



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Company**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Keith Ficken #17-3

17-9s-24w Graham, KS

Start Date: 2014.03.08 @ 12:45:00

End Date: 2014.03.09 @ 00:28:00

Job Ticket #: 56158 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.15 @ 11:23:47

H&C Oil Company
17-9s-24w Graham, KS
Keith Ficken #17-3
DST # 1
LKC C-D
2014.03.08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

ATTN: Marc Downing

Job Ticket: 56158

DST#: 1

Test Start: 2014.03.08 @ 12:45:00

GENERAL INFORMATION:

Formation: **LKC C-D**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:45:00

Time Test Ended: 00:28:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Bob Hamel

Unit No: 67

Interval: 3880.00 ft (KB) To 3922.00 ft (KB) (TVD)

Reference Elevations: 2531.00 ft (KB)

Total Depth: 3922.00 ft (KB) (TVD)

2525.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: 6625 Outside

Press@RunDepth: 549.44 psig @ 3918.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.08

End Date:

2014.03.09

Last Calib.:

2014.03.08

Start Time: 12:45:01

End Time:

00:28:00

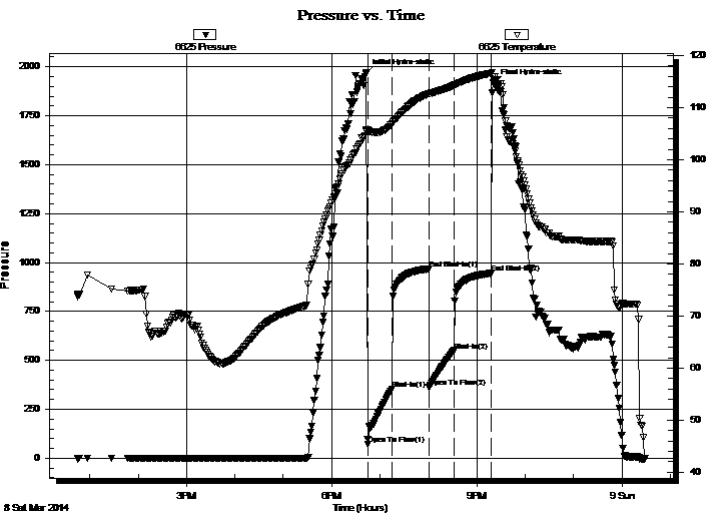
Time On Btm:

2014.03.08 @ 18:42:30

Time Off Btm:

2014.03.08 @ 21:21:00

TEST COMMENT: I.F. - 30 - BOB in 1 min
I.S.I. - 45 - BOB in 17 min
F.F. - 30 - BOB in 1 min
F.S.I. - 45 - BOB in 7 min



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1965.52	105.52	Initial Hydro-static
3	70.62	105.57	Open To Flow (1)
32	352.66	106.87	Shut-In(1)
78	967.07	112.70	End Shut-In(1)
79	360.39	112.63	Open To Flow (2)
109	549.44	114.26	Shut-In(2)
156	944.50	116.56	End Shut-In(2)
159	1914.30	116.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
126.00	H,M,C,O 30 % MUD 70% OIL	1.49
0.00	60 MIN SAMPLE M,C,O, 15% MUD 85% OIL	0.00
0.00	50 MIN. SAMPLE M,C,O, 12 % MUD 88 %	0.00
0.00	45 MIN. SAMPLE S,M,C,O, 10% MUD 90	0.00
0.00	10 - 45MIN. SAMPLE 100% CLEAN OIL	0.00
1434.00	Reversed out fluid	20.12

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56158

DST#: 1

ATTN: Marc Downing

Test Start: 2014.03.08 @ 12:45:00

Tool Information

Drill Pipe:	Length: 3840.00 ft	Diameter: 3.80 inches	Volume: 53.87 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 54.02 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3880.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	62.00 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			3861.00	
Shut In Tool	5.00			3866.00	
Hydraulic tool	5.00			3871.00	
Packer	4.00			3875.00	20.00 Bottom Of Top Packer
Packer	5.00			3880.00	
Stubb	1.00			3881.00	
Perforations	4.00			3885.00	
Change Over Sub	1.00			3886.00	
Drill Pipe	31.00			3917.00	
Change Over Sub	1.00			3918.00	
Recorder	0.00	6625	Outside	3918.00	
Recorder	0.00	8166	Inside	3918.00	
Bullnose	4.00			3922.00	42.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56158

DST#: 1

ATTN: Marc Downing

Test Start: 2014.03.08 @ 12:45:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35.8 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
126.00	H,M,C,O 30 % MUD 70% OIL	1.485
0.00	60 MIN SAMPLE M,C,O, 15%MUD 85%OIL	0.000
0.00	50 MIN. SAMPLE M,C,O, 12 % MUD 88 % OIL	0.000
0.00	45 MIN. SAMPLE S,M,C,O, 10% MUD 90 OIL	0.000
0.00	10 - 45MIN. SAMPLE 100% CLEAN OIL	0.000
1434.00	Reversed out fluid	20.115
0.00	2242' G.I.P.	0.000

Total Length: 1560.00 ft

Total Volume: 21.600 bbl

Num Fluid Samples: 0

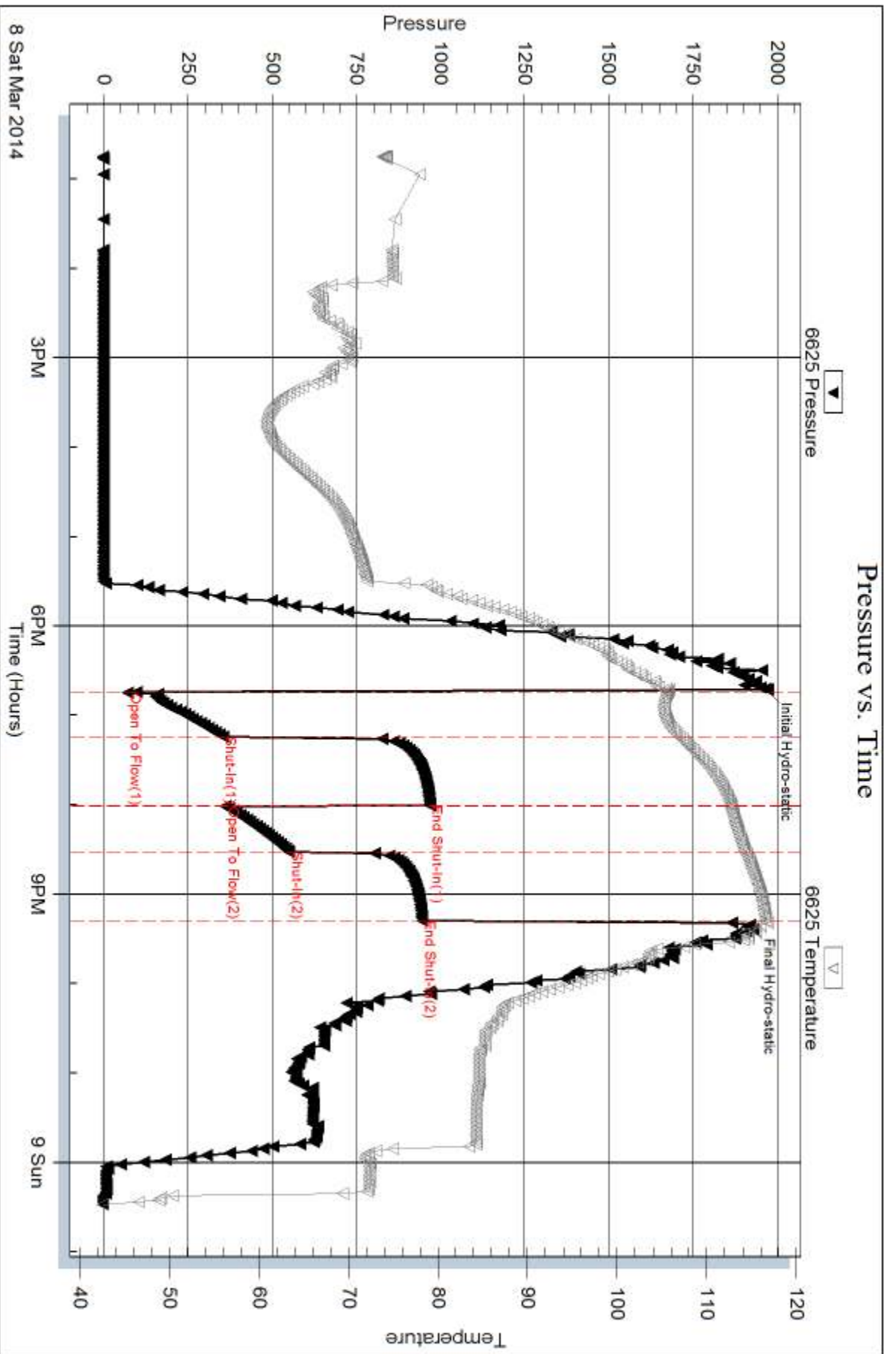
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



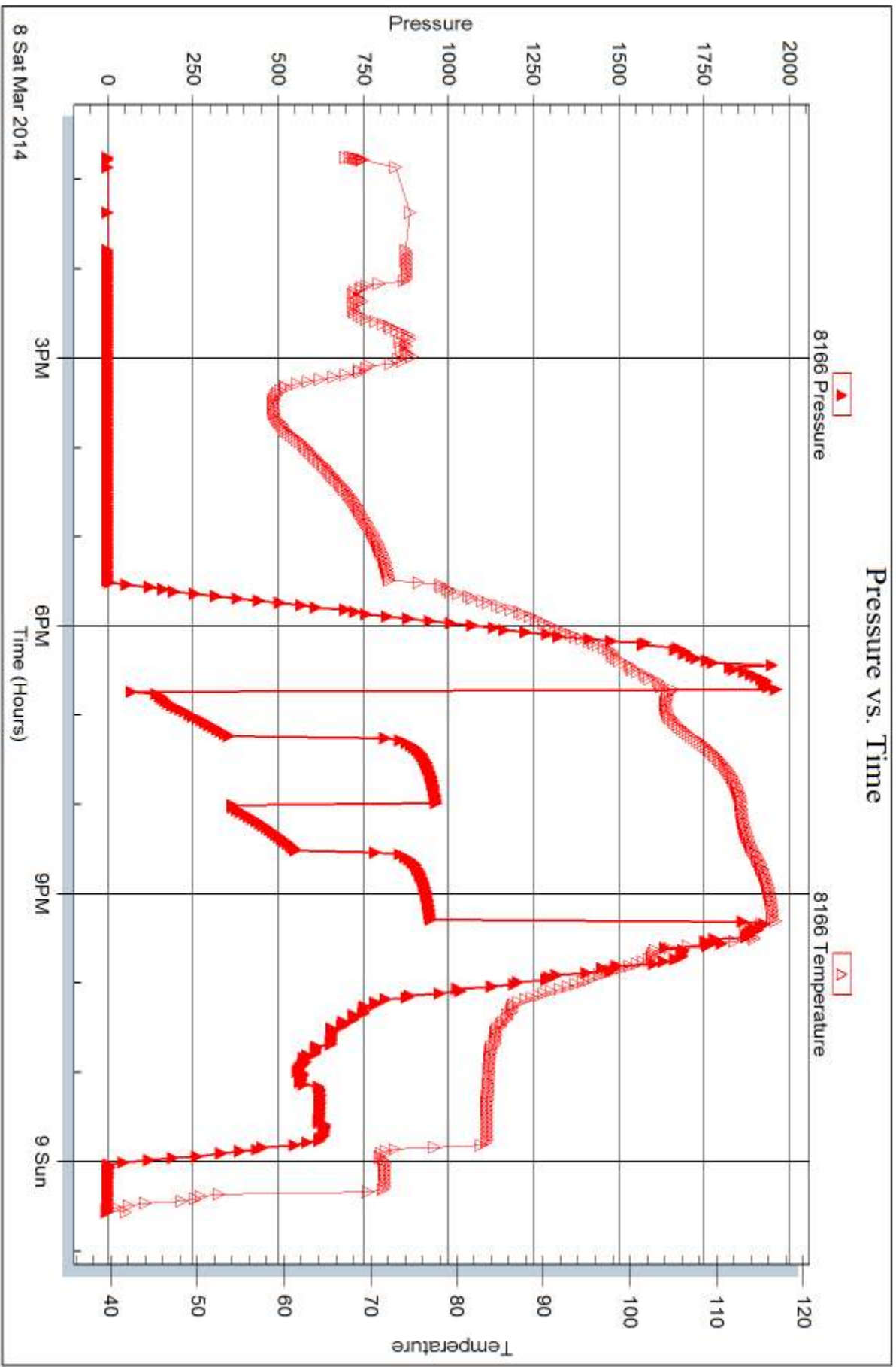
Serial #: 8166

Inside

H&C Oil Company

Keith Ficken #17-3

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56158

Printed: 2014.03.15 @ 11:23:49



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Company**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Keith Ficken #17-3

17-9s-24w Graham, KS

Start Date: 2014.03.09 @ 08:00:00

End Date: 2014.03.09 @ 15:39:34

Job Ticket #: 56159 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.15 @ 11:14:38



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

ATTN: Marc Downing

Job Ticket: 56159

DST#: 2

Test Start: 2014.03.09 @ 08:00:00

GENERAL INFORMATION:

Formation: **LKC E-F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:31:04

Time Test Ended: 15:39:34

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 67

Interval: 3918.00 ft (KB) To 3945.00 ft (KB) (TVD)

Reference Elevations: 2531.00 ft (KB)

Total Depth: 3945.00 ft (KB) (TVD)

2525.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: 6625 Outside

Press@RunDepth: 151.96 psig @ 3941.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.09

End Date:

2014.03.09

Last Calib.:

2014.03.09

Start Time: 08:00:01

End Time:

15:39:33

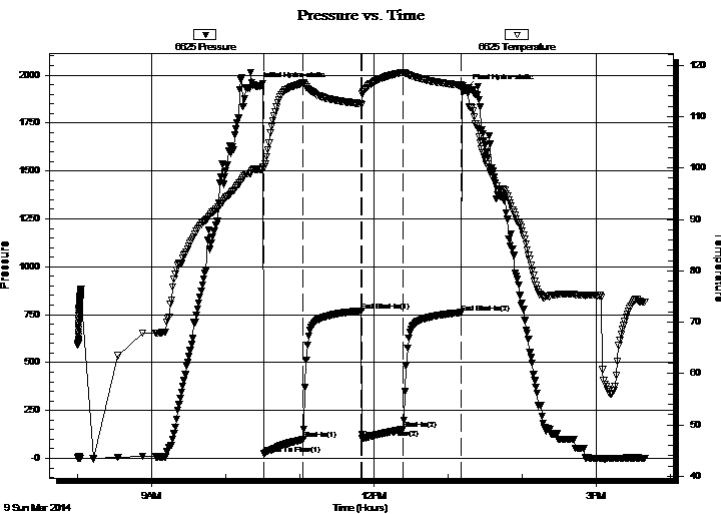
Time On Btm:

2014.03.09 @ 10:25:04

Time Off Btm:

2014.03.09 @ 13:14:34

TEST COMMENT: I.F. - 30 - BOB in 13 min
I.S.I. - 45 - Weak surface blow built to 1/4"
F.F. - 30 - BOB in 13 min
F.S.I. - 45 - No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1941.50	99.77	Initial Hydro-static
6	23.48	100.14	Open To Flow (1)
38	97.98	116.55	Shut-In(1)
85	770.43	112.53	End Shut-In(1)
86	102.78	114.36	Open To Flow (2)
119	151.96	118.59	Shut-In(2)
166	760.38	116.11	End Shut-In(2)
170	1930.90	115.09	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
189.00	S,O,C,H,W,C,M 10% OIL 40% WATER 50'2.37JD	
30.00	CLEAN OIL 100 %	0.42

* 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 Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56159

DST#: 2

ATTN: Marc Downing

Test Start: 2014.03.09 @ 08:00:00

Tool Information

Drill Pipe:	Length: 3903.00 ft	Diameter: 3.80 inches	Volume: 54.75 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 54.90 bbl</u>	Tool Chased 3.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial 53000.00 lb
Depth to Top Packer:	3918.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	46.00 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			3904.00		
Hydraulic tool	5.00			3909.00		
Packer	4.00			3913.00	19.00	Bottom Of Top Packer
Packer	5.00			3918.00		
Stubb	1.00			3919.00		
Perforations	22.00			3941.00		
Recorder	0.00	6625	Outside	3941.00		
Recorder	0.00	8166	Inside	3941.00		
Bullnose	4.00			3945.00	27.00	Bottom Packers & Anchor
Total Tool Length:	46.00					



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56159

DST#: 2

ATTN: Marc Downing

Test Start: 2014.03.09 @ 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:

39000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
189.00	S,O,C,H,W,C,M 10% OIL 40% WATER 50% M	2.369
30.00	CLEAN OIL 100 %	0.421

Total Length: 219.00 ft Total Volume: 2.790 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

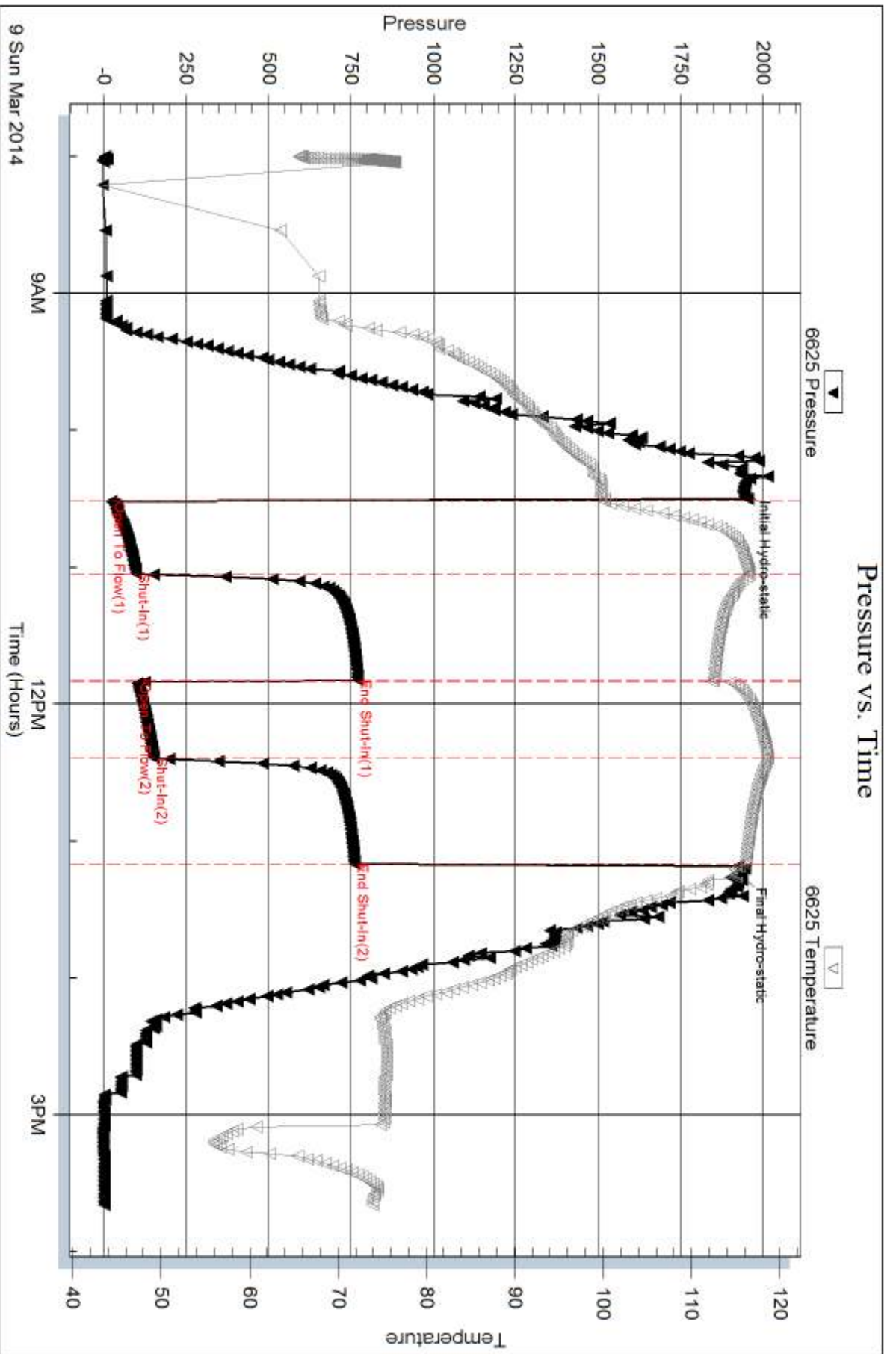
Recovery Comments: R.W. = .19 OHMS @ 70 DEG.

Serial #: 6625

Outside H&C Oil Company

Keith Ficken #17-3

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 56159

Printed: 2014.03.15 @ 11:14:40

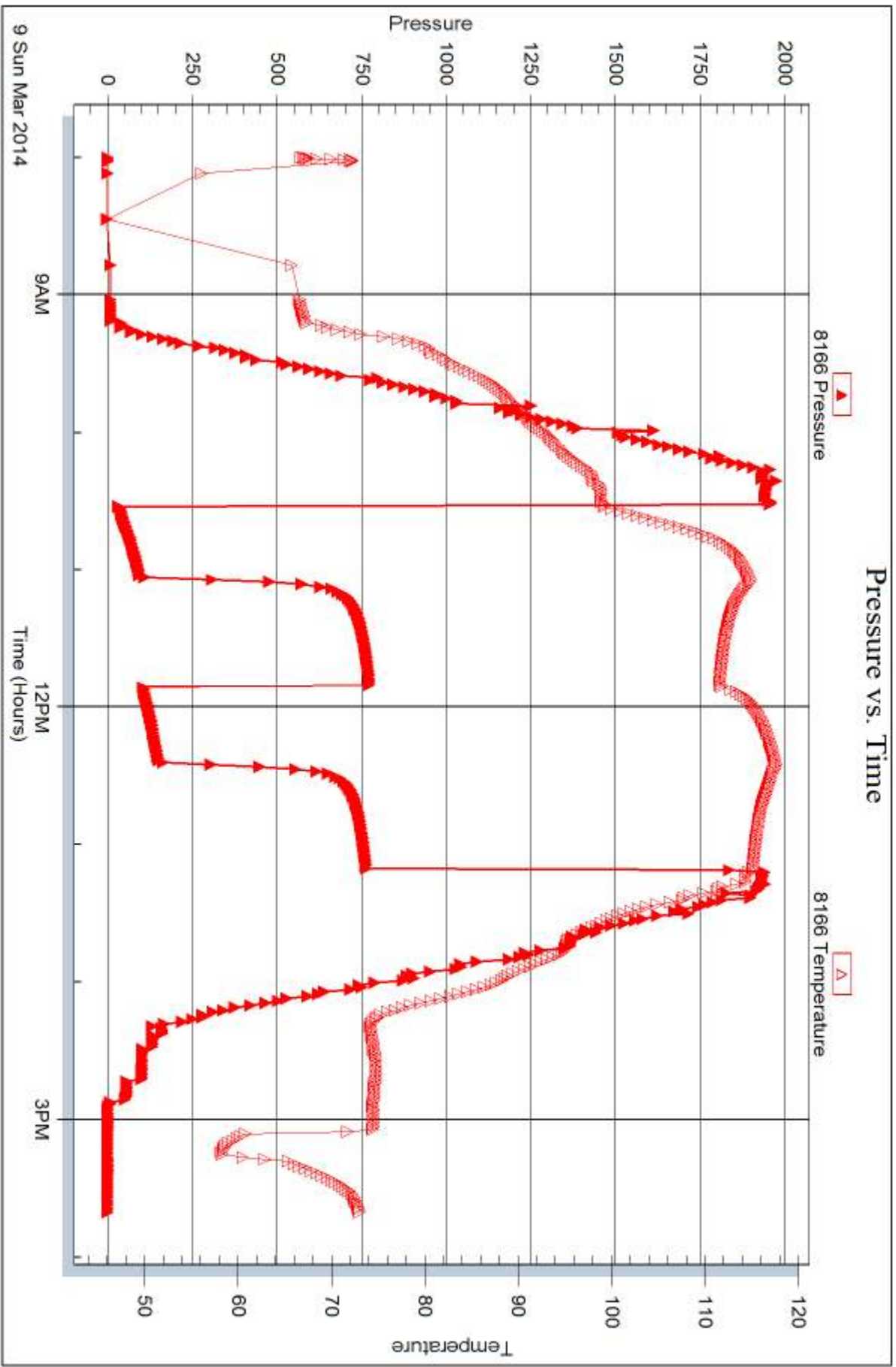
Serial #: 8166

Inside

H&C Oil Company

Keith Ficken #17-3

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56159

Printed: 2014.03.15 @ 11:14:41



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Company**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Keith Ficken #17-3

17-9s-24w Graham, KS

Start Date: 2014.03.10 @ 02:30:00

End Date: 2014.03.10 @ 09:12:30

Job Ticket #: 56160 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.15 @ 11:23:17

H&C Oil Company

17-9s-24w Graham, KS

Keith Ficken #17-3

DST # 3

LKC H-J

2014.03.10



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

ATTN: Marc Downing

Job Ticket: 56160

DST#: 3

Test Start: 2014.03.10 @ 02:30:00

GENERAL INFORMATION:

Formation: **LKC H-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:49:00

Time Test Ended: 09:12:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 67

Interval: 3976.00 ft (KB) To 4050.00 ft (KB) (TVD)

Reference Elevations: 2531.00 ft (KB)

Total Depth: 4050.00 ft (KB) (TVD)

2525.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: 6625 Outside

Press@RunDepth: 53.05 psig @ 4045.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.10

End Date:

2014.03.10

Last Calib.: 2014.03.10

Start Time: 02:30:01

End Time:

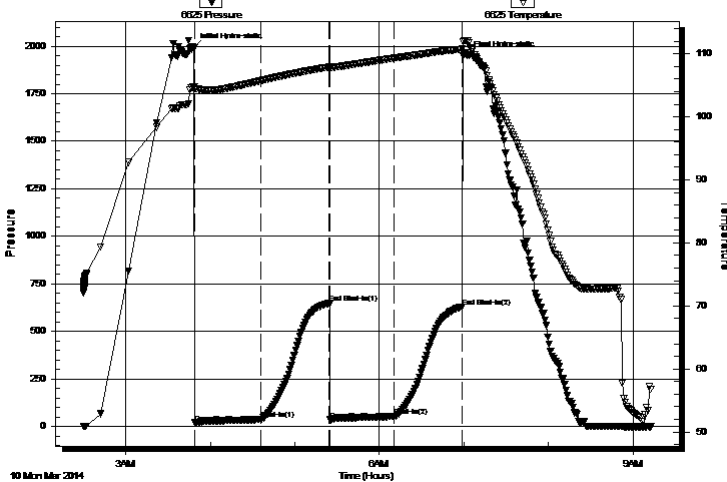
09:12:30

Time On Btm: 2014.03.10 @ 03:48:00

Time Off Btm: 2014.03.10 @ 07:02:30

TEST COMMENT: I.F. - 45 - BOB in 27 min
I.S.I. - 45 - Weak surface blow back.
F.F. - 45 - BOB in 23 min
F.S.I. - 45 - No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1994.22	104.76	Initial Hydro-static
1	18.93	104.47	Open To Flow (1)
48	36.31	105.74	Shut-In(1)
96	647.62	107.88	End Shut-In(1)
97	35.00	107.85	Open To Flow (2)
143	53.05	109.33	Shut-In(2)
191	628.35	110.75	End Shut-In(2)
195	1951.34	112.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	252' G.I.P.	0.00
40.00	G,H,M,C,O, 10% GAS 40% MUD 50% OIL 0.28	

* 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 Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56160

DST#: 3

ATTN: Marc Downing

Test Start: 2014.03.10 @ 02:30:00

Tool Information

Drill Pipe:	Length: 3934.00 ft	Diameter: 3.80 inches	Volume: 55.18 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 55.33 bbl</u>	Tool Chased 3.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	3976.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	74.00 ft			
Tool Length:	93.00 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			3962.00	
Hydraulic tool	5.00			3967.00	
Packer	4.00			3971.00	19.00 Bottom Of Top Packer
Packer	5.00			3976.00	
Stubb	1.00			3977.00	
Perforations	4.00			3981.00	
Change Over Sub	1.00			3982.00	
Drill Pipe	63.00			4045.00	
Recorder	0.00	6625	Outside	4045.00	
Recorder	0.00	8166	Inside	4045.00	
Change Over Sub	1.00			4046.00	
Bullnose	4.00			4050.00	74.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56160

DST#: 3

ATTN: Marc Downing

Test Start: 2014.03.10 @ 02:30:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	252' G.I.P.	0.000
40.00	G,H,M,C,O, 10% GAS 40% MUD 50% OIL	0.279

Total Length: 40.00 ft Total Volume: 0.279 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

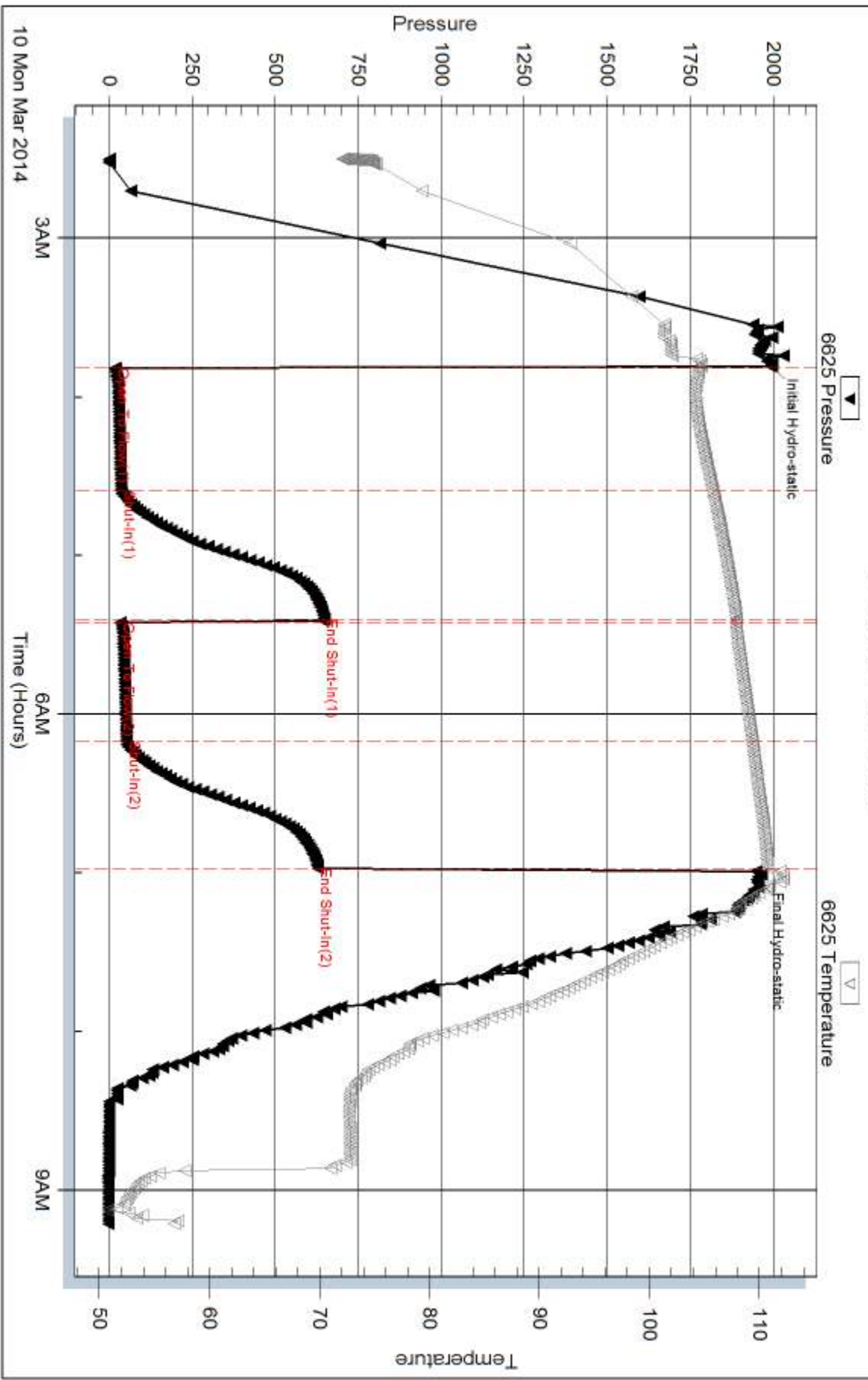
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



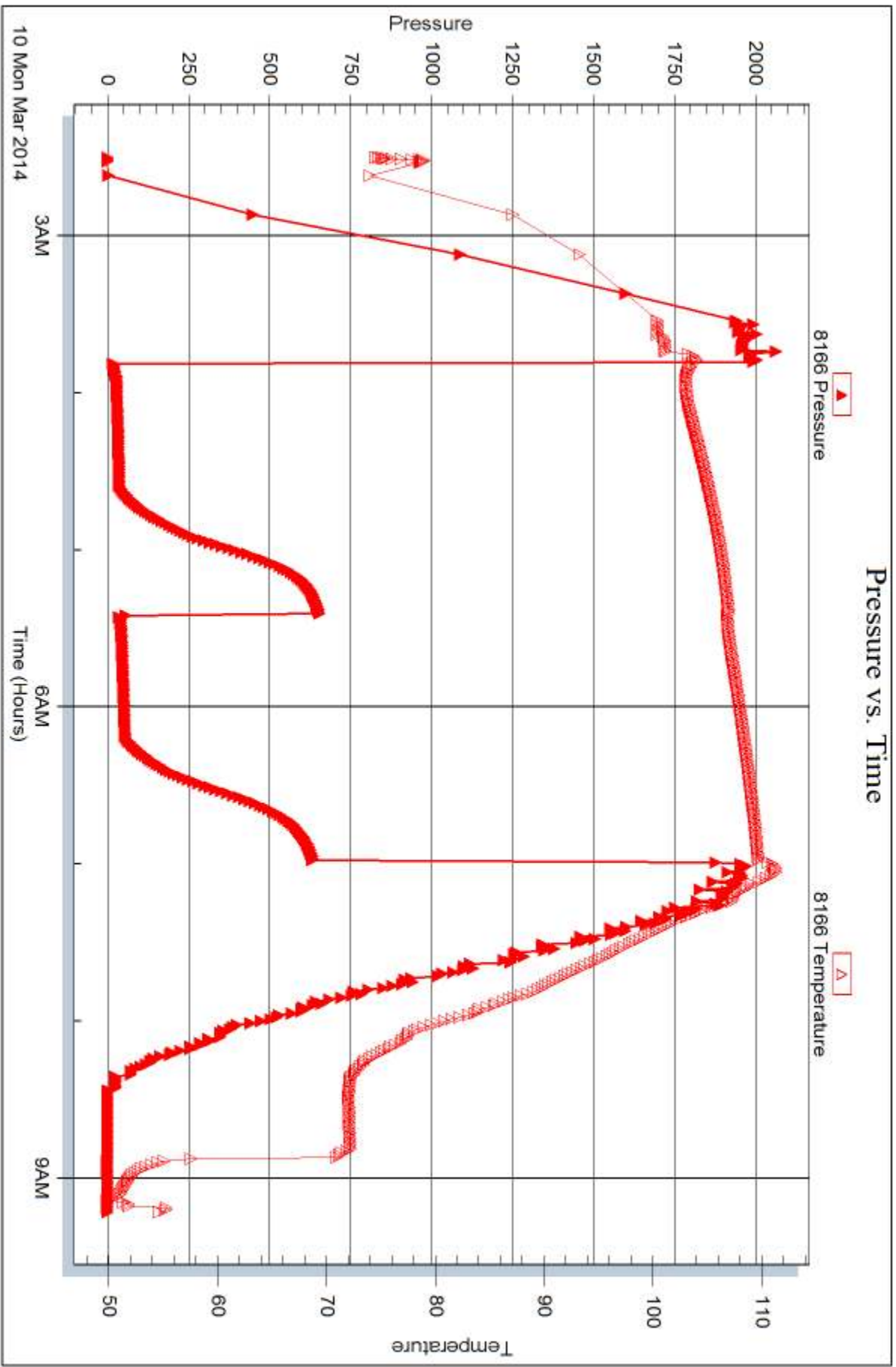
Serial #: 8166

Inside

H&C Oil Company

Keith Ficken #17-3

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 56160

Printed: 2014.03.15 @ 11:23:19



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Company**

PO Box 86
Plainville, KS 67663

ATTN: Marc Downing

Keith Ficken #17-3

17-9s-24w Graham, KS

Start Date: 2014.03.10 @ 17:20:00

End Date: 2014.03.11 @ 00:31:45

Job Ticket #: 56161 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.15 @ 11:15:09



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

ATTN: Marc Downing

Job Ticket: 56161

DST#: 4

Test Start: 2014.03.10 @ 17:20:00

GENERAL INFORMATION:

Formation: **LKC K-L**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:53:45

Time Test Ended: 00:31:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Bob Hamel

Unit No: 67

Interval: 4049.00 ft (KB) To 4090.00 ft (KB) (TVD)

Reference Elevations: 2531.00 ft (KB)

Total Depth: 4090.00 ft (KB) (TVD)

2525.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 6.00 ft

Serial #: 8166

Inside

Press@RunDepth: 141.53 psig @ 4086.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.03.10

End Date:

2014.03.11

Last Calib.: 2014.03.11

Start Time: 17:20:02

End Time:

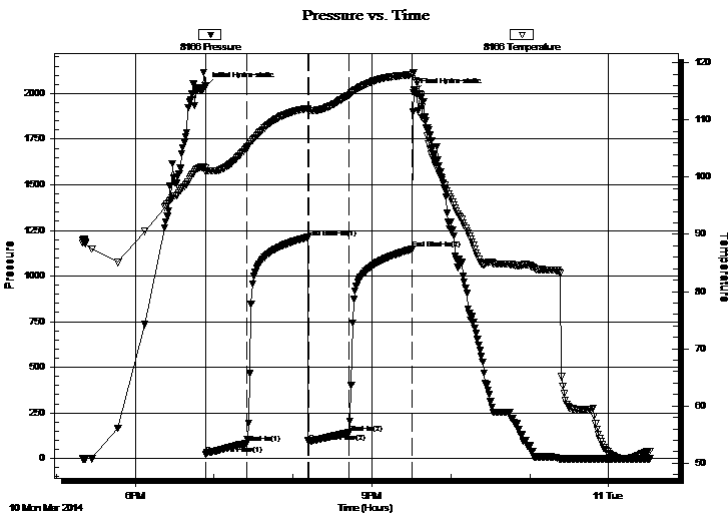
00:31:45

Time On Btm: 2014.03.10 @ 18:53:15

Time Off Btm: 2014.03.10 @ 21:31:45

TEST COMMENT: I.F. - 30 - BOB in 4 min
I.S.I. - 45 - BOB in 18 min
F.F. - 30 - BOB in 1 min
F.S.I. - 45 - BOB in 20 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2040.08	101.57	Initial Hydro-static
1	25.02	100.94	Open To Flow (1)
32	83.69	105.10	Shut-In(1)
78	1211.79	112.01	End Shut-In(1)
79	91.74	111.65	Open To Flow (2)
110	141.53	114.35	Shut-In(2)
158	1146.76	117.89	End Shut-In(2)
159	2004.47	118.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
558.00	CLEAN OIL 100%	7.54
0.00	819' G.I.P.	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 Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56161

DST#: 4

ATTN: Marc Downing

Test Start: 2014.03.10 @ 17:20:00

Tool Information

Drill Pipe:	Length: 4031.00 ft	Diameter: 3.80 inches	Volume: 56.54 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 56.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	4049.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	60.00 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			4035.00	
Hydraulic tool	5.00			4040.00	
Packer	4.00			4044.00	19.00 Bottom Of Top Packer
Packer	5.00			4049.00	
Stubb	1.00			4050.00	
Perforations	3.00			4053.00	
Change Over Sub	1.00			4054.00	
Drill Pipe	31.00			4085.00	
Change Over Sub	1.00			4086.00	
Recorder	0.00	6625	Outside	4086.00	
Recorder	0.00	8166	Inside	4086.00	
Bullnose	4.00			4090.00	41.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Company

17-9s-24w Graham,KS

PO Box 86
Plainville,KS 67663

Keith Ficken #17-3

Job Ticket: 56161

DST#: 4

ATTN: Marc Downing

Test Start: 2014.03.10 @ 17:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
558.00	CLEAN OIL 100%	7.545
0.00	819' G.I.P.	0.000

Total Length: 558.00 ft Total Volume: 7.545 bbl

Num Fluid Samples: 0

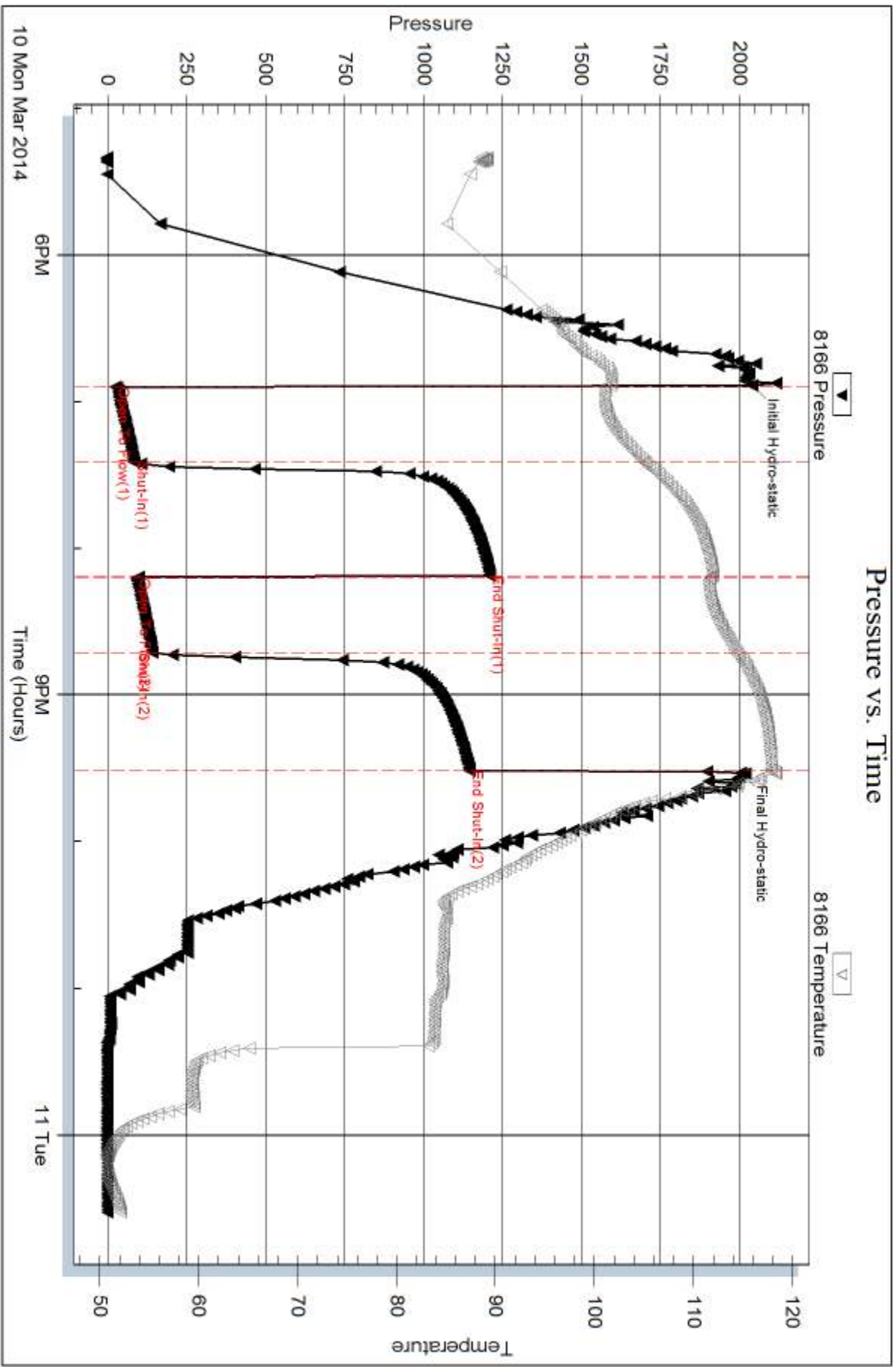
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: OIL GRAVITY = 34.6 @ 60 DEG.

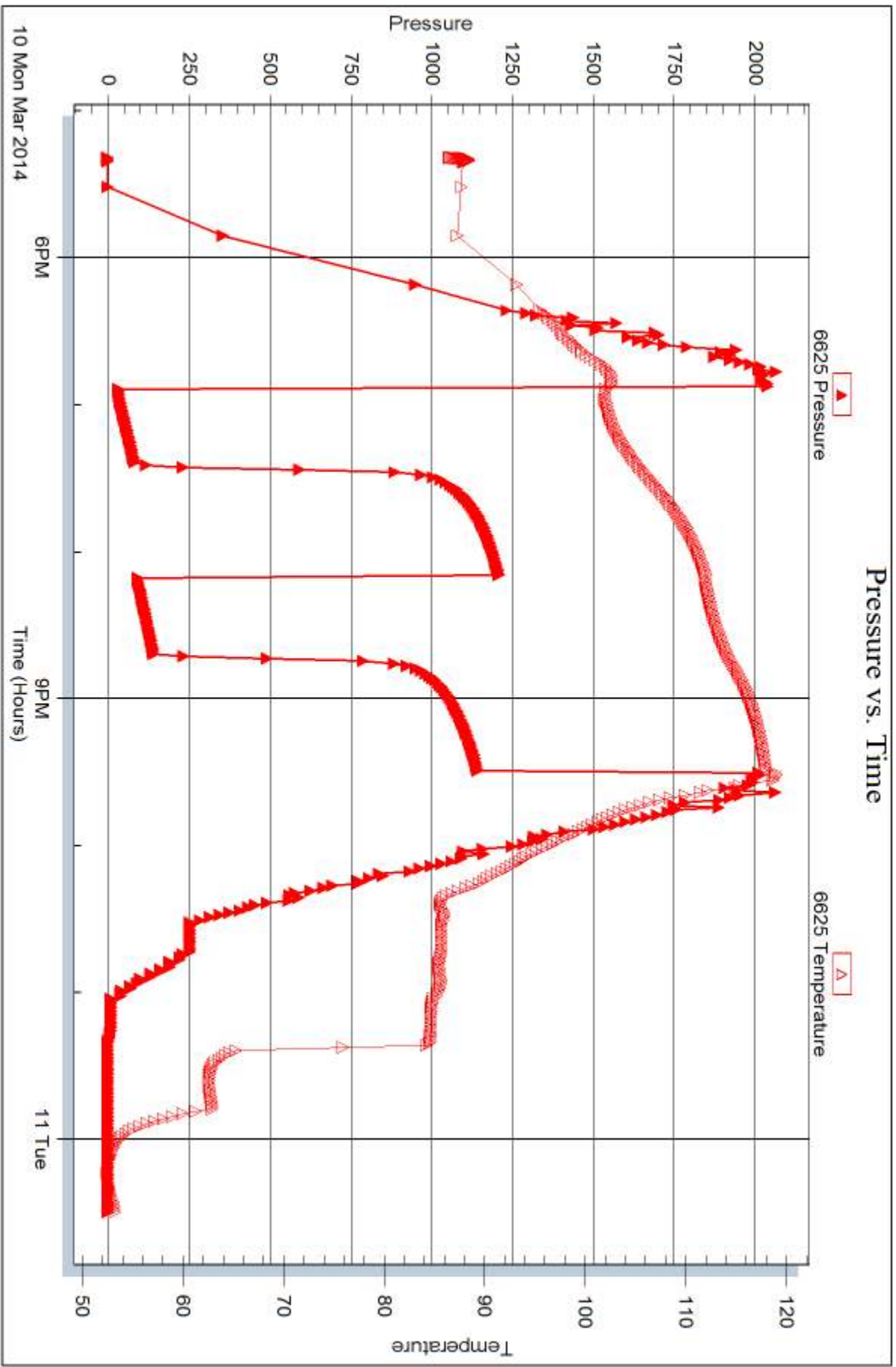


Serial #: 6625

Outside H&C Oil Company

Keith Ficken #17-3

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 56161

Printed: 2014.03.15 @ 11:15:11



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56158

Well Name & No. Keith Ficken #17-3 Test No. 1 Date 3-8-14
 Company H+C oil operating INC. Elevation 2,531 KB 2525 GL
 Address P.O. Box 86 Plainville, KS, 67663
 Co. Rep / Geo. Mark Downing / Charles R. Ramsey Rig American eggie Rig #2
 Location: Sec. 17 Twp. 9 S. Rge. 24 W. Co. Graham State KS.

Interval Tested 3,880 - 3,922 Zone Tested L.K.C. "C & D"
 Anchor Length 42' Drill Pipe Run 3840.00 Mud Wt. 8.9
 Top Packer Depth 3,875 Drill Collars Run 31.00 Vis 50
 Bottom Packer Depth 3,880 Wt. Pipe Run --- WL 6.0
 Total Depth 3922 Chlorides 1,200 ppm System LCM 2

Blow Description I.F. - 30 - 1/2 INT. Blow Built to (B.O.B. in 1 min.)
I.S.F. - 45 - B.O.B. in 17 Min.
E.F. - 30 - B.O.B. (1 min.)
E.S.F. - 45 - B.O.B. 7 min.

Rec	Feet of	%gas	%oil	%water	%mud
Rec	<u>2242' G.I.P.</u>	<u>100</u>			
Rec <u>45 min</u>	<u>6000 S, M, C, D</u>	<u>90</u>		<u>10</u>	
Rec <u>50 min</u>	<u>4500 M, C, D</u>	<u>88</u>		<u>12</u>	
Rec <u>60 min</u>	<u>3000 M, C, D</u>	<u>85</u>		<u>15</u>	
Rec <u>126'</u>	<u>H, M, C, D</u>	<u>70</u>		<u>30</u>	

Rec Total 1,560' BHT 116° Gravity 35.8^{60°} API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 1966 Test 1150 T-On Location 10:45:00
 (B) First Initial Flow 71 Jars --- T-Started 12:45:00
 (C) First Final Flow 353 Safety Joint --- T-Open 18:45:00
 (D) Initial Shut-In 987 Circ Sub Dropped Bar, 50 T-Pulled 20:23:00
 (E) Second Initial Flow 360 Hourly Standby --- T-Out 00:28:00
 (F) Second Final Flow 549 Mileage 118 R.t. 182.90 Comments (Dropped BAR)
 (G) Final Shut-In 945 Sampler --- (Write hrs. on New Shut-in test)
 (H) Final Hydrostatic 1914 Straddle --- "Thank-you"
 Ruined Shale Packer ---
 Shale Packer ---
 Ruined Packer ---
 Extra Packer ---
 Extra Copies ---
 Extra Recorder ---
 Day Standby ---
 Accessibility ---
 Sub Total 1382.90 Total 1382.90 MP/DST Disc't ---

Approved By _____ Our Representative Bob Thomas

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. **56159**

4/10

Well Name & No. Keith Ficken #17-3 Test No. 2 Date 3-9-14
 Company H+C oil operating INC. Elevation 2,531 KB 2,525 GL
 Address P.O. Box 86 Plainville KS. 67663
 Co. Rep / Geo. Mark Downing / Charles R. Ramsey Rig American Eagle Rig #2
 Location: Sec. 17 Twp. 9 S. Rge. 24 W. Co. Graham State KS.

Interval Tested 3918-3945 Zone Tested L.R.C. E-F
 Anchor Length 27' Drill Pipe Run 3,903 Mud Wt. 9.0
 Top Packer Depth 3913 Drill Collars Run 31.00' Vis 53
 Bottom Packer Depth 3918 Wt. Pipe Run --- WL 5.8
 Total Depth 3945 Chlorides 1,200 ppm System LCM 2

Blow Description I.F.-30 - 1/2 INT. Blow Built to (B.O.B. in 13 min.)
I.S.I.-45 - W.S.B.B. Built to 1/2" in 45 min.)
E.F.-30 - 1/2 INT. Blow Built to (B.O.B. in 13 min.)
F.S.I. 45 - No B.B.

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Clean oil</u>		<u>100</u>		
<u>189</u>	<u>S, O, C, H, W, C, M</u>	<u>10</u>	<u>40</u>	<u>50</u>	

Rec Total 219 BHT _____ Gravity 39.6 API RW .19 @ 70 ° F Chlorides 39,000 ppm

(A) Initial Hydrostatic 1,942 Test 1150 T-On Location 07:20:00
 (B) First Initial Flow 23 Jars _____ T-Started 08:00:00
 (C) First Final Flow 98 Safety Joint _____ T-Open 11:13:00
 (D) Initial Shut-In 770 Circ Sub _____ T-Pulled 13:43:00
 (E) Second Initial Flow 103 Hourly Standby _____ T-Out 15:20:00
 (F) Second Final Flow 152 Mileage 118 / R.T. 182.90 Comments _____
 (G) Final Shut-In 760 Sampler _____ "Thank-you"
 (H) Final Hydrostatic 1,931 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1382.90
 Final Shut-In 45 Accessibility _____ MP/DST Disc't _____
 Sub Total 1382.90

Approved By _____ Our Representative Bob Amos

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56160

Well Name & No. Keith Ficken # 17-3 Test No. 3 Date 3-10-14
 Company H+C Oil Operating INC. Elevation 2,531 KB 2,525 GL
 Address P.O. Box 86 Plainville KS. 67663
 Co. Rep / Geo. Mark Downing / Charles R. Ramsey Rig American Eagle Rig #2
 Location: Sec. 17 Twp. 9 S. Rge. 24 W. Co. Graham State KS.

Interval Tested 3976-4050 Zone Tested L.K.C. "H-J"
 Anchor Length 74' Drill Pipe Run 3934 Mud Wt. 9.0
 Top Packer Depth 3971 Drill Collars Run 31 Vis 52
 Bottom Packer Depth 3976 Wt. Pipe Run --- WL 5.8
 Total Depth 4050 Chlorides 1,200 ppm System LCM 2

Blow Description I.F. - 45 - 1/2" INT. Blow Built to (B.O.B. in 27 min)
I.S.I - 45 - W.S.B.B. @ 45 min.
E.F. - 45 - 1/2" INT. Blow Built to (B.O.B. in 23 min.)
E.S.I - 45

Rec	Feet of	%gas	%oil	%water	%mud
<u>350'</u>	<u>(G.I.P.) 252'</u>	<u>100</u>			
<u>40'</u>	<u>G, H, M, L, D</u>	<u>10</u>	<u>50</u>		<u>40</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

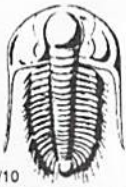
Rec Total 40' BHT 112 Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 1994 Test 1250 T-On Location 02:30:00
 (B) First Initial Flow 19 Jars --- T-Started 02:50:00
 (C) First Final Flow 36 Safety Joint --- T-Open 04:10:00
 (D) Initial Shut-In 648 Circ Sub --- T-Pulled 07:00:00
 (E) Second Initial Flow 35 Hourly Standby --- T-Out 09:12:30
 (F) Second Final Flow 53 Mileage 118 Rt. Comments ---
 (G) Final Shut-In 628 Sampler --- "Thank-you"
 (H) Final Hydrostatic 1951 Straddle --- Ruined Shale Packer ---
 Shale Packer --- Ruined Packer ---
 Extra Packer --- Extra Copies ---
 Extra Recorder --- Sub Total 0
 Day Standby --- Total 1432.90
 Accessibility --- MP/DST Disc't ---

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45
 Sub Total 1432.90

Approved By _____ Our Representative Bob Horn

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56161

Well Name & No. Keith Ficker #17-3 Test No. 4 Date 3-10-14
 Company H+C oil operating INC. Elevation 2,531 KB 2,525 GL
 Address P.O. Box 86 Plainville KS. 67663
 Co. Rep / Geo. Mark Downing / Charles R. Ramsey Rig American Eagle Rig #2
 Location: Sec. 17 Twp. 9-S. Rge. 24-W. Co. Graham State KS.

Interval Tested 4049-4090 Zone Tested L.K.C. "K+L"
 Anchor Length 41 Drill Pipe Run 4,031 Mud Wt. 9.0
 Top Packer Depth 4044 Drill Collars Run 31 Vis 52
 Bottom Packer Depth 4049 Wt. Pipe Run _____ WL 5.8
 Total Depth 4090 Chlorides 1,200 ppm System LCM 2

Blow Description I.F.-30-1/2 INT. Blow Built to (B.O.B. in 4 min)
I.S.I-45 W.S.B.B. started @ 4 min. Built to (B.O.B. in 18 min)
E.F.-30-(B.O.B. 1 min.)
E.S.I-45 W.S.B.B. Built to (B.O.B. in 20 min.)

Rec	Feet of	%gas	%oil	%water	%mud
	<u>819' G.I.P.</u>	<u>100</u>			
<u>558</u>	<u>clean oil</u>		<u>100</u>		

Rec Total 558 BHT 118 Gravity 34.6 API RW ✓ @ — °F Chlorides _____ ppm

(A) Initial Hydrostatic 2,040 Test 1250 T-On Location 17:00:00
 (B) First Initial Flow 25 Jars _____ T-Started 17:20:00
 (C) First Final Flow 84 Safety Joint _____ T-Open 18:54:00
 (D) Initial Shut-In 1,212 Circ Sub _____ T-Pulled 21:54:00
 (E) Second Initial Flow 92 Hourly Standby _____ T-Out 00:51:45
 (F) Second Final Flow 142 Mileage 118/R.T 182.90 Comments _____
 (G) Final Shut-In 1,147 Sampler _____ "thank you"
 (H) Final Hydrostatic 2,004 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1432.90
 Final Shut-In 45 Accessibility _____ MP/DST Disc't _____
 Sub Total 1432.90

Approved By _____ Our Representative Bob Adams

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