

15-151-22155

7-27s-12w

Superior Testers Enterprises, Inc.

R.R. 3, Box 295B, Great Bend, Kansas 67530

(316) 792-6902

Date 08-9-1997 Location 7-27s-12w Elevation 18646.2 County PRATTCompany Golden Exploration & Production Company Number of Copies 5Charts Mailed to Box 847 Pratt Kansas 67124Drilling Contractor Steeling Drilling Rig #4Length Drill Pipe _____ I.D. Drill Pipe 3.80 Tool Joint Size 4 1/2" X 4"Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONELength Drill Collars _____ I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" X 4"Top Packer Depth _____ Bottom Packer Depth _____ Number of Packers 2 Packer Size 6 3/4TESTED FROM 2728' TO 2800' ANCHOR LENGTH _____ TOTAL DEPTH _____ Hole Size 7 7/8LEASE & WELL NO. Lude's #6 FORMATION TESTED TIGHT HOLE TEST NO. 1Mud Weight 8.9 Viscosity 37 Water Loss 12 Chlorides - Pits 5500 D.S.T. 8000Maximum Temp. 100 °F Initial Hydrostatic Pressure (A) 1316 P.S.I. Final Hydrostatic Pressure (H) 1304 P.S.I.Tool Open I.F.P. from 2:35 P.m. to 3:45 P.m. _____ minTool Closed I.C.I.P. from 3:45 P.m. to 4:45 P.m. _____ minTool Open F.F.P. from 4:45 P.m. to 5:45 P.m. _____ minTool Closed F.C.I.P. from 5:45 P.m. to 7:45 P.m. _____ minInitial Blow STRONG blow GAS to SURFACE in 4 minutesFinal Blow STRONG blow - See Gas Flow ReportTotal Feet Recovered 180 Gravity of Oil _____ Corrected180 Feet of THIN GASSY MUD % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water _____

Remarks _____

Extra Equipment - Jars NONE Safety Joint YES Extra Packer NONE Straddle NONE Hook Wall NONETop Recorder No. 78225 Clock No. ELECTRONIC Depth 11 Cir. Sub NONE Sampler NONEBottom Recorder No. 11088 Clock No. 47441 Depth 11 Insurance NONE

Price of Job _____

Tool Operator Steve Budig

Approved By _____

No 11684

Superior Testers Enterprises, Inc. shall not be liable for damage of any kind to 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.

SUPERIOR TESTERS ENTERPRISES INC.

Great Bend, Kansas

CHART DATA

(316) 792-6902

LUDES #6 TIGHTHOLE

State KANSAS

Test Date August 9, 1997

County

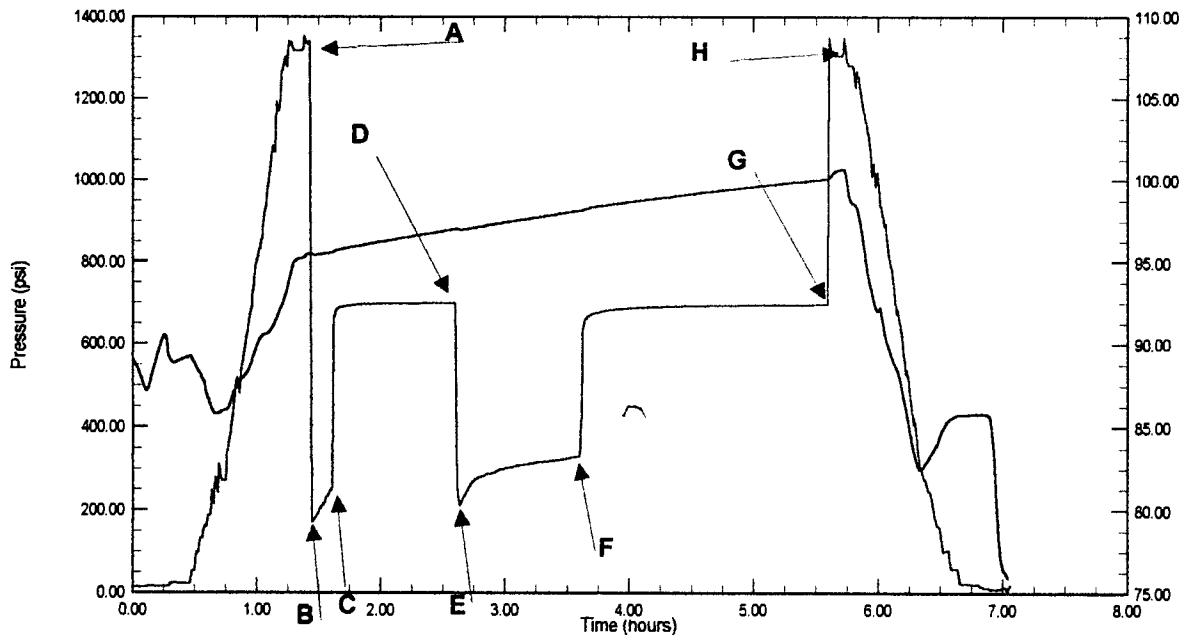
Sec Town Range 7-27S-12W

Field

Report Number 11684

Company: GOLDEN EXPLORATION & PRODUCTION COMPANY Lease & Well No. LUDES #6 Test #:1
Date: 8-9-1997 SEC. 7 TWP. 27S RGE. 12W
Upper Langdon - 2728' +, 2800'

15-151-22155



Field Reading

Office Reading

(A)	Initial Hydrostatic Pressure	1316	psi
(B)	Initial Flow Pressure	152	psi
(C)	Final Initial Flow Pressure	255	psi
(D)	Initial Shut-In Pressure	699	psi
(E)	Initial Final Flow Pressure	199	psi
(F)	Final Flow Pressure	329	psi
(G)	Final Shut-In Pressure	696	psi
(H)	Final Hydrostatic Pressure	1304	psi

ELECTRONIC REECORDER DEPTHft, RECORDER NUMBER 78225

SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

General Information

Test Company Name SUPERIOR TESTERS ENTERPRISES INC.
Company Name GOLDEN EXPLORATION & PRODUCTION COMPANY
Lease and Well Number LUDS #6
Formation Tested TIGHTHOLE
Test Number 1
State KANSAS
County PRATT
Field
Test Date 9-Aug-97
Section Town Range 7-27S-12W
Report Number 11684
Elevation Ground Level 1859
Elevation Kelly Bushings 1870
Company Representative STEVE MCCLAIN
Testing Engineer GENE BUDIG

Extra Equipment

Jars NO
Safety Joint YES
Extra Packers No
Straddle No
Hook Wall No
Sampler No
Circulating Sub No
Electronic Recorder YES

Well Information

Drilling Contractor STERLING DRILLING RIG #4

Drill Pipe Length
Drill Pipe I.D. 3.8
Tool Joint Size 4 1/2 XH

Weight Pipe Length
Weight Pipe I.D. 2.76
Tool Joint Size 4 1/2 X.H.

Drill Collar Length
Drill Collar I.D. 2.25
Tool Joint Size 4 1/2 X.H.

Mud Weight #/gal 37.00
Viscosity 8.80
Water Loss 12
Chlorides - Pits 5,500
Chlorides - DST

SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Tool Setting Information

Top Packer Depth
Bottom packer Depth
Number of Packers 2
Packer Size 6 3/4

Test Interval (from)
Test Interval (to)
Anchor Length
Total Depth (ft)
Hole Size (in) 7 7/8

Pressure Readings

	<i>Field Reading</i>	<i>Office Reading</i>
Maximum Temp	100	
Initial Hydrostatic Pressure	1316	
Initial Flow Pressure	152	
Final Initial Flow Pressure	255	
Initial Shut-In Pressure	699	
Initial Final Flow Pressure	199	
Final Flow Pressure	329	
Final Shut-In Pressure	696	
Final Hydrostatic Pressure	1304	
Electronic Recorder Depth		
Recorder Number	78225	
Mechanical Recorder Depth		
Recorder Number	11088	

Comments

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SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Flow Times

Initial Open

Tool Open (from) 3:35
 Tool Open (to) 3:45
 Duration (min) 10

Initial Shut-in

Tool Closed (from) 3:45
 Tool Closed (to) 4:45
 Duration (min) 60

Final Open

Tool Open (from) 4:45
 Tool Open (to) 5:45
 Duration (min) 60

Final Shut-in

Tool Closed (from) 5:45
 Tool Closed (to) 7:45
 Duration (min) 120

Recovery Description

Initial Blow STRONG BLOW WITH GAS TO SURFACE IN 4 MINUTES

Final Blow STRONG BLOW-SEE GAS FLOW REPORT

Description	Feet of Recovery	% Gas	% Oil	% Mud	% Water
1) THIN GASSY MUD	180				
2)					
3)					
4)					
5)					
6)					
7)					
8)					
9)					
10)					
11)					
12)					
13)					
14)					
15)					
Total	180				

Comments	Time (hh:mm:ss)	Period dt (min)	Inches H2O Orifice Tester	PSI on Orifice Tester	PSI on Pitot Tube	Choke Size (in)	Gas Rate (MCF/Day)
TOOL OPENED	4:55	10		5		1 1/2	863.000
AT 4:45	5:05	20		5 1/2		1 1/2	908.000
	5:10	25		5 3/4		1 1/2	930.500
	5:15	30		6		1 1/2	953.000
	5:20	35		6 1/4		1 1/2	974.000
	5:25	40		6 1/2		1 1/2	995.000
	5:30	45		6 3/4		1 1/2	1015.500
	5:35	50		7		1 1/2	1036.000
	5:40	55		7		1 1/2	1036.000
	5:45	60		7		1 1/2	1036.000

PVT Detail

INPUT DATA

1	Pr (psia)	200.00
2	Temperature of Interest (psia)	100.00
3	Yield (bb/mmscf).....	250.00
4	Water Cut (%)	0.00%
5	Standard Pressure (psia)	14.7000
6	Standard Temperature (F)	60.0000
7	API Gravity Liq Hydrocarbon	35.0000
8	Water Salinity (ppm)	8000.0000
9	Liq. Hydro. SOL GOR AND PB Correlation ...	STANDING
10	Liq. Hydro. FVF Correlation.	STANDING
11	Dead Oil Correlation	BEGGS-ROBINSON
12	Dead Water Correlation	MEEHAN
13	Reservoir Fluid Type	GAS
14	Reservoir Oil Saturation (%)	0.00%
15	Reservoir H2O Saturation (%)	0.00%
16	Reservoir Gas Saturation (%)	100.00%
17	Reservoir Rock Type	SANDSTONE
18	Reservoir Rock Porosity (%)	18.00%
19	True Vertical Depth (ft)	2800
20	CO2 (Mole %)	0.000E+00
21	H2S (Mole %)	0.000E+00
22	N2 (Mole %)	0.000E+00
23	Specific Gravity Gas (dim)	0.6500
24	Pseudo Critical Temp (R)	370.0000
25	Pseudo Critical Press (psia)	671.0000

CALCULATED VALUES

26	Ct Reservoir (1/psi)	5.150E-03
27	Cf Wellbore (1/psi)	-1.216E-03
28	Total Fluid Visc (cp)	0.0284
29	Total FVF (bbl/stb)	5.890E-03
30	Total Fluid Bubble Point Press (psi)	0.0744
31	Fluid Density (lbs/r-ft3)	17.9434
32	Total Fluid SG (dim)	1.3847
33	FVF Oil (Rbl/Stb)	N/A
34	FVF H2O (Rbl/Stb)	N/A
35	FVF GAS (Scf/FT3)	N/A
36	Mu Oil (cp)	N/A
37	Mu H2O (cp)	N/A
38	Mu Gas (cp)	N/A
39	Density Oil (lb/rft3)	N/A
40	Density H2O (lb/rft3)	N/A
41	Density Gas (lb/rft3)	N/A
42	Compress. Oil (1/psi)	N/A
43	Compress. H2O (1/psi)	N/A
44	Compress. Gas (1/psi)	5.148E-03
45	Compress. Rock (1/psi)	2.854E-06
46	Critical Temp (R)	596.0817
47	Critical Press (psia)	628.2950
48	Oil Vol Frac of Total Fluid (frac)	0.000E+00
49	Water Vol Frac of Total Fluid (frac)	0.000E+00
50	Gas Vol Frac of Total Fluid (frac)	N/A
51	Dissolved Gas/Oil Ratio (Scf/Stb oil)	N/A
52	Dissolved Gas/H2O Ratio (Scf/Stb H2O)	N/A
53	Free Gas/Liquid Ratio (Scf/STB Tot Liq)	N/A
54	Gas Gravity of Free Gas (dim)	N/A
55	Gas Gravity of Gas in Oil (dim)	N/A
56	Gas Gravity of Gas in H2O (dim)	N/A

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

1ST SHUT-IN

State KANSAS

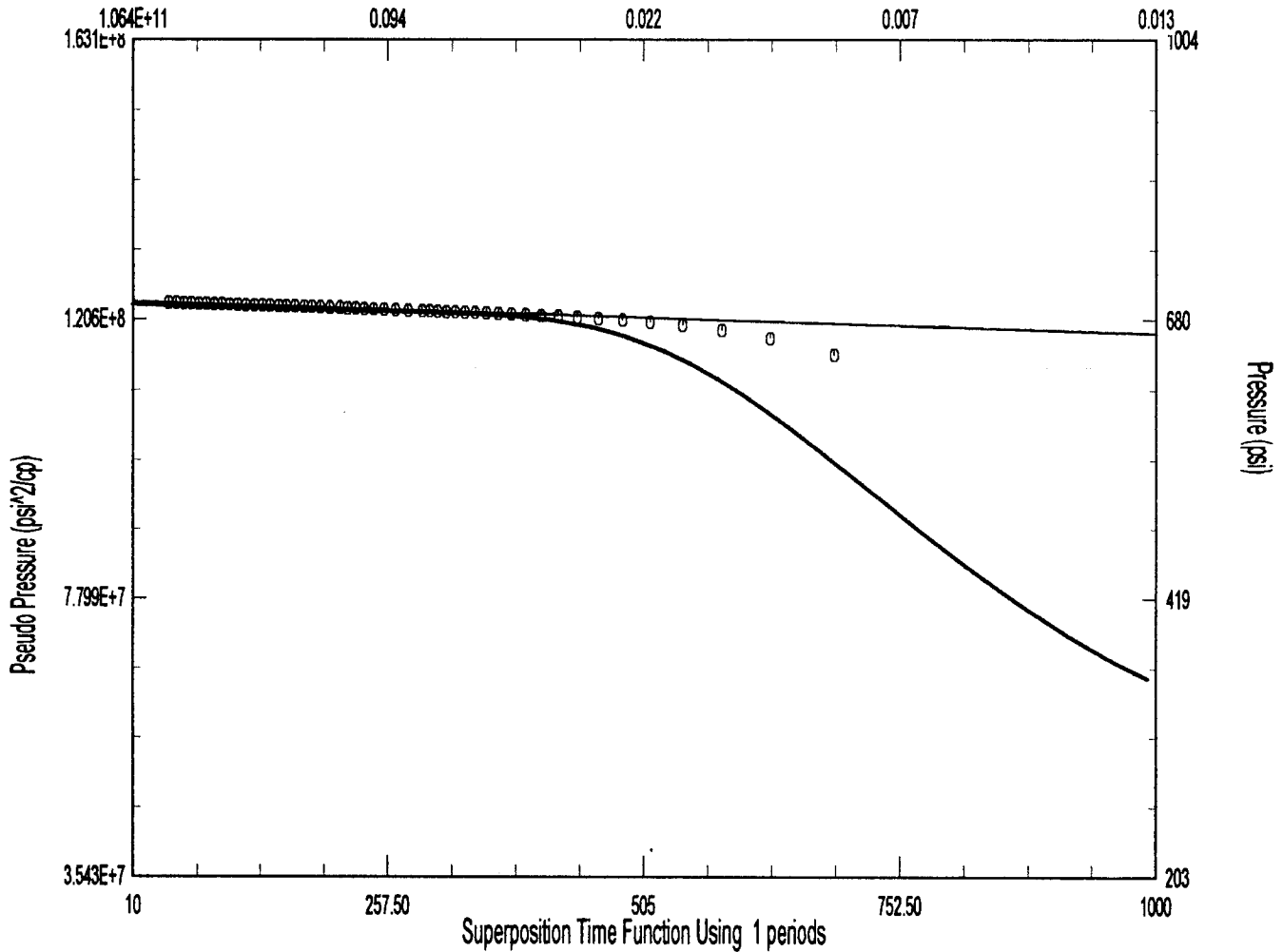
Test Date August 9, 1997

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11684



Constant Storage
C1 : $5.320\text{E}-4$ bbl/psi

Skin Model
Skin : 32.60

Homogeneous
k : 18.180 md

No Boundaries

h : 10 ft
mu : 0.022 cp
phi : 0.18 %
ct : $5.150\text{E}-03$ 1/psi
rw : 2.828 ft

Field :
County or Parish :
State :

Date : 12-Aug-97 19:19:23
Analysis Period : END FLOW - 1ST SHUT-IN
Identifier : Line #

Superposition Slope -> m' -4788.822000
Homer Slope -> m -2.494976E+6
Intercept 1.233E+8
P(dt=1 hr) 1.231E+8
Pwf 4.543E+7
R Sqr 0.9983

Intercept (psi) 700.377
k (md) 19.14291
kh (md-ft) 191.42911
k/u (md/cp) 866.19509
kh/uB (md-ft/cp) 8661.95094
Skin 33.7301
DP Skin 410.0914
Total DP 444.6956
Percent DP 92.22%

Radius Invest (ft) 31
Radius Time (hrs) 0.99

Delta Q = 521
h (ft)= 10
mu (cp) = 0.0221
B (stb/scf) = 0.0013

First Point # 16
Second Point # 253
Start Real Time 0.051
End Real Time 0.762
Start SF Time 341.798

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

2ND SHUT-IN

State KANSAS

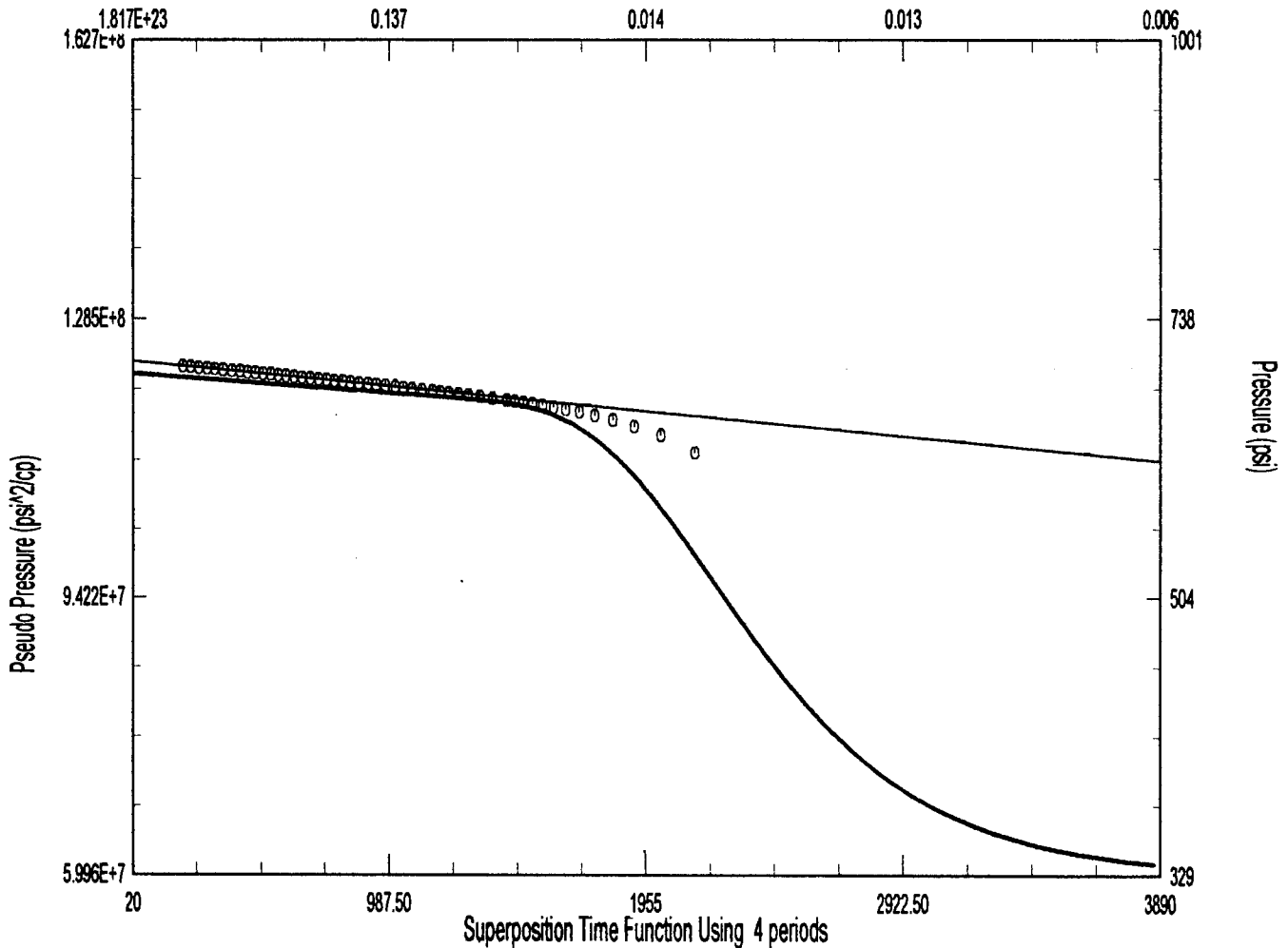
Test Date August 9, 1997

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11684



Constant Storage

C1 : 0.001 bbl/psi

Skin Model

Skin : 24.70

Homogeneous

k : 36.219 md

No Boundaries

h : 10 ft

μ : 0.022 cp

ϕ : 0.18 %

ct : $5.150\text{E}-03$ 1/psi

rw : 2.828 ft

Field :
County or Parish :
State :

Date : 12-Aug-97 19:20:15
Analysis Period : 2ND FLOW - 2ND SHUT-IN
Identifier : Line #

Superposition Slope -> m' -3149.594000
Horner Slope -> m -3.262979E+6
Intercept 1.234E+8
P(dt=1 hr) 1.224E+8
Pwf 5.996E+7
R Sqr 0.9995

Intercept (psi) 700.896
k (md) 29.10598
kh (md-ft) 291.05976
k/u (md/cp) 1317.01250
kh/uB (md-ft/cp) 13170.12505
Skin 19.6871
DP Skin 316.1406
Total DP 371.7247
Percent DP 85.05%

Radius Invest (ft) 54
Radius Time (hrs) 1.98

Delta Q = 1036
h (ft)= 10
mu (cp) = 0.0221
B (stb/scf) = 0.0013

First Point # 38
Second Point # 295
Start Real Time 0.117
End Real Time 1.740
Start SF Time 1029.552

Superior Testers Enterprises, Inc.

R.R. 3, Box 295B, Great Bend, Kansas 67530

(316) 792-6902

Date Aug 11 Location 7-27-12^W Elevation 1859 GL County Pratt

Company Golden Exploration & Production Company Number of Copies 5

Charts Mailed to Box 847 Pratt Kansas 67124

Drilling Contractor Stirling Drilling Rig 4

Length Drill Pipe _____ I.D. Drill Pipe _____ Tool Joint Size 4 1/2" X H.

Length Weight Pipe _____ I.D. Weight Pipe _____ Tool Joint Size _____

Length Drill Collars _____ I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" X H

Top Packer Depth _____ Bottom Packer Depth _____ Number of Packers _____ Packer Size _____

TESTED FROM 3711' TO 3736' ANCHOR LENGTH _____ TOTAL DEPTH _____ Hole Size _____

LEASE & WELL NO. Luden #6 FORMATION TESTED Tight Hole TEST NO. 2

Mud Weight 9.1 Viscosity 48 Water Loss 10.4 Chlorides - Pits 5500 D.S.T. 8000 84000

Maximum Temp. 125 °F Initial Hydrostatic Pressure (A) 1805 P.S.I. Final Hydrostatic Pressure (H) 1788 P.S.I.

Tool Open I.F.P. from 5:45 P.m to 6:15 P.m 30 min

Tool Closed I.C.I.P. from 6:15 P.m to 6:45 P.m 30 min

Tool Open F.F.P. from 6:45 P.m to 7:30 P.m 45 min

Tool Closed F.C.I.P. from 7:30 P.m to 8:30 P.m 60 min

Initial Blow strong blow

Final Blow strong blow

Total Feet Recovered 210'

Gravity of Oil _____ Corrected _____

90 Feet of gas in drill pipe 20 % Gas 20 % Oil _____ % Mud _____ % Water

40 Feet of Heavy gassy oil cut mud 15 % Gas 30 % Oil 50 % Mud _____ % Water

90 Feet of Very heavy oil & gas cut mud 5 % Gas 10 % Oil 70 % Mud 15 % Water

30 Feet of slightly gassy water _____ % Gas _____ % Oil 60 % Mud 40 % Water

30 Feet of Gassy mud or oil 51 % Gas 34 % Oil 15 % Mud 0 % Water

60 Feet of Heavy oil & Gas cut mud 21 % Gas 14 % Oil 65 % Mud 0 % Water

60 Feet of Oil cut water mud 2 % Gas 12 % Oil 60 % Mud 25 % Water

60 Feet of muddy water with a trace of oil 0 % Gas TRACE Oil 45 % Mud 55 % Water

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

Remarks _____

ORIGINAL

Extra Equipment - Jars yes Safety Joint yes Extra Packer _____ Straddle _____ Hook Wall _____

Top Recorder No. 78225 Clock No. electric Depth _____ Cir. Sub yes Sampler _____

Bottom Recorder No. 11088 Clock No. 47441 Depth _____ Insurance _____

Price of Job _____

Tool Operator Gene Rudig

Approved By _____

No 11685

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SUPERIOR TESTERS ENTERPRISES INC.

Great Bend, Kansas

CHART DATA

(316) 792-6902

LUDES #6 TIGHTHOLE

State KANSAS

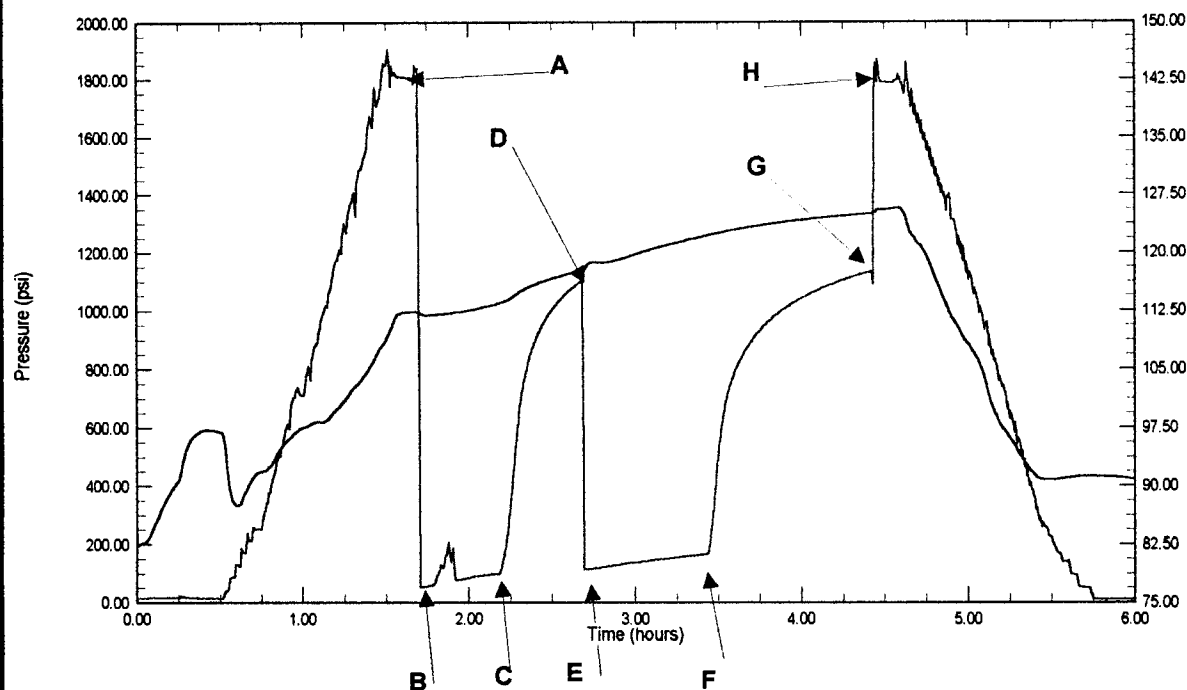
Test Date 8-11-97

County

Sec Town Range 7-27S-12W

Field

Report Number 11685



Field Reading

Office Reading

(A)	Initial Hydrostatic Pressure	1805	psi
(B)	Initial Flow Pressure	59	psi
(C)	Final Initial Flow Pressure	99	psi
(D)	Initial Shut-In Pressure	1103	psi
(E)	Initial Final Flow Pressure	114	psi
(F)	Final Flow Pressure	167	psi
(G)	Final Shut-In Pressure	1136	psi
(H)	Final Hydrostatic Pressure	1788	psi

ELECTRONIC REECORDER DEPTHft,RECORDER NUMBER78225

Company: GOLDEN EXPLORATION AND PRODUCTION COMPANY
Date:8-11-1997 SEC. 7 TWP. 27S RGE. 12W 15-151-22155

Lease & Well No. LUDES #6 Test #: 2
Lansing '8' - 3711' + 3736'

SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

General Information

Test Company Name SUPERIOR TESTERS ENTERPRISES INC.
Company Name GOLDEN EXPLORATION & PRODUCTION COMPANY
Lease and Well Number LUDS #6
Formation Tested TIGHTHOLE
Test Number 2
State KANSAS
County PRATT
Field
Test Date 8-11-97
Section Town Range 7-27S-12W
Report Number 11685
Elevation Ground Level 1859
Elevation Kelly Bushings 1870
Company Representative STEVE MCCLAIN
Testing Engineer GENE BUDIG

Extra Equipment

Jars YES
Safety Joint YES
Extra Packs No
Straddle No
Hook Wall No
Sampler No
Circulating Sub No
Electronic Recorder YES

Well Information

Drilling Contractor STERLING DRILLING RIG #4

Drill Pipe Length
Drill Pipe I.D. 3.8
Tool Joint Size 4 1/2 XH

Weight Pipe Length
Weight Pipe I.D. 2.76
Tool Joint Size 4 1/2 X.H.

Drill Collar Length
Drill Collar I.D. 2.25
Tool Joint Size 4 1/2 X.H.

Mud Weight #/gal 9.10
Viscosity 48.00
Water Loss 10.4
Chlorides - Pits 5,500
Chlorides - DST 84,000

RIOR TESTERS ENTERPRISES INC.
DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Tool Setting Information

Top Packer Depth
Bottom packer Depth
Number of Packers 2
Packer Size 6 3/4

Test Interval (from)
 Test Interval (to)
 Anchor Length
 Total Depth (ft)
 Hole Size (in) 7 7/8

Pressure Readings

	Field Reading	Office Reading
Maximum Temp	125	
Initial Hydrostatic Pressure	1805	
Initial Flow Pressure	59	
Final Initial Flow Pressure	99	
Initial Shut-In Pressure	1103	
Initial Final Flow Pressure	114	
Final Flow Pressure	167	
Final Shut-In Pressure	1136	
Final Hydrostatic Pressure	1788	
Electronic Recorder Depth		
Recorder Number	78225	
Mechanical Recorder Depth		
Recorder Number	11088	

Comments

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SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Flow Times

Initial Open

Tool Open (from) 5:45
 Tool Open (to) 6:15
 Duration (min) 30

Initial Shut-in

Tool Closed (from) 6:15
 Tool Closed (to) 6:45
 Duration (min) 30

Final Open

Tool Open (from) 6:45
 Tool Open (to) 7:30
 Duration (min) 45

Final Shut-in

Tool Closed (from) 7:30
 Tool Closed (to) 8:30
 Duration (min) 60

Recovery Description

Initial Blow STRONG BLOW

Final Blow STRONG BLOW

Description	Feet of Recovery	% Gas	% Oil	% Mud	% Water
1) GASSY MUDDY OIL	30	55	30	30	0
2) HEAVY OIL AND GAS CUT MUD	120	18	17	17	0
3) OIL CUT WATERY MUD	60	0	15	65	20
4) MUDDY WATER WITH A TRACE OF OIL	60	0	TRACE	60	40
5) GAS IN THE PIPE	90	100			
6)					
7)					
8)					
9)					
10)					
11)					
12)					
13)					
14)					
15)					
Total	360				

PVT Detail

INPUT DATA

1	Pr (psia)	490.00
2	Temperature of Interest (psia)	125.00
3	GLR (scf/bbl).....	250.00
4	Water Cut (%)	30.00%
5	Standard Pressure (psia)	14.7000
6	Standard Temperature (F)	60.0000
7	API Gravity Liq Hydrocarbon	35.0000
8	Water Salinity (ppm)	8000.0000
9	Liq. Hydro. SOL GOR AND PB Correlation ...	STANDING
10	Liq. Hydro. FVF Correlation.	STANDING
11	Dead Oil Correlation	BEGGS-ROBINSON
12	Dead Water Correlation	MEEHAN
13	Reservoir Fluid Type	Liquid
14	Reservoir Oil Saturation (%)	40.00%
15	Reservoir H2O Saturation (%)	40.00%
16	Reservoir Gas Saturation (%)	20.00%
17	Reservoir Rock Type	LIMESTONE
18	Reservoir Rock Porosity (%)	18.00%
19	True Vertical Depth (ft)	3756
20	CO2 (Mole %)	0.000E+00
21	H2S (Mole %)	0.000E+00
22	N2 (Mole %)	0.000E+00
23	Specific Gravity Gas (dim)	0.6500
24	Pseudo Critical Temp (R)	370.0000
25	Pseudo Critical Press (psia)	671.0000

CALCULATED VALUES

26	Ct Reservoir (1/psi)	8.683E-04
27	Cf Wellbore (1/psi)	1.472E-03
28	Total Fluid Visc (cp)	1.0678
29	Total FVF (bbl/stb)	2.1301
30	Total Fluid Bubble Point Press (psi)	1588.1160
31	Fluid Density (lbs/r-ft3)	27.3035
32	Total Fluid SG (dim)	0.4378
33	FVF Oil (Rbl/Stb)	1.0600
34	FVF H2O (Rbl/Stb)	1.0112
35	FVF GAS (Scf/FT3)	0.0322
36	Mu Oil (cp)	2.8308
37	Mu H2O (cp)	0.5276
38	Mu Gas (cp)	0.0129
39	Density Oil (lb/rft3)	51.0770
40	Density H2O (lb/rft3)	62.0548
41	Density Gas (lb/rft3)	1.3220
42	Compress. Oil (1/psi)	1.043E-03
43	Compress. H2O (1/psi)	4.101E-05
44	Compress. Gas (1/psi)	2.166E-03
45	Compress. Rock (1/psi)	1.377E-06
46	Critical Temp (R)	342.0905
47	Critical Press (psia)	676.8199
48	Oil Vol Frac of Total Fluid (frac)	0.3483
49	Water Vol Frac of Total Fluid (frac)	0.1424
50	Gas Vol Frac of Total Fluid (frac)	0.5092
51	Dissolved Gas/Oil Ratio (Scf/Stb oil)	85.5293
52	Dissolved Gas/H2O Ratio (Scf/Stb H2O)	3.9287
53	Free Gas/Liquid Ratio (Scf/STB Tot Liq)	188.9509
54	Gas Gravity of Free Gas (dim)	0.5583
55	Gas Gravity of Gas in Oil (dim)	0.9393
56	Gas Gravity of Gas in H2O (dim)	0.6500

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

1ST SHUT-IN

State KANSAS

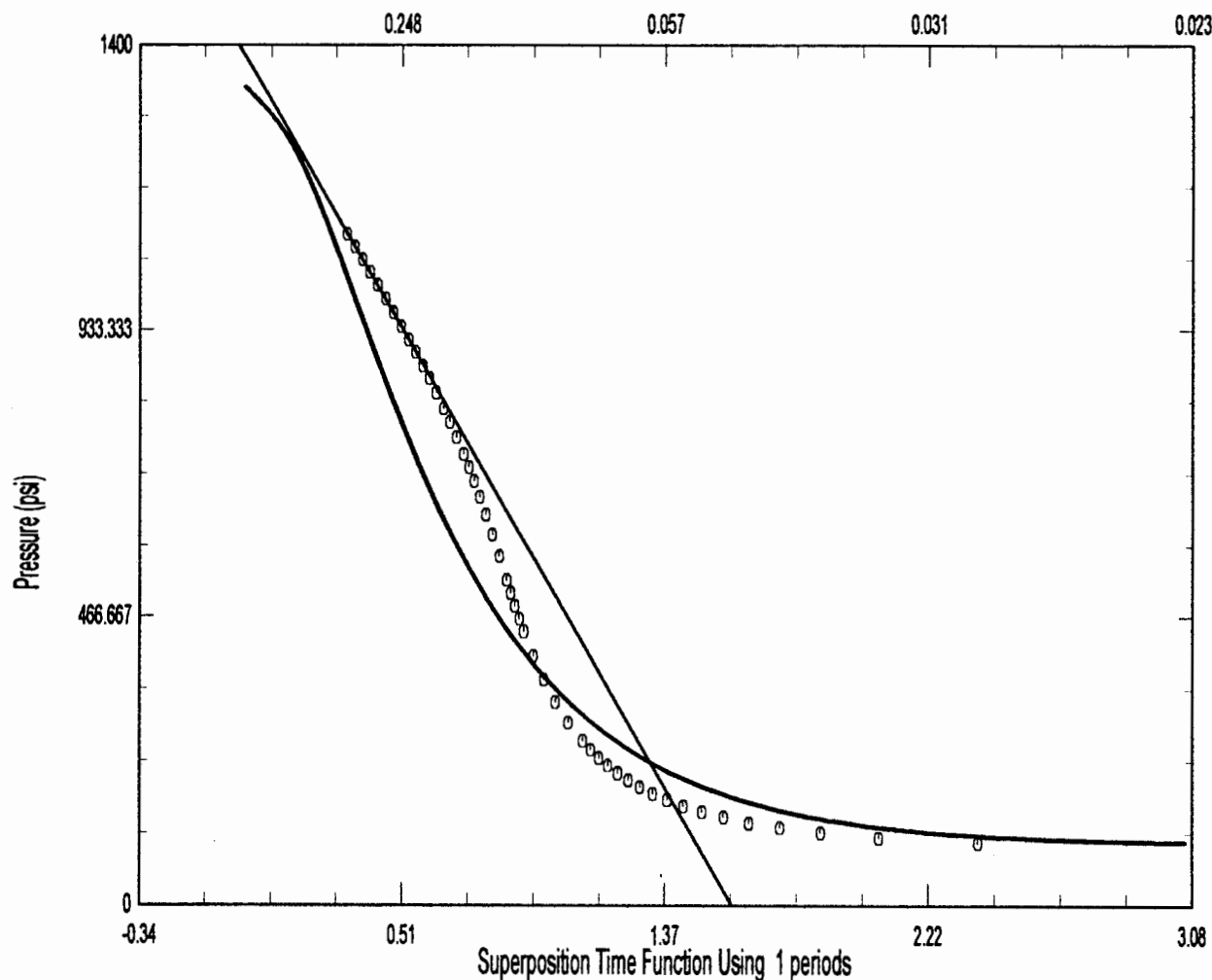
Test Date 8-11-97

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11685



Constant Storage
C1 : 4.000E-5 bbl/psi

Skin Model
Skin : 2.32

Homogeneous
k : 0.097 md

No Boundaries

h : 10 ft
mu : 0.622 cp
phi : 0.18 %
ct : 8.683E-04 1/psi
rw : 0.328 ft

Field :
County or Parish :
State :

Date : 12-Aug-97 19:43:39
Analysis Period : END FLOW - 1ST SHUT-IN
Identifier : Line #

Superposition Slope -> m' -870.903100
Horner Slope -> m -940.575322
Intercept 1381.301
P(dt=1 hr) 1221.157
Pwf 99.300
R Sqr 0.9997

k (md) 0.05877
kh (md-ft) 0.58773
k/u (md/cp) 0.09449
kh/uB (md-ft/cp) 0.18670

Skin 0.773
DP Skin 632.386
Total DP 1282.001
Percent DP 49.33%

Radius Invest (ft) 1
Radius Time (hrs) 0.50

Delta Q = 1
h (ft)= 10
mu = 0.622
B = 5.061

First Point # 66
Second Point # 162
Start Real Time 0.195
End Real Time 0.483
Start SF Time 0.582

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND,KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

2ND SHUT-IN

State KANSAS

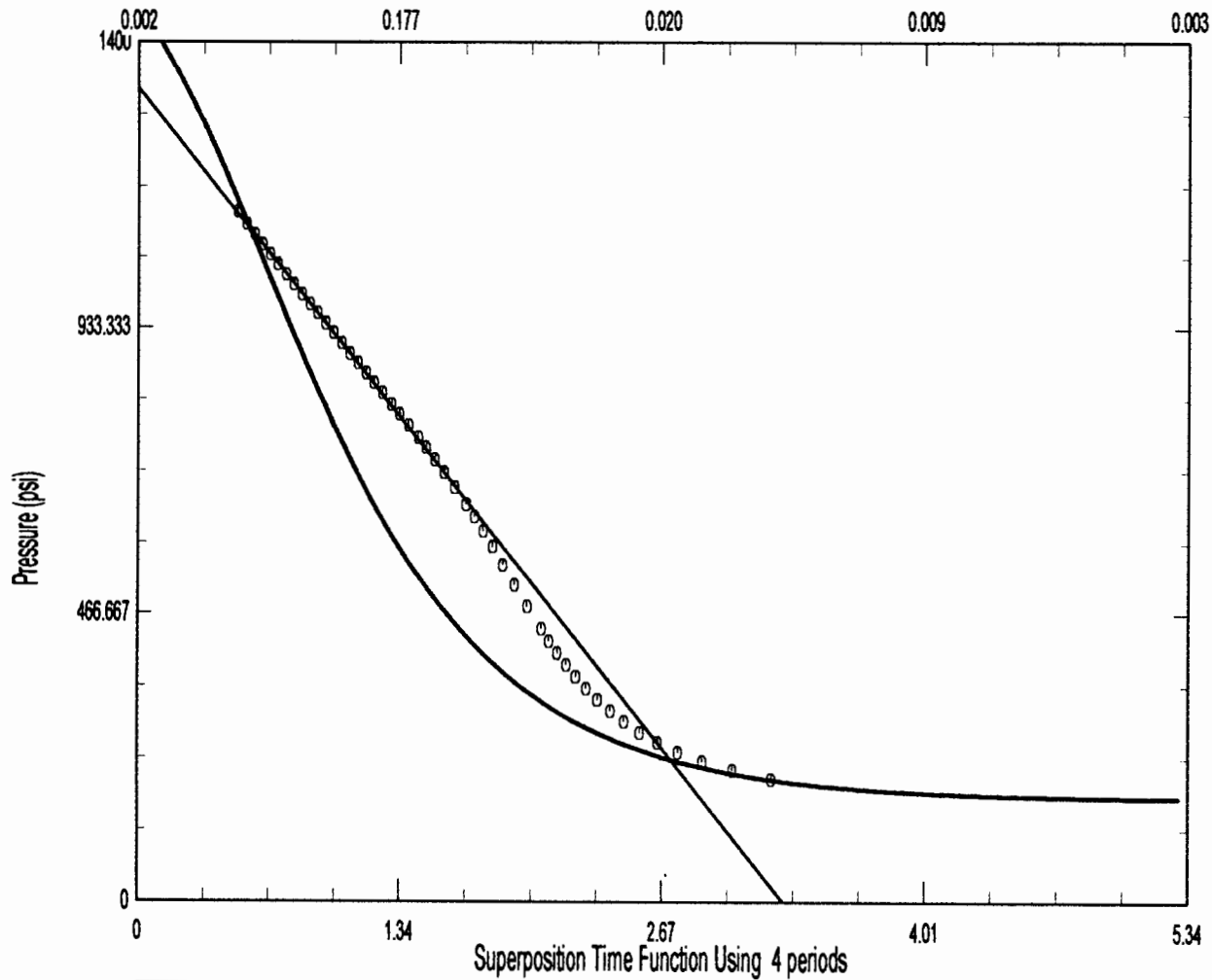
Test Date 8-11-97

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11685



Constant Storage
C1 : 8.330E-5 bbl/psi

Skin Model
Skin : 1.14

Homogeneous
k : 0.100 md

No Boundaries

h : 10 ft
mu : 0.622 cp
phi : 0.18 %
ct : 8.683E-04 1/psi
rw : 0.328 ft

Field :
County or Parish :
State :

Date : 12-Aug-97 19:44:17
Analysis Period : END FLOW - 2ND SHUT-IN
Identifier : Line #

Superposition Slope -> m' -402.757700
Horner Slope -> m -644.412305
Intercept 1325.731
P(dt=1 hr) 1133.124
Pwf 166.860
R Sqr 0.9997

k (md) 0.12709
kh (md-ft) 1.27088
k/u (md/cp) 0.20432
kh/uB (md-ft/cp) 0.40372

Skin 0.740
DP Skin 415.060
Total DP 1158.871
Percent DP 35.82%

Radius Invest (ft) 1
Radius Time (hrs) 0.99

Delta Q = 2
h (ft)= 10
mu = 0.622
B = 5.061

First Point # 54
Second Point # 297
Start Real Time 0.165
End Real Time 0.915
Start SF Time 1.325

Superior Testers Enterprises, Inc.

R.R. 3, Box 295B, Great Bend, Kansas 67530

(316) 792-6902

Date 8-12-1997 Location 7-27-12^W Elevation 18596.2 County Perth
Company Golden Exploration & Production Company Number of Copies 5

Charts Mailed to Box 847 Perth Kansas 67124

Drilling Contractor Sterling Drilling Rig #4

Length Drill Pipe _____ I.D. Drill Pipe _____ Tool Joint Size _____

Length Weight Pipe _____ I.D. Weight Pipe _____ Tool Joint Size _____

Length Drill Collars _____ I.D. Drill Collars _____ Tool Joint Size _____

Top Packer Depth _____ Bottom Packer Depth _____ Number of Packers 2 Packer Size 6 3/4

TESTED FROM 3876' TO 3950' ANCHOR LENGTH _____ TOTAL DEPTH _____ Hole Size 7 7/8

LEASE & WELL NO. TIGHT HOLE FORMATION TESTED LUDS #6 TEST NO. 3

Mud Weight 9.15 Viscosity 40 Water Loss 10.4 Chlorides - Pits 8000 D.S.T. 72000

Maximum Temp. 123 °F Initial Hydrostatic Pressure (A) 1918 P.S.I. Final Hydrostatic Pressure (H) 1909 P.S.I.

Tool Open I.F.P. from 5:00 P.m. to 5:30 P.m. 30 min

from [B] 91 P.S.I. to [C] 181 P.S.I.

Tool Closed I.C.I.P. from 5:30 P.m. to 6:15 P.m. 45 min

[D] 1262 P.S.I.

Tool Open F.F.P. from 6:15 P.m. to 7:00 P.m. 45 min

from [E] 199 P.S.I. to [F] 267 P.S.I.

Tool Closed F.C.I.P. from 7:00 P.m. to 8:00 P.m. 60 min

[G] 1248 P.S.I.

Initial Blow Fair blow built to the bottom of a 5 Gallon bucket in 3 minutes

Final Blow Fair blow built to the bottom of a 5 Gallon bucket in 7 minutes

Total Feet Recovered 480 Gravity of Oil _____ Corrected

120 Feet of Drilling mud % Gas _____ % Oil _____ % Mud _____ % Water _____

90 Feet of Oil & Gas cut mud 46 % Gas 14 % Oil 32 % Mud 8 % Water

90 Feet of Gassy oily mud 48 % Gas 20 % Oil 20 % Mud 12 % Water

120 Feet of VERY SLIGHTLY oil cut Gas cut muddy water 46 % Gas 20 % Oil 28 % Mud 65 % Water

60 Feet of SLIGHTLY Gas cut muddy water 96 % Gas TRACE % Oil 28 % Mud 63 % Water

1775 Feet of Gas in the Pipe 100 % Gas 0 % Oil 0 % Mud 0 % Water

_____ Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

_____ Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

_____ Feet of _____ % Gas _____ % Oil _____ % Mud _____ % Water

Remarks _____

Extra Equipment - Jars YES Safety Joint YES Extra Packer NONE Straddle NONE Hook Wall NONE

Top Recorder No. 78225 Clock No. ELECTRONIC Depth _____ Cir. Sub NONE Sampler NONE

Bottom Recorder No. 11088 Clock No. 4744 Depth _____ Insurance NONE

Price of Job _____

Tool Operator Steve Rudy

Approved By _____

Superior Testers Enterprises, Inc. shall not be liable for damage of any kind to 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.

No 11686

SUPERIOR TESTERS ENTERPRISES INC.

Great Bend, Kansas

CHART DATA

(316) 792-6902

LUDES #6

State KANSAS

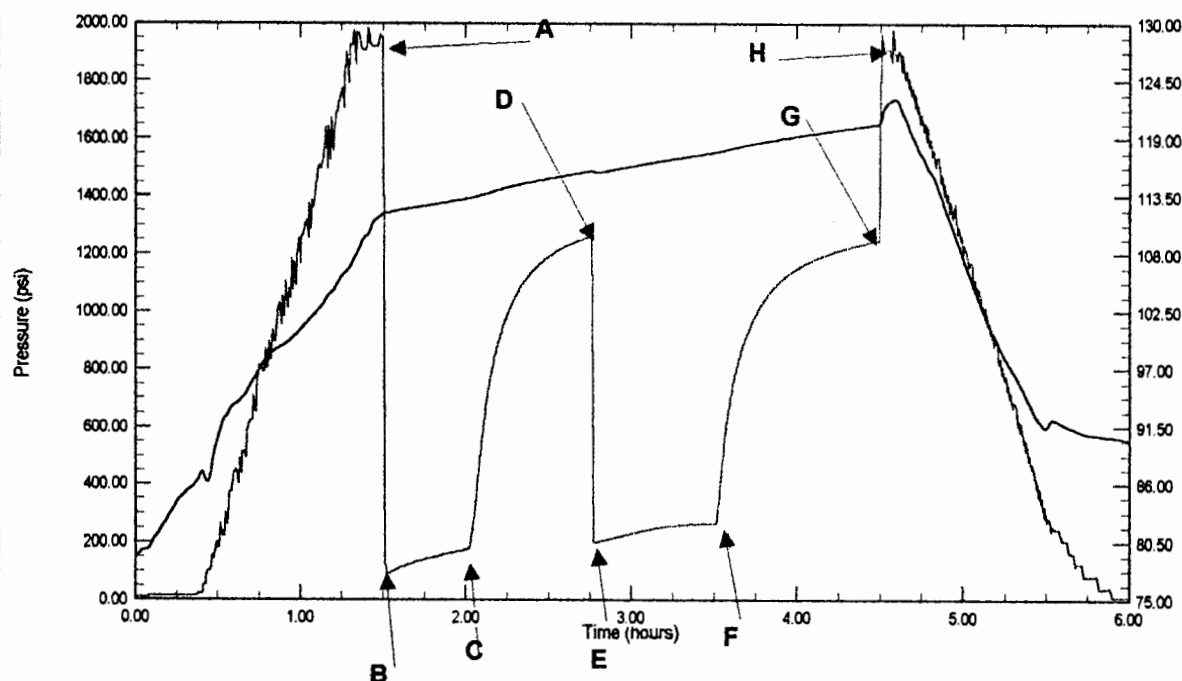
Test Date August 12, 1997

County

Sec Town Range 7-27S-12W

Field

Report Number 11686



Field Reading

Office Reading

(A)	Initial Hydrostatic Pressure	1918	psi
(B)	Initial Flow Pressure	91	psi
(C)	Final Initial Flow Pressure	181	psi
(D)	Initial Shut-In Pressure	1262	psi
(E)	Initial Final Flow Pressure	199	psi
(F)	Final Flow Pressure	267	psi
(G)	Final Shut-In Pressure	1248	psi
(H)	Final Hydrostatic Pressure	1909	psi

ELECTRONIC REECORDER DEPTHft, RECORDER NUMBER 78225

Company: GOLDEN EXPLORATION & PRODUCTION COMPANY Lease & Well No. LUDES #6 Test #: 3
 Date: 8-2-1997 SEC. 7 TWP. 27S RGE. 12W 15-151-22155 Lansing T & H 3876' to 3950'

SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

General Information

Test Company Name SUPERIOR TESTERS ENTERPRISES INC.
Company Name GOLDEN EXPLORATION & PRODUCTION COMPANY
Lease and Well Number LUDS #6
Formation Tested
Test Number 3
State KANSAS
County PRATT
Field
Test Date 12-Aug-97
Section Town Range 7-27S-12W
Report Number 11686
Elevation Ground Level 1859
Elevation Kelly Bushings 1870
Company Representative STEVE MCCLAIN
Testing Engineer GENE BUDIG

Extra Equipment

Jars YEES
Safety Joint YEES
Extra Packs No
Straddle No
Hook Wall No
Sampler No
Circulating Sub No
Electronic Recorder YEES

Well Information

Drilling Contractor STERLING DRILLING RIG #4

Drill Pipe Length
Drill Pipe I.D. 3.8
Tool Joint Size 4 1/2 XH

Weight Pipe Length
Weight Pipe I.D. 2.76
Tool Joint Size 4 1/2 X.H.

Drill Collar Length
Drill Collar I.D. 2.25
Tool Joint Size 4 1/2 X.H.

Mud Weight #/gal 9.1+
Viscosity 40.00
Water Loss 10.4
Chlorides - Pits 8,000
Chlorides - DST 72,000

SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Tool Setting Information

Top Packer Depth
Bottom packer Depth
Number of Packers 2
Packer Size 6 3/4

Test Interval (from)
Test Interval (to)
Anchor Length
Total Depth (ft)
Hole Size (in) 7 7/8

Pressure Readings

	<i>Field Reading</i>	<i>Office Reading</i>
Maximum Temp	123	
Initial Hydrostatic Pressure	1918	
Initial Flow Pressure	91	
Final Initial Flow Pressure	181	
Initial Shut-In Pressure	1262	
Initial Final Flow Pressure	199	
Final Flow Pressure	267	
Final Shut-In Pressure	1248	
Final Hydrostatic Pressure	1909	
Electronic Recorder Depth		
Recorder Number	78225	
Mechanical Recorder Depth		
Recorder Number	11088	

Comments

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SUPERIOR TESTERS ENTERPRISES INC.

DRILL STEM TEST REPORT

GREAT BEND, KANSAS (316) 792-6902

Flow Times

Initial Open

Tool Open (from) 5:00
 Tool Open (to) 5:30
 Duration (min) 30

Initial Shut-in

Tool Closed (from) 5:30
 Tool Closed (to) 6:15
 Duration (min) 45

Final Open

Tool Open (from) 6:15
 Tool Open (to) 7:00
 Duration (min) 45

Final Shut-in

Tool Closed (from) 7:00
 Tool Closed (to) 0:00
 Duration (min) 60

Recovery Description

Initial Blow FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON
 BUCKET IN 3 MINUTES

Final Blow FAIR BLOW BUILT TO THE BOTTOM OF A 5 GALLON
 BUCKET IN 7 MINUTES

Description	Feet of Recovery	% Gas	% Oil	% Mud	% Water
1) GAS IN THE PIPE	1775	100			
2) DRILLING MUD	120			100	
3) OIL AND GAS CUT MUD	90	46	14	32	8
4) GASSY OILY MUD	90	48	20	20	12
5) VERY SLIGHTLY OIL & GAS CUT MUDDY WATER	120	6	1	28	65
6) SLIGHTLY GAS CUT MUDDY WATER	60	9	TRACE	28	63
7)					
8)					
9)					
10)					
11)					
12)					
13)					
14)					
15)					
Total	2255				

PVT Detail

INPUT DATA

1	Pr (psia)	490.00
2	Temperature of Interest (psia)	123.00
3	GLR (scf/bbl).....	250.00
4	Water Cut (%)	40.00%
5	Standard Pressure (psia)	14.7000
6	Standard Temperature (F)	60.0000
7	API Gravity Liq Hydrocarbon	35.0000
8	Water Salinity (ppm)	72000.0000
9	Liq. Hydro. SOL GOR AND PB Correlation ...	STANDING
10	Liq. Hydro. FVF Correlation.	STANDING
11	Dead Oil Correlation	BEGGS-ROBINSON
12	Dead Water Correlation	MEEHAN
13	Reservoir Fluid Type	Liquid
14	Reservoir Oil Saturation (%)	55.00%
15	Reservoir H2O Saturation (%)	35.00%
16	Reservoir Gas Saturation (%)	10.00%
17	Reservoir Rock Type	LIMESTONE
18	Reservoir Rock Porosity (%)	18.00%
19	True Vertical Depth (ft)	3800
20	CO2 (Mole %)	0.000E+00
21	H2S (Mole %)	0.000E+00
22	N2 (Mole %)	0.000E+00
23	Specific Gravity Gas (dim)	0.6500
24	Pseudo Critical Temp (R)	370.0000
25	Pseudo Critical Press (psia)	671.0000

CALCULATED VALUES

26	Ct Reservoir (1/psi)	8.035E-04
27	Cf Wellbore (1/psi)	1.438E-03
28	Total Fluid Visc (cp)	0.9799
29	Total FVF (bbl/stb)	2.1656
30	Total Fluid Bubble Point Press (psi)	1796.3030
31	Fluid Density (lbs/r-ft3)	27.8403
32	Total Fluid SG (dim)	0.4464
33	FVF Oil (Rbl/Stb)	1.0591
34	FVF H2O (Rbl/Stb)	1.0126
35	FVF GAS (Scf/FT3)	0.0320
36	Mu Oil (cp)	2.9243
37	Mu H2O (cp)	0.6162
38	Mu Gas (cp)	0.0128
39	Density Oil (lb/rft3)	51.1279
40	Density H2O (lb/rft3)	64.8368
41	Density Gas (lb/rft3)	1.3690
42	Compress. Oil (1/psi)	1.045E-03
43	Compress. H2O (1/psi)	3.012E-05
44	Compress. Gas (1/psi)	2.168E-03
45	Compress. Rock (1/psi)	1.366E-06
46	Critical Temp (R)	347.0223
47	Critical Press (psia)	675.8777
48	Oil Vol Frac of Total Fluid (frac)	0.2934
49	Water Vol Frac of Total Fluid (frac)	0.1870
50	Gas Vol Frac of Total Fluid (frac)	0.5195
51	Dissolved Gas/Oil Ratio (Scf/Stb oil)	85.9623
52	Dissolved Gas/H2O Ratio (Scf/Stb H2O)	2.8540
53	Free Gas/Liquid Ratio (Scf/STB Tot Liq)	197.2810
54	Gas Gravity of Free Gas (dim)	0.5744
55	Gas Gravity of Gas in Oil (dim)	0.9393
56	Gas Gravity of Gas in H2O (dim)	0.6500

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

1ST SHUT-IN

State KANSAS

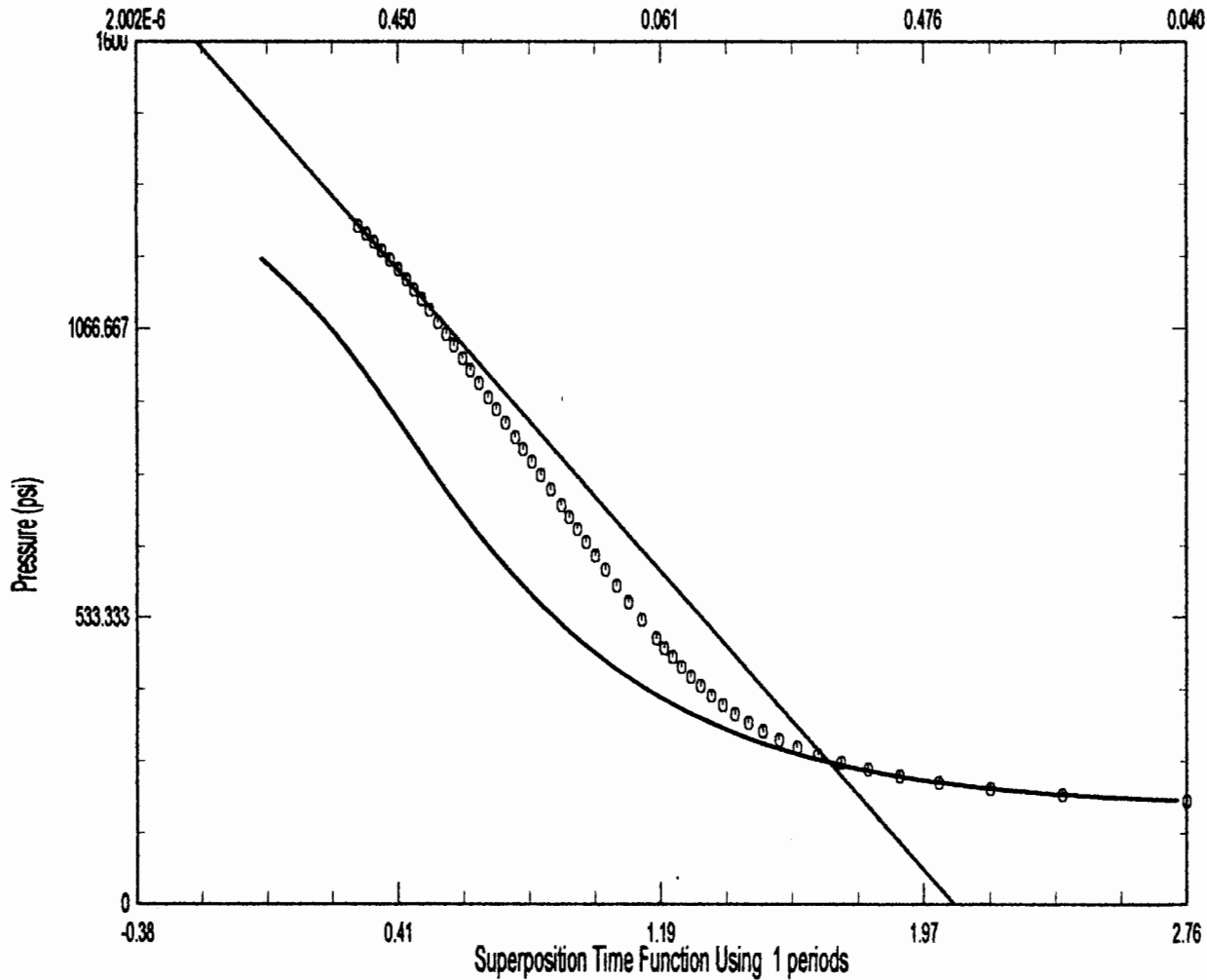
Test Date August 12, 1997

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11686



Constant Storage
C1 : 3.710E-5 bbl/psi

Skin Model
Skin : 1.26

Homogeneous
k : 0.070 md

No Boundaries

h : 10 ft
mu : 0.763 cp
phi : 0.18 %
ct : 8.035E-04 1/psi
rw : 0.328 ft

Field :
County or Parish :
State :

Date : 13-Aug-97 10:41:01
Analysis Period : END FLOW - 1ST SHUT-IN
Identifier : Line #

Superposition Slope -> m' -708.265500
Horner Slope -> m -878.249224
Intercept 1462.760
P(dt=1 hr) 1308.617
Pwf 181.560
R Sqr 0.9980

k (md) 0.05994
kh (md-ft) 0.59936
k/u (md/cp) 0.07858
kh/uB (md-ft/cp) 0.22957

Skin 0.930
DP Skin 710.911
Total DP 1281.200
Percent DP 55.49%

Radius Invest (ft) 1
Radius Time (hrs) 0.73

Delta Q = 1
h (ft)= 10
mu = 0.763
B = 3.423

First Point # 116
Second Point # 246
Start Real Time 0.345
End Real Time 0.735
Start SF Time 0.481

SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

SUPERPOSITION ANALYSIS

(316) 792-6902

2ND SHUT-IN

State KANSAS

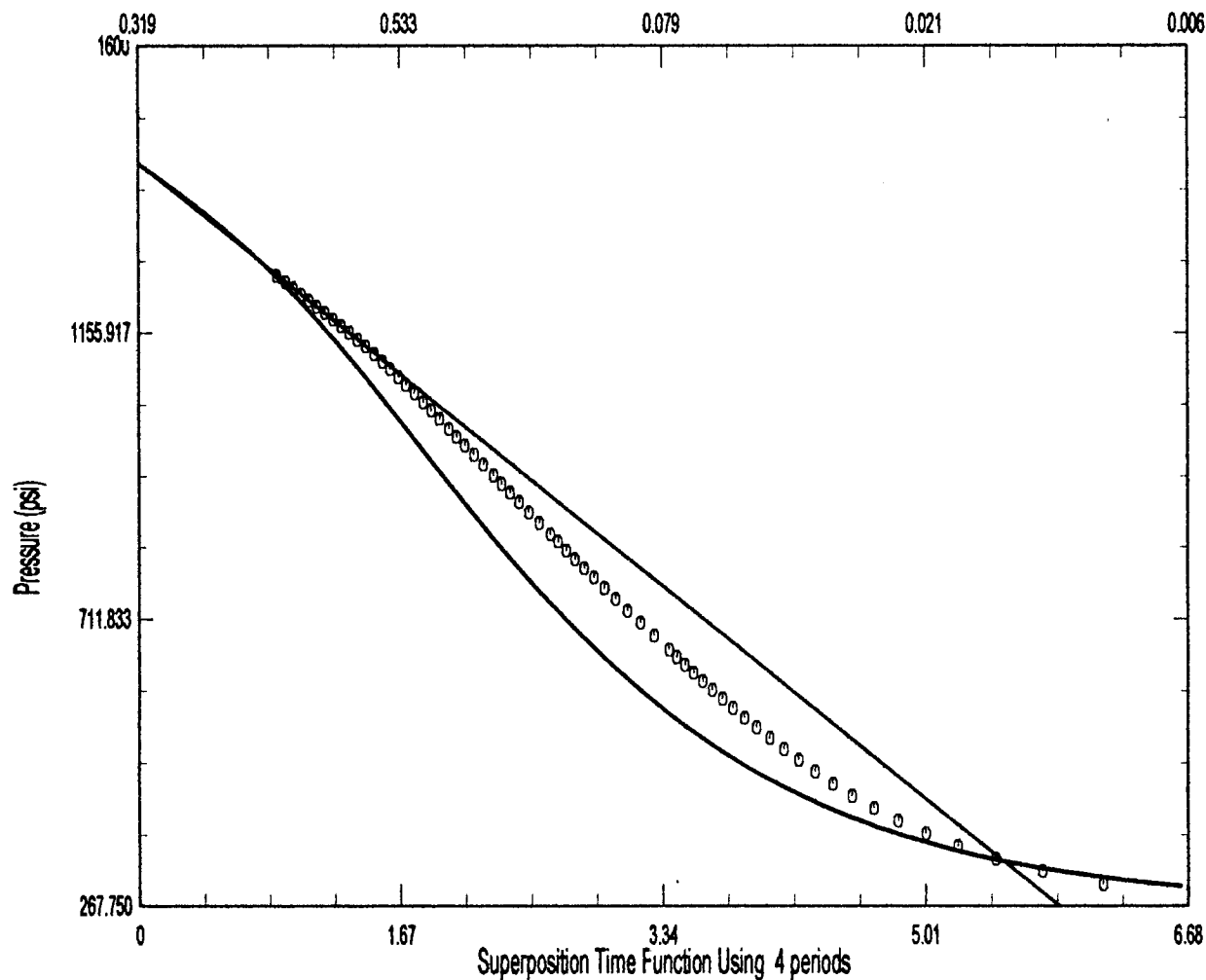
Test Date August 12, 1997

County PRATT

Sec Town Range 7-27S-12W

Field

Report Number 11686



Constant Storage
C1 : 8.010E-5 bbl/psi

Skin Model
Skin : 1.43

Homogeneous
k : 0.246 md

No Boundaries

h : 10 ft
mu : 0.763 cp
phi : 0.18 %
ct : 8.035E-04 1/psi
rw : 0.328 ft

Field :
County or Parish :
State :

Date : 13-Aug-97 10:42:16
Analysis Period : END FLOW - 2ND SHUT-IN
Identifier : Line #

Superposition Slope -> m' -196.679200
Horner Slope -> m -611.672262
Intercept 1420.271
P(dt=1 hr) 1253.199
Pwf 267.750
R Sqr 0.9994

k (md) 0.21584
kh (md-ft) 2.15835
k/u (md/cp) 0.28299
kh/uB (md-ft/cp) 0.82673

Skin 0.667
DP Skin 355.067
Total DP 1152.521
Percent DP 30.81%

Radius Invest (ft) 1
Radius Time (hrs) 0.98

Delta Q = 3
h (ft)= 10
mu = 0.763
B = 3.423

First Point # 132
Second Point # 299
Start Real Time 0.399
End Real Time 0.948
Start SF Time 1.548