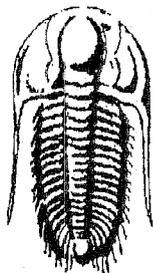


16-95-21w

IND

15-065-23542 0000



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays, KS 67601

ATTN: Tony R

16-9-21 Graham KS

Boland #9

Start Date: 2009.05.25 @ 23:34:44

End Date: 2009.05.26 @ 04:38:14

Job Ticket #: 36376 DST #: 1

ED SWINE

1980 FNL

1650 FEL

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Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Black Diamond

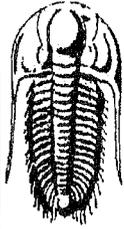
Boland #9

16-9-21 Graham KS

DST # 1

Arb

2009.05.25



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond
PO Box 641
Hays, KS 67601
ATTN: Tony R

Boland #9
16-9-21 Graham KS
Job Ticket: 36376 DST#: 1
Test Start: 2009.05.25 @ 23:34:44

GENERAL INFORMATION:

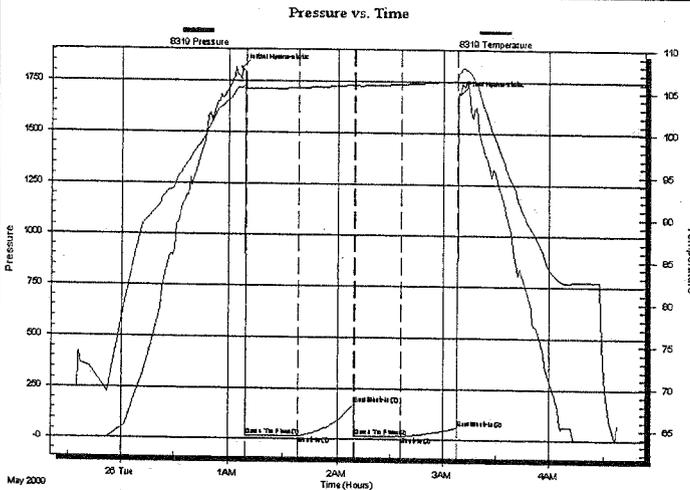
Formation: **Arb**
Deviated: **No** Whipstock: ft (KB)
Time Tool Opened: 01:09:14
Time Test Ended: 04:38:14
Interval: **3647.00 ft (KB) To 3688.00 ft (KB) (TVD)**
Total Depth: **3688.00 ft (KB) (TVD)**
Hole Diameter: **7.88 inches** Hole Condition: **Good**
Test Type: **Conventional Bottom Hole**
Tester: **Kyle Kinderknecht**
Unit No: **47**
Reference Elevations: **2191.00 ft (KB)**
2186.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8319

Inside

Press@RunDepth: **16.92 psig @ 3651.00 ft (KB)**
Start Date: **2009.05.25** End Date: **2009.05.26** Capacity: **7000.00 psig**
Start Time: **23:34:49** End Time: **04:38:13** Last Calib.: **2009.05.26**
Time On Btm: **2009.05.26 @ 01:07:14**
Time Off Btm: **2009.05.26 @ 03:09:44**

TEST COMMENT: IF 1/4"
FF No blow



PRESSURE SUMMARY

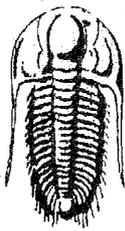
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1814.43	105.40	Initial Hydro-static
2	13.55	105.33	Open To Flow (1)
31	14.06	105.40	Shut-In(1)
62	173.24	105.76	End Shut-In(1)
63	15.87	105.72	Open To Flow (2)
89	16.92	105.87	Shut-In(2)
121	60.55	106.30	End Shut-In(2)
123	1689.96	107.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	Mud	0.01
2.00	Clean Oil	0.01

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 R

Boland #9
16-9-21 Graham KS
Job Ticket: 36376 DST#: 1
Test Start: 2009.05.25 @ 23:34:44

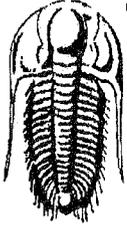
Tool Information

Drill Pipe:	Length: 3513.00 ft	Diameter: 3.82 inches	Volume: 49.80 bbl	Tool Weight: 2000.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 53000.00 lb
			<u>Total Volume: 50.41 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3647.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	61.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3628.00	
Shut In Tool	5.00			3633.00	
Hydraulic tool	5.00			3638.00	
Packer	4.00			3642.00	20.00 Bottom Of Top Packer
Packer	5.00			3647.00	
Stubb	1.00			3648.00	
Perforations	2.00			3650.00	
Change Over Sub	1.00			3651.00	
Recorder	0.00	8319	inside	3651.00	
Recorder	0.00	8369	inside	3651.00	
Blank Spacing	31.00			3682.00	
Change Over Sub	1.00			3683.00	
Perforations	2.00			3685.00	
Bullnose	3.00			3688.00	41.00 Bottom Packers & Anchor

Total Tool Length: 61.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond
PO Box 641
Hays, KS 67601
ATTN: Tony R

Boland #9
16-9-21 Graham KS
Job Ticket: 36376 **DST#: 1**
Test Start: 2009.05.25 @ 23:34:44

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: sec/qt	Cushion Volume: bbl		
Water Loss: in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: inches			

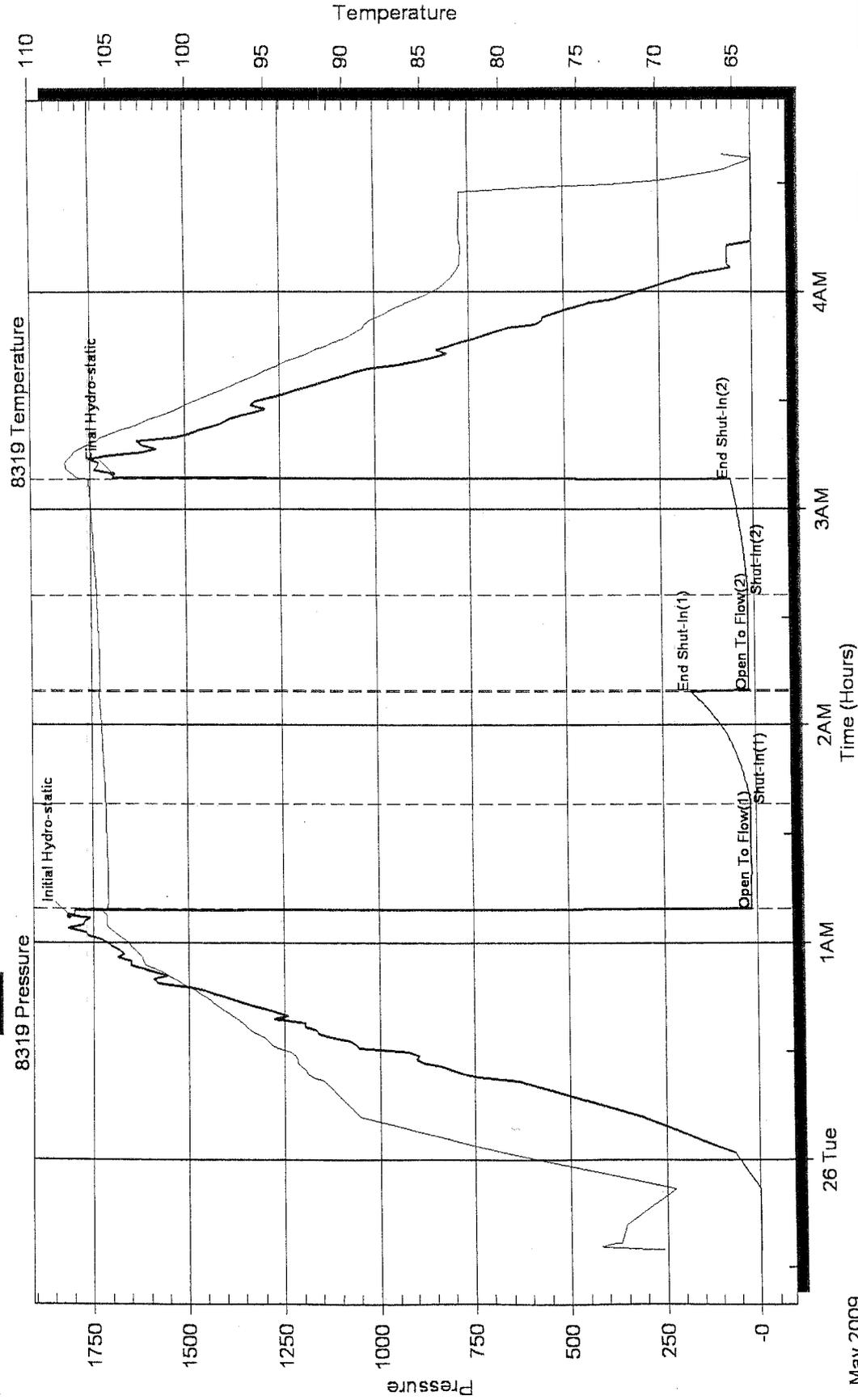
Recovery Information

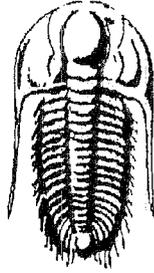
Recovery Table

Length ft	Description	Volume bbl
3.00	Mud	0.015
2.00	Clean Oil	0.010

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





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays, KS 67601

ATTN: Tony R

16-9-21 Graham KS

Boland #9

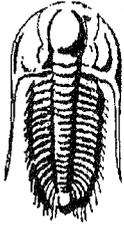
Start Date: 2009.05.26 @ 05:37:22

End Date: 2009.05.26 @ 12:02:52

Job Ticket #: 36377 DST #: 2

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TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

Boland #9

PO Box 641
Hays, KS 67601

16-9-21 Graham KS

Job Ticket: 36377

DST#: 2

ATTN: Tony R

Test Start: 2009.05.26 @ 05:37:22

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:24:22

Time Test Ended: 12:02:52

Test Type: Conventional Straddle

Tester: Kyle Kinderknecht

Unit No: 47

Interval: **3386.00 ft (KB) To 3415.00 ft (KB) (TVD)**

Total Depth: 3688.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2191.00 ft (KB)

2186.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8319 Inside

Press@RunDepth: 131.36 psig @ 3387.00 ft (KB)

Start Date: 2009.05.26

End Date:

2009.05.26

Capacity: 7000.00 psig

Last Calib.: 2009.05.26

Start Time: 05:37:27

End Time:

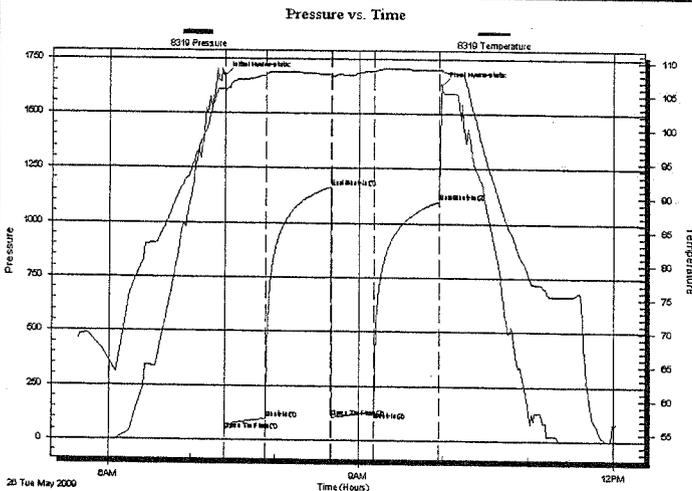
12:02:51

Time On Btm: 2009.05.26 @ 07:23:52

Time Off Btm: 2009.05.26 @ 09:58:52

TEST COMMENT: IF 8"

FF 6 1/2"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1673.25	105.87	Initial Hydro-static
1	44.82	105.49	Open To Flow (1)
30	99.54	107.96	Shut-In(1)
76	1163.93	108.18	End Shut-In(1)
77	106.53	107.63	Open To Flow (2)
107	131.36	108.54	Shut-In(2)
154	1099.63	108.81	End Shut-In(2)
155	1631.44	108.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
270.00	Mdy Wtr	2.68

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

Boland #9

PO Box 641
Hays, KS 67601

16-9-21 Graham KS

Job Ticket: 36377

DST#: 2

ATTN: Tony R

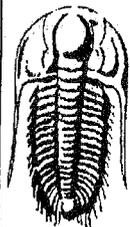
Test Start: 2009.05.26 @ 05:37:22

Tool Information

Drill Pipe:	Length: 3258.00 ft	Diameter: 3.82 inches	Volume: 46.18 bbl	Tool Weight: 2000.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 57000.00 lb
			<u>Total Volume: 46.79 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3386.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	3415.00 ft			
Interval between Packers:	29.00 ft			
Tool Length:	322.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3367.00	
Shut In Tool	5.00			3372.00	
Hydraulic tool	5.00			3377.00	
Packer	4.00			3381.00	20.00 Bottom Of Top Packer
Packer	5.00			3386.00	
Stubb	1.00			3387.00	
Recorder	0.00	8319	Inside	3387.00	
Perforations	24.00			3411.00	
Recorder	0.00	13308	Inside	3411.00	
Blank Off Sub	1.00			3412.00	
Blank Spacing	3.00			3415.00	29.00 Tool Interval
Packer	0.00			3415.00	
Stubb	1.00			3416.00	
Recorder	0.00	8369	Below	3416.00	
Perforations	13.00			3429.00	
Change Over Sub	1.00			3430.00	
Blank Spacing	254.00			3684.00	
Change Over Sub	1.00			3685.00	
Bullnose	3.00			3688.00	273.00 Bottom Packers & Anchor
Total Tool Length:	322.00				



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond
PO Box 641
Hays, KS 67601
ATTN: Tony R

Boland #9
16-9-21 Graham KS
Job Ticket: 36377 **DST#: 2**
Test Start: 2009.05.26 @ 05:37:22

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: lb/gal	Cushion Length: ft	Water Salinity:	50000 ppm
Viscosity: sec/qt	Cushion Volume: bbl		
Water Loss: in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: inches			

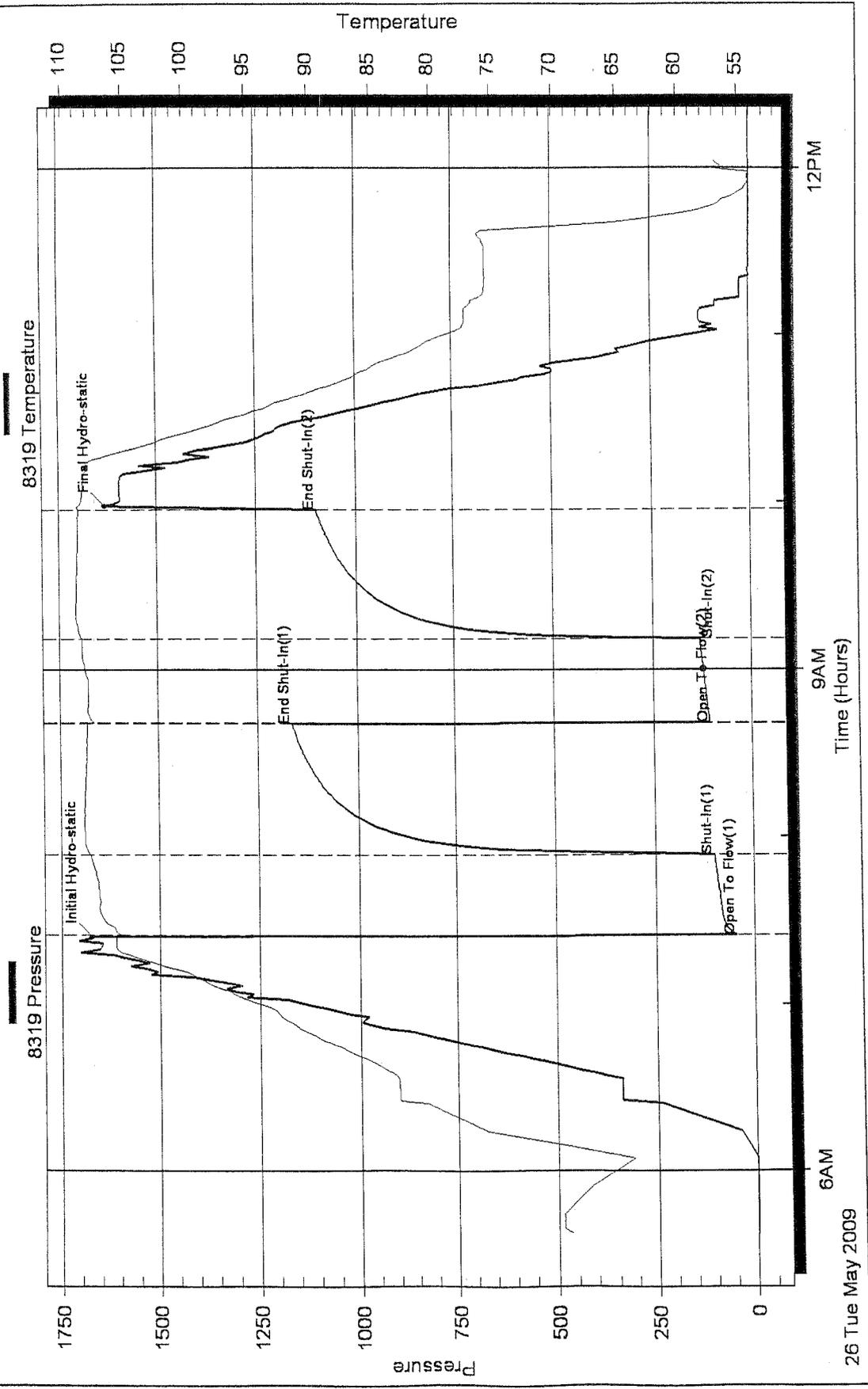
Recovery Information

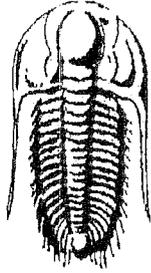
Recovery Table

Length ft	Description	Volume bbl
270.00	Mdy Wtr	2.679

Total Length: 270.00 ft Total Volume: 2.679 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: RW .16 @ 70 = 50000 chlorides

Pressure vs. Time





TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays, KS 67601

ATTN: Tony R

16-9-21 Graham KS

Boland #9

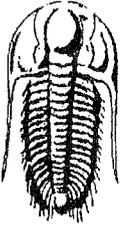
Start Date: 2009.05.26 @ 18:18:04

End Date: 2009.05.27 @ 02:03:34

Job Ticket #: 36378 DST #: 3

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PO Box 1733 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

Boland #9

PO Box 641
Hays, KS 67601

16-9-21 Graham KS

ATTN: Tony R

Job Ticket: 36378

DST#: 3

Test Start: 2009.05.26 @ 18:18:04

GENERAL INFORMATION:

Formation: **Arb**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:11:04
 Time Test Ended: 02:03:34

Test Type: Conventional Bottom Hole
 Tester: Kyle Kinderknecht
 Unit No: 47

Interval: **3647.00 ft (KB) To 3694.00 ft (KB) (TVD)**
 Total Depth: 3694.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2191.00 ft (KB)
 2186.00 ft (CF)
 KB to GR/CF: 5.00 ft

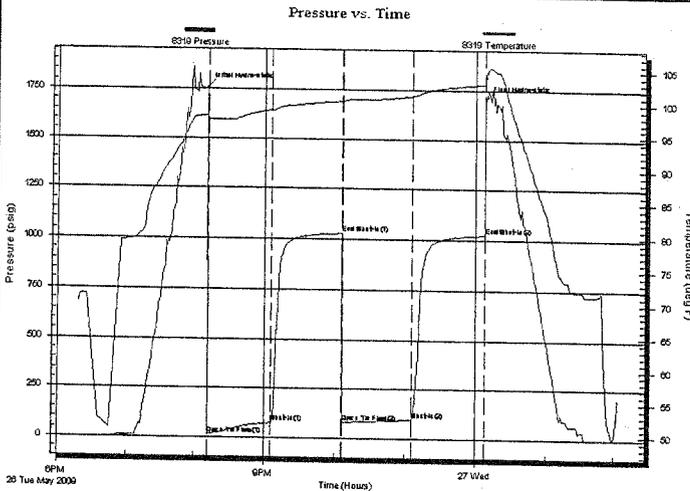
Serial #: 8319 Inside

Press@RunDepth: 99.40 psig @ 3654.00 ft (KB)
 Start Date: 2009.05.26 End Date: 2009.05.27
 Start Time: 18:18:09 End Time: 02:03:33

Capacity: 7000.00 psig
 Last Calib.: 2009.05.27
 Time On Btm: 2009.05.26 @ 20:10:34
 Time Off Btm: 2009.05.27 @ 00:08:04

TEST COMMENT: IF 8"

FF 6"



PRESSURE SUMMARY

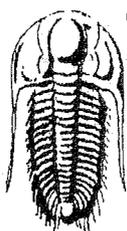
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1758.49	98.04	Initial Hydro-static
1	17.78	97.59	Open To Flow (1)
55	75.79	98.95	Shut-In (1)
115	1027.90	100.39	End Shut-In (1)
116	81.21	100.09	Open To Flow (2)
175	99.40	101.21	Shut-In (2)
237	1023.36	103.06	End Shut-In (2)
238	1707.72	103.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
160.00	HOCM 40%O 60%M	1.12
40.00	Free Oil	0.57

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

Boland #9

PO Box 641
Hays, KS 67601

16-9-21 Graham KS

ATTN: Tony R

Job Ticket: 36378

DST#: 3

Test Start: 2009.05.26 @ 18:18:04

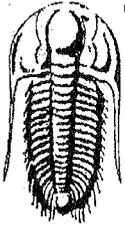
Tool Information

Drill Pipe:	Length: 3513.00 ft	Diameter: 3.82 inches	Volume: 49.80 bbl	Tool Weight:	2000.00 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	52000.00 lb
			<u>Total Volume: 50.41 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3647.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	47.00 ft				
Tool Length:	67.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3628.00	
Shut In Tool	5.00			3633.00	
Hydraulic tool	5.00			3638.00	
Packer	4.00			3642.00	20.00 Bottom Of Top Packer
Packer	5.00			3647.00	
Stubb	1.00			3648.00	
Perforations	5.00			3653.00	
Change Over Sub	1.00			3654.00	
Recorder	0.00	8319	Inside	3654.00	
Recorder	0.00	8369	Inside	3654.00	
Blank Spacing	31.00			3685.00	
Change Over Sub	1.00			3686.00	
Perforations	5.00			3691.00	
Bullnose	3.00			3694.00	47.00 Bottom Packers & Anchor

Total Tool Length: 67.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

Boland #9

PO Box 641
Hays, KS 67601

16-9-21 Graham KS

Job Ticket: 36378

DST#: 3

ATTN: Tony R

Test Start: 2009.05.26 @ 18:18:04

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: lb/gal

Viscosity: sec/qt

Water Loss: in³

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
160.00	HOCM 40%O 60%M	1.120
40.00	Free Oil	0.567

Total Length: 200.00 ft Total Volume: 1.687 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

