

15-171-20585



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Ritchie Explor. Inc**

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

13-17-31 Scott,Ks

Froebe #1 13D

Start Date: 2004.05.03 @ 16:00:01

End Date: 2004.05.03 @ 22:22:15

Job Ticket #: 18119

DST #: 1

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Ritchie Explor. Inc

Froebe #1 13D

13-17-31 Scott,Ks

DST # 1

E-F

2004.05.03

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Ritchie Explor. Inc

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

Froebe #1 13D

13-17-31 Scott, Ks

Job Ticket: 18119

DST#: 1

Test Start: 2004.05.03 @ 16:00:01

GENERAL INFORMATION:

Formation: E-F

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:52:00

Time Test Ended: 22:22 15

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 25

Interval: 4020.00 ft (KB) To 4053.00 ft (KB) (TVD)

Total Depth: 4053.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2906.00 ft (KB)

2901.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6720

Inside

Press@RunDepth: 68.85 psig @ 4021.00 ft (KB)

Start Date: 2004.05.03

End Date: 2004.05.03

Start Time: 16:00:01

End Time: 22:22:15

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Time On Btm: 2004.05.03 @ 17:51:45

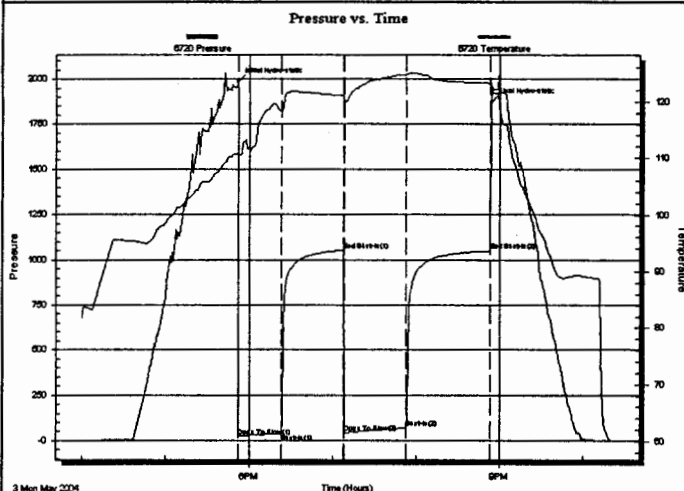
Time Off Btm: 2004.05.03 @ 20:54:00

TEST COMMENT: 1/2" in. @ open built to 3 1/2" in.

No return

Surface blow built to 1 1/2" in.

No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1983.09	111.03	Initial Hydro-static
1	23.37	110.53	Open To Flow (1)
31	37.38	118.42	Shut-In(1)
76	1050.82	121.07	End Shut-In(1)
77	42.61	120.02	Open To Flow (2)
121	68.85	124.77	Shut-In(2)
182	1048.24	123.24	End Shut-In(2)
183	1871.34	123.38	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	m c w 20% m 80% w	1.61

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618
Wichita, Ks

13-17-31 Scott, Ks

Job Ticket: 18119

DST#: 1

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.03 @ 16:00:01

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:

32000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.94 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
115.00	m c w 20% m 80% w	1.613

Total Length: 115.00 ft

Total Volume: 1.613 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

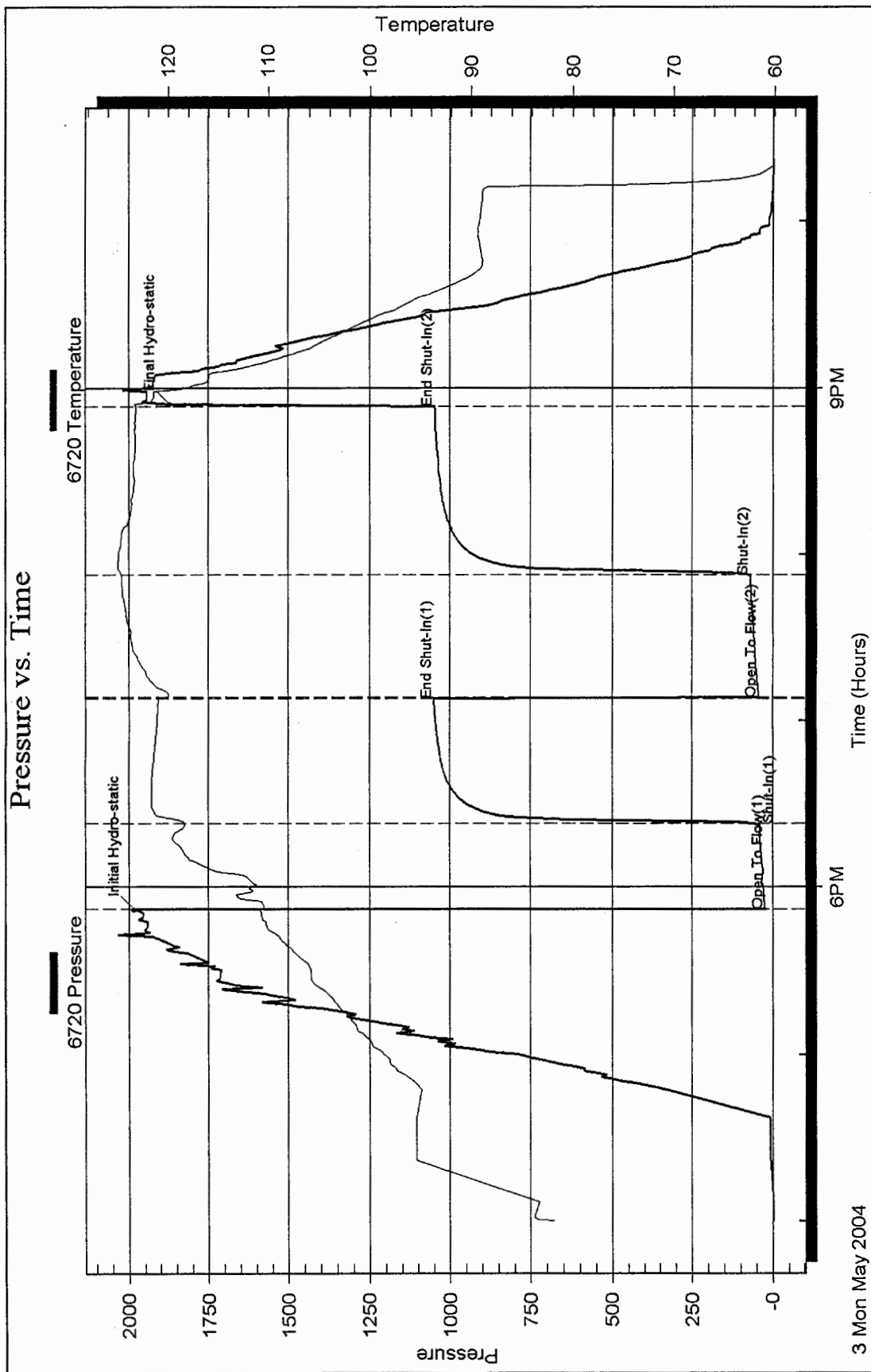
Recovery Comments:

DST Test Number: 1

13-17-31 Scott, Ks

Serial #: 6720 Ritchie Explor. Inc

Pressure vs. Time

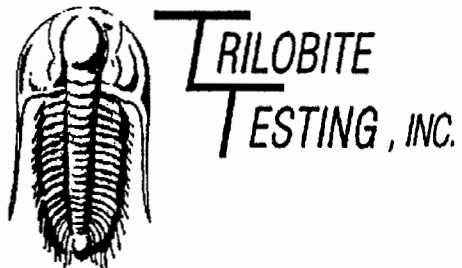


3 Mon May 2004

Trilobite Testing, Inc

Ref. No: 18119

Printed: 2004.05.11 @ 15:11:44 Page 5



DRILL STEM TEST REPORT

Prepared For: **Ritchie Explor. Inc**

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

13-17-31 Scott,Ks

Froebe #1 13D

Start Date: 2004.05.05 @ 12:50:48

End Date: 2004.05.05 @ 19:09:02

Job Ticket #: 18120 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

Ritchie Explor. Inc

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

Froebe #1 13D

13-17-31 Scott, Ks

Job Ticket: 18120

DST#: 2

Test Start: 2004.05.05 @ 12:50:48

GENERAL INFORMATION:

Formation: **marm**

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

Time Tool Opened: 14:23:32

Time Test Ended: 19:09:02

Test Type: **Conventional Bottom Hole**

Tester: **Shane McBride**

Unit No: **25**

Interval: **4308.00 ft (KB) To 4405.00 ft (KB) (TVD)**

Total Depth: **4405.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2906.00 ft (KB)**

2901.00 ft (CF)

KB to GR/CF: **5.00 ft**

Serial #: 6720

Inside

Press@RunDepth: **103.61 psig @ 4309.00 ft (KB)**

Start Date: **2004.05.05**

End Date:

2004.05.05

Start Time: **12:50:48**

End Time:

19:09:02

Capacity: **7000.00 psig**

Last Calib.: **1899.12.30**

Time On Btm: **2004.05.05 @ 14:23:17**

Time Off Btm: **2004.05.05 @ 17:29:32**

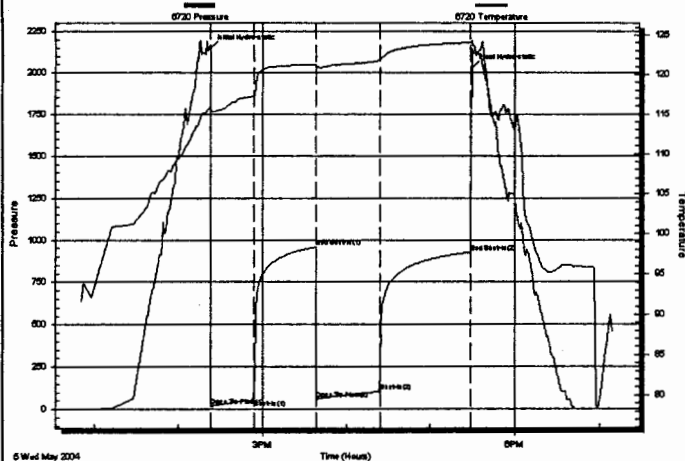
TEST COMMENT: **1/2" in. @ open built to 6" in.**

No return

Surface blow in 3 min built to 5 1/2" in.

No return

Pressure vs. Time



5 Wed May 2004

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2151.52	115.84	Initial Hydro-static
1	16.78	115.41	Open To Flow (1)
31	56.48	117.23	Shut-In (1)
75	956.38	121.16	End Shut-In (1)
76	59.95	120.83	Open To Flow (2)
121	103.61	121.80	Shut-In (2)
186	926.30	124.07	End Shut-In (2)
187	2032.13	124.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
185.00	w c m w/trace of oil 20%w 80%m	2.60

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618

13-17-31 Scott, Ks

Wichita, Ks

Job Ticket: 18120

DST#: 2

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.05 @ 12:50:48

Tool Information

Drill Pipe:	Length: 4310.00 ft	Diameter: 3.80 inches	Volume: 60.46 bbl	Tool Weight: 1500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
		Total Volume: 60.46 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	4308.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	97.00 ft			
Tool Length:	117.00 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			4289.00	
Shut In Tool	5.00			4294.00	
Hydraulic tool	5.00			4299.00	
Packer	5.00			4304.00	20.00 Bottom Of Top Packer
Packer	4.00			4308.00	
Stubb	1.00			4309.00	
Recorder	0.00	6720	Inside	4309.00	
Perforations	26.00			4335.00	
Change Over Sub	1.00			4336.00	
Drill Pipe	63.00			4399.00	
Change Over Sub	1.00			4400.00	
Recorder	0.00	11058	Outside	4400.00	
Bullnose	5.00			4405.00	97.00 Bottom Packers & Anchor

Total Tool Length: 117.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618
Wichita, Ks

13-17-31 Scott, Ks

Job Ticket: 18120

DST#: 2

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.05 @ 12:50:48

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:

29000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
185.00	w c mw/trace of oil 20%w 80%m	2.595

Total Length: 185.00 ft

Total Volume: 2.595 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

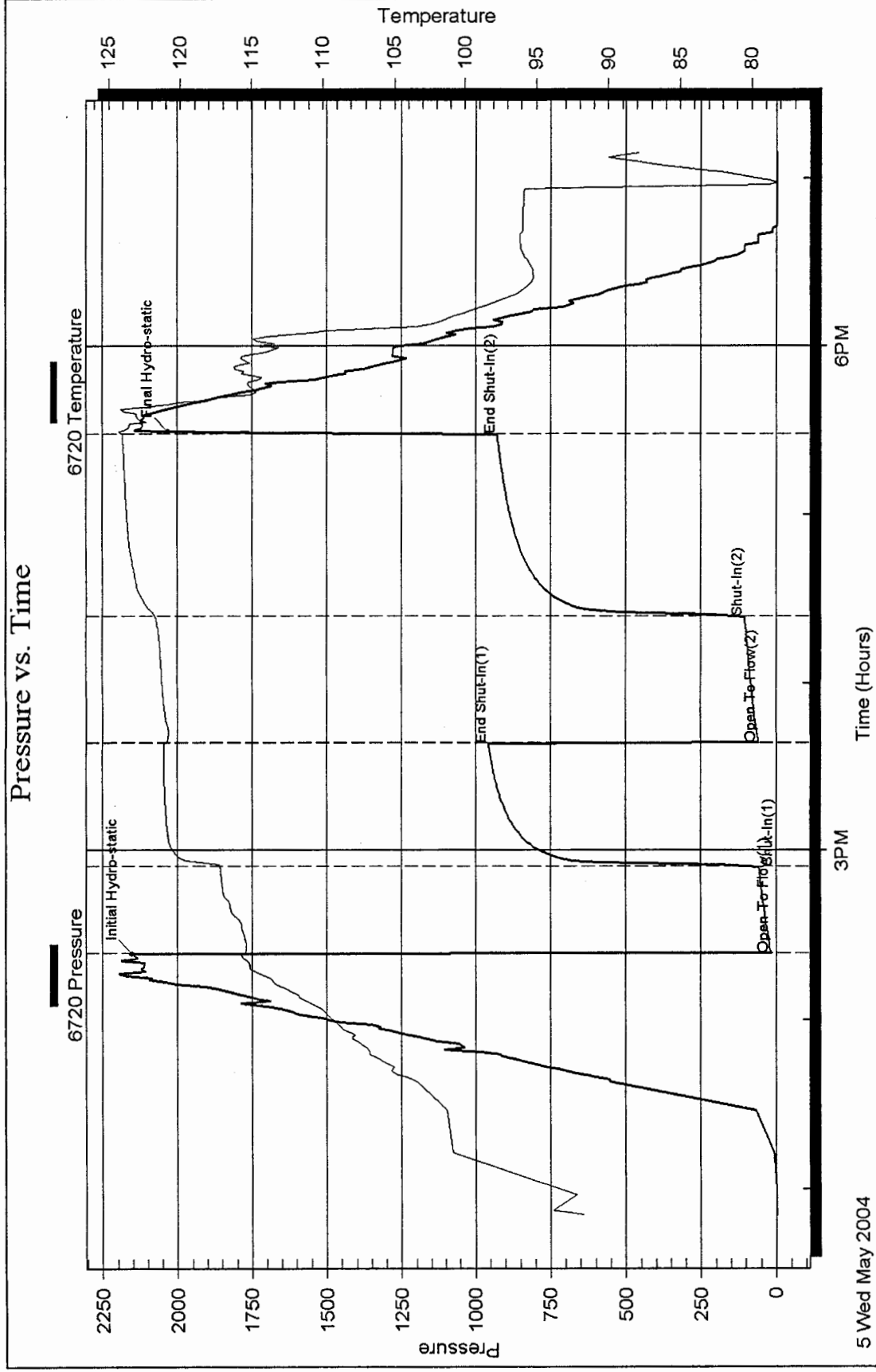
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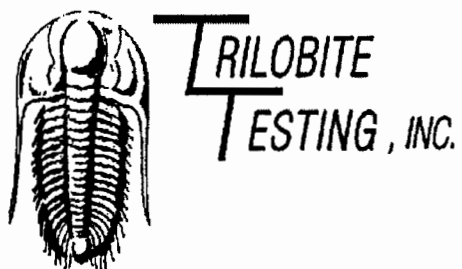
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Ritchie Explor. Inc**

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

13-17-31 Scott,Ks

Froebe #1 13D

Start Date: 2004.05.06 @ 07:15:27

End Date: 2004.05.06 @ 12:21:56

Job Ticket #: 18121 DST #: 3

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



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TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Explor. Inc

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

Froebe #1 13D

13-17-31 Scott, Ks

Job Ticket: 18121

DST#: 3

Test Start: 2004.05.06 @ 07:15:27

GENERAL INFORMATION:

Formation: **cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:45:26

Time Test Ended: 12:21:56

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 25

Interval: **4400.00 ft (KB) To 4486.00 ft (KB) (TVD)**

Total Depth: 4486.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2906.00 ft (KB)

2901.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6720

Inside

Press@RunDepth: 24.22 psig @ 4401.00 ft (KB)

Start Date: 2004.05.06

End Date:

2004.05.06

Start Time: 07:15:27

End Time:

12:21:56

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Time On Btm: 2004.05.06 @ 08:45:11

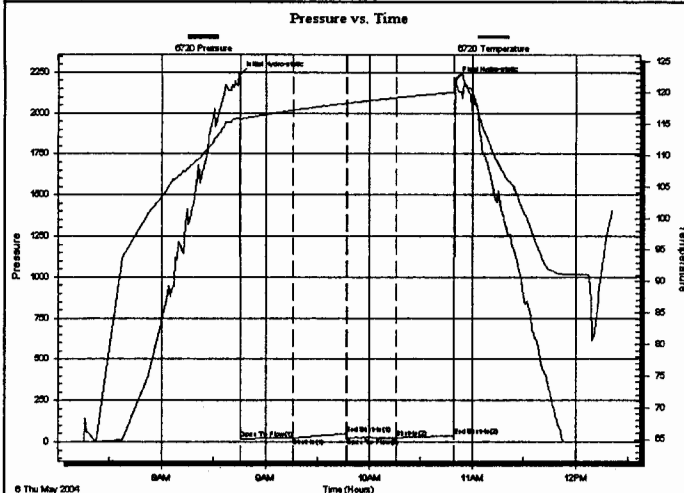
Time Off Btm: 2004.05.06 @ 10:50:11

TEST COMMENT: 1/2" in. @ open built to 1 1/2" in.

No return

Weak surface blow

No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2234.50	116.06	Initial Hydro-static
1	17.11	115.68	Open To Flow (1)
31	22.75	117.16	Shut-In(1)
62	49.75	118.31	End Shut-In(1)
62	24.65	118.32	Open To Flow (2)
91	24.22	119.18	Shut-In(2)
124	36.47	120.07	End Shut-In(2)
125	2202.64	121.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	mud w/oil spots 100% m	0.35

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618
Wichita, Ks

13-17-31 Scott, Ks

Job Ticket: 18121

DST#: 3

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.06 @ 07:15:27

Tool Information

Drill Pipe:	Length: 4405.00 ft	Diameter: 3.80 inches	Volume: 61.79 bbl	Tool Weight:	1500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			Total Volume: 61.79 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	47000.00 lb
Depth to Top Packer:	4400.00 ft			Final	47000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	86.00 ft				
Tool Length:	106.00 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			4381.00	
Shut In Tool	5.00			4386.00	
Hydraulic tool	5.00			4391.00	
Packer	5.00			4396.00	20.00 Bottom Of Top Packer
Packer	4.00			4400.00	
Stubb	1.00			4401.00	
Recorder	0.00	6720	Inside	4401.00	
Perforations	15.00			4416.00	
Change Over Sub	1.00			4417.00	
Drill Pipe	63.00			4480.00	
Change Over Sub	1.00			4481.00	
Recorder	0.00	11058	Outside	4481.00	
Bullnose	5.00			4486.00	86.00 Bottom Packers & Anchor

Total Tool Length: 106.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618

13-17-31 Scott, Ks

Wichita, Ks

Job Ticket: 18121

DST#: 3

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.06 @ 07:15:27

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:

2500 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.56 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
25.00	mud w/oil spots 100%r	0.351

Total Length: 25.00 ft

Total Volume: 0.351 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

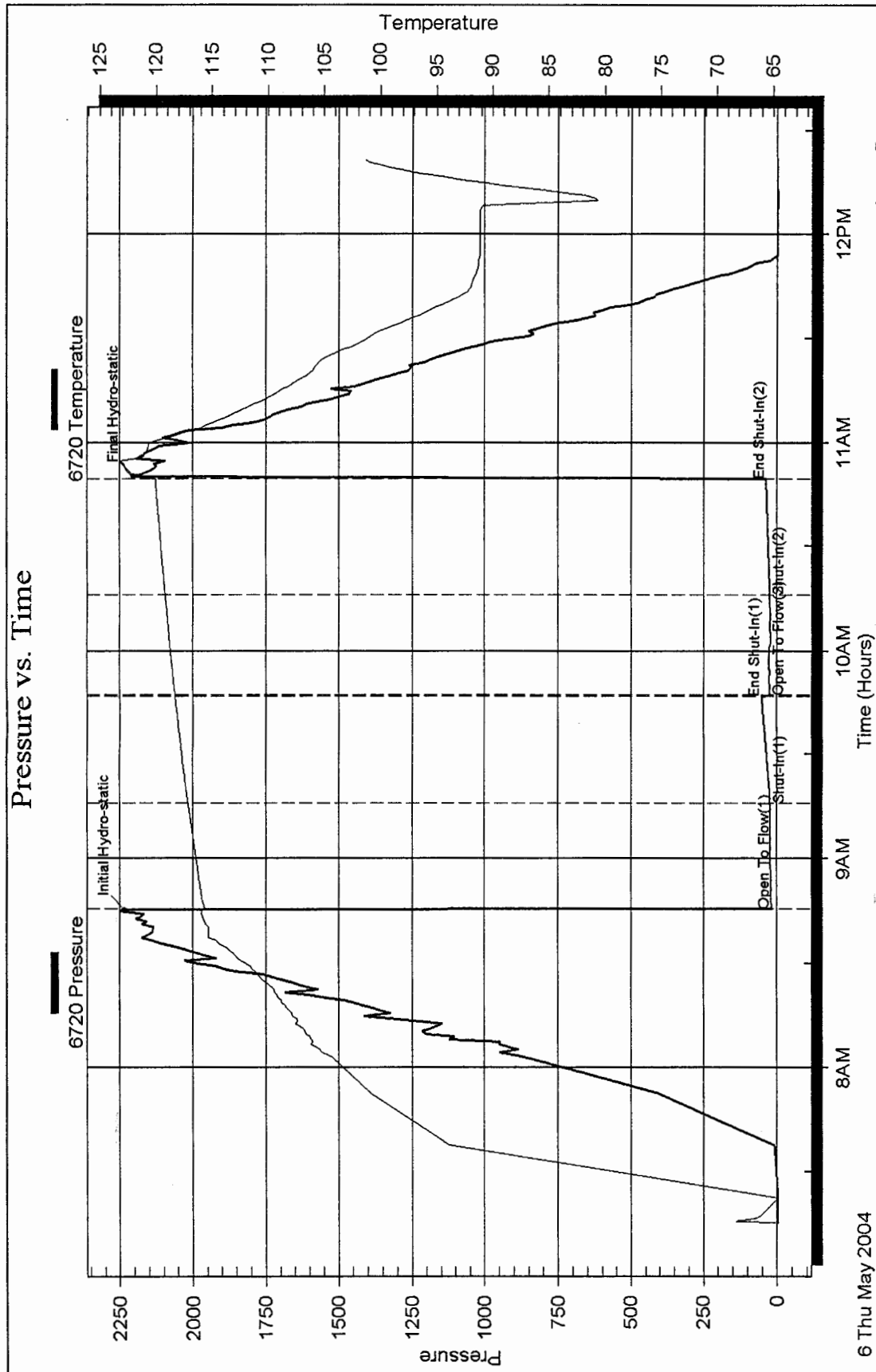
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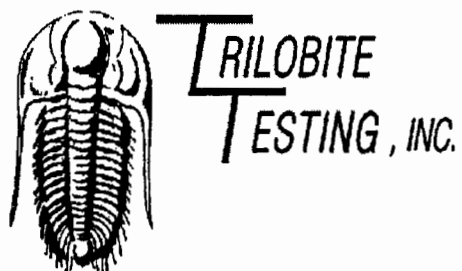
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Ritchie Explor. Inc**

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

13-17-31 Scott,Ks

Froebe #1 13D

Start Date: 2004.05.06 @ 21:30:34

End Date: 2004.05.07 @ 06:45:18

Job Ticket #: 18122 DST #: 4

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Ritchie Explor. Inc

PO Box 783618
Wichita, Ks

ATTN: Ritchie Explor. Inc

Froebe #1 13D

13-17-31 Scott, Ks

Job Ticket: 18122

DST#: 4

Test Start: 2004.05.06 @ 21:30:34

GENERAL INFORMATION:

Formation: **Johnson**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:32:48

Time Test Ended: 06:45:18

Test Type: Conventional Bottom Hole

Tester: Shane McBride

Unit No: 25

Interval: **4482.00 ft (KB) To 4538.00 ft (KB) (TVD)**

Total Depth: 4538.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2906.00 ft (KB)

2901.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 6720

Inside

Press@RunDepth: 429.00 psig @ 4483.00 ft (KB)

Start Date: 2004.05.06

End Date: 2004.05.07

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Start Time: 21:30:34

End Time: 06:45:18

Time On Btm: 2004.05.06 @ 23:32:18

Time Off Btm: 2004.05.07 @ 02:35:48

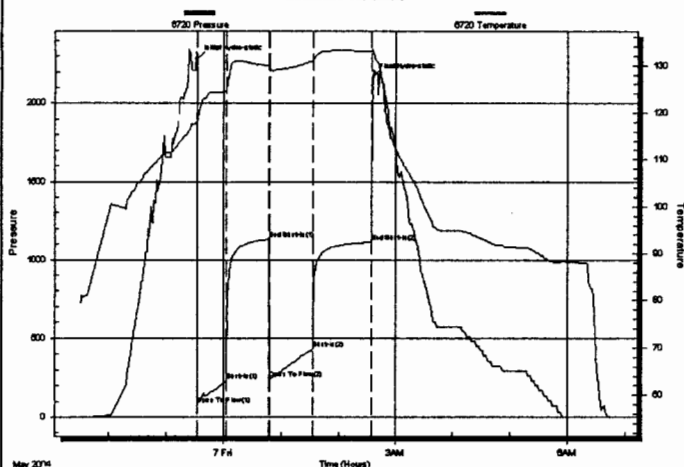
TEST COMMENT: B.O.B. in 3 min.

Bleed off for 6 min. Return blow built to B.O.B. in 6 min.

B.O.B. @ open

Bleed off for 6 min. Return to B.O.B. in 9 min. Gas to surface 50 min. into shutin

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2282.05	118.18	Initial Hydro-static
1	76.30	117.65	Open To Flow (1)
31	228.26	124.53	Shut-In (1)
75	1130.67	129.94	End Shut-In (1)
76	240.66	129.15	Open To Flow (2)
121	429.00	130.93	Shut-In (2)
183	1113.76	132.92	End Shut-In (2)
184	2164.50	133.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
850.00	c g o 30%g 70%o	11.92
188.00	m c g o 10%m 25%g 65%o	2.64
32.00	h m c g o 30%m 25%g 45%o	0.45

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618
Wichita, Ks

13-17-31 Scott, Ks

Job Ticket: 18122

DST#: 4

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.06 @ 21:30:34

Tool Information

Drill Pipe:	Length: 4468.00 ft	Diameter: 3.80 inches	Volume: 62.67 bbl	Tool Weight:	1500.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	70000.00 lb
			Total Volume: 62.67 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	4482.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	56.00 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
Change Over Sub	1.00			4463.00	
Shut In Tool	5.00			4468.00	
Hydraulic tool	5.00			4473.00	
Packer	5.00			4478.00	20.00 Bottom Of Top Packer
Packer	4.00			4482.00	
Stubb	1.00			4483.00	
Recorder	0.00	6720	Inside	4483.00	
Perforations	17.00			4500.00	
Change Over Sub	1.00			4501.00	
Drill Pipe	31.00			4532.00	
Change Over Sub	1.00			4533.00	
Recorder	0.00	2023	Outside	4533.00	
Bullnose	5.00			4538.00	56.00 Bottom Packers & Anchor

Total Tool Length: 76.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Explor. Inc

Froebe #1 13D

PO Box 783618

13-17-31 Scott, Ks

Wichita, Ks

Job Ticket: 18122

DST#: 4

ATTN: Ritchie Explor. Inc

Test Start: 2004.05.06 @ 21:30:34

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 60.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
850.00	c g o 30%g 70%o	11.923
188.00	m c g o 10%m 25%g 65%o	2.637
32.00	h m c g o 30%m 25%g 45%o	0.449

Total Length: 1070.00 ft

Total Volume: 15.009 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

