15-065-23162

Black Diamond Voss #1 4 6 21w Graham KS DST # 1 Topeka Deer Creek 2006.04.13

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

4 6 21w Graham KS

Voss #1

Start Date: 2006.04.13 @ 12:58:49
End Date: 2006.04.13 @ 19:40:32
Job Ticket #: 24321 DST #: 1

RECEIVED
JUN 2 1 2006
KCC WICHITA

15-065-23162-00-00
S2 SE NE SE
1530 FSL 330 FEL

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24321 **DST#: 1**

Test Start: 2006.04.13 @ 12:58:49

GENERAL INFORMATION:

Formation: **Topeka Deer Creek**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 15:09:02
Time Test Ended: 19:40:32

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 24

Interval: 3156.00 ft (KB) To 3233.00 ft (KB) (TVD)
Total Depth: 3233.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2201.00 ft (KB)
2196.00 ft (CF)
KB to GR/CF: 5.00 ft

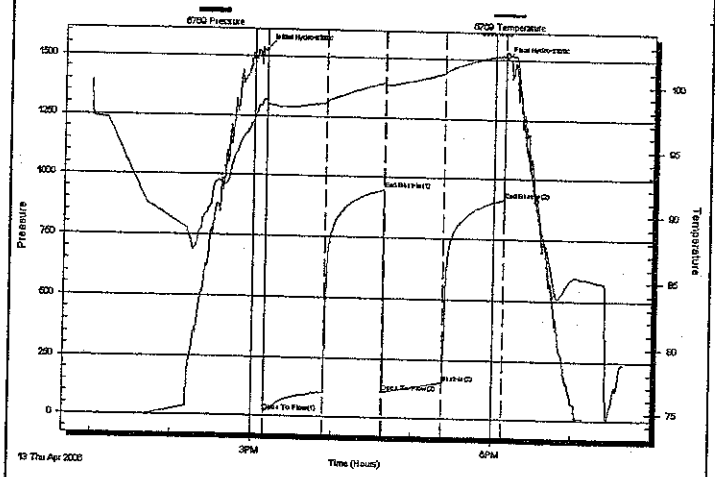
Serial #: 6769 **Inside**

Press@RunDepth: 154.24 psig @ 3161.01 ft (KB)
Start Date: 2006.04.13 End Date: 2006.04.13
Start Time: 12:58:49 End Time: 19:40:32

Capacity: 7000.00 psig
Last Calib.: 2006.04.13
Time On Btm: 2006.04.13 @ 15:08:47
Time Off Btm: 2006.04.13 @ 18:08:02

TEST COMMENT: IFP BOB 31M
ISI No blow back
FFP BOB 35"
FSI No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1529.27	98.73	Initial Hydro-static
1	17.10	98.39	Open To Flow (1)
45	102.35	98.51	Shut-In(1)
90	947.89	100.15	End Shut-In(1)
90	107.44	99.92	Open To Flow (2)
134	154.24	100.94	Shut-In(2)
179	913.39	102.36	End Shut-In(2)
180	1498.53	102.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M100%	0.02
65.00	MW 30% M 70% W	0.32
120.00	MW 50% M 50% W	1.23
120.00	WM 1% W 99% M	1.68
2.00	VSOCM 1% O 99% M	0.03

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24321 **DST#: 1**

Test Start: 2006.04.13 @ 12:58:49

Tool Information

Drill Pipe:	Length:	3041.00 ft	Diameter:	3.80 inches	Volume:	42.66 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	
					Total Volume:	43.25 bbl	

Drill Pipe Above KB:	25.00 ft
Depth to Top Packer:	3156.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	77.02 ft
Tool Length:	97.02 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:		2500.00 lb
Weight set on Packer:		25000.00 lb
Weight to Pull Loose:		70000.00 lb
Tool Chased		5.00 ft
String Weight:	Initial	43000.00 lb
	Final	48000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
S.I. Tool	5.00			3141.00		
HYD S.I. Tool	5.00			3146.00		
Packer	5.00			3151.00	20.00	Bottom Of Top Packer
Packer	5.00			3156.00		
Stubb	1.00			3157.00		
Perforations	3.00			3160.00		
C.O. Sub	1.00			3161.00		
Recorder	0.01	6769	Inside	3161.01		
Blank Spacing	63.00			3224.01		
C.O. Sub	1.00			3225.01		
Perforations	5.00			3230.01		
Recorder	0.01	13548	Outside	3230.02		
Bullnose	3.00			3233.02	77.02	Bottom Packers & Anchor
Total Tool Length:	**97.02**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24321 **DST#: 1**

Test Start: 2006.04.13 @ 12:58:49

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 59.00 sec/qt
Water Loss: 8.70 in³
Resistivity: ohm.m
Salinity: 1500.00 ppm
Filter Cake: inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: 22000 ppm

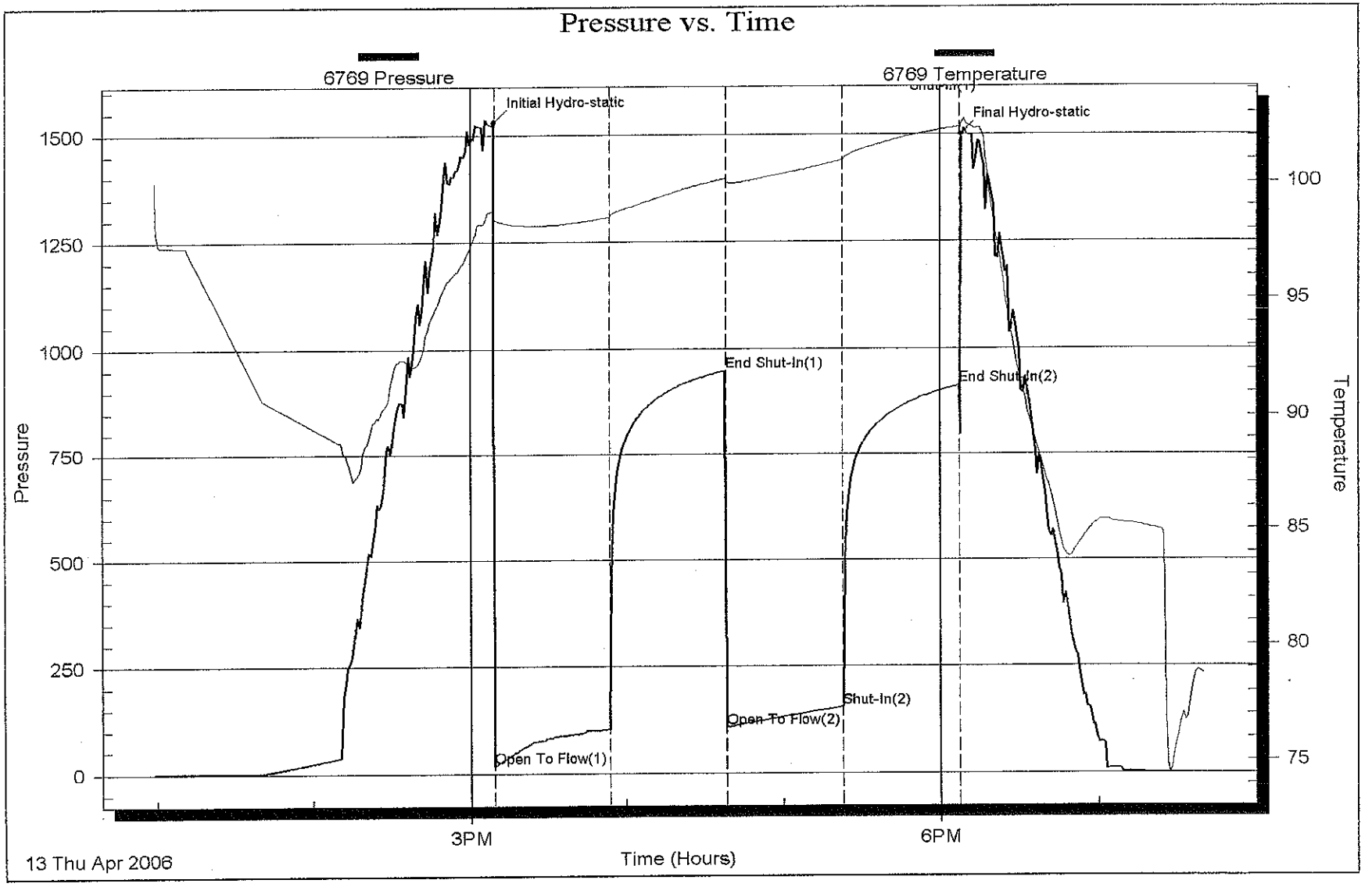
Recovery Information

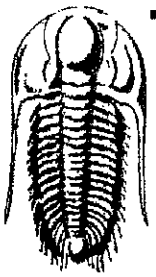
Recovery Table

Length ft	Description	Volume bbl
5.00	M100%	0.025
65.00	MW 30% M 70% W	0.320
120.00	MW 50% M 50% W	1.228
120.00	WM 1% W 99% M	1.683
2.00	VSOCM 1% O 99% M	0.028

Total Length: 312.00 ft Total Volume: 3.284 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
6769 Pressure
6769 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1500
1250
1000
750
500
250
0
100
95
90
85
80
75
3PM
6PM
Time (Hours)
13 Thu Apr 2006



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

4 6 21w Graham KS

Voss #1

Start Date: 2006.04.14 @ 10:00:23
End Date: 2006.04.14 @ 13:19:51
Job Ticket #: 24322 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24322 **DST#: 2**

Test Start: 2006.04.14 @ 10:00:23

GENERAL INFORMATION:

Formation: **LKC "C-D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 13:19:51

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 24

Interval: 3402.00 ft (KB) To 3442.00 ft (KB) (TVD)
Total Depth: 3442.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

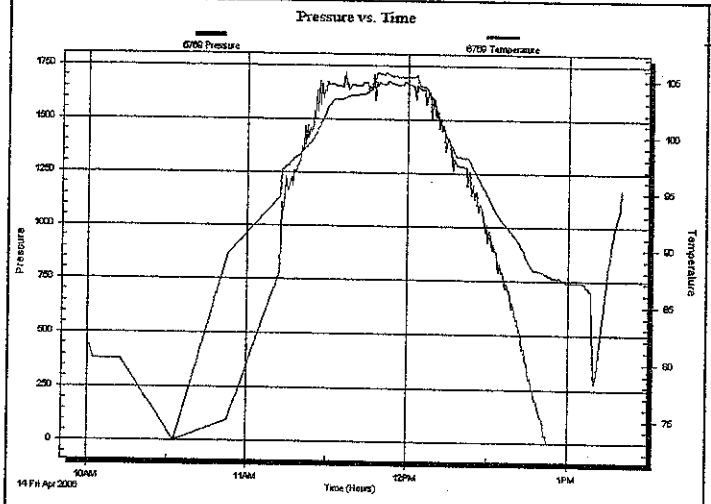
Reference Elevations: 2201.00 ft (KB)
2196.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6769

Press@RunDepth: psig @ ft (KB)
Start Date: 2006.04.14 End Date: 2006.04.14
Start Time: 10:00:23 End Time: 13:19:51

Capacity: 7000.00 psig
Last Calib.: 2006.04.14
Time On Btm:
Time Off Btm:

TEST COMMENT: Hit bridges 20' off bottom punched through. Hung up about 15 times made it to within 1' of bottom Geo decided to pull tool and circulate



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24322 **DST#: 2**

Test Start: 2006.04.14 @ 10:00:23

Tool Information

Drill Pipe:	Length:	3282.00 ft	Diameter:	3.80 inches	Volume:	46.04 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:	25000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:	lb
					Total Volume:	46.63 bbl	Tool Chased	ft
Drill Pipe Above KB:		27.00 ft					String Weight: Initial	lb
Depth to Top Packer:		3402.00 ft					Final	lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		40.02 ft						
Tool Length:		67.02 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
S.I. Tool	5.00			3380.00		
HYD S.I. Tool	5.00			3385.00		
Jars	5.00			3390.00		
Safety Joint	2.00			3392.00		
Packer	5.00			3397.00	27.00	Bottom Of Top Packer
Packer	5.00			3402.00		
Stubb	1.00			3403.00		
Perforations	7.00			3410.00		
Recorder	0.01	6769	Inside	3410.01		
Perforations	29.00			3439.01		
Recorder	0.01	13548	Outside	3439.02		
Bullnose	3.00			3442.02	40.02	Bottom Packers & Anchor
Total Tool Length:	**67.02**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24322 **DST#: 2**

Test Start: 2006.04.14 @ 10:00:23

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.94 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

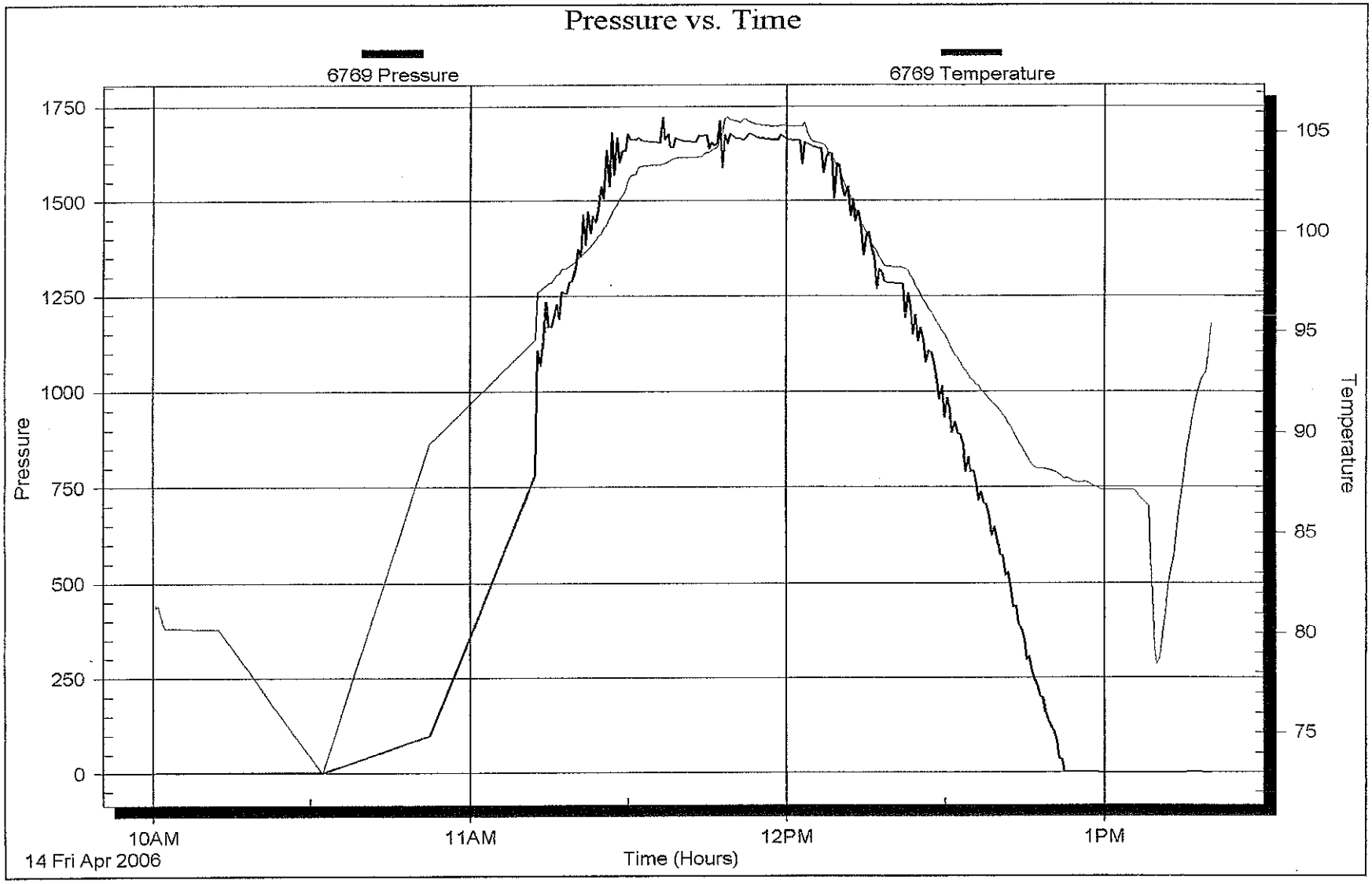
Length ft	Description	Volume bbl

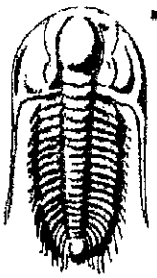
Total Length: ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
6769 Pressure
6769 Temperature
1750
1500
1250
1000
750
500
250
0
Pressure
105
100
95
90
85
80
75
Temperature
10AM
11AM
12PM
1PM
14 Fri Apr 2006
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

4 6 21w Graham KS

Voss #1

Start Date: 2006.04.14 @ 17:16:29
End Date: 2006.04.14 @ 22:50:57
Job Ticket #: 24323 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24323 **DST#: 3**

Test Start: 2006.04.14 @ 17:16:29

GENERAL INFORMATION:

Formation: **LKC "C-D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 18:49:12
Time Test Ended: 22:50:57

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 24

Interval: 3402.00 ft (KB) To 3442.00 ft (KB) (TVD)
Total Depth: 3442.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

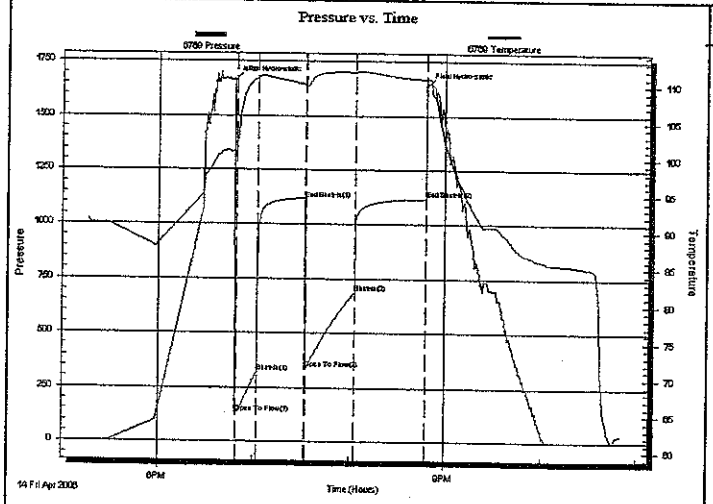
Reference Elevations: 2201.00 ft (KB)
2196.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6769 **Inside**

Press@RunDepth: 686.69 psig @ 3410.01 ft (KB)
Start Date: 2006.04.14 End Date: 2006.04.14
Start Time: 17:16:29 End Time: 22:50:57

Capacity: 7000.00 psig
Last Calib.: 2006.04.14
Time On Btm: 2006.04.14 @ 18:48:12
Time Off Btm: 2006.04.14 @ 20:48:12

TEST COMMENT: IFP - BOB 1 min.
ISI - sur. blow back
FFP - BOB 1 1/2 min.
FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.17	101.04	Initial Hydro-static
1	130.11	100.98	Open To Flow (1)
14	318.26	110.97	Shut-In(1)
44	1117.07	110.15	End Shut-In(1)
45	338.24	109.90	Open To Flow (2)
75	686.69	111.76	Shut-In(2)
120	1117.28	110.82	End Shut-In(2)
120	1638.16	110.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	M100%	0.32
1195.00	MW 50% M 50% W	16.26
130.00	WM 30% W 70% M	1.82

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24323 **DST#: 3**

Test Start: 2006.04.14 @ 17:16:29

Tool Information

Drill Pipe:	Length:	3283.00 ft	Diameter:	3.80 inches	Volume:	46.05 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:	25000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:	62000.00 lb
					Total Volume:	46.64 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		28.00 ft					String Weight: Initial	44000.00 lb
Depth to Top Packer:		3402.00 ft					Final	51000.00 lb
Depth to Bottom Packer:		ft						
Interval betw een Packers:		40.02 ft						
Tool Length:		67.02 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
S.I. Tool	5.00			3380.00		
HYD S.I. Tool	5.00			3385.00		
Jars	5.00			3390.00		
Safety Joint	2.00			3392.00		
Packer	5.00			3397.00	27.00	Bottom Of Top Packer
Packer	5.00			3402.00		
Stubb	1.00			3403.00		
Perforations	7.00			3410.00		
Recorder	0.01	6769	Inside	3410.01		
Perforations	29.00			3439.01		
Recorder	0.01	13548	Outside	3439.02		
Bullnose	3.00			3442.02	40.02	Bottom Packers & Anchor
Total Tool Length:	**67.02**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24323 **DST#: 3**

Test Start: 2006.04.14 @ 17:16:29

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:	65000 ppm
Viscosity:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.94 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

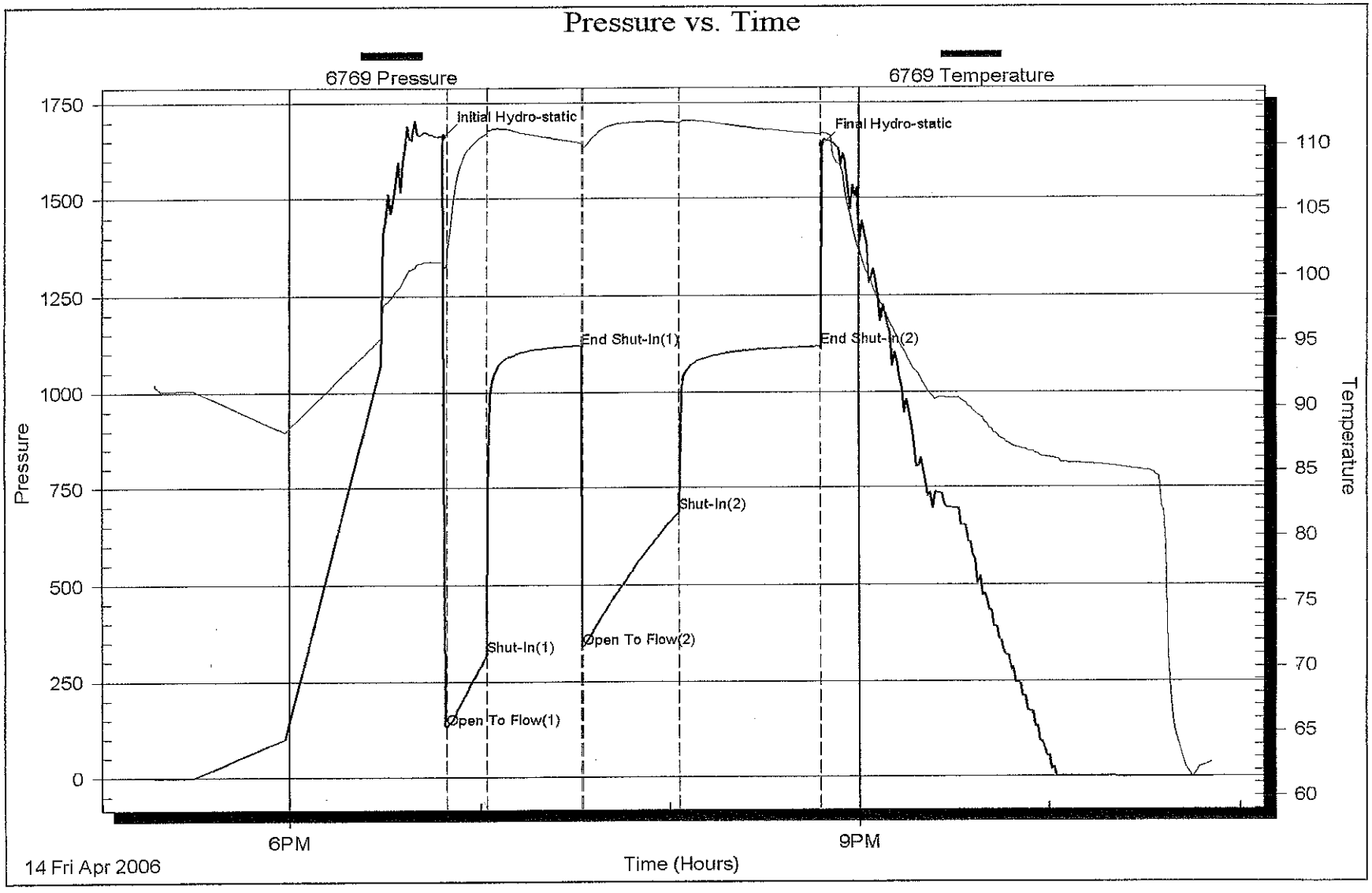
Length ft	Description	Volume bbl
65.00	M100%	0.320
1195.00	MW 50% M 50% W	16.262
130.00	WM 30% W 70% M	1.824

Total Length: 1390.00 ft Total Volume: 18.406 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
6769 Pressure
6769 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(2)
Shut-In(1)
Open To Flow(2)
Open To Flow(1)
Pressure
Temperature
Time (Hours)
6PM
9PM
14 Fri Apr 2006
1750
1500
1250
1000
750
500
250
0
110
105
100
95
90
85
80
75
70
65
60

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

4 6 21w Graham KS

Voss #1

Start Date: 2006.04.15 @ 15:52:58
End Date: 2006.04.15 @ 20:36:11
Job Ticket #: 24324 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24324 **DST#: 4**

Test Start: 2006.04.15 @ 15:52:58

GENERAL INFORMATION:

Formation: **LKC "H-L"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:52:41
Time Test Ended: 20:36:11

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 24

Interval: 3484.00 ft (KB) To 3578.00 ft (KB) (TVD)
Total Depth: 3578.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

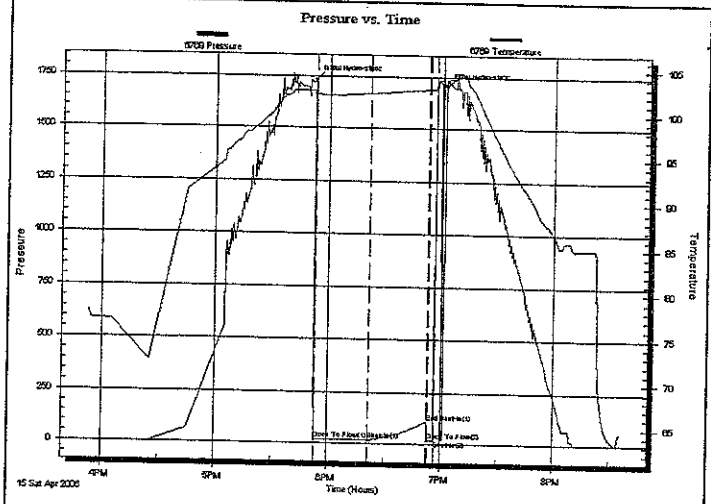
Reference Elevations: 2201.00 ft (KB)
2196.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6769 **Inside**

Press@RunDepth: 19.67 psig @ 3491.01 ft (KB)
Start Date: 2006.04.15 End Date: 2006.04.15
Start Time: 15:52:58 End Time: 20:36:11

Capacity: 7000.00 psig
Last Calib.: 2006.04.15
Time On Btm: 2006.04.15 @ 17:52:11
Time Off Btm: 2006.04.15 @ 19:01:26

TEST COMMENT: IFP Weak sur blow died after 15"
ISI No blow back
FFP No blow flush tool no blow pull tool
TIME 30 30 5



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1732.76	102.68	Initial Hydro-static
1	17.80	102.29	Open To Flow (1)
30	19.67	102.33	Shut-In(1)
61	106.83	102.86	End Shut-In(1)
61	20.42	102.84	Open To Flow (2)
64	21.01	102.90	Shut-In(2)
70	1702.13	103.78	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M100%	0.02

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24324 **DST#: 4**

Test Start: 2006.04.15 @ 15:52:58

Tool Information

Drill Pipe:	Length:	3372.00 ft	Diameter:	3.80 inches	Volume:	47.30 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:	25000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:	62000.00 lb
					Total Volume:	47.89 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		28.00 ft					String Weight: Initial	44000.00 lb
Depth to Top Packer:		3484.00 ft					Final	44000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		94.02 ft						
Tool Length:		114.02 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:
5'off figured bottom

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
S.I. Tool	5.00			3469.00		
HYD S.I. Tool	5.00			3474.00		
Packer	5.00			3479.00	20.00	Bottom Of Top Packer
Packer	5.00			3484.00		
Stubb	1.00			3485.00		
Perforations	5.00			3490.00		
C.O. Sub	1.00			3491.00		
Recorder	0.01	6769	Inside	3491.01		
Blank Spacing	63.00			3554.01		
C.O. Sub	1.00			3555.01		
Perforations	20.00			3575.01		
Recorder	0.01	13548	Outside	3575.02		
Bullnose	3.00			3578.02	94.02	Bottom Packers & Anchor
Total Tool Length:	**114.02**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24324 **DST#: 4**

Test Start: 2006.04.15 @ 15:52:58

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:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.96 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

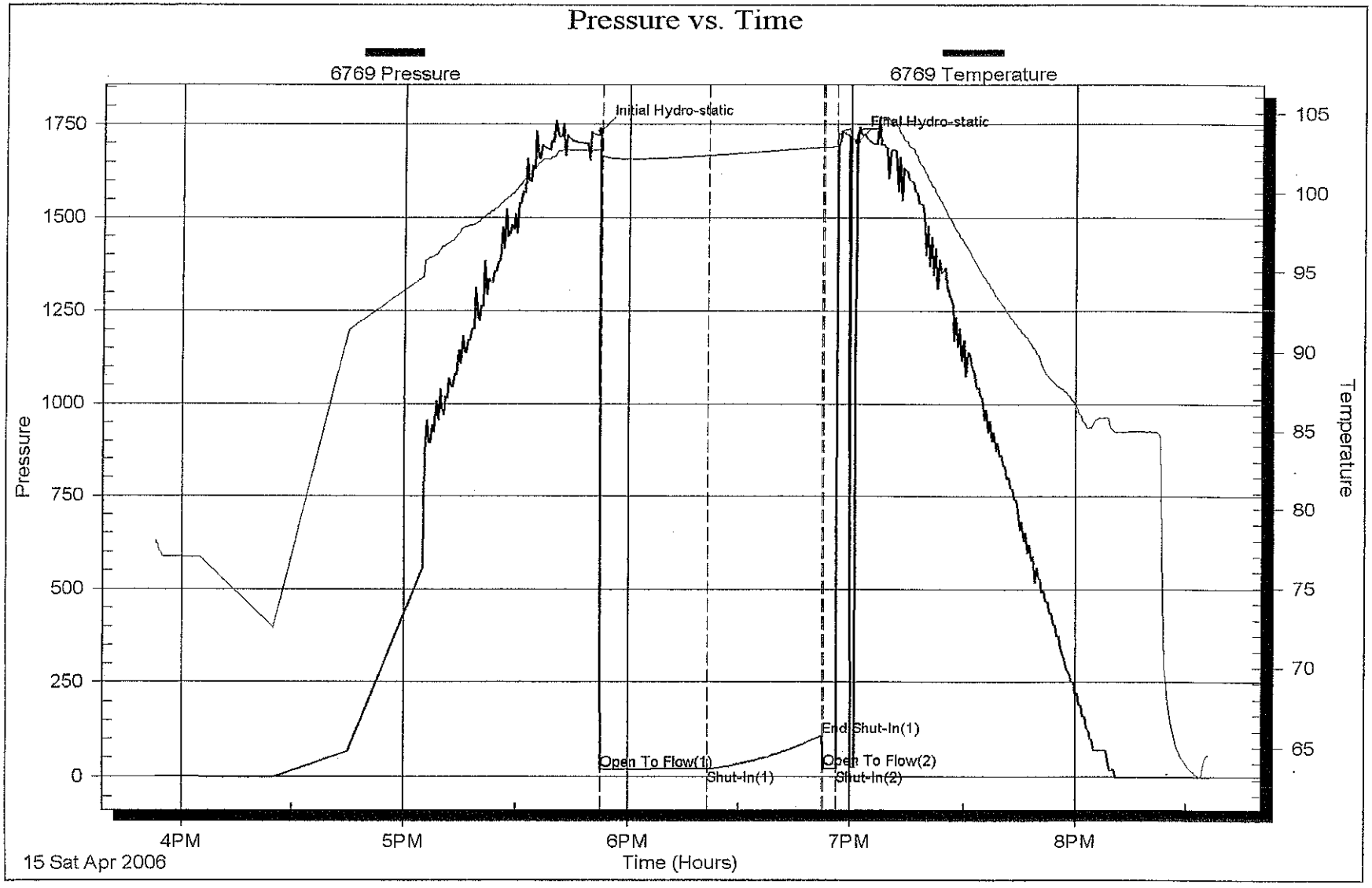
Length ft	Description	Volume bbl
5.00	M100%	0.025

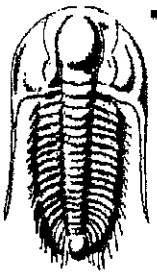
Total Length: 5.00 ft Total Volume: 0.025 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
6769 Pressure
6769 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1750
1500
1250
1000
750
500
250
0
105
100
95
90
85
80
75
70
65
4PM
5PM
6PM
7PM
8PM
15 Sat Apr 2006
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

4 6 21w Graham KS

Voss #1

Start Date: 2006.04.16 @ 02:20:01
End Date: 2006.04.16 @ 07:51:14
Job Ticket #: 24325 DST #: 5

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24325 **DST#: 5**

Test Start: 2006.04.16 @ 02:20:01

GENERAL INFORMATION:

Formation: **Gorham - Reagan Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:50:44
Time Test Ended: 07:51:14

Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 24

Interval: 3570.00 ft (KB) To 3630.00 ft (KB) (TVD)
Total Depth: 3630.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

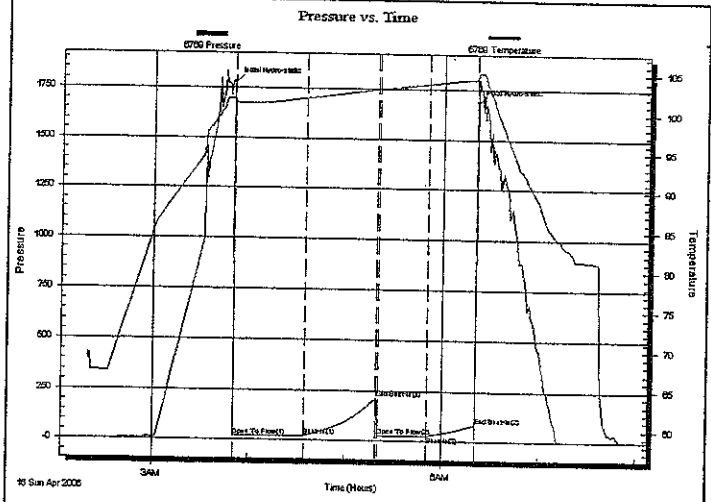
Reference Elevations: 2201.00 ft (KB)
2196.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6769 **Inside**

Press@RunDepth: 23.91 psig @ 3577.01 ft (KB)
Start Date: 2006.04.16 End Date: 2006.04.16
Start Time: 02:20:01 End Time: 07:51:14

Capacity: 7000.00 psig
Last Calib.: 2006.04.16
Time On Btm: 2006.04.16 @ 03:50:14
Time Off Btm: 2006.04.16 @ 06:20:59

TEST COMMENT: IFP Weak blow throughout 1/2" - 1"
ISI No blow back
FFP No blow
FSI No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1779.48	101.76	Initial Hydro-static
1	17.04	101.34	Open To Flow (1)
45	20.16	101.82	Shut-In(1)
90	213.93	103.03	End Shut-In(1)
90	22.35	103.01	Open To Flow (2)
121	23.91	103.73	Shut-In(2)
151	81.84	104.40	End Shut-In(2)
151	1685.39	104.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%	0.02

Gas Rates

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

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24325 **DST#: 5**

Test Start: 2006.04.16 @ 02:20:01

Tool Information

Drill Pipe:	Length:	3443.00 ft	Diameter:	3.80 inches	Volume:	48.30 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:		25000.00 lb
Drill Collar:	Length:	120.00 ft	Diameter:	2.25 inches	Volume:	0.59 bbl	Weight to Pull Loose:		62000.00 lb
					Total Volume:	48.89 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		13.00 ft					String Weight:	Initial	40000.00 lb
Depth to Top Packer:		3570.00 ft						Final	41000.00 lb
Depth to Bottom Packer:		ft							
Interval betw een Packers:		60.02 ft							
Tool Length:		80.02 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
S.I. Tool	5.00			3555.00		
HYD S.I. Tool	5.00			3560.00		
Packer	5.00			3565.00	20.00	Bottom Of Top Packer
Packer	5.00			3570.00		
Stubb	1.00			3571.00		
Perforations	5.00			3576.00		
C.O. Sub	1.00			3577.00		
Recorder	0.01	6769	Inside	3577.01		
Blank Spacing	30.00			3607.01		
C.O. Sub	1.00			3608.01		
Perforations	19.00			3627.01		
Recorder	0.01	13548	Outside	3627.02		
Bullnose	3.00			3630.02	60.02	Bottom Packers & Anchor
Total Tool Length:	**80.02**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Tony Richardson

Voss #1

4 6 21w Graham KS

Job Ticket: 24325 **DST#: 5**

Test Start: 2006.04.16 @ 02:20:01

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:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.97 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	4000.00 ppm				
Filter Cake:	inches				

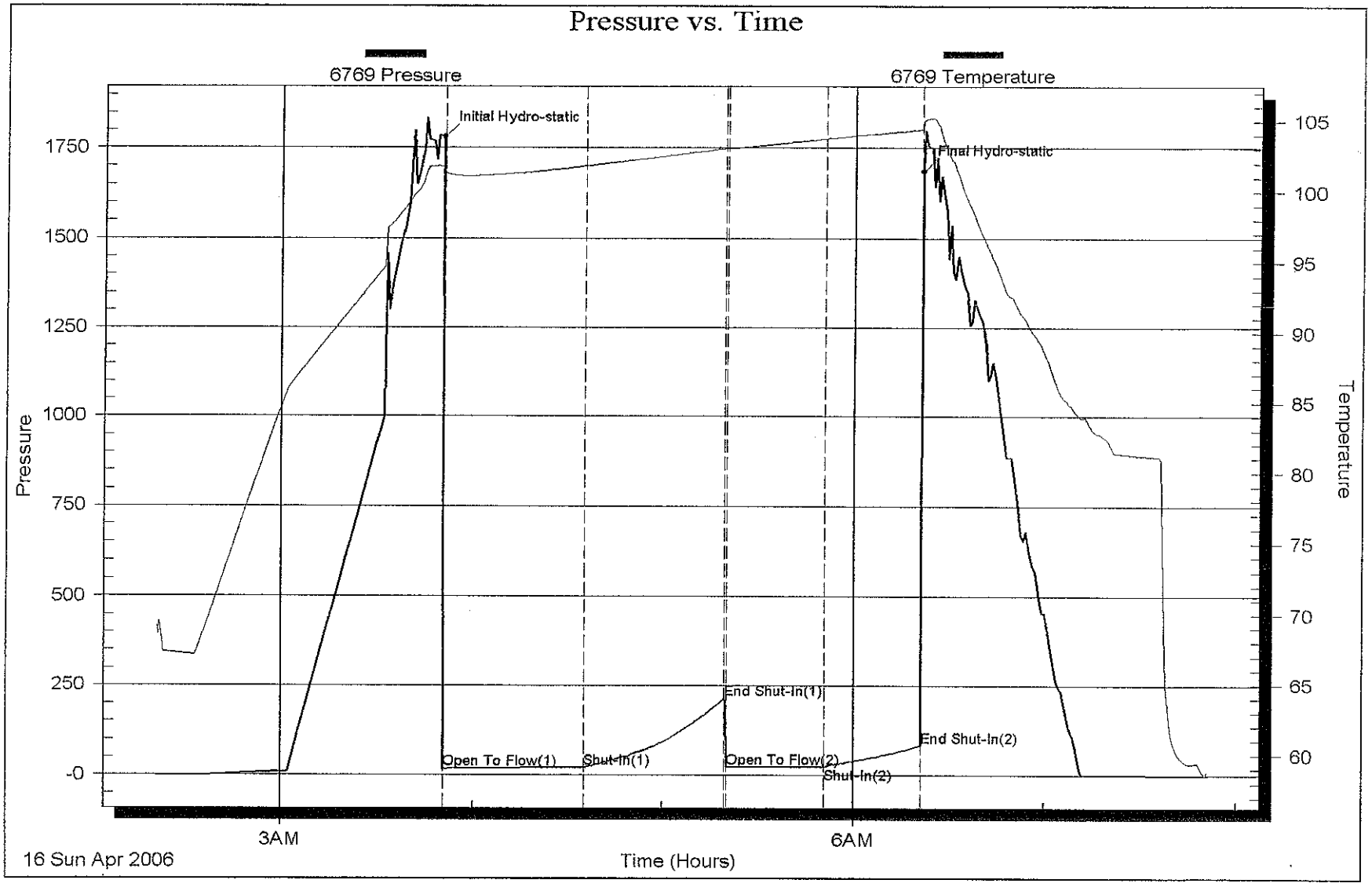
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100%	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
6769 Pressure
6769 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
1750
1500
1250
1000
750
500
250
-0
Pressure
105
100
95
90
85
80
75
70
65
60
Temperature
3AM
6AM
16 Sun Apr 2006
Time (Hours)