



Weatherford®

Completion Systems

DRILL STEM TEST REPORT

Prepared For: **Curt's Oil Operations**

P.O. Box 328
Hosington KS 67544-0328

ATTN: Jason Alm

11-14s-20w Ellis KS

Befort #6

Start Date: 2011.02.02 @ 08:02:01

End Date: 2011.02.02 @ 15:49:30

Job Ticket #: 041545 DST #: 1

ALPINE OIL SERVICES CORPORATION
2460, 240 - 4 Avenue S.W. Calgary, AB. T2P 4H4
ph: 263-7800 fax: 264-7260



Weatherford® Completion Systems

DRILL STEM TEST REPORT

Curt's Oil Operations

P.O. Box 328
Hosington KS 67544-0328

ATTN: Jason Alm

Befort #6

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

Test Start: 2011.02.02 @ 08:02:01

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:30

Time Test Ended: 15:49:30

Interval: **3814.00 ft (KB) To 3850.00 ft (KB) (TVD)**

Total Depth: 3850.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 31

Reference Elevations: 2232.00 ft (KB)

2224.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: **8650** Outside

Press@RunDepth: 31.11 psig @ 3815.00 ft (KB)

Start Date: 2011.02.02

End Date:

2011.02.02

Start Time: 08:02:01

End Time:

15:49:30

Capacity: 8000.00 psig

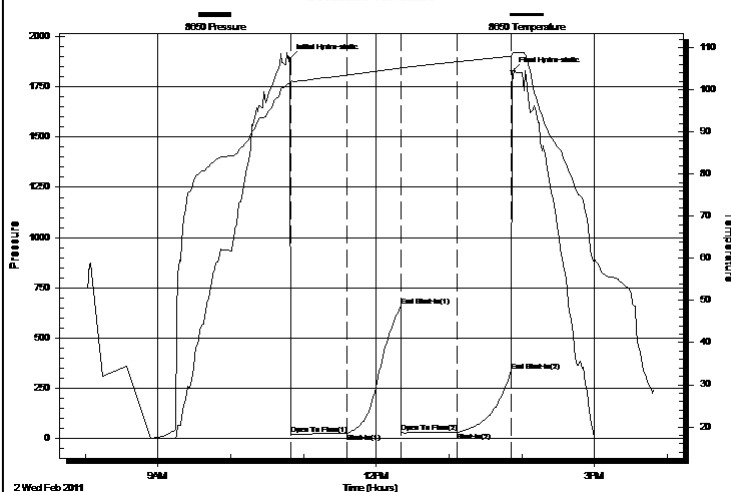
Last Calib.: 2011.02.02

Time On Btm: 2011.02.02 @ 10:48:30

Time Off Btm: 2011.02.02 @ 13:52:00

TEST COMMENT: IF: Fair blow , 2 inches
IS: No Return
FF: Fair blow , 2 inches
FS: No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1891.23	101.77	Initial Hydro-static
1	19.10	101.59	Open To Flow (1)
48	26.82	103.45	Shut-In(1)
92	657.03	105.15	End Shut-In(1)
92	29.03	104.91	Open To Flow (2)
138	31.11	106.61	Shut-In(2)
183	332.98	107.91	End Shut-In(2)
184	1827.49	108.56	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
19.00	Mud	0.09
1.00	Oil	0.00

Gas Rates

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

Curt's Oil Operations

P.O. Box 328
Hosington KS 67544-0328

ATTN: Jason Alm

Befort #6

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

Test Start: 2011.02.02 @ 08:02:01

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:49:30

Time Test Ended: 15:49:30

Interval: 3814.00 ft (KB) To 3850.00 ft (KB) (TVD)

Total Depth: 3850.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole

Tester: Andy Carreira

Unit No: 31

Reference Elevations: 2232.00 ft (KB)

2224.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8017 Inside

Press@RunDepth: psig @ 3815.00 ft (KB)

Start Date: 2011.02.02

End Date:

2011.02.02

Start Time: 08:01:25

End Time:

15:50:49

Capacity: 8000.00 psig

Last Calib.:

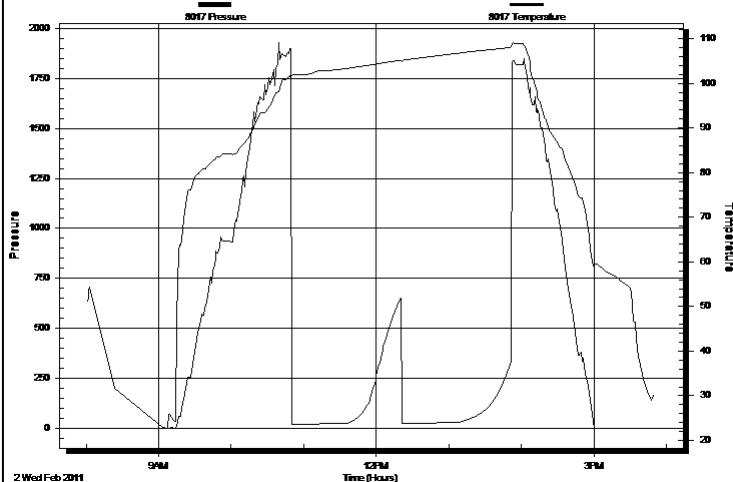
2011.02.02

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: Fair blow , 2 inches
IS: No Return
FF: Fair blow , 2 inches
FS: No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
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Recovery

Length (ft)	Description	Volume (bbl)
19.00	Mud	0.09
1.00	Oil	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (MMcf/d)
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Completion Systems

DRILL STEM TEST REPORT

TOOL DIAGRAM

Curt's Oil Operations

Befort #6

P.O. Box 328
Hosington KS 67544-0328

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

ATTN: Jason Alm

Test Start: 2011.02.02 @ 08:02:01

Tool Information

Drill Pipe:	Length: 3767.00 ft	Diameter: 3.80 inches	Volume: 52.84 bbl	Tool Weight: 3000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 24000.00 lb
Drill Collar:	Length: 31.52 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 60000.00 lb
		Total Volume:	53.00 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.52 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3814.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	64.00 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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Change Over Sub	1.00			3787.00	
Shut In Tool	5.00			3792.00	
Hydraulic tool	5.00			3797.00	
Jars	5.00			3802.00	
Safety Joint	3.00			3805.00	
Packer	5.00			3810.00	28.00 Bottom Of Top Packer
Packer	4.00			3814.00	
Stubb	1.00			3815.00	
Recorder	0.00	8017	Inside	3815.00	
Recorder	0.00	8650	Outside	3815.00	
Perforations	32.00			3847.00	
Bullnose	3.00			3850.00	36.00 Bottom Packers & Anchor

Total Tool Length: 64.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Curt's Oil Operations

Befort #6

P.O. Box 328
Hosington KS 67544-0328

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

ATTN: Jason Alm

Test Start: 2011.02.02 @ 08:02:01

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 10.00 lb/gal

Viscosity: 58.00 sec/qt

Water Loss: 7.39 in³

Resistivity: ohm.m

Salinity: 2700.00 ppm

Filter Cake: inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

deg API

ppm

ft

bbl

psig

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
19.00	Mud	0.093
1.00	Oil	0.005

Total Length: 20.00 ft

Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Weatherford®
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DRILL STEM TEST REPORT

GAS RATES

Curt's Oil Operations

Befort #6

P.O. Box 328
Hosington KS 67544-0328

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

ATTN: Jason Alm

Test Start: 2011.02.02 @ 08:02:01

Gas Rates Information

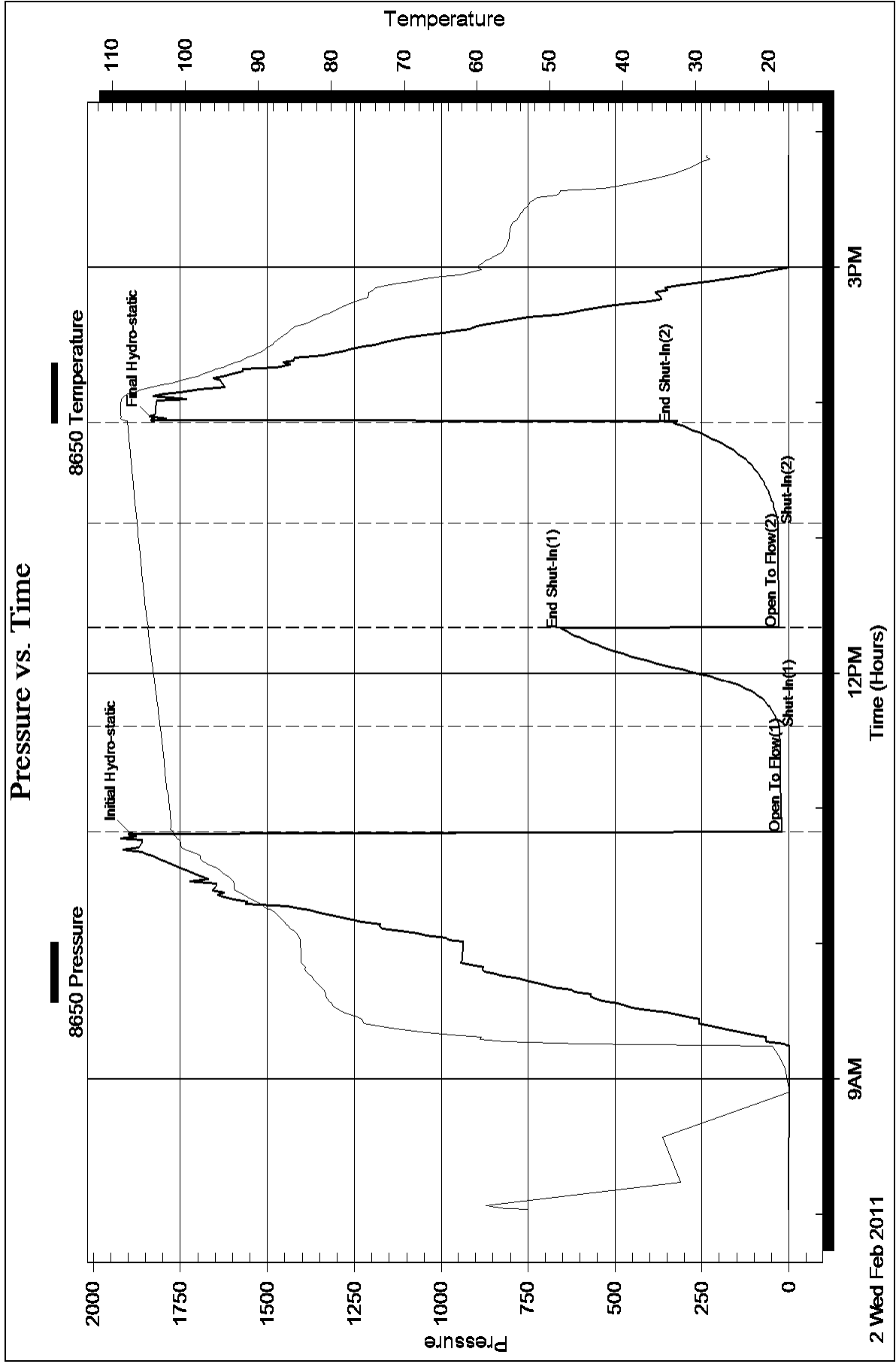
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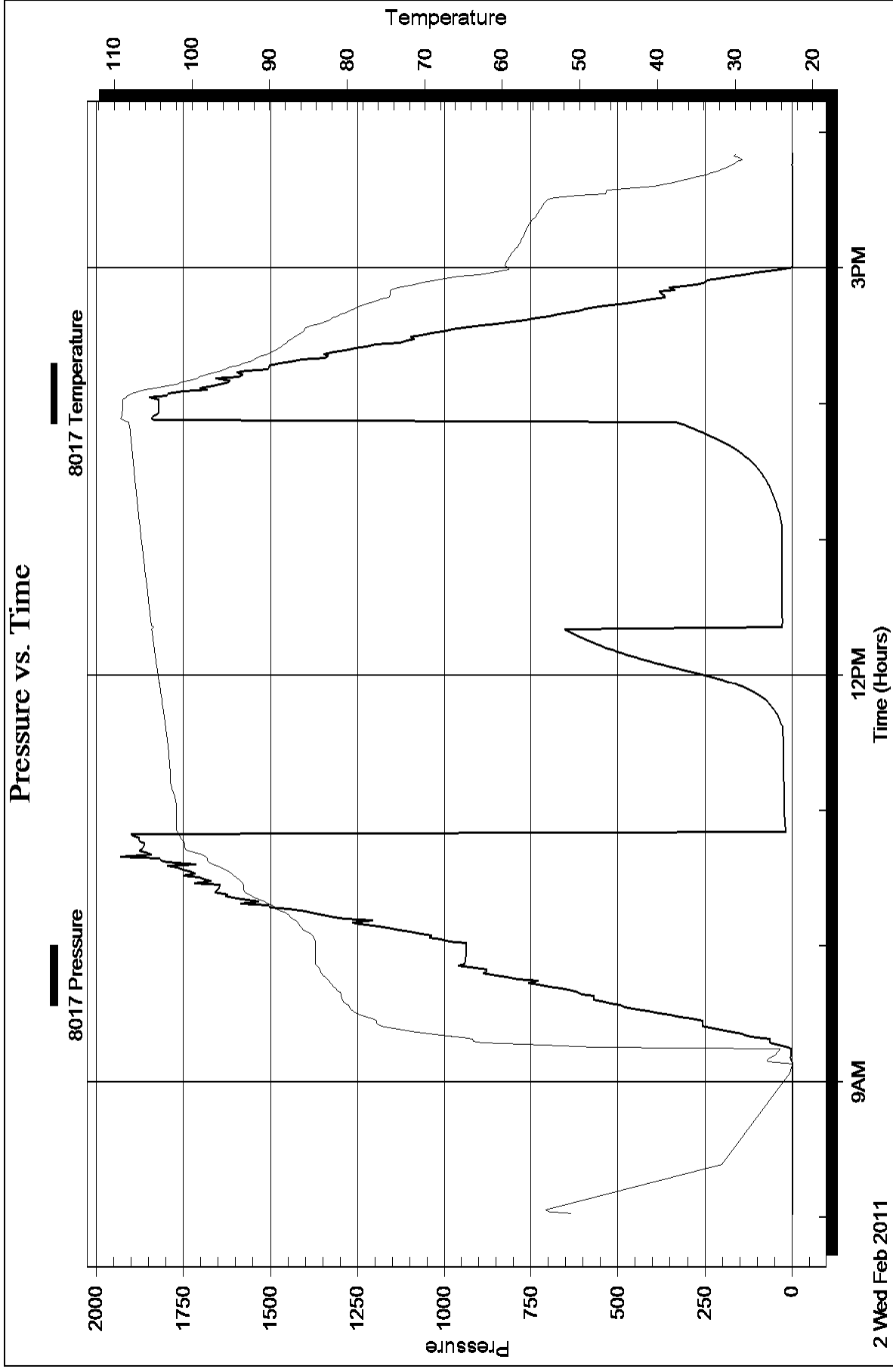
Relative Density: 0.65

Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m³/d)
		0.00	0.00	0.00







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DRILL STEM TESTING - DATA LISTING

Curt's Oil Operations

P.O. Box 328
Hosington KS 67544-0328

ATTN: Jason Alm

Befort #6

11-14s-20w Ellis KS

Job Ticket: 041545

DST#: 1

Test Start: 2011.02.02 @ 08:02:01

Serial # 8650 Outside				Serial # 8650 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	0.0	-0.32	53.1		1.6	-0.28	58.4
	0.1	-0.28	53.3		1.7	-0.27	58.4
	0.1	-0.28	53.5		1.8	-0.27	58.5
	0.2	-0.30	53.7		1.8	-0.29	58.6
	0.2	-0.34	53.9		1.9	-0.30	58.6
	0.3	-0.37	54.0		1.9	-0.32	58.7
	0.3	-0.38	54.3		2.0	-0.34	58.8
	0.3	-0.38	54.7		12.0	-0.40	32.0
	0.4	-0.37	55.1		42.0	-1.25	19.0
	0.4	-0.37	55.5		62.5	-1.37	17.8
	0.5	-0.36	55.8		64.0	-1.35	18.0
	0.6	-0.34	56.1		65.5	-1.32	18.2
	0.6	-0.32	56.3		67.0	-1.29	18.4
	0.6	-0.31	56.5		68.5	-1.28	18.7
	0.7	-0.30	56.6		70.0	-1.27	19.0
	0.8	-0.31	56.8		71.5	-1.25	19.3
	0.8	-0.31	56.9		73.0	15.78	33.1
	0.9	-0.31	57.0		74.5	65.75	56.2
	0.9	-0.30	57.1		76.0	65.16	59.5
	0.9	-0.28	57.2		77.5	103.89	63.6
	1.0	-0.27	57.3		79.0	134.94	68.2
	1.0	-0.27	57.4		80.5	196.86	71.8
	1.1	-0.26	57.5		82.0	258.87	74.4
	1.1	-0.27	57.6		83.5	257.33	75.8
	1.2	-0.27	57.7		85.0	242.57	75.8
	1.3	-0.27	57.7		86.5	322.11	77.5
	1.3	-0.28	57.8		88.0	384.21	78.7
	1.4	-0.28	57.9		89.5	451.99	79.5
	1.4	-0.27	58.0		91.0	477.77	79.9
	1.5	-0.27	58.1		92.5	535.10	80.3
	1.5	-0.27	58.1		94.0	571.70	80.7
	1.5	-0.27	58.2		95.5	568.76	80.8
	1.6	-0.27	58.3		97.0	602.39	81.0

Printing every 3 samples

Serial # 8650 Outside				Serial # 8650 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	98.5	676.23	81.4		160.0	1873.83	100.4
	100.0	695.99	81.9		161.5	1865.20	100.6
	101.5	753.18	82.3		163.0	1860.53	100.7
	103.0	789.42	82.7		164.5	1921.00	101.1
	104.5	842.19	83.1		165.5	1876.27	101.4
	106.0	881.64	83.5		166.0	1916.24	101.4
	107.5	877.05	83.6	Initial Hydro-static	166.5	1891.23	101.8
	109.0	950.38	84.0		167.0	1898.03	101.8
	110.5	939.91	84.2	Open To Flow (1)	167.5	19.10	101.6
	112.0	937.25	84.2		168.0	19.39	101.9
	113.5	936.68	84.2		169.5	19.72	102.0
	115.0	936.12	84.2		171.0	20.17	102.0
	116.5	935.70	84.2		172.5	20.71	102.0
	118.0	935.21	84.2		174.0	21.24	102.1
	119.5	978.03	84.3		175.5	21.62	102.1
	121.0	1007.17	84.5		177.0	21.92	102.1
	122.5	1068.23	84.8		178.5	22.23	102.2
	124.0	1099.66	85.4		180.0	22.66	102.2
	125.5	1177.99	85.9		181.5	22.77	102.3
	127.0	1146.23	86.3		183.0	23.16	102.3
	128.5	1256.08	86.7		184.5	23.39	102.4
	130.0	1305.62	87.2		186.0	23.61	102.5
	131.5	1348.52	87.7		187.5	24.18	102.6
	133.0	1448.11	88.4		189.0	24.00	102.6
	134.5	1441.13	89.3		190.5	24.06	102.7
	136.0	1504.66	90.1		192.0	24.36	102.8
	137.5	1595.22	90.8		193.5	24.81	102.8
	139.0	1596.59	91.7		195.0	24.89	102.8
	140.5	1624.59	92.5		196.5	24.98	102.8
	142.0	1655.42	93.3		198.0	25.05	102.9
	143.5	1647.67	93.3		199.5	25.07	102.9
	145.0	1645.17	93.4		201.0	25.10	103.0
	146.5	1668.52	93.7		202.5	25.20	103.0
	148.0	1705.63	94.3		204.0	24.97	103.1
	149.5	1718.42	94.9		205.5	25.03	103.1
	151.0	1776.39	95.4		207.0	25.19	103.2
	152.5	1765.72	96.5		208.5	25.49	103.2
	154.0	1817.69	97.3		210.0	26.03	103.3
	155.5	1812.78	97.9		211.5	26.12	103.4
	157.0	1826.18	98.1		213.0	26.18	103.4
	158.5	1859.82	99.1		213.5	26.23	103.4

Printing every 3 samples

Serial # 8650 Outside				Serial # 8650 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
Shut-In(1)	214.0	26.82	103.5		267.0	28.95	105.5
	214.5	28.08	103.5		268.5	28.99	105.5
	215.0	29.48	103.5		270.0	29.06	105.6
	215.5	30.76	103.5		271.5	29.12	105.6
	217.0	34.88	103.6		273.0	29.20	105.7
	218.5	39.51	103.6		274.5	29.29	105.7
	220.0	44.77	103.7		276.0	29.39	105.8
	221.5	50.71	103.7		277.5	29.48	105.8
	223.0	57.64	103.8		279.0	29.59	105.8
	224.5	65.91	103.8		280.5	29.67	105.9
	226.0	75.45	103.9		282.0	29.74	105.9
	227.5	87.10	104.0		283.5	29.80	106.0
	229.0	101.39	104.0		285.0	29.87	106.0
	230.5	119.17	104.1		286.5	29.91	106.1
	232.0	140.02	104.1		288.0	29.97	106.1
	233.5	165.41	104.2		289.5	30.06	106.2
	235.0	194.94	104.3		291.0	30.16	106.2
	236.5	229.13	104.3		292.5	30.25	106.3
	238.0	266.80	104.4		294.0	30.36	106.3
	239.5	306.48	104.4		295.5	30.48	106.3
	241.0	346.18	104.5		297.0	30.55	106.4
	242.5	384.72	104.6		298.5	30.67	106.4
	244.0	421.33	104.6		300.0	30.73	106.5
	245.5	455.41	104.7		301.5	30.78	106.5
	247.0	486.91	104.7		303.0	30.84	106.6
	248.5	515.95	104.8		303.5	30.88	106.6
	250.0	542.73	104.9		304.0	30.97	106.6
	251.5	567.69	104.9	Shut-In(2)	304.5	31.11	106.6
	253.0	590.75	105.0		305.0	31.35	106.6
	254.5	612.41	105.0		305.5	32.08	106.6
	256.0	632.19	105.1		306.0	32.84	106.7
	257.0	644.95	105.1		307.5	35.30	106.7
End Shut-In(1)	257.5	651.15	105.1		309.0	37.92	106.8
	258.0	657.03	105.2		310.5	40.67	106.8
Open To Flow (2)	258.5	29.03	104.9		312.0	43.58	106.8
	259.0	28.96	105.1		313.5	46.81	106.9
	259.5	28.81	105.1		315.0	50.23	106.9
	261.0	28.52	105.2		316.5	53.90	107.0
	262.5	28.36	105.3		318.0	57.79	107.0
	264.0	28.86	105.3		319.5	62.33	107.1
	265.5	28.94	105.4		321.0	67.06	107.1

Printing every 3 samples

Serial # 8650 Outside				Serial # 8650 Outside			
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)	Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	322.5	72.34	107.2		379.0	1346.62	90.5
	324.0	78.01	107.2		380.5	1287.74	89.5
	325.5	84.34	107.2		382.0	1208.45	88.9
	327.0	91.41	107.3		383.5	1193.13	88.1
	328.5	99.07	107.3		385.0	1174.36	87.6
	330.0	107.64	107.4		386.5	1099.11	86.9
	331.5	117.20	107.4		388.0	1037.97	86.1
	333.0	127.74	107.5		389.5	950.07	85.8
	334.5	139.70	107.5		391.0	943.30	85.4
	336.0	152.98	107.6		392.5	863.09	83.6
	337.5	167.87	107.6		394.0	762.01	82.7
	339.0	184.38	107.6		395.5	749.85	81.6
	340.5	202.47	107.7		397.0	673.54	80.5
	342.0	222.36	107.7		398.5	594.88	79.6
	343.5	243.89	107.8		400.0	499.28	78.7
	345.0	267.03	107.8		401.5	461.56	77.5
	346.5	291.13	107.9		403.0	401.45	76.0
	348.0	315.98	107.9		404.5	367.66	75.0
	348.5	324.38	107.9		406.0	379.65	74.9
End Shut-In(2)	349.0	332.98	107.9		407.5	348.76	74.2
	349.5	319.91	107.9		409.0	315.30	73.0
Final Hydro-static	350.0	1827.49	108.6		410.5	272.49	70.9
	350.5	1790.33	108.8		412.0	210.18	67.7
	352.0	1830.55	108.8		413.5	139.02	64.9
	353.5	1820.28	108.8		415.0	106.89	61.6
	355.0	1819.91	108.8		416.5	36.80	59.4
	356.5	1819.04	108.8		418.0	0.19	59.8
	358.0	1818.88	108.8		419.5	0.19	59.2
	359.5	1732.20	108.7		421.0	0.19	58.5
	361.0	1770.04	108.3		422.5	0.20	57.6
	362.5	1750.26	107.1		424.0	0.20	56.6
	364.0	1703.00	105.1		425.5	0.24	56.2
	365.5	1625.31	103.3		427.0	0.25	56.0
	367.0	1655.34	100.8		428.5	0.30	55.7
	368.5	1657.09	99.4		430.0	0.29	55.6
	370.0	1581.49	98.2		431.5	0.29	55.5
	371.5	1570.26	96.5		433.0	0.29	55.5
	373.0	1534.30	95.3		434.5	0.29	55.4
	374.5	1433.68	94.0		436.0	0.27	55.3
	376.0	1440.94	92.6		437.5	0.28	55.0
	377.5	1422.79	91.7		439.0	0.29	54.4

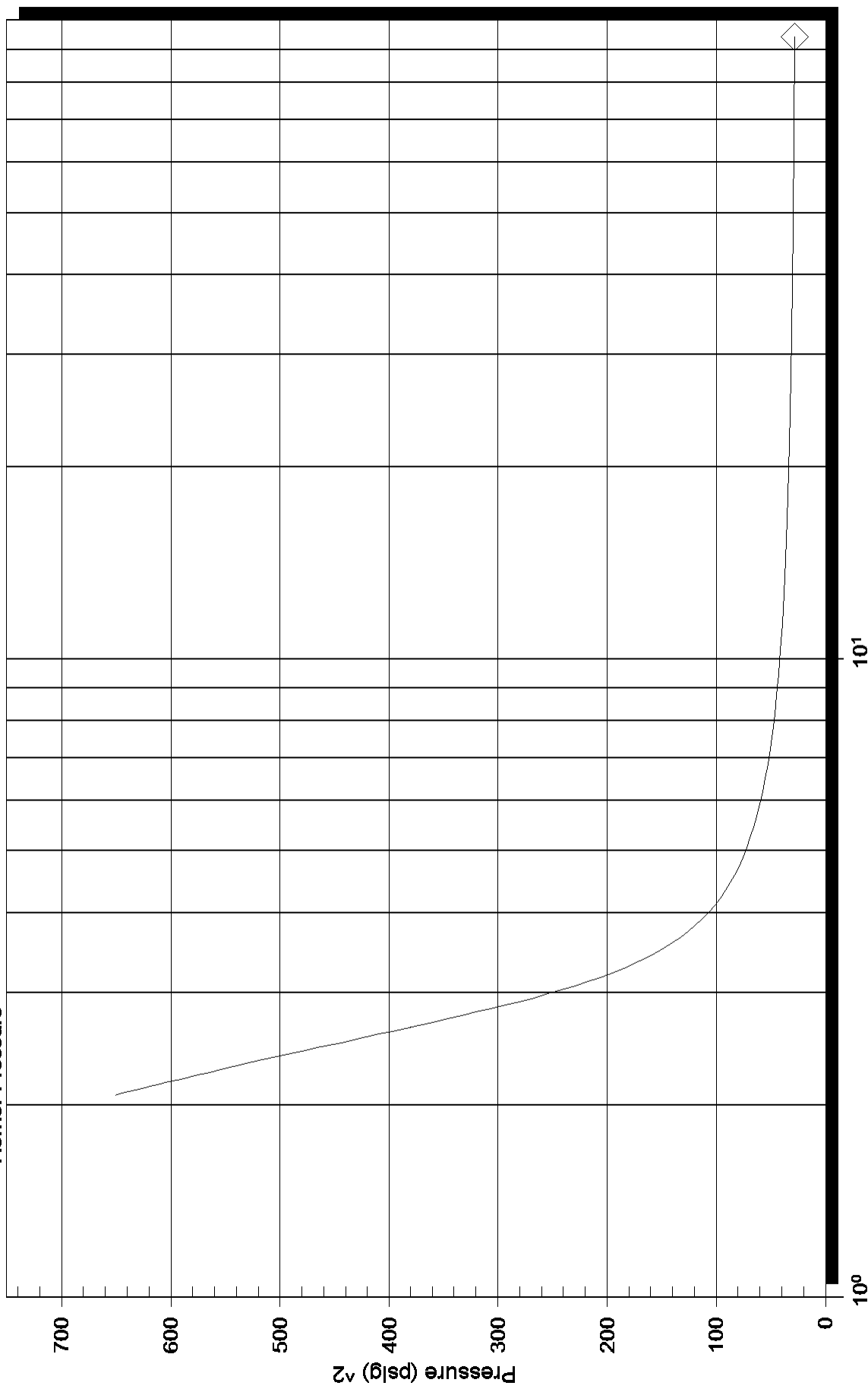
Printing every 3 samples

Serial # 8650		Outside	
Comments	Time (Min.)	Pressure (psig)	Temp. (deg F)
	440.5	0.32	54.2
	442.0	0.33	53.9
	443.5	0.31	53.4
	445.0	0.33	53.0
	446.5	0.35	52.6
	448.0	0.34	52.0
	449.5	0.33	49.1
	451.0	0.33	48.6
	452.5	0.19	42.7
	454.0	0.37	39.9
	455.5	0.31	37.7
	457.0	0.25	35.5
	458.5	-0.44	33.6
	460.0	-0.50	32.2
	461.5	-0.33	30.9
	463.0	-0.51	30.0
	464.5	-0.57	29.1
	466.0	-0.57	28.8
	467.5	-0.11	28.4

Printing every 3 samples

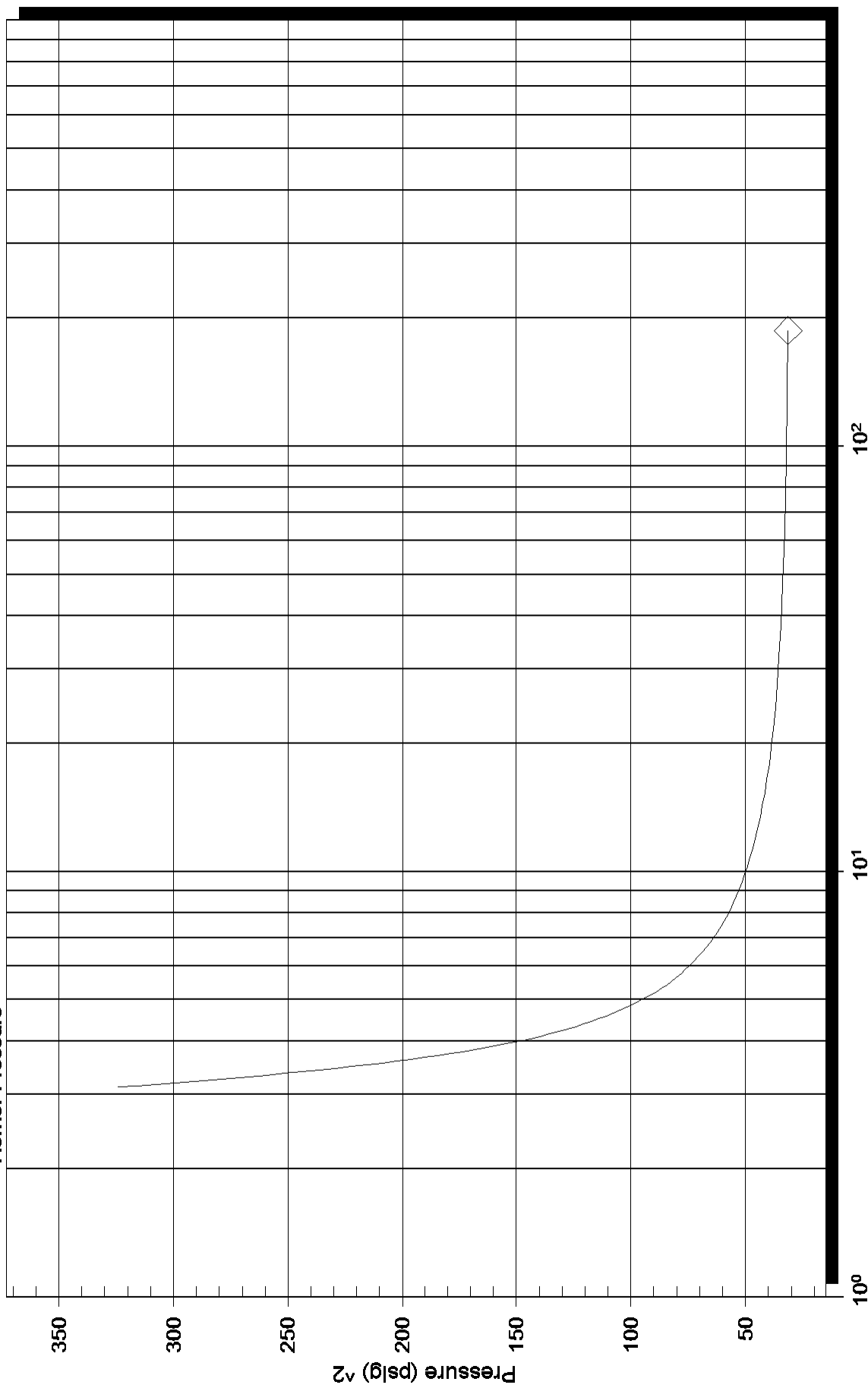
Horner Plot

Horner Pressure

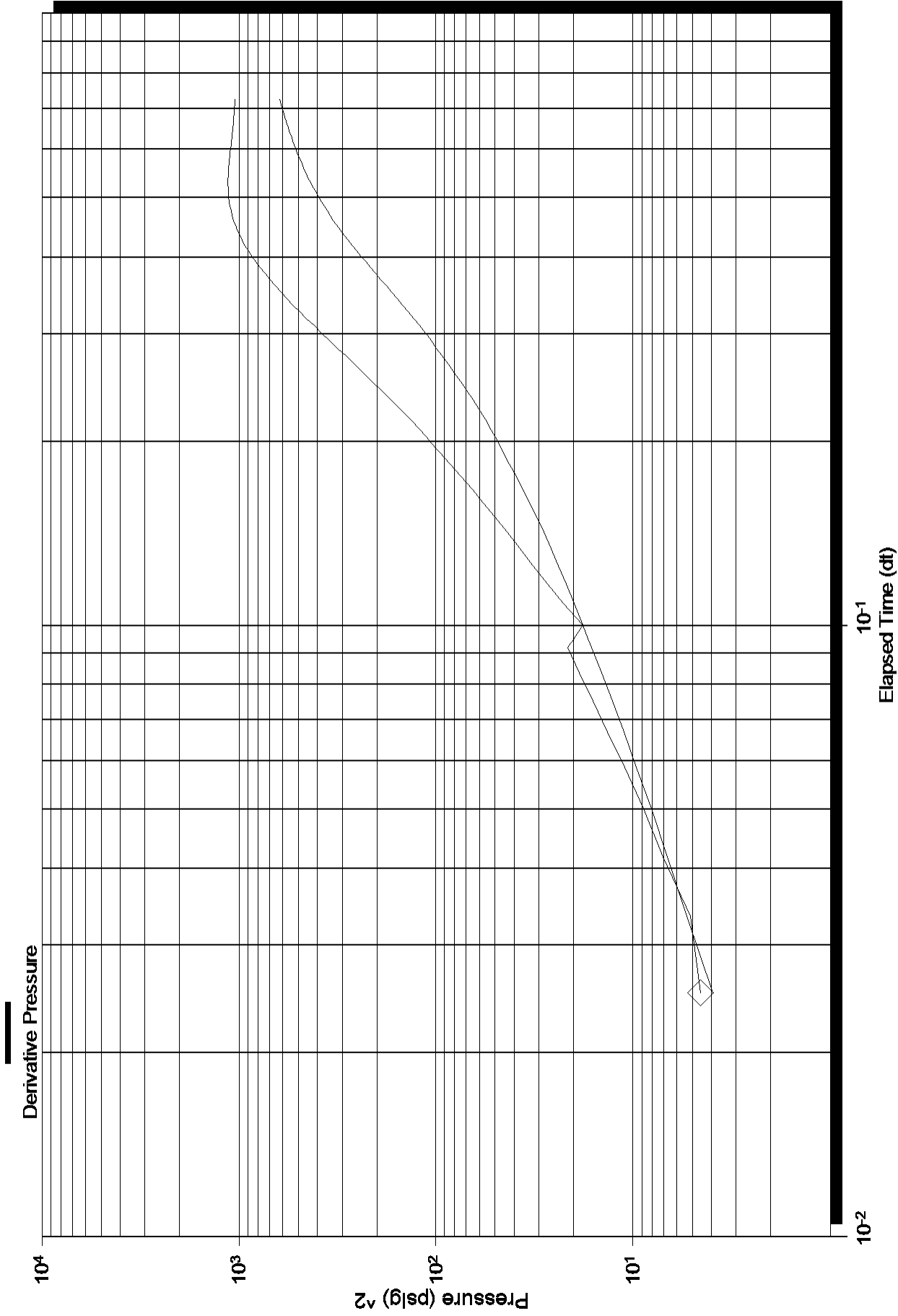


Horner Plot

Horner Pressure



Log-Log and Pseudo-Derivative



Log-Log and Pseudo-Derivative

