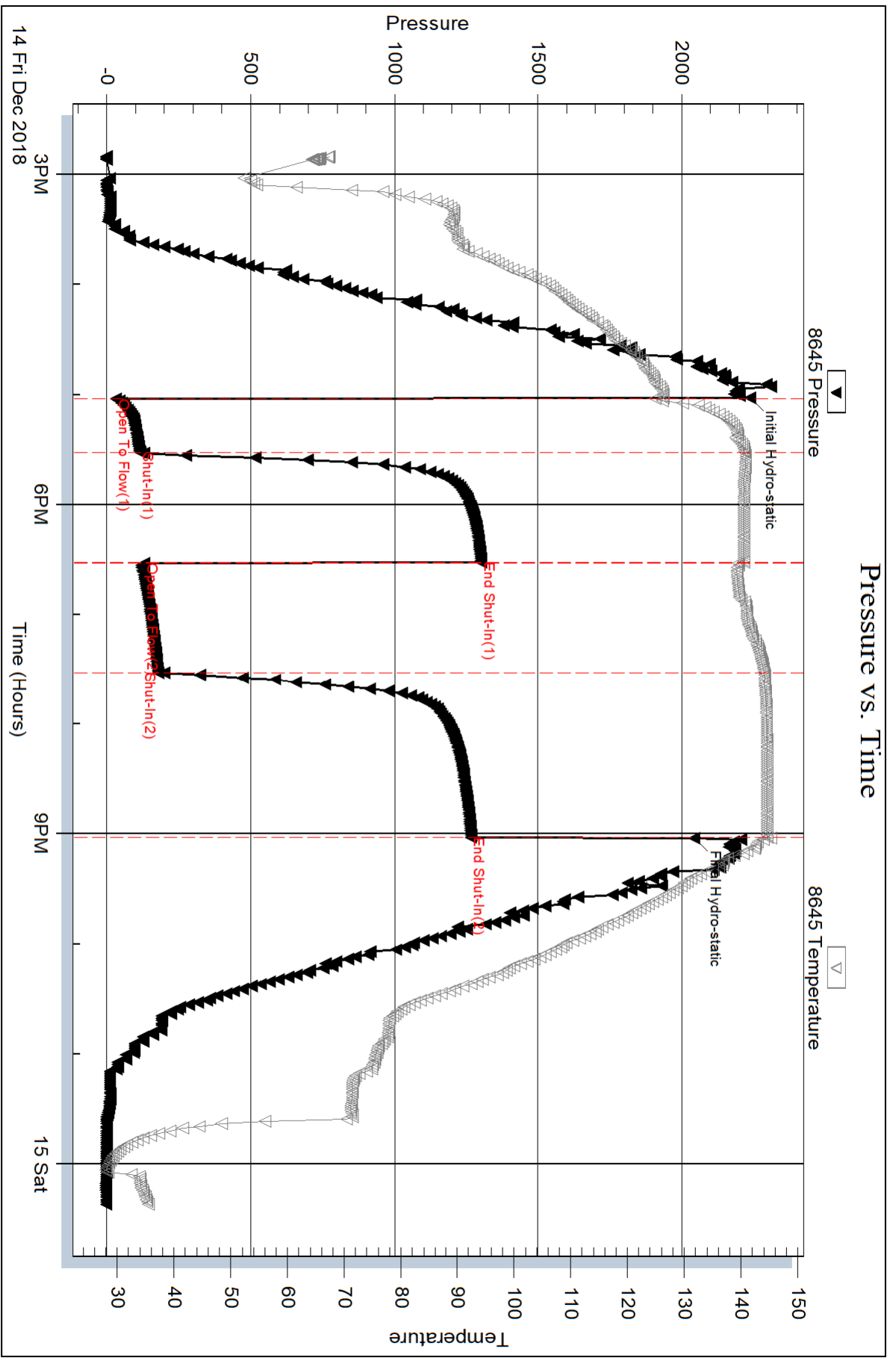
Total Length: 387.00 ft Total Volume: 3.824 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: .481 @ 47

Serial #: 8645

Outside Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 64169

Printed: 2018.12.18 @ 11:50:48

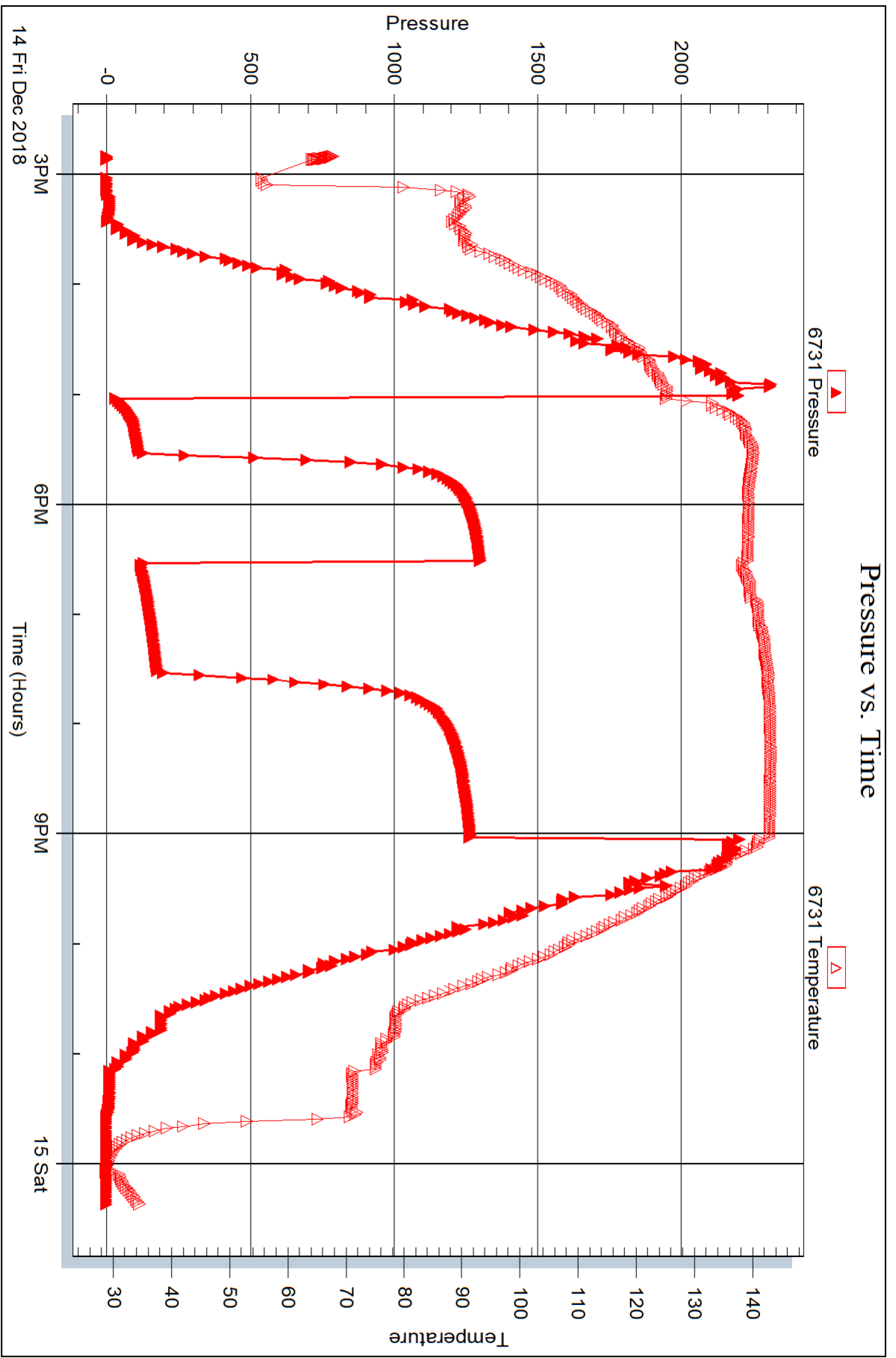
Serial #: 6731

Inside

Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Robert Hendrix

McClurg #2-12

12 2s 37w Cheyenne,KS

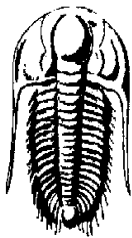
Start Date: 2018.12.16 @ 03:14:00

End Date: 2018.12.16 @ 12:50:00

Job Ticket #: 64170 DST #: 5

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

Printed: 2018.12.18 @ 11:50:24



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Robert Hendrix

12 2s 37w Cheyenne, KS

McClurg #2-12

Job Ticket: 64170

DST#: 5

Test Start: 2018.12.16 @ 03:14:00

GENERAL INFORMATION:

Formation: **Fort Scott & Celia**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:50:16

Time Test Ended: 12:50:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: **4678.00 ft (KB) To 4817.00 ft (KB) (TVD)**

Reference Elevations: 3380.00 ft (KB)

Total Depth: 4817.00 ft (KB) (TVD)

3375.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8645

Outside

Press@RunDepth: 242.73 psig @ 4689.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.12.16

End Date:

2018.12.16

Last Calib.: 2018.12.16

Start Time: 03:14:01

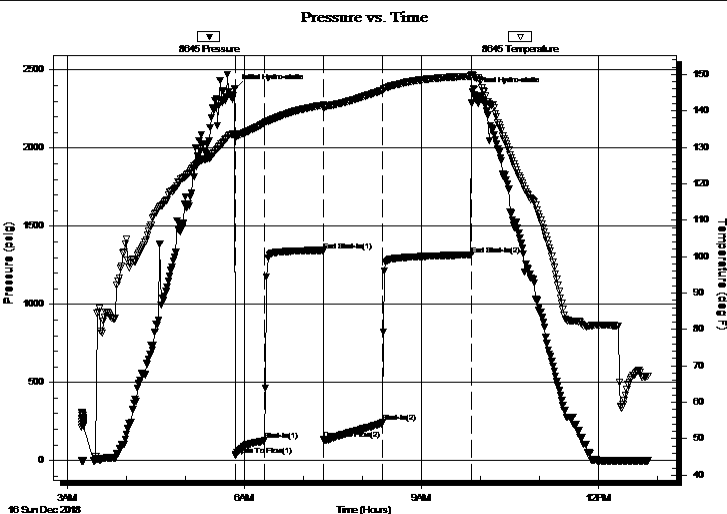
End Time:

12:50:01

Time On Btm: 2018.12.16 @ 05:50:01

Time Off Btm: 2018.12.16 @ 09:51:16

TEST COMMENT: 30-IFP- BOB in 10 1/2 min. IPRO---30.67
 60-ISIP- Surface Blow Built to 2" in 14 min.
 60-FFP- BOB in 8 min. IPRO---76.62
 90-FSIP- Surface Blow Built to 6" in 24 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2383.53	133.79	Initial Hydro-static
1	32.37	132.46	Open To Flow (1)
30	128.20	136.62	Shut-In(1)
90	1343.51	141.59	End Shut-In(1)
91	134.50	140.71	Open To Flow (2)
150	242.73	145.65	Shut-In(2)
241	1316.83	149.50	End Shut-In(2)
242	2363.21	149.99	Final Hydro-static

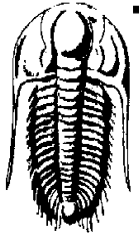
Recovery

Length (ft)	Description	Volume (bbl)
487.00	GMCO 30%g 20%m 50%o	5.23
93.00	GCO 30%g 70%o	1.30
0.00	964 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne, KS
McClurg #2-12
Job Ticket: 64170 **DST#: 5**
Test Start: 2018.12.16 @ 03:14:00

GENERAL INFORMATION:

Formation: **Fort Scott & Celia**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:50:16
Time Test Ended: 12:50:00
Interval: **4678.00 ft (KB) To 4817.00 ft (KB) (TVD)**
Total Depth: 4817.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 3380.00 ft (KB)
3375.00 ft (CF)
KB to GR/CF: 5.00 ft

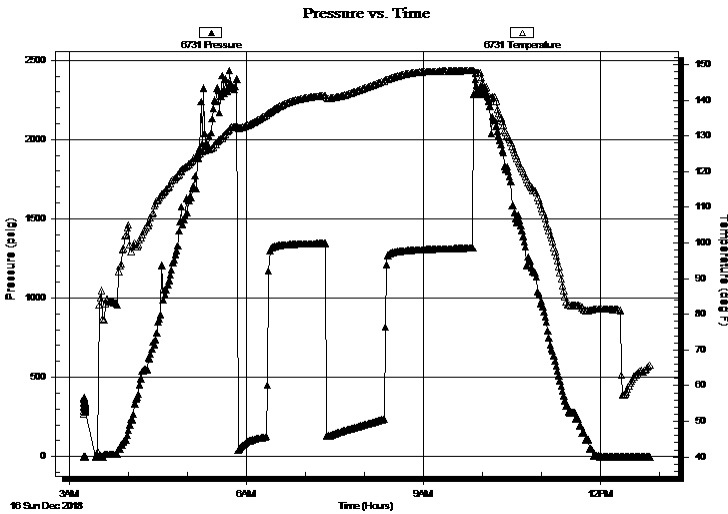
Serial #: 6731

Inside

Press@RunDepth: psig @ 4689.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.12.16 End Date: 2018.12.16 Last Calib.: 2018.12.16
Start Time: 03:14:01 End Time: 12:50:01 Time On Btm:
Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 10 1/2 min. IPRO---30.67
60-ISIP- Surface Blow Built to 2" in 14 min.
60-FFP- BOB in 8 min. IPRO---76.62
90-FSIP- Surface Blow Built to 6" in 24 min.

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
487.00	GMCO 30%g 20%m 50%o	5.23
93.00	GCO 30%g 70%o	1.30
0.00	964 GIP	0.00

* 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
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64170 **DST#: 5**
Test Start: 2018.12.16 @ 03:14:00

Tool Information

Drill Pipe:	Length: 4504.00 ft	Diameter: 3.80 inches	Volume: 63.18 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 176.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 64.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4678.00 ft			Final 67000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	139.00 ft			
Tool Length:	167.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4651.00	
Shut In Tool	5.00			4656.00	
Hydraulic tool	5.00		Inside	4661.00	
Jars	5.00			4666.00	
Safety Joint	2.00			4668.00	
Packer	5.00			4673.00	28.00 Bottom Of Top Packer
Packer	5.00			4678.00	
Stubb	1.00			4679.00	
Perforations	9.00			4688.00	
Change Over Sub	1.00			4689.00	
Recorder	0.00	8645	Outside	4689.00	
Recorder	0.00	6731	Inside	4689.00	
Drill Pipe	124.00			4813.00	
Change Over Sub	1.00			4814.00	
Bullnose	3.00			4817.00	139.00 Bottom Packers & Anchor

Total Tool Length: 167.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Robert Hendrix

12 2s 37w Cheyenne,KS
McClurg #2-12
Job Ticket: 64170 **DST#: 5**
Test Start: 2018.12.16 @ 03:14:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 45.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.99 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 800.00 ppm		
Filter Cake: 6.00 inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
487.00	GMCO 30%g 20%m 50%o	5.228
93.00	GCO 30%g 70%o	1.305
0.00	964 GIP	0.000

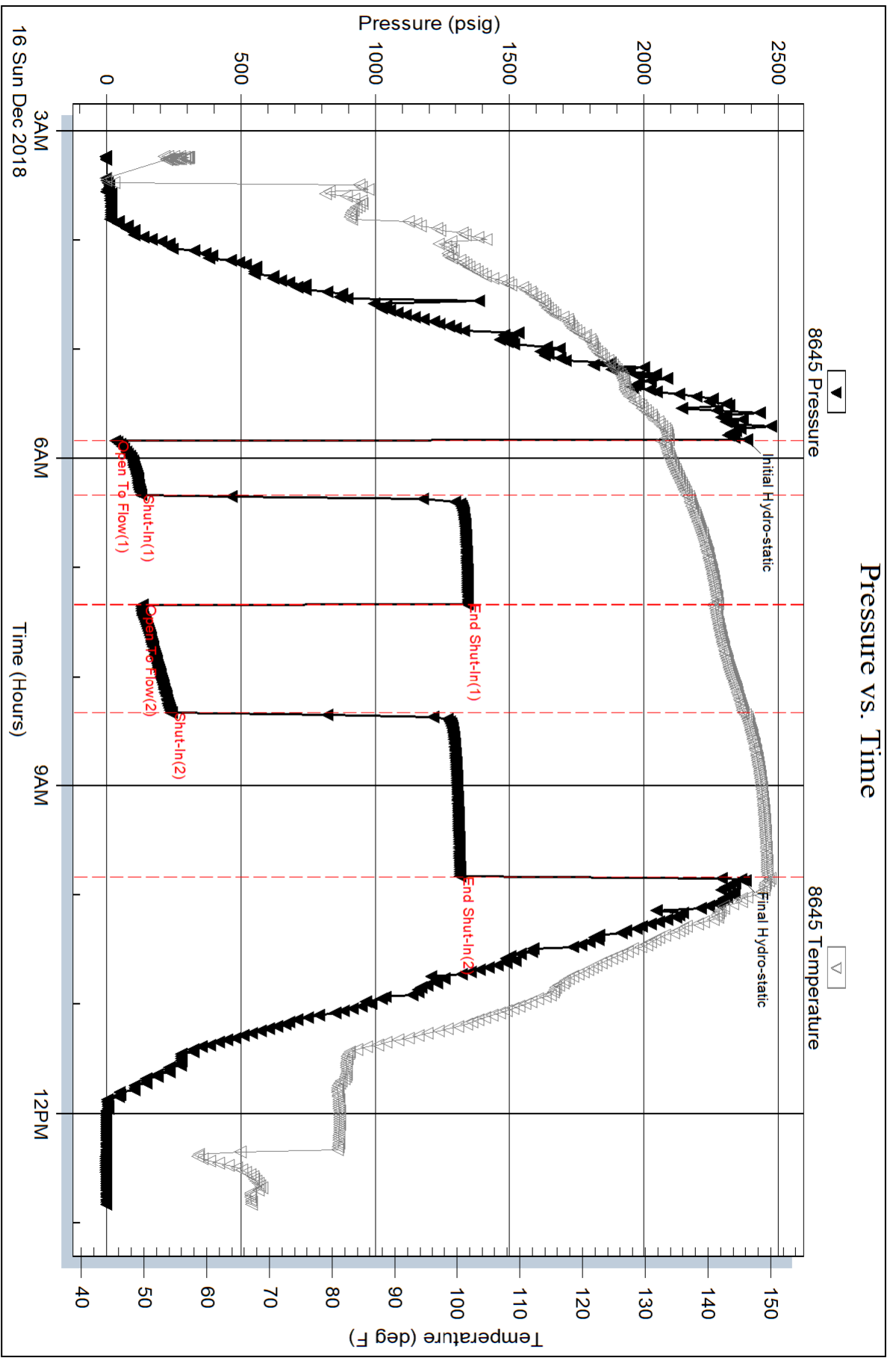
Total Length: 580.00 ft Total Volume: 6.533 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8645

Outside Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 5



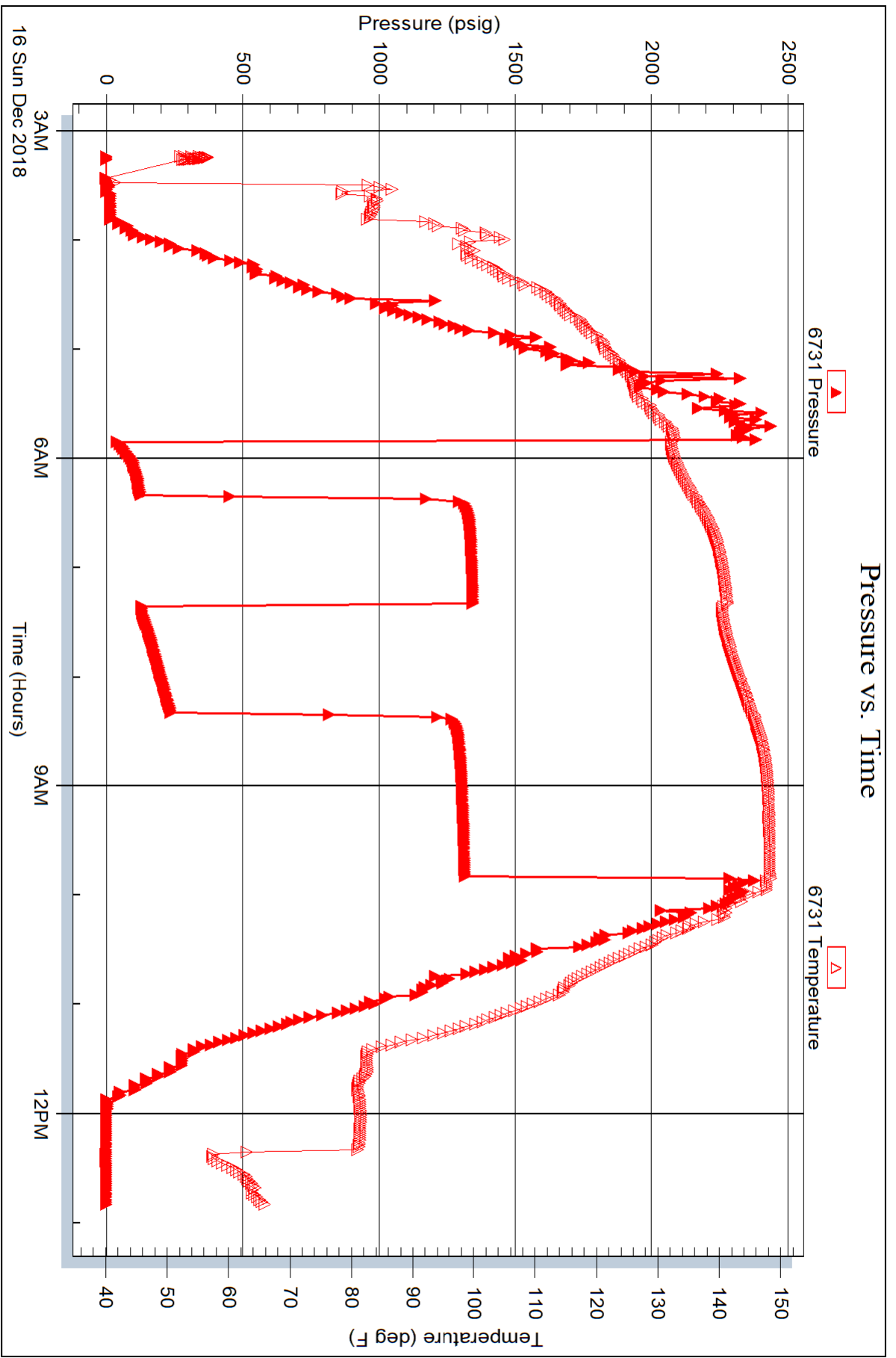
Serial #: 6731

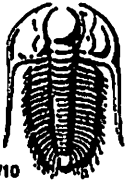
Inside

Murfin Drilling Co Inc

McClurg #2-12

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64166

Well Name & No. McClurg 2-12 Test No. 1 Date 12-1-18
 Company Murfin Drilling Co. Inc. Elevation 3380 KB 3375 GL
 Address 250 N. Water Ste 300 Wichita KS 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin 3
 Location: Sec. 12 Twp 2^s Rge. 37^w Co. Cheyenne State KS

Interval Tested 4173-4244 Zone Tested Croad.
 Anchor Length 71 Drill Pipe Run 3974 Mud Wt. 8.8
 Top Packer Depth 4168 Drill Collars Run 176 Vls 60
 Bottom Packer Depth 4173 Wt. Pipe Run 8 WL 5.6
 Total Depth 4244 Chlorides 700 ppm System LCM 4

Blow Description IIFP - Surface Blow Built to 2 in.
ISIP - No Blow
FFP - Surface Blow Built to 1 in.
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>25</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 25 BHT 134 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2068</u>	<input checked="" type="checkbox"/> Test 1150	T-On Location <u>18:30</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>20:44</u>
(C) First Final Flow <u>25</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>23:37</u>
(D) Initial Shut-In <u>522</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>03:37</u>
(E) Second Initial Flow <u>28</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>05:49</u>
(F) Second Final Flow <u>35</u>	<input checked="" type="checkbox"/> Mileage <u>113 RT</u> 113	Comments _____
(G) Final Shut-In <u>514</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2020</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Total <u>1588</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility	Sub Total <u>1588</u>

Approved By _____ Our Representative [Signature]
 TriLOBITE TESTING INC. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64167

Well Name & No. McClurg 2-12 Test No. 2 Date 12-12-18
 Company Murfin Drilling Co. Inc. Elevation 3380 KB 3375 GL
 Address 250 N. Water St 300 Wichita KS 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin 3
 Location: Sec. 12 Twp 2^s Rge. 37W Co. Cheyenne State K-5

Interval Tested 4315-4386 Zone Tested LKC "A-D"
 Anchor Length 71 Drill Pipe Run 4132 Mud Wt. 9.0
 Top Packer Depth 4310 Drill Collars Run 176 Vis 61
 Bottom Packer Depth 4315 Wt. Pipe Run 0 WL 5.6
 Total Depth 4386 Chlorides 700 ppm System LCM 4

Blow Description IFP- B.O.B. in 1 min. 30 sec. IFRD 146.92
FSIP- No Blow
FFP- B.O.B. in 2 min. 45 sec IFRD 68
FSIP- No Blow

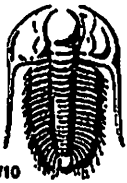
Rec	Feet of	%gas	%oil	%water	%mud
<u>922</u>	<u>Water</u>		<u>100</u>		
<u>498</u>	<u>MCW show of 0.1</u>		<u>70</u>	<u>30</u>	
<u>425</u>	<u>WCM show of 0.1</u>		<u>10</u>	<u>90</u>	

Rec Total 1845 BHT 151 Gravity API RW .299 @ 49 F Chlorides 34000 ppm

(A) Initial Hydrostatic 2113 Test 1150 T-On Location 18:54
 (B) First Initial Flow 156 Jars 250 T-Started 20:15
 (C) First Final Flow 659 Safety Joint 75 T-Open 23:06
 (D) Initial Shut-In 927 Circ Sub T-Pulled 02:06
 (E) Second Initial Flow 668 Hourly Standby T-Out 06:06
 (F) Second Final Flow 855 Mileage 113 Comments _____
 (G) Final Shut-In 929 Sampler _____
 (H) Final Hydrostatic 1993 Straddle _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 0
 Total 1588
 MP/DST Disc't _____
 Sub Total 1588

Approved By _____ Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64168

Well Name & No. McClurg 2-12 Test No. 3 Date 12-13-18
 Company Murfin Drilling Co. Inc. Elevation 3380 KB 3375 GL
 Address 250 N. Water Ste. 300 Wichita KS 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin 2
 Location: Sec. 12 Twp 25 Rge. 37^W Co. Cheyenne State KS

Interval Tested 4395-4440 Zone Tested LKC "E"
 Anchor Length 45 Drill Pipe Run 4224 Mud Wt. 9.0
 Top Packer Depth 4390 Drill Collars Run 176 Vis 64
 Bottom Packer Depth 4395 Wt. Pipe Run 0 WL 5.6
 Total Depth 4440 Chlorides 800 ppm System LCM 6

Blow Description I/P - Surface Blow Built to 4 1/2 in.
FSIP - No Blow
F/P - Surface Blow Built to 7 1/2 in. IPR0 7.86
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>118</u>	<u>Hmco</u>	<u>70</u>		<u>30</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of <u>120 MIP</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 118 BHT 139 Gravity 37 API RW @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 2193
- (B) First Initial Flow 21
- (C) First Final Flow 39
- (D) Initial Shut-In 1248
- (E) Second Initial Flow 43
- (F) Second Final Flow 69
- (G) Final Shut-In 1179
- (H) Final Hydrostatic 2073

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

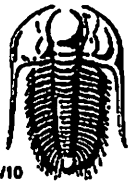
- Test 1150
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 113
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1588

- T-On Location 15:40
- T-Started 16:40
- T-Open 19:14
- T-Pulled 23:14
- T-Out 02:14

- Comments _____
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1588
- 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. 64169

Well Name & No. McCura 2-12 Test No. 4 Date 12-14-18
 Company Murfin Drilling Co. Inc. Elevation 3380 KB 3375 GL
 Address 2501 Water St. 300 Wichita KS. 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig MURFIN 3
 Location: Sec. 12 Twp 25 Rge. 37W Co. Cheyenne State KS

Interval Tested 4437-4525 Zone Tested LKC "H-J"
 Anchor Length 88 Drill Pipe Run 4255 Mud Wt. 8.9
 Top Packer Depth 4432 Drill Collars Run 176 Vls 55
 Bottom Packer Depth 4437 Wt. Pipe Run 8 WL 6
 Total Depth 4525 Chlorides 800 ppm System LCM 6

Blow Description IFP - BOB in 14 min.
ISIP - Surface Blow in 1/2 min. Built to 1/2 in IN 15 min.
FFP - BOB in 18 min.
FSIP - Surface Blow Built to 5 3/4 in.

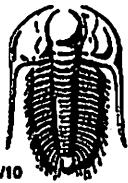
Rec	Feet of	%gas	%oil	%water	%mud
<u>117</u>	<u>WOCM</u>	<u>25</u>	<u>20</u>	<u>55</u>	
<u>59</u>	<u>MWCMCO</u>	<u>20</u>	<u>40</u>	<u>10</u>	<u>30</u>
<u>124</u>	<u>MWCMCO</u>	<u>20</u>	<u>50</u>		<u>30</u>
<u>87</u>	<u>MCO</u>	<u>70</u>		<u>30</u>	
<u>285</u>	<u>IFP</u>				

Rec Total 387 BHT 145 Gravity 34 API RW .481 @ 47 °F Chlorides 21000 ppm

(A) Initial Hydrostatic 2236 Test 1150 T-On Location 13:50
 (B) First Initial Flow 31 Jars 250 T-Started 14:50
 (C) First Final Flow 115 Safety Joint 75 T-Open 17:02
 (D) Initial Shut-In 1303 Circ Sub T-Pulled 21:02
 (E) Second Initial Flow 129 Hourly Standby T-Out 00:22
 (F) Second Final Flow 177 Mileage 113 Comments _____
 (G) Final Shut-In 1267 Sampler _____
 (H) Final Hydrostatic 2043 Straddle _____
 Shale Packer _____ Ruined Shale Packer _____

Initial Open 30 Extra Packer _____ Ruined Packer _____
 Initial Shut-In 60 Extra Recorder _____ Extra Copies _____
 Final Flow 60 Day Standby _____ Sub Total 0
 Final Shut-In 90 Accessibility _____ Total 1588
 Sub Total 1588 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. 64170

Well Name & No. McClurg 2-12 Test No. 5 Date 12-16-18
 Company Murfin Drilling Co. Inc. Elevation 3380 KB 3375 GL
 Address 250 N. Water Ste 300 Wichita KS 67202-1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin 3
 Location: Sec. 12 Twp 2S Rge. 37W Co. Cheyenne State KS

Interval Tested 4678 - 4817 Zone Tested Fort Scott + Celia
 Anchor Length 139 Drill Pipe Run 4504 Mud Wt. 9.1
 Top Packer Depth 4673 Drill Collars Run 176 Vis 45
 Bottom Packer Depth 4678 Wt. Pipe Run 0 WL 6
 Total Depth 4817 Chlorides 800 ppm System LCM 6

Blow Description I/FP - BOB in 10 1/2 min.
ISIP - SURFACE Blow Built to 2 in. In 14 min.
F/FP - BOB in 8 min.
FSIP - SURFACE Blow Built to 6 in. In 24 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>487</u>	<u>AMCO</u>	<u>30</u>	<u>50</u>	<u>20</u>	
<u>93</u>	<u>ACO</u>	<u>30</u>	<u>70</u>		

Rec Total 580 BHT 150 Gravity 38 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>02:20</u>
(B) First Initial Flow <u>2383</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>03:14</u>
(C) First Final Flow <u>32</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>05:50</u>
(D) Initial Shut-In <u>128</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>09:50</u>
(E) Second Initial Flow <u>1343</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>12:50</u>
(F) Second Final Flow <u>134</u>	<input checked="" type="checkbox"/> Mileage <u>113</u>	Comments _____
(G) Final Shut-In <u>242</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1316</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
<u>2363</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1588</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1588</u>	

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