



## DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 1019  
Hays KS 67601

ATTN: Mark Downing

### **Flemming #1-24**

#### **24-5s-37w Cheyenne,KS**

Start Date: 2019.10.01 @ 15:07:00

End Date: 2019.10.01 @ 23:13:30

Job Ticket #: 65272                      DST #: 1

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

Printed: 2019.10.08 @ 11:17:08

DNOC  
24-5s-37w Cheyenne,KS  
Flemming #1-24  
DST # 1  
Toronto - LKC " A "  
2019.10.01



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

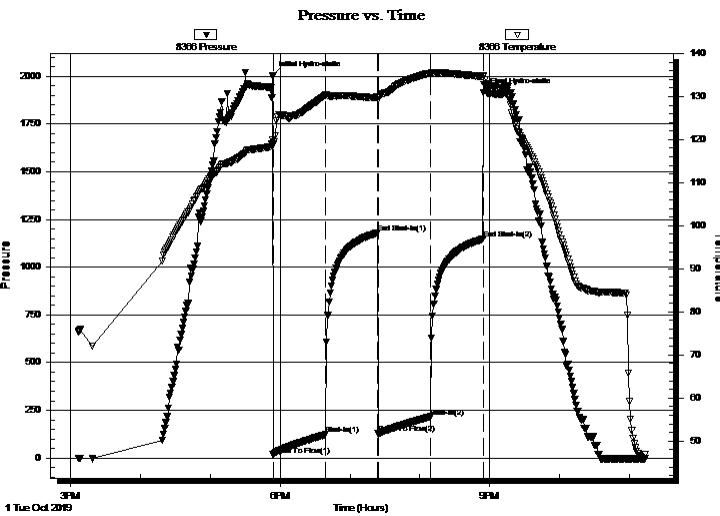
**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
Job Ticket: 65272      **DST#: 1**  
Test Start: 2019.10.01 @ 15:07:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC " A "**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Initial)  
Time Tool Opened: 17:54:00      Tester: Ryan Nichols  
Time Test Ended: 23:13:30      Unit No: 71  
**Interval: 4138.00 ft (KB) To 4210.00 ft (KB) (TVD)**      Reference Elevations: 3310.00 ft (KB)  
Total Depth: 4210.00 ft (KB) (TVD)      3306.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 4.00 ft

**Serial #: 8366      Outside**  
Press@RunDepth: 215.18 psig @ 4139.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2019.10.01      End Date: 2019.10.01      Last Calib.: 2019.10.01  
Start Time: 15:07:01      End Time: 23:13:30      Time On Btm: 2019.10.01 @ 17:53:40  
Time Off Btm: 2019.10.01 @ 20:54:40

TEST COMMENT: 45 IF - BoB @ 24 mins  
45 ISI - No return  
45 FF - BoB @ 40 mins  
45 FSI - No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2002.69	119.88	Initial Hydro-static
1	16.85	118.75	Open To Flow (1)
46	122.48	130.31	Shut-In(1)
90	1179.10	129.85	End Shut-In(1)
91	127.67	129.33	Open To Flow (2)
136	215.18	135.40	Shut-In(2)
181	1146.77	134.67	End Shut-In(2)
181	1915.96	134.91	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
252.00	MCW - 5%M - 95%W	3.25
189.00	MCW - 50%M - 50%W	2.65
20.00	Mud with oil spots 100%M	0.28

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
Job Ticket: 65272      **DST#: 1**  
Test Start: 2019.10.01 @ 15:07:00

## Tool Information

Drill Pipe:	Length: 4120.00 ft	Diameter: 3.80 inches	Volume: 57.79 bbl	Tool Weight: 1500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 57.94 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4138.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	72.00 ft			
Tool Length:	92.00 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			4123.00	
Hydraulic tool	5.00			4128.00	
Packer	5.00			4133.00	20.00      Bottom Of Top Packer
Packer	5.00			4138.00	
Stubb	1.00			4139.00	
Recorder	0.00	8353	Inside	4139.00	
Recorder	0.00	8366	Outside	4139.00	
Perforations	34.00			4173.00	
Blank Spacing	34.00			4207.00	
Bullnose	3.00			4210.00	72.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>92.00</b>				



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

DNOC **24-5s-37w Cheyenne,KS**

PO Box 1019  
Hays KS 67601

**Flemming #1-24**

Job Ticket: 65272 **DST#: 1**

ATTN: Mark Downing

Test Start: 2019.10.01 @ 15:07:00

**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: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: 1.00 inches			

**Recovery Information**

Recovery Table

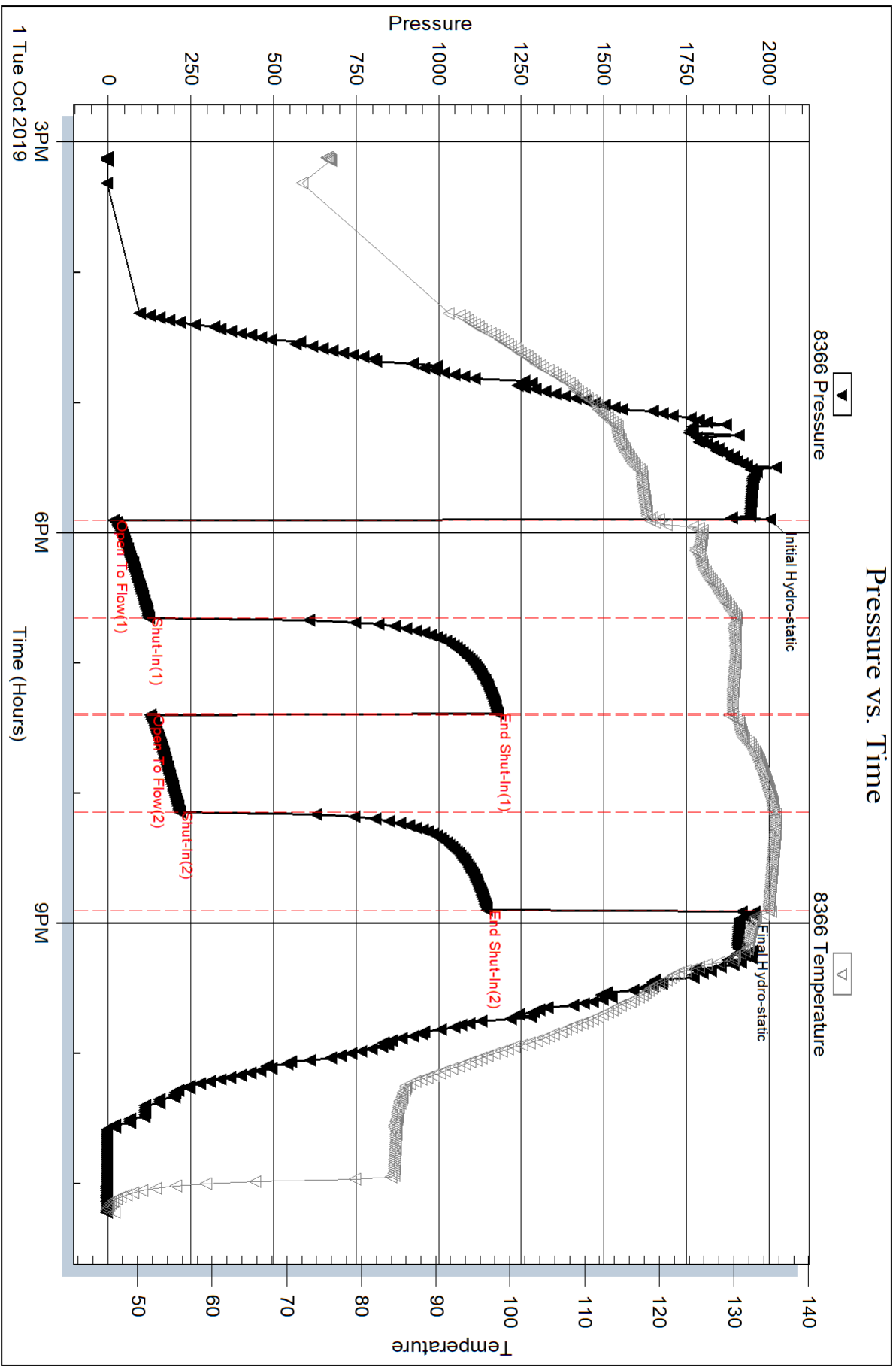
Length ft	Description	Volume bbl
252.00	MCW - 5%M - 95%W	3.253
189.00	MCW - 50%M - 50%W	2.651
20.00	Mud with oil spots 100%M	0.281

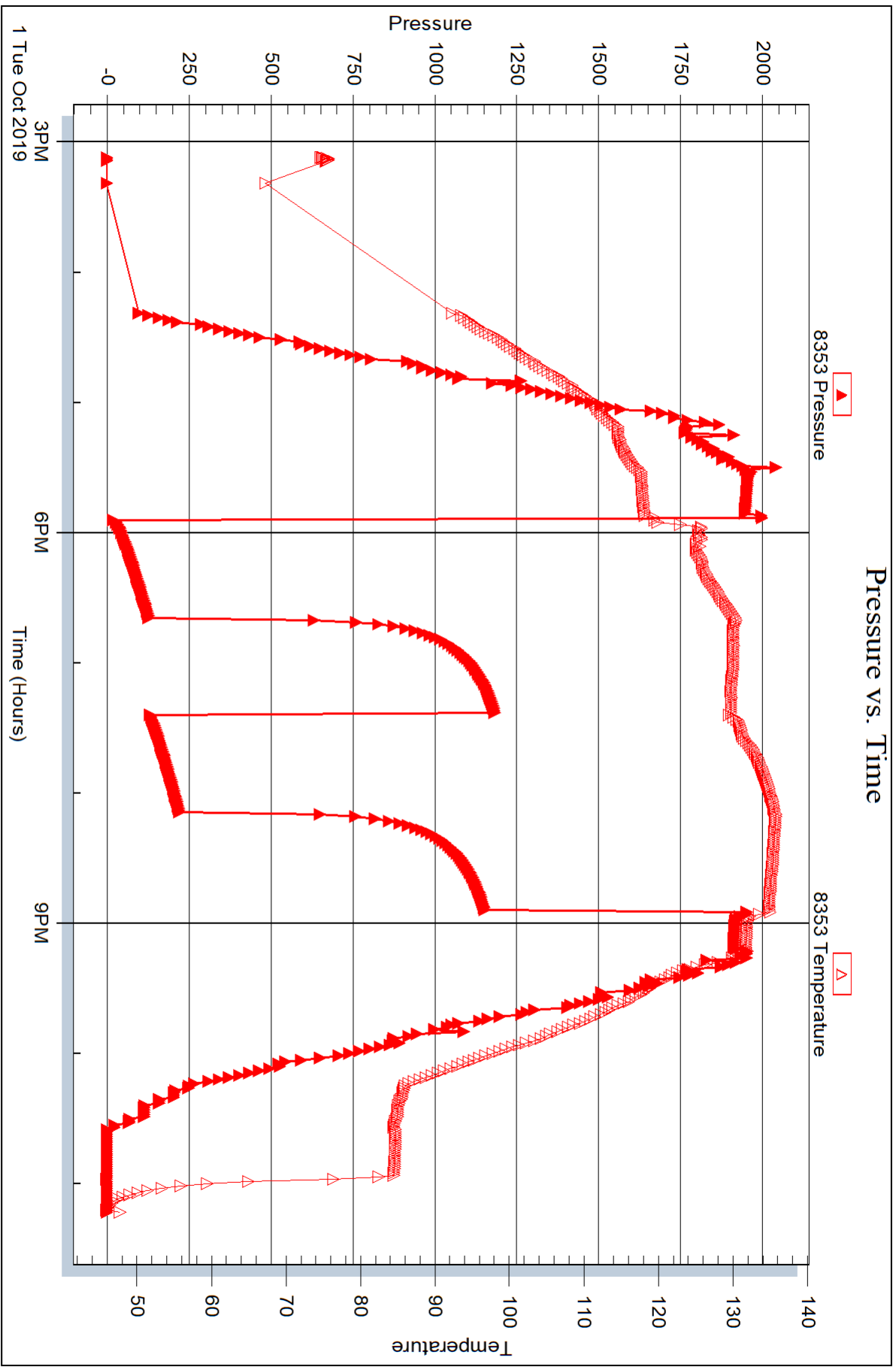
Total Length: 461.00 ft Total Volume: 6.185 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW = .533 @ 45 DEG F  
Chlorides = 19,000 ppm







## DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 1019  
Hays KS 67601

ATTN: Mark Downing

### **Flemming #1-24**

#### **24-5s-37w Cheyenne,KS**

Start Date: 2019.10.02 @ 16:18:00

End Date: 2019.10.02 @ 23:39:39

Job Ticket #: 65615                      DST #: 2

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

Printed: 2019.10.08 @ 11:16:44

DNOC  
24-5s-37w Cheyenne,KS  
Flemming #1-24  
DST # 2  
LKC " J "  
2019.10.02





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

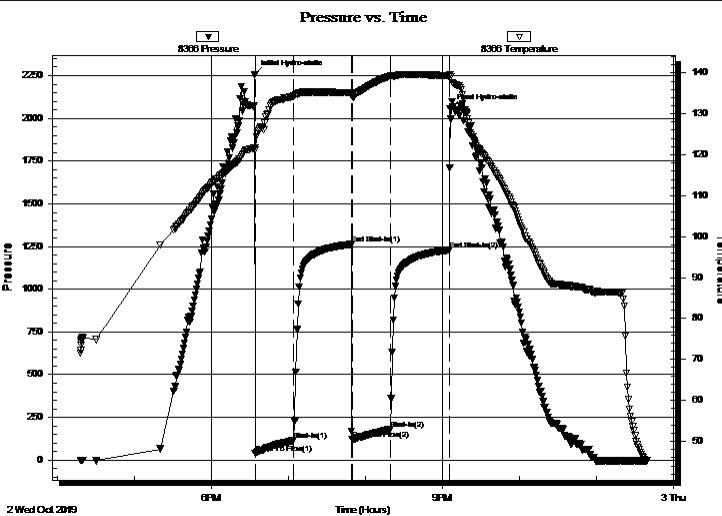
**24-5s-37w Cheyenne, KS**  
**Flemming #1-24**  
Job Ticket: 65615      **DST#: 2**  
Test Start: 2019.10.02 @ 16:18:00

## GENERAL INFORMATION:

Formation: **LKC " J "**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Bottom Hole (Reset)  
Time Tool Opened: 18:34:00      Tester: Ryan Nichols  
Time Test Ended: 23:39:39      Unit No: 71  
**Interval: 4341.00 ft (KB) To 4391.00 ft (KB) (TVD)**      Reference Elevations: 3310.00 ft (KB)  
Total Depth: 4391.00 ft (KB) (TVD)      3306.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Good      KB to GR/CF: 4.00 ft

**Serial #: 8366      Outside**  
Press@RunDepth: 180.41 psig @ 4342.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2019.10.02      End Date: 2019.10.02      Last Calib.: 2019.10.02  
Start Time: 16:18:01      End Time: 23:39:40      Time On Btm: 2019.10.02 @ 18:33:40  
Time Off Btm: 2019.10.02 @ 21:05:50

**TEST COMMENT:** 30 IF - BoB @ 6 1/2 mins  
45 ISI - Return built to 5" @ 12 mins died back to 3 3/4"  
30 FF - BoB @ 7 1/2 mins  
45 FSI - Return built to 8 1/2" @ 16 mins died back to 6 1/4"



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2256.88	121.73	Initial Hydro-static
1	41.54	121.32	Open To Flow (1)
31	114.69	134.31	Shut-In(1)
75	1262.74	135.16	End Shut-In(1)
76	121.79	134.46	Open To Flow (2)
106	180.41	139.18	Shut-In(2)
152	1230.24	139.32	End Shut-In(2)
153	2058.11	139.63	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
63.00	GOWCM - 15%G - 10%o - 10%W - 65%M	0.60
63.00	GWOCM - 30%G - 5%W - 25%o - 40%M	0.88
63.00	GMCO - 30%G - 30%M - 40%o	0.88
63.00	GMCO - 30%G - 35%M - 35%o	0.88
194.00	GO - 20%G - 80%o	2.72
0.00	945' 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**

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
Job Ticket: 65615      **DST#: 2**  
Test Start: 2019.10.02 @ 16:18:00

**Tool Information**

Drill Pipe:	Length: 4311.00 ft	Diameter: 3.80 inches	Volume: 60.47 bbl	Tool Weight: 1500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 60.62 bbl</u>	Tool Chased 6.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4341.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	70.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			4326.00	
Hydraulic tool	5.00			4331.00	
Packer	5.00			4336.00	20.00      Bottom Of Top Packer
Packer	5.00			4341.00	
Stubb	1.00			4342.00	
Recorder	0.00	8353	Inside	4342.00	
Recorder	0.00	8366	Outside	4342.00	
Perforations	12.00			4354.00	
Blank Spacing	34.00			4388.00	
Bullnose	3.00			4391.00	50.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>70.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

DNOC **24-5s-37w Cheyenne,KS**  
 PO Box 1019 **Flemming #1-24**  
 Hays KS 67601 Job Ticket: 65615 **DST#: 2**  
 ATTN: Mark Downing Test Start: 2019.10.02 @ 16:18:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 64.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.58 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 500.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

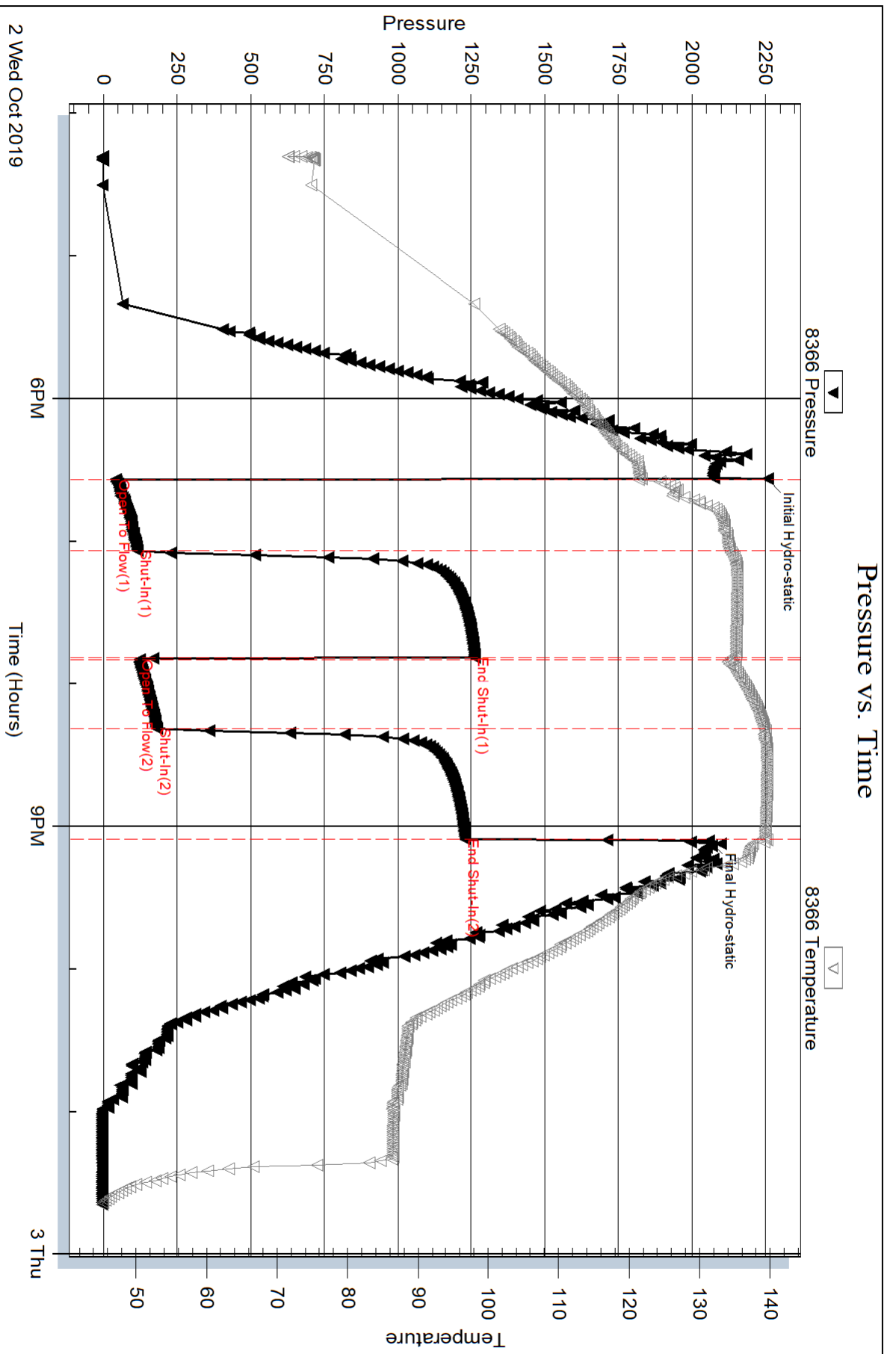
Length ft	Description	Volume bbl
63.00	GOWCM - 15%G - 10%o - 10%W - 65%M	0.601
63.00	GWOCM - 30%G - 5%W - 25%o - 40%M	0.884
63.00	GMCO - 30%G - 30%M - 40%o	0.884
63.00	GMCO - 30%G - 35%M - 35%o	0.884
194.00	GO - 20%G - 80%o	2.721
0.00	945' GIP	0.000

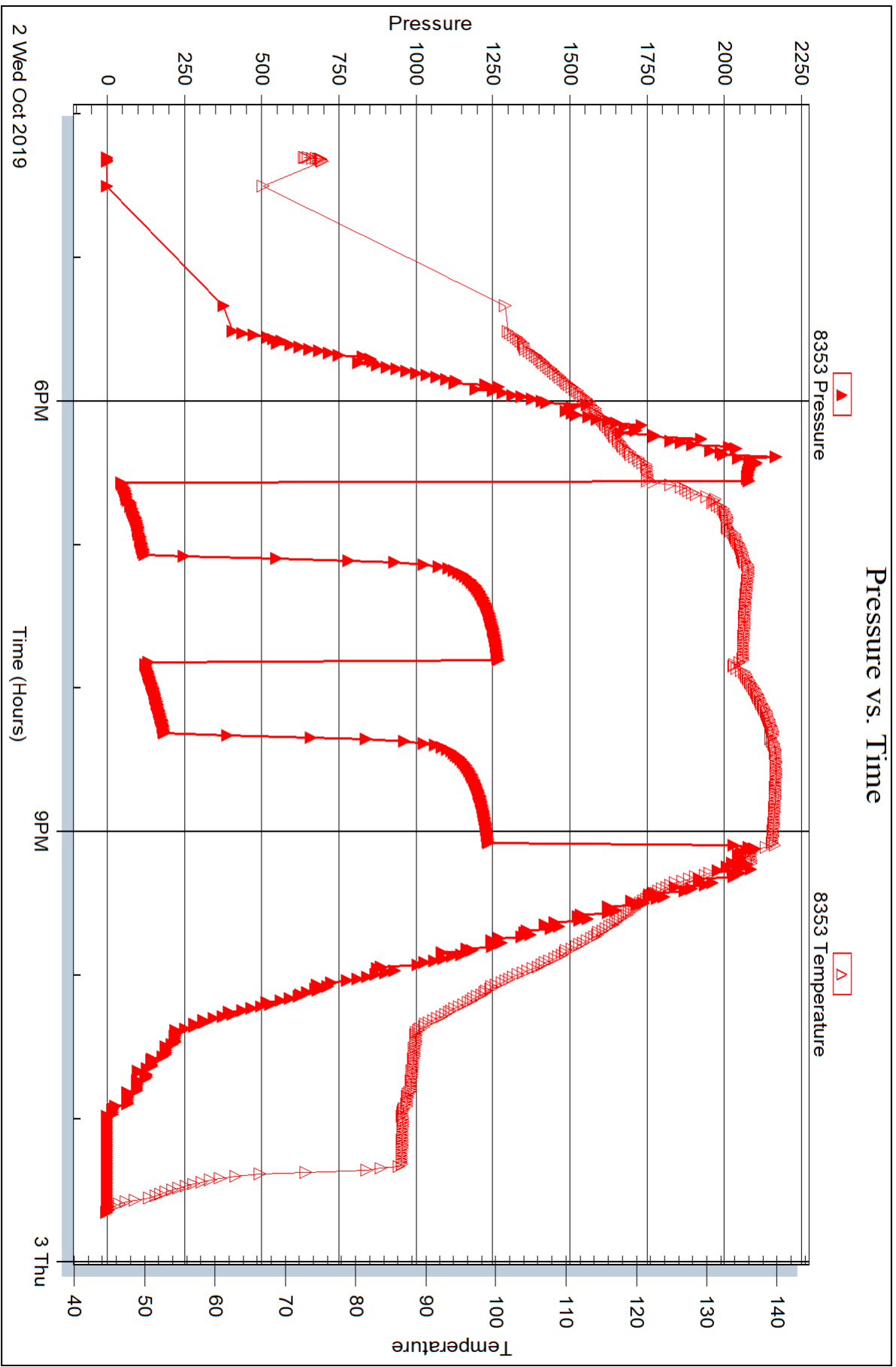
Total Length: 446.00 ft Total Volume: 5.974 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Gravity - 34 @ 50 DEG F = 35 COR 60 DEG F







## DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 1019  
Hays KS 67601

ATTN: Mark Downing

### **Flemming #1-24**

#### **24-5s-37w Cheyenne,KS**

Start Date: 2019.10.03 @ 12:02:00

End Date: 2019.10.03 @ 17:56:39

Job Ticket #: 65616                      DST #: 3

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

Printed: 2019.10.08 @ 09:53:13

DNOC  
24-5s-37w Cheyenne,KS  
Flemming #1-24  
DST # 3  
LKC " L "  
2019.10.03







**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

DNOG  
 PO Box 1019  
 Hays KS 67601  
 ATTN: Mark Downing

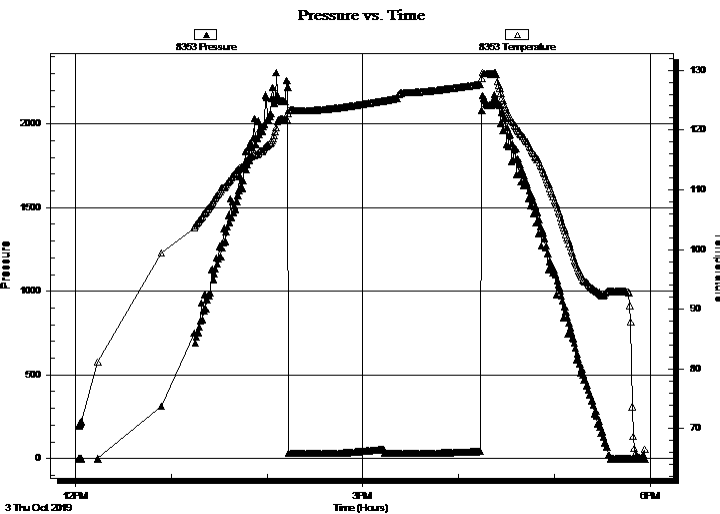
**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
 Job Ticket: 65616 **DST#: 3**  
 Test Start: 2019.10.03 @ 12:02:00

## GENERAL INFORMATION:

Formation: **LKC " L "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:13:20  
 Time Test Ended: 17:56:39  
 Interval: **4448.00 ft (KB) To 4487.00 ft (KB) (TVD)**  
 Total Depth: 4487.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ryan Nichols  
 Unit No: 71  
 Reference Elevations: 3310.00 ft (KB)  
 3306.00 ft (CF)  
 KB to GR/CF: 4.00 ft

**Serial #: 8353** **Inside**  
 Press@RunDepth: psig @ 4449.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.10.03 End Date: 2019.10.03 Last Calib.: 2019.10.03  
 Start Time: 12:02:01 End Time: 17:56:40 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 IF - slide 5' to bottom, 1 3/4" blow built to 2" died back to 1 1/4"  
 30 ISI - No return  
 30 FF - No blow, flushed tool, no blow  
 30 FSI - No return



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
15.00	Mud 100%M	0.07

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
Job Ticket: 65616      **DST#: 3**  
Test Start: 2019.10.03 @ 12:02:00

**Tool Information**

Drill Pipe:	Length: 4406.00 ft	Diameter: 3.80 inches	Volume: 61.80 bbl	Tool Weight:	1500.00 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	65000.00 lb
			<u>Total Volume: 61.95 bbl</u>	Tool Chased	5.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	4448.00 ft			Final	62000.00 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**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4433.00	
Hydraulic tool	5.00			4438.00	
Packer	5.00			4443.00	20.00      Bottom Of Top Packer
Packer	5.00			4448.00	
Stubb	1.00			4449.00	
Recorder	0.00	8353	Inside	4449.00	
Recorder	0.00	8366	Outside	4449.00	
Perforations	35.00			4484.00	
Bullnose	3.00			4487.00	39.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>59.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

DNOC **24-5s-37w Cheyenne,KS**

PO Box 1019  
Hays KS 67601

**Flemming #1-24**

Job Ticket: 65616 **DST#: 3**

ATTN: Mark Downing

Test Start: 2019.10.03 @ 12:02:00

## 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: 67.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 500.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

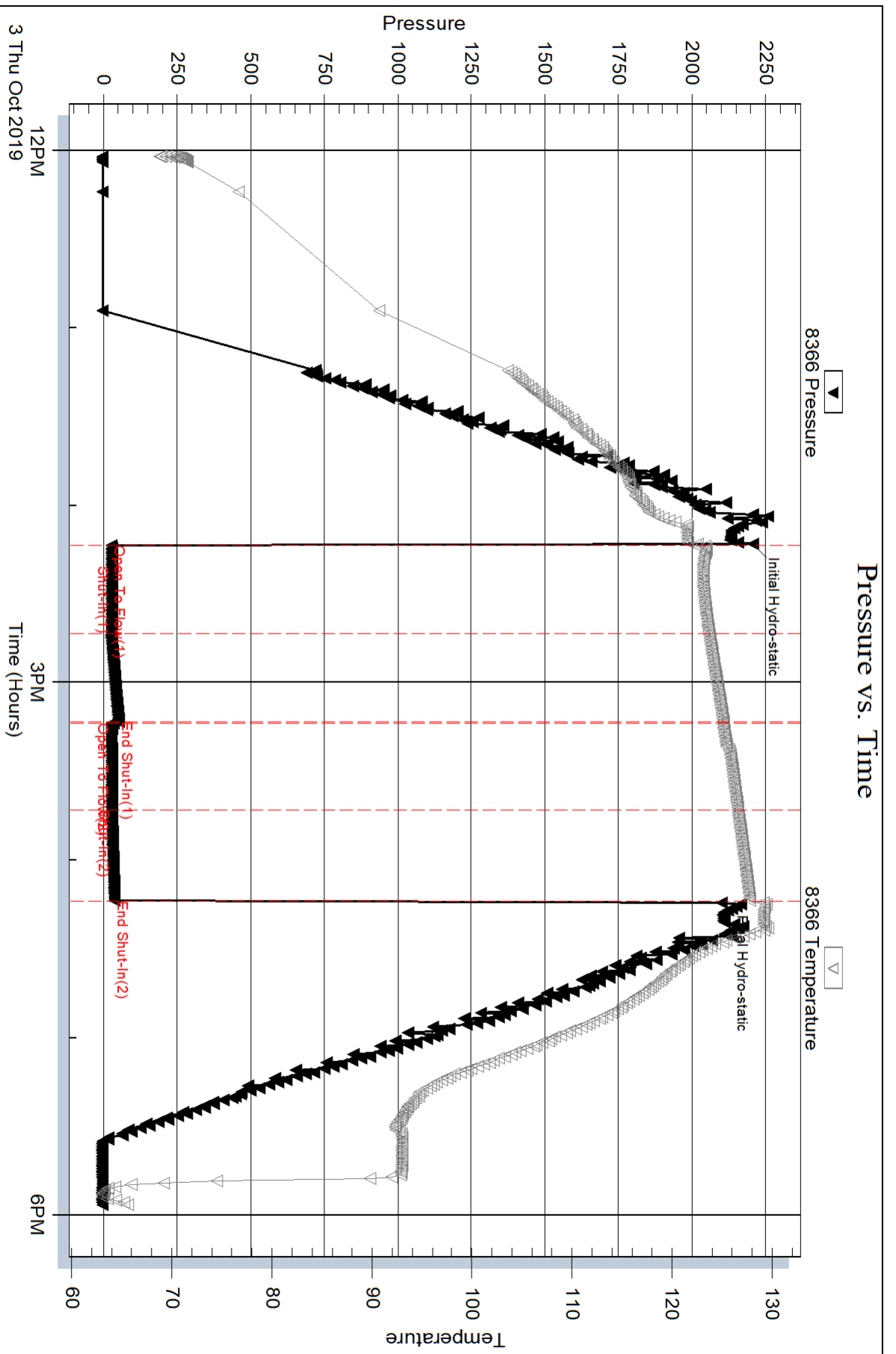
Length ft	Description	Volume bbl
15.00	Mud 100%M	0.074

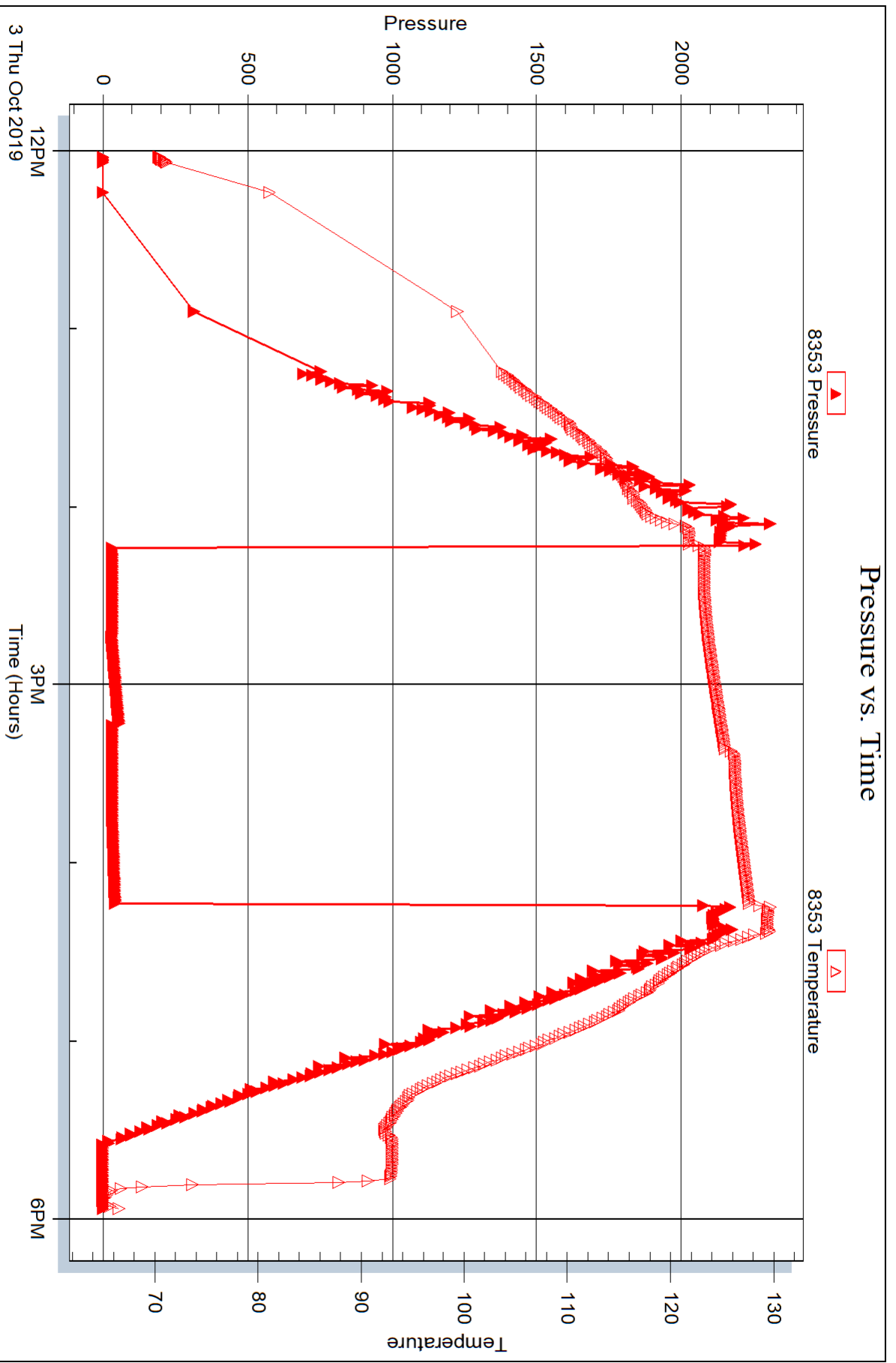
Total Length: 15.00 ft Total Volume: 0.074 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **DNOC**

PO Box 1019  
Hays KS 67601

ATTN: Mark Downing

### **Flemming #1-24**

#### **24-5s-37w Cheyenne,KS**

Start Date: 2019.10.04 @ 09:04:00

End Date: 2019.10.04 @ 17:05:00

Job Ticket #: 65167                      DST #: 4

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

Printed: 2019.10.08 @ 09:51:55



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

DNOC  
 PO Box 1019  
 Hays KS 67601  
 ATTN: Mark Downing

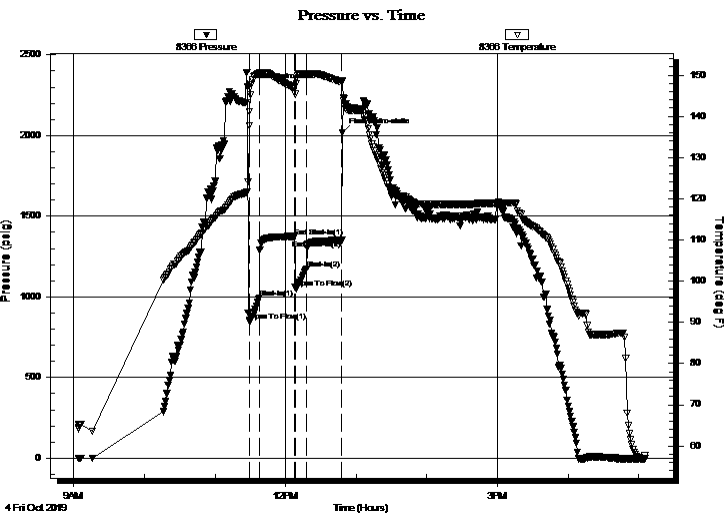
**24-5s-37w Cheyenne, KS**  
**Flemming #1-24**  
 Job Ticket: 65167 **DST#: 4**  
 Test Start: 2019.10.04 @ 09:04:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 11:29:20 Tester: Ryan Nichols  
 Time Test Ended: 17:05:00 Unit No: 71  
 Interval: **4551.00 ft (KB) To 4595.00 ft (KB) (TVD)** Reference Elevations: 3310.00 ft (KB)  
 Total Depth: 4595.00 ft (KB) (TVD) 3306.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 4.00 ft

**Serial #: 8366 Outside**  
 Press@RunDepth: 1172.30 psig @ 4552.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.10.04 End Date: 2019.10.04 Last Calib.: 2019.10.04  
 Start Time: 09:04:01 End Time: 17:05:00 Time On Btm: 2019.10.04 @ 11:27:20  
 Time Off Btm: 2019.10.04 @ 12:48:00

**TEST COMMENT:** 10 IF - BoB @ 25 secs, Gas to surface @ 4 mins  
 30 ISI - BoB @ 5 mins  
 10 FF - BoB @ 25 secs  
 30 FSI - BoB @ 8 mins



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2299.87	121.57	Initial Hydro-static
2	849.10	141.22	Open To Flow (1)
11	991.11	150.32	Shut-In(1)
41	1374.33	146.95	End Shut-In(1)
41	1057.91	145.35	Open To Flow (2)
51	1172.30	150.38	Shut-In(2)
81	1350.11	148.31	End Shut-In(2)
81	2019.99	148.71	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
3369.00	GO - 35%G - 65%o	46.98
0.00	GTS TSM	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**

DNOC  
PO Box 1019  
Hays KS 67601  
ATTN: Mark Downing

**24-5s-37w Cheyenne,KS**  
**Flemming #1-24**  
Job Ticket: 65167      **DST#: 4**  
Test Start: 2019.10.04 @ 09:04:00

**Tool Information**

Drill Pipe:	Length: 4517.00 ft	Diameter: 3.80 inches	Volume: 63.36 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: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 63.51 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4551.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	72.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			4528.00	
Hydraulic tool	5.00			4533.00	
Jars	5.00			4538.00	
Safety Joint	3.00			4541.00	
Packer	5.00			4546.00	28.00      Bottom Of Top Packer
Packer	5.00			4551.00	
Stubb	1.00			4552.00	
Recorder	0.00	8353	Inside	4552.00	
Recorder	0.00	8366	Outside	4552.00	
Perforations	7.00			4559.00	
Blank Spacing	33.00			4592.00	
Bullnose	3.00			4595.00	44.00      Bottom Packers & Anchor

**Total Tool Length: 72.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

DNOG **24-5s-37w Cheyenne,KS**  
 PO Box 1019 **Flemming #1-24**  
 Hays KS 67601 Job Ticket: 65167 **DST#: 4**  
 ATTN: Mark Downing Test Start: 2019.10.04 @ 09:04:00

## Mud and Cushion Information

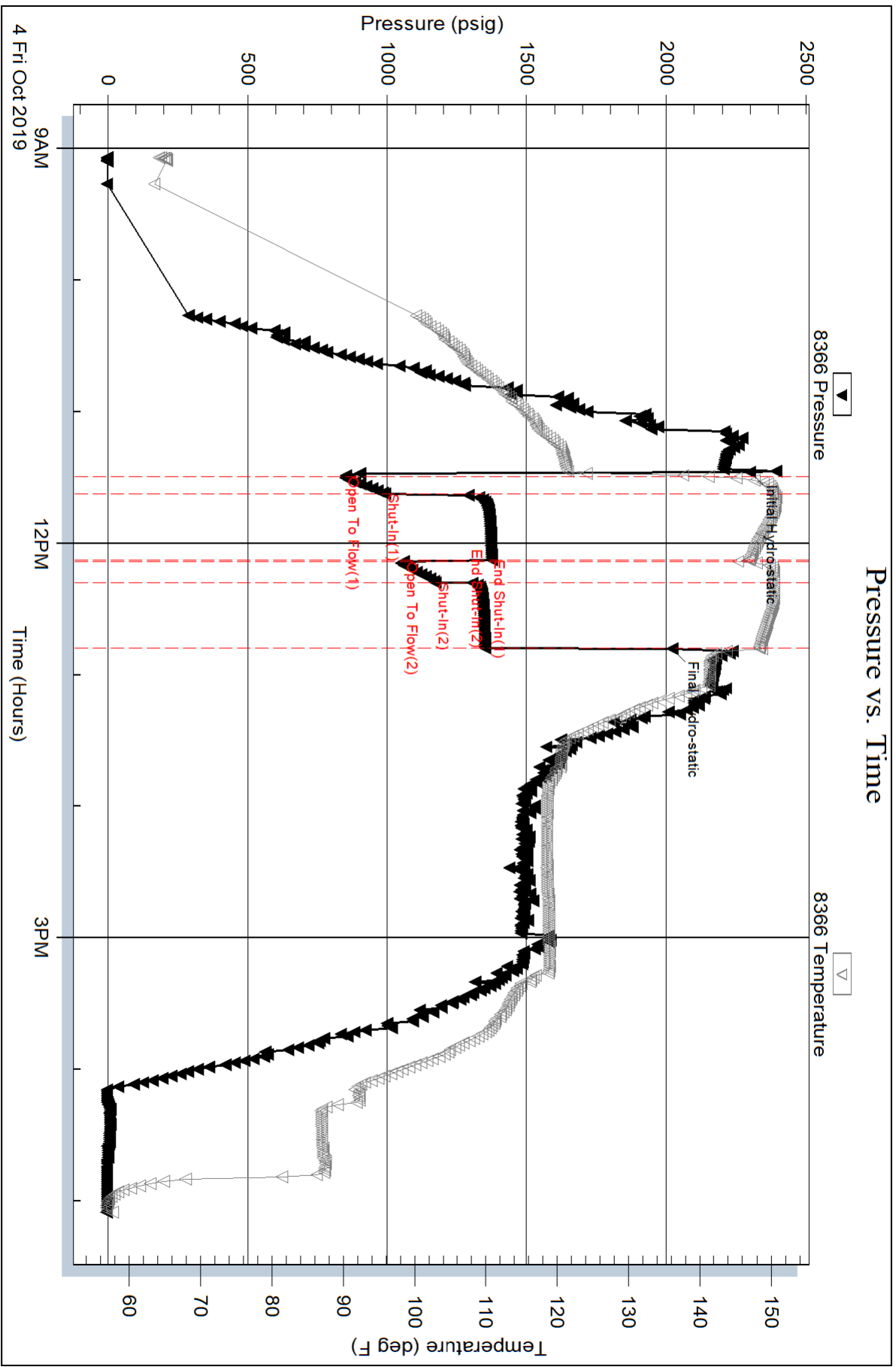
Mud Type: Gel Chem	Cushion Type:	Oil API: 32 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 500.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3369.00	GO - 35%G - 65%o	46.976
0.00	GTS TSM	0.000

Total Length: 3369.00 ft      Total Volume: 46.976 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: Gravity = 32 @ 60 DEG F



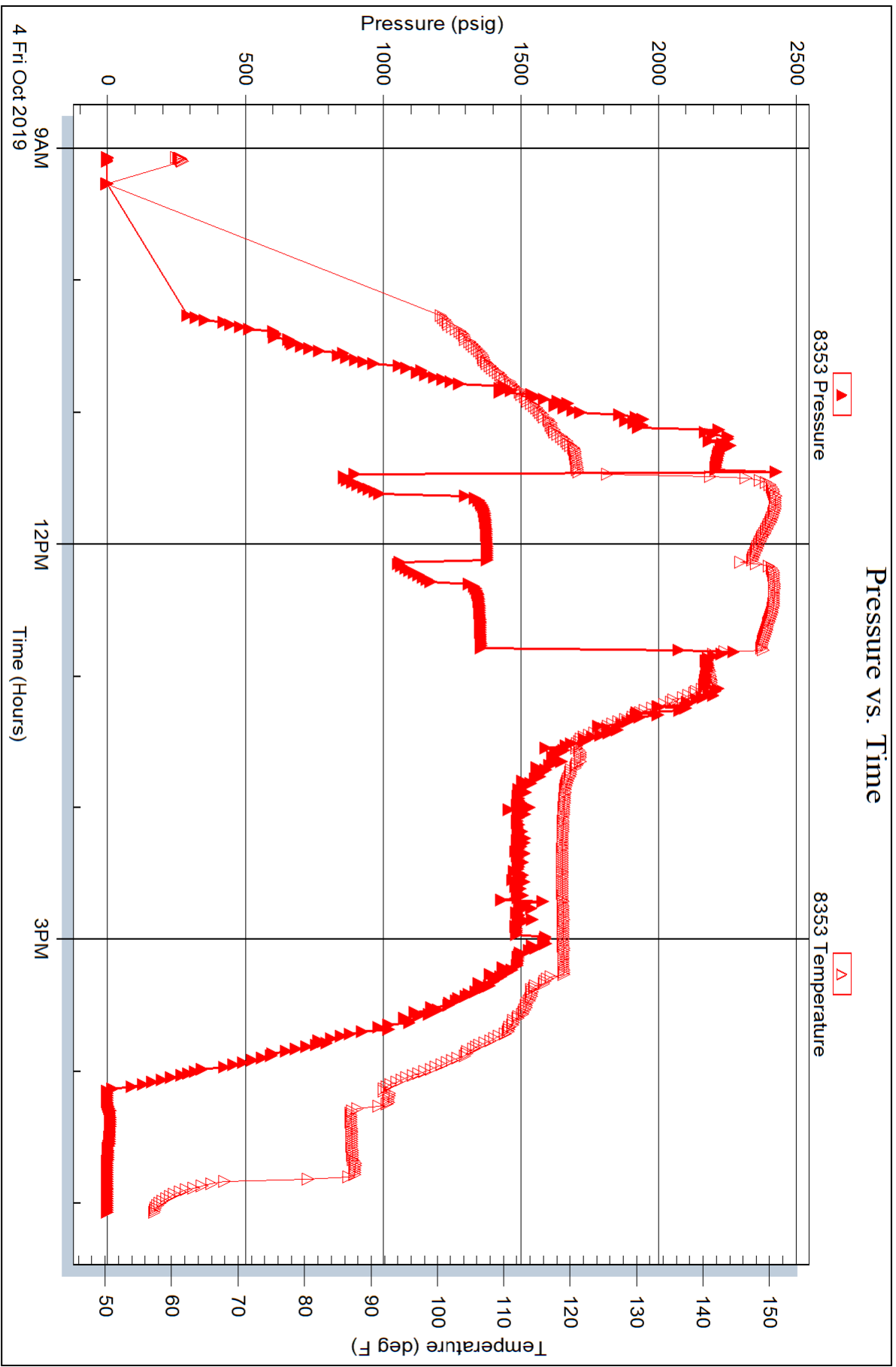
Serial #: 8353

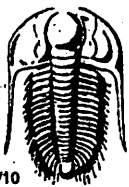
Inside

DNOC

Fleming #1-24

DST Test Number: 4





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65272

Well Name & No. Flemming # 1-24 Test No. 1 Date 10/1/19  
 Company DNOCI Elevation 3310' KB 3306 GL  
 Address P.O. Box 1019 Hays KS 67601  
 Co. Rep / Geo. Mark Downing Rig Discovery # 4  
 Location: Sec. 24 Twp. 5S Rge. 37W Co. Cheyenne State KS

Interval Tested 4138 - 4210 Zone Tested Taranta - LKC "A"  
 Anchor Length 72' Drill Pipe Run 4120' Mud Wt. 8.9  
 Top Packer Depth 4133 Drill Collars Run 31' Vis 50  
 Bottom Packer Depth 4138 Wt. Pipe Run 0' WL 8.0  
 Total Depth 4210 Chlorides 500 ppm System LCM 2

Blow Description 45 IF - BoB @ 24 mins  
45 ISI - No return  
45 FF - BoB @ 40 mins  
45 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>Mud w/ oil spots</u>			<u>100</u>	
<u>189'</u>	<u>MCW</u>		<u>50</u>	<u>50</u>	
<u>252'</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

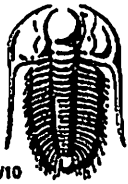
Rec Total 461' BHT 135° Gravity — API RW 533 @ 45° F Chlorides 19,000 ppm

(A) Initial Hydrostatic 2003  Test 1300 T-On Location 14:30  
 (B) First Initial Flow 17  Jars T-Started 15:07  
 (C) First Final Flow 122  Safety Joint T-Open 17:54  
 (D) Initial Shut-In 1179  Circ Sub T-Pulled 20:54  
 (E) Second Initial Flow 128  Hourly Standby T-Out 23:00  
 (F) Second Final Flow 215  Mileage 124 RT 124 Comments 0  
 (G) Final Shut-In 1147  Sampler  
 (H) Final Hydrostatic 1966  Straddle  Ruined Shale Packer

Initial Open 45  Shale Packer  Ruined Packer  
 Initial Shut-In 45  Extra Packer  Extra Copies  
 Final Flow 45  Extra Recorder Sub Total 0  
 Final Shut-In 45  Day Standby Total 1424  
 Accessibility MP/DST Disc't  
 Sub Total 1424

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. 65615

Well Name & No. Flemming # 1-24 Test No. 2 Date 10/2/19  
 Company DNOCE Elevation 3310 KB 3306 GL  
 Address P.O. Box 1019 Hays KS 67601  
 Co. Rep / Geo. Mark Downing Rig Discovery # 4  
 Location: Sec. 24 Twp 55 Rge. 37 W Co. Cheyenne State KS

Interval Tested 4341 - 4391 Zone Tested LKC "J"  
 Anchor Length 50' Drill Pipe Run 4311' Mud Wt. 9.0  
 Top Packer Depth 4336 Drill Collars Run 31' Vis 64  
 Bottom Packer Depth 4341 Wt. Pipe Run 0' WL 7.6  
 Total Depth 4391 Chlorides 500 ppm System LCM 2

Blow Description 30 IF - BoB @ 6 1/2 mins  
45 ISL - Return built to 5" @ 12 mins died to 3 3/4"  
30 FF - BoB @ 7 1/2 mins  
45 FSL - Return built to 8 1/2" @ 16 mins died to 6 1/4"

Rec	Feet of	%gas	%oil	%water	%mud
<u>194'</u>	<u>GO</u>	<u>20</u>	<u>80</u>		
<u>63'</u>	<u>GMCO</u>	<u>30</u>	<u>35</u>		<u>35</u>
<u>63'</u>	<u>GMCO</u>	<u>30</u>	<u>40</u>		<u>30</u>
<u>63'</u>	<u>GWOCM</u>	<u>30</u>	<u>25</u>	<u>5</u>	<u>40</u>
<u>63'</u>	<u>GOWCM</u>	<u>15</u>	<u>10</u>	<u>10</u>	<u>65</u>

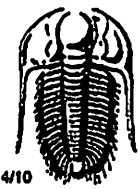
Rec Total 446' BHT 139° Gravity 35.10R 60° API RW @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2257  Test 1300 T-On Location 15:45  
 (B) First Initial Flow 42  Jars — T-Started 16:19  
 (C) First Final Flow 115  Safety Joint — T-Open 18:34  
 (D) Initial Shut-In 1263  Circ Sub — T-Pulled 21:05  
 (E) Second Initial Flow 122  Hourly Standby — T-Out 23:30  
 (F) Second Final Flow 180  Mileage 124 RT Comments 945' GIP  
 (G) Final Shut-In 1230  Sampler — Slide 2' to bottom  
 (H) Final Hydrostatic 2058  Straddle —  EM Tool —

Initial Open 30  Shale Packer —  Ruined Shale Packer —  
 Initial Shut-In 45  Extra Packer —  Ruined Packer —  
 Final Flow 30  Extra Recorder —  Extra Copies —  
 Final Shut-In 45  Day Standby — Sub Total 0  
 Sub Total 1424  Accessibility — Total 1424  
 MP/DST Disc't —

Approved By \_\_\_\_\_ Our Representative Tom J. Mubert

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65616

Well Name & No. Flemming #1-24 Test No. 3 Date 10/3/19  
 Company DNOCT Elevation 3310 KB 3306 GL  
 Address P.O. Box 7019 Hays KS 67601  
 Co. Rep / Geo. Mack Downing Rig Discovery #21  
 Location: Sec. 24 Twp 55 Rge. 37W Co. Cheyenne State KS

Interval Tested 4448-4487 Zone Tested LKC "L"  
 Anchor Length 39' Drill Pipe Run 4406' Mud Wt. 9.2  
 Top Packer Depth 4443 Drill Collars Run 31' Vls 67  
 Bottom Packer Depth 4448 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4487 Chlorides 500 ppm System LCM 2  
 Blow Description 30 IF - 1 3/4" blow built to 2" @ 10 mind died back to 1 1/4"  
30 ISL - No return  
30 FF - No blow, flushed tool, no blow  
30 FSL - No return

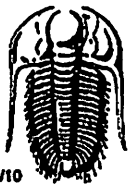
Rec	Feet of	%gas	%oil	%water	%mud
<u>15'</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 15' BHT 128° Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2207</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>11:50</u>
(B) First Initial Flow <u>27</u>	<input type="checkbox"/> Jars	T-Started <u>12:02</u>
(C) First Final Flow <u>27</u>	<input type="checkbox"/> Safety Joint	T-Open <u>14:13</u>
(D) Initial Shut-In <u>51</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>16:13</u>
(E) Second Initial Flow <u>27</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>17:45</u>
(F) Second Final Flow <u>28</u>	<input checked="" type="checkbox"/> Mileage <u>124 RT</u>	Comments
(G) Final Shut-In <u>38</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2100</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1424</u>
	Sub Total <u>1424</u>	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. 65617

Well Name & No. Flemming #1-24 Test No. 4 Date 10/4/19  
 Company DNOCI Elevation 3310 KB 3306 GL  
 Address P.O. Box 1019 Hays KS 67601  
 Co. Rep / Geo. Mark Downing Rig Discovery #1  
 Location: Sec. 24 Twp 55 Rge. 37W Co. Cheyenne State KS

Interval Tested 4551-4595 Zone Tested Pawnee  
 Anchor Length 44' Drill Pipe Run 4517' Mud Wt. 9.4  
 Top Packer Depth 4546 Drill Collars Run 31' Vis 55  
 Bottom Packer Depth 4551 Wt. Pipe Run 0' WL 7.6  
 Total Depth 4595 Chlorides 500 ppm System LCM 2  
 Blow Description 10 IF - BoB @ 25 secs Gas to surface @ 4 mins  
30 TSI - BoB @ 5 mins  
10 FF - BoB @ 25 secs  
30 FSI - BoB @ 8 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>3369'</u>	<u>GTS TSM</u>				
	<u>60</u>	<u>35</u>	<u>65</u>		

Rec Total 3369 BHT 148° Gravity 32 @ 60° API RW ← @ ← ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2300</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>08:30</u>
(B) First Initial Flow <u>849</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>09:04</u>
(C) First Final Flow <u>991</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:29</u>
(D) Initial Shut-In <u>1374</u>	<input checked="" type="checkbox"/> Circ Sub <u>used 50</u>	T-Pulled <u>12:47</u>
(E) Second Initial Flow <u>1058</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:45</u>
(F) Second Final Flow <u>1172</u>	<input checked="" type="checkbox"/> Mileage <u>248 124RT x 2</u>	Comments <u>GTS TSM</u>
(G) Final Shut-In <u>1350</u>	<input type="checkbox"/> Sampler	<u>loaded tools @ 12:00 on 10/6/19</u>
(H) Final Hydrostatic <u>2020</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> EM Tool
Initial Open <u>10</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>10</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1923</u>
	Sub Total <u>1923</u>	MP/DST Disc't <u>—</u>

Approved By \_\_\_\_\_ Our Representative Mark Downing

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