



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.06 @ 08:42:00

End Date: 2014.12.06 @ 16:02:00

Job Ticket #: 61042 DST #: 1

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

Printed: 2014.12.11 @ 16:31:51



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:33:30

Time Test Ended: 16:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3480.00 ft (KB) To 3526.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3480.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 122.48 psig @ 3481.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.06

End Date:

2014.12.06

Last Calib.:

2014.12.06

Start Time: 08:42:01

End Time:

16:02:00

Time On Btm:

2014.12.06 @ 10:30:30

Time Off Btm:

2014.12.06 @ 14:19:30

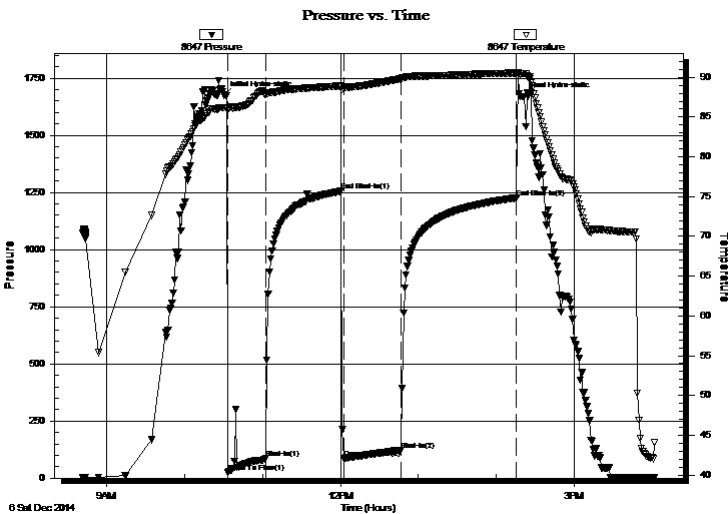
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 7 1/2"

60 - ISI - No Return

45 - FF - Blow built to 9 1/2"

90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.28	86.17	Initial Hydro-static
3	26.78	85.98	Open To Flow (1)
32	87.81	87.80	Shut-In(1)
90	1255.80	88.90	End Shut-In(1)
92	85.43	88.75	Open To Flow (2)
136	122.48	89.80	Shut-In(2)
225	1226.40	90.54	End Shut-In(2)
229	1669.84	90.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
182.00	MW 80%w, 20%m	1.45
50.00	100%m	0.70

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:33:30

Time Test Ended: 16:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3480.00 ft (KB) To 3526.00 ft (KB) (TVD)

Total Depth: 3480.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2201.00 ft (KB)

2196.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8372

Outside

Press@RunDepth: psig @ 3481.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.06

End Date:

2014.12.06

Last Calib.:

2014.12.06

Start Time: 08:42:01

End Time:

16:04:00

Time On Btm:

Time Off Btm:

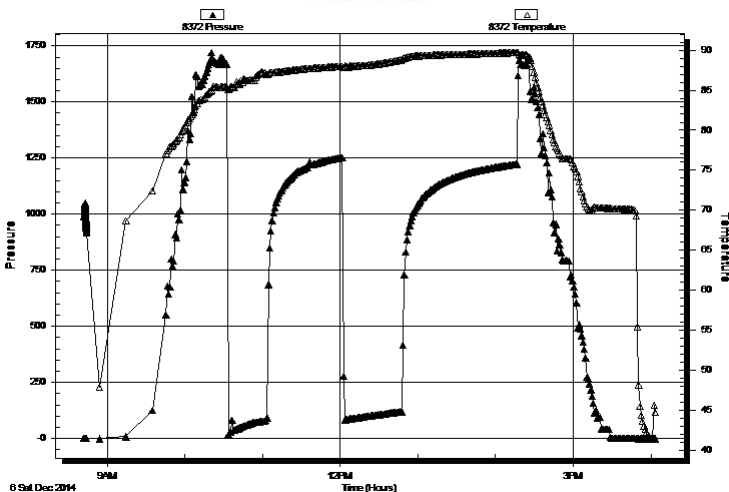
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 7 1/2"

60 - ISI - No Return

45 - FF - Blow built to 9 1/2"

90 - FSI - No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
182.00	MW 80%w, 20%m	1.45
50.00	100%m	0.70

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

Tool Information

Drill Pipe:	Length: 3371.00 ft	Diameter: 3.80 inches	Volume: 47.29 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3480.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	66.00 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			3465.00	
Hydraulic tool	5.00			3470.00	
Packer	5.00			3475.00	20.00 Bottom Of Top Packer
Packer	5.00			3480.00	
Stubb	1.00			3481.00	
Recorder	0.00	8647	Inside	3481.00	
Recorder	0.00	8372	Outside	3481.00	
Perforations	9.00			3490.00	
Change Over Sub	1.00			3491.00	
Drill Pipe	31.00			3522.00	
Change Over Sub	1.00			3523.00	
Bullnose	3.00			3526.00	46.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61042

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.06 @ 08:42:00

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: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
182.00	MW 80%w , 20%m	1.451
50.00	100%m	0.701

Total Length: 232.00 ft Total Volume: 2.152 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .299 @ 42.3F Chlorides 42000ppm

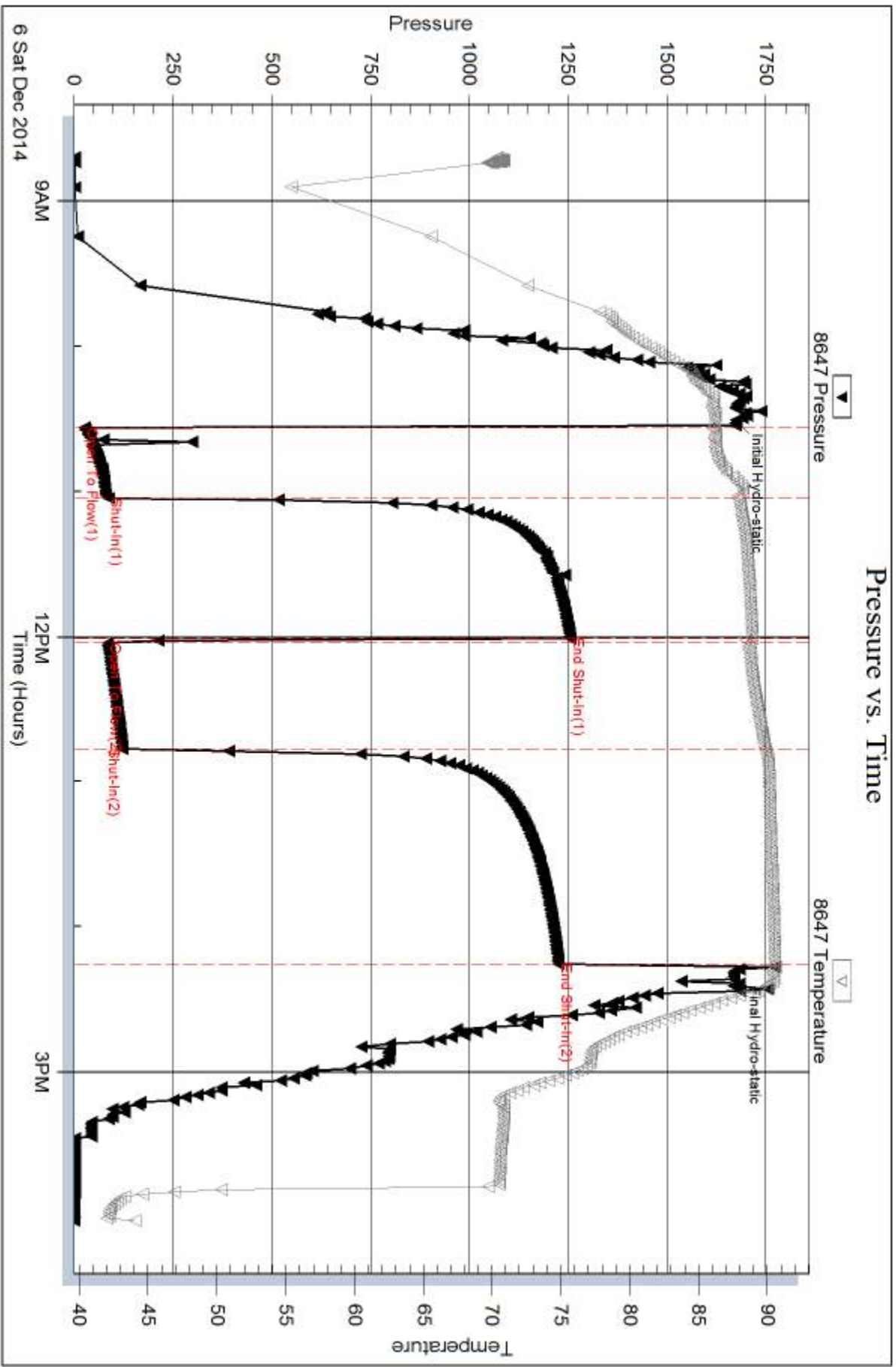
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 1

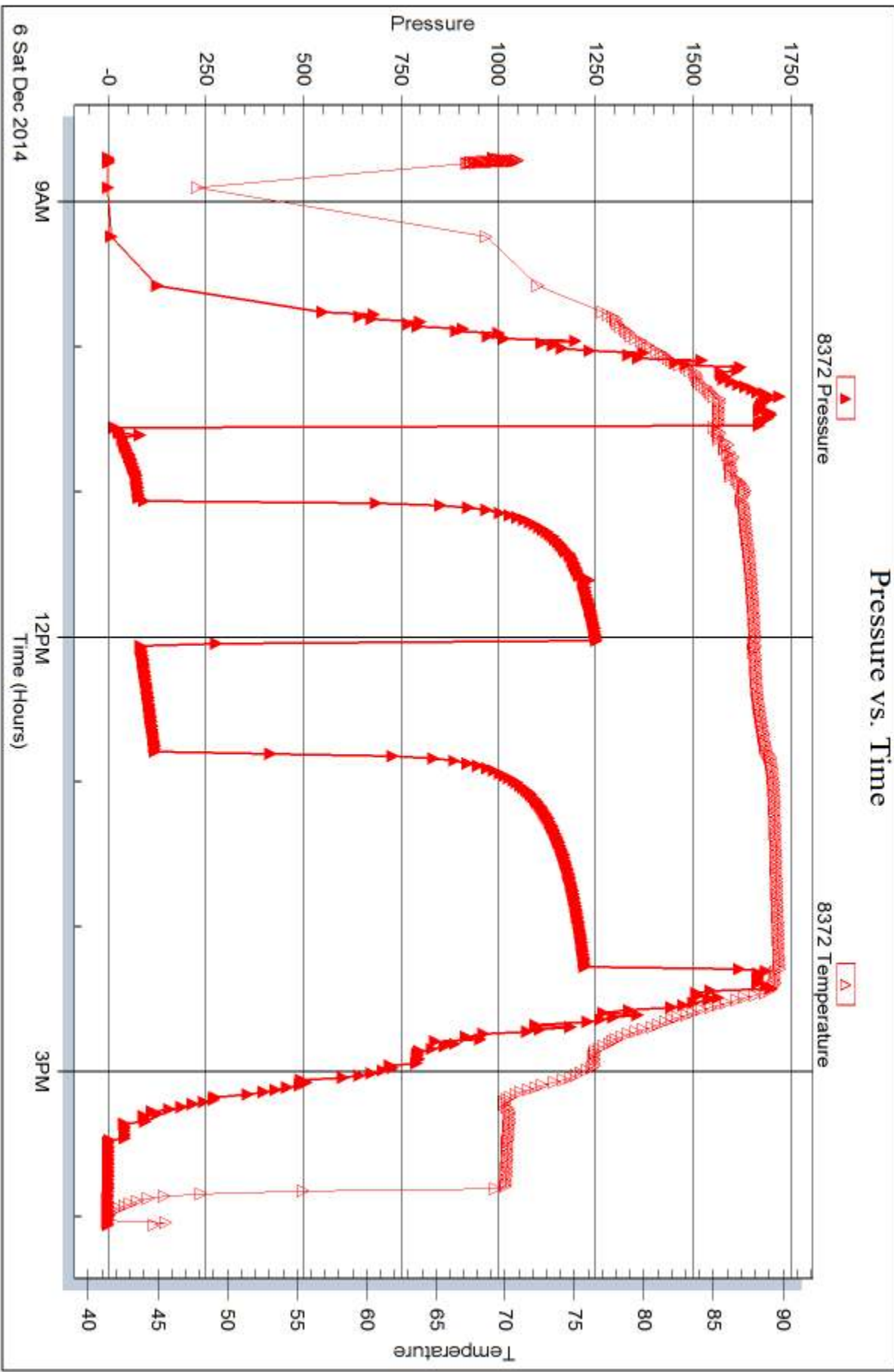


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 61042

Printed: 2014.12.11 @ 16:31:52



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.07 @ 09:22:00

End Date: 2014.12.07 @ 15:39:00

Job Ticket #: 61043 DST #: 2

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

Printed: 2014.12.11 @ 16:31:28



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

GENERAL INFORMATION:

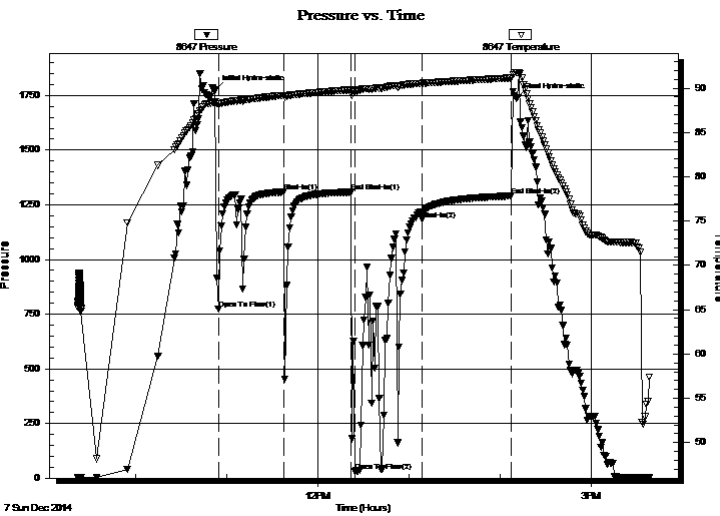
Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:54:30
 Time Test Ended: 15:39:00
 Interval: **3622.00 ft (KB) To 3662.00 ft (KB) (TVD)**
 Total Depth: 3662.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1183.01 psig @ 3623.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07
 Start Time: 09:22:01 End Time: 15:39:00 Time On Btm: 2014.12.07 @ 10:52:30
 Time Off Btm: 2014.12.07 @ 14:11:30

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1/2" then died back to surface
 45 - ISI - No Return
 45 - FF - No Blow
 60 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1775.88	88.41	Initial Hydro-static
2	773.13	88.20	Open To Flow (1)
45	1308.37	89.19	Shut-In(1)
89	1307.53	89.82	End Shut-In(1)
92	32.28	89.56	Open To Flow (2)
136	1183.01	90.53	Shut-In(2)
195	1290.12	91.16	End Shut-In(2)
199	1738.71	91.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

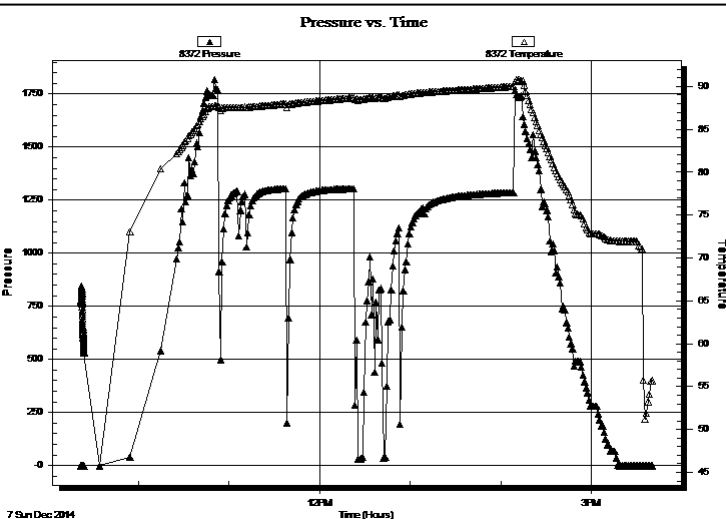
Test Start: 2014.12.07 @ 09:22:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 10:54:30
 Time Test Ended: 15:39:00
 Interval: **3622.00 ft (KB) To 3662.00 ft (KB) (TVD)**
 Total Depth: 3662.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2201.00 ft (KB)
 2196.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8372 Outside
 Press@RunDepth: psig @ 3623.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.07 End Date: 2014.12.07 Last Calib.: 2014.12.07
 Start Time: 09:22:01 End Time: 15:40:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1/2" then died back to surface
 45 - ISI - No Return
 45 - FF - No Blow
 60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

Tool Information

Drill Pipe:	Length: 3497.00 ft	Diameter: 3.80 inches	Volume: 49.05 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3622.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 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			3607.00	
Hydraulic tool	5.00			3612.00	
Packer	5.00			3617.00	20.00 Bottom Of Top Packer
Packer	5.00			3622.00	
Stubb	1.00			3623.00	
Recorder	0.00	8647	Inside	3623.00	
Recorder	0.00	8372	Outside	3623.00	
Perforations	2.00			3625.00	
Change Over Sub	1.00			3626.00	
Drill Pipe	32.00			3658.00	
Change Over Sub	1.00			3659.00	
Bullnose	3.00			3662.00	40.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61043

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.07 @ 09:22:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 51.00 sec/qt

Cushion Volume: bbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

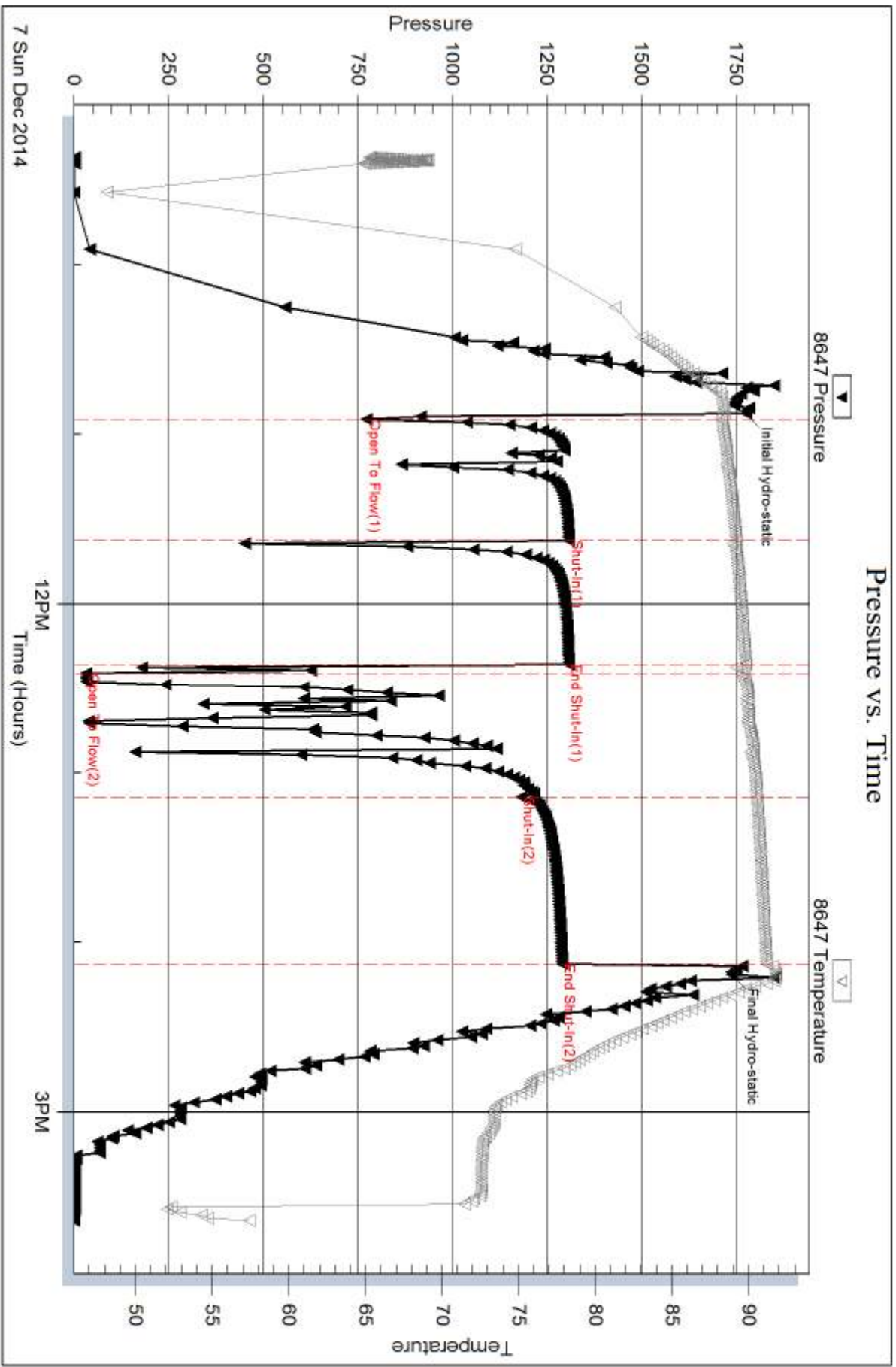
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 61043

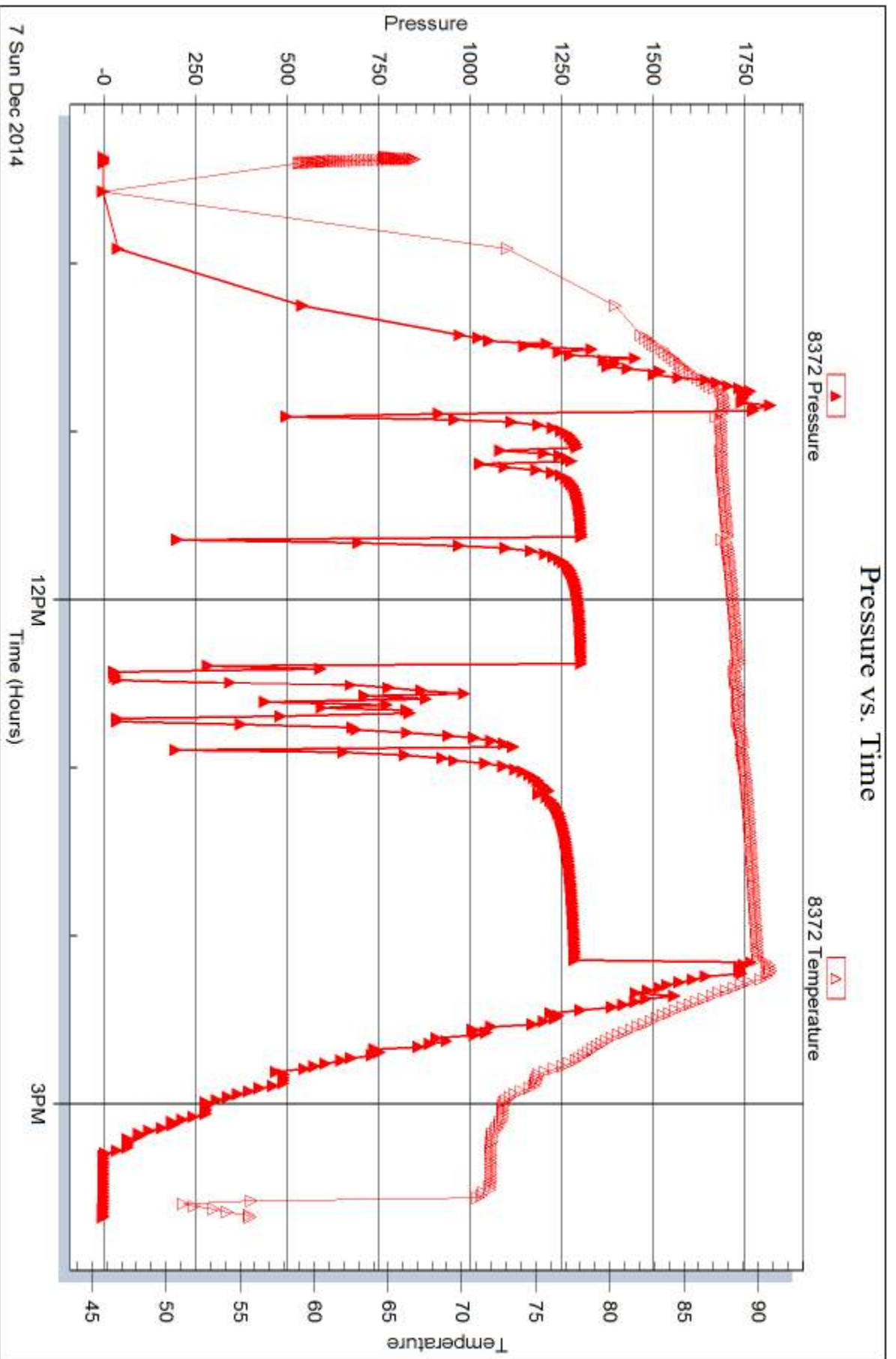
Printed: 2014.12.11 @ 16:31:29

Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 61043

Printed: 2014.12.11 @ 16:31:29



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.08 @ 08:32:00

End Date: 2014.12.08 @ 15:06:00

Job Ticket #: 61044 DST #: 3

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

Printed: 2014.12.11 @ 16:30:59



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1301.86 psig @ 3611.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date:

2014.12.08

Last Calib.:

2014.12.08

Start Time: 08:32:01

End Time:

15:06:00

Time On Btm:

2014.12.08 @ 10:40:30

Time Off Btm:

2014.12.08 @ 13:48:30

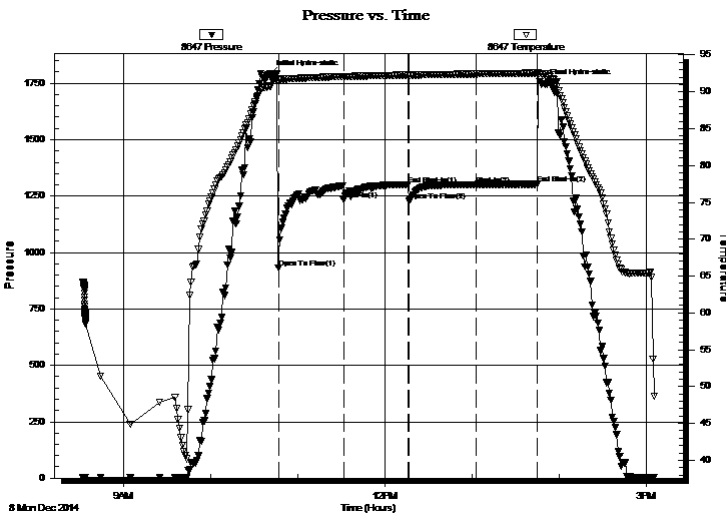
TEST COMMENT: 45 - IF - Opened w/ surface blow, went straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1790.55	90.76	Initial Hydro-static
6	930.16	91.69	Open To Flow (1)
51	1234.09	92.07	Shut-In(1)
95	1299.16	92.29	End Shut-In(1)
96	1228.33	92.25	Open To Flow (2)
142	1301.86	92.43	Shut-In(2)
184	1302.99	92.55	End Shut-In(2)
188	1747.59	92.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Straddle (Initial)

Time Tool Opened: 10:46:30

Tester: Brandon Quintana

Time Test Ended: 15:06:00

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inchesHole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3611.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08 End Date: 2014.12.08

Last Calib.: 2014.12.08

Start Time: 08:32:01 End Time: 15:07:30

Time On Btm:

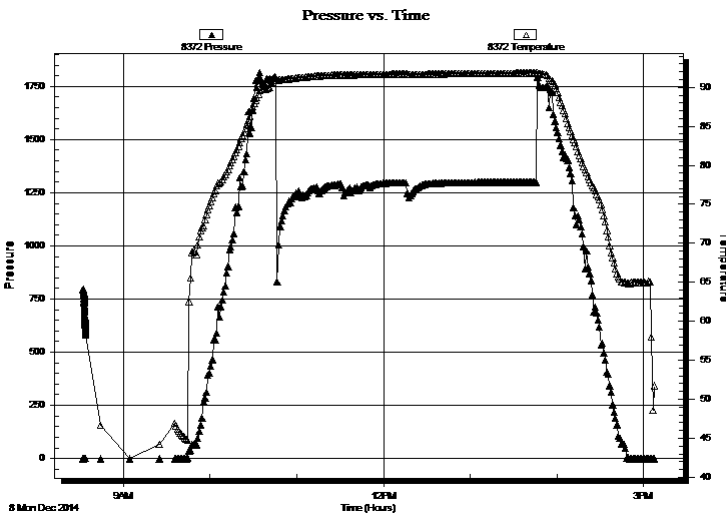
Time Off Btm:

TEST COMMENT: 45- IF - Opened w/ surface blow , w ent straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:46:30

Time Test Ended: 15:06:00

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3610.00 ft (KB) To 3655.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3631.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date: 2014.12.08

Last Calib.: 2014.12.08

Start Time: 08:32:01

End Time: 15:47:30

Time On Btm:

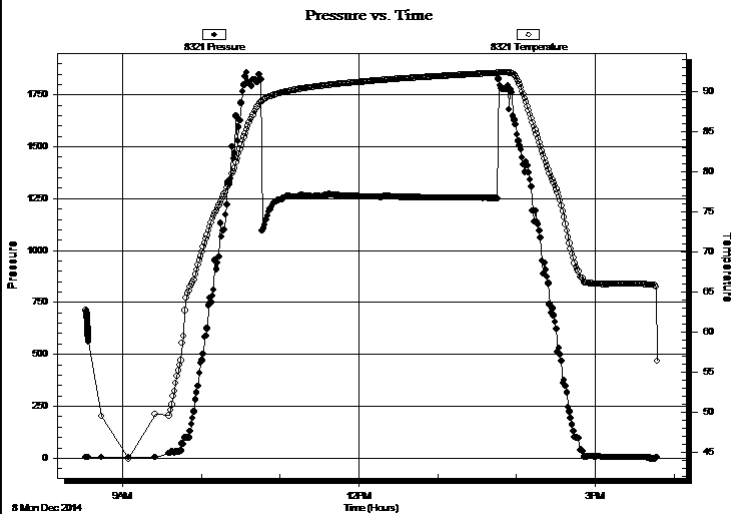
Time Off Btm:

TEST COMMENT: 45- IF - Opened w/ surface blow , w ent straight to 2", died back to 1 1/2"

45 - ISI - No Return

45 - FF - No Blow

45 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

Tool Information

Drill Pipe:	Length: 3497.00 ft	Diameter: 3.80 inches	Volume: 49.05 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
				String Weight: Initial	39000.00 lb
Drill Pipe Above KB:	28.00 ft			Final	39000.00 lb
Depth to Top Packer:	3610.00 ft				
Depth to Bottom Packer:	3738.00 ft				
Interval between Packers:	128.00 ft				
Tool Length:	148.00 ft				
Number of Packers:	3	Diameter: 6.75 inches			
Tool Comments:					

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

Shut In Tool	5.00			3595.00	
Hydraulic tool	5.00			3600.00	
Packer	5.00			3605.00	20.00 Bottom Of Top Packer
Packer	5.00			3610.00	
Stubb	1.00			3611.00	
Recorder	0.00	8647	Inside	3611.00	
Recorder	0.00	8372	Outside	3611.00	
Perforations	12.00			3623.00	
Blank Off Sub	1.00			3624.00	
Packer - Shale	5.00			3629.00	
Stubb	1.00			3630.00	
Change Over Sub	1.00			3631.00	
Recorder	0.00	8321	Below	3631.00	
Drill Pipe	94.00			3725.00	
Change Over Sub	1.00			3726.00	
Perforations	9.00			3735.00	
Bullnose	3.00			3738.00	128.00 Bottom Packers & Anchor
Total Tool Length:	148.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61044

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 08:32:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	100% mud	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

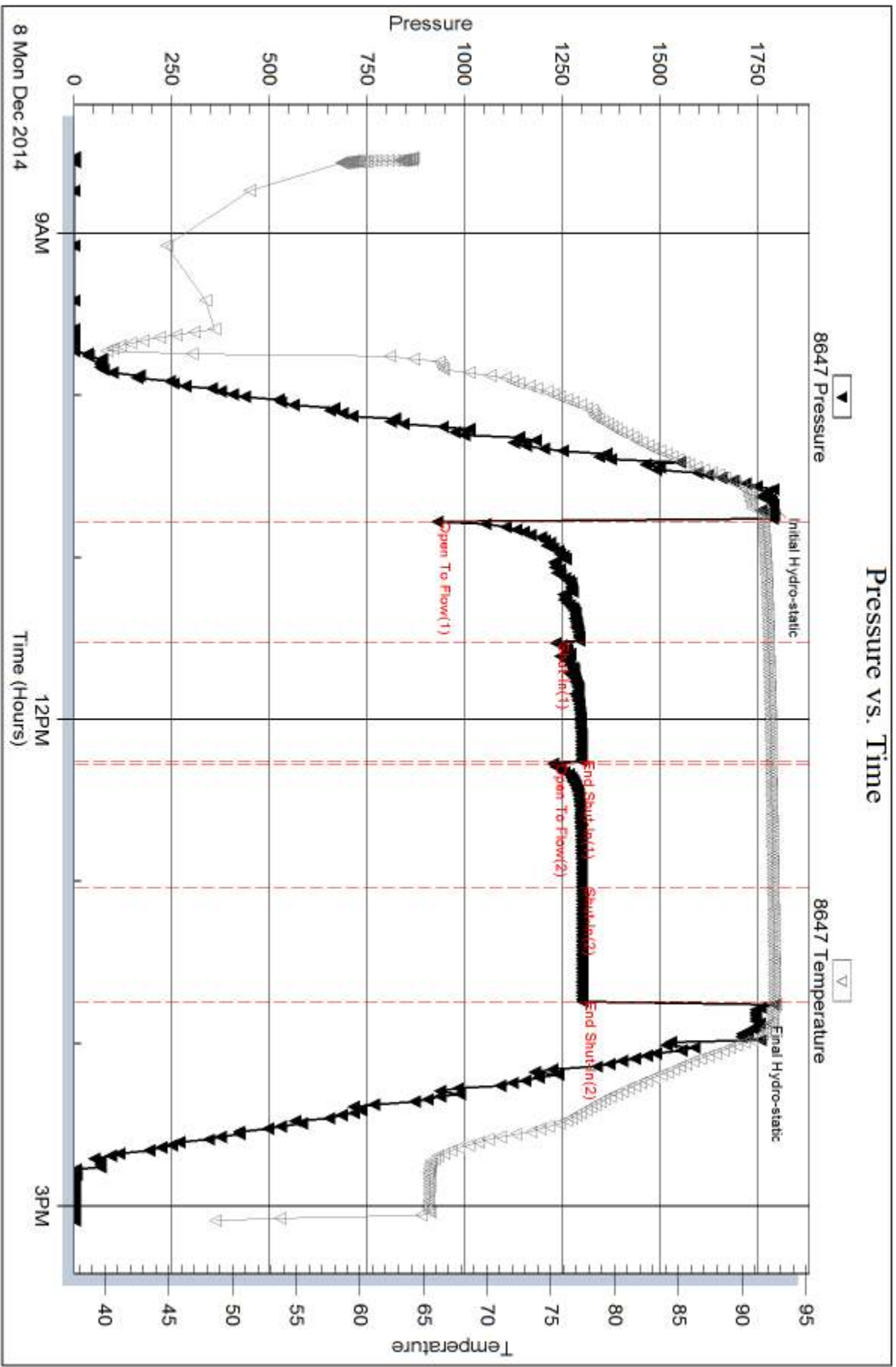
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

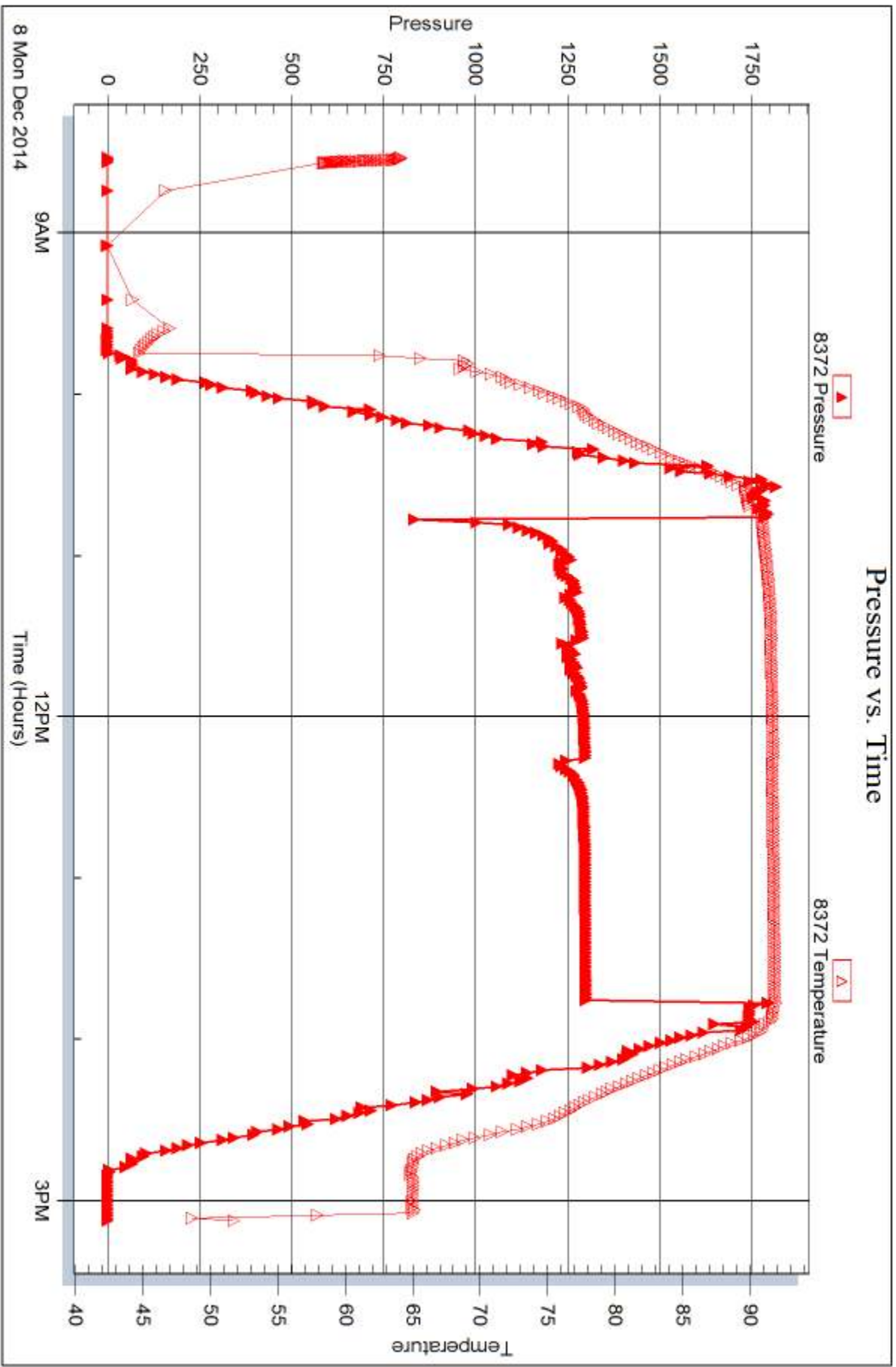


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

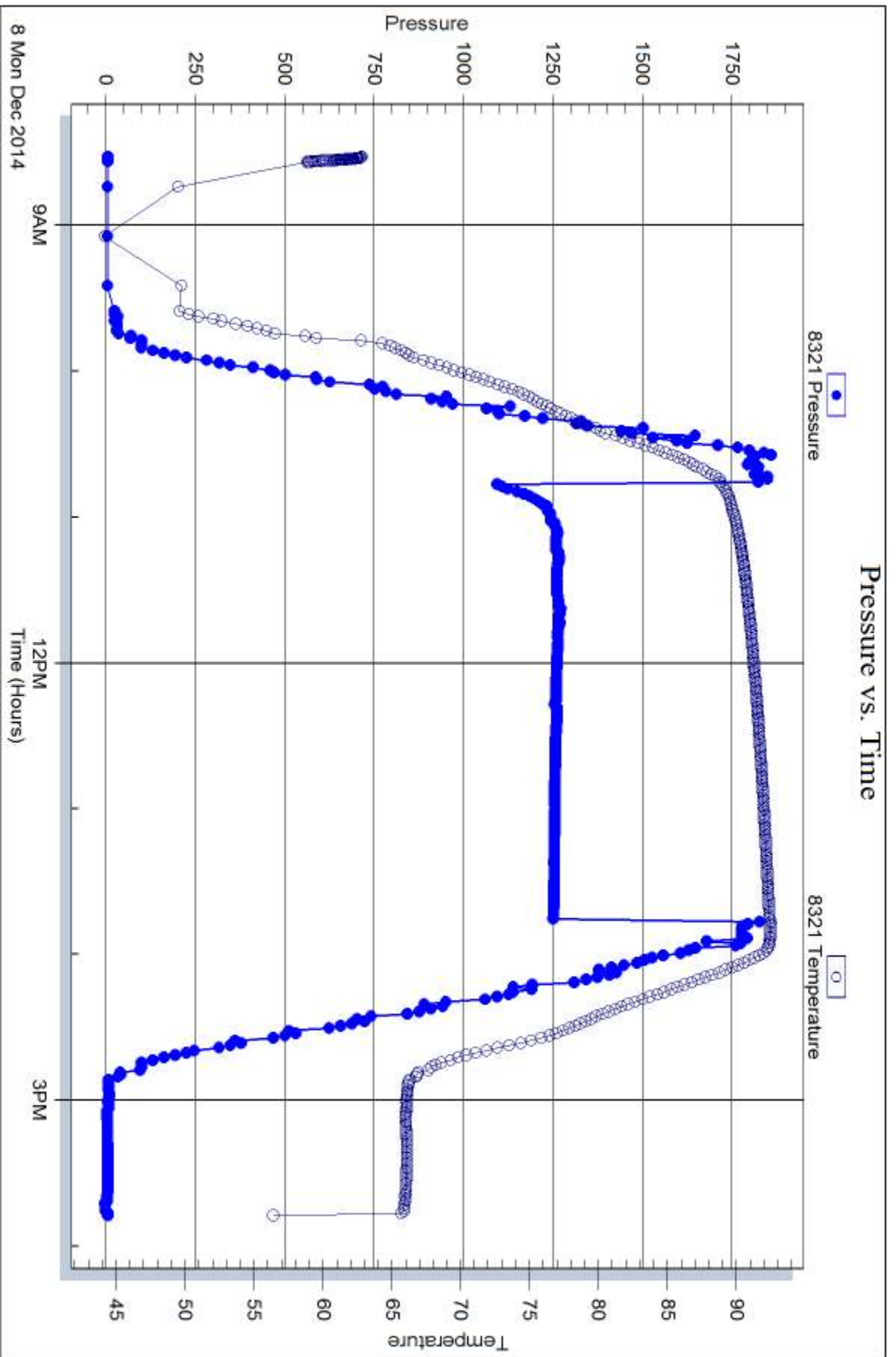
DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 61044

Printed: 2014.12.11 @ 16:31:01





DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.08 @ 16:59:00

End Date: 2014.12.08 @ 23:12:30

Job Ticket #: 61045 DST #: 4

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

Printed: 2014.12.11 @ 16:30:29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3420.00 ft (KB) To 3480.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 1271.39 psig @ 3421.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.08

End Date:

2014.12.08

Last Calib.:

2014.12.08

Start Time: 16:59:01

End Time:

23:12:30

Time On Btm:

2014.12.08 @ 18:50:30

Time Off Btm:

2014.12.08 @ 21:33:30

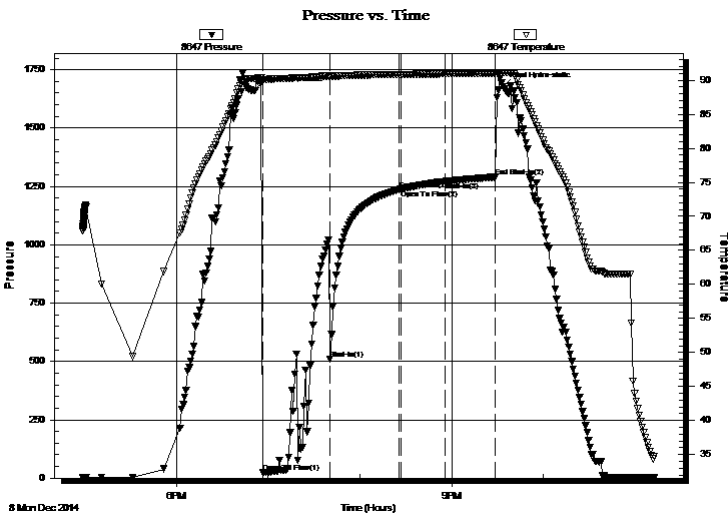
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1661.89	90.25	Initial Hydro-static
6	23.50	90.06	Open To Flow (1)
50	508.89	90.52	Shut-In(1)
95	1235.58	90.85	End Shut-In(1)
96	1237.50	90.85	Open To Flow (2)
125	1271.39	90.94	Shut-In(2)
158	1289.96	91.02	End Shut-In(2)
163	1679.74	91.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3420.00 ft (KB) To 3480.00 ft (KB) (TVD)

Total Depth: 3769.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2201.00 ft (KB)

2196.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3421.00 ft (KB)

Start Date: 2014.12.08

End Date:

2014.12.08

Start Time: 16:59:01

End Time:

23:13:30

Capacity: 8000.00 psig

Last Calib.:

2014.12.08

Time On Btm:

Time Off Btm:

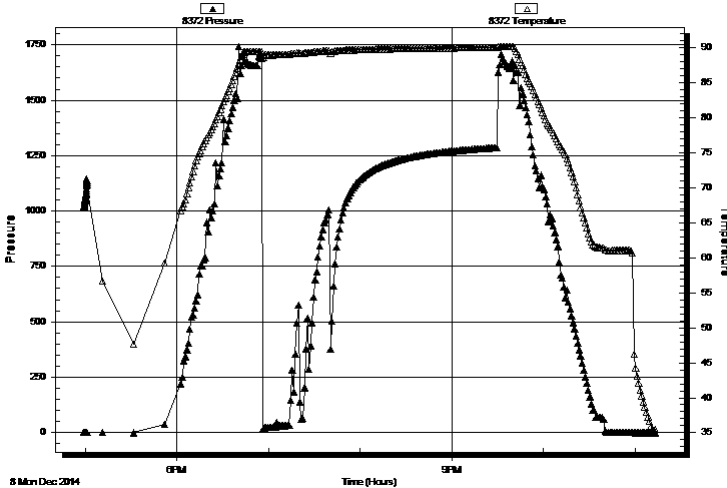
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

GENERAL INFORMATION:

Formation: **Toronto & "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:56:30

Time Test Ended: 23:12:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3420.00 ft (KB) To 3480.00 ft (KB) (TVD)

Total Depth: 3769.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2201.00 ft (KB)

2196.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3488.00 ft (KB)

Start Date: 2014.12.08 End Date: 2014.12.08

Start Time: 16:59:01 End Time: 23:12:30

Capacity: 8000.00 psig

Last Calib.: 2014.12.08

Time On Btm:

Time Off Btm:

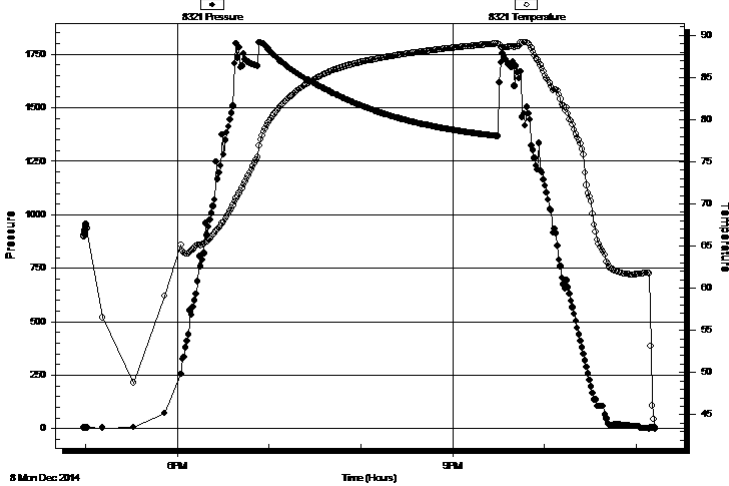
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 1"

45 - ISI - No Return

30 - FF - No Blow

30 - FSI - No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	100% mud	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

Tool Information

Drill Pipe:	Length: 3312.00 ft	Diameter: 3.80 inches	Volume: 46.46 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	39000.00 lb
Depth to Top Packer:	3420.00 ft			Final	39000.00 lb
Depth to Bottom Packer:	3777.00 ft				
Interval between Packers:	357.00 ft				
Tool Length:	377.00 ft				
Number of Packers:	3	Diameter: 6.75 inches			
Tool Comments:					

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

Shut In Tool	5.00			3405.00	
Hydraulic tool	5.00			3410.00	
Packer	5.00			3415.00	20.00 Bottom Of Top Packer
Packer	5.00			3420.00	
Stubb	1.00			3421.00	
Recorder	0.00	8647	Inside	3421.00	
Recorder	0.00	8372	Outside	3421.00	
Perforations	5.00			3426.00	
Change Over Sub	1.00			3427.00	
Drill Pipe	32.00			3459.00	
Change Over Sub	1.00			3460.00	
Perforations	20.00			3480.00	
Blank Off Sub	1.00			3481.00	
Packer - Shale	5.00			3486.00	
Stubb	1.00			3487.00	
Change Over Sub	1.00			3488.00	
Recorder	0.00	8321	Below	3488.00	
Drill Pipe	286.00			3774.00	
Bullnose	3.00			3777.00	357.00 Bottom Packers & Anchor

Total Tool Length: 377.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61045

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.08 @ 16:59:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 51.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	100% mud	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

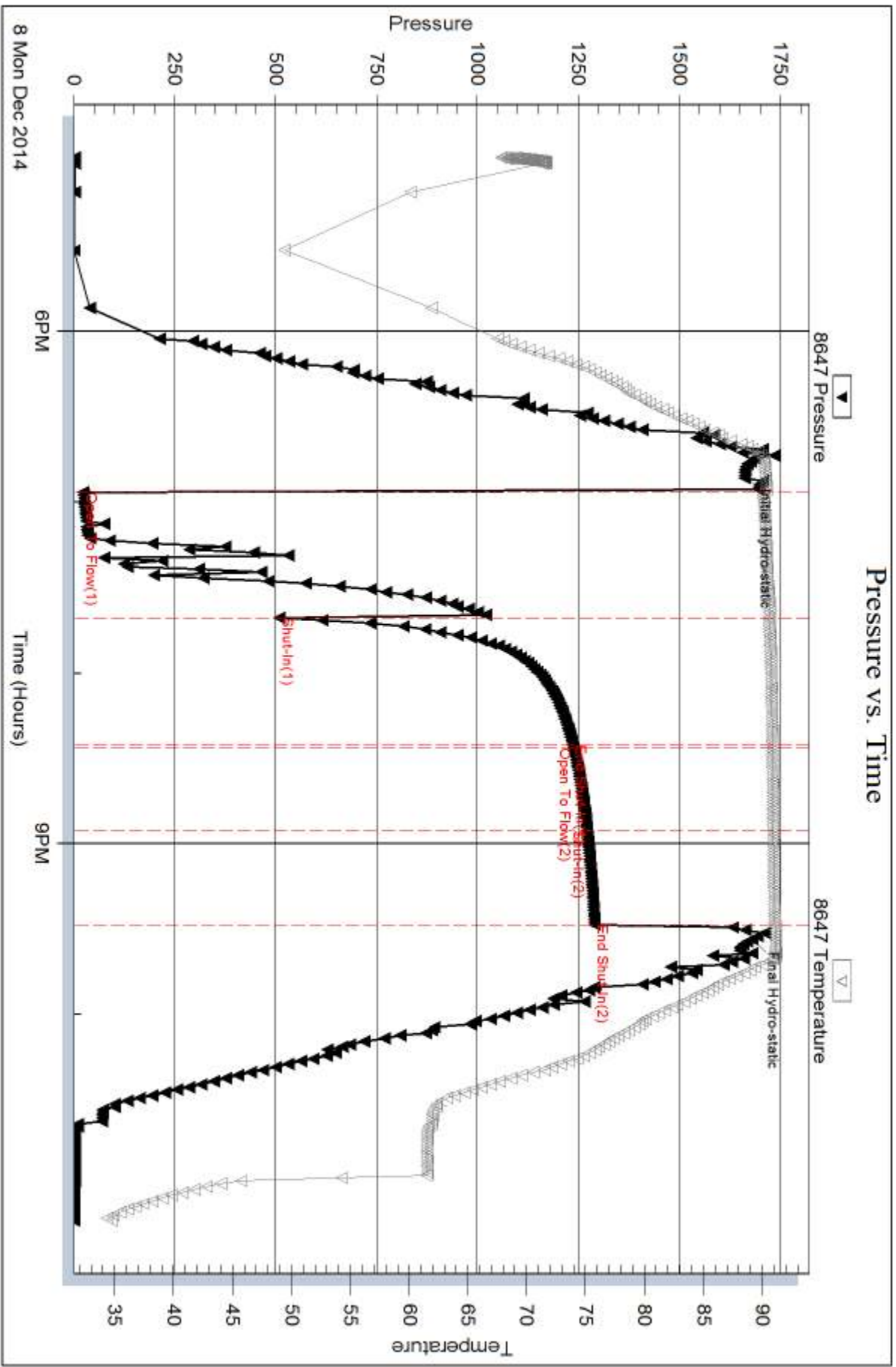
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 4

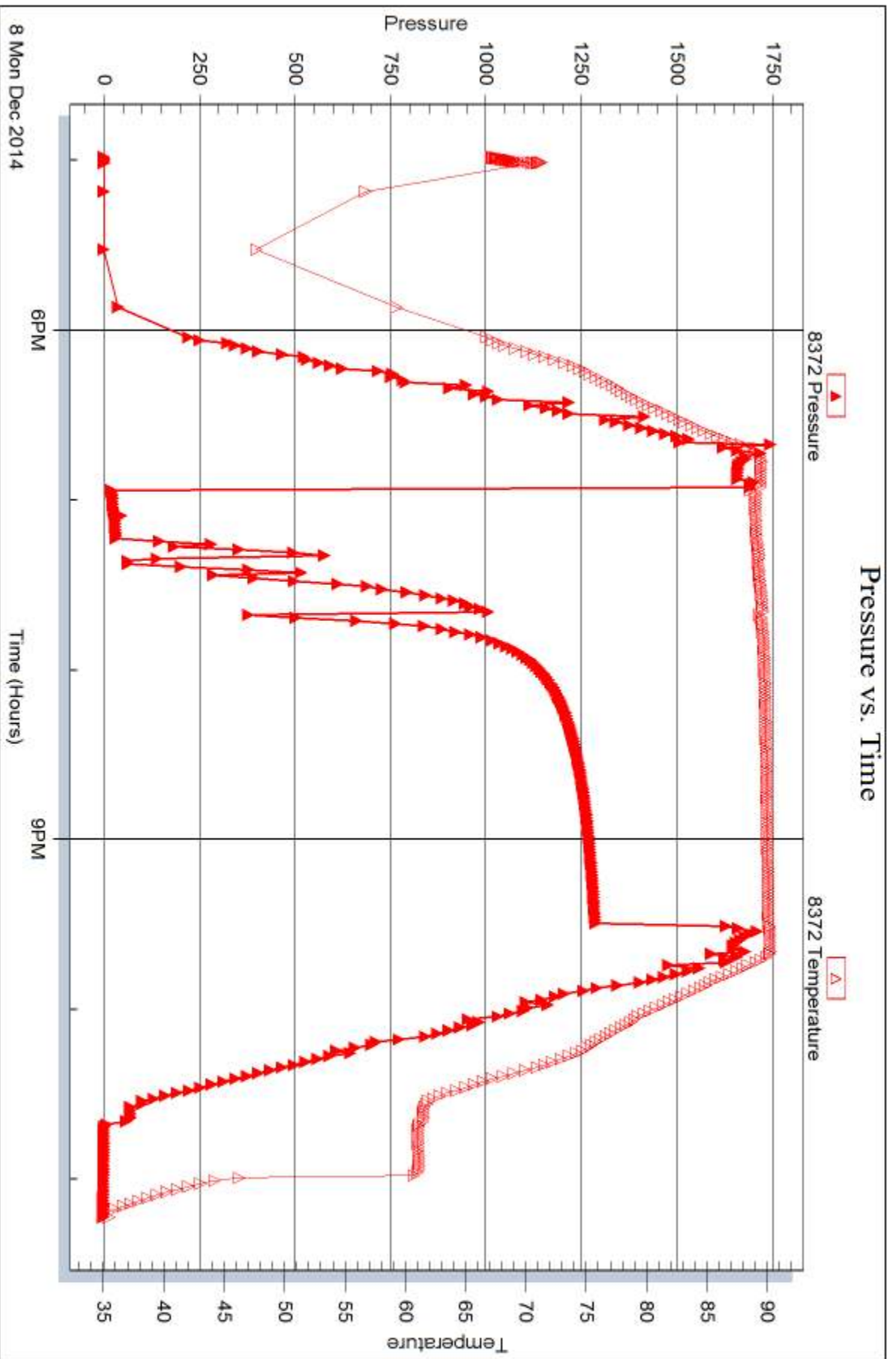


Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 61045

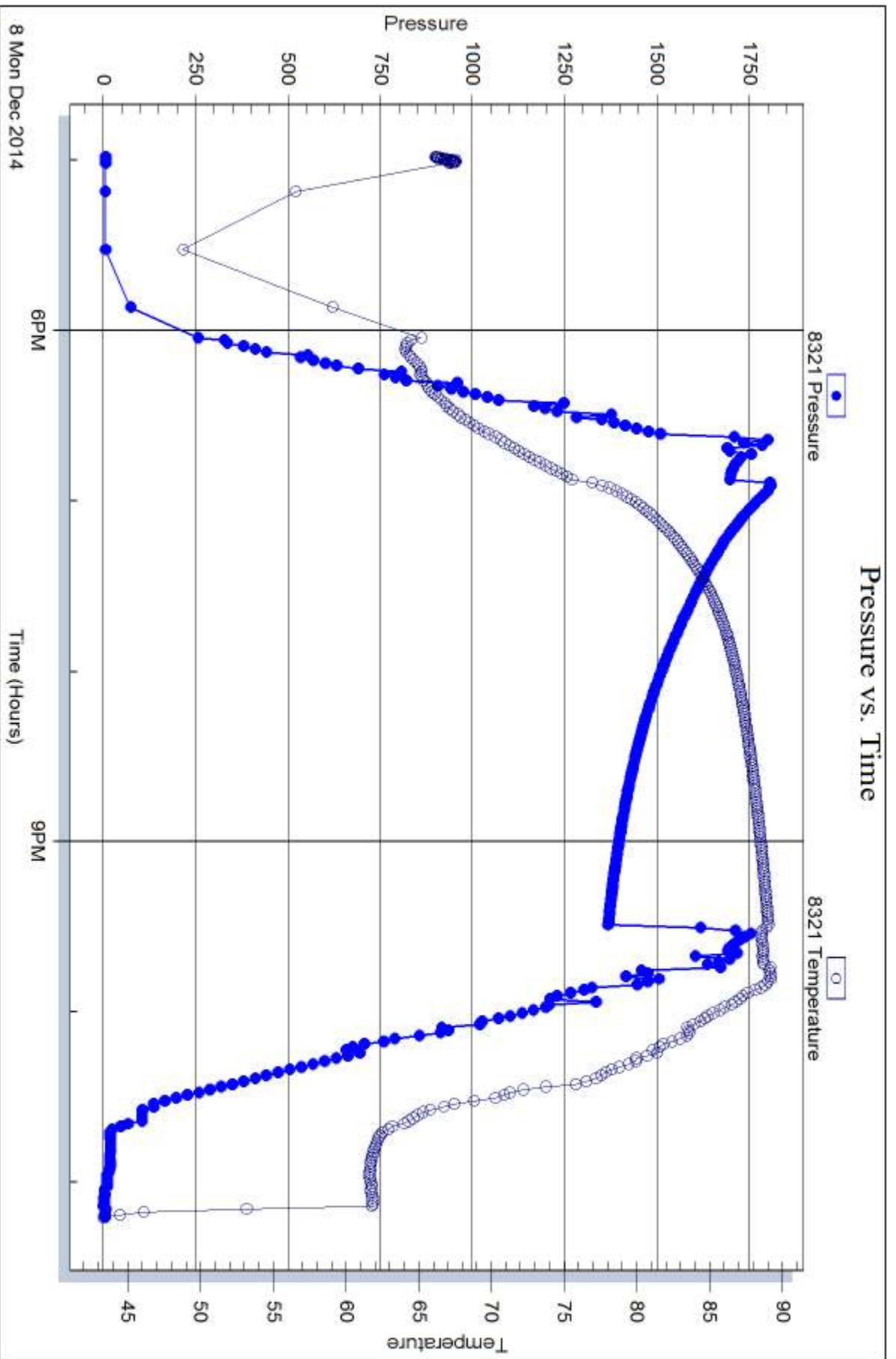
Printed: 2014.12.11 @ 16:30:31

Serial #: 8321

Below (Stratfield) Diamond Oil Inc.

Logan NW #1

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 61045

Printed: 2014.12.11 @ 16:30:31



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.09 @ 00:00:00

End Date:

Job Ticket #: 61046

DST #: 5

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

Printed: 2014.12.11 @ 16:29:47



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3627.00 ft (KB) To 3657.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: psig @ 3628.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date:

2014.12.09

Last Calib.:

2014.12.09

Start Time: 04:37:01

End Time:

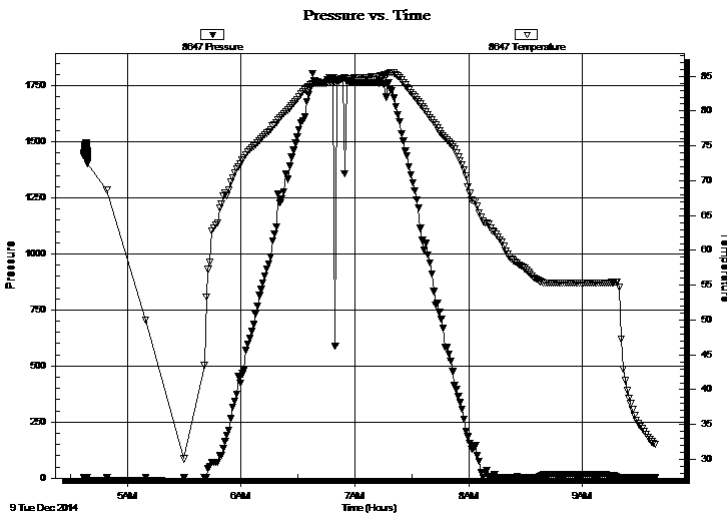
09:38:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3627.00 ft (KB) To 3657.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3628.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date:

2014.12.09

Last Calib.:

2014.12.09

Start Time: 04:37:01

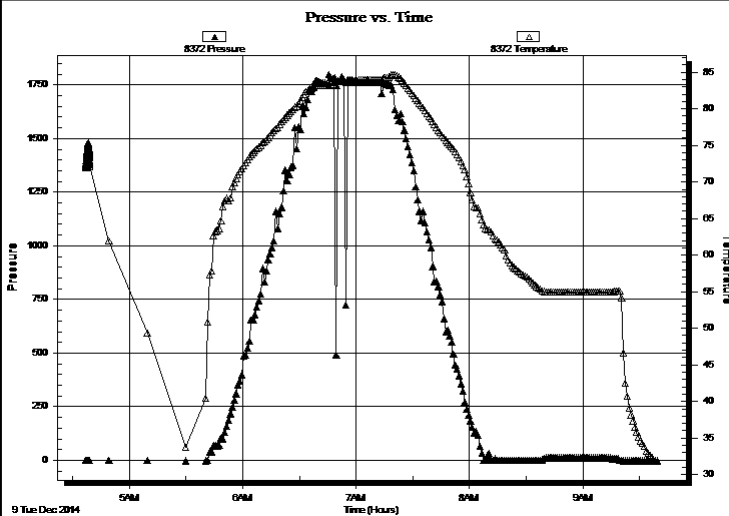
End Time:

09:40:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3627.00 ft (KB) To 3657.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3665.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09 End Date: 2014.12.09

Last Calib.: 2014.12.09

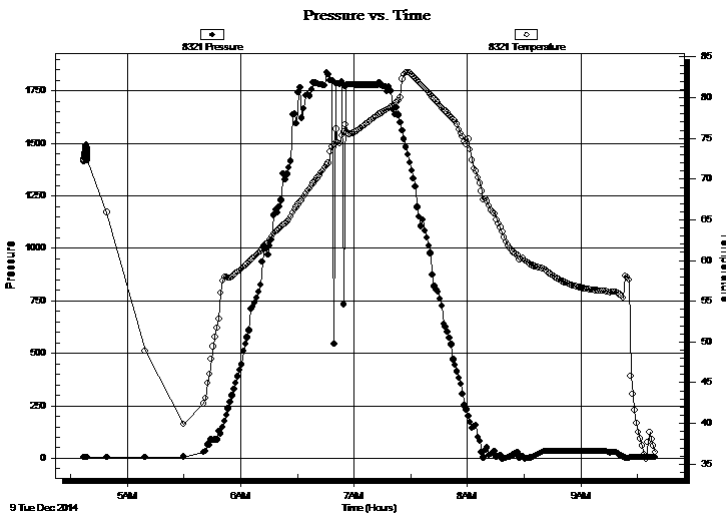
Start Time: 04:37:01 End Time: 09:40:00

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF -
30 - ISI - MISRUN
30 - FF - PACKER FAILURE
30 - FSI -

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
308.00	100%Mud	3.22

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

Tool Information

Drill Pipe:	Length: 3502.00 ft	Diameter: 3.80 inches	Volume: 49.12 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3627.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3772.00 ft			
Interval between Packers:	145.00 ft			
Tool Length:	165.00 ft			
Number of Packers:	3	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			3612.00	
Hydraulic tool	5.00			3617.00	
Packer	5.00			3622.00	20.00 Bottom Of Top Packer
Packer	5.00			3627.00	
Stubb	1.00			3628.00	
Recorder	0.00	8647	Inside	3628.00	
Recorder	0.00	8372	Outside	3628.00	
Perforations	30.00			3658.00	
Blank Off Sub	1.00			3659.00	
Packer - Shale	5.00			3664.00	
Stubb	1.00			3665.00	
Recorder	0.00	8321	Below	3665.00	
Change Over Sub	1.00			3666.00	
Blank Spacing	94.00			3760.00	
Change Over Sub	1.00			3761.00	
Perforations	8.00			3769.00	
Bullnose	3.00			3772.00	145.00 Bottom Packers & Anchor
Total Tool Length:	165.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61046

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 00:00:00

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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
308.00	100%Mud	3.218

Total Length: 308.00 ft Total Volume: 3.218 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

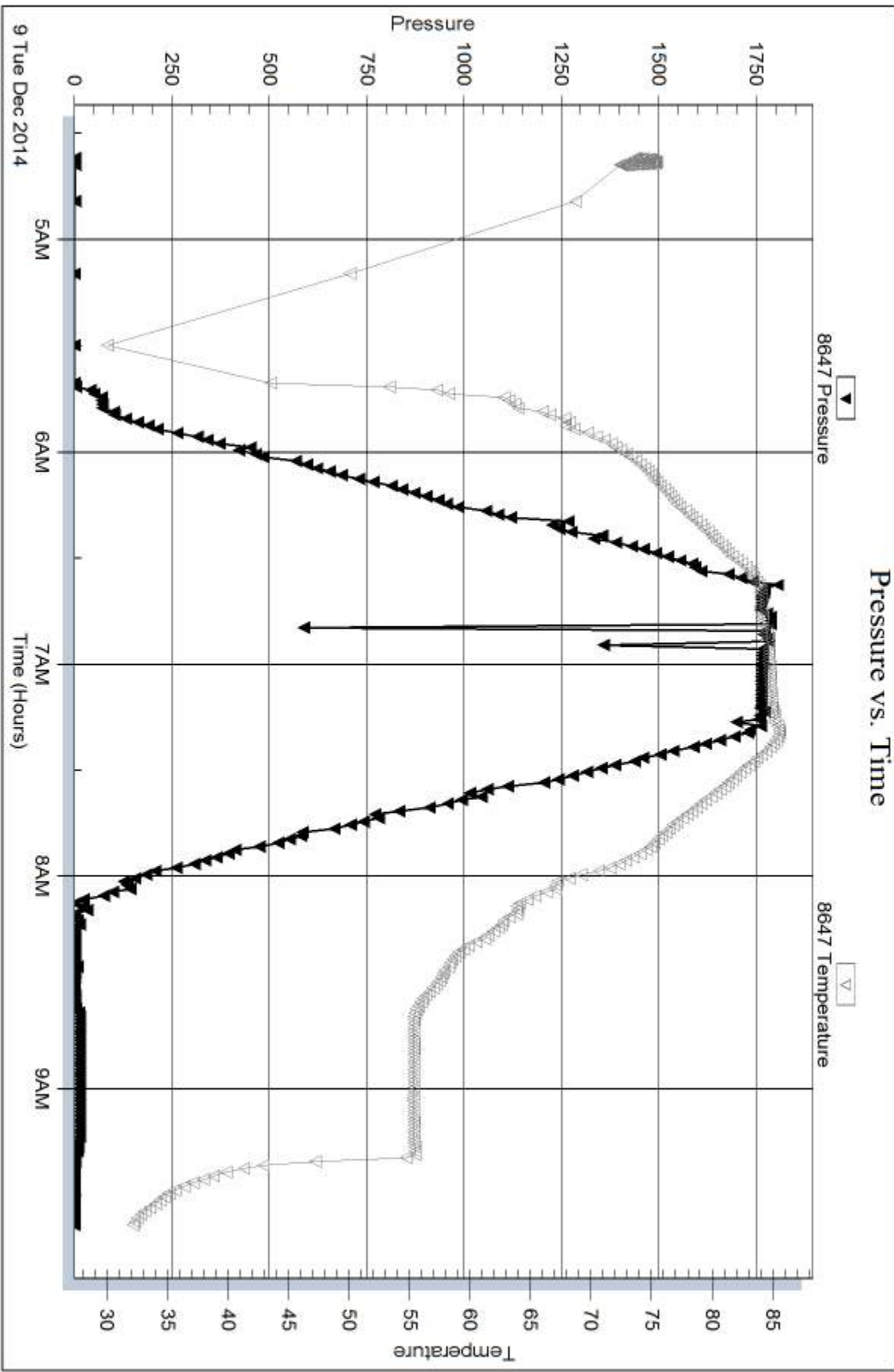
Serial #: 8647

Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 61046

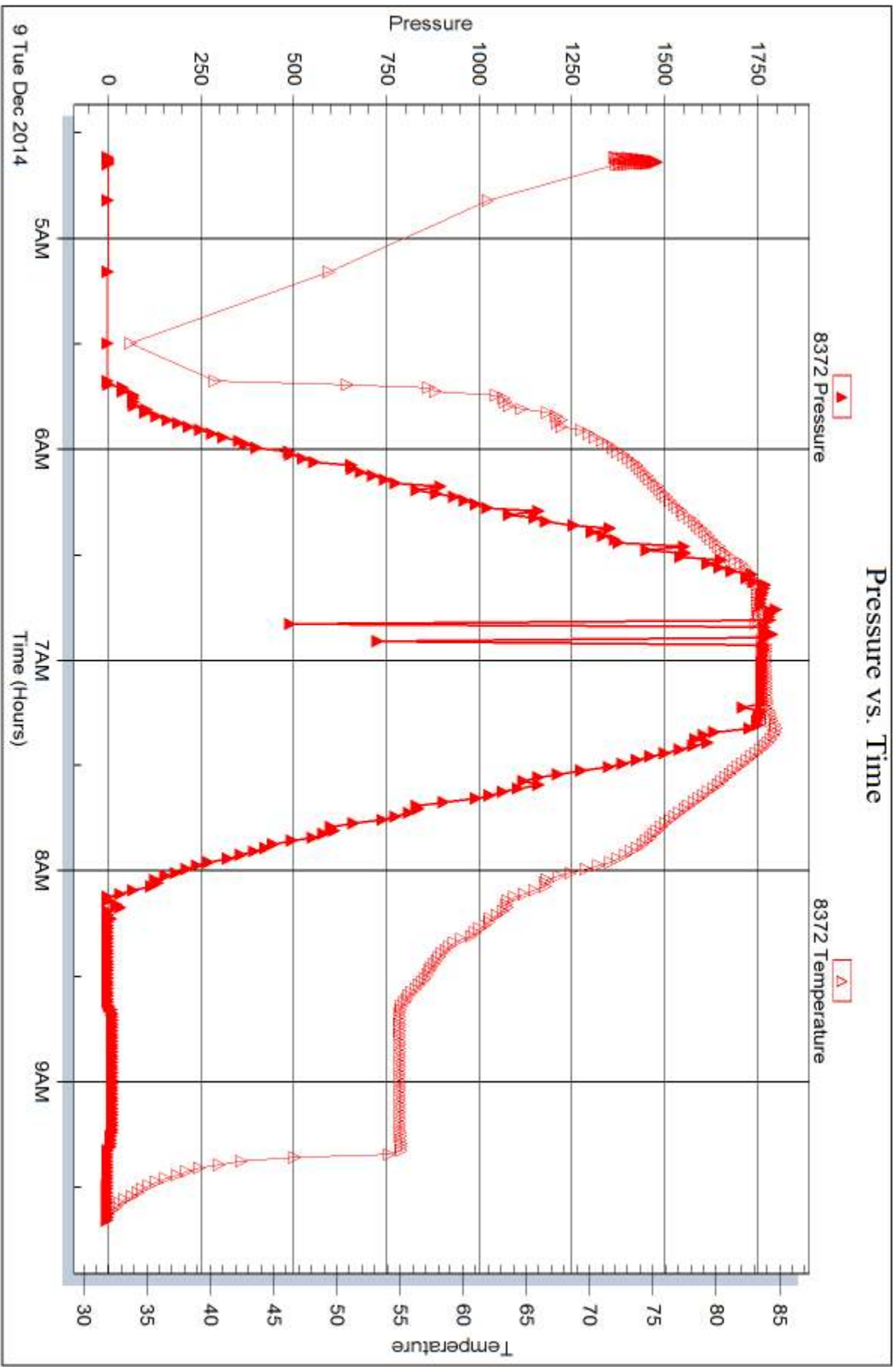
Printed: 2014, 12, 11 @ 16:29:48

Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

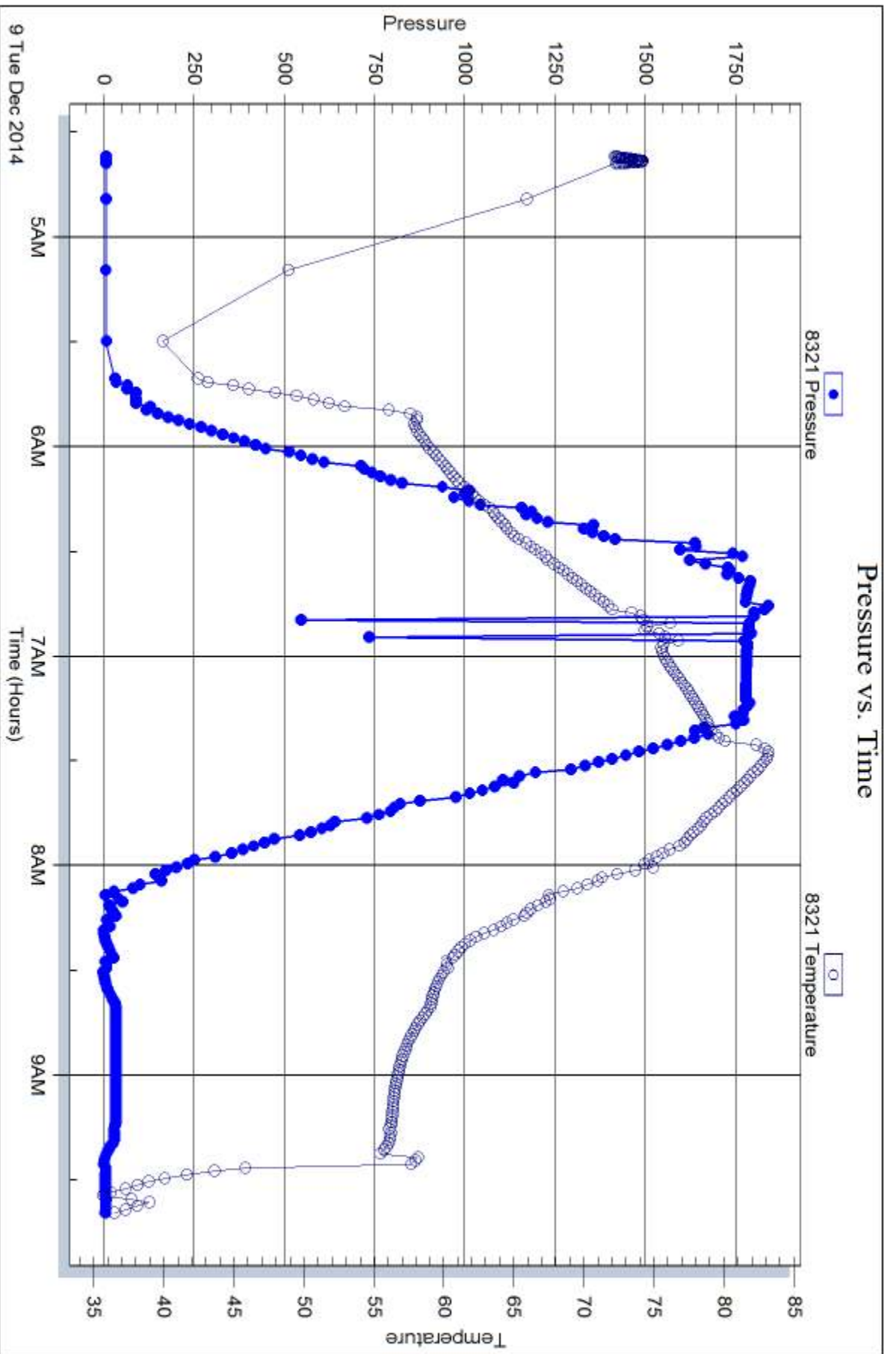
DST Test Number: 5



Triobite Testing, Inc

Ref. No: 61046

Printed: 2014, 12, 11 @ 16:29:48





DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil Inc.**

PO Box 641
Hays, KS 67601

ATTN: Jeff Lawler

Logan NW #1

24-3s-21w Norton,KS

Start Date: 2014.12.09 @ 10:24:00

End Date: 2014.12.09 @ 17:15:30

Job Ticket #: 61047 DST #: 6

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

Printed: 2014.12.11 @ 16:28:54



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:03:30

Time Test Ended: 17:15:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 3622.00 ft (KB) To 3644.00 ft (KB) (TVD)

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8647

Inside

Press@RunDepth: 84.17 psig @ 3633.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09

End Date:

2014.12.09

Last Calib.:

2014.12.09

Start Time: 10:24:01

End Time:

17:15:30

Time On Btm:

2014.12.09 @ 12:02:30

Time Off Btm:

2014.12.09 @ 15:37:30

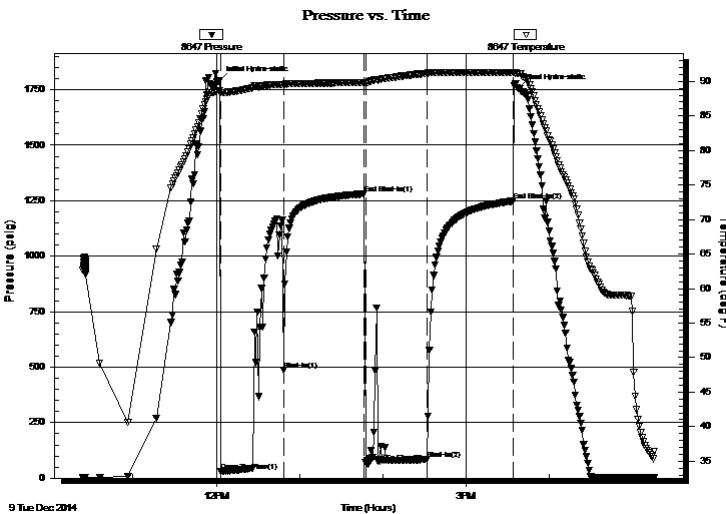
TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"

60 - ISI - No Return

45 - FF - Blow built to 2 1/4"

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1791.72	88.65	Initial Hydro-static
1	30.40	88.37	Open To Flow (1)
46	485.04	89.48	Shut-In(1)
104	1280.86	89.85	End Shut-In(1)
105	71.53	89.72	Open To Flow (2)
149	84.17	91.15	Shut-In(2)
211	1247.93	91.27	End Shut-In(2)
215	1755.13	91.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

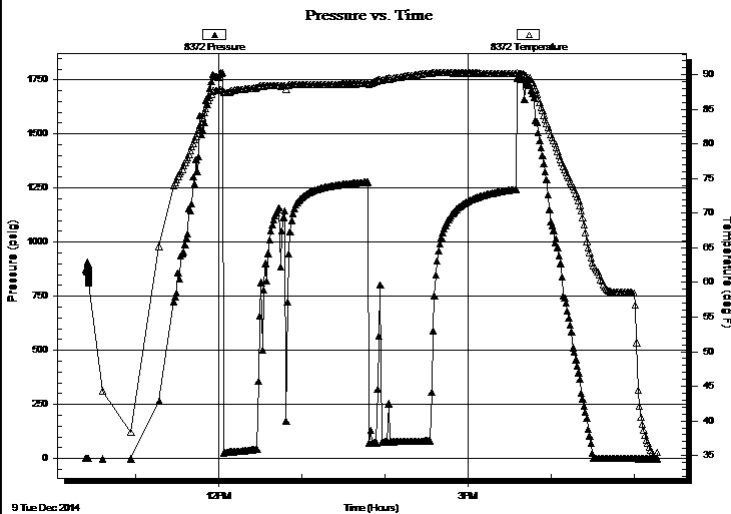
Test Start: 2014.12.09 @ 10:24:00

GENERAL INFORMATION:

Formation: LKC "J-K"			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Straddle (Initial)	
Time Tool Opened: 12:03:30		Tester: Brandon Quintana	
Time Test Ended: 17:15:30		Unit No: 57	
Interval: 3622.00 ft (KB) To 3644.00 ft (KB) (TVD)		Reference Elevations: 2201.00 ft (KB)	
Total Depth: 3769.00 ft (KB) (TVD)		2196.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 5.00 ft	

Serial #: 8372	Outside		
Press@RunDepth: psig @ 3633.00 ft (KB)		Capacity: 8000.00 psig	
Start Date: 2014.12.09	End Date: 2014.12.09	Last Calib.: 2014.12.09	
Start Time: 10:24:01	End Time: 17:17:00	Time On Btm:	
		Time Off Btm:	

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"
60 - ISI - No Return
45 - FF - Blow built to 2 1/4"
60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



DRILL STEM TEST REPORT

Black Diamond Oil Inc.

24-3s-21w Norton, KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

GENERAL INFORMATION:

Formation: **LKC "J-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:03:30

Time Test Ended: 17:15:30

Test Type: Conventional Straddle (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: **3622.00 ft (KB) To 3644.00 ft (KB) (TVD)**

Reference Elevations: 2201.00 ft (KB)

Total Depth: 3769.00 ft (KB) (TVD)

2196.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8321 Below (Straddle)

Press@RunDepth: psig @ 3666.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.09 End Date: 2014.12.09

Last Calib.: 2014.12.09

Start Time: 10:24:01 End Time: 17:15:30

Time On Btm:

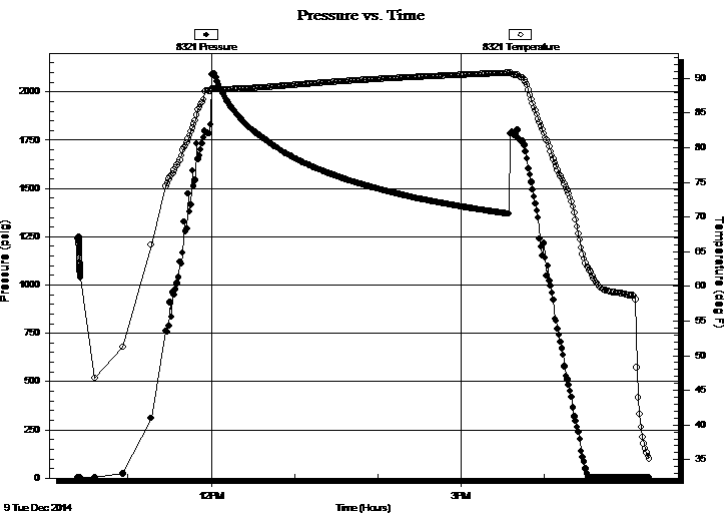
Time Off Btm:

TEST COMMENT: 45 - IF - Opened w/ surface blow , built to 3 1/2"

60 - ISI - No Return

45 - FF - Blow built to 2 1/4"

60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
70.00	100% mud	0.34

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

Tool Information

Drill Pipe:	Length: 3498.00 ft	Diameter: 3.80 inches	Volume: 49.07 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 39000.00 lb
Depth to Top Packer:	3622.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	3771.00 ft			
Interval between Packers:	149.00 ft			
Tool Length:	169.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3607.00	
Hydraulic tool	5.00			3612.00	
Packer	5.00			3617.00	20.00 Bottom Of Top Packer
Packer	5.00			3622.00	
Stubb	1.00			3623.00	
Perforations	10.00			3633.00	
Recorder	0.00	8647	Inside	3633.00	
Recorder	0.00	8372	Outside	3633.00	
Perforations	12.00			3645.00	
Blank Off Sub	1.00			3646.00	
Packer - Shale	5.00			3651.00	
Stubb	1.00			3652.00	
Perforations	13.00			3665.00	
Change Over Sub	1.00			3666.00	
Recorder	0.00	8321	Below	3666.00	
Drill Pipe	94.00			3760.00	
Change Over Sub	1.00			3761.00	
Perforations	7.00			3768.00	
Bullnose	3.00			3771.00	149.00 Bottom Packers & Anchor

Total Tool Length: 169.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil Inc.

24-3s-21w Norton,KS

PO Box 641
Hays, KS 67601

Logan NW #1

Job Ticket: 61047

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.09 @ 10:24:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	100% mud	0.344

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8647

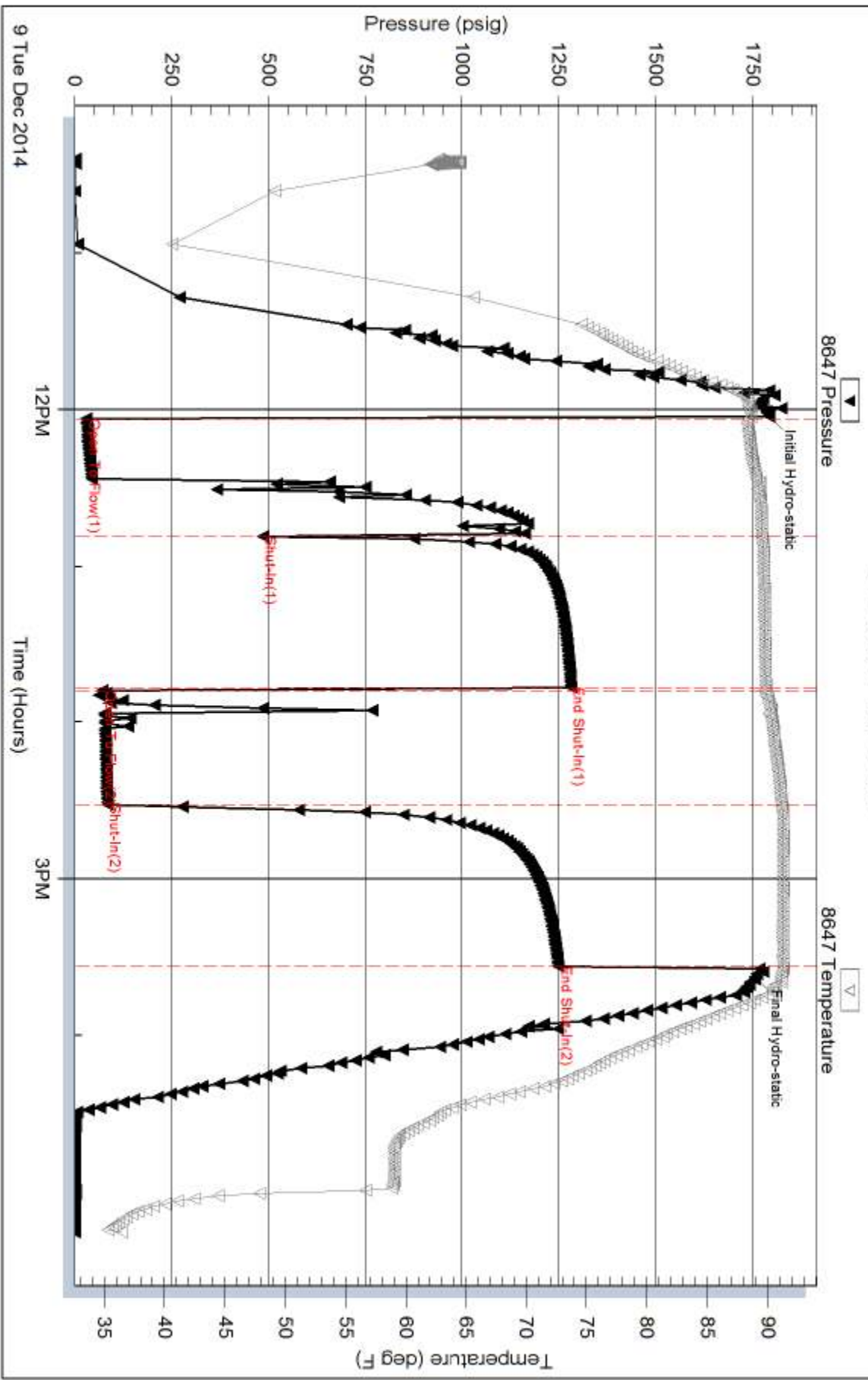
Inside

Black Diamond Oil Inc.

Logan NW #1

DST Test Number: 6

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 61047

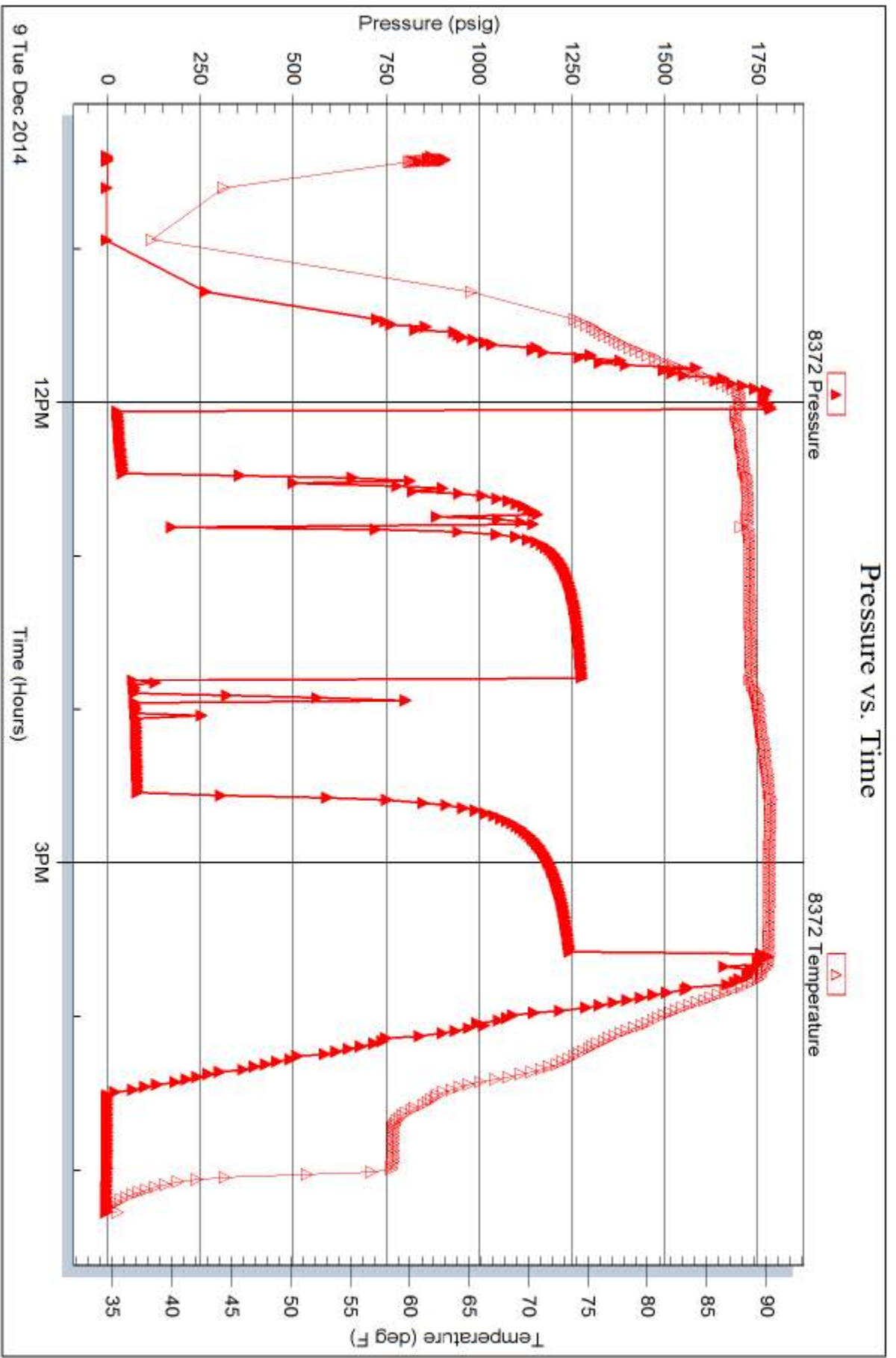
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Serial #: 8372

Outside Black Diamond Oil Inc.

Logan NW #1

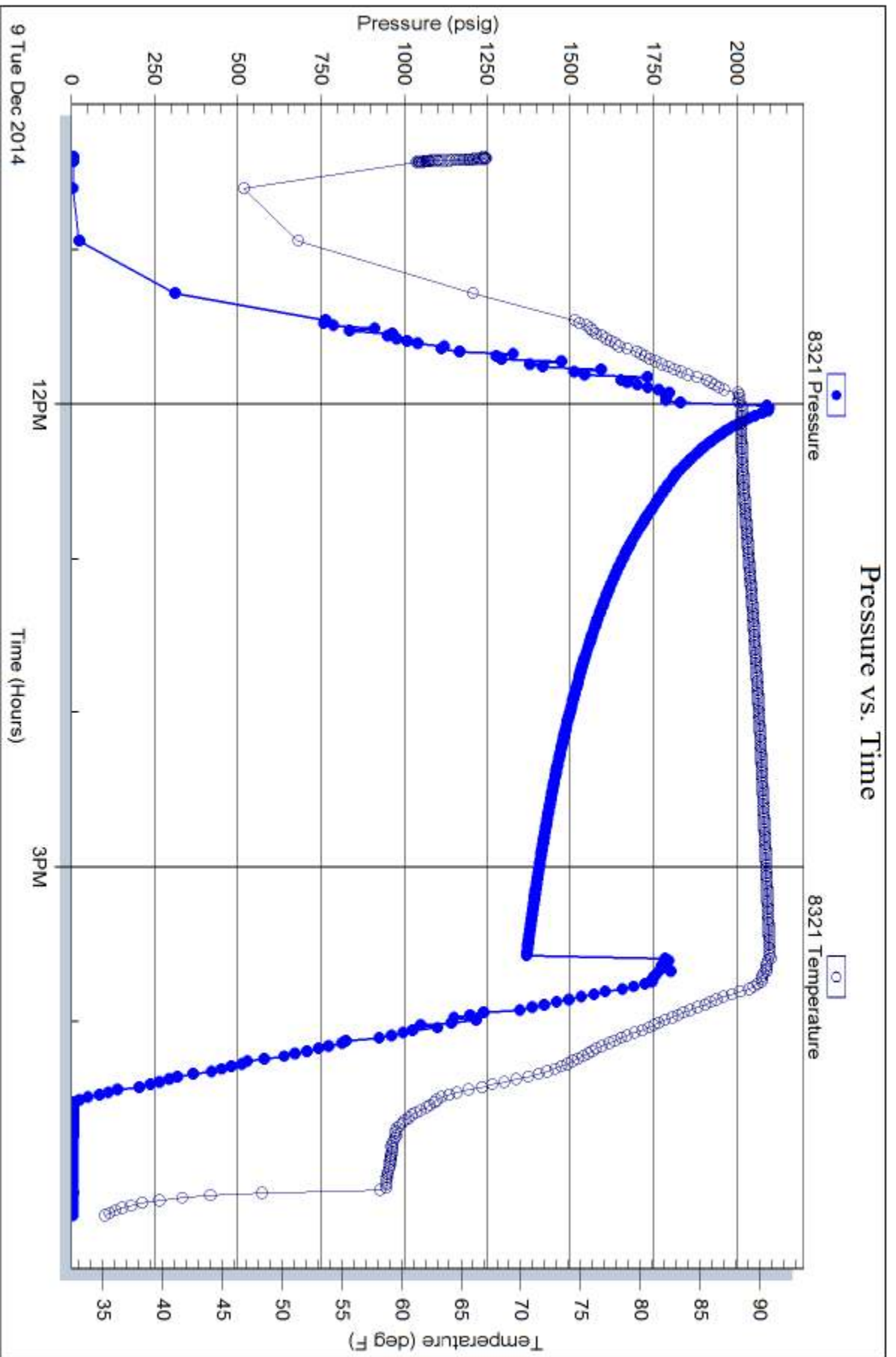
DST Test Number: 6



Trilobite Testing, Inc

Ref. No: 61047

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

61042

NO.

Well Name & No. Logan NW #1 Test No. 1 Date 12-6-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, Ks 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3480-3526 Zone Tested LKC "C-D"
 Anchor Length 46 Drill Pipe Run ~~3371~~ 3371 Mud Wt. 8.9
 Top Packer Depth 3475 Drill Collars Run 121 Vis 64
 Bottom Packer Depth 3480 Wt. Pipe Run — WL 6
 Total Depth 3526 Chlorides 500 ppm System LCM 2
 Blow Description IF- Opened w/ surface blow. built to 7 1/2"
ISI- No Return
FF- Blow built to 9 1/2"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
182 50	Mud				100%
182	MW			80%	20%

Rec Total 232 BHT 90 Gravity — API RW .299 @ 42.3 °F Chlorides 42,000 ppm

(A) Initial Hydrostatic 1675 Test 1150 T-On Location 7:06 AM
 (B) First Initial Flow 26 Jars — T-Started 8:42 AM
 (C) First Final Flow 87 Safety Joint — T-Open 10:34 AM
 (D) Initial Shut-In 1255 Circ Sub — T-Pulled 2:19 PM
 (E) Second Initial Flow 850 Hourly Standby — T-Out 4:07 PM
 (F) Second Final Flow 122 Mileage 104 R.T. 161.20 Comments —
 (G) Final Shut-In 1226 Sampler —
 (H) Final Hydrostatic 1669 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Extra Recorder — Sub Total 0
 Day Standby — Total 1311.20
 Accessibility — MP/DST Disc't —
 Sub Total 1311.20

Approved By — Our Representative Bud Oit
 Trilobite Testing Inc. shall not be liable for damaged or 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. 61043

Well Name & No. Logan NW #1 Test No. 2 Date 12-7-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3622-3662 Zone Tested LKC "J-K"
 Anchor Length 40 Drill Pipe Run 3497 Mud Wt. 9.2
 Top Packer Depth 3617 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3622 Wt. Pipe Run — WL 6.8
 Total Depth 3662 Chlorides 500 ppm System LCM 1 1/2

Blow Description IF - Opened w/ surface blow, built to 1/2", then died back to surface
ISI - No Return
FF - No Blow
FSI - No Return

MISRUN

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</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 10 BHT 91 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1775 Test 950 T-On Location 8:54 AM
 (B) First Initial Flow 773 Jars _____ T-Started 9:22 AM
 (C) First Final Flow 1308 Safety Joint _____ T-Open 10:55 AM
 (D) Initial Shut-In 1307 Circ Sub _____ T-Pulled 2:10 PM
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 3:42 PM
 (F) Second Final Flow 1183 Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In 1290 Sampler _____
 (H) Final Hydrostatic 1738 Straddle _____
 Shale Packer _____
 Ruined Shale Packer _____
 Ruined Packer _____

Initial Open 45 Extra Packer _____
 Initial Shut-In 45 Extra Recorder _____
 Final Flow 45 Day Standby _____
 Final Shut-In 60 Accessibility _____
 Sub Total 1111.20 MP/DST Disc't _____

Approved By _____ Our Representative Bud Oit

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61044

Well Name & No. Logan NW #1 Test No. 3 Date 12-8-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3610-3655 Zone Tested LKC "J-K"
 Anchor Length 45' Drill Pipe Run 3497 Mud Wt. 9.3
 Top Packer Depth 3605 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3610 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF - Opened w/ surface blow, went straight to 2", died back to 1 1/2"
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</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 Total 70 BHT 92 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1790 Test 950 T-On Location 8:10 AM
 (B) First Initial Flow 930 Jars _____ T-Started 8:32 AM
 (C) First Final Flow 1234 Safety Joint _____ T-Open 10:48 AM
 (D) Initial Shut-In 1299 Circ Sub _____ T-Pulled 1:48 AM
 (E) Second Initial Flow 1228 Hourly Standby _____ T-Out 3:08 PM
 (F) Second Final Flow 1301 Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In 1302 Sampler _____
 (H) Final Hydrostatic 1747 Straddle X1 600

Initial Open 45 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 45 Extra Packer _____ Ruined Packer _____
 Final Flow 45 Extra Recorder _____ Extra Copies _____
 Final Shut-In 45 Day Standby _____ Sub Total 0
 Sub Total 1711.20 Total 1711.20 MP/DST Disc't _____

Approved By _____ Our Representative Bud Q. L.

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **61045**

Well Name & No. Logan NW #1 Test No. 4 Date 12-8-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 24 Twp. 3S Rge. 21W Co. Norton State KS

Interval Tested 3420-3480 Zone Tested Toronto + LKC "A"
 Anchor Length 60' Drill Pipe Run 3312 Mud Wt. 9.3
 Top Packer Depth 3415 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3420 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF: Spined w/ surface blow, built to 1"
ISI: No Return
FF: No Blow
FSS: No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</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 Total 10 BHT 91 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1661 Test 950 T-On Location 8:10 AM
 (B) First Initial Flow 23 Jars _____ T-Started 4:59 PM
 (C) First Final Flow 508 Safety Joint _____ T-Open 6:58 PM
 (D) Initial Shut-In 1235 Circ Sub _____ T-Pulled 9:28 PM
 (E) Second Initial Flow 1237 Hourly Standby _____ T-Out 11:14 PM
 (F) Second Final Flow 1271 Mileage 104 R.T Comments _____
 (G) Final Shut-In 1289 Sampler _____
 (H) Final Hydrostatic 1679 Straddle x1 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 45 Extra Packer _____ Extra Copies _____
 Initial Shut-In 45 Extra Recorder _____ Sub Total 0
 Final Flow 30 Day Standby _____ Total 1550
 Final Shut-In 30 Accessibility _____ MP/DST Disc't _____
 Sub Total 1550

Approved By _____ Our Representative Burd Pitt

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61046

Well Name & No. Logan NW #1 Test No. 5 Date 12-9-14
 Company Black Diamond Oil Inc Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 29 Twp. 35 Rge. 21W Co. Norton State KS

Interval Tested 3627-3657 Zone Tested LKC "J-K"
 Anchor Length 30' Drill Pipe Run _____ Mud Wt. 9.3
 Top Packer Depth 3622 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3627 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF- ISI- FF- FSJ- MIS RUN Packer Failure

Rec	Feet of	%gas	%oil	%water	%mud

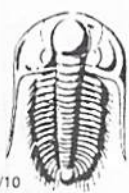
Rec Total _____ BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic _____ Test 950 T-On Location 4:25 AM
 (B) First Initial Flow _____ Jars _____ T-Started 4:37 AM
 (C) First Final Flow _____ Safety Joint _____ T-Open _____
 (D) Initial Shut-In _____ Circ Sub _____ T-Pulled _____ 8:00 AM
 (E) Second Initial Flow _____ Hourly Standby _____ T-Out _____ 9:04 AM
 (F) Second Final Flow _____ Mileage 104 R.T. 161.20 Comments _____
 (G) Final Shut-In _____ Sampler _____
 (H) Final Hydrostatic _____ Straddle X1 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1711.20
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1711.20

Initial Open _____
 Initial Shut-In _____
 Final Flow _____
 Final Shut-In _____

Approved By _____ Our Representative Bud Oit

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61047

Well Name & No. Logan NW #1 Test No. 6 Date 12-9-14
 Company Black Diamond Oil Inc. Elevation 2201 KB 2196 GL
 Address P.O. Box 641 Hays, KS 67601
 Co. Rep / Geo. Jeff Lawler Rig ww #6
 Location: Sec. 24 Twp. 3S Rge. 21W Co. Norton State KS

Interval Tested 3622-3644 Zone Tested LKC "J-K"
 Anchor Length 22' Drill Pipe Run 3498 Mud Wt. 9.3
 Top Packer Depth 3617 Drill Collars Run 121 Vis 51
 Bottom Packer Depth 3622 Wt. Pipe Run — WL 7.6
 Total Depth 3769 Chlorides 500 ppm System LCM 2

Blow Description IF- Opened w/ surface blow, built to 3 1/2"
ISI- No Return
FF- Blow built to 2 1/4"
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</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 70 BHT 91 Gravity 1150 API RW — @ — °F Chlorides — ppm
 Test
 Jars
 Safety Joint
 Circ Sub
 Hourly Standby
 Mileage 104 RT.
 Sampler
 Straddle x1 600
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility
 Sub Total 1750

T-On Location 4:25 AM
 T-Started 10:24 AM
 T-Open 12:05 PM
 T-Pulled 3:35 PM
 T-Out 5:19 PM
 Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1750
 MP/DST Disc't _____

Initial Open 45
 Initial Shut-In 60
 Final Flow 45
 Final Shut-In 60

Approved By _____ Our Representative Burd Ot
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