



DRILL STEM TEST REPORT

Prepared For: **Tengasco, Inc.**

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

24-16s-18w-Rush-Ks

Legleiter C #2

Start Date: 2001.11.29 @ 20:22:22

End Date: 2001.11.30 @ 03:46:21

Job Ticket #: 15603

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

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15603

DST#: 1

Test Start: 2001.11.29 @ 20:22:22

GENERAL INFORMATION:

Formation: **Toronto/A**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:36:21

Time Test Ended: 03:46:21

Interval: **3230.00 ft (KB) To 3307.00 ft (KB) (TVD)**

Total Depth: 3307.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 21

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 2357

Inside

Press@RunDepth: 32.13 psig @ 3233.01 ft (KB)

Start Date: 2001.11.29

End Date:

2001.11.30

Start Time: 20:22:22

End Time:

03:46:21

Capacity: 7000.00 psig

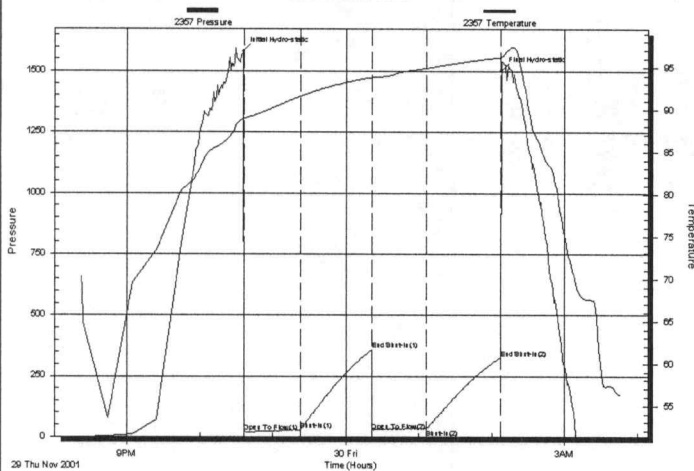
Last Calib.: 1899.12.30

Time On Btm: 2001.11.29 @ 22:35:51

Time Off Btm: 2001.11.30 @ 02:07:51

TEST COMMENT: IF-Strong BOB in 20 min
FF-Strong- BOB in 30 min
Times-45-60-45-60

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1581.76	88.89	Initial Hydro-static
1	20.73	88.90	Open To Flow (1)
47	26.64	91.52	Shut-In (1)
106	357.65	93.80	End Shut-In (1)
106	21.97	93.82	Open To Flow (2)
150	32.13	94.87	Shut-In (2)
212	325.05	96.17	End Shut-In (2)
212	1503.55	96.18	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	Gsy M 10%g 90%m	0.29
475.00	GIP	6.66

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15603

DST#: 1

Test Start: 2001.11.29 @ 20:22:22

Tool Information

Drill Pipe:	Length: 3203.00 ft	Diameter: 3.80 inches	Volume: 44.93 bbl	Tool Weight:	1000.00 lb
Heavy Wt. Pipe:	Length: 0.01 ft	Diameter: 0.01 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	50000.00 lb
			<u>Total Volume: 45.08 bbl</u>	Tool Chased	0.01 ft
Drill Pipe Above KB:	24.01 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3230.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	77.02 ft				
Tool Length:	98.02 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3210.00	
S.I. Tool	5.00			3215.00	
HMV	5.00			3220.00	
Packer	5.00			3225.00	21.00 Bottom Of Top Packer
Packer	5.00			3230.00	
Stubb	1.00			3231.00	
Perforations	1.00			3232.00	
C.O. Sub	1.00			3233.00	
Recorder	0.01	2357	Inside	3233.01	
Blank Spacing	62.00			3295.01	
C.O. Sub	1.00			3296.01	
Recorder	0.01	13254	Outside	3296.02	
Perforations	8.00			3304.02	
Bullnose	3.00			3307.02	77.02 Bottom Packers & Anchor

Total Tool Length: 98.02



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15603

DST#: 1

ATTN: Ed Glassman

Test Start: 2001.11.29 @ 20:22:22

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: 43.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.35 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
40.00	Gsy M 10%g 90%m	0.288
475.00	GIP	6.663

Total Length: 515.00 ft

Total Volume: 6.951 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

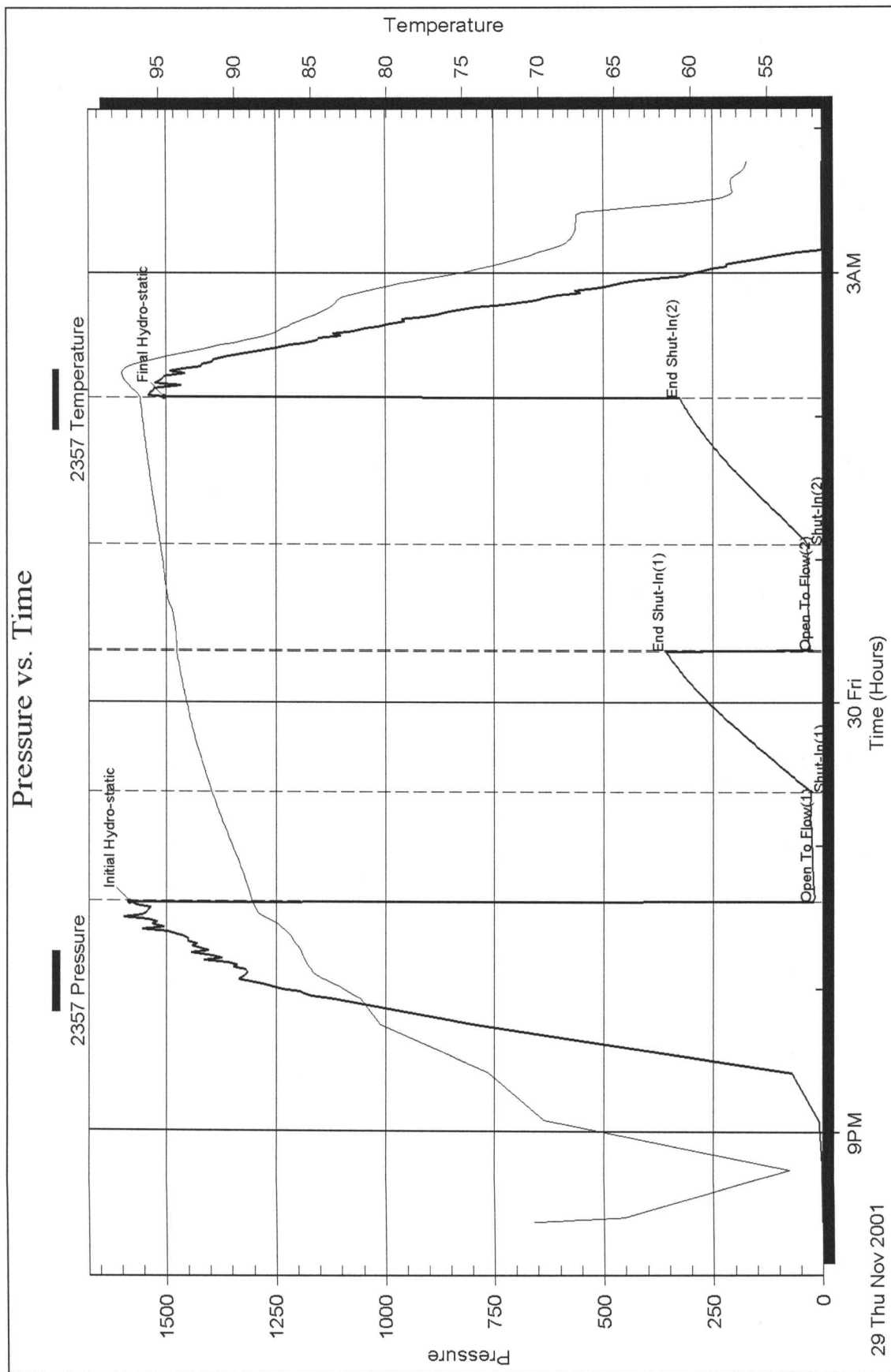
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Tengasco, Inc.**

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

24-16s-18w-Rush-Ks

Legleiter C #2

Start Date: 2001.11.30 @ 20:43:01

End Date: 2001.12.01 @ 03:51:01

Job Ticket #: 15604

DST #: 2

Trilobite Testing, Inc

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DRILL STEM TEST REPORT

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15604

DST#: 2

Test Start: 2001.11.30 @ 20:43:01

GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:29:01

Time Test Ended: 03:51:01

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 21

Interval: **3325.00 ft (KB) To 3400.00 ft (KB) (TVD)**

Total Depth: 3400.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 2357

Inside

Press@RunDepth: 38.10 psig @ 3328.01 ft (KB)

Start Date: 2001.11.30 End Date: 2001.12.01

Start Time: 20:43:02 End Time: 03:51:01

Capacity: 7000.00 psig

Last Calib.: 1899.12.30

Time On Btm: 2001.11.30 @ 22:28:01

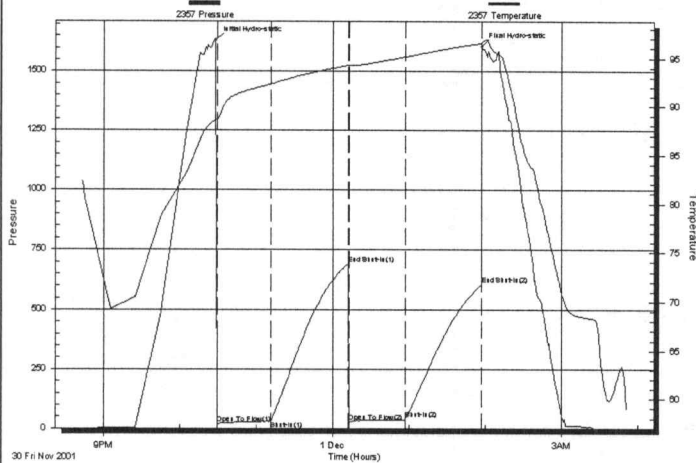
Time Off Btm: 2001.12.01 @ 01:57:01

TEST COMMENT: IF-Strong BOB in 10 min

FF-Strong BOB in 5 min

Times-45-60-45-60

Pressure vs. Time



PRESSURE SUMMARY

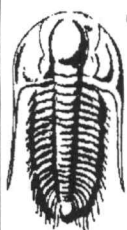
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1631.32	88.65	Initial Hydro-static
1	17.79	88.69	Open To Flow (1)
44	30.13	92.35	Shut-In (1)
104	691.02	94.26	End Shut-In (1)
105	29.54	94.25	Open To Flow (2)
149	38.10	95.13	Shut-In (2)
209	604.49	96.54	End Shut-In (2)
209	1606.93	96.57	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Gsy M 10%g 90%m	0.43
558.00	GIP	7.83

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15604

DST#: 2

ATTN: Ed Glassman

Test Start: 2001.11.30 @ 20:43:01

Tool Information

Drill Pipe:	Length:	3296.00 ft	Diameter:	3.80 inches	Volume:	46.23 bbl	Tool Weight:	1000.00 lb
Heavy Wt. Pipe:	Length:	0.01 ft	Diameter:	0.01 inches	Volume:	0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length:	30.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	Weight to Pull Loose:	45000.00 lb
					Total Volume:	46.38 bbl	Tool Chased	0.01 ft
Drill Pipe Above KB:		22.01 ft					String Weight: Initial	41000.00 lb
Depth to Top Packer:		3325.00 ft					Final	41000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		75.02 ft						
Tool Length:		96.02 ft						
Number of Packers:		2	Diameter:	6.75 inches				

Tool Comments:

Tool Description

Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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C.O. Sub	1.00		3305.00	
S.I. Tool	5.00		3310.00	
HMV	5.00		3315.00	
Packer	5.00		3320.00	21.00 Bottom Of Top Packer
Packer	5.00		3325.00	
Stubb	1.00		3326.00	
Perforations	1.00		3327.00	
C.O. Sub	1.00		3328.00	
Recorder	0.01	2357 Inside	3328.01	
Blank Spacing	62.00		3390.01	
C.O. Sub	1.00		3391.01	
Recorder	0.01	13254 Outside	3391.02	
Perforations	6.00		3397.02	
Bullnose	3.00		3400.02	75.02 Bottom Packers & Anchor

Total Tool Length: 96.02



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DRILL STEM TEST REPORT

FLUID SUMMARY

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15604

DST#: 2

ATTN: Ed Glassman

Test Start: 2001.11.30 @ 20:43:01

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: 46.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.34 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
50.00	Gsy M 10%g 90%m	0.428
558.00	GIP	7.827

Total Length: 608.00 ft

Total Volume: 8.255 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 2357

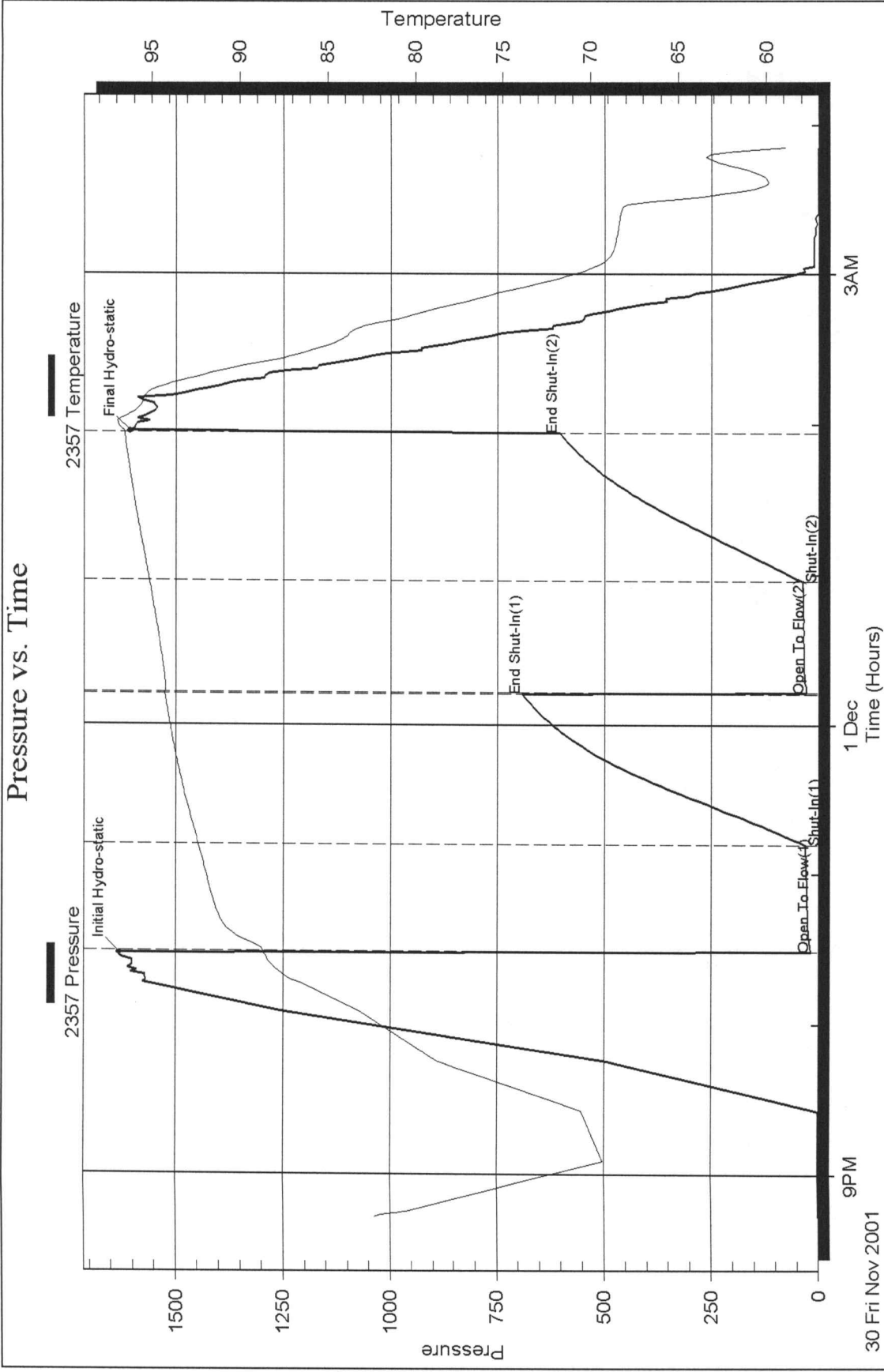
Inside

Tengasco, Inc.

24-16s-18w - Rush-Ks

DST Test Number: 2

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Tengasco, Inc.**

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

24-16s-18w-Rush-Ks

Legleiter C #2

Start Date: 2001.12.01 @ 21:11:19

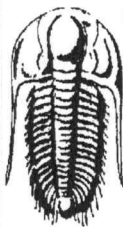
End Date: 2001.12.02 @ 03:39:19

Job Ticket #: 15605 DST #: 3

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DRILL STEM TEST REPORT

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15605

DST#: 3

Test Start: 2001.12.01 @ 21:11:19

GENERAL INFORMATION:

Formation: **Penn Sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:48:49

Time Test Ended: 03:39:19

Interval: **3543.00 ft (KB) To 3560.00 ft (KB) (TVD)**

Total Depth: 3560.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 21

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 2357

Inside

Press@RunDepth: 950.00 psig @ 3544.01 ft (KB)

Start Date: 2001.12.01

End Date:

2001.12.02

Start Time: 21:11:20

End Time:

03:39:19

Capacity: 7000.00 psig

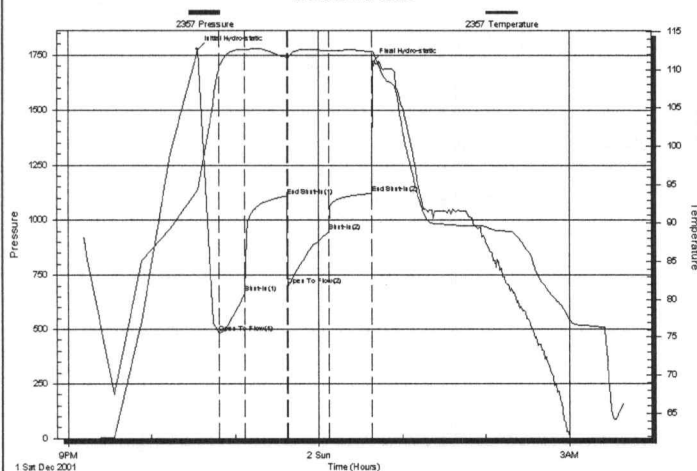
Last Calib.: 1899.12.30

Time On Btm: 2001.12.01 @ 22:33:19

Time Off Btm: 2001.12.02 @ 00:38:49

TEST COMMENT: IF-Strong BOB in 30 sec-GTS in 10 min-TSTM
FF-Strong BOB in 2 min Gas sample taken
Times-30-30-30-30

Pressure vs. Time



PRESSURE SUMMARY

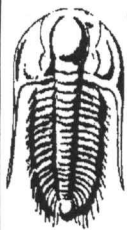
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1776.58	94.27	Initial Hydro-static
16	482.56	110.30	Open To Flow (1)
34	668.45	112.62	Shut-In (1)
64	1108.81	111.58	End Shut-In (1)
65	702.80	111.59	Open To Flow (2)
94	950.00	112.49	Shut-In (2)
125	1120.43	112.29	End Shut-In (2)
126	1719.30	112.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2170.00	Gsy Water 20%g 80%w	30.17
	Rw .26 @ 60 = 31000ppm	

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15605

DST#: 3

ATTN: Ed Glassman

Test Start: 2001.12.01 @ 21:11:19

Tool Information

Drill Pipe:	Length: 3514.00 ft	Diameter: 3.80 inches	Volume: 49.29 bbl	Tool Weight: 1000.00 lb
Heavy Wt. Pipe:	Length: 0.01 ft	Diameter: 0.01 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 55000.00 lb
		Total Volume:	49.44 bbl	Tool Chased 0.01 ft
Drill Pipe Above KB:	22.01 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3543.00 ft			Final 52000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	17.02 ft			
Tool Length:	38.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3523.00	
S.I. Tool	5.00			3528.00	
HMV	5.00			3533.00	
Packer	5.00			3538.00	21.00 Bottom Of Top Packer
Packer	5.00			3543.00	
Stubb	1.00			3544.00	
Recorder	0.01	2357	Inside	3544.01	
Perforations	13.00			3557.01	
Recorder	0.01	13254	Outside	3557.02	
Bullnose	3.00			3560.02	17.02 Bottom Packers & Anchor
Total Tool Length:	38.02				



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DRILL STEM TEST REPORT

FLUID SUMMARY

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15605

DST#: 3

ATTN: Ed Glassman

Test Start: 2001.12.01 @ 21:11:19

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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.17 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
2170.00	Gsy Water 20%g 80%w	30.166
	Rw .26 @ 60 = 31000ppm	

Total Length: -997829.00 ft

Total Volume: 30.166 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15605

DST#: 3

ATTN: Ed Glassman

Test Start: 2001.12.01 @ 21:11:19

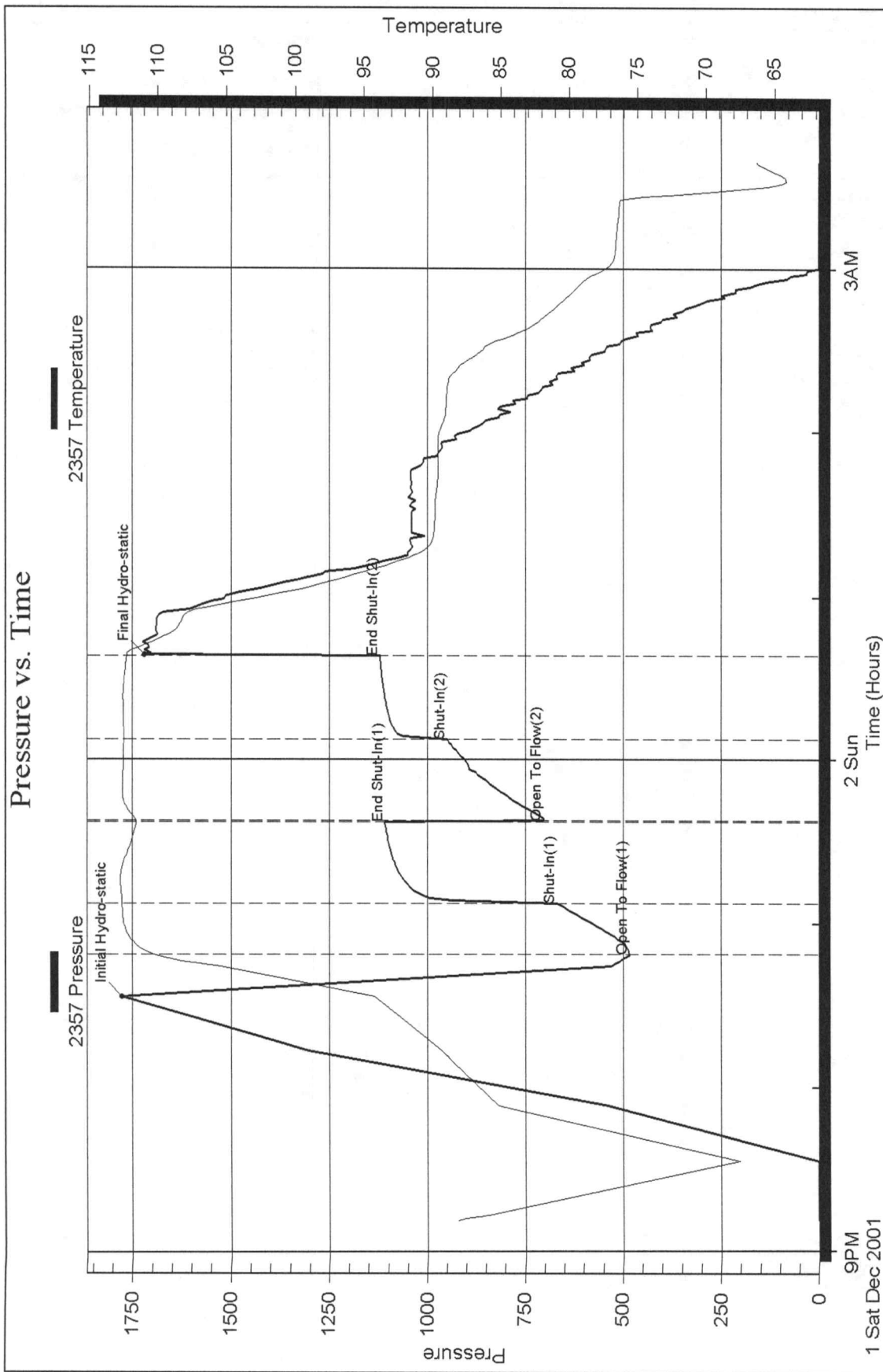
Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
		0.00	0.00	0.00

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Tengasco, Inc.**

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

24-16s-18w-Rush-Ks

Legleiter C #2

Start Date: 2001.12.02 @ 16:17:21

End Date: 2001.12.03 @ 00:07:51

Job Ticket #: 15606 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



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DRILL STEM TEST REPORT

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P.O. Box 458
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ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15606

DST#: 4

Test Start: 2001.12.02 @ 16:17:21

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:30:51

Time Test Ended: 00:07:51

Interval: **3160.00 ft (KB) To 3183.00 ft (KB) (TVD)**

Total Depth: 3620.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Straddle

Tester: Dan Bangle

Unit No: 21

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 2357

Inside

Press@RunDepth: 997.59 psig @ 3161.01 ft (KB)

Start Date: 2001.12.02

End Date: 2001.12.03

Start Time: 16:17:22

End Time: 00:07:51

Capacity: 7000.00 psig

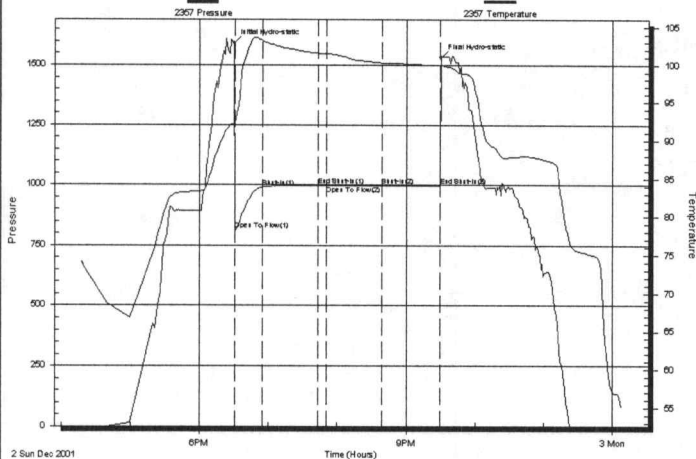
Last Calib.: 1899.12.30

Time On Btm: 2001.12.02 @ 18:30:21

Time Off Btm: 2001.12.02 @ 21:29:51

TEST COMMENT: IF-Strong BOB in 1 min
FF-Weak steady surface blow
Times-30-60-30-60

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1591.67	92.28	Initial Hydro-static
1	811.65	92.32	Open To Flow (1)
25	990.77	103.21	Shut-In (1)
73	997.48	101.52	End Shut-In (1)
81	997.56	101.46	Open To Flow (2)
129	997.59	100.24	Shut-In (2)
179	998.10	99.90	End Shut-In (2)
180	1532.77	99.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1984.00	Muddy water	27.56

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15606

DST#: 4

Test Start: 2001.12.02 @ 16:17:21

Tool Information

Drill Pipe:	Length: 3112.00 ft	Diameter: 3.80 inches	Volume: 43.65 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.01 ft	Diameter: 0.01 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			Total Volume: 43.80 bbl	Tool Chased 0.01 ft
Drill Pipe Above KB:	3.01 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3160.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	3183.02 ft			
Interval between Packers:	23.02 ft			
Tool Length:	481.03 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				
BOTTOM PACKER FAILED				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3140.00	
S.I. Tool	5.00			3145.00	
HMV	5.00			3150.00	
Packer	5.00			3155.00	21.00 Bottom Of Top Packer
Packer	5.00			3160.00	
Stubb	1.00			3161.00	
Recorder	0.01	2357	Inside	3161.01	
Perforations	21.00			3182.01	
Recorder	0.01	13254	Outside	3182.02	
Blank Off Sub	1.00			3183.02	23.02 Tool Interval
Packer	5.00			3188.02	
Stubb	1.00			3189.02	
Recorder	0.01	13248	Outside	3189.03	
Blank Spacing	428.00			3617.03	
Bullnose	3.00			3620.03	437.01 Bottom Packers & Anchor

Total Tool Length: 481.03



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15606

DST#: 4

ATTN: Ed Glassman

Test Start: 2001.12.02 @ 16:17:21

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: 9.37 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1984.00	Mudy water	27.557

Total Length: 1984.00 ft

Total Volume: bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

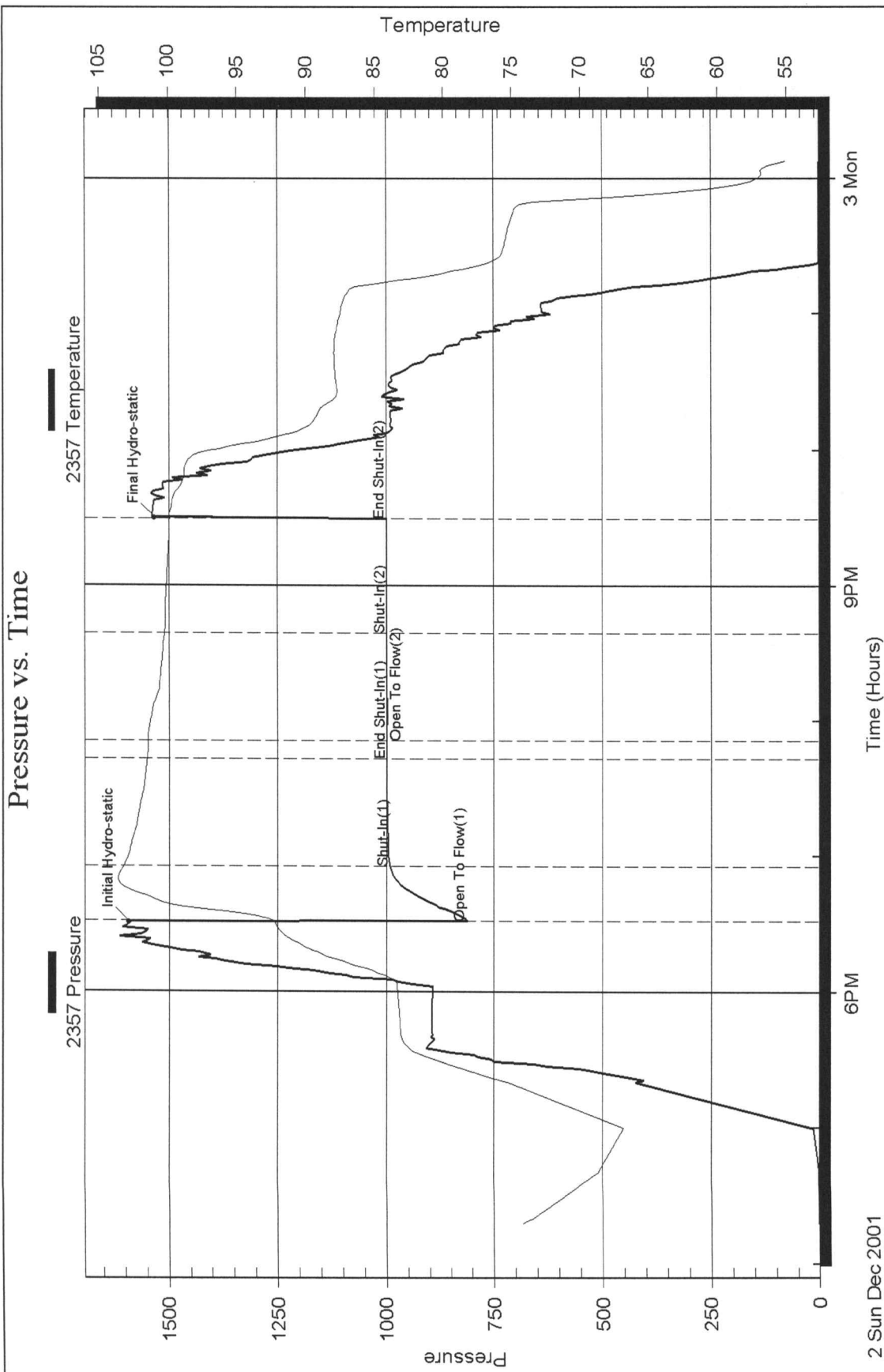
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Tengasco, Inc.**

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

24-16s-18w-Rush-Ks

Legleiter C #2

Start Date: 2001.12.03 @ 06:05:58

End Date: 2001.12.03 @ 12:43:28

Job Ticket #: 15607 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15607

DST#: 5

Test Start: 2001.12.03 @ 06:05:58

GENERAL INFORMATION:

Formation: **Lower Tokeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:10:58

Time Test Ended: 12:43:28

Interval: **3160.00 ft (KB) To 3187.00 ft (KB) (TVD)**

Total Depth: 3620.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Test Type: Conventional Straddle

Tester: Dan Bangle

Unit No: 21

Reference Elevations: 2009.00 ft (KB)

2001.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 2357

Inside

Press@RunDepth: 42.08 psig @ 3161.01 ft (KB)

Start Date: 2001.12.03

End Date: 2001.12.03

Start Time: 06:05:59

End Time: 12:43:28

Capacity: 7000.00 psig

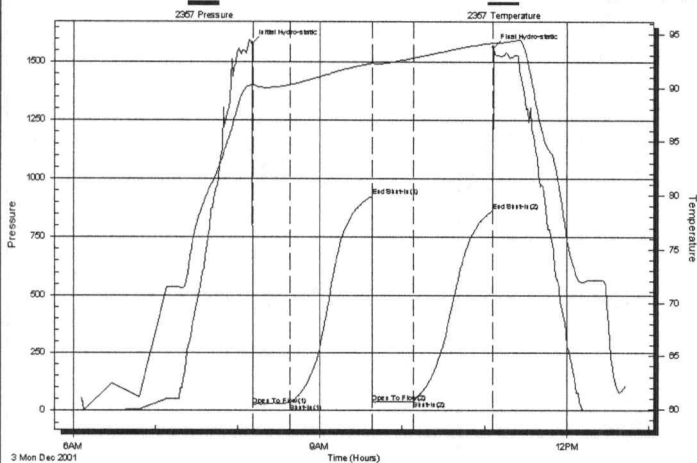
Last Calib.: 1899.12.30

Time On Btm: 2001.12.03 @ 08:10:28

Time Off Btm: 2001.12.03 @ 11:06:28

TEST COMMENT: IF-Weak building to 3"
FF-Weak building to 1"
Times-30-60-30-60

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1578.83	90.28	Initial Hydro-static
1	24.08	90.29	Open To Flow (1)
28	32.99	90.29	Shut-In(1)
88	924.00	92.29	End Shut-In(1)
88	34.25	92.28	Open To Flow (2)
118	42.08	92.78	Shut-In(2)
176	864.40	94.19	End Shut-In(2)
176	1563.79	94.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Muddy water	0.43

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Tengasco, Inc.

P.O. Box 458
Hays, KS 67601

ATTN: Ed Glassman

Legleiter C #2

24-16s-18w-Rush-Ks

Job Ticket: 15607

DST#: 5

Test Start: 2001.12.03 @ 06:05:58

Tool Information

Drill Pipe:	Length: 3112.00 ft	Diameter: 3.80 inches	Volume: 43.65 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.01 ft	Diameter: 0.01 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 43.80 bbl</u>	Tool Chased 0.01 ft
Drill Pipe Above KB:	3.01 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3160.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	3187.02 ft			
Interval between Packers:	27.02 ft			
Tool Length:	481.03 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3140.00	
S.I. Tool	5.00			3145.00	
HMV	5.00			3150.00	
Packer	5.00			3155.00	21.00 Bottom Of Top Packer
Packer	5.00			3160.00	
Stubb	1.00			3161.00	
Recorder	0.01	2357	Inside	3161.01	
Perforations	25.00			3186.01	
Recorder	0.01	13254	Outside	3186.02	
Blank Off Sub	1.00			3187.02	27.02 Tool Interval
Packer	5.00			3192.02	
Stubb	1.00			3193.02	
Recorder	0.01	13248	Outside	3193.03	
Blank Spacing	424.00			3617.03	
Bullnose	3.00			3620.03	433.01 Bottom Packers & Anchor

Total Tool Length: 481.03



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Tengasco, Inc.

Legleiter C #2

P.O. Box 458
Hays, KS 67601

24-16s-18w-Rush-Ks

Job Ticket: 15607

DST#: 5

ATTN: Ed Glassman

Test Start: 2001.12.03 @ 06:05:58

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: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.38 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Muddy water	0.428

Total Length: 50.00 ft

Total Volume: 0.428 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

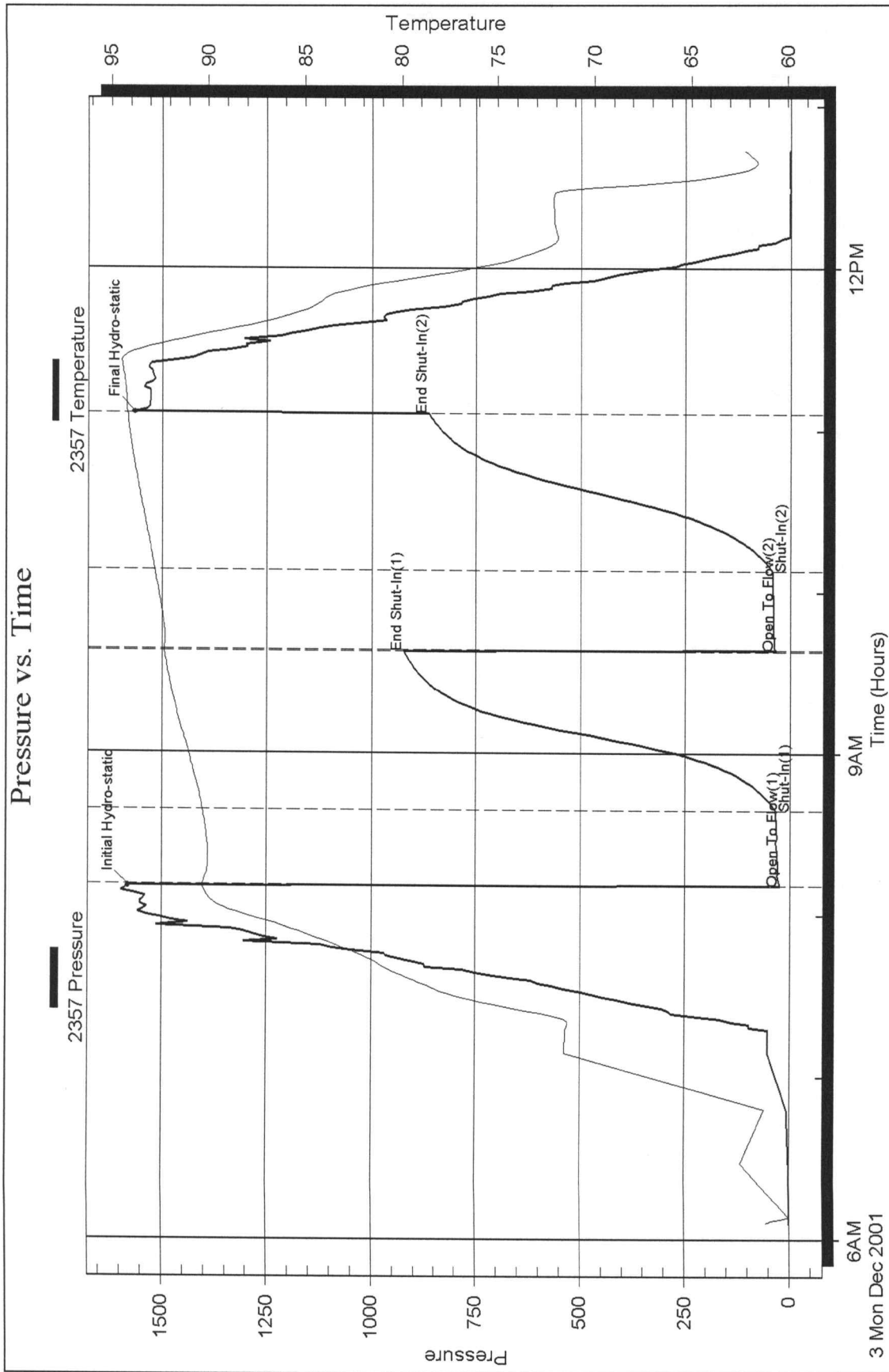
Serial #: 2357

Inside

Tengasco, Inc.

24-16s-18w -Rush-Ks

DST Test Number: 5



NATURAL GAS ANALYSIS REPORT

Sampled by:

Trilobite Testing, Inc.
Hays, Kansas
Scott City, Kansas
Phone: 800-728-5369
Fax: 785-625-5620

Analyzed by:

Caraway Analytical, Inc
P. O. Box 2137
Liberal, Kansas 67905
Phone: 620-624-5389
Fax: 620-626-7108

Lab Number: 20016157

Analyzed: 12/05/01

Sample From: Legleiter C-2 DST 3
Producer: Tengasco, Inc.

Pressure:
Temperature:

Date: Location: 24-16-18

Time:
Sampler:
Source:

County: Rush
State: Kansas
Formation: Penn Sd

	Mole %	GPM
Helium	He: 2.414	0.000
Hydrogen	H2: 0.000	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 18.433	0.000
Carbon Dioxide	CO2: 0.265	0.000
Methane	C1: 70.809	0.000
Ethane	C2: 3.789	1.013
Propane	C3: 1.551	0.427
Iso Butane	iC4: 0.368	0.120
Normal Butane	nC4: 0.598	0.189
Iso Pentane	iC5: 0.238	0.087
Normal Pentane	nC5: 0.248	0.090
Hexanes Plus	C6+: 1.287	0.561

TOTAL: 100.000 2.488

Z Fact: 0.9979

SP.GR.: 0.7155

BTU (SAT): 926.0 @ 14.73 psia
BTU (DRY): 942.3 @ 14.73 psia
OCTANE RATING: 98.9

COMMENTS:

0.000