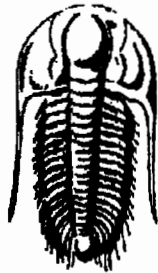


15-171-20750

28-18s-31w



**TRILOBITE  
TESTING, INC.**

**KCC  
APR 21 2010  
CONFIDENTIAL**

**DRILL STEM TEST REPORT**

Prepared For: **FIML Natural Res, LLC**

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

**28-18s-31w Scott KS**

**Long 3D-28-1831**

Start Date: 2010.02.14 @ 12:24:15

End Date: 2010.02.14 @ 22:17:30

Job Ticket #: 37765                      DST #: 1

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**APR 26 2010**

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WICHITA, KS**

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

FIML Natural Res, LLC

Long 3D-28-1831

28-18s-31w Scott KS

DST # 1

Lans G

2010.02.14



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

FML Natural Res, LLC

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

Long 3D-28-1831

28-18s-31w Scott KS

Job Ticket: 37765

DST#: 1

Test Start: 2010.02.14 @ 12:24:15

## GENERAL INFORMATION:

Formation: **Lans G**

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

Time Tool Opened: 14:36:00

Time Test Ended: 22:17:30

Test Type: **Conventional Bottom Hole**

Tester: **Brandon Domsch**

Unit No: **48**

Interval: **4090.00 ft (KB) To 4136.00 ft (KB) (TVD)**

Total Depth: **4136.00 ft (KB) (TVD)**

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

Reference Elevations: **2963.00 ft (KB)**

**2952.00 ft (CF)**

KB to GR/CF: **11.00 ft**

Serial #: **8166** Inside

Press@RunDepth: **751.14 psig @ 4091.00 ft (KB)**

Start Date: **2010.02.14**

End Date:

2010.02.14

Start Time: **12:24:15**

End Time:

22:17:30

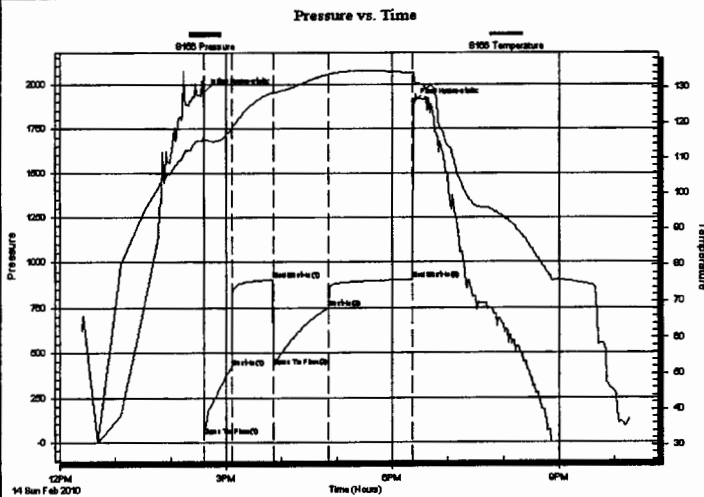
Capacity: **8000.00 psig**

Last Calib.: **2010.02.14**

Time On Btm: **2010.02.14 @ 14:35:30**

Time Off Btm: **2010.02.14 @ 18:22:45**

TEST COMMENT: IF: BOB in 4 1/2 mins.  
IS: Surface blow for 7 mins.  
FF: BOB in 5 1/4 mins.  
FS: Surface blow off and on for 14 mins.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1956.03	115.59	Initial Hydro-static
1	39.87	114.78	Open To Flow (1)
31	420.58	118.34	Shut-in(1)
76	906.01	128.57	End Shut-in(1)
76	427.08	128.43	Open To Flow (2)
136	751.14	133.54	Shut-in(2)
227	905.35	133.96	End Shut-in(2)
228	1897.08	133.89	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	M 100% m	0.15
1303.00	O&MCW 10% o 85% w 5% m	15.85
282.00	G, O&WCM 5% g 15% o 30% w 50% m	3.96
105.00	CG&O 5% g 95% o	1.47
0.00	GP = 15 ft	0.00
0.00	API = 29@50F = 30	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

FIML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37765

DST#: 1

ATTN: Jim Musgrove

Test Start: 2010.02.14 @ 12:24:15

**Tool Information**

Drill Pipe:	Length: 3787.00 ft	Diameter: 3.80 inches	Volume: 53.12 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: 297.00 ft	Diameter: 2.25 inches	Volume: 1.46 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 54.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4090.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	66.00 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			4071.00	
Shut In Tool	5.00			4076.00	
Hydraulic tool	5.00			4081.00	
Packer	5.00			4086.00	20.00 Bottom Of Top Packer
Packer	4.00			4090.00	
Stubb	1.00			4091.00	
Recorder	0.00	8322	inside	4091.00	
Recorder	0.00	8166	inside	4091.00	
Perforations	7.00			4098.00	
Change Over Sub	1.00			4099.00	
Drill Pipe	31.00			4130.00	
Change Over Sub	1.00			4131.00	
Bullnose	5.00			4136.00	46.00 Bottom Packers & Anchor

**Total Tool Length: 66.00**

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**TRILOBITE  
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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

FIML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37765

DST#: 1

ATTN: Jim Musgrove

Test Start: 2010.02.14 @ 12:24:15

**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:

49000 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.75 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3100.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
30.00	M 100% <i>m</i>	0.148
1303.00	O&MCW 10% <i>o</i> 85% <i>w</i> 5% <i>m</i>	15.845
282.00	G,O&WCM 5% <i>g</i> 15% <i>o</i> 30% <i>w</i> 50% <i>m</i>	3.956
105.00	CG&O 5% <i>g</i> 95% <i>o</i>	1.473
0.00	GIP = 15 ft	0.000
0.00	API = 29@50F = 30	0.000
0.00	RW = N/A to much O on top	0.000

Total Length: 1720.00 ft

Total Volume: 21.422 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

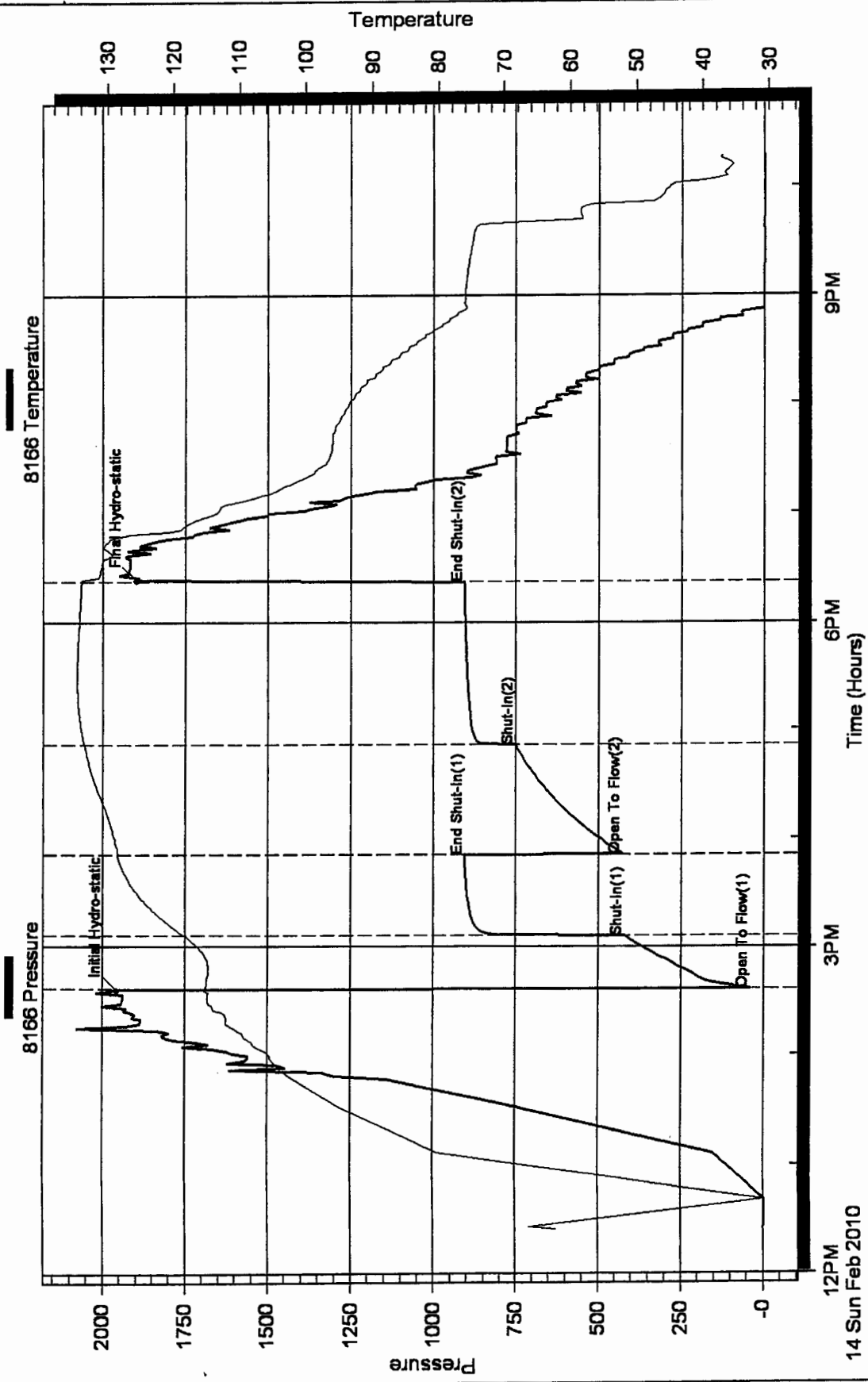
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time



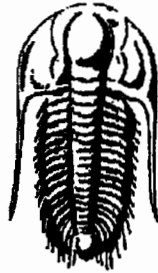
12 PM  
14 Sun Feb 2010

3 PM  
6 PM  
9 PM

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 WICHITA, KS  
 APR 26 2010

Ref. No: 37765

Rate Testing, Inc



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **FIML Natural Res, LLC**

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

**28-18s-31w Scott KS**

**Long 3D-28-1831**

Start Date: 2010.02.15 @ 09:30:05

End Date: 2010.02.15 @ 17:05:29

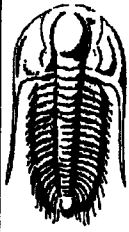
Job Ticket #: 37766                      DST #: 2

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

ATTN: Jim Musgrove

Job Ticket: 37766

DST#: 2

Test Start: 2010.02.15 @ 09:30:05

### GENERAL INFORMATION:

Formation: **Lans I**

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

Time Tool Opened: 11:40:00

Time Test Ended: 17:05:29

Test Type: **Conventional Bottom Hole**

Tester: **Brandon Domsch**

Unit No: **48**

Interval: **4153.00 ft (KB) To 4190.00 ft (KB) (TVD)**

Total Depth: **4190.00 ft (KB) (TVD)**

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

Reference Elevations: **2963.00 ft (KB)**

**2952.00 ft (CF)**

KB to GR/CF: **11.00 ft**

Serial #: **8322**

Inside

Press@RunDepth: **545.04 psig @ 4154.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2010.02.15**

End Date:

**2010.02.15**

Last Calib.: **2010.02.15**

Start Time: **09:30:05**

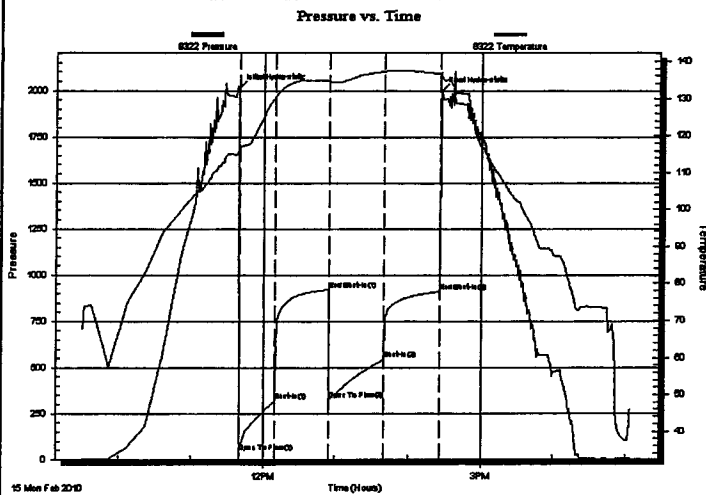
End Time:

**17:05:29**

Time On Btm: **2010.02.15 @ 11:39:15**

Time Off Btm: **2010.02.15 @ 14:26:44**

TEST COMMENT: **IF: BOB in 6 1/4 mins.  
IS: No return.  
FF: BOB in 7 1/2 mins.  
FS: No return.**



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2012.39	116.10	Initial Hydro-static
1	41.12	116.05	Open To Flow (1)
31	320.75	130.43	Shut-In(1)
76	920.33	134.65	End Shut-In(1)
76	327.69	134.49	Open To Flow (2)
121	545.04	137.15	Shut-In(2)
167	907.78	136.60	End Shut-In(2)
168	1997.53	136.88	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
30.00	M 100%m	0.15
1014.00	SMCW 95%w 5%m	11.79
196.00	W&M 50%w 50%m	2.75
0.00	GP = 0	0.00
0.00	RW = .667@58F = 11500ppm	0.00

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

FML Natural Res, LLC

**Long 3D-28-1831**

410 17th St STE 900  
Denver CO 80202

**28-18s-31w Scott KS**

ATTN: Jim Musgrove

Job Ticket: 37766

DST#: 2

Test Start: 2010.02.15 @ 09:30:05

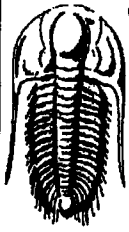
**Tool Information**

Drill Pipe:	Length: 3852.00 ft	Diameter: 3.80 inches	Volume: 54.03 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: 297.00 ft	Diameter: 2.25 inches	Volume: 1.46 bbl	Weight to Pull Loose: 70000.00 lb
		<u>Total Volume: 55.49 bbl</u>		Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4153.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	57.00 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			4134.00	
Shut In Tool	5.00			4139.00	
Hydraulic tool	5.00			4144.00	
Packer	5.00			4149.00	20.00 Bottom Of Top Packer
Packer	4.00			4153.00	
Stubb	1.00			4154.00	
Recorder	0.00	8322	Inside	4154.00	
Recorder	0.00	8166	Inside	4154.00	
Perforations	31.00			4185.00	
Bullnose	5.00			4190.00	37.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>57.00</b>				

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**TRILOBITE  
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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

FIML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37766

DST#: 2

ATTN: Jim Musgrove

Test Start: 2010.02.15 @ 09:30:05

**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:

11500 ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.37 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbf
30.00	M 100%m	0.148
1014.00	SMCW 95%w 5%m	11.792
196.00	W&M 50%w 50%m	2.749
0.00	GP = 0	0.000
0.00	RW = .667@58F = 11500ppm	0.000

Total Length: 1240.00 ft

Total Volume: 14.689 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

DST Test Number: 2

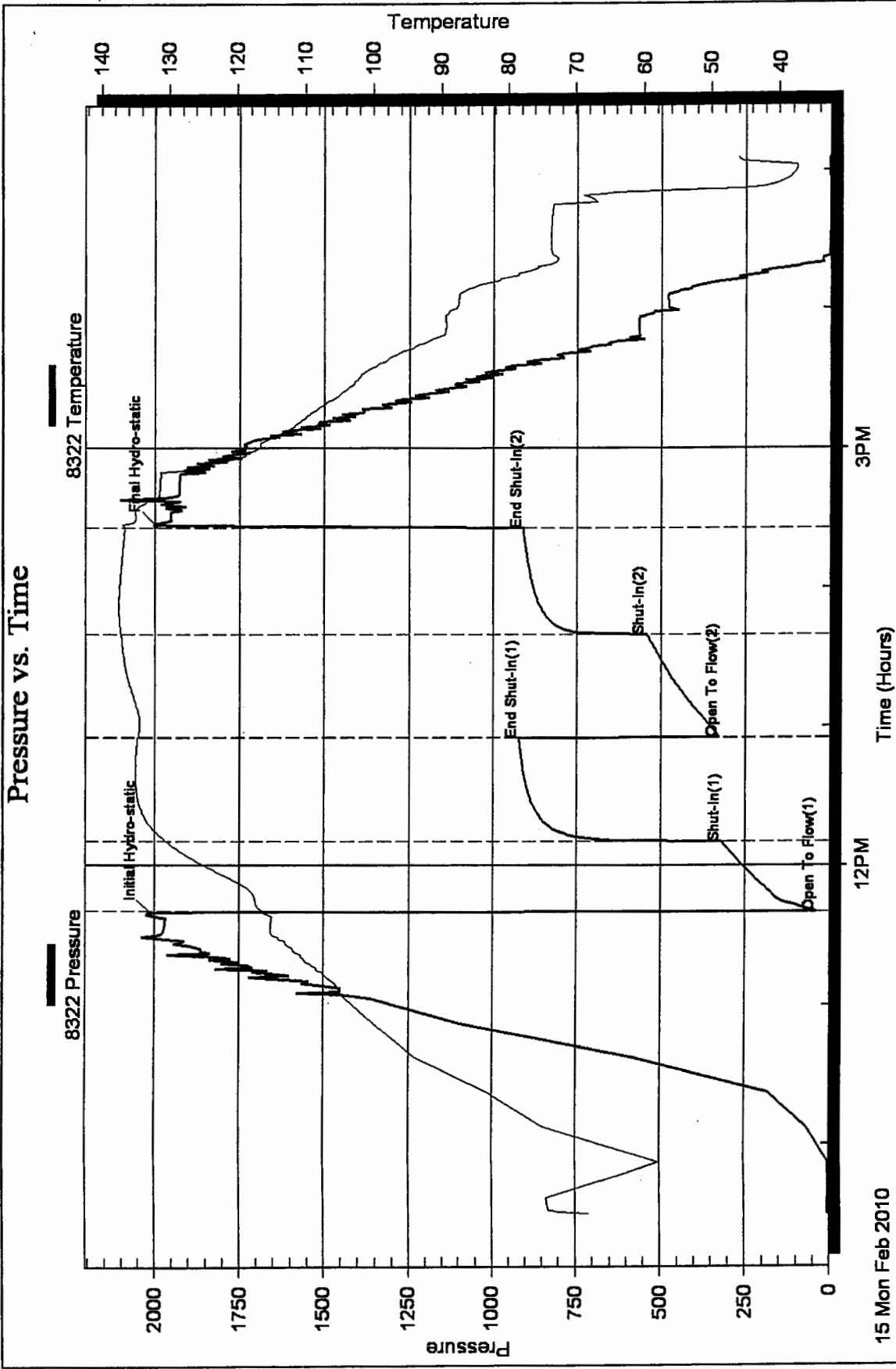
28-18s-31w Scott KS

FIML Natural Res, LLC

Inside

Serial #: 8322

### Pressure vs. Time



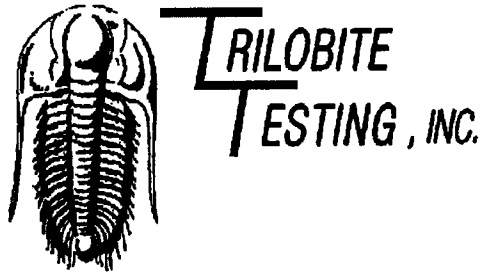
Trilobite Testing, Inc

Ref. No: 37766

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## DRILL STEM TEST REPORT

Prepared For: **FIML Natural Res, LLC**

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

**28-18s-31w Scott KS**

**Long 3D-28-1831**

Start Date: 2010.02.16 @ 07:15:05

End Date: 2010.02.16 @ 14:21:14

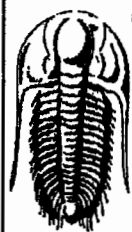
Job Ticket #: 37767                      DST #: 3

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

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**TRIOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

FIML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37767

DST#: 3

ATTN: Jim Musgrove

Test Start: 2010.02.16 @ 07:15:05

## GENERAL INFORMATION:

Formation: **Lans, J,K,L**

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

Time Tool Opened: 09:31:45

Time Test Ended: 14:21:14

Test Type: **Conventional Bottom Hole**

Tester: **Brandon Domsch**

Unit No: **48**

Interval: **4188.00 ft (KB) To 4296.00 ft (KB) (TVD)**

Reference Elevations: **2963.00 ft (KB)**

Total Depth: **4296.00 ft (KB) (TVD)**

**2952.00 ft (CF)**

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

KB to GR/CF: **11.00 ft**

Serial #: **8322**

Inside

Press@RunDepth: **76.46 psig @ 4189.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2010.02.16**

End Date: **2010.02.16**

Last Calib.: **2010.02.16**

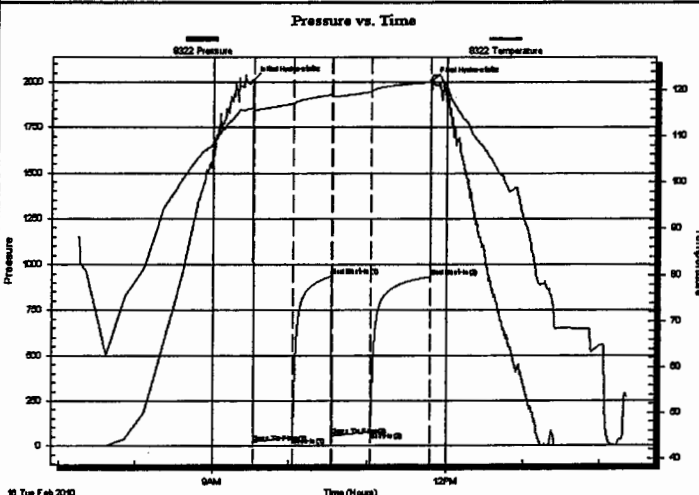
Start Time: **07:15:05**

End Time: **14:21:14**

Time On Btm: **2010.02.16 @ 09:31:30**

Time Off Btm: **2010.02.16 @ 11:48:29**

TEST COMMENT: **IF: Built to 3 1/2 inches.  
IS: No return.  
FF: Built to 2 inches.  
FS: No return.**



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2008.24	116.06	Initial Hydro-static
1	19.77	115.78	Open To Flow (1)
32	49.86	117.10	Shut-In(1)
61	938.82	119.01	End Shut-In(1)
61	54.66	118.81	Open To Flow(2)
91	76.46	119.72	Shut-In(2)
137	934.83	121.77	End Shut-In(2)
137	2007.29	122.25	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
120.00	M 100%m	0.59
0.00	GIP = 0	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

FML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

ATTN: Jim Musgrove

Job Ticket: 37767

DST#: 3

Test Start: 2010.02.16 @ 07:15:05

## Tool Information

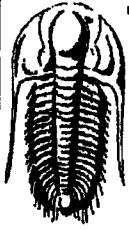
Drill Pipe:	Length: 3884.00 ft	Diameter: 3.80 inches	Volume: 54.48 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 297.00 ft	Diameter: 2.25 inches	Volume: 1.46 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 55.94 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4188.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	108.00 ft			
Tool Length:	128.00 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			4169.00	
Shut In Tool	5.00			4174.00	
Hydraulic tool	5.00			4179.00	
Packer	5.00			4184.00	20.00 Bottom Of Top Packer
Packer	4.00			4188.00	
Stubb	1.00			4189.00	
Recorder	0.00	8322	Inside	4189.00	
Recorder	0.00	8166	Inside	4189.00	
Perforations	7.00			4196.00	
Change Over Sub	1.00			4197.00	
Drill Pipe	93.00			4290.00	
Change Over Sub	1.00			4291.00	
Bullnose	5.00			4296.00	108.00 Bottom Packers & Anchor

**Total Tool Length: 128.00**

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**TRILOBITE**  
TESTING, INC

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

FML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37767

DST#: 3

ATTN: Jim Musgrove

Test Start: 2010.02.16 @ 07:15:05

**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: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.17 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 1.00 inches

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbf
120.00	M 100%m	0.590
0.00	GIP = 0	0.000

Total Length: 120.00 ft      Total Volume: 0.590 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8322

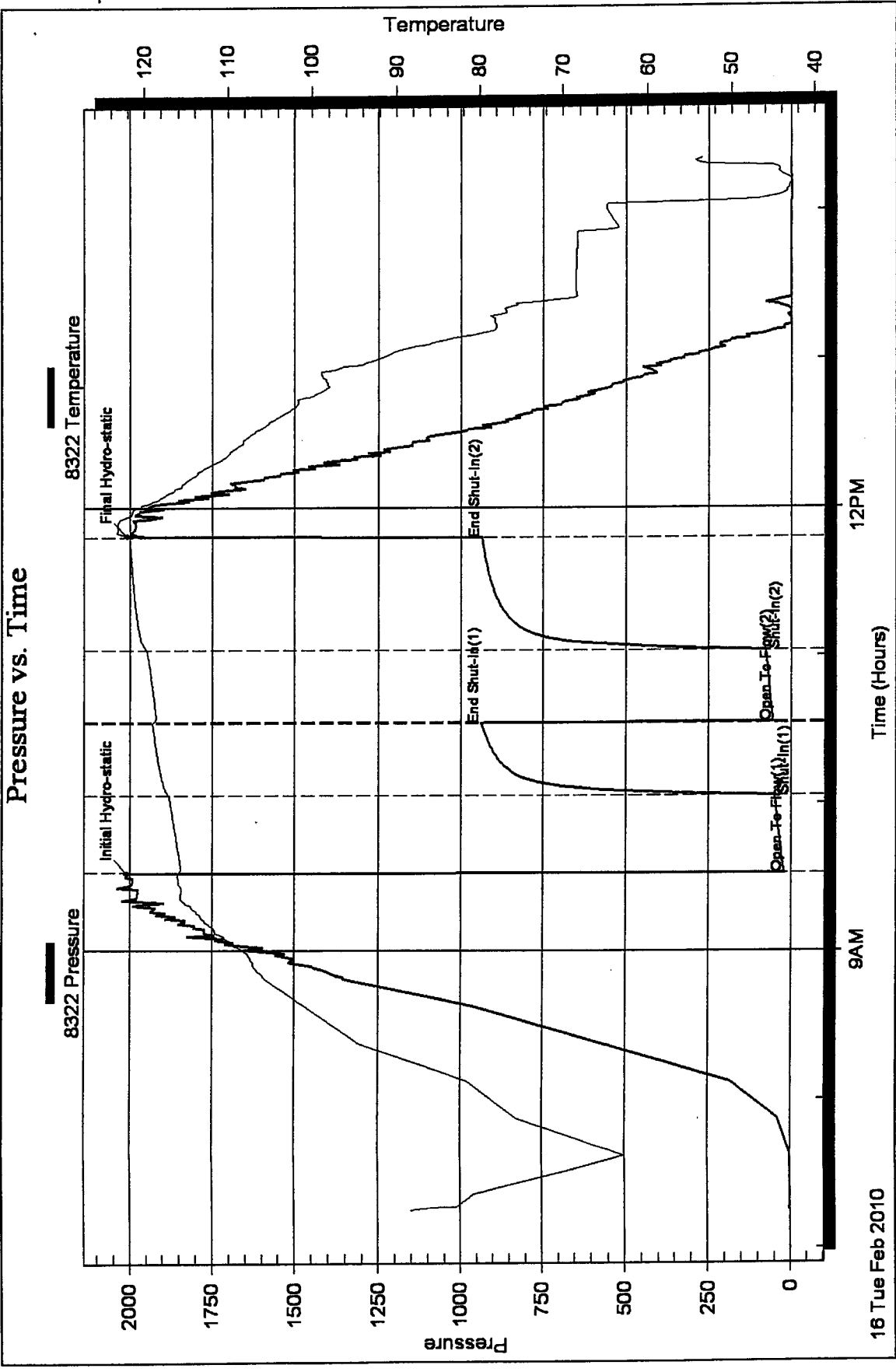
Inside

FIML Natural Res, LLC

28-18s-31w Scott KS

DST Test Number: 3

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 37767

APR 26 2010

Printed: 2010.02.23 @ 20:32:57 Page 5

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WICHITA, KS



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **FIML Natural Res, LLC**

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

**28-18s-31w Scott KS**

**Long 3D-28-1831**

Start Date: 2010.02.17 @ 15:03:05

End Date: 2010.02.17 @ 23:19:14

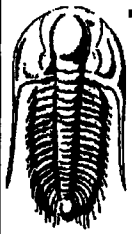
Job Ticket #: 37768      DST #: 4

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APR 26 2010

CONSERVATION DIVISION  
WICHITA, KS

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

FIML Natural Res, LLC

410 17th St STE 900  
Denver CO 80202

ATTN: Jim Musgrove

Long 3D-28-1831

28-18s-31w Scott KS

Job Ticket: 37768

DST#: 4

Test Start: 2010.02.17 @ 15:03:05

## GENERAL INFORMATION:

Formation: **Miss**

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

Time Tool Opened: 16:51:45

Time Test Ended: 23:19:14

Test Type: **Conventional Bottom Hole**

Tester: **Brandon Domsch**

Unit No: **48**

Interval: **4566.00 ft (KB) To 4594.00 ft (KB) (TVD)**

Total Depth: **4594.00 ft (KB) (TVD)**

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

Reference Elevations: **2963.00 ft (KB)**

**2952.00 ft (CF)**

KB to GRV/CF: **11.00 ft**

Serial #: **8322**

Inside

Press@RunDepth: **218.14 psig @ 4567.00 ft (KB)**

Start Date: **2010.02.17**

End Date:

2010.02.17

Start Time: **15:03:05**

End Time:

23:19:14

Capacity: **8000.00 psig**

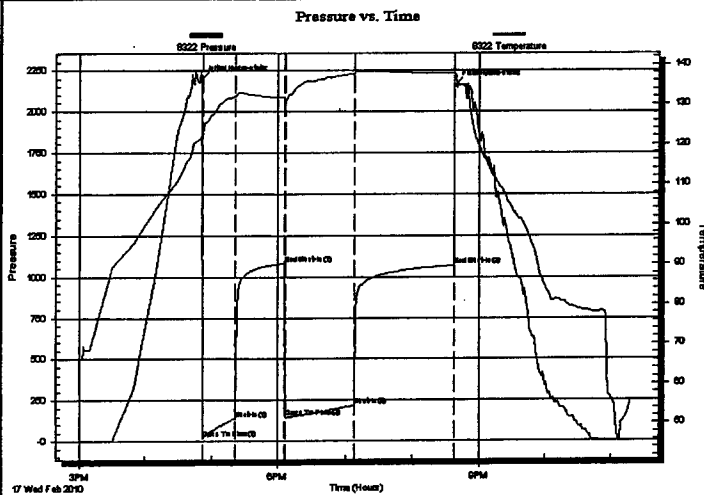
Last Calib.: **2010.02.17**

Time On Btm: **2010.02.17 @ 16:51:00**

Time Off Btm: **2010.02.17 @ 20:38:15**

TEST COMMENT: **F: BOB in 19 mins.  
IS: 1/4 inch died in 30 mins.  
FF: BOB in 20 mins.  
FS: Built to 2 inches died in 54 mins.**

## PRESSURE SUMMARY



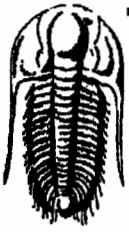
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2200.38	122.97	Initial Hydro-static
1	19.11	122.78	Open To Flow (1)
31	137.31	131.92	Shut-in(1)
76	1080.54	131.65	End Shut-in(1)
76	144.38	131.36	Open To Flow (2)
137	218.14	137.61	Shut-in(2)
227	1067.70	137.67	End Shut-in(2)
228	2164.54	137.42	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	GO&WCM 15%g 35%o 10%w 40%m	0.91
125.00	SMCG&O 15%g 75%o 10%m	0.74
229.00	CG&O 20%g 80%o	3.21
0.00	GIP = 45 ft	0.00
0.00	API = 30 @ 60F = 30	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

FIML Natural Res, LLC

**Long 3D-28-1831**

410 17th St STE 900  
Denver CO 80202

**28-18s-31w Scott KS**

Job Ticket: 37768

DST#: 4

ATTN: Jim Musgrove

Test Start: 2010.02.17 @ 15:03:05

**Tool Information**

Drill Pipe:	Length: 4259.00 ft	Diameter: 3.80 inches	Volume: 59.74 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: 297.00 ft	Diameter: 2.25 inches	Volume: 1.46 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 61.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4566.00 ft			Final 73000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	48.00 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			4547.00	
Shut In Tool	5.00			4552.00	
Hydraulic tool	5.00			4557.00	
Packer	5.00			4562.00	20.00 Bottom Of Top Packer
Packer	4.00			4566.00	
Stubb	1.00			4567.00	
Recorder	0.00	8322	Inside	4567.00	
Recorder	0.00	8166	Inside	4567.00	
Perforations	22.00			4589.00	
Bullnose	5.00			4594.00	28.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>48.00</b>				

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**TRILOBITE  
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## DRILL STEM TEST REPORT

**FLUID SUMMARY**

FIML Natural Res, LLC

Long 3D-28-1831

410 17th St STE 900  
Denver CO 80202

28-18s-31w Scott KS

Job Ticket: 37768

DST#: 4

ATTN: Jim Musgrove

Test Start: 2010.02.17 @ 15:03:05

### 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: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.39 in<sup>3</sup>

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 bbf
186.00	GO&WCM 15%g 35%o 10%w 40%m	0.915
125.00	SMCG&O 15%g 75%o 10%m	0.742
229.00	CG&O 20%g 80%o	3.212
0.00	GIP = 45 ft	0.000
0.00	API = 30 @ 60F = 30	0.000

Total Length: 540.00 ft

Total Volume: 4.869 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8322

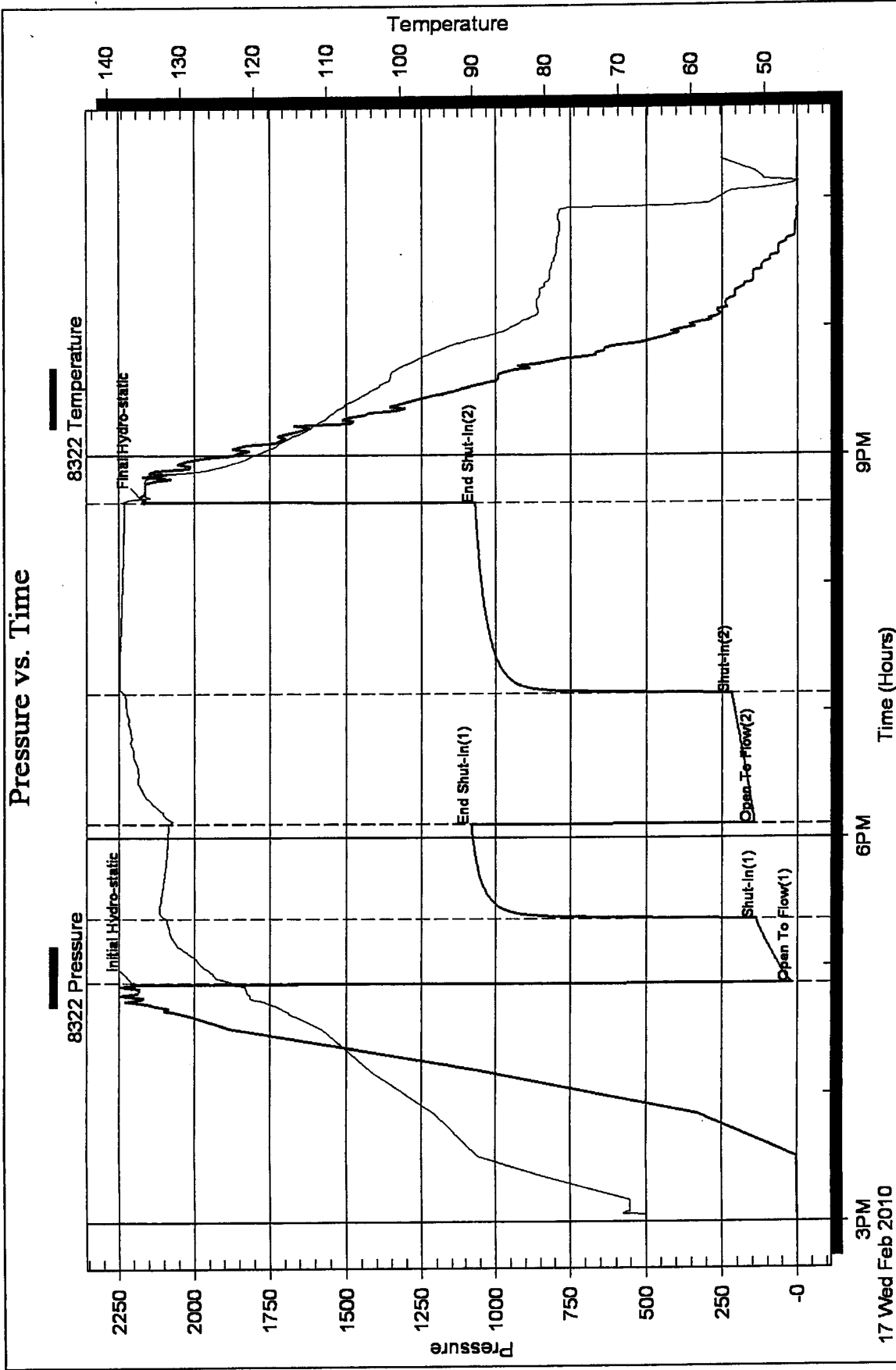
Inside

FIML Natural Res, LLC

28-18s-31w Scott KS

DST Test Number: 4

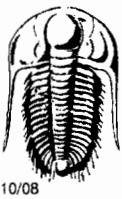
### Pressure vs. Time



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Ref. No: 37768

Trilobite Testing, Inc



# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 37765 13923

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Well Name & No. Long 3D-28-1831 BY: \_\_\_\_\_ Test No. 1 Date 2-14-10  
 Company FIML Elevation 2963 KB 2952 GL \_\_\_\_\_  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Gary Duke / Jim Musgrove Rig Martin #22  
 Location: Sec. 28 Twp. 18s Rge. 31w Co. Scott State KS

Interval Tested 4090 - 4136 Zone Tested Lans G  
 Anchor Length 46' Drill Pipe Run 3787 Mud Wt. 9.2  
 Top Packer Depth 4085 Drill Collars Run 297 Vis 46  
 Bottom Packer Depth 4090 Wt. Pipe Run 0 WL 6.8  
 Total Depth 4136 Chlorides 3100 ppm System LCM 4\*

Blow Description IF: BOB in 4 1/2 mins  
IS: Surface blow for 7 mins  
FF: BOB in 5 1/4 mins. GIP = 15 ft  
FS: Surface blow off + on for 14 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>105</u>	<u>CG+O</u>	<u>5</u>	<u>95</u>		
<u>282</u>	<u>G,O+WCM</u>	<u>5</u>	<u>15</u>	<u>30</u>	<u>50</u>
<u>1303</u>	<u>O+MCLW</u>		<u>10</u>	<u>85</u>	<u>5</u>
<u>30</u>	<u>M</u>				<u>100</u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>

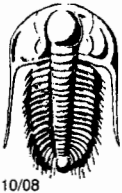
Rec Total 1720 BHT 133 Gravity 30 API RW 157 @ 65° F Chlorides 99000 ppm

(A) Initial Hydrostatic 1956  Test 1150 T-On Location 11:45am  
 (B) First Initial Flow 37  Jars \_\_\_\_\_ T-Started 12:24pm  
 (C) First Final Flow 420  Safety Joint \_\_\_\_\_ T-Open 14:39pm  
 (D) Initial Shut-In 906  Circ Sub N/C # \_\_\_\_\_ T-Pulled 18:24pm  
 (E) Second Initial Flow 427  Hourly Standby N/C T-Out 22:17pm  
 (F) Second Final Flow 751  Mileage 21 = 21.00 Comments \_\_\_\_\_  
 (G) Final Shut-In 905  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1897  Straddle \_\_\_\_\_

Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Day Standby \_\_\_\_\_ Sub Total 0  
 Accessibility \_\_\_\_\_ Total 1171  
 Sub Total 1171

Approved By [Signature] Our Representative [Signature]

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## Test Ticket

NO. 37766

Well Name & No. Long 3D-28-1831 BY: \_\_\_\_\_ Test No. 2 Date 2-15-10  
 Company FIML Elevation 2963 KB 2952 GL \_\_\_\_\_  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Gary Deke / Jim Musgrove Rig Murfin# 22  
 Location: Sec. 28 Twp. 18S Rge. 31W Co. Scott State KANSAS

Interval Tested 4153-4190 Zone Tested Lans I  
 Anchor Length 37' Drill Pipe Run 3852 Mud Wt. 9.0  
 Top Packer Depth 4148 Drill Collars Run 297 Vis 48  
 Bottom Packer Depth 4153 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4190 Chlorides 3600 ppm System LCM 4#

Blow Description IF: BOB in 6 1/4 mins.  
IS: No return.  
FF: BOB in 7 1/2 mins. GIP = 0  
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>196</u>	<u>W+M</u>			<u>50</u>	<u>50</u>
<u>1014</u>	<u>SMCW</u>			<u>95</u>	<u>5</u>
<u>30</u>	<u>M</u>				<u>100</u>
____	____	%gas	%oil	%water	%mud
____	____	%gas	%oil	%water	%mud

Rec Total 1240 BHT 136 Gravity 8.8 API RW 667 @ 58 °F Chlorides 11500 ppm

- (A) Initial Hydrostatic 2012
- (B) First Initial Flow 41
- (C) First Final Flow 320
- (D) Initial Shut-In 920
- (E) Second Initial Flow 327
- (F) Second Final Flow 545
- (G) Final Shut-In 907
- (H) Final Hydrostatic 1997

- Test 1150-
- Jars \_\_\_\_\_
- Safety Joint \_\_\_\_\_
- Circ Sub \$50.00
- Hourly Standby \_\_\_\_\_
- Mileage 21 = \$21.00
- Sampler \_\_\_\_\_
- Straddle \_\_\_\_\_
- Shale Packer \_\_\_\_\_
- Extra Packer \_\_\_\_\_
- Extra Recorder \_\_\_\_\_
- Day Standby \_\_\_\_\_
- Accessibility \_\_\_\_\_

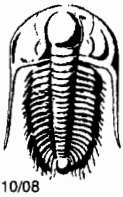
T-On Location 08:40am  
 T-Started 09:30am  
 T-Open 11:43am  
 T-Pulled 14:30pm  
 T-Out 17:05pm  
 Comments \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45

Ruined Shale Packer \_\_\_\_\_  
 Ruined Packer \_\_\_\_\_  
 Extra Copies \_\_\_\_\_  
 Sub Total 0  
 Total 1221-

Approved By [Signature] Our Representative [Signature]

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FEB 22 2010

## Test Ticket

NO. 37767

Well Name & No. Long 3D-26-1831 Test No. 3 Date 2-16-10  
 Company FIML Elevation 2963 KB 2952 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Gary Duke / Jim Musgrove Rig Murfin #22  
 Location: Sec. 28 Twp. 18s Rge. 3/W Co. Scott State K5

Interval Tested 4188-4296 Zone Tested Lvs J, K, L  
 Anchor Length 108' Drill Pipe Run 3884 Mud Wt. 9.1  
 Top Packer Depth 4183 Drill Collars Run 297 Vis 52  
 Bottom Packer Depth 4188 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4296 Chlorides 3000 ppm System LCM 3\*  
 Blow Description IF: Built to 3 1/2 inches.  
IS: No return.  
FF: Built to 2 inches.  
FS: No return.

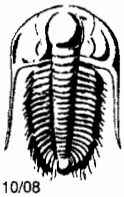
Rec	Feet of	%gas	%oil	%water	%mud
<u>120</u>	<u>M w/ a few O spots</u>			<u>100</u>	

Rec Total 120 BHT 121 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2006  Test 1150' T-On Location 06:45am  
 (B) First Initial Flow 19  Jars \_\_\_\_\_ T-Started 07:15am  
 (C) First Final Flow 49  Safety Joint \_\_\_\_\_ T-Open 09:35am  
 (D) Initial Shut-In 938  Circ Sub N/C T-Pulled 11:50am  
 (E) Second Initial Flow 54  Hourly Standby \_\_\_\_\_ T-Out 14:14pm  
 (F) Second Final Flow 76  Mileage 21 = \$21.00 Comments \_\_\_\_\_  
 (G) Final Shut-In 934  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2007  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30 Sub Total 0  
 Initial Shut-In 30 Total 1171  
 Final Flow 30  
 Final Shut-In 49  
 Sub Total 1171

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

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## Test Ticket

NO. 37768

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FEB 22 2010

Well Name & No. Long 3D-28-1831 BY: \_\_\_\_\_ Test No. 4 Date 2-17-10  
 Company FIML Elevation 2963 KB 2952 GL \_\_\_\_\_  
 Address \_\_\_\_\_  
 Co. Rep / Geo. Gary Duke / Jim Musgrave Rig Murfin #22  
 Location: Sec. 28 Twp. 18s Rge. 3lw Co. Scott State KS

Interval Tested 4566-4594 Zone Tested Miss  
 Anchor Length 28' Drill Pipe Run 4259 Mud Wt. 9.1  
 Top Packer Depth 4561 Drill Collars Run 297 Vis 51  
 Bottom Packer Depth 4566 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4594 Chlorides 2500 ppm System LCM 8#

Blow Description IF: BOB in 19 mins.  
IS: 1/4 inch blow for 30 mins.  
FF: BOB in 20 mins.  
FS: Butoff 2 inches died in 54 mins.

Rec	Feet of	%gas	%oil	%water	%mud
<u>229</u>	<u>CG+O</u>	<u>20</u>	<u>80</u>		
<u>125</u>	<u>SM C G+O</u>	<u>15</u>	<u>75</u>		<u>10</u>
<u>186</u>	<u>GO+W CM</u>	<u>15</u>	<u>35</u>	<u>10</u>	<u>40</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 540 BHT 137 Gravity 30 API RW N/A °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2200  Test 1150' T-On Location 14:20pm  
 (B) First Initial Flow 19  Jars \_\_\_\_\_ T-Started 15:03pm  
 (C) First Final Flow 137  Safety Joint \_\_\_\_\_ T-Open 16:55pm  
 (D) Initial Shut-In 1080  Circ Sub N/C T-Pulled 20:40pm  
 (E) Second Initial Flow 144  Hourly Standby \_\_\_\_\_ T-Out 23:20  
 (F) Second Final Flow 218  Mileage 21 = 21.00 Comments \_\_\_\_\_  
 (G) Final Shut-In 1067  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2193  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Day Standby \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 45  Accessibility \_\_\_\_\_ Total 1171  
 Final Flow 60 Sub Total 1171

Approved By [Signature] Our Representative [Signature]  
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