



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 6663

ATTN: Marc Downing

Hobbs Unit #19-1

19-10s-24w Graham,KS

Start Date: 2015.08.31 @ 22:10:00

End Date: 2015.09.01 @ 09:01:15

Job Ticket #: 64717 DST #: 1

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

Printed: 2015.09.04 @ 12:01:37

H&C Oil Operating Inc.
19-10s-24w Graham,KS
Hobbs Unit #19-1
DST # 1
LKC "C"
2015.08.31



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

ATTN: Marc Downing

Job Ticket: 64717

DST#: 1

Test Start: 2015.08.31 @ 22:10:00

GENERAL INFORMATION:

Formation: **LKC "C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:23:15

Time Test Ended: 09:01:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 81

Interval: 3726.00 ft (KB) To 3746.00 ft (KB) (TVD)

Reference Elevations: 3395.00 ft (KB)

Total Depth: 3746.00 ft (KB) (TVD)

3390.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Outside

Press@RunDepth: 165.45 psig @ 3727.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.08.31

End Date: 2015.09.01

Last Calib.: 2015.09.01

Start Time: 22:10:05

End Time: 09:01:15

Time On Btm: 2015.09.01 @ 04:22:45

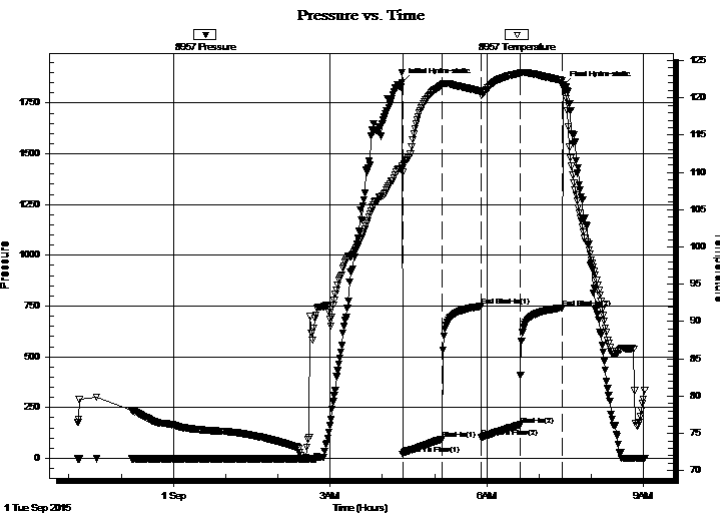
Time Off Btm: 2015.09.01 @ 07:27:30

TEST COMMENT: IF-BOB in 40 min

IS-No blow

FF-4" blow

FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1850.21	110.84	Initial Hydro-static
1	18.39	110.01	Open To Flow (1)
46	94.49	121.72	Shut-In(1)
91	749.16	120.84	End Shut-In(1)
91	102.53	120.37	Open To Flow (2)
136	165.45	123.27	Shut-In(2)
184	741.16	122.32	End Shut-In(2)
185	1837.68	121.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
319.00	SMCW 10%M 90%W	4.20
1.00	Free Oil	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64717

DST#: 1

ATTN: Marc Downing

Test Start: 2015.08.31 @ 22:10:00

Tool Information

Drill Pipe:	Length: 3679.00 ft	Diameter: 3.80 inches	Volume: 51.61 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial	43000.00 lb
Depth to Top Packer:	3726.00 ft			Final	44000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	20.00 ft				
Tool Length:	40.00 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			3711.00	
Hydraulic tool	5.00			3716.00	
Packer	5.00			3721.00	20.00 Bottom Of Top Packer
Packer	5.00			3726.00	
Stubb	1.00			3727.00	
Recorder	0.00	8736	Inside	3727.00	
Recorder	0.00	8957	Outside	3727.00	
Perforations	16.00			3743.00	
Bullnose	3.00			3746.00	20.00 Bottom Packers & Anchor
Total Tool Length:	40.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64717

DST#: 1

ATTN: Marc Downing

Test Start: 2015.08.31 @ 22:10:00

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:

64000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
319.00	SMCW 10%M 90%W	4.201
1.00	Free Oil	0.014

Total Length: 320.00 ft Total Volume: 4.215 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

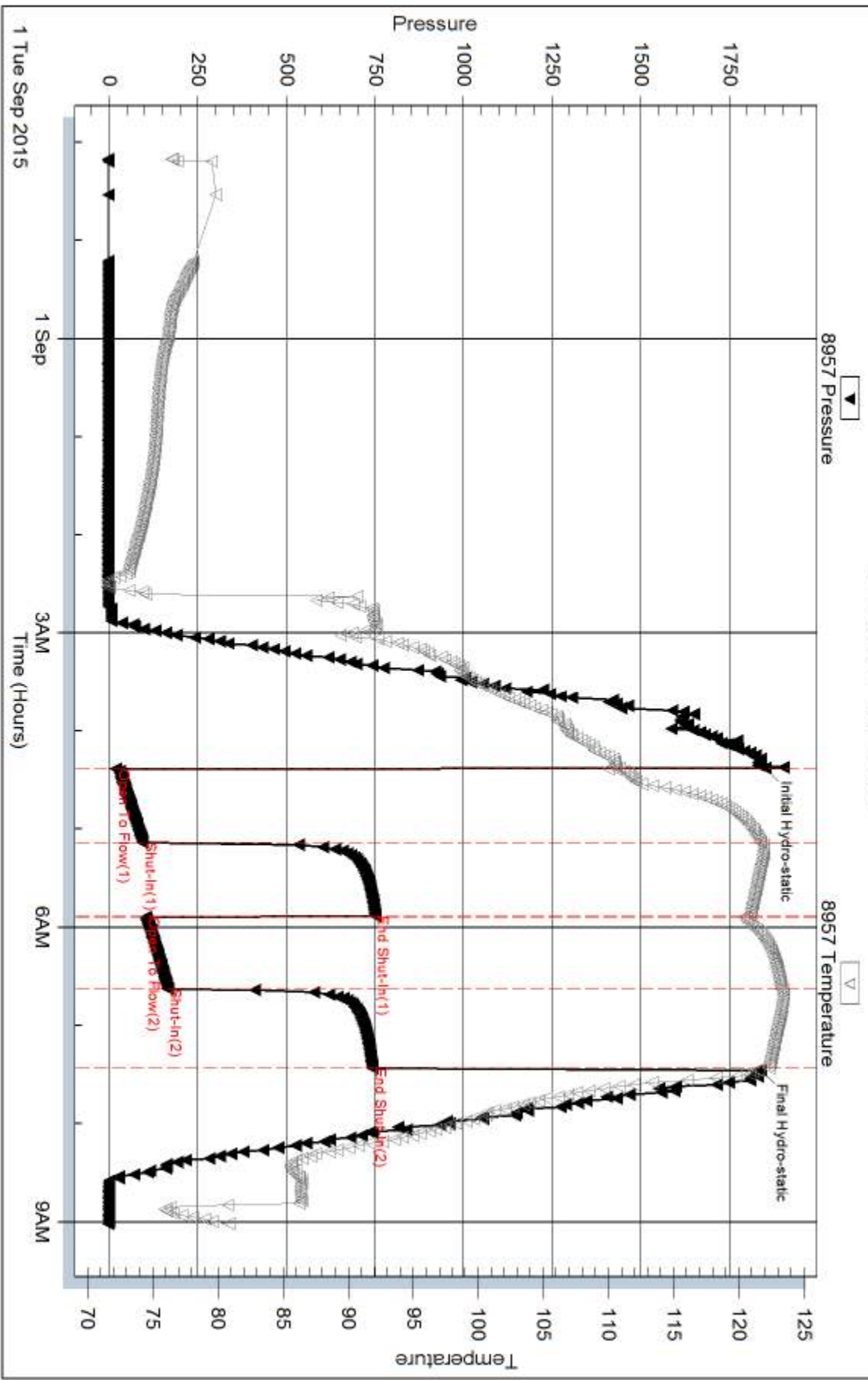
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



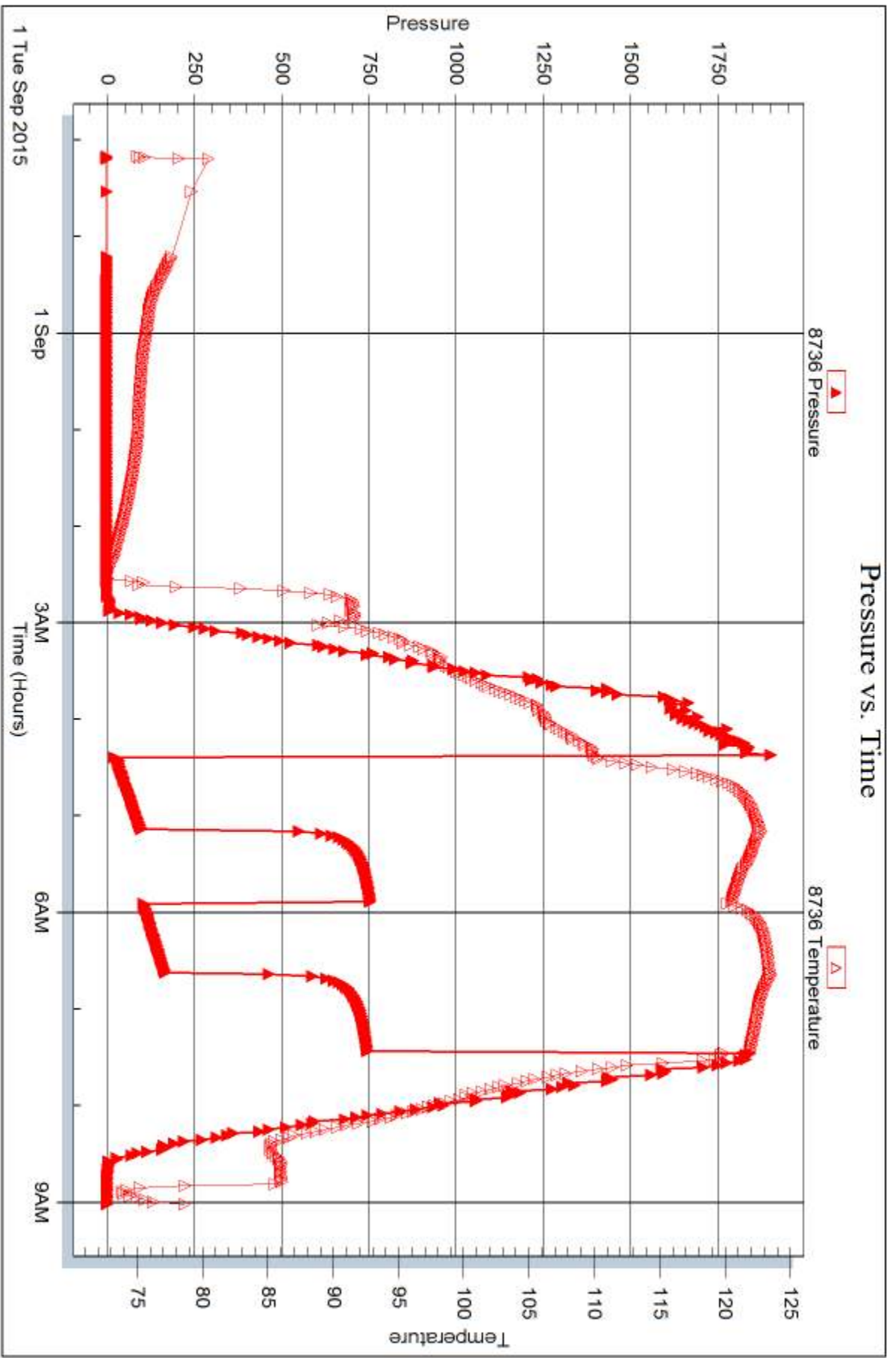
Serial #: 8736

Inside

H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 64717

Printed: 2015.09.04 @ 12:01:39



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 6663

ATTN: Marc Downing

Hobbs Unit #19-1

19-10s-24w Graham,KS

Start Date: 2015.09.01 @ 16:30:00

End Date: 2015.09.01 @ 23:56:38

Job Ticket #: 64718 DST #: 2

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

Printed: 2015.09.04 @ 12:00:43



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64718

DST#: 2

ATTN: Marc Downing

Test Start: 2015.09.01 @ 16:30:00

GENERAL INFORMATION:

Formation: **LKC"D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:10:53

Time Test Ended: 23:56:38

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 81

Interval: 3745.00 ft (KB) To 3770.00 ft (KB) (TVD)

Reference Elevations: 3395.00 ft (KB)

Total Depth: 3770.00 ft (KB) (TVD)

3390.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Outside

Press@RunDepth: 292.36 psig @ 3746.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.01

End Date:

2015.09.01

Last Calib.: 2015.09.02

Start Time: 16:30:05

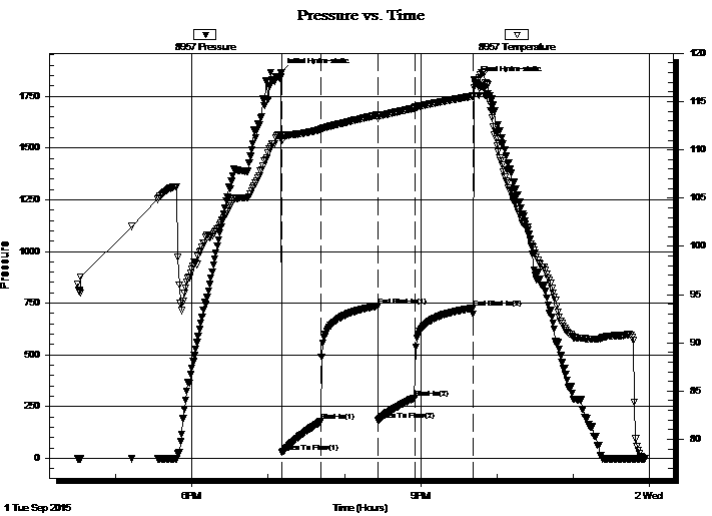
End Time:

23:56:37

Time On Btm: 2015.09.01 @ 19:10:08

Time Off Btm: 2015.09.01 @ 21:41:53

TEST COMMENT: IF-BOB in 8 min
IS-No blow
FF-BOB in 17 min
FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1865.62	111.53	Initial Hydro-static
1	28.82	110.93	Open To Flow (1)
32	178.30	112.11	Shut-In(1)
76	736.04	113.63	End Shut-In(1)
76	184.19	113.30	Open To Flow (2)
105	292.36	114.33	Shut-In(2)
151	726.15	115.57	End Shut-In(2)
152	1828.78	116.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
684.00	VSMCW 95%W 5%M	9.32
1.00	Free Oil	0.01

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64718

DST#: 2

ATTN: Marc Downing

Test Start: 2015.09.01 @ 16:30:00

Tool Information

Drill Pipe:	Length: 3710.00 ft	Diameter: 3.80 inches	Volume: 52.04 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	42000.00 lb
Drill Pipe Above KB:	15.00 ft			Final	4800.00 lb
Depth to Top Packer:	3745.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	25.00 ft				
Tool Length:	45.00 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			3730.00	
Hydraulic tool	5.00			3735.00	
Packer	5.00			3740.00	20.00 Bottom Of Top Packer
Packer	5.00			3745.00	
Stubb	1.00			3746.00	
Recorder	0.00	8736	Inside	3746.00	
Recorder	0.00	8957	Outside	3746.00	
Perforations	21.00			3767.00	
Bullnose	3.00			3770.00	25.00 Bottom Packers & Anchor
Total Tool Length:	45.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64718

DST#: 2

ATTN: Marc Downing

Test Start: 2015.09.01 @ 16:30:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
684.00	VSMCW 95%W 5%M	9.321
1.00	Free Oil	0.014

Total Length: 685.00 ft Total Volume: 9.335 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

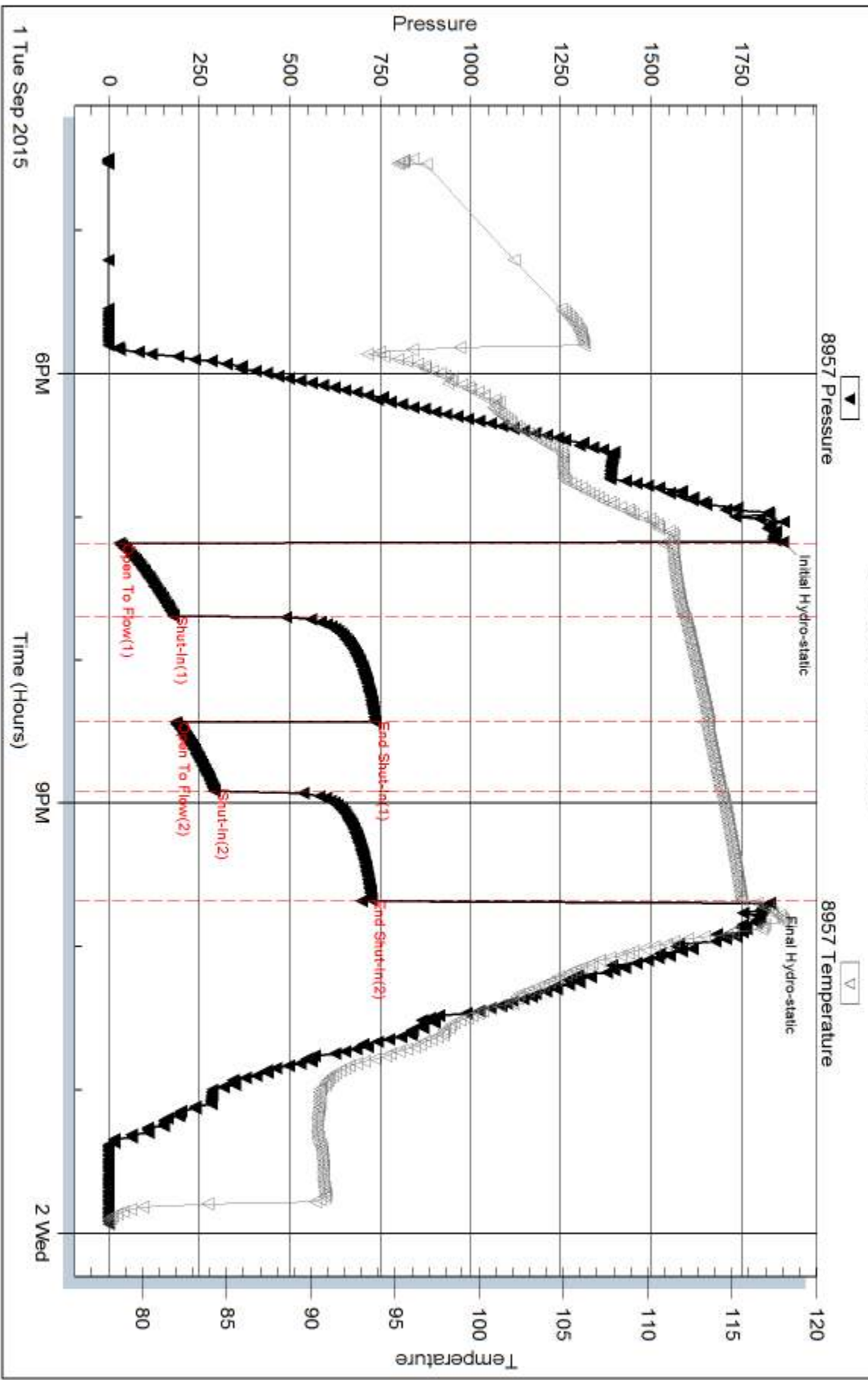
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



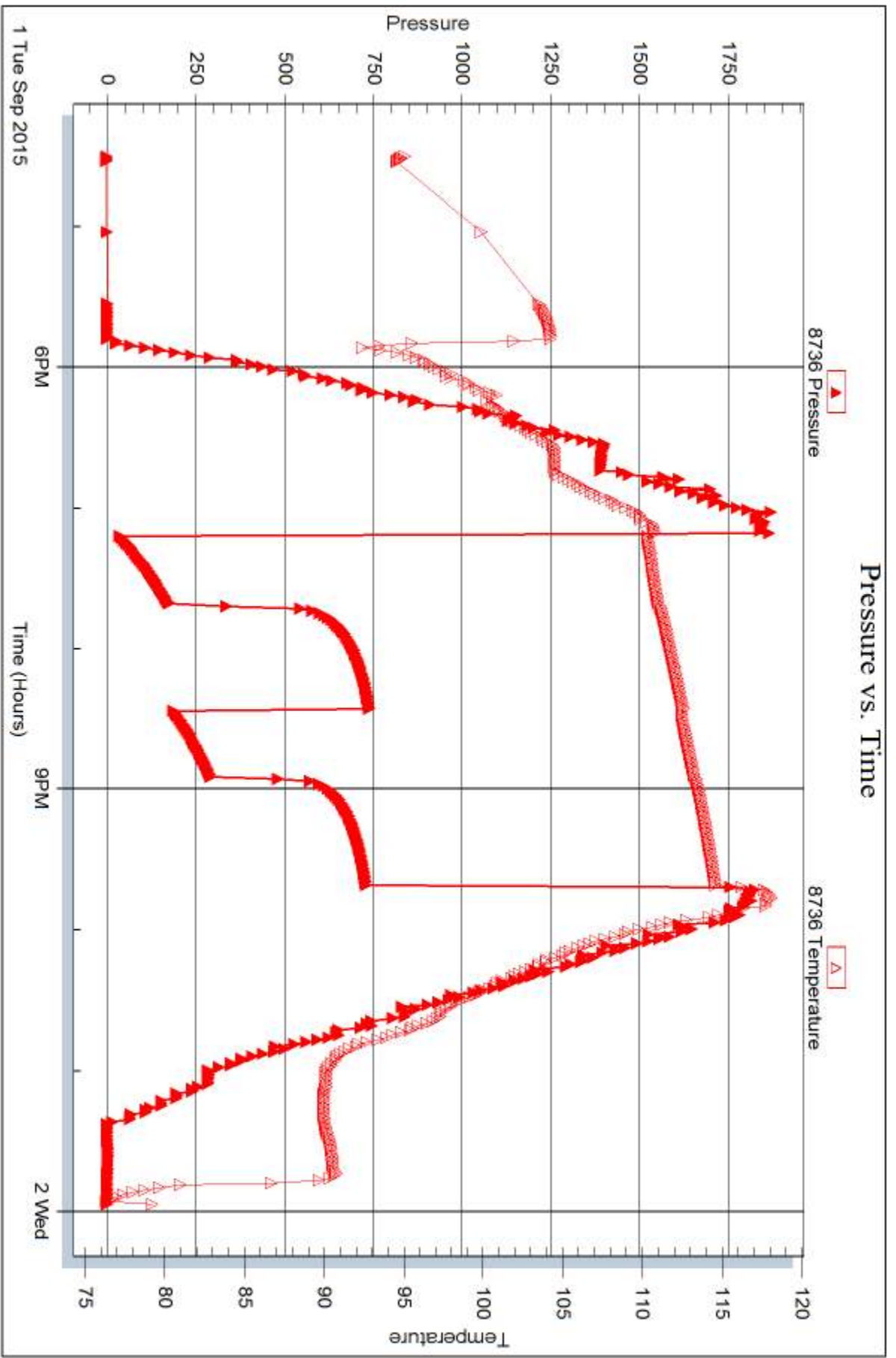
Serial #: 8736

Inside

H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 64718

Printed: 2015.09.04 @ 12:00:45



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 6663

ATTN: Marc Downing

Hobbs Unit #19-1

19-10s-24w Graham,KS

Start Date: 2015.09.02 @ 08:00:00

End Date: 2015.09.02 @ 13:30:30

Job Ticket #: 64719 DST #: 3

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

Printed: 2015.09.04 @ 11:59:57

H&C Oil Operating Inc.

19-10s-24w Graham,KS

Hobbs Unit #19-1

DST # 3

LKC "E-F"

2015.09.02



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64719

DST#: 3

ATTN: Marc Downing

Test Start: 2015.09.02 @ 08:00:00

GENERAL INFORMATION:

Formation: **LKC "E-F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:35:15

Time Test Ended: 13:30:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 81

Interval: 3772.00 ft (KB) To 3795.00 ft (KB) (TVD)

Reference Elevations: 3395.00 ft (KB)

Total Depth: 3795.00 ft (KB) (TVD)

3390.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957

Outside

Press@RunDepth: 324.50 psig @ 3773.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.09.02

End Date:

2015.09.02

Last Calib.:

2015.09.02

Start Time: 08:00:05

End Time:

13:30:29

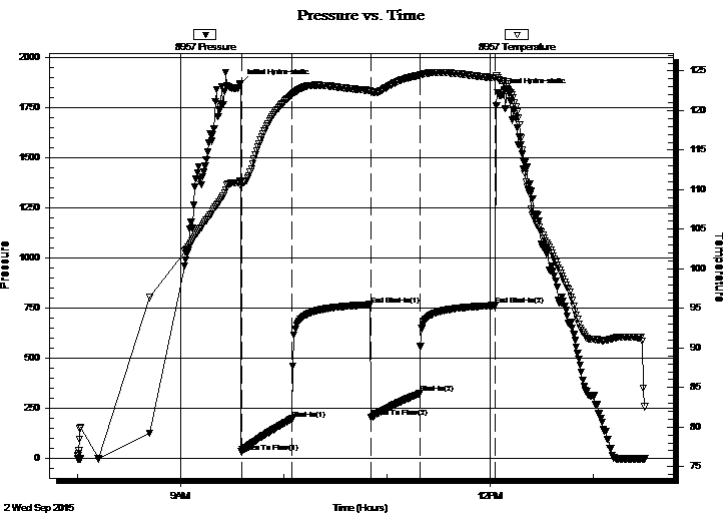
Time On Btm:

2015.09.02 @ 09:34:45

Time Off Btm:

2015.09.02 @ 12:04:30

TEST COMMENT: IF-BOB in 8 min
IS-No blow
FF-BOB in 14 min
FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1872.97	111.15	Initial Hydro-static
1	32.06	110.47	Open To Flow (1)
31	198.18	121.98	Shut-In(1)
76	768.00	122.52	End Shut-In(1)
77	205.33	122.35	Open To Flow (2)
105	324.50	124.47	Shut-In(2)
149	763.80	124.12	End Shut-In(2)
150	1824.20	124.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MCW 20%M 80%W	1.41
610.00	Water	8.56

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64719

DST#: 3

ATTN: Marc Downing

Test Start: 2015.09.02 @ 08:00:00

Tool Information

Drill Pipe:	Length: 3742.00 ft	Diameter: 3.80 inches	Volume: 52.49 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3772.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	23.00 ft			
Tool Length:	43.00 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			3757.00	
Hydraulic tool	5.00			3762.00	
Packer	5.00			3767.00	20.00 Bottom Of Top Packer
Packer	5.00			3772.00	
Stubb	1.00			3773.00	
Recorder	0.00	8736	Inside	3773.00	
Recorder	0.00	8957	Outside	3773.00	
Perforations	19.00			3792.00	
Bullnose	3.00			3795.00	23.00 Bottom Packers & Anchor
Total Tool Length:	43.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64719

DST#: 3

ATTN: Marc Downing

Test Start: 2015.09.02 @ 08:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

75000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	MCW 20%M 80%W	1.410
610.00	Water	8.557

Total Length: 730.00 ft Total Volume: 9.967 bbl

Num Fluid Samples: 0

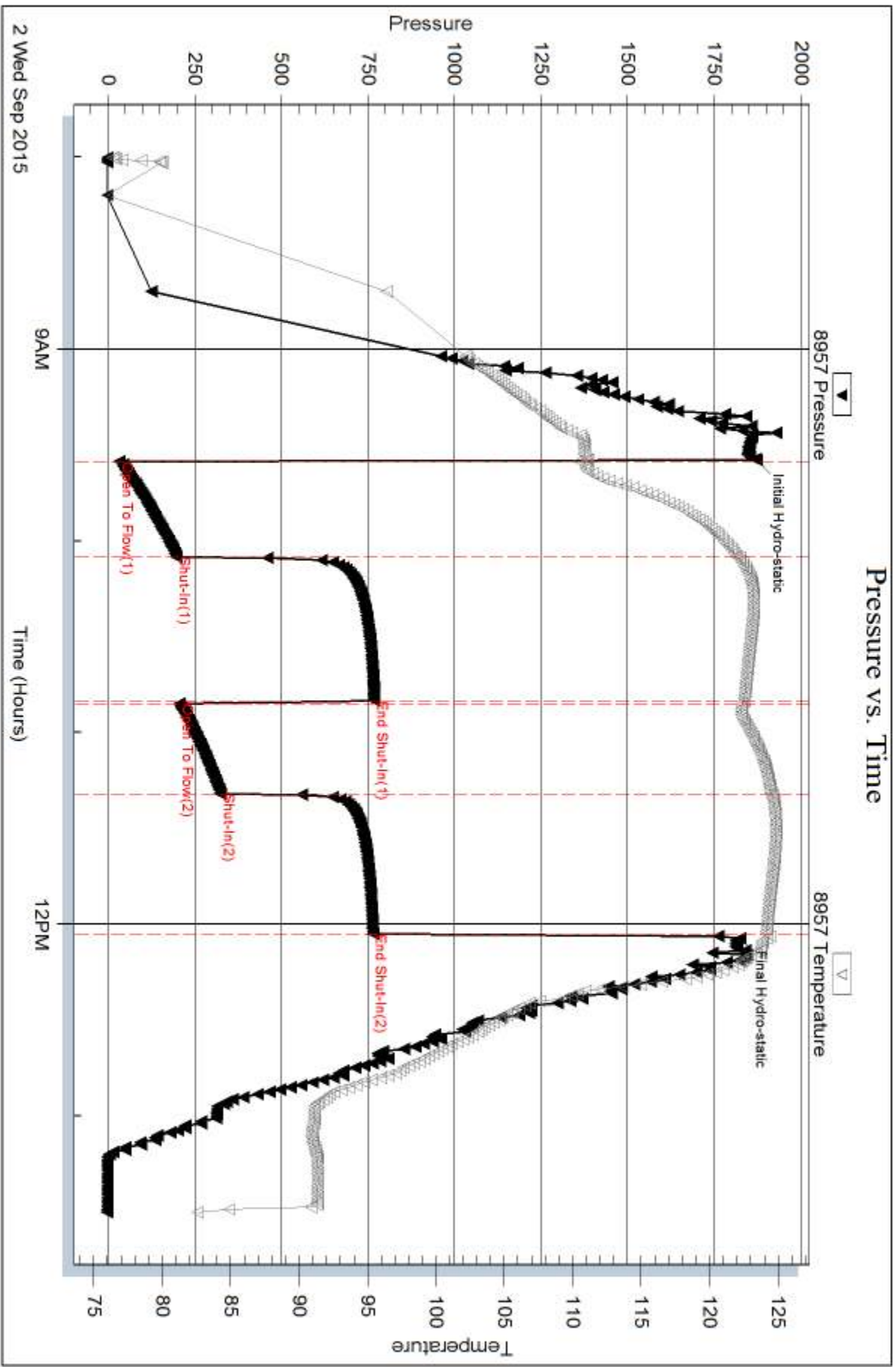
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



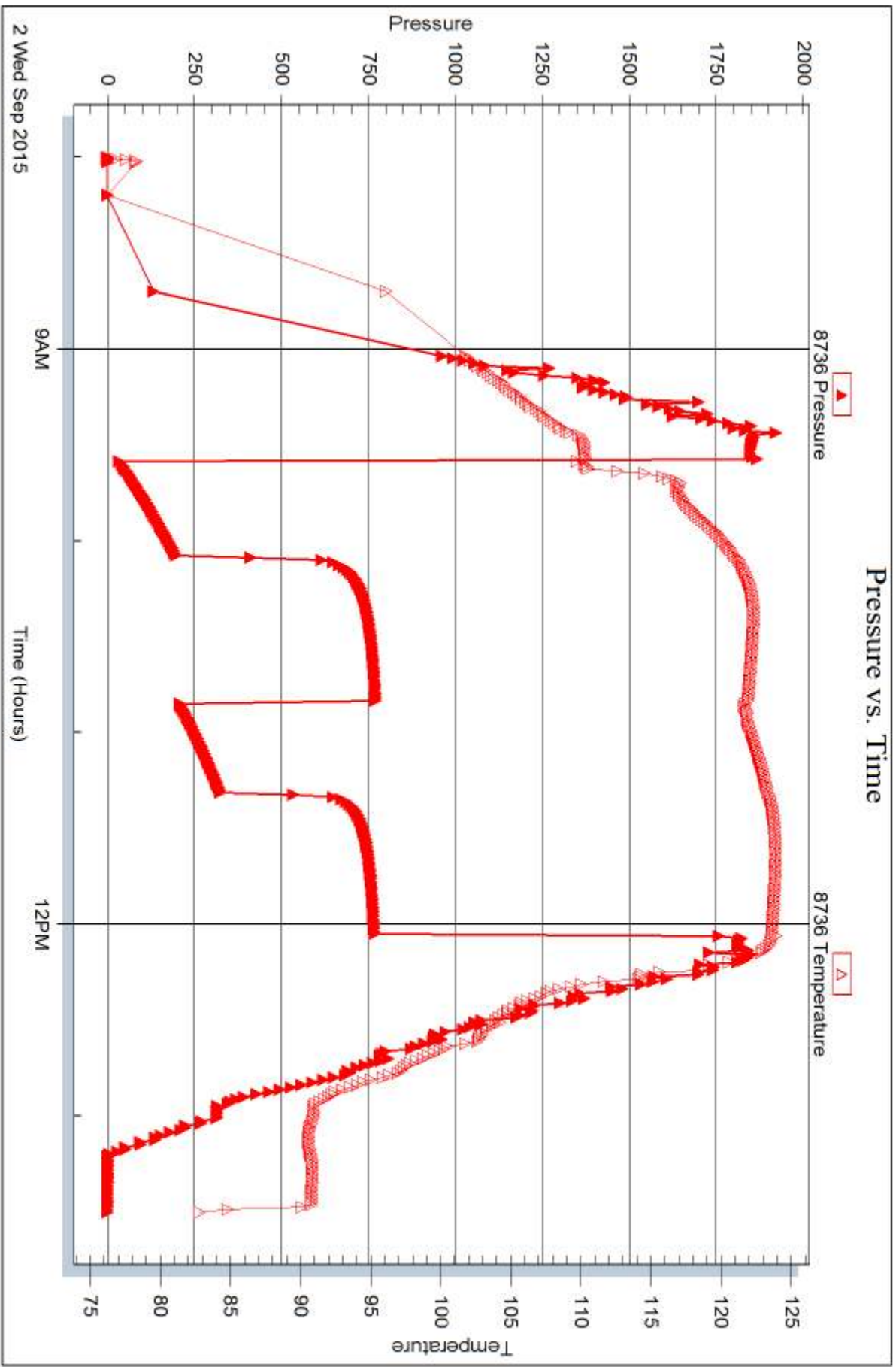
Serial #: 8736

Inside

H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 64719

Printed: 2015.09.04 @ 11:59:59



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 6663

ATTN: Marc Downing

Hobbs Unit #19-1

19-10s-24w Graham,KS

Start Date: 2015.09.02 @ 21:00:00

End Date: 2015.09.03 @ 03:32:30

Job Ticket #: 64720 DST #: 4

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

Printed: 2015.09.04 @ 11:59:30



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

ATTN: Marc Downing

Job Ticket: 64720

DST#: 4

Test Start: 2015.09.02 @ 21:00:00

GENERAL INFORMATION:

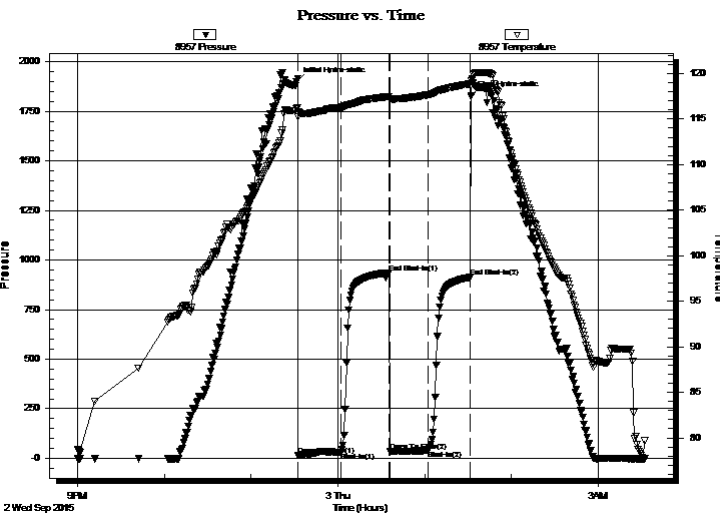
Formation: **LKC "H"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:32:30
 Time Test Ended: 03:32:30
 Interval: **3824.00 ft (KB) To 3857.00 ft (KB) (TVD)**
 Total Depth: 3857.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 81
 Reference Elevations: 3395.00 ft (KB)
 3390.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8957

Outside

Press@RunDepth: 39.24 psig @ 3825.00 ft (KB)
 Start Date: 2015.09.02 End Date: 2015.09.03
 Start Time: 21:00:05 End Time: 03:32:29
 Capacity: 8000.00 psig
 Last Calib.: 2015.09.03
 Time On Btm: 2015.09.02 @ 23:31:45
 Time Off Btm: 2015.09.03 @ 01:32:30

TEST COMMENT: IF-1" blow
 IS-No blow
 FF-No blow
 FS-No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1898.95	116.19	Initial Hydro-static
1	14.38	115.22	Open To Flow (1)
31	31.32	116.28	Shut-In(1)
64	934.03	117.45	End Shut-In(1)
65	33.52	117.23	Open To Flow (2)
91	39.24	117.66	Shut-In(2)
120	912.45	118.86	End Shut-In(2)
121	1828.52	119.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Mud	0.10

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64720

DST#: 4

ATTN: Marc Downing

Test Start: 2015.09.02 @ 21:00:00

Tool Information

Drill Pipe:	Length: 3790.00 ft	Diameter: 3.80 inches	Volume: 53.16 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	46000.00 lb
			<u>Total Volume:</u>	Tool Chased	3.00 ft
				String Weight: Initial	46000.00 lb
Drill Pipe Above KB:	16.00 ft			Final	46000.00 lb
Depth to Top Packer:	3824.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	33.00 ft				
Tool Length:	53.00 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			3809.00	
Hydraulic tool	5.00			3814.00	
Packer	5.00			3819.00	20.00 Bottom Of Top Packer
Packer	5.00			3824.00	
Stubb	1.00			3825.00	
Recorder	0.00	8736	Inside	3825.00	
Recorder	0.00	8957	Outside	3825.00	
Perforations	29.00			3854.00	
Bullnose	3.00			3857.00	33.00 Bottom Packers & Anchor
Total Tool Length:	53.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64720

DST#: 4

ATTN: Marc Downing

Test Start: 2015.09.02 @ 21:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 56.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	Mud	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

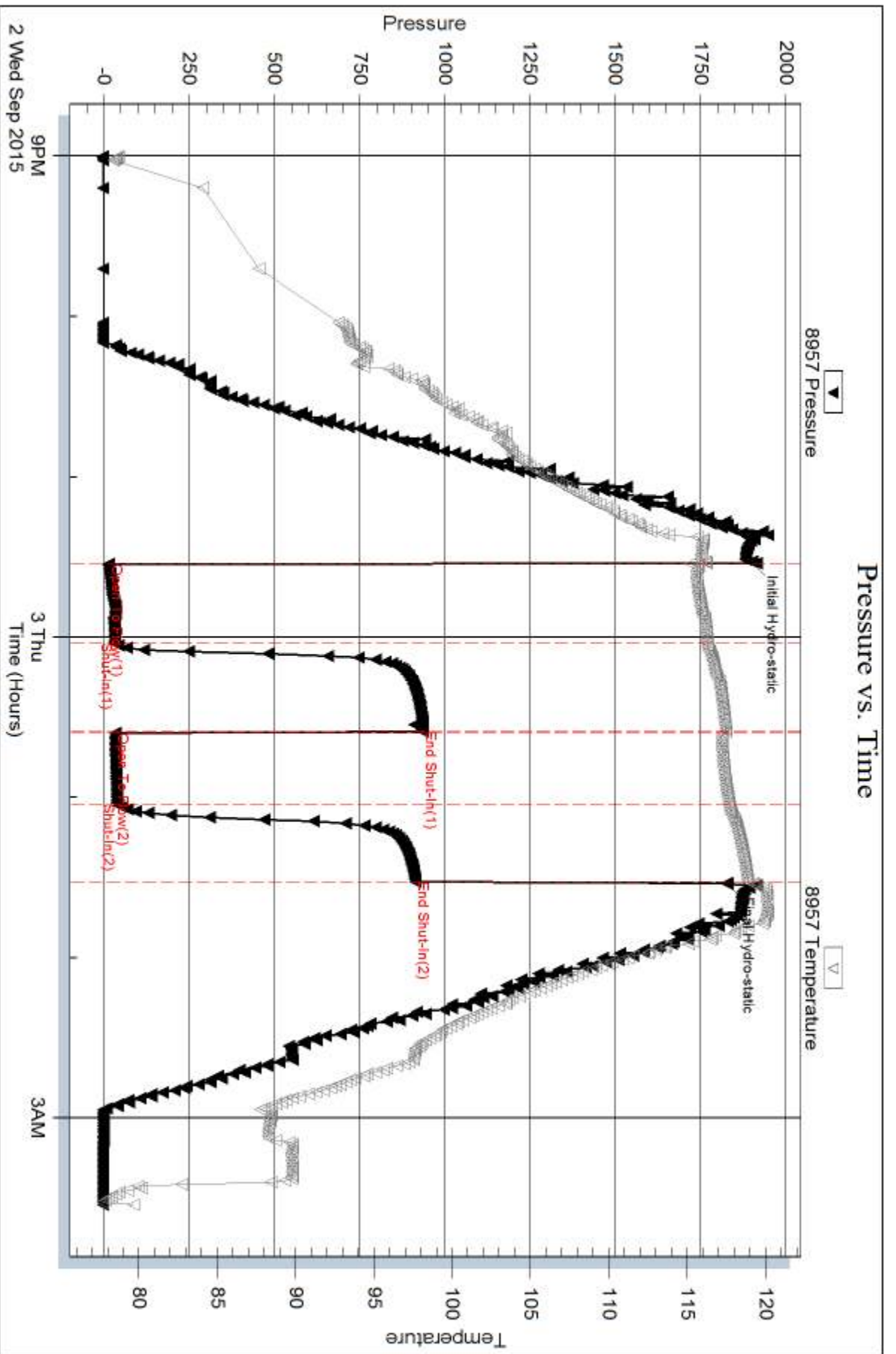
Recovery Comments:

Serial #: 8957

Outside H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 64720

Printed: 2015.09.04 @ 11:59:31

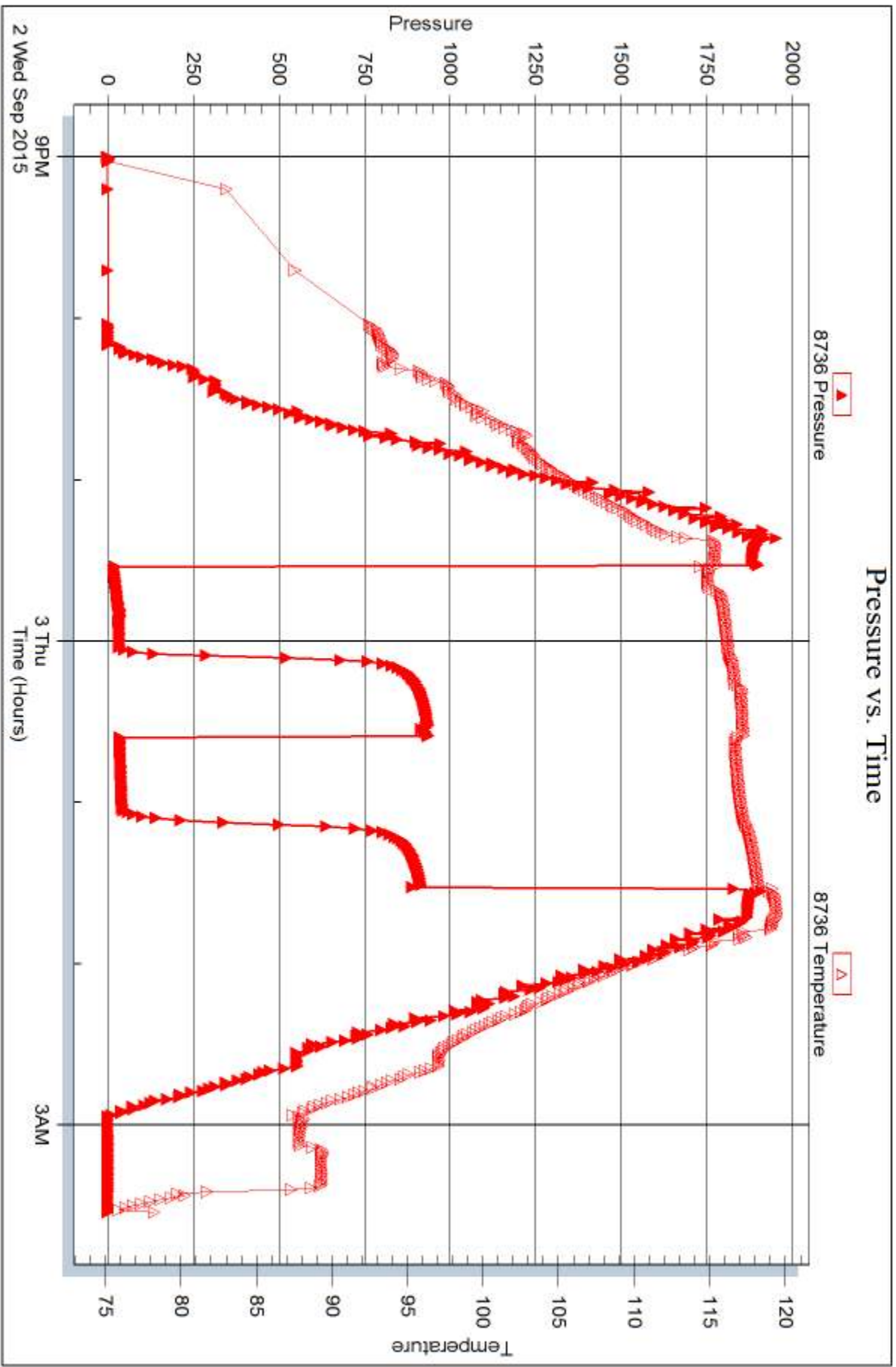
Serial #: 8736

Inside

H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 4



Tribble Testing, Inc

Ref. No: 64720

Printed: 2015.09.04 @ 11:59:32



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating Inc.**

PO Box 86
Plainville KS 6663

ATTN: Marc Downing

Hobbs Unit #19-1

19-10s-24w Graham,KS

Start Date: 2015.09.03 @ 12:30:00

End Date: 2015.09.03 @ 19:26:00

Job Ticket #: 64721 DST #: 5

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

Printed: 2015.09.04 @ 11:58:55

H&C Oil Operating Inc.

19-10s-24w Graham,KS

Hobbs Unit #19-1

DST # 5

LKC "I,K"

2015.09.03



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64721

DST#: 5

ATTN: Marc Downing

Test Start: 2015.09.03 @ 12:30:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:23:00
 Time Test Ended: 19:26:00
 Interval: **3854.00 ft (KB) To 3918.00 ft (KB) (TVD)**
 Total Depth: 3918.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Poor
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brett Dickinson
 Unit No: 81
 Reference Elevations: 3395.00 ft (KB)
 3390.00 ft (CF)
 KB to GR/CF: 5.00 ft

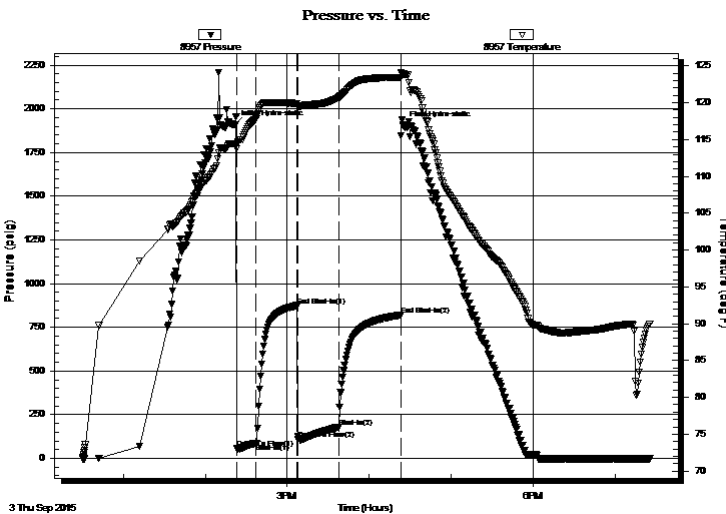
Serial #: 8957

Outside

Press@RunDepth: 178.28 psig @ 3862.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2015.09.03 End Date: 2015.09.03 Last Calib.: 2015.09.03
 Start Time: 12:30:05 End Time: 19:25:59 Time On Btm: 2015.09.03 @ 14:21:45
 Time Off Btm: 2015.09.03 @ 16:25:00

TEST COMMENT: IF-BOB in 3 min
 IS-1 1/2" blow
 FF-BOB in 3 1/2" blow
 FS-BOB in 18 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1908.11	114.43	Initial Hydro-static
2	55.68	113.79	Open To Flow (1)
16	87.65	117.84	Shut-In(1)
46	874.18	119.89	End Shut-In(1)
47	109.04	119.58	Open To Flow (2)
76	178.28	120.65	Shut-In(2)
122	820.54	123.43	End Shut-In(2)
124	1903.23	123.89	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	GSMCO 5%M 15%G 80%O	1.41
320.00	GO 15%G 85%O	4.49
0.00	1550f 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

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64721

DST#: 5

ATTN: Marc Downing

Test Start: 2015.09.03 @ 12:30:00

Tool Information

Drill Pipe:	Length: 3806.00 ft	Diameter: 3.80 inches	Volume: 53.39 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	2.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3854.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3839.00	
Hydraulic tool	5.00			3844.00	
Packer	5.00			3849.00	20.00 Bottom Of Top Packer
Packer	5.00			3854.00	
Stubb	1.00			3855.00	
Perforations	7.00			3862.00	
Recorder	0.00	8736	Inside	3862.00	
Recorder	0.00	8957	Outside	3862.00	
Change Over Sub	1.00			3863.00	
Drill Pipe	30.00			3893.00	
Change Over Sub	1.00			3894.00	
Perforations	21.00			3915.00	
Bullnose	3.00			3918.00	64.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating Inc.

19-10s-24w Graham,KS

PO Box 86
Plainville KS 6663

Hobbs Unit #19-1

Job Ticket: 64721

DST#: 5

ATTN: Marc Downing

Test Start: 2015.09.03 @ 12:30:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	GSMCO 5%M 15%G 80%O	1.410
320.00	GO 15%G 85%O	4.489
0.00	1550f GIP	0.000

Total Length: 440.00 ft Total Volume: 5.899 bbl

Num Fluid Samples: 0

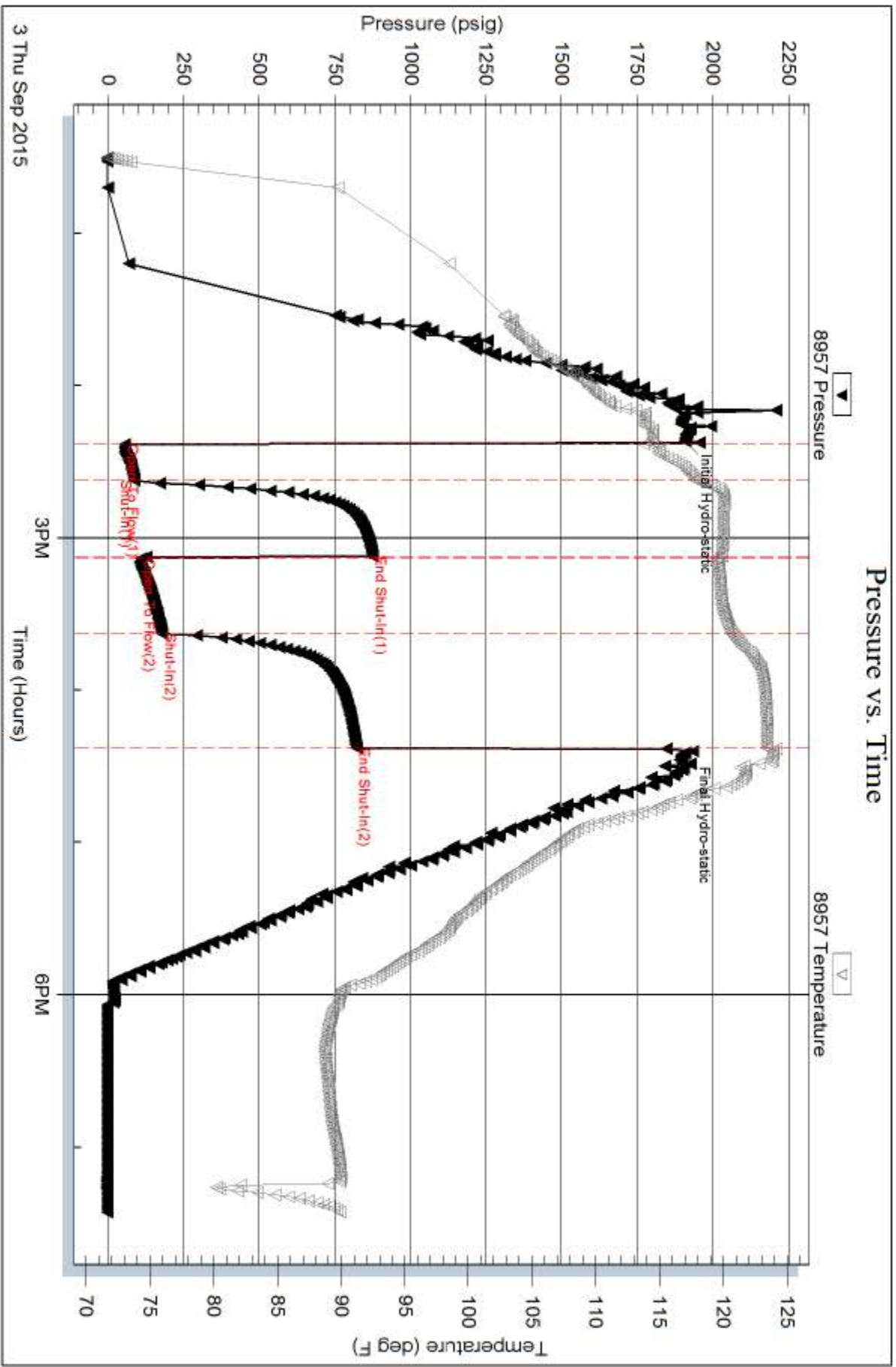
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



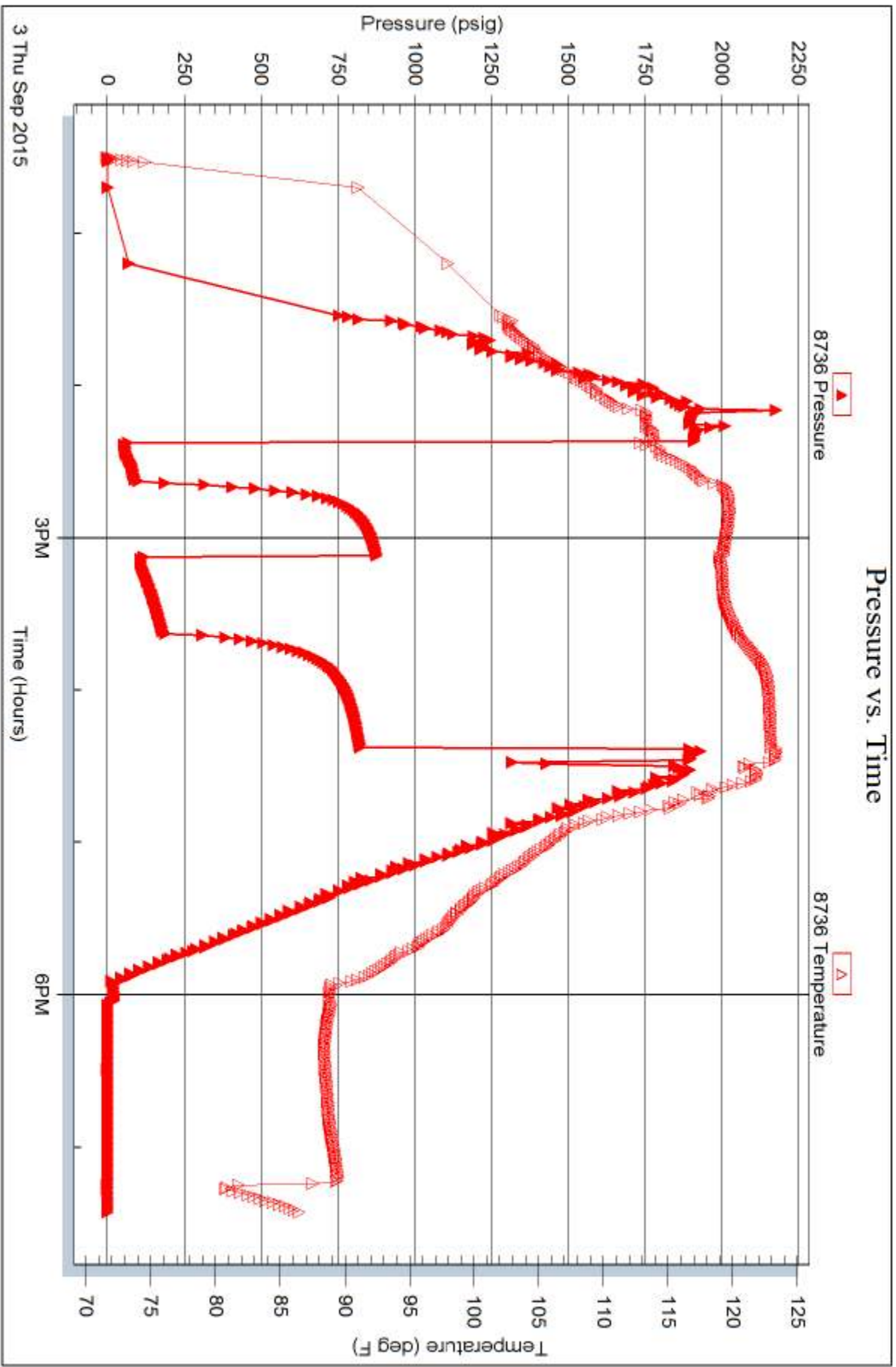
Serial #: 8736

Inside

H&C Oil Operating Inc.

Hobbs Unit #19-1

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

785-639-1220
639-2563

Test Ticket

NO. **64717**

Well Name & No. Hobbs Unit #19-1 Test No. 1 Date 8-31-15
 Company H&C Oil Operating Inc. Elevation 3395 KB 3390 GL
 Address PO Box 86 Plainville KS 67663
 Co. Rep / Geo. Marc Downing Rig American Eagle #2
 Location: Sec. 19 Twp. 10S Rge. 24W Co. Graham State KS

Interval Tested 3726-3746 Zone Tested KC" C"
 Anchor Length 20 Drill Pipe Run _____ Mud Wt. 9.3
 Top Packer Depth 3721 Drill Collars Run 30 Vis 56
 Bottom Packer Depth 3726 Wt. Pipe Run — WL 7.8
 Total Depth 3746 Chlorides 4,300 ppm System LCM 2#
 Blow Description FF-BOB in 40min
ISF-No blow
EF-4in blow
FSF-No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free Oil</u>				
<u>319</u>	<u>SMCW</u>		<u>90</u>	<u>10</u>	
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud
Rec _____	Feet of _____	%gas	%oil	%water	%mud

Rec Total 320 BHT 122 Gravity _____ API RW e1 @ 80 °F Chlorides 64,000 ppm
 (A) Initial Hydrostatic 1,850 Test 1050 T-On Location 22:05
 (B) First Initial Flow 18 Jars _____ T-Started 23:10
 (C) First Final Flow 94 Safety Joint _____ T-Open 5:20
 (D) Initial Shut-In 749 Circ Sub _____ T-Pulled 8:20
 (E) Second Initial Flow 103 Hourly Standby 2h 160 T-Out 10:05
 (F) Second Final Flow 165 Mileage 112rt Comments _____
 (G) Final Shut-In 741 Sampler _____
 (H) Final Hydrostatic 1,839 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1322
 Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 1322
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1322
 MP/DST Disc't _____

Approved By _____

Our Representative Burt [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. **64718**

Well Name & No. Hobbs Unit #19-1 Test No. 2 Date 9-1-15
 Company HOC Oil Operating Inc. Elevation 3395 KB 3390 GL
 Address _____
 Co. Rep / Geo. Marc Downing Rig American Eagle #2
 Location: Sec. 19 Twp. 10 Rge. 24 Co. Graham State KS

Interval Tested 3745-3770 Zone Tested KC"10"
 Anchor Length 25 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3740 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3745 Wt. Pipe Run - WL _____
 Total Depth 3770 Chlorides _____ ppm System LCM _____
 Blow Description IF - BOB in 8min
ISI - No blow
FF - BOB in 17min
KSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free Oil</u>				
<u>684</u>	<u>VSMCW</u>		<u>95</u>	<u>5</u>	
____	____				
____	____				
____	____				

Rec Total 685 BHT 116 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm
 (A) Initial Hydrostatic 1,866 Test 1050 T-On Location 16:20
 (B) First Initial Flow 29 Jars _____ T-Started 16:30
 (C) First Final Flow 178 Safety Joint _____ T-Open 19:10
 (D) Initial Shut-In 736 Circ Sub _____ T-Pulled 21:40
 (E) Second Initial Flow 184 Hourly Standby _____ T-Out 23:55
 (F) Second Final Flow 292 Mileage 112 Comments _____
 (G) Final Shut-In 726 Sampler _____
 (H) Final Hydrostatic 6829 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 45 Extra Packer _____
 Final Flow 30 Extra Recorder _____
 Final Shut-In 45 Day Standby _____
 Accessibility _____
 Sub Total 1162 Sub Total 0
 Total 1162 MP/DST Disc't _____

Approved By _____ Our Representative Burt Green

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64719**

Well Name & No. Hobbs Unit #19-1 Test No. 3 Date 9-2-15
 Company H&C Oil Operating, Inc Elevation 3395 KB 3390 GL
 Address _____
 Co. Rep / Geo. Marc Downing Rig American Eagle #2
 Location: Sec. 19 Twp. 10 Rge. 24 Co. Graham State K.S.

Interval Tested 3772-3795 Zone Tested KC "E&F"
 Anchor Length 23 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3767 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3772 Wt. Pipe Run _____ WL _____
 Total Depth 3795 Chlorides _____ ppm System LCM _____
 Blow Description IF- BOB in 8 min
ISI- No blow
FF- BOB in 14 min
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>Mcw</u>			<u>80</u>	<u>20</u>
<u>610</u>	<u>water</u>				
____	____				
____	____				
____	____				

Rec Total 730 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1873 Test 1050 T-On Location 7:50
 (B) First Initial Flow 32 Jars _____ T-Started 8:00
 (C) First Final Flow 198 Safety Joint _____ T-Open 9:30
 (D) Initial Shut-In 768 Circ Sub _____ T-Pulled 12:00
 (E) Second Initial Flow 205 Hourly Standby _____ T-Out 13:30
 (F) Second Final Flow 325 Mileage 112 Comments _____
 (G) Final Shut-In 764 Sampler _____
 (H) Final Hydrostatic 1824 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 45

Sub Total 1162
 Total 1162
 MP/DST Disc't _____

Approved By _____ Our Representative Butt D...

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64720**

Well Name & No. Hobbs Unit #19-1 Test No. 4 Date 9-2-15
 Company H&C Oil Operating, Inc Elevation 2395 KB 2390 GL
 Address _____
 Co. Rep / Geo. Marc Downing Rig American Eagle #2
 Location: Sec. 19 Twp. 10 Rge. 24 Co. Graham State KS

Interval Tested 3824-3857 Zone Tested KCH¹¹
 Anchor Length 33 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3819 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3824 Wt. Pipe Run — WL _____
 Total Depth 3857 Chlorides _____ ppm System LCM _____

Blow Description FF - lin blow
ISI - No blow
FF - No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>Mad</u>				
____	____				
____	____				
____	____				
____	____				

Rec Total 20 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1,899</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>21:00</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars _____	T-Started <u>21:15</u>
(C) First Final Flow <u>31</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>23:45</u>
(D) Initial Shut-In <u>934</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1:45</u>
(E) Second Initial Flow <u>34</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>3:45</u>
(F) Second Final Flow <u>39</u>	<input checked="" type="checkbox"/> Mileage <u>112</u>	Comments _____
(G) Final Shut-In <u>912</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1,829</u>	<input type="checkbox"/> Straddle _____	_____
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>1162</u>
	Sub Total <u>1162</u>	MP/DST Disc't _____

Approved By _____ Our Representative Beth Downing

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64721**

Well Name & No. Hobbs Unit #19-1 Test No. 5 Date 9-3-15
 Company H&C Oil Operating, Inc Elevation 2395 KB 2390 GL
 Address _____
 Co. Rep / Geo. Marc Downing Rig American Eagle #2
 Location: Sec. 19 Twp. 10 Rge. 24 Co. Graham State KS

Interval Tested 3854-3918 Zone Tested KC "I-K"
 Anchor Length 64 Drill Pipe Run _____ Mud Wt. _____
 Top Packer Depth 3849 Drill Collars Run 30 Vis _____
 Bottom Packer Depth 3854 Wt. Pipe Run _____ WL _____
 Total Depth 3918 Chlorides _____ ppm System LCM _____
 Blow Description IF-BOB in 3min
ISF - 1 1/2 in blow
FF - BOB in 3 1/2 min
FSI - BOB in 18min

Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>GSMCO</u>	<u>15</u>	<u>80</u>	<u>5</u>	
<u>320</u>	<u>60</u>	<u>15</u>	<u>85</u>		
	<u>1550 GIP</u>				

Rec Total 440 BHT 123 Gravity 28 API RW _____ @ _____ °F Chlorides _____ ppm
 Test 1050
 Jars _____
 Safety Joint _____
 Circ Sub _____
 Hourly Standby _____
 Mileage 112
 Sampler _____
 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1162

T-On Location 12:15
 T-Started 12:30
 T-Open 14:20
 T-Pulled 16:20
 T-Out 19:25
 Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1162
 MP/DST Disc't _____

Approved By _____ Our Representative Batt D...

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.