

TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Chesapeake Operating Inc**

PO Box 18496
Oklahoma City OK 73154

ATTN: Wes Hansen

2-30s-34w

MLP Black#2-2

Start Date: 2002.05.25 @ 12:45:56

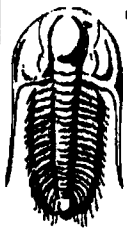
End Date: 2002.05.25 @ 20:46:11

Job Ticket #: 14774 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496
Oklahoma City OK 73154

2-30s-34w

Job Ticket: 14774

DST#: 1

ATTN: Wes Hansen

Test Start: 2002.05.25 @ 12:45:56

GENERAL INFORMATION:

Formation: **Morrow**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 15:06:41

Time Test Ended: 20:46:11

Test Type: **Conventional Bottom Hole**

Tester: **Blake Wallace**

Unit No: **20**

Interval: **5240.00 ft (KB) To 5342.00 ft (KB) (TVD)**

Total Depth: **5342.00 ft (KB) (TVD)**

Hole Diameter: **7.78 inches** Hole Condition: **Fair**

Reference Elevations: **2999.00 ft (KB)**

2987.00 ft (CF)

KB to GR/CF: **12.00 ft**

Serial #: 3027

Inside

Press@RunDepth: **71.74 psig @ 5244.00 ft (KB)**

Start Date: **2002.05.25**

End Date: **2002.05.25**

Capacity: **7000.00 psig**

Last Calib.: **1899.12.30**

Start Time: **12:45:58**

End Time: **20:46:11**

Time On Btm: **2002.05.25 @ 15:06:11**

Time Off Btm: **2002.05.25 @ 18:02:41**

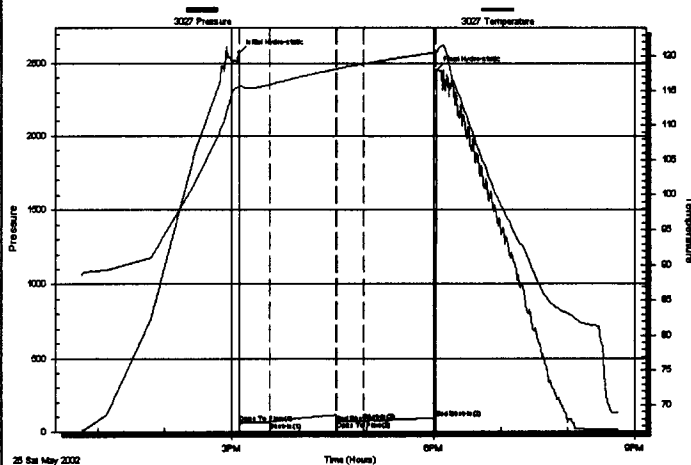
TEST COMMENT: IF-weak blow built to 1/4 inch died back to surface blow

IS-no blow back

FF-no blow

FSI-no blow back

Pressure vs. Time



PRESSURE SUMMARY

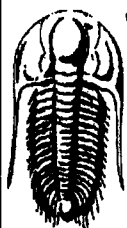
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2571.53	115.59	Initial Hydro-static
1	57.71	115.68	Open To Flow (1)
28	66.25	115.88	Shut-In(1)
87	113.05	118.12	End Shut-In(1)
88	69.95	118.14	Open To Flow (2)
112	71.74	118.83	Shut-In(2)
176	90.40	120.52	End Shut-In(2)
177	2451.29	120.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	100% Mud	0.32

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496
Oklahoma City OK 73154

2-30s-34w

Job Ticket: 14774

DST#: 1

ATTN: Wes Hansen

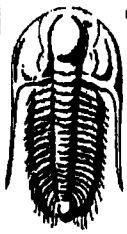
Test Start: 2002.05.25 @ 12:45:56

Tool Information

Drill Pipe:	Length: 4687.00 ft	Diameter: 3.80 inches	Volume: 65.75 bbl	Tool Weight: 1800.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 546.00 ft	Diameter: 2.25 inches	Volume: 2.69 bbl	Weight to Pull Loose: 110000.0 lb
			Total Volume: 68.44 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 80000.00 lb
Depth to Top Packer:	5240.00 ft			Final 81000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	102.00 ft			
Tool Length:	129.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			5214.00	
S.I. Tool	5.00			5219.00	
HMV	5.00			5224.00	
Jars	5.00			5229.00	
Safety Joint	2.00			5231.00	
Packer	5.00			5236.00	27.00 Bottom Of Top Packer
Packer	4.00			5240.00	
Stubb	1.00			5241.00	
Perforations	3.00			5244.00	
Recorder	0.00	3027	Inside	5244.00	
Perforations	15.00			5259.00	
C.O. Sub	1.00			5260.00	
Blank Spacing	62.00			5322.00	
C.O. Sub	1.00			5323.00	
Perforations	17.00			5340.00	
Recorder	0.00	11019	Outside	5340.00	
Bullnose	2.00			5342.00	102.00 Bottom Packers & Anchor
Total Tool Length:		129.00			



TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496
Oklahoma City OK 73154

2-30s-34w

Job Ticket: 14774

DST#: 1

ATTN: Wes Hansen

Test Start: 2002.05.25 @ 12:45:56

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: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	100% Mud	0.320

Total Length: 65.00 ft

Total Volume: 0.320 bbl

Num Fluid Samples: 0

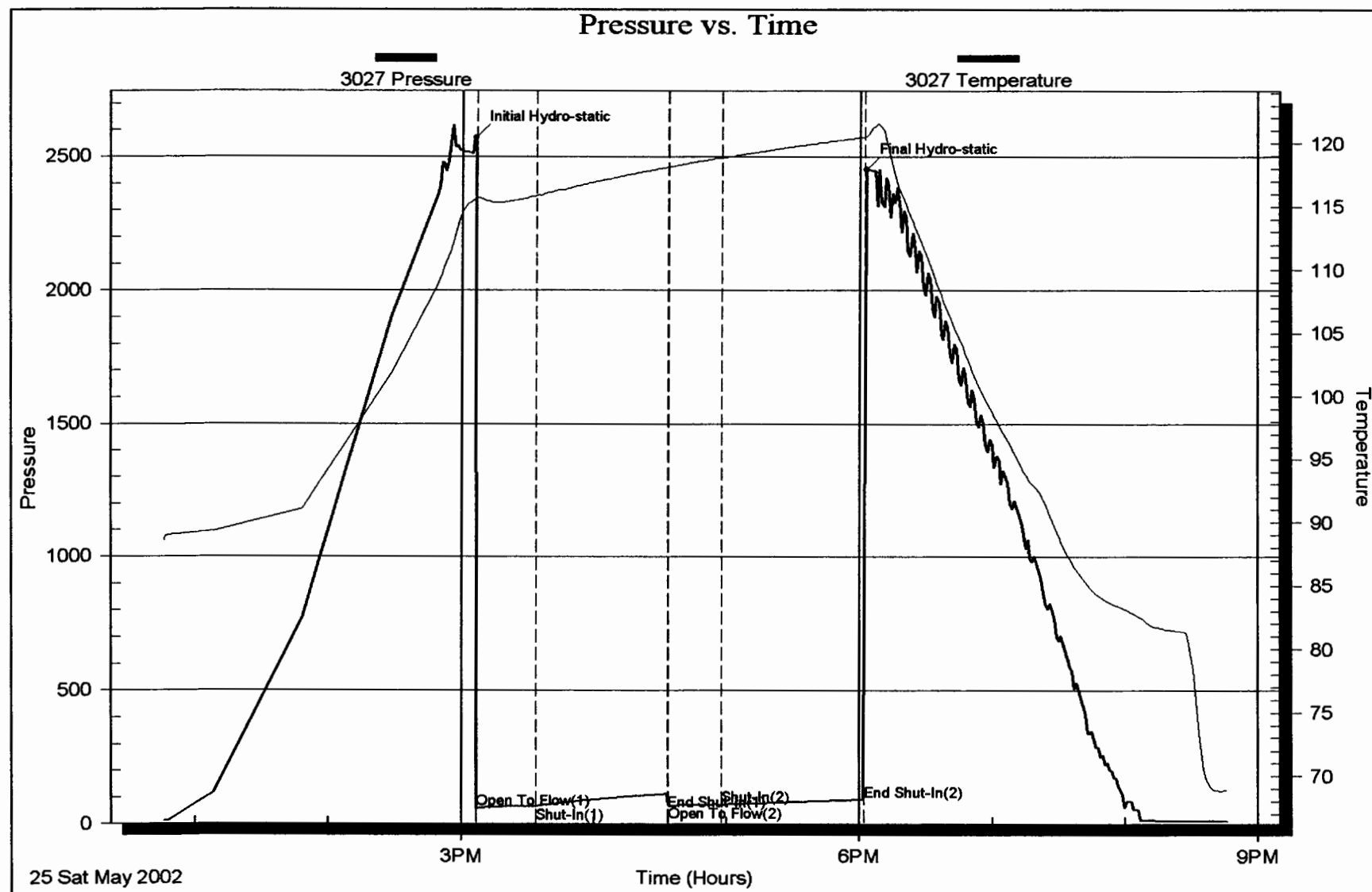
Num Gas Bombs: 0

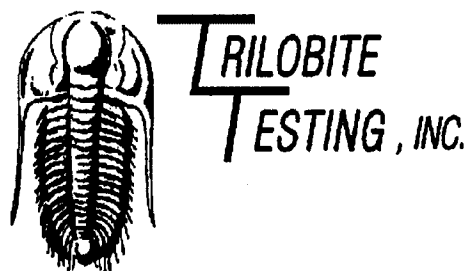
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DRILL STEM TEST REPORT

Prepared For: **Chesapeake Operating Inc**

PO Box 18496
Oklahoma City OK 73154

ATTN: Wes Hansen

2-30s-34w

MLP Black#2-2

Start Date: 2002.05.26 @ 13:26:52

End Date: 2002.05.26 @ 23:14:07

Job Ticket #: 14775 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496
Oklahoma City OK 73154

2-30s-34w

Job Ticket: 14775

DST#: 2

ATTN: Wes Hansen

Test Start: 2002.05.26 @ 13:26:52

GENERAL INFORMATION:

Formation: **Chester**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:49:37

Time Test Ended: 23:14:07

Test Type: Conventional Bottom Hole

Tester: Blake Wallace

Unit No: 20

Interval: **5391.00 ft (KB) To 5440.00 ft (KB) (TVD)**

Total Depth: 5440.00 ft (KB) (TVD)

Hole Diameter: 7.78 inches Hole Condition: Fair

Reference Elevations: 2999.00 ft (KB)

2987.00 ft (CF)

KB to GR/CF: 12.00 ft

Serial #: 3027

Inside

Press@RunDepth: 60.85 psig @ 5395.00 ft (KB)

Start Date: 2002.05.26

End Date:

2002.05.26

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Start Time: 13:26:54

End Time:

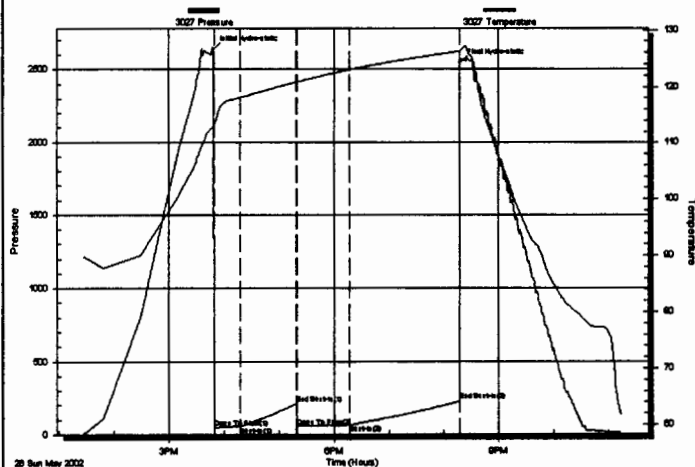
23:14:07

Time On Btmr: 2002.05.26 @ 15:48:52

Time Off Btmr: 2002.05.26 @ 20:17:37

TEST COMMENT: F-fair blow built to 6 inch
IS-no blow back
FF-weak blow built to 2 inches died back to 3/4 inch
FSI-no blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2636.00	112.91	Initial Hydro-static
1	45.93	113.06	Open To Flow (1)
30	53.89	118.10	Shut-In (1)
91	211.12	120.85	End Shut-In (1)
91	51.72	120.87	Open To Flow (2)
148	60.85	123.00	Shut-In (2)
269	225.56	126.20	End Shut-In (2)
269	2544.01	126.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	5% G 95% M trace oil	0.61

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496

2-30s-34w

Oklahoma City OK 73154

Job Ticket: 14775

DST#: 2

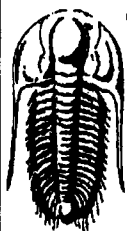
ATTN: Wes Hansen

Test Start: 2002.05.26 @ 13:26:52

Tool Information

Drill Pipe:	Length: 4844.00 ft	Diameter: 3.80 inches	Volume: 67.95 bbl	Tool Weight: 1800.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 546.00 ft	Diameter: 2.25 inches	Volume: 2.69 bbl	Weight to Pull Loose: 110000.0 lb
			<u>Total Volume: 70.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 88000.00 lb
Depth to Top Packer:	5391.00 ft			Final 90000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	49.00 ft			
Tool Length:	76.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			5365.00	
S.I. Tool	5.00			5370.00	
HMV	5.00			5375.00	
Jars	5.00			5380.00	
Safety Joint	2.00			5382.00	
Packer	5.00			5387.00	27.00 Bottom Of Top Packer
Packer	4.00			5391.00	
Stubb	1.00			5392.00	
Perforations	3.00			5395.00	
Recorder	0.00	3027	Inside	5395.00	
Perforations	10.00			5405.00	
C.O. Sub	1.00			5406.00	
Blank Spacing	31.00			5437.00	
C.O. Sub	1.00			5438.00	
Recorder	0.00	11019	Outside	5438.00	
Bullnose	2.00			5440.00	49.00 Bottom Packers & Anchor
Total Tool Length:		76.00			



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DRILL STEM TEST REPORT

FLUID SUMMARY

Chesapeake Operating Inc

MLP Black#2-2

PO Box 18496
Oklahoma City OK 73154

2-30s-34w

Job Ticket: 14775

DST#: 2

ATTN: Wes Hansen

Test Start: 2002.05.26 @ 13:26:52

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:

bbl

Water Loss: 8.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	5% G 95% M trace oil	0.610

Total Length: 124.00 ft

Total Volume: 0.610 bbl

Num Fluid Samples: 0

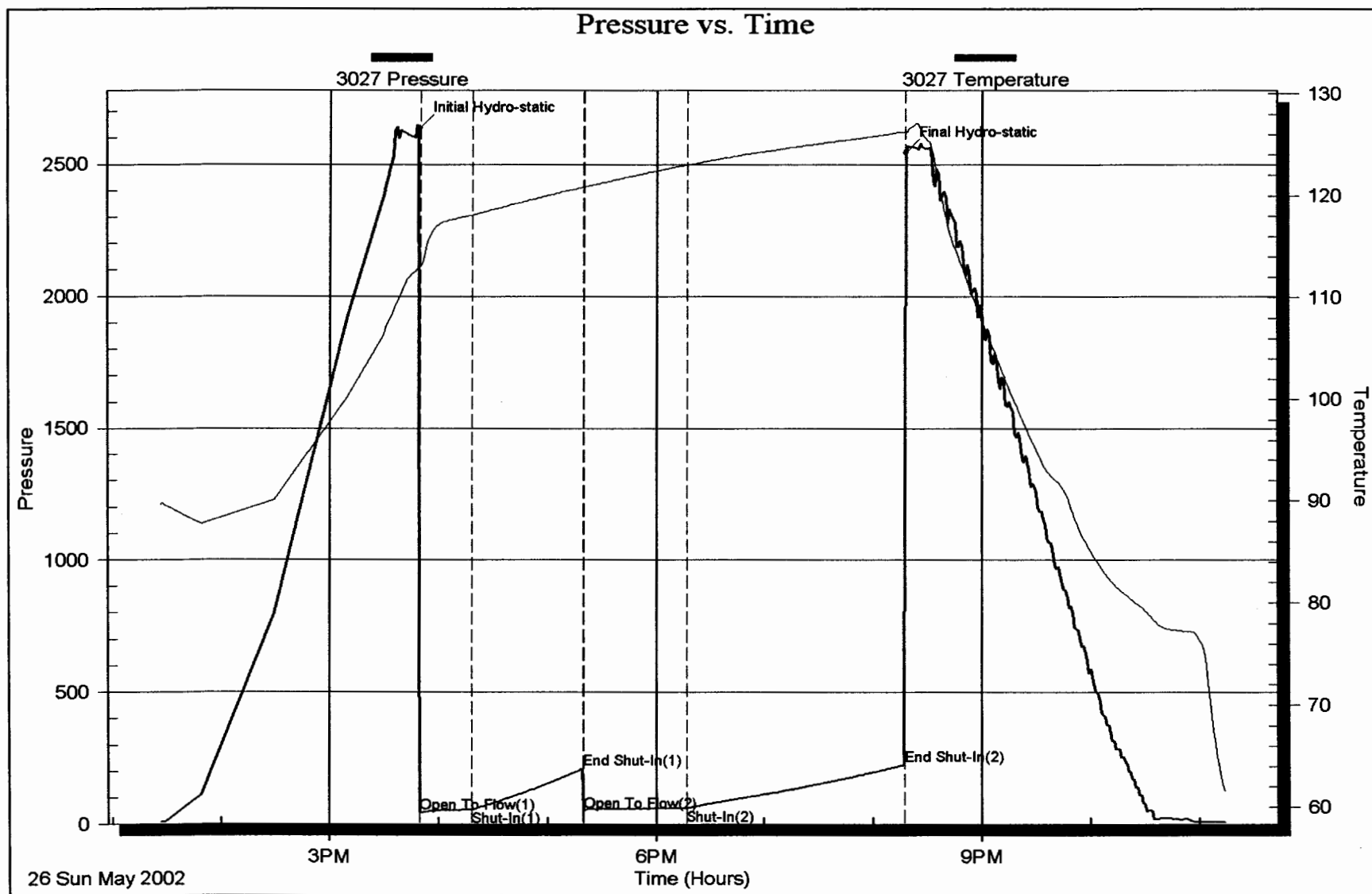
Num Gas Bombs: 0

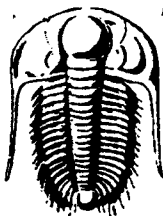
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 14774

Test Ticket

Well Name & No. MLP Black #2-2 Test No. 1 Date 5-25-02
 Company Chesapeake Operating Inc. Zone Tested Morrow
 Address P.O. Box 18496 Oklahoma City OK 73154 Elevation 2799' KB 2987' GL
 Co. Rep / Geo. WES Hansen Cont. Murkin #21 Est. Ft. of Pay Por. %
 Location: Sec. 2 Twp. 30 Rge. 34 Co. Haskell State KS
 No. of Copies Distribution Sheet (Y, N) Turnkey (Y, N) Evaluation (Y, N)

Interval Tested 5240' - 5242' Initial Str Wt./Lbs. 80000 Unseated Str Wt./Lbs. 81000
 Anchor Length 102' Wt. Set Lbs. 20000 Wt. Pulled Loose/Lbs. 110000
 Top Packer Depth 5235' Tool Weight 1800
 Bottom Packer Depth 5240' Hole Size — 7 7/8" ☒ Rubber Size — 6 3/4" ☒
 Total Depth 5342' Wt. Pipe Run N/A Drill Collar Run 546'
 Mud Wt. 9.1 LCM 6 Vis. 55 WL 8.8 Drill Pipe Size 4.510 Ft. Run 4687

Blow Description IT-Weak blow built to 14 inch dead back to surface bbw

ISI- No blow back

IT- No blow

ISI- No blow back

Recovery — Total Feet 105' GIP Ft. in DC Ft. in DP
 Rec. 105' Feet Of mud %gas %oil %water 100 %mud
 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
 BHT 120° °F Gravity °API D@ °F Corrected Gravity °API
 RW @ °F Chlorides ppm Recovery Chlorides 1000 ppm System

	AK-1	Alpine			
(A) Initial Hydrostatic Mud		<u>2523</u>	PSI Recorder No.	<u>3027</u>	T-On Location <u>10:00</u>
(B) First Initial Flow Pressure		<u>57</u>	PSI (depth)	<u>5243'</u>	T-Started <u>12:30</u>
(C) First Final Flow Pressure		<u>66</u>	PSI Recorder No.	<u>11019</u>	T-Open <u>14:50</u>
(D) Initial Shut-In Pressure		<u>112</u>	PSI (depth)	<u>5240'</u>	T-Pulled <u>17:50</u>
(E) Second Initial Flow Pressure		<u>69</u>	PSI Recorder No.		T-Out <u>20:30</u>
(F) Second Final Flow Pressure		<u>71</u>	PSI (depth)		T-Off Location <u> </u>
(G) Final Shut-in Pressure		<u>90</u>	PSI Initial Opening	<u>30</u>	Test ☒ Conventional <u>900</u>
(Q) Final Hydrostatic Mud		<u>2451</u>	PSI Initial Shut-in	<u>60</u>	Jars ☒ <u>200</u>
			Final Flow	<u>30</u>	Safety Joint ☒ <u>50</u>
			Final Shut-in	<u>60</u>	Straddle <u> </u>
					Circ. Sub <u> </u>
					Sampler <u> </u>
					Extra Packer <u> </u>
					Elec. Rec. ☒ <u>150</u>
					Mileage ☒ <u>\$35.00</u>
					Other <u>1 hr 516 by 30</u>
					TOTAL PRICE \$ <u>\$1365.00</u>

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE 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.

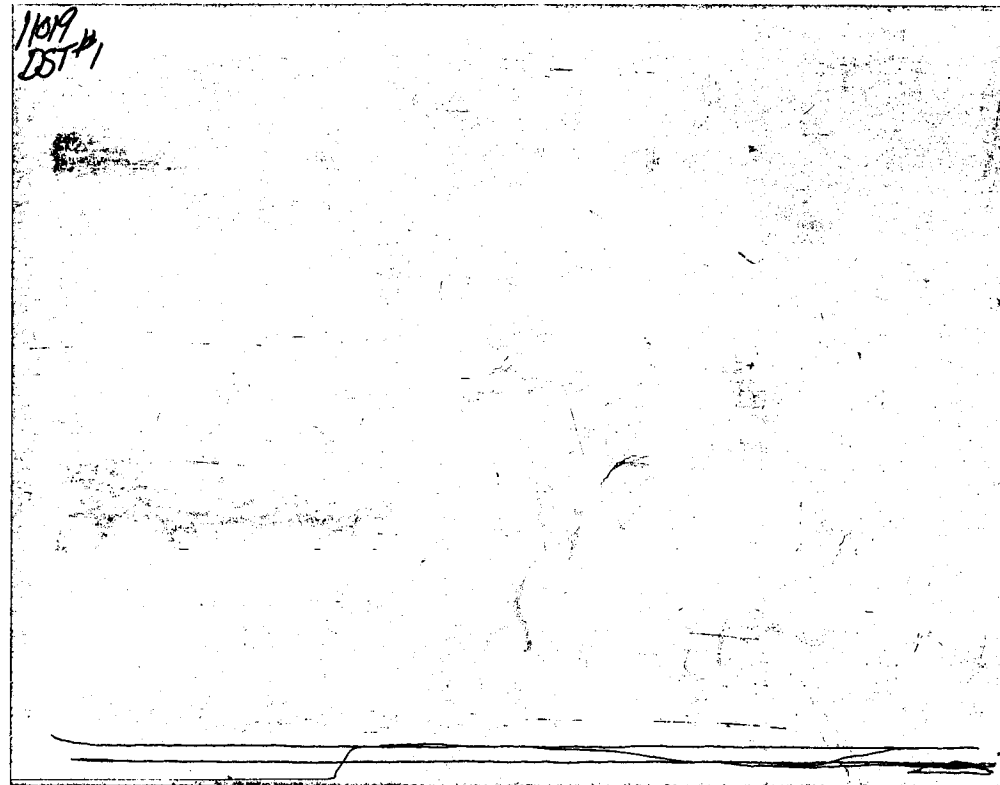
Approved By Wesley Hansen

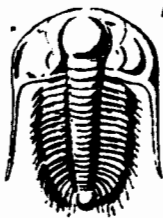
Our Representative Blake L Wallace

10:30

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 14775

Test Ticket

Well Name & No. <u>MLP Black #2-2</u>	Test No. <u>2</u>	Date <u>5-26-02</u>
Company <u>Chesapeake Operating Inc.</u>	Zone Tested <u>Chesapeake</u>	
Address <u>P.O. Box 18496 Oklahoma City OK 73154</u>	Elevation <u>2999'</u>	KB <u>2987'</u> GL
Co. Rep / Geo. <u>Wes Hansen</u>	Cont. <u>Mudwin Rig #21</u>	Est. Ft. of Pay <u>12</u> Por. <u>10</u> %
Location: Sec. <u>2</u> Twp. <u>30</u> Rge. <u>34</u>	Co. <u>Haskell</u>	State <u>KS</u>
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested <u>5391'-5440'</u>	Initial Str Wt./Lbs. <u>88000</u>	Unseated Str Wt./Lbs. <u>90000</u>
Anchor Length <u>49'</u>	Wt. Set Lbs. <u>2000</u>	Wt. Pulled Loose/Lbs. <u>110000</u>
Top Packer Depth <u>5386'</u>	Tool Weight <u>1800</u>	
Bottom Packer Depth <u>5391'</u>	Hole Size — 7 7/8" ☒	Rubber Size — 6 3/4" ☒
Total Depth <u>5440'</u>	Wt. Pipe Run <u>N/A</u>	Drill Collar Run <u>546'</u>
Mud Wt. <u>9.1</u> LCM <u>4</u> Vis. <u>48</u> WL <u>8.2</u>	Drill Pipe Size <u>4.5x0</u>	Ft. Run <u>4844</u>

Blow Description 17-30 sec blow built to 6 inches

ISI- No blow back

77- Weak blow built to 2 inches did back to 3/4 inch

75I- No blow back

Recovery — Total Feet <u>164'</u>	GIP <u>248'</u>	Ft. in DC _____	Ft. in DP _____
Rec. <u>164'</u>	Feet Of <u>SOC, SGC mud</u>	%gas <u>5</u> %oil <u>75</u>	%water <u>95</u> %mud <u>95</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 _____
BHT <u>126</u>	°F Gravity _____	°API D@ _____	°F Corrected Gravity _____ °API _____
RW _____	@ _____ °F	Chlorides _____ ppm Recovery	Chlorides <u>1400</u> ppm System

(A) Initial Hydrostatic Mud	AK-1 <u>2648</u>	Alpine <u>2648</u>	PSI Recorder No. <u>3027</u>	T-On Location <u>12:00</u>
(B) First Initial Flow Pressure	<u>45</u>	PSI (depth) <u>5394'</u>	T-Started <u>13:15</u>	
(C) First Final Flow Pressure	<u>53</u>	PSI Recorder No. <u>1526</u>	T-Open <u>15:35</u>	10:45
(D) Initial Shut-In Pressure	<u>210</u>	PSI (depth) <u>5405'</u>	T-Pulled <u>20:05</u>	
(E) Second Initial Flow Pressure	<u>51</u>	PSI Recorder No. _____	T-Out <u>22:45</u>	
(F) Second Final Flow Pressure	<u>60</u>	PSI (depth) _____	T-Off Location _____	
(G) Final Shut-in Pressure	<u>225</u>	PSI Initial Opening <u>30</u>	Test ☒ Conventional 900	
(Q) Final Hydrostatic Mud	<u>2544</u>	PSI Initial Shut-in <u>60</u>	Jars ☒ 200	
		Final Flow <u>120</u>	Safety Joint ☒ 50	
		Final Shut-in <u>120</u>	Straddle _____	
			Circ. Sub _____	
			Sampler _____	
			Extra Packer <u>150</u>	
			Elec. Rec. ☒ 150	
			Mileage ☒ 135.00	
			Other <u>The Side by 30</u>	
			TOTAL PRICE \$ <u>1365.00</u>	

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Approved By Wesley Hansen
Our Representative Bobb L Waller

CHART PAGE

This is a photocopy of the actual AK-1 recorder chart

