



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.13 @ 20:43:00

End Date: 2014.12.14 @ 06:08:15

Job Ticket #: 62401 DST #: 1

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

Printed: 2014.12.23 @ 10:54:41



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62401

DST#: 1

Test Start: 2014.12.13 @ 20:43:00

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:22:45

Time Test Ended: 06:08:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3403.00 ft (KB) To 3435.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3435.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 89.44 psig @ 3407.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.13

End Date:

2014.12.14

Last Calib.: 2014.12.14

Start Time: 20:43:05

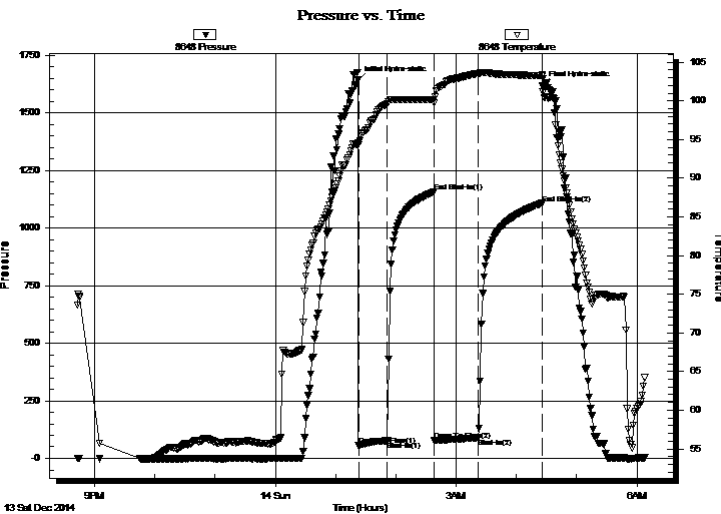
End Time:

06:08:15

Time On Btm: 2014.12.14 @ 01:22:15

Time Off Btm: 2014.12.14 @ 04:25:45

TEST COMMENT: 30 - IF- 6" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1642.20	94.53	Initial Hydro-static
1	55.09	94.32	Open To Flow (1)
30	76.36	99.61	Shut-In(1)
76	1156.39	100.17	End Shut-In(1)
76	78.48	99.71	Open To Flow (2)
120	89.44	103.50	Shut-In(2)
183	1107.19	103.24	End Shut-In(2)
184	1617.63	103.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW - Oil spots, 10%M, 90%W	0.30
102.00	Mud - Oil spots, 100%M	0.90

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

21-5s-21w Norton KS

Glennemeier A #2

Job Ticket: 62401

DST#: 1

Test Start: 2014.12.13 @ 20:43:00

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:22:45

Time Test Ended: 06:08:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3403.00 ft (KB) To 3435.00 ft (KB) (TVD)

Total Depth: 3435.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2215.00 ft (KB)

2210.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8940 **Outside**

Press@RunDepth: psig @ 3407.00 ft (KB)

Start Date: 2014.12.13

End Date:

2014.12.14

Start Time: 20:43:05

End Time:

06:08:15

Capacity: 8000.00 psig

Last Calib.:

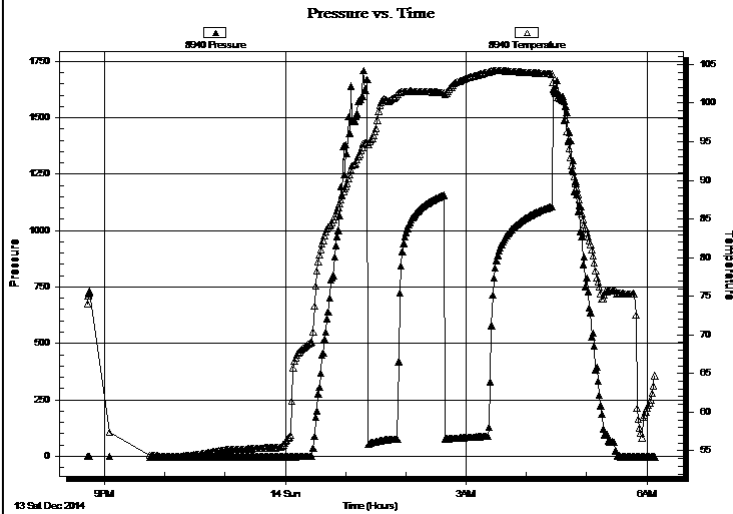
2014.12.14

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 6" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW - Oil spots, 10%M, 90%W	0.30
102.00	Mud - Oil spots, 100%M	0.90

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62401

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.13 @ 20:43:00

Tool Information

Drill Pipe:	Length: 3273.00 ft	Diameter: 3.80 inches	Volume: 45.91 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 46.50 bbl</u>	Tool Chased 10.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3403.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	53.00 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			3383.00	
Shut In Tool	5.00			3388.00	
Hydraulic tool	5.00			3393.00	
Packer	5.00			3398.00	21.00 Bottom Of Top Packer
Packer	5.00			3403.00	
Stubb	1.00			3404.00	
Perforations	3.00			3407.00	
Recorder	0.00	8648	Inside	3407.00	
Recorder	0.00	8940	Outside	3407.00	
Perforations	25.00			3432.00	
Bullnose	3.00			3435.00	32.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62401

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.13 @ 20:43:00

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:

124000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
62.00	MW - Oil spots, 10%M, 90%W	0.305
102.00	Mud - Oil spots, 100%M	0.902

Total Length: 164.00 ft Total Volume: 1.207 bbf

Num Fluid Samples: 0

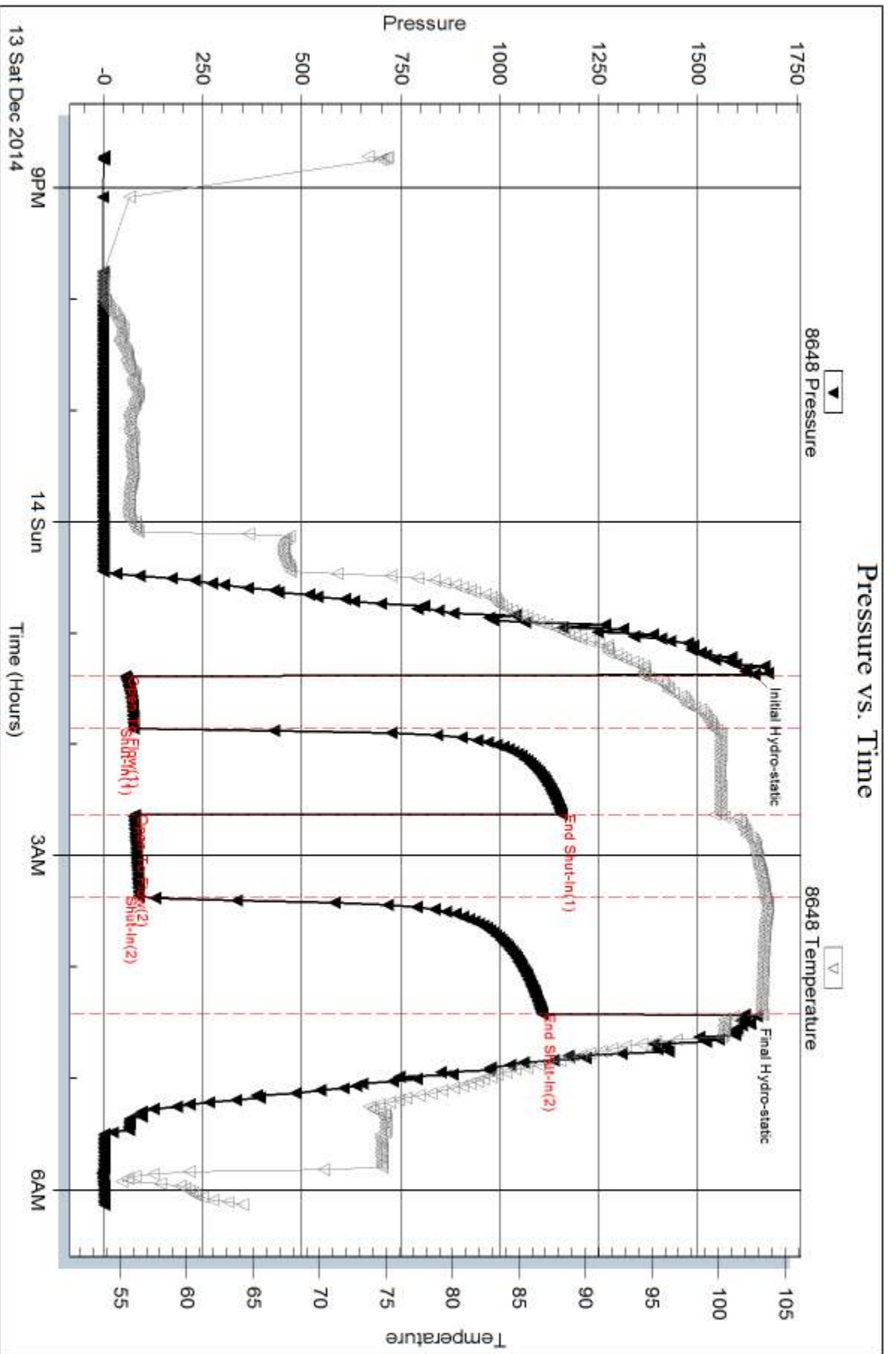
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Salinity: .08 @ 58 Degrees = 124,000

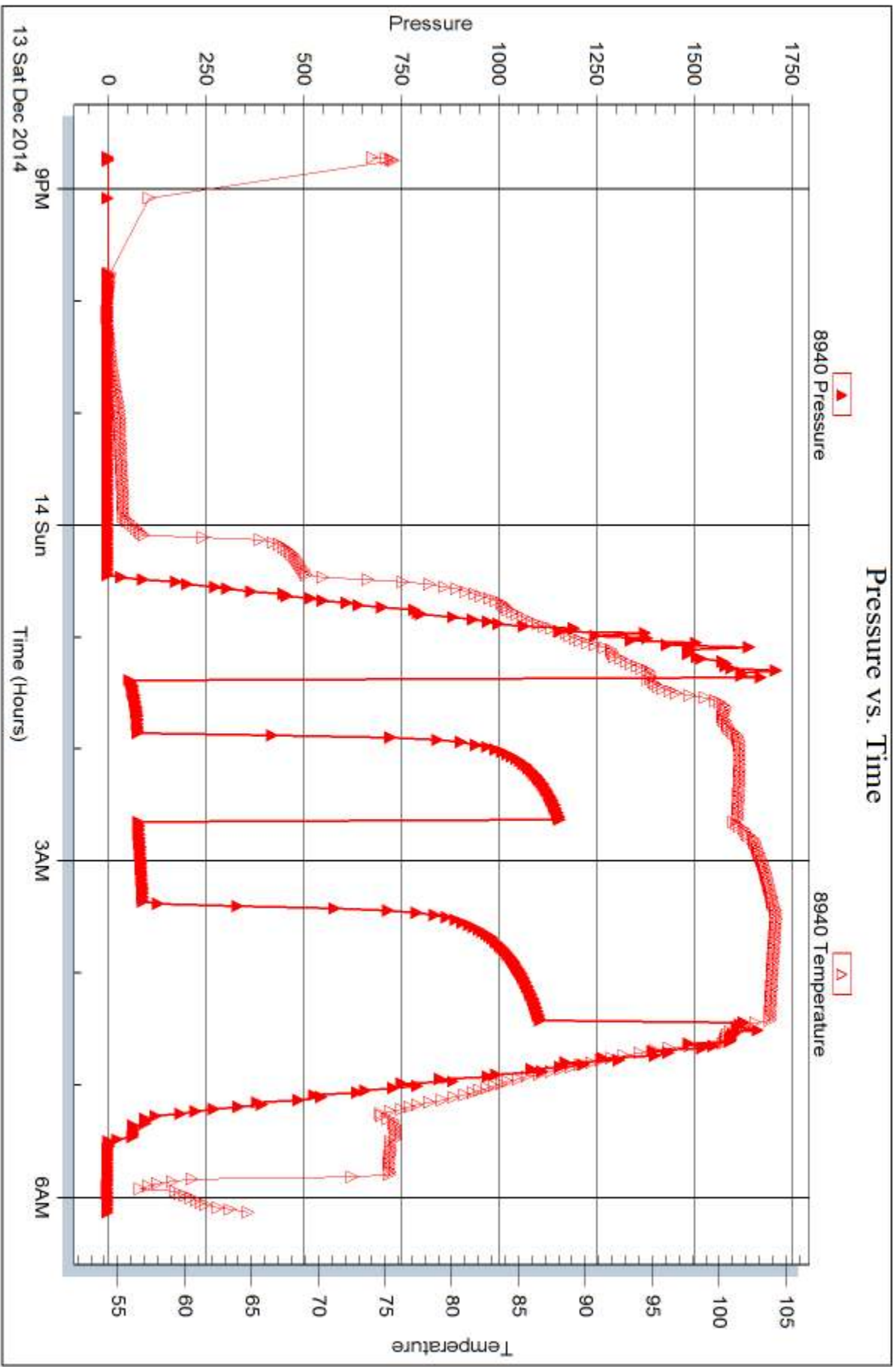


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 62401

Printed: 2014, 12, 23 @ 10:54:42



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.14 @ 12:57:00

End Date: 2014.12.14 @ 19:20:00

Job Ticket #: 62402 DST #: 2

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

Printed: 2014.12.23 @ 10:54:19



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62402

DST#: 2

Test Start: 2014.12.14 @ 12:57:00

GENERAL INFORMATION:

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

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:35:30

Time Test Ended: 19:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3434.00 ft (KB) To 3468.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3468.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 50.38 psig @ 3438.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.14

End Date:

2014.12.14

Last Calib.:

2014.12.14

Start Time:

12:57:05

End Time:

19:19:59

Time On Btm:

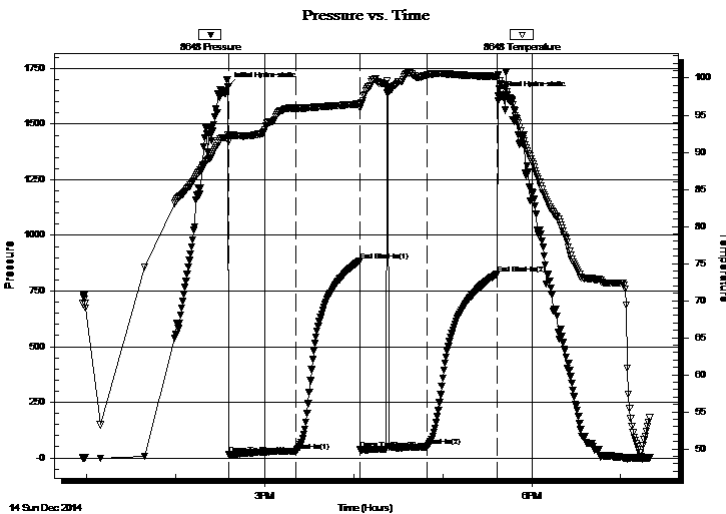
2014.12.14 @ 14:35:15

Time Off Btm:

2014.12.14 @ 17:37:15

TEST COMMENT: 45 - IF- 1.5" blow in 15 minutes, died back to half inch
45 - IS- No return
45 - FF- No blow for 15 minutes, flushed tool, surface blow
45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1668.40	92.35	Initial Hydro-static
1	14.91	91.40	Open To Flow (1)
46	31.18	95.96	Shut-In(1)
89	884.85	96.52	End Shut-In(1)
89	38.24	95.95	Open To Flow (2)
135	50.38	100.50	Shut-In(2)
182	827.88	100.24	End Shut-In(2)
182	1628.57	100.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	HOCM, 30% O, 70%M	0.30
15.00	VSOCM, 5%O, 95%M	0.07

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62402

DST#: 2

Test Start: 2014.12.14 @ 12:57:00

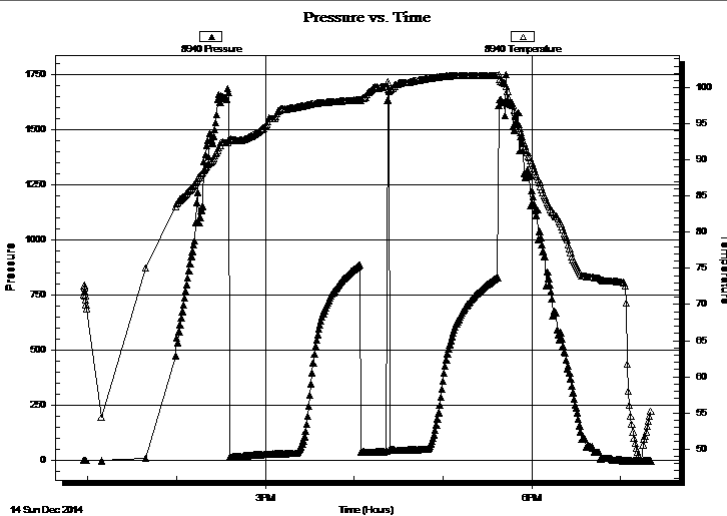
GENERAL INFORMATION:

Formation: LKC "C-D"			
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole (Reset)	
Time Tool Opened: 14:35:30		Tester: Cody Bloedorn	
Time Test Ended: 19:20:00		Unit No: 73	
Interval: 3434.00 ft (KB) To 3468.00 ft (KB) (TVD)		Reference Elevations: 2215.00 ft (KB)	
Total Depth: 3468.00 ft (KB) (TVD)		2210.00 ft (CF)	
Hole Diameter: 7.88 inches	Hole Condition: Fair	KB to GR/CF: 5.00 ft	

Serial #: 8940 Outside

Press@RunDepth:	psig @	3438.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2014.12.14	End Date:	2014.12.14	Last Calib.:
Start Time:	12:57:05	End Time:	19:20:14	Time On Btm:
				Time Off Btm:

TEST COMMENT: 45 - IF- 1.5" blow in 15 minutes, died back to half inch
 45 - IS- No return
 45 - FF- No blow for 15 minutes, flushed tool, surface blow
 45 - FS- No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	HOCM, 30% O, 70%M	0.30
15.00	VSOCM, 5%O, 95%M	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.14 @ 12:57:00

Tool Information

Drill Pipe:	Length: 3305.00 ft	Diameter: 3.80 inches	Volume: 46.36 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	42000.00 lb
			<u>Total Volume: 46.95 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3434.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	55.00 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			3414.00	
Shut In Tool	5.00			3419.00	
Hydraulic tool	5.00			3424.00	
Packer	5.00			3429.00	21.00 Bottom Of Top Packer
Packer	5.00			3434.00	
Stubb	1.00			3435.00	
Perforations	3.00			3438.00	
Recorder	0.00	8648	Inside	3438.00	
Recorder	0.00	8940	Outside	3438.00	
Perforations	27.00			3465.00	
Bullnose	3.00			3468.00	34.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.14 @ 12:57:00

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: 54.00 sec/qt

Cushion Volume: bbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	HOCM, 30% O, 70%M	0.295
15.00	VSOCM, 5%O, 95%M	0.074

Total Length: 75.00 ft Total Volume: 0.369 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

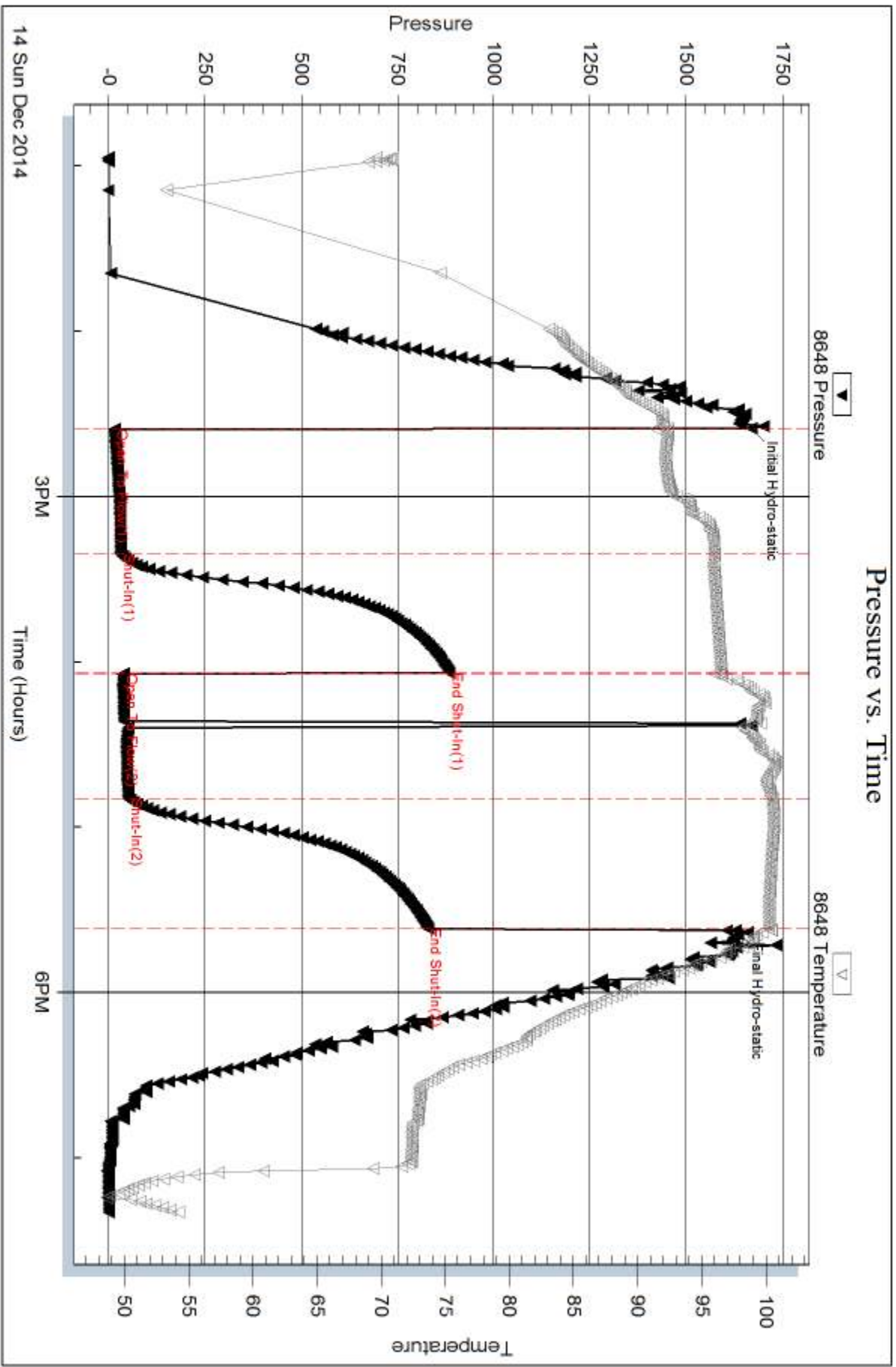
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 2

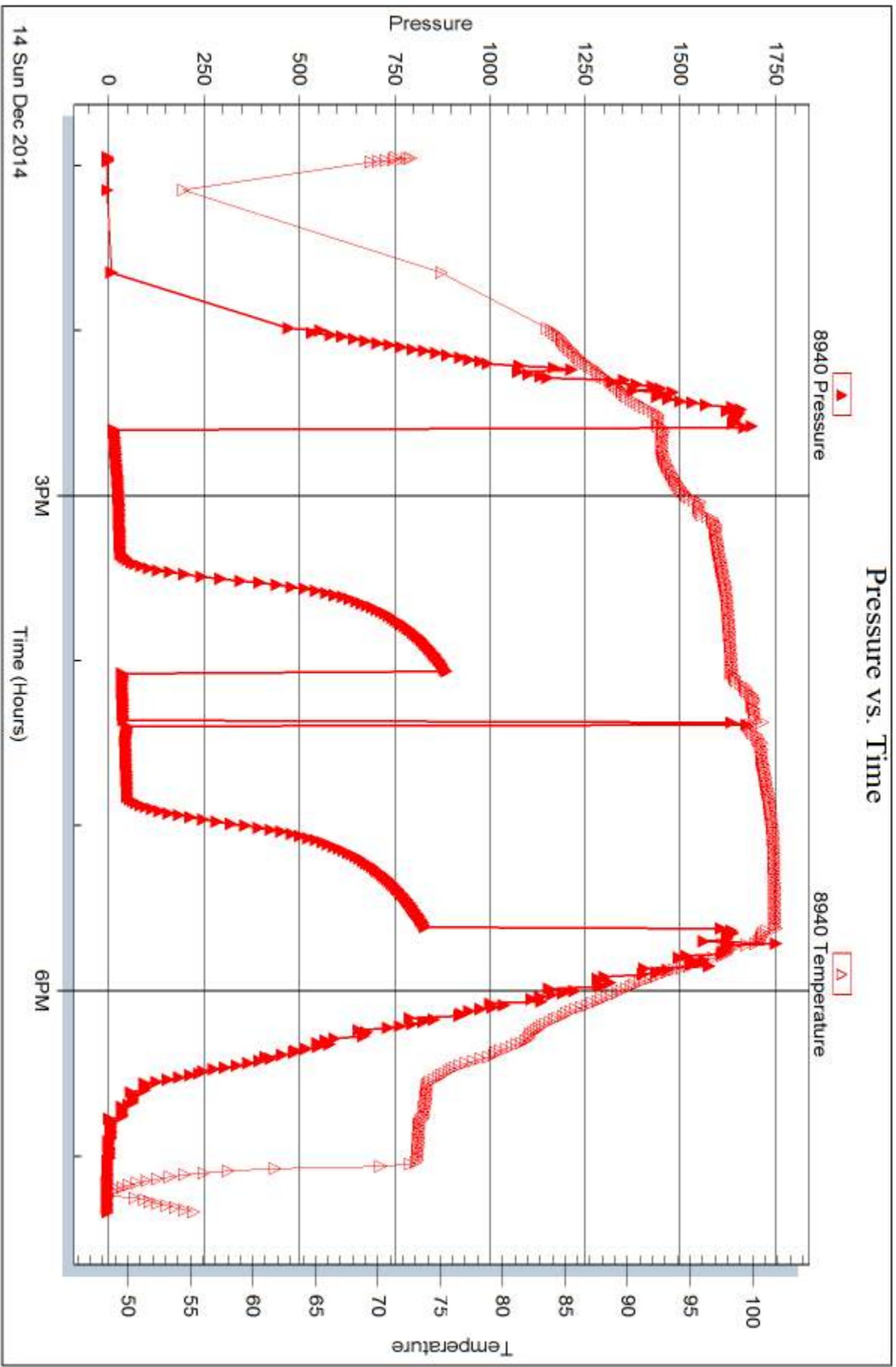


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.15 @ 07:48:00

End Date: 2014.12.15 @ 15:06:45

Job Ticket #: 62403 DST #: 3

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

Printed: 2014.12.23 @ 10:53:54



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:32:15

Time Test Ended: 15:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 56.20 psig @ 3544.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date:

2014.12.15

Last Calib.: 2014.12.15

Start Time: 07:48:05

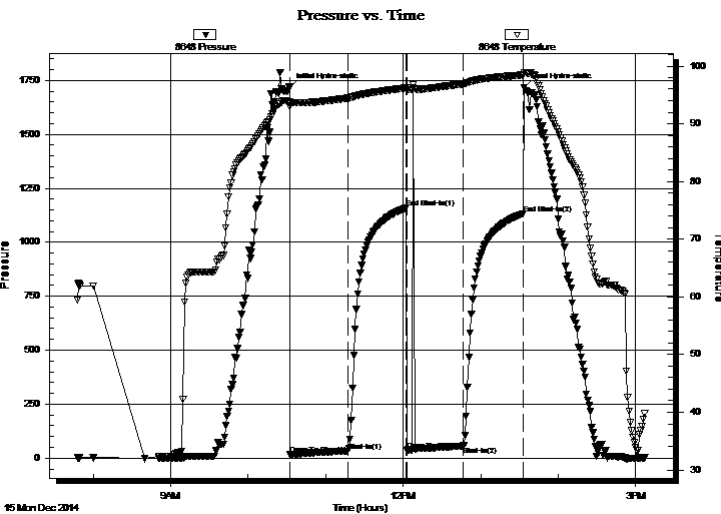
End Time:

15:06:44

Time On Btm: 2014.12.15 @ 10:32:00

Time Off Btm: 2014.12.15 @ 13:33:45

TEST COMMENT: 45 - IF- Surface blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
45 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.90	93.80	Initial Hydro-static
1	16.09	92.94	Open To Flow (1)
45	32.43	94.43	Shut-In(1)
91	1159.23	96.23	End Shut-In(1)
91	37.50	95.87	Open To Flow (2)
135	56.20	96.90	Shut-In(2)
181	1133.14	98.45	End Shut-In(2)
182	1716.64	98.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud - Oil spots, 100%M	0.39

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403 **DST#: 3**

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**

Deviated: No Whipstock: ft (KB)

Test Type: Conventional Bottom Hole (Reset)

Time Tool Opened: 10:32:15

Tester: Cody Bloedorn

Time Test Ended: 15:06:45

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3544.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15 End Date: 2014.12.15

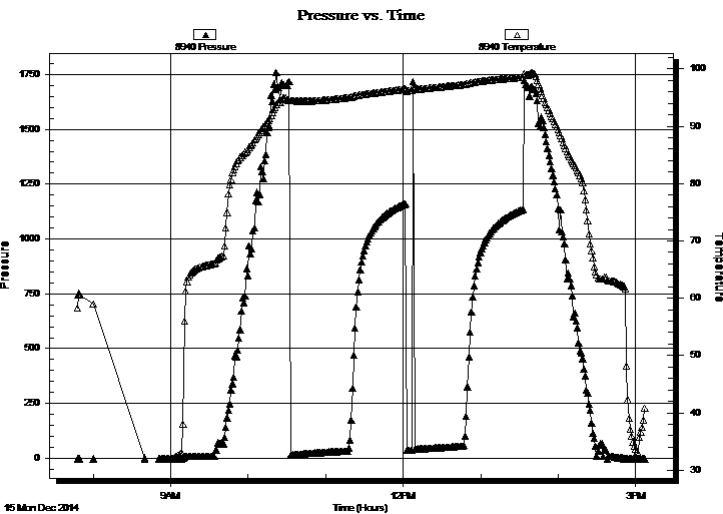
Last Calib.: 2014.12.15

Start Time: 07:48:05 End Time: 15:06:44

Time On Btm:

Time Off Btm:

TEST COMMENT:
 45 - IF- Surface blow
 45 - IS- No return
 45 - FF- Surged and died, flushed tool, surged and died
 45 - FS- No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud - Oil spots, 100%M	0.39

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

Tool Information

Drill Pipe:	Length: 3399.00 ft	Diameter: 3.80 inches	Volume: 47.68 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 48.27 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3507.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	45.00 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
Change Over Sub	1.00			3487.00	
Shut In Tool	5.00			3492.00	
Hydraulic tool	5.00			3497.00	
Packer	5.00			3502.00	21.00 Bottom Of Top Packer
Packer	5.00			3507.00	
Stubb	1.00			3508.00	
Perforations	3.00			3511.00	
Change Over Sub	1.00			3512.00	
Drill Pipe	31.00			3543.00	
Change Over Sub	1.00			3544.00	
Recorder	0.00	8648	Inside	3544.00	
Recorder	0.00	8940	Outside	3544.00	
Perforations	5.00			3549.00	
Bullnose	3.00			3552.00	45.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

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: 48.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
80.00	Mud - Oil spots, 100%M	0.393

Total Length: 80.00 ft Total Volume: 0.393 bbf

Num Fluid Samples: 0

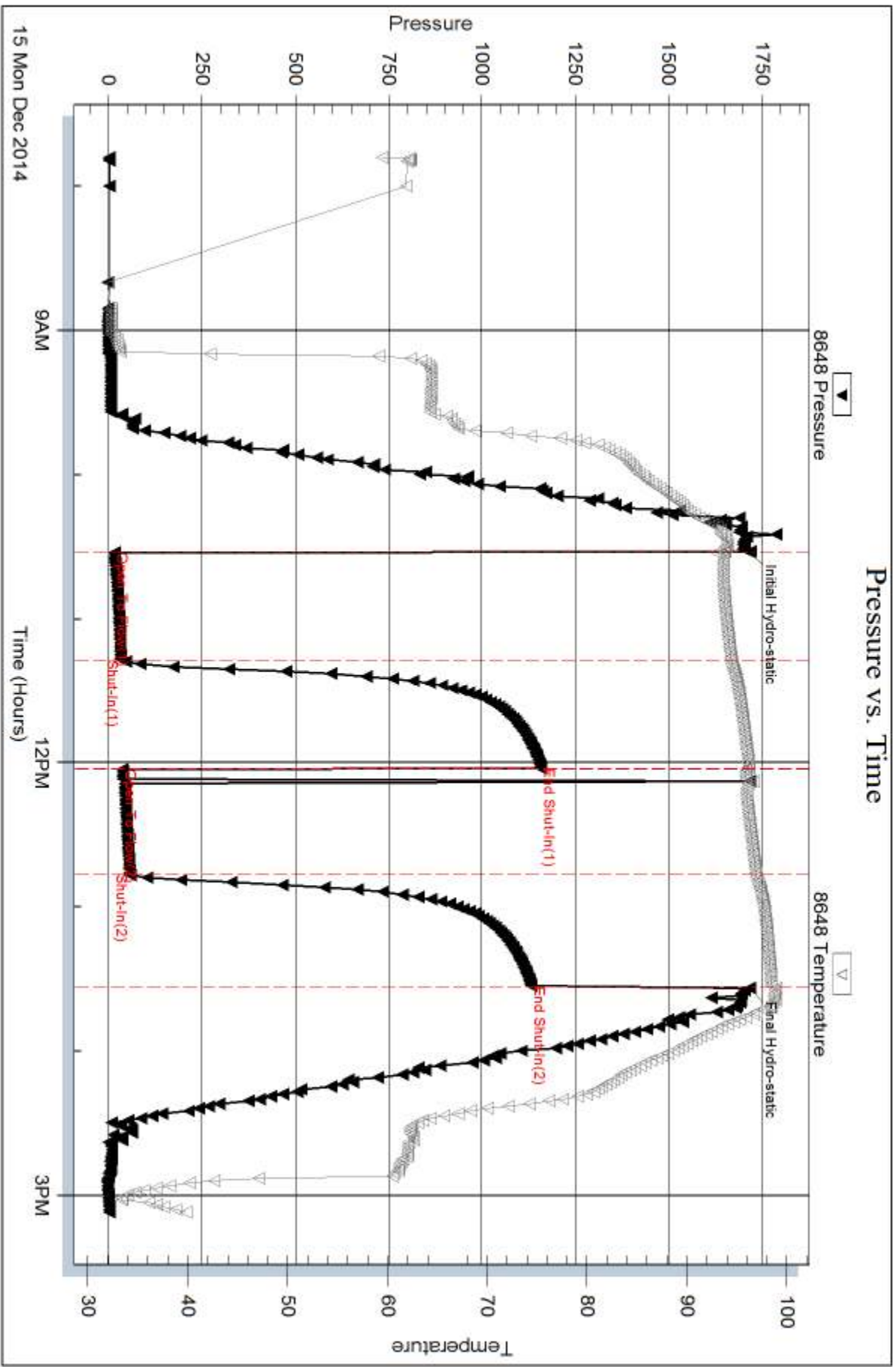
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

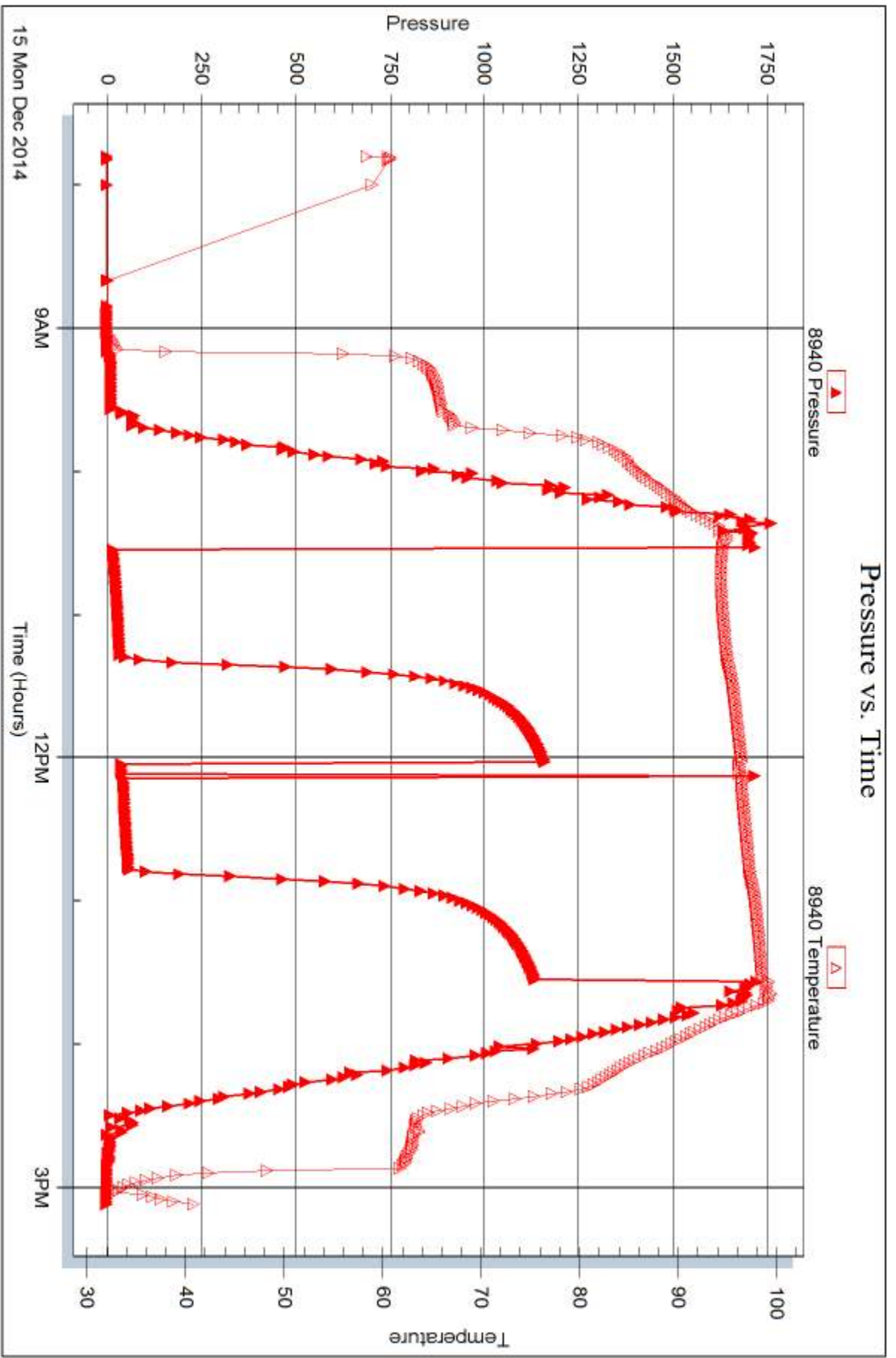


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 62403

Printed: 2014, 12, 23 @ 10:53:56



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.15 @ 21:55:00

End Date: 2014.12.16 @ 05:37:30

Job Ticket #: 62404 DST #: 4

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

Printed: 2014.12.23 @ 10:53:30



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:27:00

Time Test Ended: 05:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3535.00 ft (KB) To 3587.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3587.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 38.26 psig @ 3572.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date:

2014.12.16

Last Calib.:

2014.12.16

Start Time: 21:55:05

End Time:

05:37:29

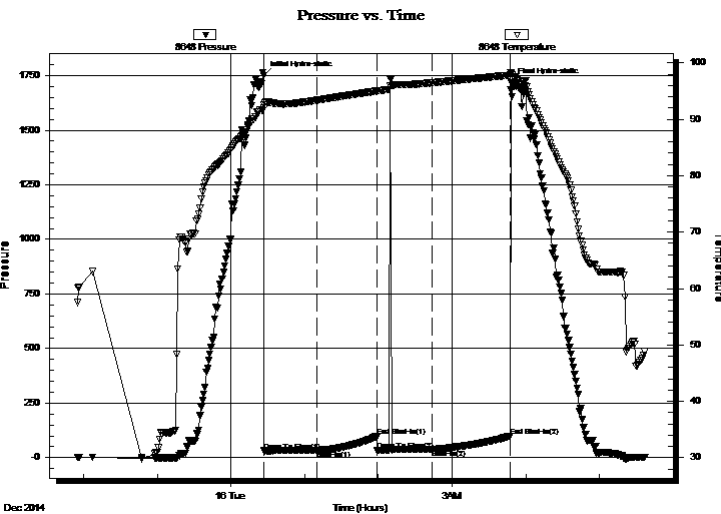
Time On Btm:

2014.12.16 @ 00:26:45

Time Off Btm:

2014.12.16 @ 03:48:00

TEST COMMENT: 45 - IF- 1.5" blow in 23 minutes, died back to 1" blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1749.17	92.48	Initial Hydro-static
1	32.03	92.03	Open To Flow (1)
44	33.61	93.39	Shut-In(1)
92	97.94	95.00	End Shut-In(1)
93	33.94	94.99	Open To Flow (2)
137	38.26	96.48	Shut-In(2)
201	99.65	97.82	End Shut-In(2)
202	1719.60	98.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM, 2%, 98%M	0.10

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404 **DST#: 4**

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:27:00

Time Test Ended: 05:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3535.00 ft (KB) To 3587.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3587.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3572.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date:

2014.12.16

Last Calib.: 2014.12.16

Start Time: 21:55:05

End Time:

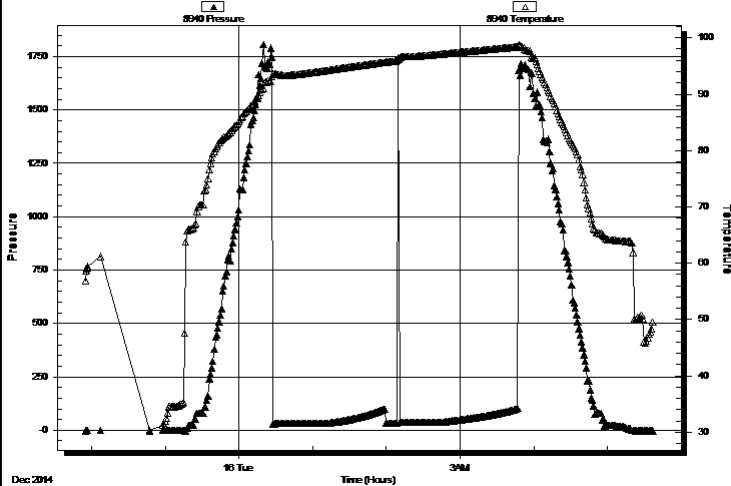
05:37:29

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- 1.5" blow in 23 minutes, died back to 1" blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
60 - FS- No return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM, 2%, 98%M	0.10

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

Tool Information

Drill Pipe:	Length: 3401.00 ft	Diameter: 3.80 inches	Volume: 47.71 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 48.30 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3535.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	52.00 ft				
Tool Length:	73.00 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			3515.00	
Shut In Tool	5.00			3520.00	
Hydraulic tool	5.00			3525.00	
Packer	5.00			3530.00	21.00 Bottom Of Top Packer
Packer	5.00			3535.00	
Stubb	1.00			3536.00	
Perforations	3.00			3539.00	
Change Over Sub	1.00			3540.00	
Drill Pipe	31.00			3571.00	
Change Over Sub	1.00			3572.00	
Recorder	0.00	8648	Inside	3572.00	
Recorder	0.00	8940	Outside	3572.00	
Perforations	12.00			3584.00	
Bullnose	3.00			3587.00	52.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

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: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	VSOCM, 2%, 98%M	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

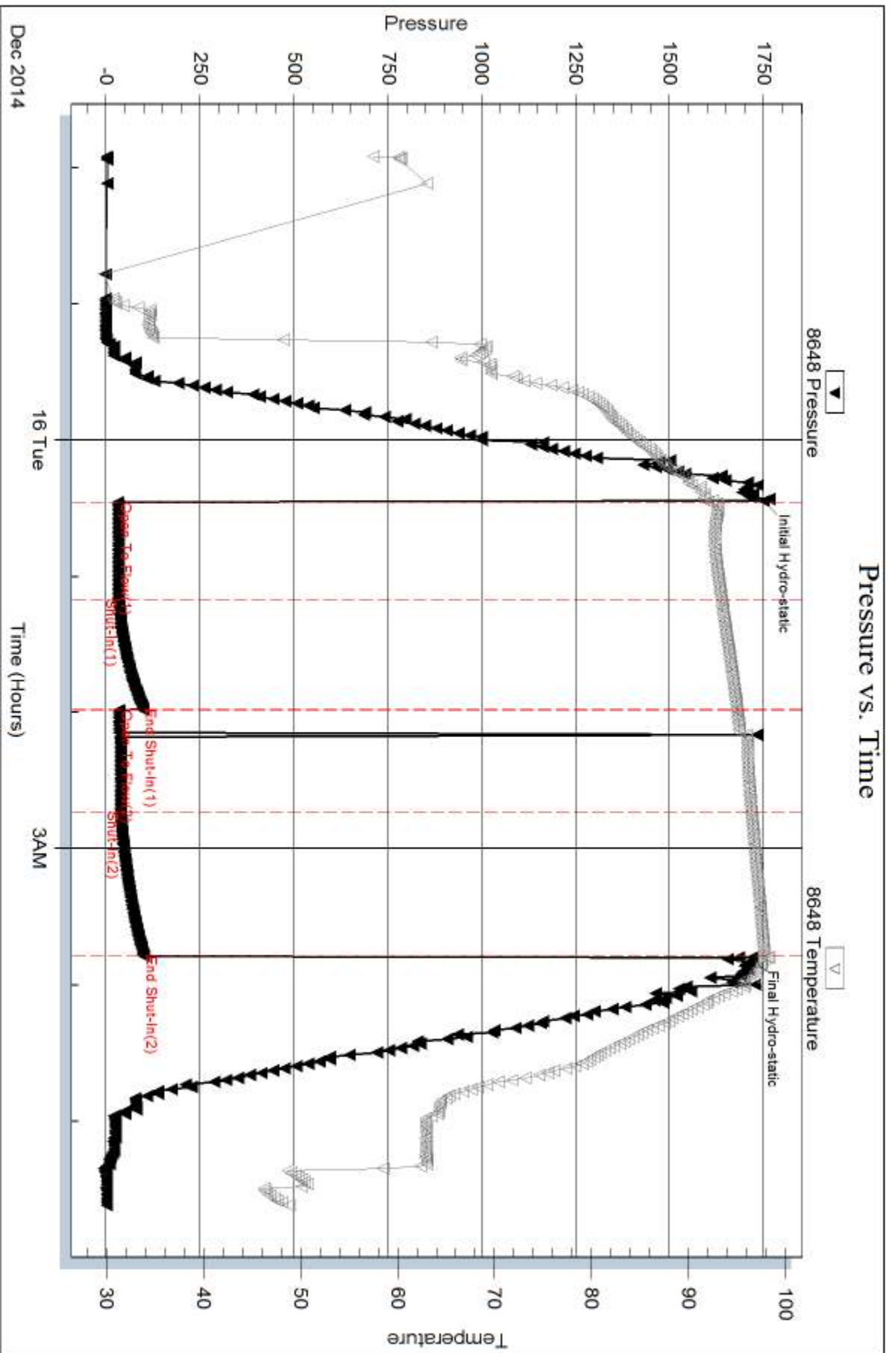
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

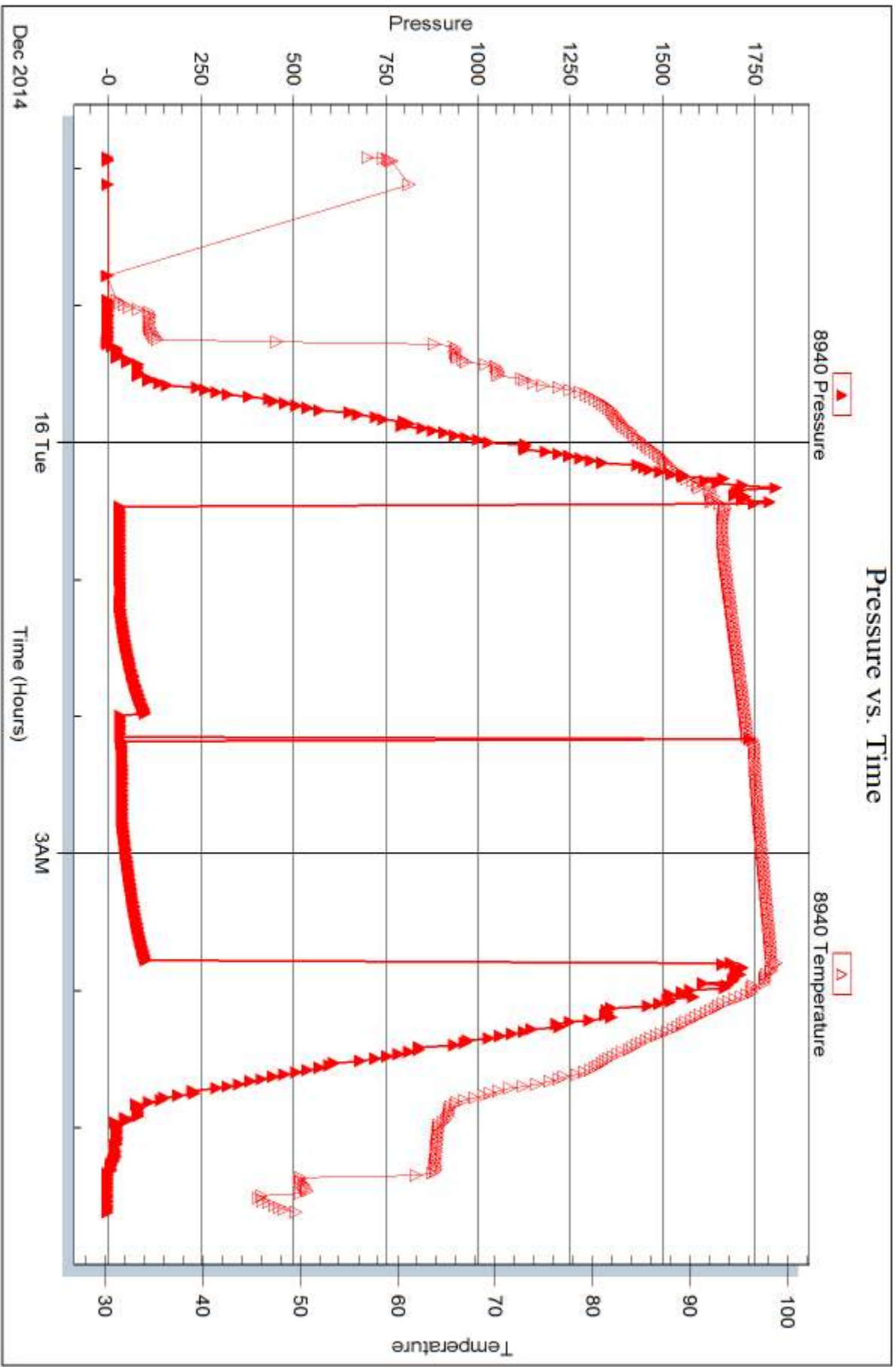


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.16 @ 17:53:00

End Date: 2014.12.17 @ 02:59:45

Job Ticket #: 62405 DST #: 5

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

Printed: 2014.12.23 @ 10:52:52



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62405

DST#: 5

Test Start: 2014.12.16 @ 17:53:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:26:00

Time Test Ended: 02:59:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3638.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 102.49 psig @ 3642.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.16

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 17:53:05

End Time:

02:59:45

Time On Btm:

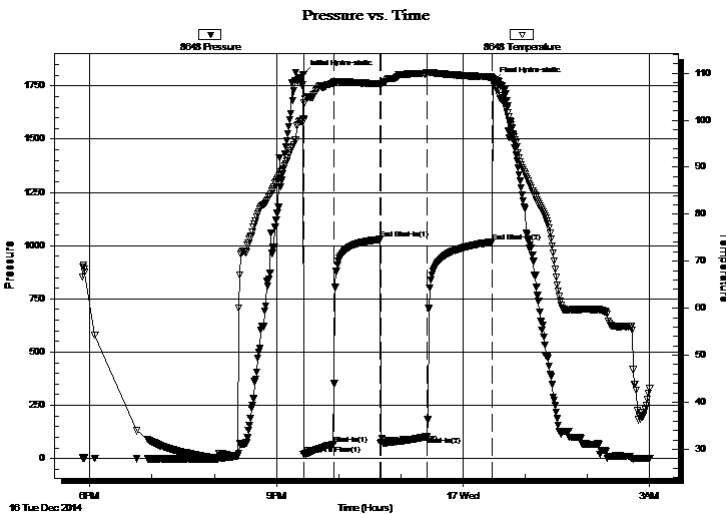
2014.12.16 @ 21:25:45

Time Off Btm:

2014.12.17 @ 00:28:30

TEST COMMENT: 30 - IF- 5" blow
45 - IS- Surface return
45 - FF- 4" return
60 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1803.08	100.37	Initial Hydro-static
1	19.45	100.00	Open To Flow (1)
30	65.49	107.94	Shut-In(1)
74	1029.90	107.71	End Shut-In(1)
75	71.59	107.39	Open To Flow (2)
120	102.49	110.00	Shut-In(2)
182	1016.91	109.14	End Shut-In(2)
183	1768.01	108.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
169.00	OCMW, 20%O, 30%M, 50%W	1.28
75.00	GO, 5%G, 95%O	1.05

Gas Rates

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

* Recovery from multiple tests



DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:26:00

Time Test Ended: 02:59:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3638.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3642.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.16

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 17:53:05

End Time:

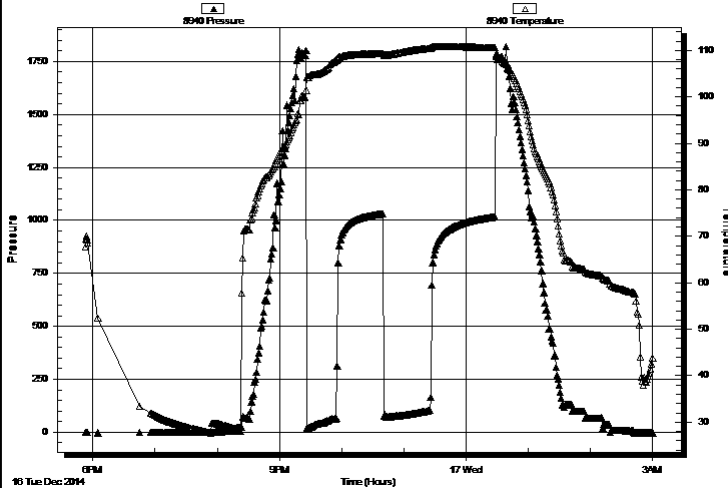
02:59:45

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 5" blow
45 - IS- Surface return
45 - FF- 4" return
60 - FS- No return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
169.00	OCMW, 20%O, 30%M, 50%W	1.28
75.00	GO, 5%G, 95%O	1.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

Tool Information

Drill Pipe:	Length: 3525.00 ft	Diameter: 3.80 inches	Volume: 49.45 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 50.04 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3638.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	12.00 ft				
Tool Length:	33.00 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			3618.00	
Shut In Tool	5.00			3623.00	
Hydraulic tool	5.00			3628.00	
Packer	5.00			3633.00	21.00 Bottom Of Top Packer
Packer	5.00			3638.00	
Stubb	1.00			3639.00	
Perforations	3.00			3642.00	
Recorder	0.00	8648	Inside	3642.00	
Recorder	0.00	8940	Outside	3642.00	
Perforations	5.00			3647.00	
Bullnose	3.00			3650.00	12.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
169.00	OCMW, 20%O, 30%M, 50%W	1.277
75.00	GO, 5%G, 95%O	1.052

Total Length: 244.00 ft Total Volume: 2.329 bbl

Num Fluid Samples: 0

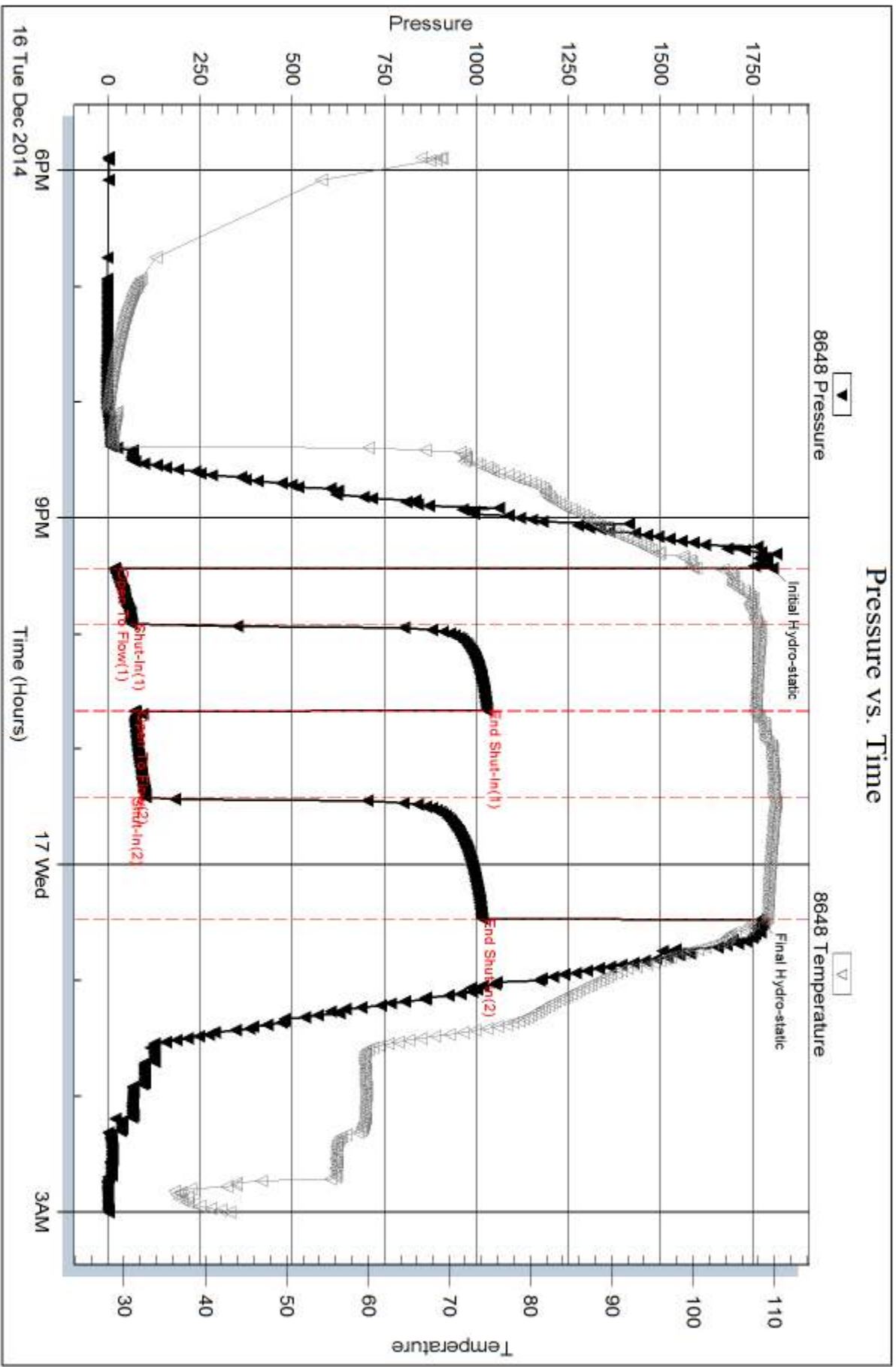
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

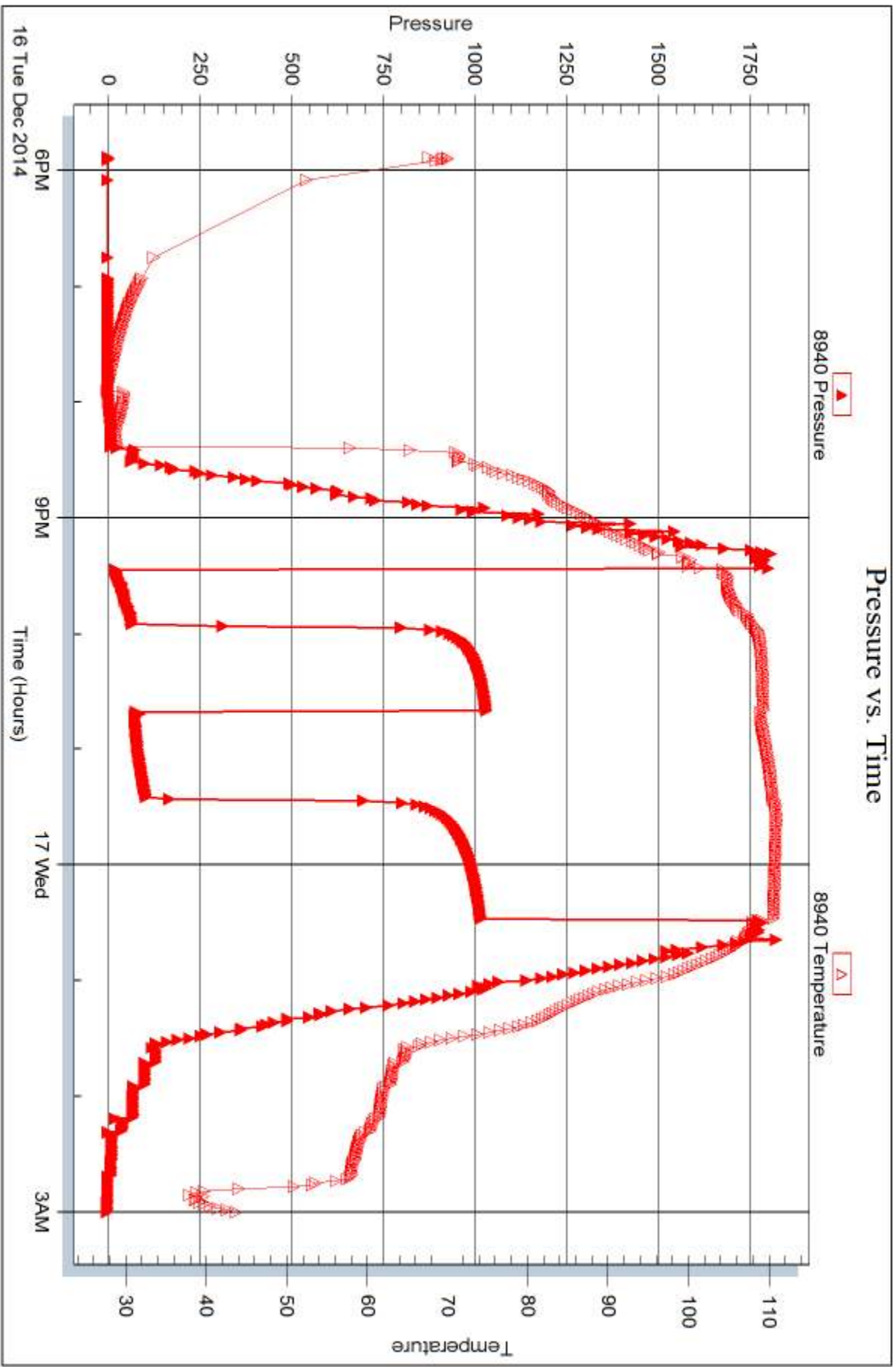


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 62405

Printed: 2014, 12, 23 @ 10:52:53



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 03:32:00

End Date: 2014.12.17 @ 09:58:15

Job Ticket #: 62406 DST #: 6

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

Printed: 2014.12.23 @ 10:52:26



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:59:15

Time Test Ended: 09:58:15

Test Type: Conventional Straddle (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3460.00 ft (KB) To 3490.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 72.94 psig @ 3461.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.: 2014.12.17

Start Time: 03:32:05

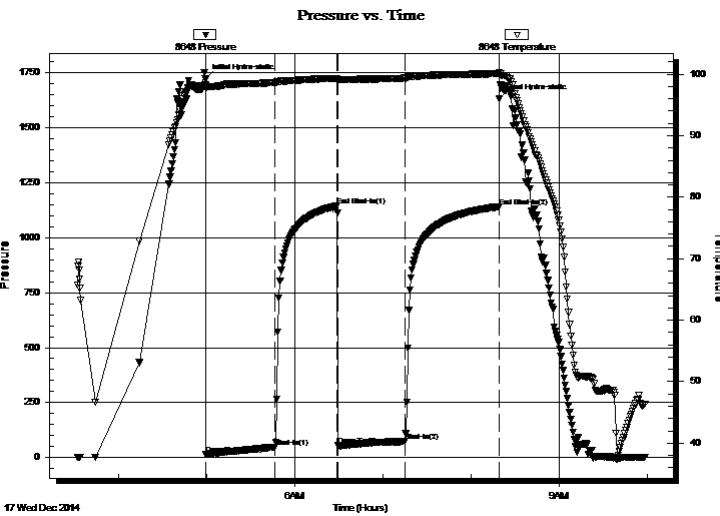
End Time:

09:58:14

Time On Btm: 2014.12.17 @ 04:59:00

Time Off Btm: 2014.12.17 @ 08:19:15

TEST COMMENT: 45 - IF- 3" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1722.44	98.22	Initial Hydro-static
1	14.45	97.74	Open To Flow (1)
48	48.23	98.62	Shut-In(1)
90	1146.49	99.34	End Shut-In(1)
91	54.82	98.96	Open To Flow (2)
136	72.94	99.37	Shut-In(2)
200	1142.08	100.08	End Shut-In(2)
201	1631.09	100.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM - Oil spots, 10%W, 90%M	0.30
65.00	VSOCM, 5%O, 95%M	0.37

* Recovery from multiple tests

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406 **DST#: 6**

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:59:15

Time Test Ended: 09:58:15

Test Type: Conventional Straddle (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: **3460.00 ft (KB) To 3490.00 ft (KB) (TVD)**

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3461.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 03:32:05

End Time:

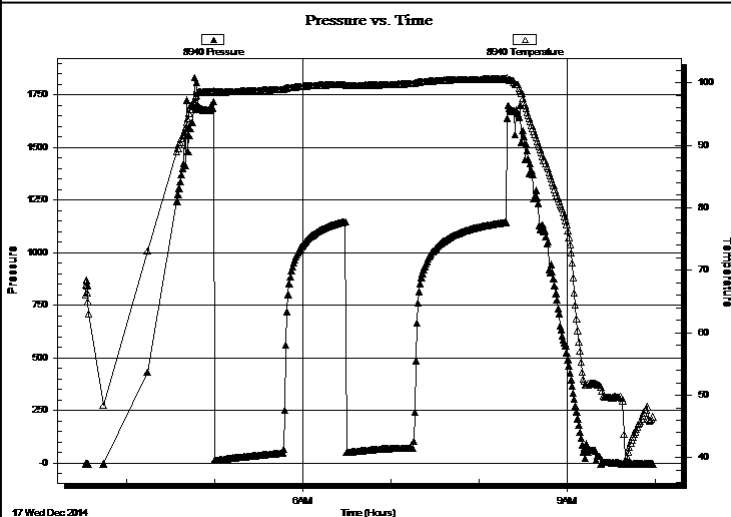
09:58:14

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- 3" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM - Oil spots, 10%W, 90%M	0.30
65.00	VSOCM, 5%O, 95%M	0.37

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:59:15

Time Test Ended: 09:58:15

Test Type: Conventional Straddle (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3460.00 ft (KB) To 3490.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8958

Below (Straddle)

Press@RunDepth: psig @ 3496.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 03:32:05

End Time:

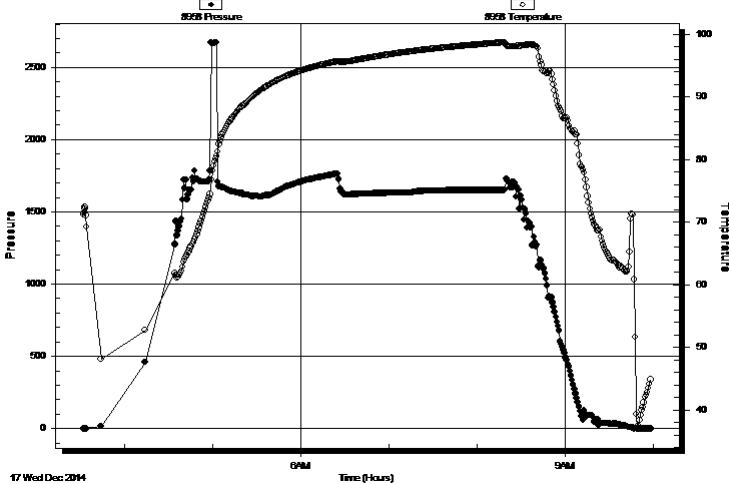
09:58:14

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- 3" blow
45 - ISI- No return
45 - FF- Surface blow
60 - FSI- No return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM - Oil spots, 10%W, 90%M	0.30
65.00	VSOCM, 5%O, 95%M	0.37

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

Tool Information

Drill Pipe:	Length: 3337.00 ft	Diameter: 3.80 inches	Volume: 46.81 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 47.40 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3460.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	3490.00 ft			
Interval between Packers:	30.00 ft			
Tool Length:	215.00 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			3440.00	
Shut In Tool	5.00			3445.00	
Hydraulic tool	5.00			3450.00	
Packer	5.00			3455.00	21.00 Bottom Of Top Packer
Packer	5.00			3460.00	
Stubb	1.00			3461.00	
Recorder	0.00	8648	Inside	3461.00	
Recorder	0.00	8940	Outside	3461.00	
Perforations	28.00			3489.00	
Blank Off Sub	1.00			3490.00	30.00 Tool Interval
Packer	5.00			3495.00	
Change Over Sub	1.00			3496.00	
Recorder	0.00	8958	Below	3496.00	
Drill Pipe	158.00			3654.00	164.00 Bottom Packers & Anchor

Total Tool Length: 215.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WM - Oil spots, 10%W, 90%M	0.295
65.00	VSOCM, 5%O, 95%M	0.365

Total Length: 125.00 ft

Total Volume: 0.660 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

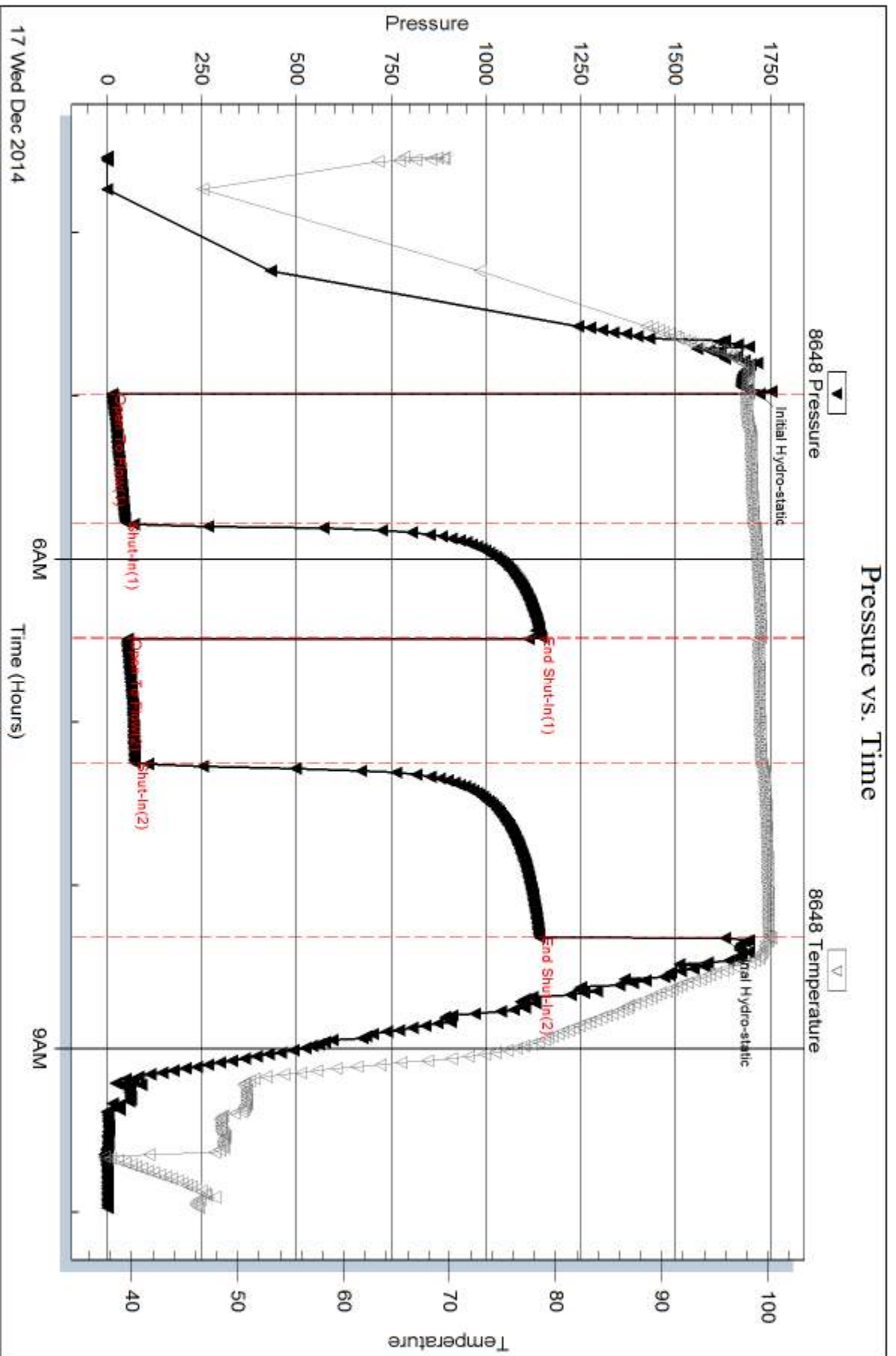
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 62406

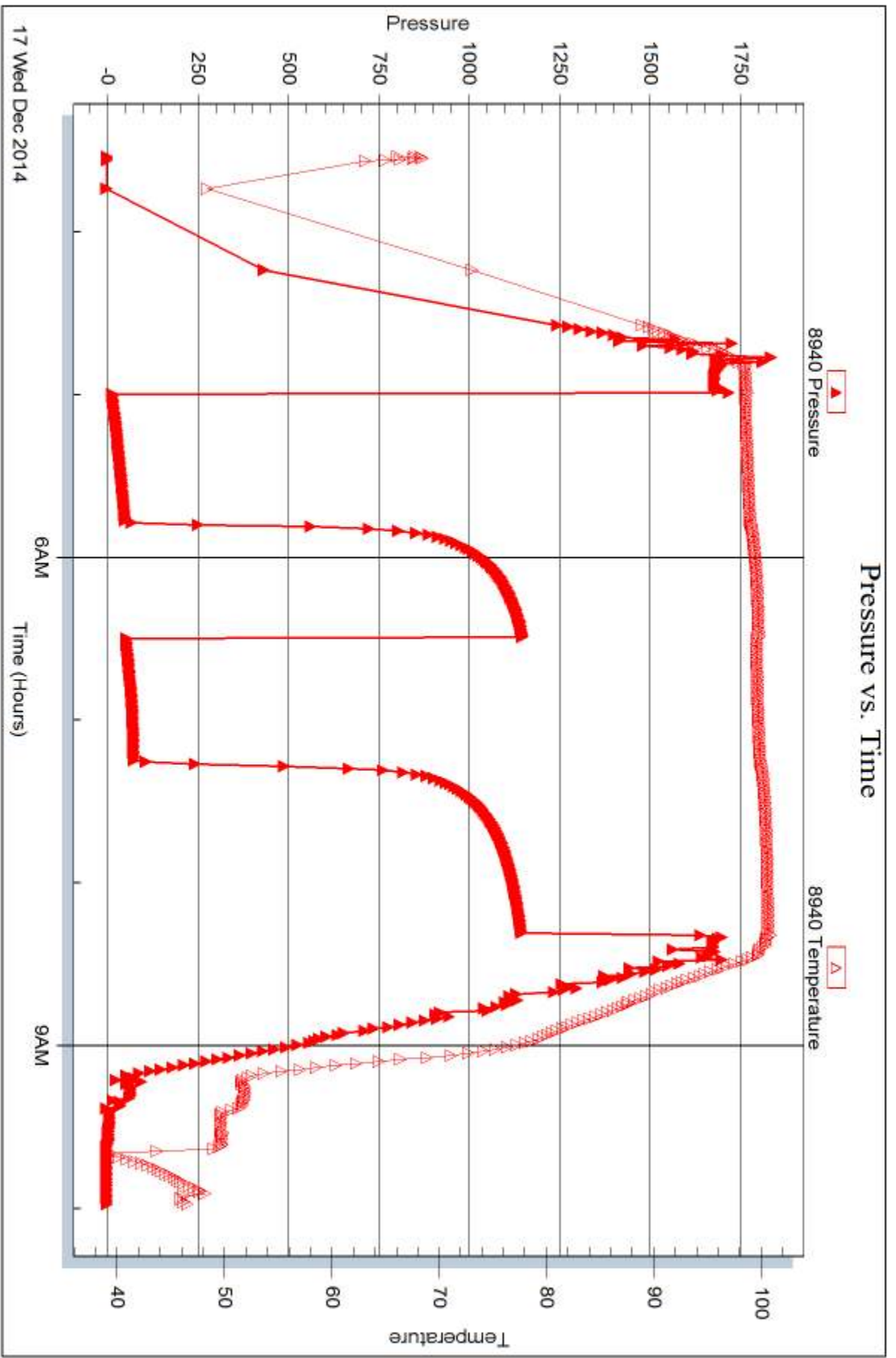
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Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 62406

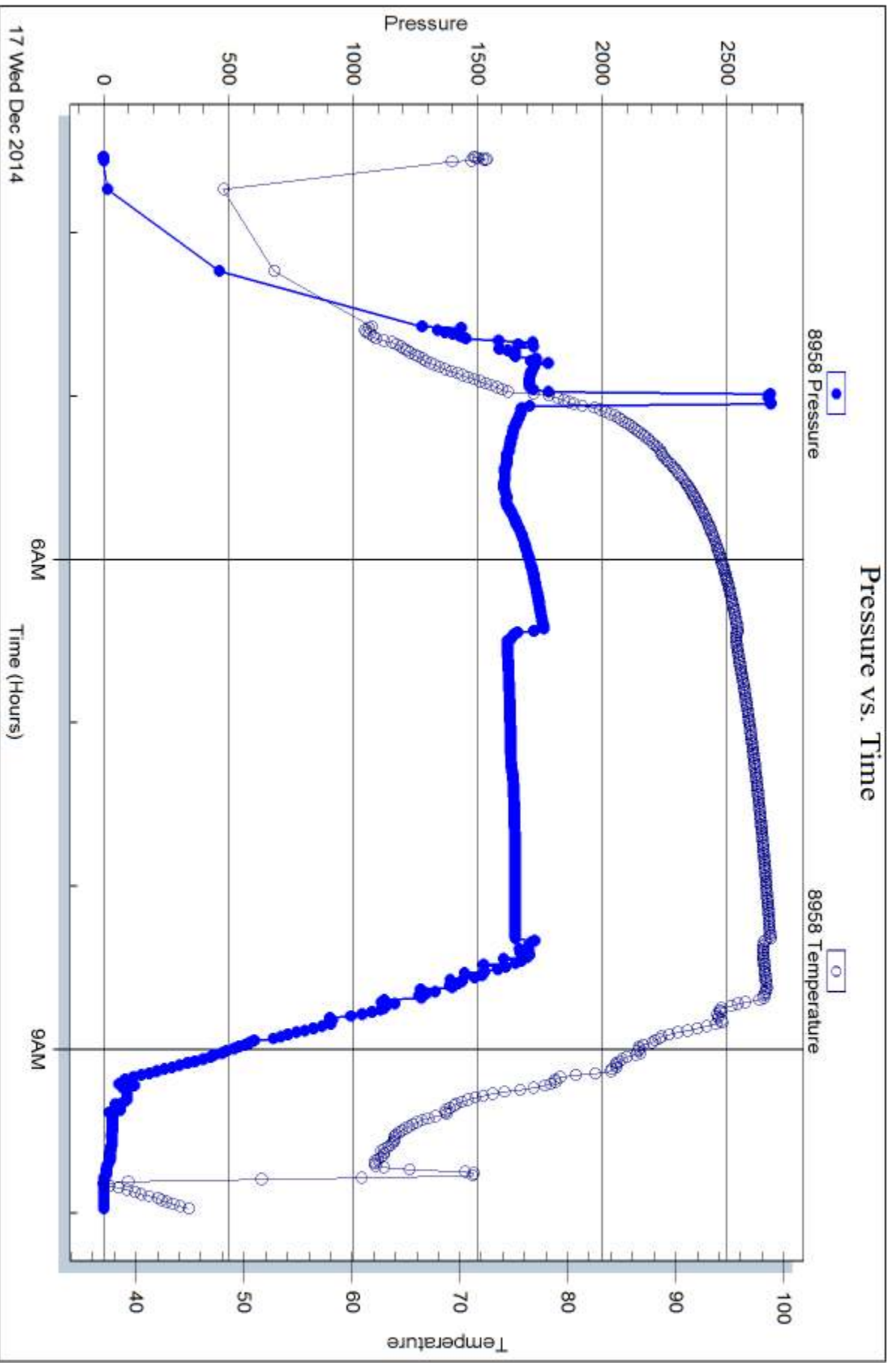
Printed: 2014, 12, 23 @ 10:52:27

Serial #: 8958

Below (Stratellite) Diamond

Glennweiler A #2

DST Test Number: 6



Tribble Testing, Inc

Ref. No: 62406

Printed: 2014, 12, 23 @ 10:52:27



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 14:53:05

End Date: 2014.12.17 @ 17:56:15

Job Ticket #: 62407 DST #: 7

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

Printed: 2014.12.23 @ 10:51:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 14:53:05

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 17:56:15

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: **3638.00 ft (KB) To 3650.00 ft (KB) (TVD)**

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648 Inside

Press@RunDepth: psig @ 3642.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 14:53:05

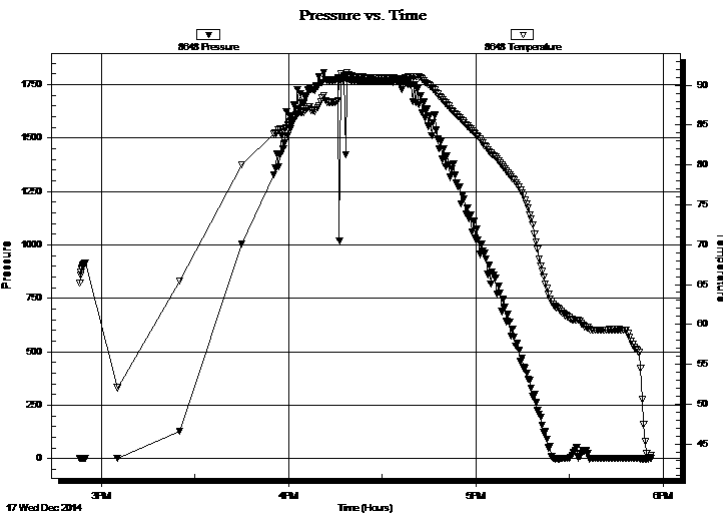
End Time:

17:56:15

Time On Btm:

Time Off Btm:

TEST COMMENT: Opened tool, packer failure, pulled up, bled pressure off and tried again. Packer failure, come out of hole.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud	0.15

Gas Rates

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

* Recovery from multiple tests



DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

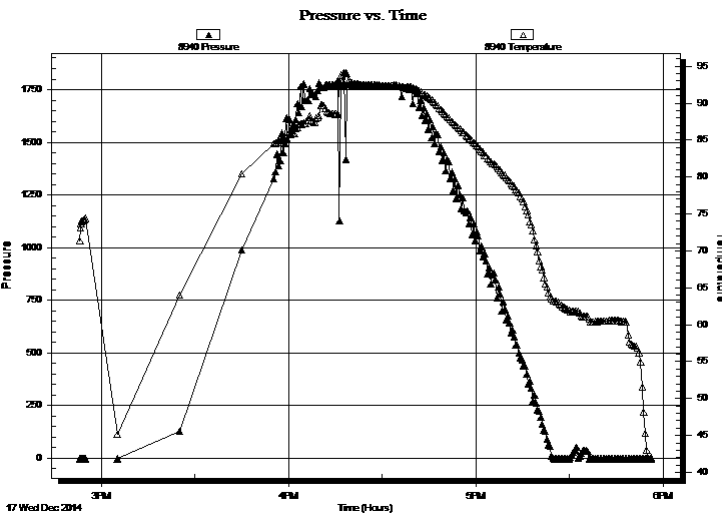
Test Start: 2014.12.17 @ 14:53:05

GENERAL INFORMATION:

Formation:	Gorham Sand				
Deviated:	No	Whipstock:		ft (KB)	
Time Tool Opened:				Test Type:	Conventional Bottom Hole (Reset)
Time Test Ended:	17:56:15			Tester:	Cody Bloedorn
Interval:	3638.00 ft (KB) To	3650.00 ft (KB) (TVD)		Unit No:	73
Total Depth:	3650.00 ft (KB) (TVD)			Reference Elevations:	2215.00 ft (KB)
Hole Diameter:	7.88 inches	Hole Condition:	Fair		2210.00 ft (CF)
				KB to GR/CF:	5.00 ft

Serial #:	8940	Outside			
Press@RunDepth:	psig @	3642.00 ft (KB)		Capacity:	8000.00 psig
Start Date:	2014.12.17	End Date:	2014.12.17	Last Calib.:	2014.12.17
Start Time:	14:53:05	End Time:	17:56:15	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: Opened tool, packer failure, pulled up, bled pressure off and tried again. Packer failure, come out of hole.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud	0.15

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 14:53:05

Tool Information

Drill Pipe:	Length: 3525.00 ft	Diameter: 3.80 inches	Volume: 49.45 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 35000.00 lb
			<u>Total Volume: 50.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3638.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	33.00 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			3618.00	
Shut In Tool	5.00			3623.00	
Hydraulic tool	5.00			3628.00	
Packer	5.00			3633.00	21.00 Bottom Of Top Packer
Packer	5.00			3638.00	
Stubb	1.00			3639.00	
Perforations	3.00			3642.00	
Recorder	0.00	8648	Inside	3642.00	
Recorder	0.00	8940	Outside	3642.00	
Perforations	5.00			3647.00	
Bullnose	3.00			3650.00	12.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 14:53:05

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

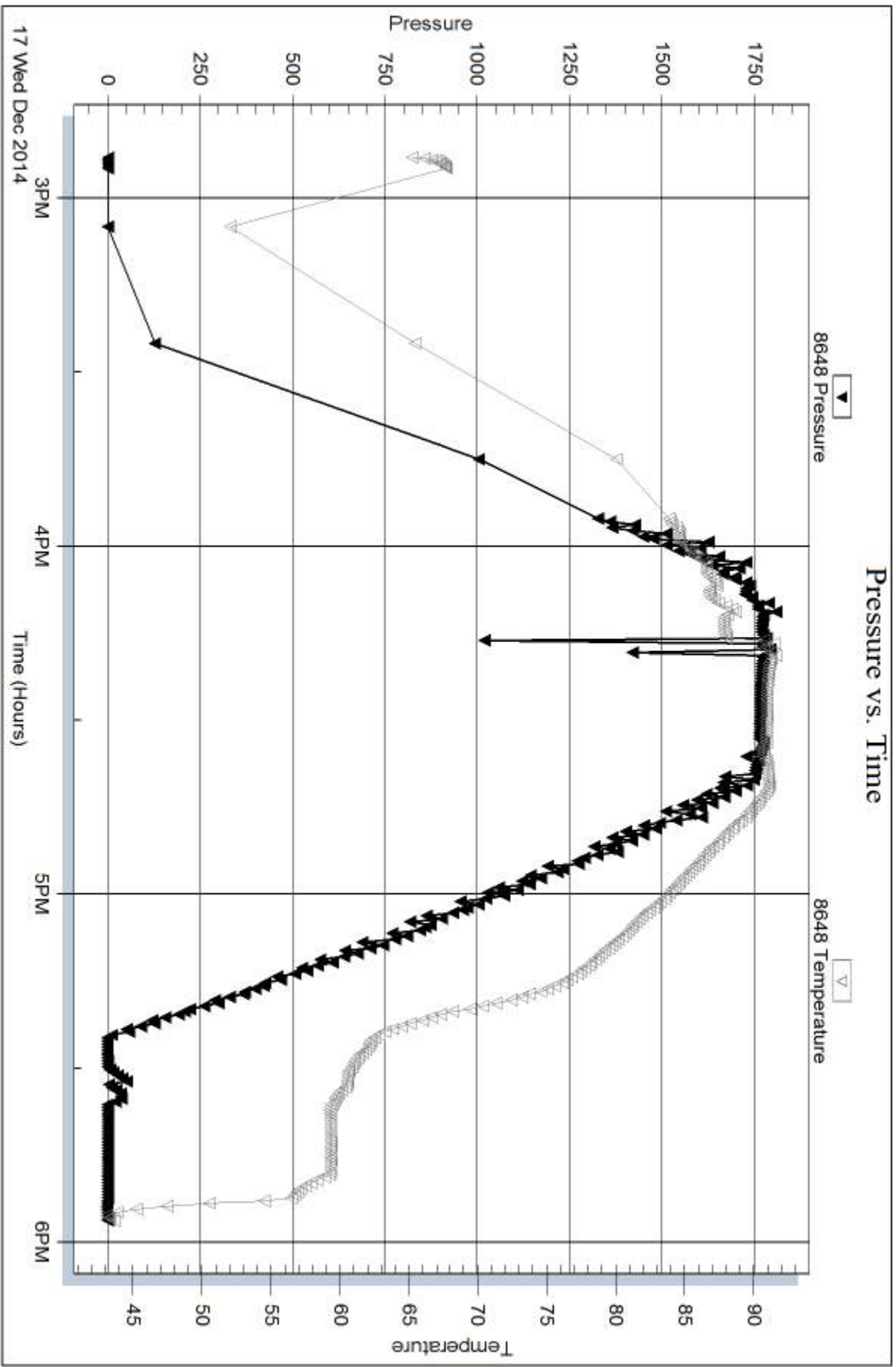
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 7



17 Wed Dec 2014

Triobite Testing, Inc

Ref. No: 62407

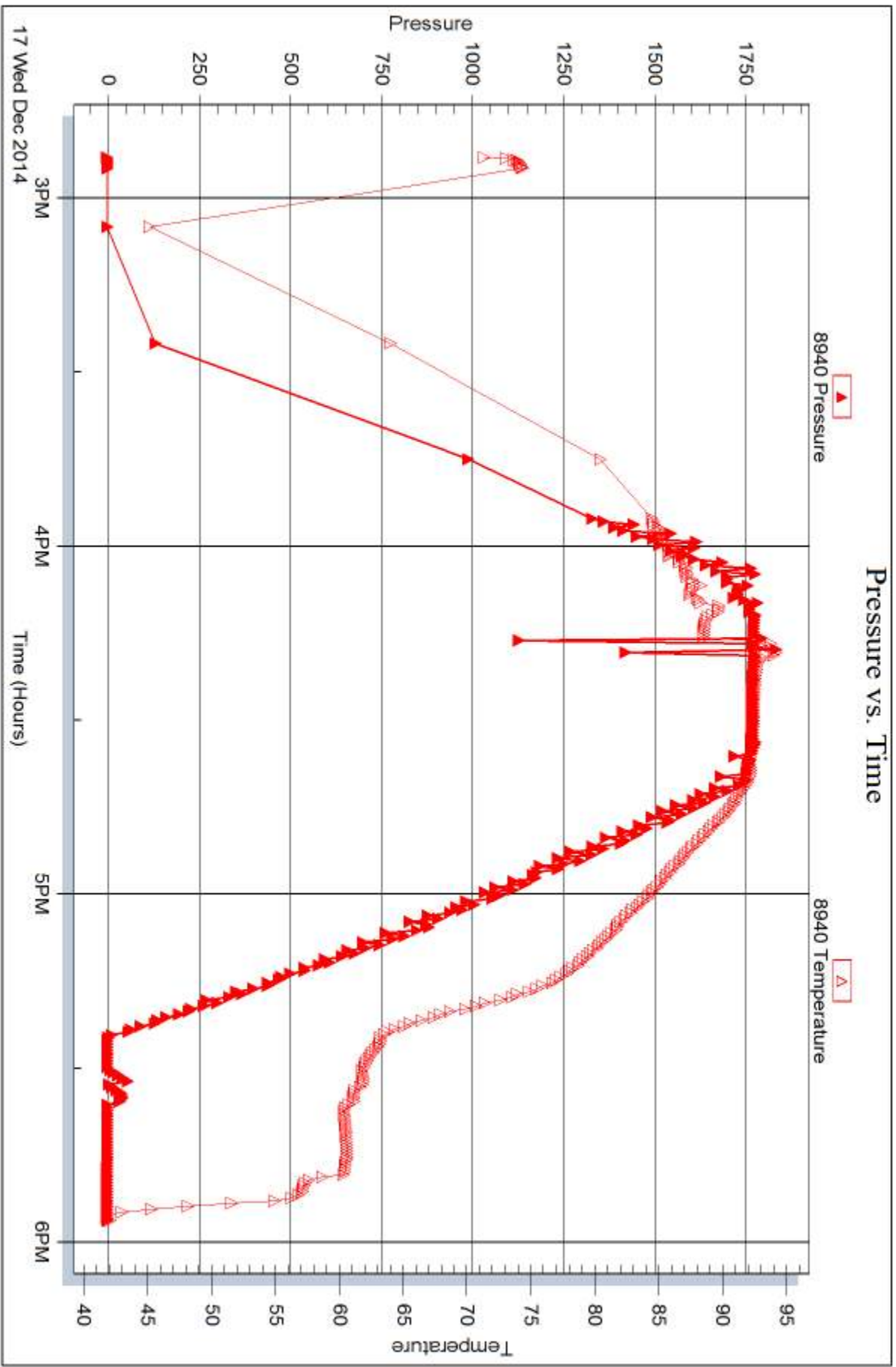
Printed: 2014, 12, 23 @ 10:51:36

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 7



Triobite Testing, Inc

Ref. No: 62407

Printed: 2014, 12, 23 @ 10:51:36



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 18:09:00

End Date: 2014.12.18 @ 01:31:45

Job Ticket #: 62408 DST #: 8

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

Printed: 2014.12.23 @ 10:50:56



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:34:15

Time Test Ended: 01:31:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3588.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 179.48 psig @ 3627.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time: 18:09:05

End Time:

01:31:44

Time On Btm:

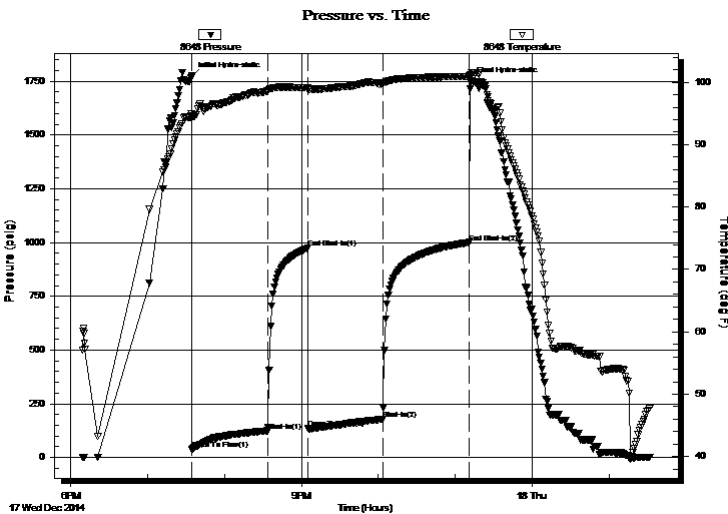
2014.12.17 @ 19:34:00

Time Off Btm:

2014.12.17 @ 23:11:30

TEST COMMENT: 60 - IF- B.O.B. in 35 minutes
30 - IS- surface return
60 - FF- B.O.B. in 48 minutes
60 - FS- Surface return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1773.85	94.87	Initial Hydro-static
1	38.90	94.17	Open To Flow (1)
60	124.56	98.61	Shut-In(1)
91	973.90	99.12	End Shut-In(1)
92	135.51	98.81	Open To Flow (2)
150	179.48	99.77	Shut-In(2)
217	1000.52	100.96	End Shut-In(2)
218	1750.03	101.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	VSOCWM, 5%O, 10%W, 85%M	0.65
186.00	SOCM, 10%O, 90%M	2.61
5.00	MCO, 30%M, 70%O	0.07

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:34:15

Time Test Ended: 01:31:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3588.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 **Outside**

Press@RunDepth: psig @ 3627.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time: 18:09:05

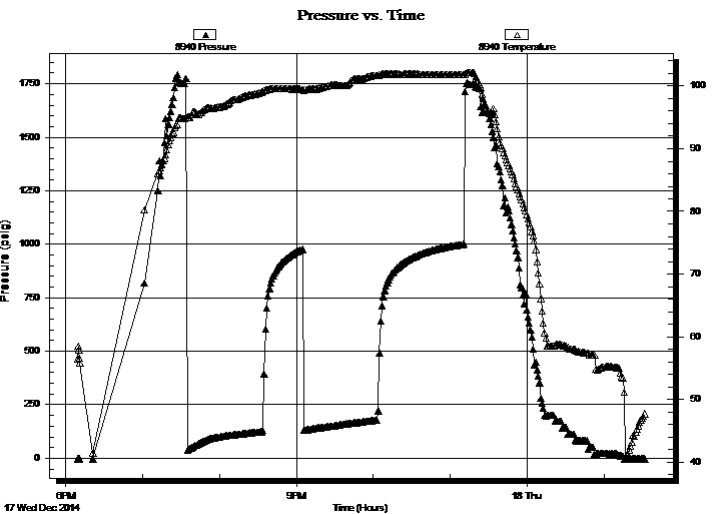
End Time:

01:31:44

Time On Btm:

Time Off Btm:

TEST COMMENT: 60 - IF- B.O.B. in 35 minutes
30 - IS- surface return
60 - FF- B.O.B. in 48 minutes
60 - FS- Surface return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	VSOCWM, 5%O, 10%W, 85%M	0.65
186.00	SOCM, 10%O, 90%M	2.61
5.00	MCO, 30%M, 70%O	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

Tool Information

Drill Pipe:	Length: 3463.00 ft	Diameter: 3.80 inches	Volume: 48.58 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	36000.00 lb
			<u>Total Volume: 49.17 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3588.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	62.00 ft				
Tool Length:	83.00 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			3568.00	
Shut In Tool	5.00			3573.00	
Hydraulic tool	5.00			3578.00	
Packer	5.00			3583.00	21.00 Bottom Of Top Packer
Packer	5.00			3588.00	
Stubb	1.00			3589.00	
Perforations	5.00			3594.00	
Change Over Sub	1.00			3595.00	
Drill Pipe	31.00			3626.00	
Change Over Sub	1.00			3627.00	
Recorder	0.00	8648	Inside	3627.00	
Recorder	0.00	8940	Outside	3627.00	
Perforations	20.00			3647.00	
Bullnose	3.00			3650.00	62.00 Bottom Packers & Anchor

Total Tool Length: 83.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

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: 53.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
124.00	VSOCWM, 5%O, 10%W, 85%M	0.646
186.00	SOCM, 10%O, 90%M	2.609
5.00	MCO, 30%M, 70%O	0.070

Total Length: 315.00 ft

Total Volume: 3.325 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

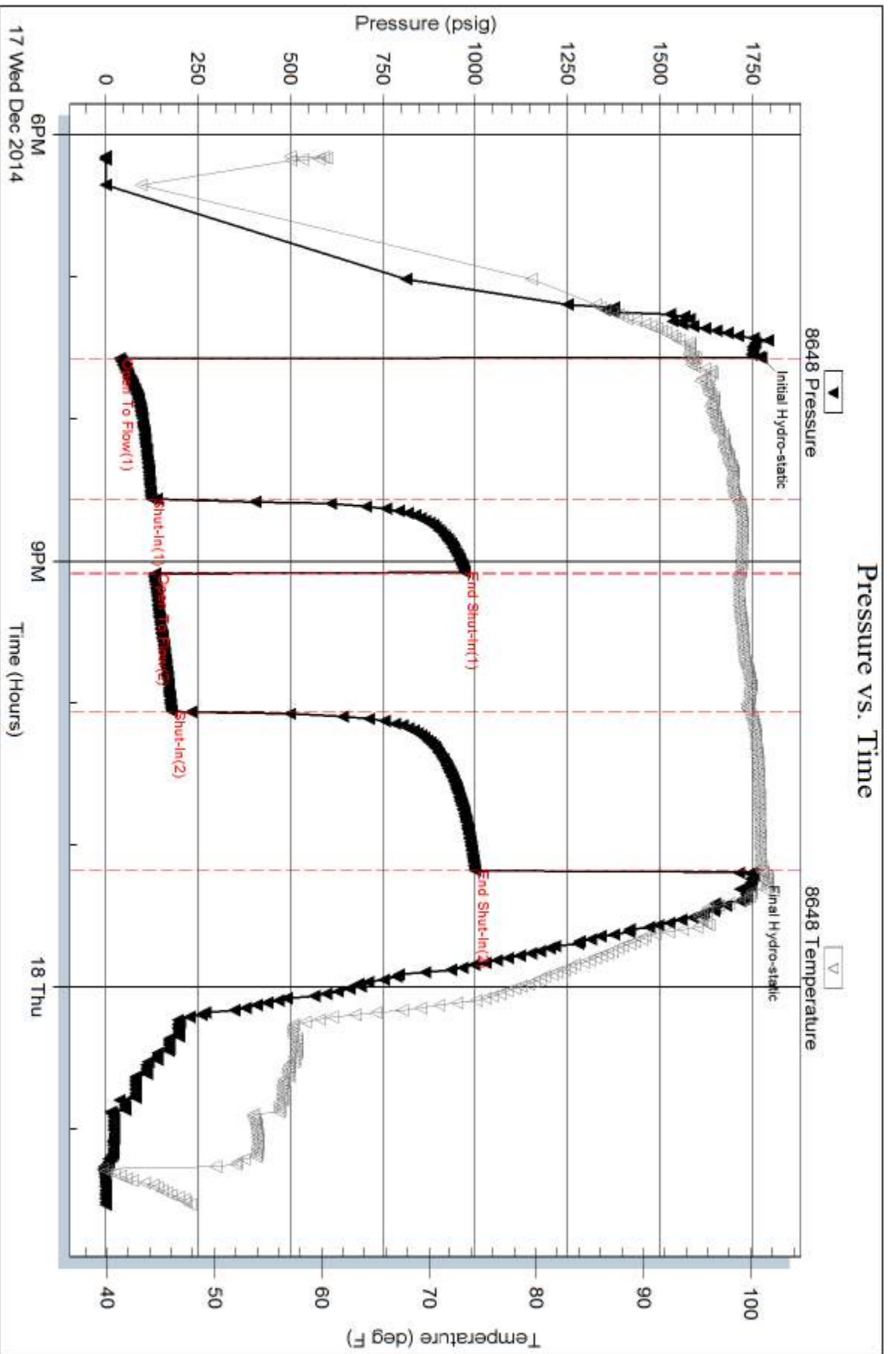
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 8



Trilobite Testing, Inc

Ref. No: 62408

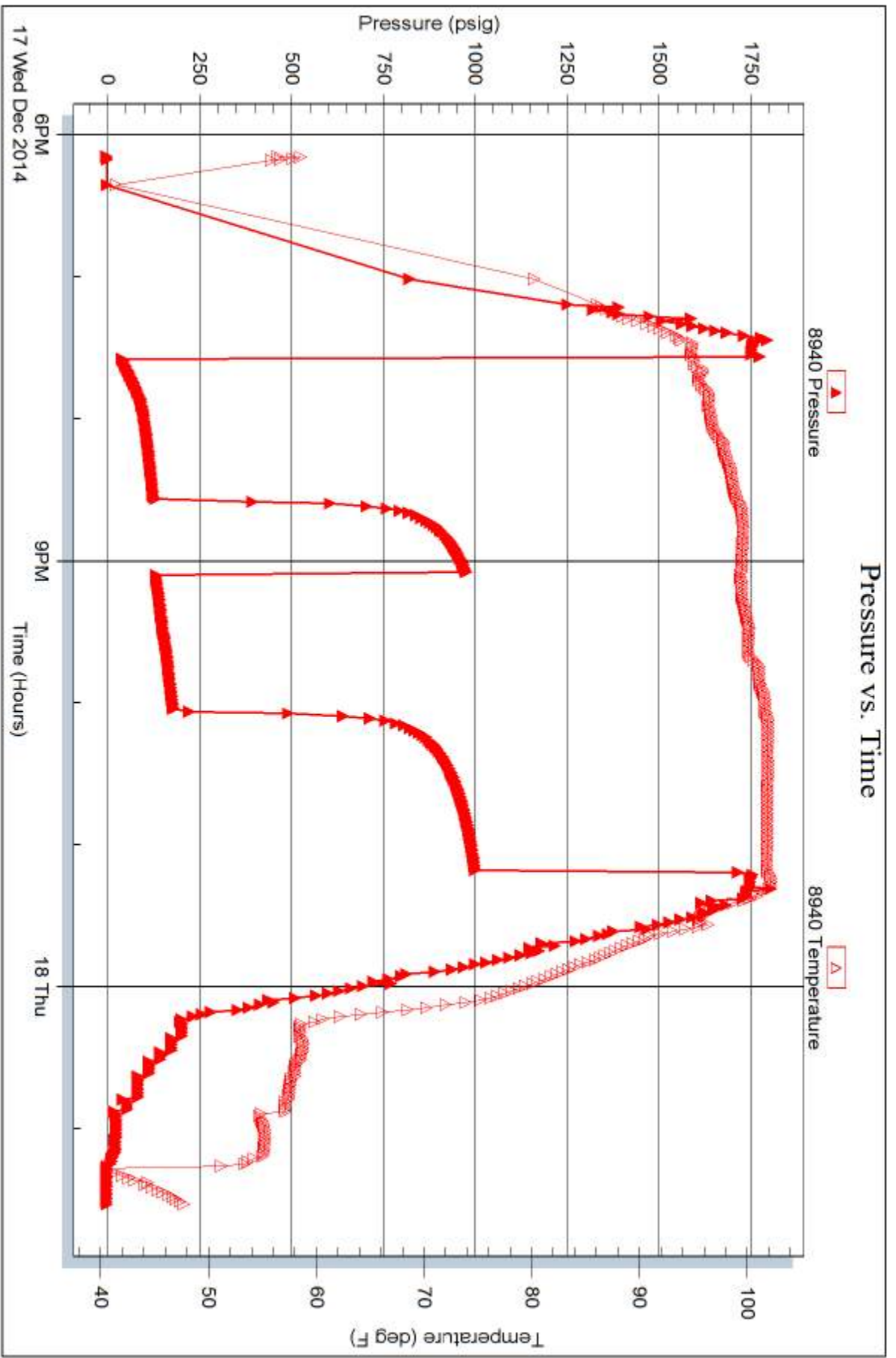
Printed: 2014, 12, 23 @ 10:50:57

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 8



Triobite Testing, Inc

Ref. No: 62408

Printed: 2014, 12, 23 @ 10:50:58



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62401

Well Name & No. Glennemeier A #2 Test No. 1 Date 12-13-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

Interval Tested 3403-3435 Zone Tested LKL "A"
 Anchor Length 32' Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3378 Drill Collars Run 120' Vis 54
 Bottom Packer Depth 3403 Wt. Pipe Run Ø - WL 7.6
 Total Depth 3435 Chlorides 500 ppm System LCM 1#
 Blow Description IF- 6" blow - slid 10'
ISI- No return
FF- Surface return
FSI- No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>MW - oil spots</u>		<u>90</u>	<u>10</u>	
<u>102</u>	<u>Mud - oil spots</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 164' BHT 103° Gravity — API RW 109 @ 58 °F Chlorides 124,000 ppm
 (A) Initial Hydrostatic 1642 Test 1150 T-On Location 2010
 (B) First Initial Flow 55 Jars _____ T-Started 2043
 (C) First Final Flow 76 Safety Joint _____ T-Open 0123
 (D) Initial Shut-In 1156 Circ Sub _____ T-Pulled 0423
 (E) Second Initial Flow 78 Hourly Standby _____ T-Out 0609
 (F) Second Final Flow 89 Mileage 148RT 132rt 204.60 Comments _____
 (G) Final Shut-In 1107 Sampler _____
 (H) Final Hydrostatic 1617 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1354.60
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1354.60

Approved By _____ Our Representative Cody B [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. 62402

Well Name & No. Glennemeier A # 2 Test No. 2 Date 12-14-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW 6
 Location: Sec. 21 Twp. 5s Rge. 2/w Co. Norton State KS

Interval Tested 3434 - 3468 Zone Tested LKC "C-D"
 Anchor Length 34' Drill Pipe Run 3305' Mud Wt. 9.2
 Top Packer Depth 3429 Drill Collars Run 120' Vis 48
 Bottom Packer Depth 3434 Wt. Pipe Run — WL 8
 Total Depth 3468 Chlorides 500 ppm System LCM 1.5
 Blow Description IF - 1 1/2" blow in 15 died back to 1/2"
ISI - No return
FF - No blow for 15 minutes, flushed tool, surface blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>HOCM</u>	<u>30</u>	<u>—</u>	<u>70</u>	<u>—</u>
<u>15</u>	<u>USOCM</u>	<u>5</u>	<u>—</u>	<u>95</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 75' BHT 100° Gravity — API RW — @ — ° F Chlorides — ppm
 (A) Initial Hydrostatic 1668 Test 1150 T-On Location 1246
 (B) First Initial Flow 14 Jars — T-Started 1257
 (C) First Final Flow 31 Safety Joint — T-Open 1335
 (D) Initial Shut-In 884 Circ Sub — T-Pulled 1735
 (E) Second Initial Flow 38 Hourly Standby — T-Out 1920
 (F) Second Final Flow 50 Mileage 148 RT 204.60 Comments —
 (G) Final Shut-In 827 Sampler —
 (H) Final Hydrostatic 1628 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 45 Extra Recorder — Sub Total 0
 Initial Shut-In 45 Day Standby — Total 1354.60
 Final Flow 45 Accessibility — MP/DST Disc't —
 Final Shut-In 45 Sub Total 1354.60

Approved By _____ Our Representative Cody Black

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **62403**

Well Name & No. Glennemeier A #2 Test No. 3 Date 12-15-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW 6
 Location: Sec. 21 Twp. 5S Rge. 21W Co. Norton State KS

Interval Tested 3507-3552 Zone Tested LKC "H-I"
 Anchor Length 45' Drill Pipe Run 3399' Mud Wt. 9.2
 Top Packer Depth 3502 Drill Collars Run 120' Vis 48
 Bottom Packer Depth 3507 Wt. Pipe Run — WL 8
 Total Depth 3552 Chlorides 500 ppm System LCM 1.5
 Blow Description IF - Surface blow
ISI - No return
FF - Surged & died, Flushed tool, Surged & died
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>Mud - oil spots</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 80' BHT 98° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1715</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0733</u>
(B) First Initial Flow <u>16</u>	<input type="checkbox"/> Jars	T-Started <u>0748</u>
(C) First Final Flow <u>32</u>	<input type="checkbox"/> Safety Joint	T-Open <u>10:32</u>
(D) Initial Shut-In <u>1159</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>13:32</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>1506</u>
(F) Second Final Flow <u>56</u>	<input checked="" type="checkbox"/> Mileage <u>148 RT</u> 204.60	Comments
(G) Final Shut-In <u>1133</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1716</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1354.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1354.60</u>	

Approved By _____ Our Representative Cody B...

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62404

Well Name & No. Glennemeier A # 2 Test No. 4 Date 12-15-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

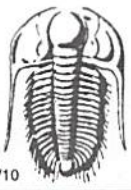
Interval Tested 3535 - 3587 Zone Tested LKC "I-K"
 Anchor Length 52' Drill Pipe Run 3401' Mud Wt. 9.2
 Top Packer Depth 3530 Drill Collars Run 120' Vis 51
 Bottom Packer Depth 3535 Wt. Pipe Run — WL 8
 Total Depth 3587 Chlorides 600 ppm System LCM 1.5
 Blow Description IF - 1 1/2" blow in 23 minutes, died back to 1"
ISI - No return
FF - No blow for 10 minutes, flushed tool, surged & died
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>NSOCM</u>	<u>2</u>		<u>98</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 20' BHT 97° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1749</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2142</u>
(B) First Initial Flow <u>32</u>	<input type="checkbox"/> Jars	T-Started <u>2155</u>
(C) First Final Flow <u>33</u>	<input type="checkbox"/> Safety Joint	T-Open <u>1227</u>
(D) Initial Shut-In <u>97</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0343</u>
(E) Second Initial Flow <u>33</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0537</u>
(F) Second Final Flow <u>38</u>	<input checked="" type="checkbox"/> Mileage <u>148 RT</u> 204.60	Comments
(G) Final Shut-In <u>99</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1719</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1354.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1354.60</u>	

Approved By _____ Our Representative Cody B...
 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. 62405

Well Name & No. Glennemeier A #2 Test No. 5 Date 12-16-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 55 Rge. 21W Co. Norton State Ks

Interval Tested 3638-3650 Zone Tested Gorham Sand
 Anchor Length 12' Drill Pipe Run 3525' Mud Wt. 9.2
 Top Packer Depth 3633 Drill Collars Run 120' Vis 53
 Bottom Packer Depth 3638 Wt. Pipe Run — WL 8
 Total Depth 3650 Chlorides 660 ppm System LCM 1.5
 Blow Description IF-5" blow
ISI - Surface return
FF-4" blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>169</u>	<u>OCMW</u>	<u>20</u>	<u>50</u>	<u>30</u>	
<u>75</u>	<u>60</u>	<u>5</u>	<u>95</u>		

Rec Total 244' BHT 109° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1803</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1730</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars	T-Started <u>1753</u>
(C) First Final Flow <u>65</u>	<input type="checkbox"/> Safety Joint	T-Open <u>2126</u>
(D) Initial Shut-In <u>1029</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1226</u>
(E) Second Initial Flow <u>71</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0300</u>
(F) Second Final Flow <u>102</u>	<input checked="" type="checkbox"/> Mileage <u>148RT</u> 204.60	Comments <u>Told to be here @ 5:30pm</u>
(G) Final Shut-In <u>1016</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1768</u>	<input checked="" type="checkbox"/> Straddle <u>[Signature]</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1354.60</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1354.60</u>	

Approved By _____ Our Representative Cody [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62406

Well Name & No. Glennemeier #2 Test No. 6 Date 12-16-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

Interval Tested 3460-3490 3650 Zone Tested LKC "F-6"
 Anchor Length 30' 160' tail Drill Pipe Run 3337' Mud Wt. 9.2
 Top Packer Depth 3455 Drill Collars Run 120' Vis 53
 Bottom Packer Depth 3460 Wt. Pipe Run — WL 8
 Total Depth 3490 Chlorides 600 ppm System LCM 1.5
 Blow Description IF - 3" blow
ISI - No return
FF - Surface return
FSS - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>WM - oil spots</u>		<u>10</u>	<u>90</u>	
<u>65</u>	<u>USOCM</u>		<u>5</u>	<u>95</u>	

Rec Total 125' BHT 100° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1722</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1730</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars	T-Started <u>0332</u>
(C) First Final Flow <u>48</u>	<input type="checkbox"/> Safety Joint	T-Open <u>0500</u>
(D) Initial Shut-In <u>1146</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0815</u>
(E) Second Initial Flow <u>54</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0958</u>
(F) Second Final Flow <u>72</u>	<input checked="" type="checkbox"/> Mileage <u>204.60</u>	Comments
(G) Final Shut-In <u>1142</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1631</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby	Total <u>1954.60</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1954.60</u>	

Approved By _____ Our Representative Cody Bledsoe

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. 62408

Well Name & No. Glenn Meier A #2 Test No. 8 Date 12-17-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 55 Rge. 21w Co. Norton State KS

Interval Tested 3588-3650 Zone Tested Gorham Sand
 Anchor Length 62' Drill Pipe Run 3463 Mud Wt. 9.2
 Top Packer Depth 3583 Drill Collars Run 120 Vis 53
 Bottom Packer Depth 3588 Wt. Pipe Run --- WL 8
 Total Depth 3650 Chlorides 600 ppm System LCM 1.5

Blow Description IF - B.O.B. in 35 minutes
ISI - surface return
FF - B.O.B. in 48 minutes
FSI - surface return

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>VSOCWM</u>	<u>5</u>	<u>10</u>	<u>85</u>	<u>---</u>
<u>186</u>	<u>SOCM</u>	<u>10</u>	<u>---</u>	<u>90</u>	<u>---</u>
<u>5</u>	<u>MCO</u>	<u>70</u>	<u>---</u>	<u>30</u>	<u>---</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 315' BHT 100° Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 1773 Test 1150 T-On Location 1440
 (B) First Initial Flow 38 Jars --- T-Started 1809
 (C) First Final Flow 124 Safety Joint --- T-Open 1934
 (D) Initial Shut-In 973 Circ Sub --- T-Pulled 2304
 (E) Second Initial Flow 135 Hourly Standby --- T-Out 0132
 (F) Second Final Flow 179 Mileage 148RT Comments ---
 (G) Final Shut-In 1000 Sampler ---
 (H) Final Hydrostatic 1750 Straddle --- Ruined Shale Packer ---
 Shale Packer --- Ruined Packer ---
 Extra Packer --- Extra Copies ---
 Extra Recorder --- Sub Total 0
 Day Standby --- Total 1150
 Accessibility --- MP/DST Disc't ---
 Sub Total 1150

Approved By _____

Our Representative Cody B...

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