

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Mai Oil Operations Inc

25-19S-13W Barton,KS

8411 Preston Road
Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

Clasen #2

Job Ticket: 65120

DST#: 1

Test Start: 2016.09.19 @ 01:35:00

GENERAL INFORMATION:

Formation: **LKC A - C**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:05:30

Time Test Ended: 07:30:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: **3125.00 ft (KB) To 3185.00 ft (KB) (TVD)**

Reference Elevations: 1838.00 ft (KB)

Total Depth: 3185.00 ft (KB) (TVD)

1830.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6999 Inside

Press@RunDepth: 74.48 psig @ 3180.72 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.09.19

End Date:

2016.09.19

Last Calib.: 2016.09.19

Start Time: 01:35:05

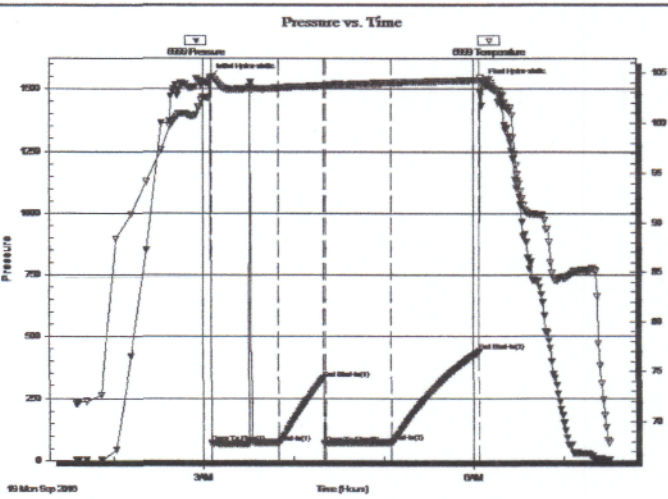
End Time:

07:30:29

Time On Btm: 2016.09.19 @ 03:04:30

Time Off Btm: 2016.09.19 @ 06:06:30

TEST COMMENT: IFP 45 minutes Surging build to BOB in 17 1/2 minutes/flush tool after 25 min/ no change
 ISI 30 minutes No blow back
 FFP 45 minutes Smooth built to BOB in 1 min then slow ed to match I.F. after 4 minutes
 FSI 60 minutes No blow back



PRESSURE SUMMARY

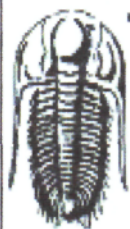
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1547.78	104.24	Initial Hydro-static
1	70.35	104.58	Open To Flow (1)
46	73.78	103.47	Shut-in(1)
76	330.01	103.69	End Shut-in(1)
77	69.57	103.71	Open To Flow (2)
121	74.48	104.01	Shut-in(2)
180	438.71	104.27	End Shut-in(2)
182	1527.75	104.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	Mud w with a skim of oil/ Mud 100%	1.30
0.00	465' GIP	0.00

Gas Rates

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



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TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston Road
Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65120 **DST#: 1**
Test Start: 2016.09.19 @ 01:35:00

Tool Information

Drill Pipe:	Length: 3134.00 ft	Diameter: 3.80 inches	Volume: 43.96 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 48000.00 lb
		Total Volume:	43.96 bbl	Tool Chased 15.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 33000.00 lb
Depth to Top Packer:	3125.00 ft			Final 34000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	59.72 ft			
Tool Length:	79.72 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: Initial set 15 foot high/slide tool 10 foot after open to top of joint/picked up another joint/tool slid 5 foot before second open/ no slide after tool opened

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3110.00	
Hydraulic tool	5.00			3115.00	
Top Packer	5.00			3120.00	
Packer	5.00			3125.00	20.00 Bottom Of Top Packer
Anchor	5.00			3130.00	
Change Over Sub	1.00			3131.00	
Drill Pipe	31.72			3162.72	
Change Over Sub	1.00			3163.72	
Anchor	16.00			3179.72	
Recorder	1.00	6999	Inside	3180.72	
Recorder	1.00	8960	Outside	3181.72	
Bullnose	3.00			3184.72	59.72 Anchor Tool

Total Tool Length: 79.72



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FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Road
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ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65120 **DST#: 1**
Test Start: 2016.09.19 @ 01:35:00

Mud and Cushion Information

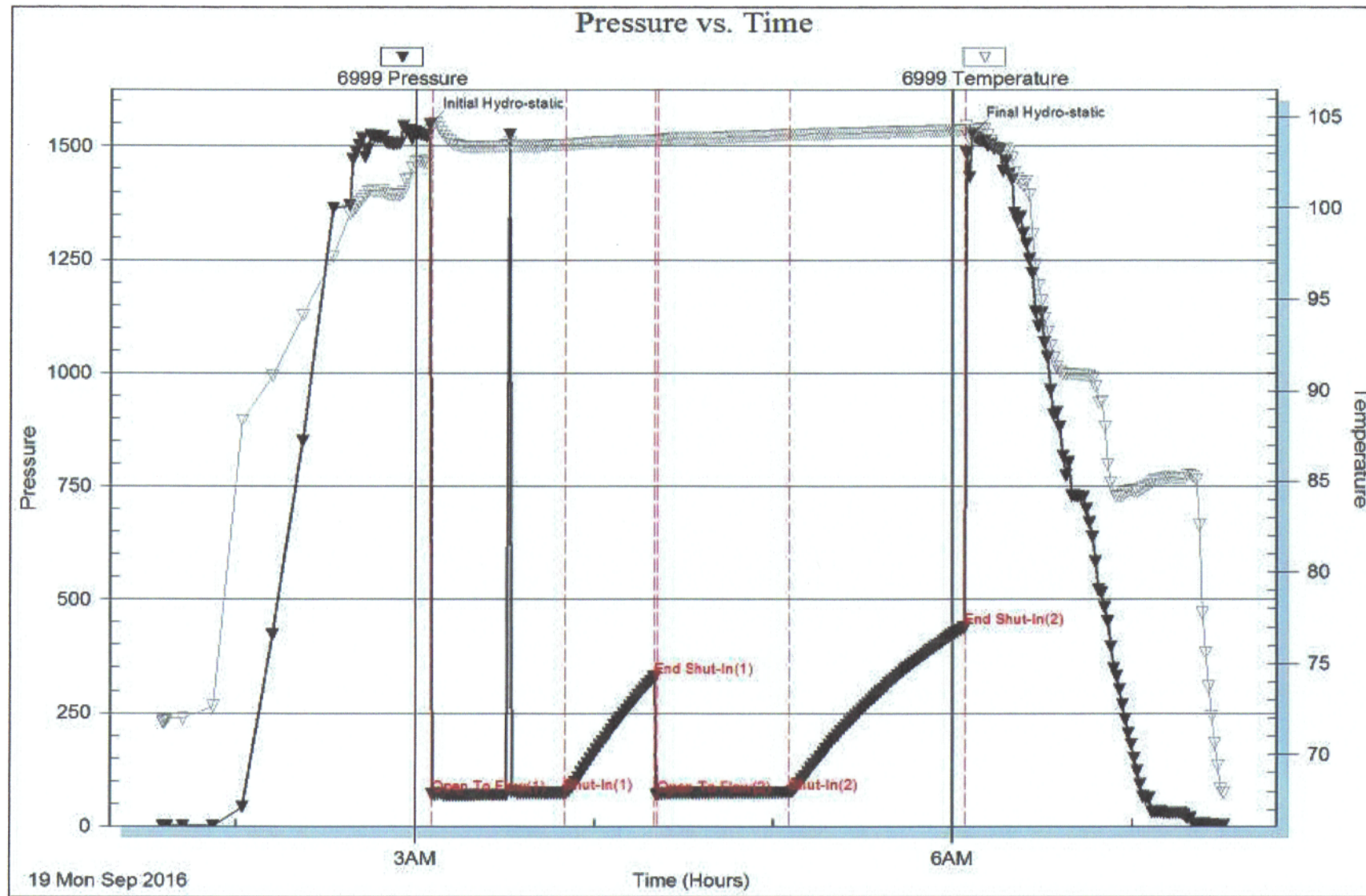
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.75 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3200.00 ppm			
Filter Cake: 2.00 inches			

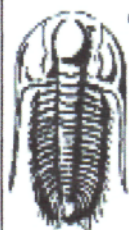
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
93.00	Mud with a skim of oil/ Mud 100%	1.305
0.00	465' GIP	0.000

Total Length: 93.00 ft Total Volume: 1.305 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:





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DRILL STEM TEST REPORT

Mai Oil Operations Inc

25-19S-13W Barton,KS

8411 Preston Road
Suite 800
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ATTN: Jim Musgrove

Clasen #2

Job Ticket: 65121

DST#: 2

Test Start: 2016.09.19 @ 13:38:00

GENERAL INFORMATION:

Formation: **LKC D - F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:42:30

Time Test Ended: 18:27:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 3186.00 ft (KB) To 3225.00 ft (KB) (TVD)

Reference Elevations: 1838.00 ft (KB)

Total Depth: 3225.00 ft (KB) (TVD)

1830.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8960 Outside

Press@RunDepth: 87.64 psig @ 3222.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.09.19

End Date:

2016.09.19

Last Calib.: 2016.09.19

Start Time: 13:38:05

End Time:

18:26:29

Time On Btm: 2016.09.19 @ 14:41:00

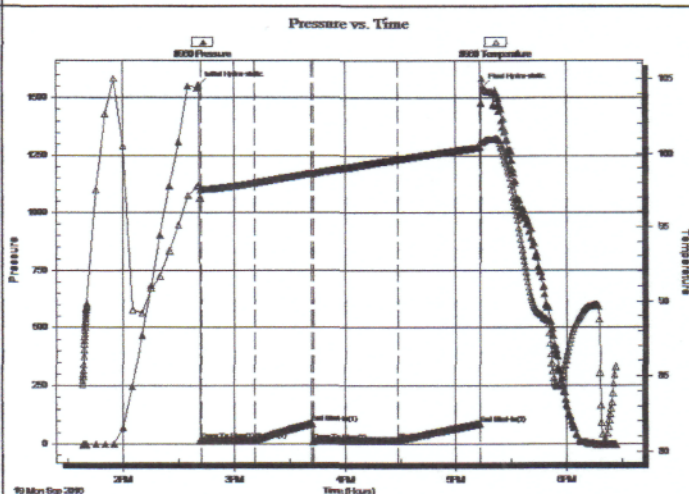
Time Off Btm: 2016.09.19 @ 17:14:30

TEST COMMENT: IFP 30 minutes Weak blow built to 3"

ISI 30 minutes No blow back

FFP 45 minutes Blow built to 5"

FSI 45 minutes No blow back



PRESSURE SUMMARY

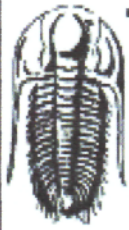
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1555.62	97.81	Initial Hydro-static
1	15.95	97.52	Open To Flow (1)
31	16.52	97.99	Shut-In (1)
61	89.13	98.66	End Shut-In (1)
62	13.18	98.62	Open To Flow (2)
108	16.54	99.58	Shut-In (2)
152	87.64	100.40	End Shut-In (2)
154	1544.64	100.74	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud with show of oil in tool/Mud 100%	0.07
0.00	55 feet of gas in pipe	0.00

Gas Rates

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



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TOOL DIAGRAM

Mai Oil Operations Inc
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ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65121 **DST#: 2**
Test Start: 2016.09.19 @ 13:38:00

Tool Information

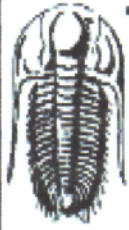
Drill Pipe:	Length: 3197.00 ft	Diameter: 3.80 inches	Volume: 44.85 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 48000.00 lb
			<u>Total Volume: 44.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3186.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	39.00 ft			
Tool Length:	59.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3171.00	
Hydraulic tool	5.00			3176.00	
Top Packer	5.00			3181.00	
Packer	5.00			3186.00	20.00 Bottom Of Top Packer
Anchor	34.00			3220.00	
Recorder	1.00	6999	Inside	3221.00	
Recorder	1.00	8960	Outside	3222.00	
Bullnose	3.00			3225.00	39.00 Anchor Tool

Total Tool Length: 59.00



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ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65121 **DST#: 2**
Test Start: 2016.09.19 @ 13:38:00

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: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.16 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5000.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud with show of oil in tool/Mud 100%	0.070
0.00	55 feet of gas in pipe	0.000

Total Length: 5.00 ft Total Volume: 0.070 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

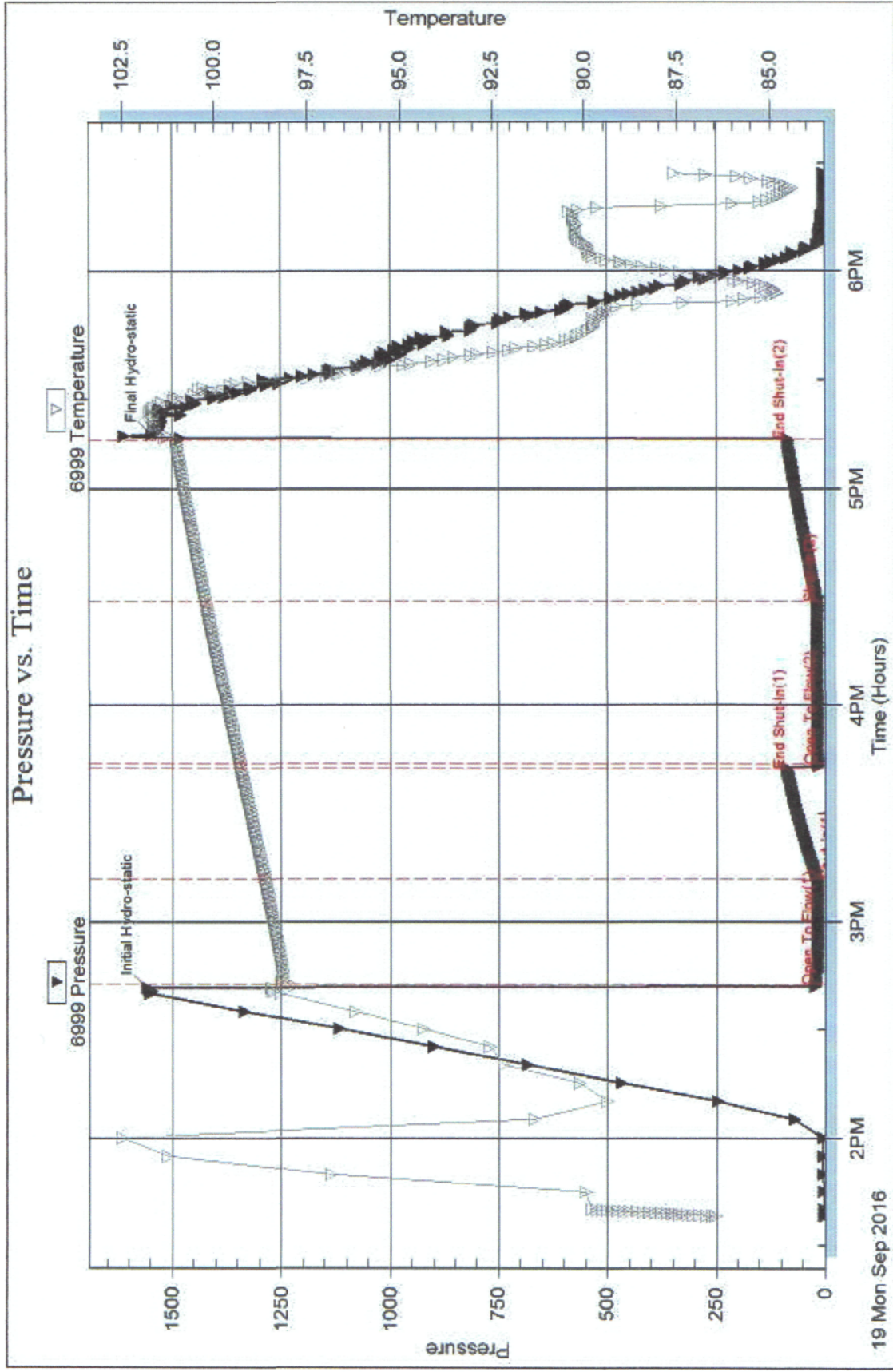
Serial #: 6999

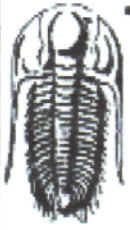
Inside

Mai Oil Operations Inc

Case# #2

DST Test Number: 2





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 ATTN: Jim Musgrove

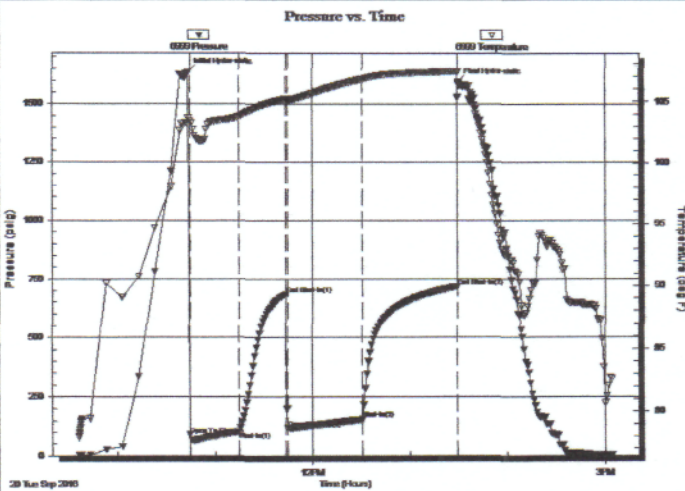
25-19S-13W Barton,KS
Clasen #2
 Job Ticket: 65122 **DST#: 3**
 Test Start: 2016.09.20 @ 09:36:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:44:30
 Time Test Ended: 15:05:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Interval: **3268.00 ft (KB) To 3360.00 ft (KB) (TVD)**
 Total Depth: 3360.00 ft (KB) (TVD)
 Reference Elevations: 1838.00 ft (KB)
 1830.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 6999 Inside
 Press@RunDepth: 155.65 psig @ 3355.49 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.09.20 End Date: 2016.09.20 Last Calib.: 2016.09.20
 Start Time: 09:36:05 End Time: 15:04:59 Time On Btm: 2016.09.20 @ 10:43:30
 Time Off Btm: 2016.09.20 @ 13:30:00

TEST COMMENT: IFP 30 minutes BOB in 1 minute
 ISI 30 minutes Blow back built to 5"
 FFP 45 minutes BOB in 1 min - GTS in 30 min - TSTM
 FSI 60 minutes BOB in 15 min



PRESSURE SUMMARY

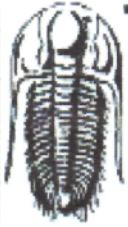
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1636.38	103.66	Initial Hydro-static
1	90.47	103.38	Open To Flow (1)
31	103.35	103.76	Shut-In(1)
60	684.91	105.18	End Shut-In(1)
62	118.18	105.10	Open To Flow (2)
107	155.65	106.78	Shut-In(2)
166	717.14	107.43	End Shut-In(2)
167	1593.74	106.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud with show of oil/Mud 100%	0.28
124.00	Water cut gassy muddy emulsified oil	1.74
0.00	Water 10% Gas 20% Mud 20% Oil 50%	0.00
186.00	Water and Mud cut Gassy Oil	2.61
0.00	Water 15% Mud 15% Gas 30% Oil 40%	0.00

Gas Rates

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



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TOOL DIAGRAM

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8411 Preston Road
Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65122 **DST#: 3**
Test Start: 2016.09.20 @ 09:36:00

Tool Information

Drill Pipe:	Length: 3260.00 ft	Diameter: 3.80 inches	Volume: 45.73 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: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 43000.00 lb
			Total Volume: 45.73 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3268.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	91.49 ft			
Tool Length:	111.49 ft			
Number of Packers:	2	Diameter: 6.75 inches		

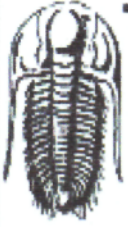
Tool Comments:

Tool Description

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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3253.00	
Hydraulic tool	5.00			3258.00	
Top Packer	5.00			3263.00	
Packer	5.00			3268.00	20.00 Bottom Of Top Packer
Anchor	5.00			3273.00	
Change Over Sub	1.00			3274.00	
Drill Pipe	63.49			3337.49	
Change Over Sub	1.00			3338.49	
Anchor	16.00			3354.49	
Recorder	1.00	6999	Inside	3355.49	
Recorder	1.00	8960	Outside	3356.49	
Bullnose	3.00			3359.49	91.49 Anchor Tool

Total Tool Length: 111.49



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ATTN: Jim Musgrove

25-19S-13W Barton,KS
Clasen #2
Job Ticket: 65122 **DST#: 3**
Test Start: 2016.09.20 @ 09:36:00

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: bbl		
Water Loss: 8.77 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 5200.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud with show of oil/Mud 100%	0.281
124.00	Water cut gassy muddy emulsified oil	1.739
0.00	Water 10% Gas 20% Mud 20% Oil 50%	0.000
186.00	Water and Mud cut Gassy Oil	2.609
0.00	Water 15% Mud 15% Gas 30% Oil 40%	0.000

Total Length: 330.00 ft Total Volume: 4.629 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

