

Pyle 5-13

15-033-21136

13-31-18W

# Superior Testers Enterprises, Inc.

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

(316) 792-6902

# COPY

Date 01-15-01 Location 4 1/2 W 1/2 SW 1/4 Sec 13-31-18 Elevation 2079 RB County Comanche

Company ONEOK RESOURCES COMPANY Number of Copies 5

Charts Mailed to P.O. Box 871 Tulsa OKLAHOMA 74102-0871

Drilling Contractor Cheyenne Drilling R/B #2

Length Drill Pipe 4389 I.D. Drill Pipe 3.80 Tool Joint Size 4 1/2" F.H.

Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONE

Length Drill Collars 586 I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" X.H.

Top Packer Depth 4999 Bottom Packer Depth 5004 Number of Packers 2 Packer Size 6 3/4"

TESTED FROM 5004 TO 5020 ANCHOR LENGTH 16 TOTAL DEPTH 5020 Hole Size 7 7/8"

LEASE & WELL NO. PYLE #5-13 FORMATION TESTED Mississippi TEST NO. 1

Mud Weight 9.0 Viscosity 60 Water Loss 8% Chlorides - Pits 4800 D.S.T.

Maximum Temp. 114 °F Initial Hydrostatic Pressure (A) 2413 P.S.I. Final Hydrostatic Pressure (H) 2399 P.S.I.

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

Tool Closed I.C.I.P. from 5:30 P.m to 6:00 P.m 30 min

Tool Open F.F.P. from 6:00 P.m to 7:00 P.m 60 min

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

Initial Blow WEAK blow for 13 minutes & DIED

Final Blow WEAK blow built to 3 1/2 inches DECREASED & DIED IN 13 minutes

Total Feet Recovered 120 Gravity of Oil \_\_\_\_\_ Corrected \_\_\_\_\_

<u>120</u> Feet of <u>Drilling Mud</u>	% 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 SLID tool 5 feet to bottom

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

Top Recorder No. 78225 Clock No. Electronic Depth 5013 Cir. Sub NONE Sampler NONE

Bottom Recorder No. 13189 Clock No. 47441 Depth 5017 Insurance NONE

Price of Job \_\_\_\_\_

Tool Operator Aene Ludwig

Approved By \_\_\_\_\_

No 13996

from [B] <u>83</u> P.S.I. to [C] <u>95</u> P.S.I.
[D] <u>138</u> P.S.I.
from [E] <u>91</u> P.S.I. to [F] <u>101</u> P.S.I.
[G] <u>291</u> P.S.I.

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, of 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

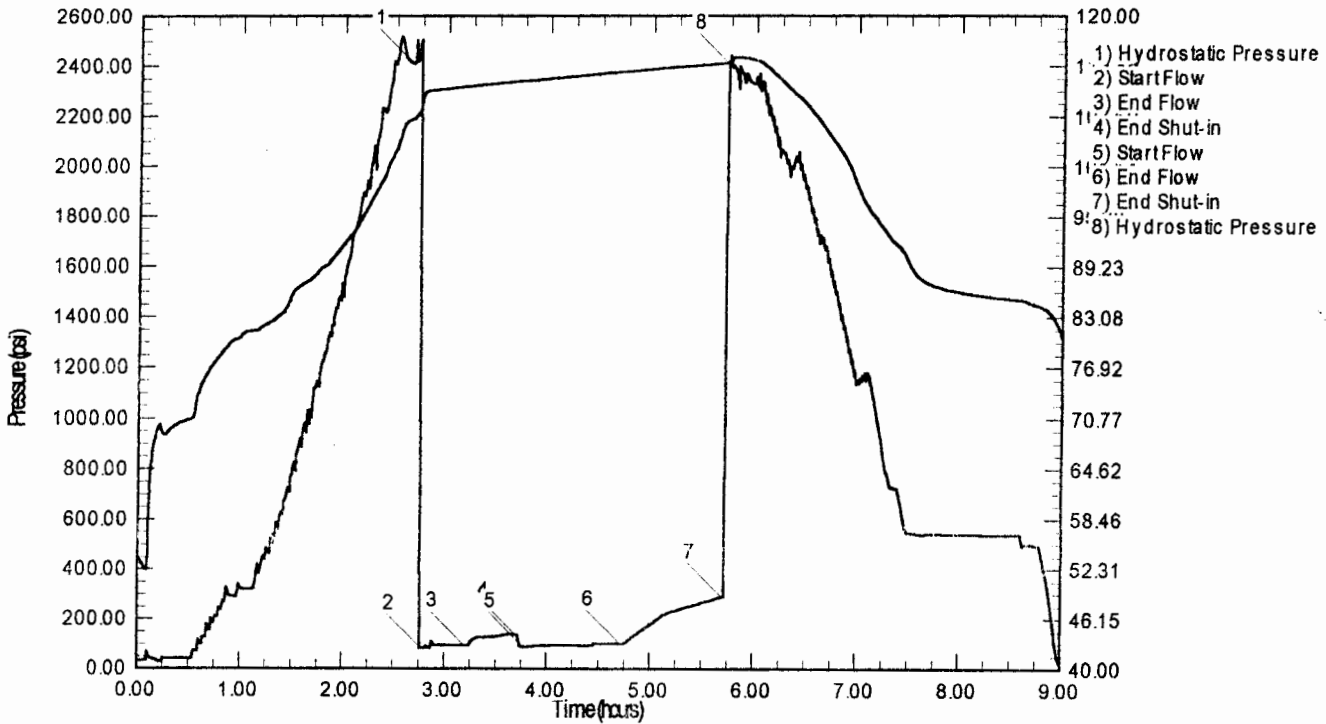
**CHART DATA**

(316) 792-6902

State ..... KANSAS  
 County ..... COMANCHE  
 Field .....

Test Date ..... January 15, 2001  
 Sec Town Range ..... 13-31S-18W  
 Report Number ..... 13996

Company: ONEOK RESOURCES COMPANY    Lease & Well No. PYLE#5-43    Test #: 1    Date: 01-15-01 SEC. 13    TWP. 31S  
 RGE. 18W



**Field Reading**

(1)	Initial Hydrostatic Pressure	2413
(2)	Initial Flow Pressure	83
(3)	Final Initial Flow Pressure	95
(4)	Initial Shut-In Pressure	138
(5)	Initial Final Flow Pressure	91
(6)	Final Flow Pressure	101
(7)	Final Shut-In Pressure	291
(8)	Final Hydrostatic Pressure	2394

**ELECTRONIC RECORDER DEPTH 5013 FT, RECORDER NUMBER 78225**

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND, KANSAS 67530 (316)792-6902

### GENERAL INFORMATION

COMPANY NAME .....	<b>ONEAK RESOURCES COMPANY</b>	LEASE AND WELL NUMBER .....	<b>PYLE #5-13</b>
TEST DATE .....	<b>1/15/01</b>	FORMATION TESTED .....	<b>MISSISSIPPI</b>
SECTION-TOWN-RANGE .....	<b>13-31S-18W</b>	DRILL STEM TEST NUMBER .....	<b>1</b>
STATE .....	<b>KANSAS</b>	REPORT NUMBER .....	<b>13996</b>
COUNTY .....	<b>COMANCHE</b>	ELEVATION KELLY BUSHINGS .....	<b>2079</b>
ELEVATION GROUND LEVEL .....	<b>2068</b>	TESTING ENGINEER .....	<b>GENE BUDIG</b>
COMPANY REPRESENTATIVE .....	<b>HARLD TRAPP</b>		

### TOOL SETTING INFORMATION

TEST INTERVAL (From) .....	<b>5004</b>	TOP PACKER DEPTH .....	<b>4999</b>
TEST INTERVAL (to) .....	<b>5020</b>	BOTTOM PACKER DEPTH .....	<b>5004</b>
ANCHOR LENGTH .....	<b>16</b>	NUMBER OF PACKERS .....	<b>2</b>
TOTAL DEPTH (ft) .....	<b>5020</b>	PACKER SIZE .....	<b>6 3/4</b>
		HOLE SIZE .....	<b>7 7/8</b>

### FLOW TIMES

*INITIAL OPEN*

TOOL OPEN (from) .....	<b>5:00</b>
TOOL OPEN (to) .....	<b>5:30</b>
DURATION (min.) .....	<b>30</b>

*INITIAL SHUT-IN*

TOOL CLOSED (from) .....	<b>5:30</b>
TOOL CLOSED (to) .....	<b>6:00</b>
DURATION (min.) .....	<b>30</b>

*FINAL OPEN*

TOOL OPEN (from) .....	<b>6:00</b>
TOOL OPEN (to) .....	<b>7:00</b>
DURATION (min.) .....	<b>60</b>

*FINAL SHUT-IN*

TOOL CLOSED (from) .....	<b>7:00</b>
TOOL CLOSED (to) .....	<b>8:00</b>
DURATION (min.) .....	<b>60</b>

### PRESSURE READINGS

INITIAL HYDROSTATIC .....	<b>2413</b>
INITIAL FLOW .....	<b>83</b>
FINAL INITIAL FLOW .....	<b>95</b>
INITIAL SHUT-IN .....	<b>138</b>
INITIAL FINAL FLOW .....	<b>91</b>
FINAL FLOW .....	<b>101</b>
FINAL SHUT-IN .....	<b>291</b>
FINAL HYDROSTATIC .....	<b>2394</b>
MAXIMUM TEMPERATURE .....	<b>114</b>
TOP RECORDER DEPTH .....	<b>5013</b>
RECORDER NUMBER .....	<b>78225</b>
BOTTOM RECORDER DEPTH .....	<b>5017</b>
RECORDER NUMBER .....	<b>13189</b>

### INITIAL BLOW

**WEAK BLOW FOR 13 MINUTES AND DIED**

### FINAL BLOW

**WEA BLOW BUILT TO 3 1/2 INCHES INTO THE WATER DECREASED AND DIED IN 13 MINUTES**

### EXTRA EQUIPMENT

JARS .....	<b>YES</b>	EXTRA PACKER (3RD) .....	<b>NO</b>
SAFETY JOINT .....	<b>YES</b>	EXTRA PACKER (4TH) .....	<b>NO</b>
ELECTRONIC RECORDER .....	<b>YES</b>	STRADDLE .....	<b>NO</b>
CIRCULATING SUB .....	<b>NO</b>	HOOK WALL .....	<b>NO</b>
		SAMPLER .....	<b>NO</b>



13-31-18W

# Superior Testers Enterprises, Inc.

R.R. 3, Box 295B, Great Bend, Kansas 67530  
(316) 792-6902

# COPY

Date 01-16-01 Location 40°N - 60°S 90°W N 1/2 13-31-18W Elevation 2079 ft. County Comanche

Company ONSOX Resources Company Number of Copies 5

Charts Mailed to P.O. Box 871 Tulsa OKLAHOMA 74102-0871

Drilling Contractor Cheyenne Drilling Rig # 2

Length Drill Pipe 4389 I.D. Drill Pipe 3.80 Tool Joint Size 4 1/2" F.H.

Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONE

Length Drill Collars 586 I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" K.H.

Top Packer Depth 4999 Bottom Packer Depth 5004 Number of Packers 2 Packer Size 6 3/4"

TESTED FROM 5004 TO 5030 ANCHOR LENGTH 26 TOTAL DEPTH 5030 Hole Size 7 7/8"

LEASE & WELL NO. PYLE #5-13 FORMATION TESTED Mississippi TEST NO. 2

Mud Weight 9.4 Viscosity 56 Water Loss 6.98 Chlorides - Pits 6000 D.S.T. \_\_\_\_\_

Maximum Temp. 116 °F Initial Hydrostatic Pressure (A) 2426 P.S.I. Final Hydrostatic Pressure (H) 2587 P.S.I.

Tool Open I.F.P. from 11:45 pm to 12:15 am 30 min

Tool Closed I.C.I.P. from 12:15 am to 1:15 am 60 min

Tool Open F.F.P. from 1:15 am to 2:45 am 90 min

Tool Closed F.C.I.P. from 2:45 am to 4:45 am 120 min

from [B]	<u>101</u>	P.S.I. to [C]	<u>126</u>	P.S.I.
[D]	<u>620</u>			P.S.I.
from [E]	<u>139</u>	P.S.I. to [F]	<u>181</u>	P.S.I.
[G]	<u>717</u>			P.S.I.

Initial Blow Weak blow built to fair blow built to the bottom of a 5 Gallon bucket in 2 min.

Final Blow Good blow built to the bottom of a 5 Gallon bucket in 2 minutes

Total Feet Recovered 300 Gravity of Oil \_\_\_\_\_ Corrected \_\_\_\_\_

1400 Feet of Gas in the P.P.C % Gas \_\_\_\_\_ % Oil \_\_\_\_\_ % Mud \_\_\_\_\_ % Water \_\_\_\_\_

150 Feet of SLIGHTLY more gas oil cut Gassy mud % Gas 0 % Oil 5 % Mud 95 % Water 0

150 Feet of SLIGHTLY O.I cut Gassy mud % Gas 22 % Oil 13 % Mud 65 % Water 0

\_\_\_\_\_ 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 YES Safety Joint YES Extra Packer NONE Straddle NONE Hook Wall NONE

Top Recorder No. 78225 Clock No. Electronic Depth 5024 Cir. Sub NONE Sampler NONE

Bottom Recorder No. 13189 Clock No. 47441 Depth 5027 Insurance NONE

Price of Job \_\_\_\_\_

Tool Operator Gene Busby

Approved By \_\_\_\_\_  
No 13997

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.**

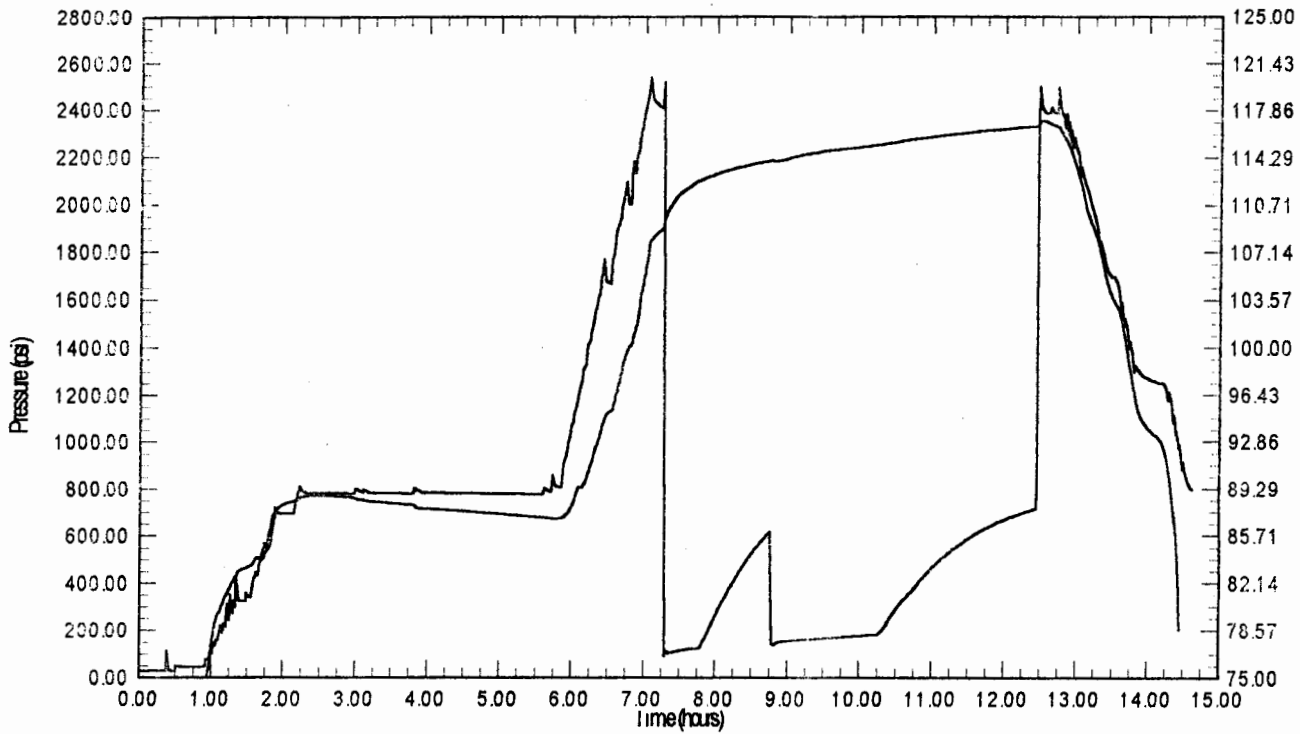
Great Bend, Kansas

**CHART DATA**

(316) 792-6902

State ..... KANSAS  
 County ..... COMANCHE  
 Field .....

Test Date ..... January 16, 2001  
 Sec Town Range ..... 13-31S-18W  
 Report Number ..... 13997



**Field Reading**

(1)	Initial Hydrostatic Pressure	2426
(2)	Initial Flow Pressure	101
(3)	Final Initial Flow Pressure	126
(4)	Initial Shut-In Pressure	620
(5)	Initial Final Flow Pressure	139
(6)	Final Flow Pressure	181
(7)	Final Shut-In Pressure	717
(8)	Final Hydrostatic Pressure	2387

**ELECTRONIC RECORDER DEPTH 55024 FT, RECORDER NUMBER 78225**

Company: ONEOK RESOURCES COMPANY Lease & Well No. PYLE #5-13 Test #: 2 Date: 1-16-01 SEC. 13 TWP. 31S  
 RGE. 18W

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND, KANSAS 67530 (316)792-6902

### GENERAL INFORMATION

COMPANY NAME	ONEOK RESOURCES COMPANY	LEASE AND WELL NUMBER	PYLE #5-13
TEST DATE	1/16/01	FORMATION TESTED	MISSISSIPPI
SECTION-TOWN-RANGE	13-31S-18W	DRILL STEM TEST NUMBER	2
STATE	KANSAS	REPORT NUMBER	13997
COUNTY	COMANCHE	ELEVATION KELLY BUSHINGS	2079
ELEVATION GROUND LEVEL	2068	TESTING ENGINEER	GENE BUDIG
COMPANY REPRESENTATIVE	HAROLD TRAPP		

### TOOL SETTING INFORMATION

TEST INTERVAL (From)	5004	TOP PACKER DEPTH	4999
TEST INTERVAL (to)	5030	BOTTOM PACKER DEPTH	5004
ANCHOR LENGTH	26	NUMBER OF PACKERS	2
TOTAL DEPTH (ft)	5030	PACKER SIZE	6 3/4
		HOLE SIZE	7 7/8

### FLOW TIMES

<i>INITIAL OPEN</i>	
TOOL OPEN (from)	11:45
TOOL OPEN (to)	12:15
DURATION (min.)	30
<i>INITIAL SHUT-IN</i>	
TOOL CLOSED (from)	12:15
TOOL CLOSED (to)	1:15
DURATION (min.)	60
<i>FINAL OPEN</i>	
TOOL OPEN (from)	1:15
TOOL OPEN (to)	2:45
DURATION (min.)	90
<i>FINAL SHUT-IN</i>	
TOOL CLOSED (from)	2:45
TOOL CLOSED (to)	4:45
DURATION (min.)	120

### PRESSURE READINGS

INITIAL HYDROSTATIC	2426
INITIAL FLOW	101
FINAL INITIAL FLOW	126
INITIAL SHUT-IN	620
INITIAL FINAL FLOW	139
FINAL FLOW	181
FINAL SHUT-IN	717
FINAL HYDROSTATIC	2387
MAXIMUM TEMPERATURE	116
TOP RECORDER DEPTH	55024
RECORDER NUMBER	78225
BOTTOM RECORDER DEPTH	5027
RECORDER NUMBER	13189

### INITIAL BLOW

WEAK BUILDING BLOW BUILT TO FAIR AND BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 7 MINUTES

### FINAL BLOW

GOOD BLOW BUILT TO THE BOTTOM OF A 5 GALLON BUCKET IN 3 MINUTES

### EXTRA EQUIPMENT

JARS	YES	EXTRA PACKER (3RD)	NO
SAFETY JOINT	YES	EXTRA PACKER (4TH)	NO
ELECTRONIC RECORDER	YES	STRADDLE	NO
CIRCULATING SUB	NO	HOOK WALL	NO
		SAMPLER	NO

# SUPERIOR TESTERS ENTERPRISES INC.

## DRILL STEM TEST REPORT

GREAT BEND, KANSAS 67530 (316)792-6902

### WELL INFORMATION

DRILLING CONTRACTOR ..... **CHEYENNE DRILLING RIG #2**

DRILL PIPE LENGTH ..... **4389**

DRILL PIPE I.D. .... **3.8**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

DRILL COLLAR LENGTH ..... **586**

DRILL COLLAR I.D. .... **2.25**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

WEIGHT PIPE LENGTH .....

WEIGHT PIPE I.D. .... **2.25**

TOOL JOINT SIZE ..... **4 1/2 X.H.**

MUD WEIGHT #/GAL ..... **9.1+**

VISCOSITY ..... **56**

WATER LOSS ..... **8.8**

CHLORIDES-PITS ..... **6000**

CHLORIDES-DST .....

FEET OF RECOVERY	RECOVERY DESCRIPTION	% GAS	% OIL	% MUD	% WATER				
1)	1400	GAS IN THE PIPE				100			
2)	150	SLIGHTLY OIL CUT GASSY MUD				0	5	95	0
3)	150	SLIGHTLY OIL CUT GASSYMUD				23	13	65	0
4)									
5)									
6)									
7)									
8)									
9)									
10)									
11)									
12)									
13)									
14)									
15)									

TOTAL RECOVERY

### COMMENTS

# SUPERIOR TESTERS ENTERPRISES INC.

GREAT BEND, KANSAS

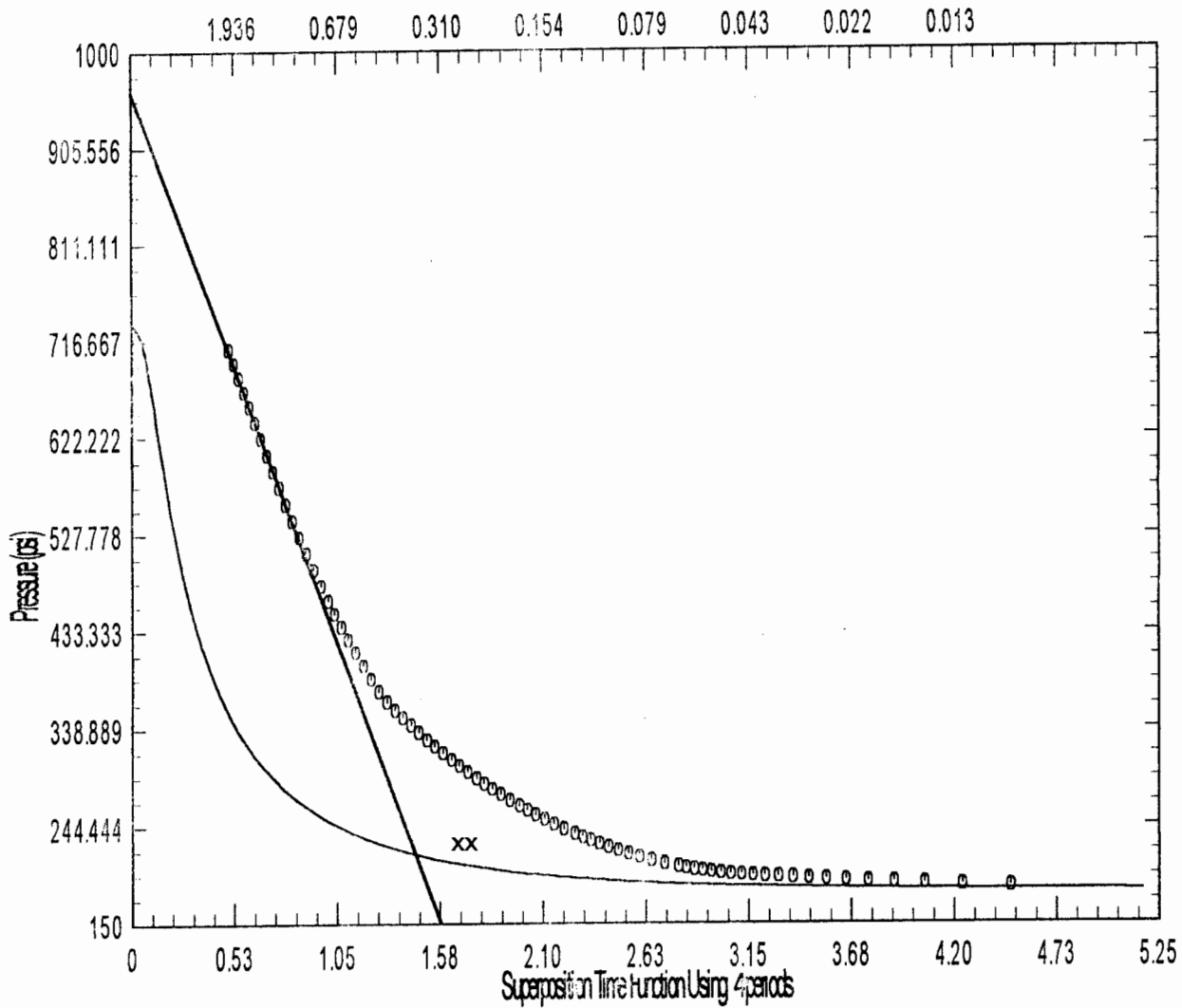
## SUPERPOSITION ANALYSIS

(316) 792-6902

### 2ND SHUT-IN

State ..... KANSAS  
 County ..... COMANCHE  
 Field .....

Test Date ..... 1/16/01  
 Sec Town Range ..... 13-31S-18W  
 Report Number ..... 13997



**MODEL RESULTS**

Constant Storage	Skin Model	Homogeneous	No Boundaries	h : 10 ft
C1 : 3.000E-4 bbl/psi	Skin : 2.29	k : 0.105 md		mu : 2.407 cp
		Est Pi: 735.8 psi		phi : 20.0%
				ct : 6.815E-04 1/psi
				rw : 3.208 ft
				FVF : 1.41

**General Information**

Company Name	ONEOAK RESOURCES
Well	PYLE #5-13
Test Description	MISSISSIPPI
State	KANSAS
County	COMANCHE
Field	WILMORE
Test Date	16-Jan-01
Interpretation Date	01-16--01
Report Number	13997

**Input Data**

Test Type	Build-up
Fluid Type	Oil
Last Rate Prior to Shut-in	2
Rate Units	bopd
Zone Height [h] (ft)	10
Porosity (frac)	0.20
Viscosity (cp)	2.407
Total Compressibility (1/psi)	6.8150E-04
Formation Volume Factor	1.4120
Open Hole Radius (ft)	3.208
Distance Between Wells (ft)	

**Results**

Model Specialized Analysis

Wellbore Storage Type	Constant Storage	
Storage Coeff 1 (bbls/psi)	0.0003	Cartesian
Storage Coeff 2 (bbls/psi)	0	
Transition Level	0	
Skin Model	Skin	
Skin or Fracture Length	2.282512	2.35 Semi-log Squid
FCD if applicable	0	

Shut-in Duration	2.2
Last Flowing Pressure	182
Last Shut-in Pressure	717.15
Bottomhole Temp (F)	116

Reservoir Model	Homogeneous	
Permeability (md)	0.105	0.11 Semi-log
Transmissibility (kh/u)	0	0.45 Semi-log
Omega if Applicable	0	
Lambda if Applicable	0	
Initial Pressure or P* (psi)	0	9.61E+02 Semi-log

Packer Depth	4999-5004
Gauge Depth	5024
Top of Perforations	5004
Bottom of Perforations	5030
TD	5030

**Boundary Model**

Boundary Model	Parallel No Flow
Distance to Single Fault or L1 or Re	0
L2	0
L3	0
L4	0
Average Pressure	

Tubing O.D.	
Tubing I.D.	
Tubing Length	

**Calculations**

Radius of Investigation (ft)	1	0.8671
Delta P Skin (psi)	2089.61	2126.991
Percent of Total DP	11.49	11.6945
Semi-log Slope (m)	1049.525	1027.234

Water Saturation	0.4
Gas Saturation	0.3
Oil Saturation	0.3
Gas Specific Gravity (dim)	0.65
Oil Gravity - API	35
GLR(scF/bbl)	160
Water Cut	0
Reference Date	1/17/01
Reference Real Time	11:56:50
Reference Elapsed Time	0

Field :  
County or Parish :  
State :

Date Printed: 01/17/01 12:25:44  
Analysis Period : End Flow - 05-End 2NDS Shut-in  
Comment : Line #

---

Superposition Slope -> m' ..... -513.366700  
Horner Slope -> m ..... -1026.733398  
Intercept ..... 961.302  
P(dt=1 hr) ..... 534.705  
Pwf ..... 181.880  
R Sqr ..... 0.9994

k (md) ..... 0.10763  
kh (md-ft) ..... 1.07630  
k/u (md/cp) ..... 0.04472  
kh/uB (md-ft/cp) ..... 0.31673

Skin ..... 2.380  
DP Skin ..... 2125.850  
Total DP ..... 779.422  
Percent DP ..... 272.75%

Radius Invest (ft) ..... 1  
Radius Time (hrs) ..... 2.20

Delta Q = ..... 2  
h (ft)= ..... 10  
mu = ..... 2.407  
B = ..... 1.412

First Point # ..... 262  
Second Point # ..... 299  
Start Real Time ..... 0.933  
End Real Time ..... 2.103  
Start SF Time ..... 0.868