

# Superior Testers Enterprises, Inc.

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

(316) 792-6902

Date 3-1-1989 Location 100'W-C1W2-SESW 27-14-13<sup>W</sup> Elevation 1707 K.B. County Russell  
 Company Colfax Development Number of Copies 5  
 Charts Mailed to P.O. Box 467 Russell Kansas 67665  
 Drilling Contractor Emphasis Drilling Rig # 7  
 Length Drill Pipe 3048 I.D. Drill Pipe 3.80 Tool Joint Size 4 1/2" X.H.  
 Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONE  
 Length Drill Collars 31 I.D. Drill Collars 2.25 Tool Joint Size 4 1/2" X.H.  
 Top Packer Depth 3093 Bottom Packer Depth 3098 Number of Packers 2 Packer Size 6 3/4"  
 TESTED FROM 3098 TO 3122 ANCHOR LENGTH 24 TOTAL DEPTH 3122 Hole Size 7 7/8"  
 LEASE & WELL NO. Rein #1 FORMATION TESTED Artificial Gorham Sand TEST NO. 1  
 Mud Weight 97 Viscosity 44 Water Loss 10 1/4 Chlorides - Pits 39000 D.S.T. 13000  
 Maximum Temp. 113 °F Initial Hydrostatic Pressure (A) 1616 P.S.I. Final Hydrostatic Pressure (H) 1605 P.S.I.

Tool Open I.F.P. from 8:10 p.m. to 8:40 p.m. 30 min  
 Tool Closed I.C.I.P. from 8:40 p.m. to 9:25 p.m. 45 min  
 Tool Open F.F.P. from 9:25 p.m. to 9:55 p.m. 30 min  
 Tool Closed F.C.I.P. from 9:55 p.m. to 10:40 p.m. 45 min  
 Initial Blow Good blow - built to the bottom of a 5 gallon bucket in 4 min.  
 Final Blow Good blow - built to the bottom of a 5 gallon bucket in 4 min.  
 Total Feet Recovered 1350 Gravity of Oil \_\_\_\_\_ Corrected \_\_\_\_\_

from [B] 77 P.S.I. to [C] 351 P.S.I.  
 [D] 1078 P.S.I.  
 from [E] 408 P.S.I. to [F] 574 P.S.I.  
 [G] 1078 P.S.I.

<u>30</u> Feet of <u>muddy Gassy oil</u>	<u>20</u> % Gas	<u>38</u> % Oil	<u>30</u> % Mud	<u>12</u> % Water
<u>60</u> Feet of <u>oil &amp; gas slightly water cut</u>	<u>7</u> % Gas	<u>70</u> % Oil	<u>3</u> % Mud	<u>20</u> % Water
<u>120</u> Feet of <u>Slightly water cut oil</u>	<u>19</u> % Gas	<u>58</u> % Oil	<u>0</u> % Mud	<u>23</u> % Water
<u>120</u> Feet of <u>water cut oil</u>	<u>12</u> % Gas	<u>55</u> % Oil	<u>0</u> % Mud	<u>38</u> % Water
<u>300</u> Feet of <u>water cut oil</u>	<u>12</u> % Gas	<u>58</u> % Oil	<u>0</u> % Mud	<u>30</u> % Water
<u>300</u> Feet of <u>water cut oil</u>	<u>2</u> % Gas	<u>58</u> % Oil	<u>0</u> % Mud	<u>40</u> % Water
<u>330</u> Feet of <u>water cut oil</u>	<u>0</u> % Gas	<u>58</u> % Oil	<u>0</u> % Mud	<u>42</u> % Water
<u>90</u> Feet of <u>water</u>	<u>0</u> % Gas	<u>0</u> % Oil	<u>0</u> % Mud	<u>100</u> % Water
Feet of _____	% Gas	% Oil	% Mud	% Water

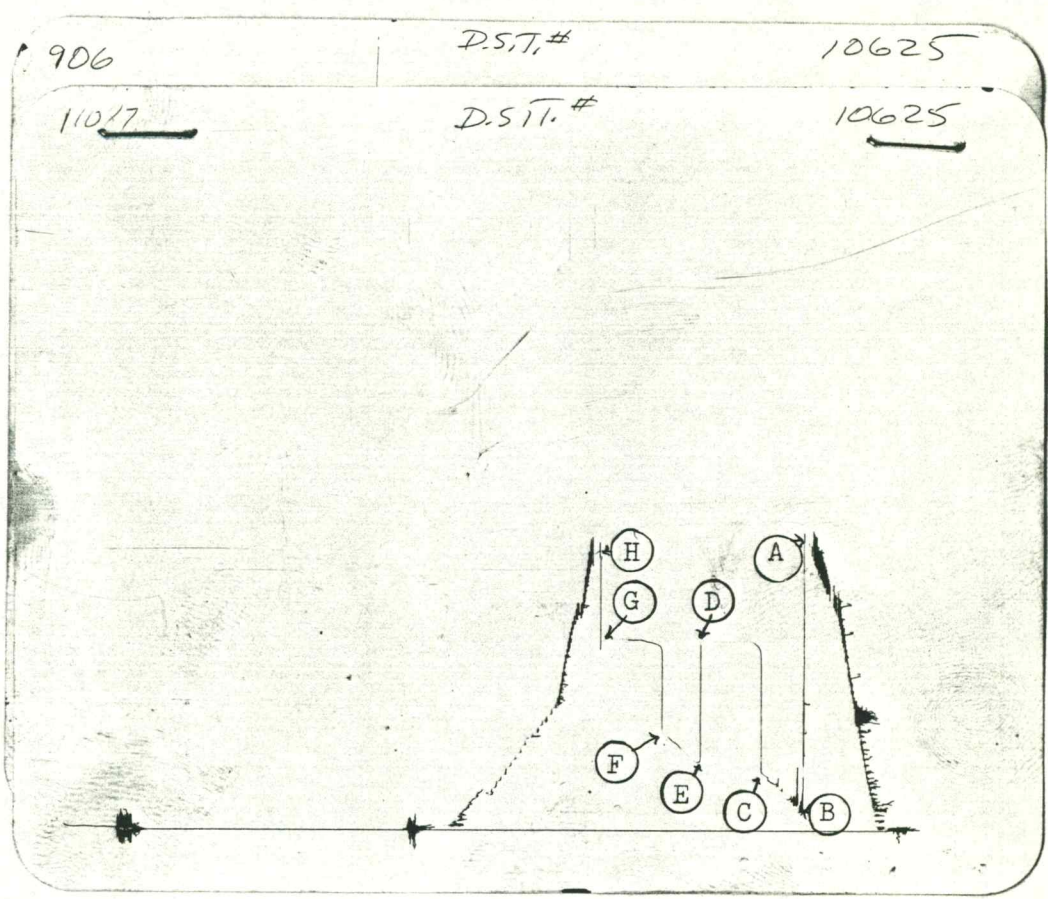
Remarks \_\_\_\_\_

Extra Equipment - Jars None Safety Joint None Extra Packer None Straddle None Hook Wall None  
 Top Recorder No. 11087 Clock No. 47441 Depth 3116 Cir. Sub None Sampler None  
 Bottom Recorder No. 906 Clock No. 47442 Depth 3119 Insurance None

Price of Job \_\_\_\_\_  
 Tool Operator Gene Budig  
 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 10625**



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud .....	1616	1641	P.S.I.
(B) First Initial Flow Pressure .....	77	109	P.S.I.
(C) First Final Flow Pressure .....	331	303	P.S.I.
(D) Initial Closed-in Pressure .....	1078	1087	P.S.I.
(E) Second Initial Flow Pressure .....	408	395	P.S.I.
(F) Second Final Flow Pressure .....	574	560	P.S.I.
(G) Final Closed-in Pressure .....	1078	1093	P.S.I.
(H) Final Hydrostatic Mud .....	1605	1583	P.S.I.

SUPERIOR TESTERS ENTERPRISES INC.

WELL IDENTIFICATION DATA

COMPANY : COL KAN DEVELOPMENT      WELL NAME : REIN #1  
ADDRESS : P.O. BOX 467, RUSSELL      LOCATION : 100'W-C/W2-SE-SW 27-14-13  
STATE & COUNTY : KANSAS, RUSSELL      FIELD :  
ELEV. (GR) : 1705      (KB) : 1707      TEST DATE : 3-1-1989

EQUIPMENT AND HOLE DATA

FORMATION TESTED : GORHAM SAND      DRILL PIPE LENGTH(ft) : 3048  
TEST INT. KB : 3098      to 3122      DRILL PIPE O.D. (in) : 3.82  
ANCHOR LENGTH(ft) : 24      WEIGHT PIPE LENGTH(ft) :  
TYPE OF TEST : Conventional      WEIGHT PIPE ID : 2.75  
TOTAL DEPTH(ft-*kb*) : 3122      DRILL COLLAR LENGTH(ft) : 31  
MAIN HOLE SIZE(in) : 7 7/8      DRILL COLLAR I.D. (in) : 2.259  
MUD WEIGHT : 9.7      TOP PACKER DEPTH(*kb*) : 3093  
MUD VISCOSITY : 44      BOTTOM PACKER DEPTH(*kb*) : 3098  
MUD CHLORIDES : 39000      DUAL PACKERS :  
SURFACE CHOKE : 3/4      PACKER SIZE(in) : 6 3/4  
BOTTOM CHOKE(in) : 3/4      PACKER HOLD : Yes  
TOOL SIZE(O.D.) : 5 1/2      TOOL PLUG : No  
TOOL JOINT SIZE(F.H.) : 4 1/2      REVERSED OUT : No  
RESERVOIR TEMPERATURE(F) : 113      TEST TICKET NUMBER : 10625

EXTRA EQUIPMENT :

ELEMENT SERIAL NO. : 11087  
RANGE : 0 - 4350      CLOCK RANGE : 12 HOURS  
CAL. EQU. : 1094.24 \* Defl. + 5.06

SURFACE BLOW

1st Opening : GOOD BLOW-BOTTOM OF THE BUCKET IN 4 MIN.  
2nd Opening : GOOD BLOW-BOTTOM OF THE BUCKET IN 4 MIN.

RECOVERY

Recovered 1350 feet of WATER CUT OIL

REMARKS :

WITNESSED BY : BRAD HUTCHINSON      TOOL OPERATOR : GENE BUDIG

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES INC.

SUPERIOR TESTERS ENTERPRISES INC.

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY : COL KAN DEVELOPMENT  
 DATE OF TEST : 3-1-1989  
 DEPTH : 3116.0

WELL NAME : REIN #1  
 LOCATION : 100'W-C/W2-SE-SW 27-14-13  
 SERIAL NO. : 11087

COMMENTS	TIME min	DEFL in	PRESSURE PSIG		
			----- CALC	CORR	CORRECTED
TEST NO.:1					
Depth : 3116.0 ft-kb					
-1ST HYDROSTATIC	0.0	1.492	1637.66	4.10	1641.76
-8:10 1ST FLOW	0.0	.099	113.39	-4.36	109.03
- 8:15	5.0	.134	151.69	-4.11	147.58
- 8:20	10.0	.142	160.44	-4.06	156.39
- 8:25	15.0	.188	210.78	-3.73	207.05
- 8:30	20.0	.235	262.21	-3.40	258.81
- 8:35	25.0	.264	293.94	-3.19	290.75
- 8:40	30.0	.303	336.62	-2.91	333.70
-8:40 END FLOW	0.0	.303	336.62	-2.91	333.70
- 8:41	1.0	.943	1036.93	1.53	1038.46
- 8:42	2.0	.953	1047.87	1.58	1049.45
- 8:43	3.0	.958	1053.34	1.60	1054.95
- 8:46	6.0	.976	1073.04	1.69	1074.73
- 8:49	9.0	.983	1080.70	1.72	1082.42
- 8:52	12.0	.985	1082.88	1.73	1084.62
- 8:55	15.0	.987	1085.07	1.74	1086.81
- 8:58	18.0	.987	1085.07	1.74	1086.81
- 9:02	22.0	.987	1085.07	1.74	1086.81
- 9:07	27.0	.987	1085.07	1.74	1086.81
- 9:11	31.0	.987	1085.07	1.74	1086.81
- 9:13	33.0	.988	1086.17	1.74	1087.91
- 9:16	36.0	.988	1086.17	1.74	1087.91
- 9:19	39.0	.988	1086.17	1.74	1087.91
- 9:22	42.0	.988	1086.17	1.74	1087.91
- 9:25	45.0	.988	1086.17	1.74	1087.91
-9:25 1ST SHUT-IN	0.0	.988	1086.17	1.74	1087.91
-9:25 2ND FLOW	0.0	.359	397.89	-2.52	395.37
- 9:30	5.0	.365	404.46	-2.48	401.98
- 9:35	10.0	.395	437.28	-2.26	435.02
- 9:40	15.0	.429	474.49	-2.02	472.47
- 9:45	20.0	.459	507.32	-1.81	505.51
- 9:50	25.0	.494	545.61	-1.56	544.05
- 9:53	28.0	.509	562.03	-1.46	560.57
-9:53 END FLOW	0.0	.509	562.03	-1.46	560.57
- 9:54	1.0	.951	1045.68	1.57	1047.25
- 9:55	2.0	.959	1054.43	1.61	1056.04
- 9:56	3.0	.963	1058.81	1.63	1060.44
- 9:59	6.0	.969	1065.38	1.66	1067.03
- 10:02	9.0	.974	1070.85	1.68	1072.53
- 10:05	12.0	.979	1076.32	1.70	1078.02

SUPERIOR TESTERS ENTERPRISES INC.

SUBSURFACE PRESSURE MEASUREMENTS

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COMPANY : COL KAN DEVELOPMENT  
 DATE OF TEST : 3-1-1989  
 DEPTH : 3116.0

WELL NAME : REIN #1  
 LOCATION : 100'W-C/W2-SE-SW 27-14-13  
 SERIAL NO. : 11087

COMMENTS	TIME min	DEFL in	PRESSURE PSIG		
			----- CALC	CORR	CORRECTED
TEST NO.: 1					
- 10:08	15.0	.983	1080.70	1.72	1082.42
- 10:11	18.0	.984	1081.79	1.73	1083.52
- 10:14	21.0	.984	1081.79	1.73	1083.52
- 10:17	24.0	.984	1081.79	1.73	1083.52
- 10:20	27.0	.986	1083.98	1.74	1085.71
- 10:23	30.0	.987	1085.07	1.74	1086.81
- 10:26	33.0	.987	1085.07	1.74	1086.81
- 10:29	36.0	.987	1085.07	1.74	1086.81
- 10:32	39.0	.987	1085.07	1.74	1086.81
- 10:35	42.0	.993	1091.64	1.77	1093.41
- 10:38	45.0	.993	1091.64	1.77	1093.41
-10:38 2ND SHUT-IN	0.0	.993	1091.64	1.77	1093.41
-2ND HYDROSTATIC	0.0	1.439	1579.67	3.85	1583.52

CALCULATED RECOVERY ANALYSIS

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DST Number:1

Test ticket number:10625

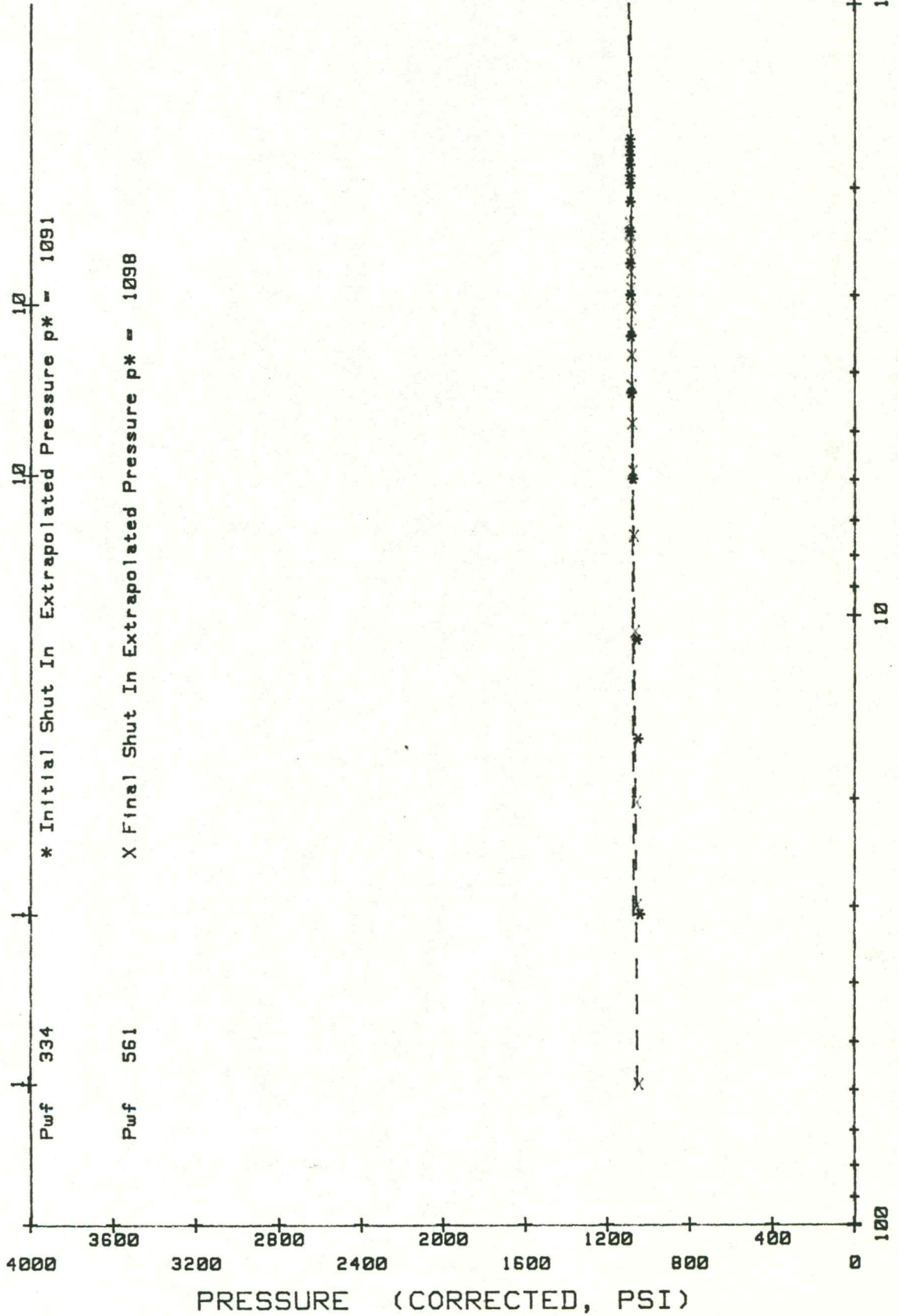
Sample #	Total Feet	***** Gas ***** %	***** Gas ***** Feet	***** Oil ***** %	***** Oil ***** Feet	***** Mud ***** %	***** Mud ***** Feet
1	30	20.00	6.00	38.00	11.40	30.00	9.00
2	60	7.00	4.20	70.00	42.00	3.00	1.80
3	120	19.00	22.80	58.00	69.60	0.00	0.00
4	120	12.00	14.40	55.00	66.00	0.00	0.00
5	300	12.00	36.00	58.00	174.00	0.00	0.00
6	300	2.00	6.00	58.00	174.00	0.00	0.00
7	330	0.00	0.00	58.00	191.40	0.00	0.00
8	90	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1350	6.62	89.40	53.96	728.40	.80	10.80

Sample #	Total Feet	**** WATER **** %	**** WATER **** Feet	Chlorides (ppm)	Resistivity (ohms)	Temperature (deg)
1	30	12.00	3.60	13000.00	.28	75.00
2	60	20.00	12.00	13000.00	.28	75.00
3	120	23.00	27.60	13000.00	.28	75.00
4	120	38.00	45.60	13000.00	.28	75.00
5	300	30.00	90.00	13000.00	.28	75.00
6	300	40.00	120.00	13000.00	.28	75.00
7	330	42.00	138.60	13000.00	.28	75.00
8	90	100.00	90.00	13000.00	.28	75.00
TOTAL	1350	39.07	527.40			

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

GAUGE # : 11087

LOCATION : 100'W-C/W2-SE-SW 27-14-13DATE : 3-1-1989



SUPERIOR TESTERS ENTERPRISES INC.

HORNER ANALYSIS

COMPANY : COL KAN DEVELOPMENT  
 WELL NAME : REIN #1  
 LOCATION : 100'W-C/W2-SE-SW 27-14-13  
 STATE & COUNTY : KANSAS,RUSSELL  
 DATE OF TEST : 3-1-1989  
 TEST INT. KB : 3098 to 3122  
 TOTAL INTERVAL (ft) K.B. : 24.00  
 ELEV.(GR) : 1705 (KB) : 1707  
 FIELD :

ELEMENT SERIAL NO. : 11087  
 LATEST CALIBRATION :

COMMENTS	TIME min	(T+dt)/dt min	----- PRESSURES CORR PSIG
Refer. depth :	3116.0 ft-kb		
-8:40 END FLOW	0.00	0.00	333.70
	1.00	31.00	1038.55
	2.00	16.00	1049.56
	3.00	11.00	1055.07
	6.00	6.00	1074.89
	9.00	4.33	1082.60
	12.00	3.50	1084.80
	15.00	3.00	1087.00
	18.00	2.67	1087.00
	22.00	2.36	1087.00
	27.00	2.11	1087.00
	31.00	1.97	1087.00
	33.00	1.91	1088.11
	36.00	1.83	1088.11
	39.00	1.77	1088.11
	42.00	1.71	1088.11
	45.00	1.67	1088.11
-9:25 1ST SHUT-IN	0.00	0.00	1088.11

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

SUPERIOR TESTERS ENTERPRISES INC.

HORNER ANALYSIS

COMPANY : COL KAN DEVELOPMENT  
 WELL NAME : REIN #1  
 LOCATION : 100'W-C/W2-SE-SW 27-14-13  
 STATE & COUNTY : KANSAS,RUSSELL  
 DATE OF TEST : 3-1-1989  
 TEST INT. KB : 3098 to 3122  
 TOTAL INTERVAL (ft) K.B. : 24.00  
 ELEV.(GR) : 1705 (KB) : 1707  
 FIELD :

ELEMENT SERIAL NO. : 11087  
 LATEST CALIBRATION :

COMMENTS	TIME min	(T+dt)/dt min	----- PRESSURES CORR PSIG	-----
Refer. depth :	3116.0 ft-kb			
-9:53 END FLOW	0.00	0.00	560.57	
	1.00	59.00	1047.36	
	2.00	30.00	1056.17	
	3.00	20.33	1060.57	
	6.00	10.67	1067.18	
	9.00	7.44	1072.69	
	12.00	5.83	1078.19	
	15.00	4.87	1082.60	
	18.00	4.22	1083.70	
	21.00	3.76	1083.70	
	24.00	3.42	1083.70	
	27.00	3.15	1085.90	
	30.00	2.93	1087.00	
	33.00	2.76	1087.00	
	36.00	2.61	1087.00	
	39.00	2.49	1087.00	
	42.00	2.38	1093.61	
	45.00	2.29	1093.61	
-10:38 2ND SHUT-IN	0.00	0.00	1093.61	

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

SUPERIOR TESTERS ENTERPRISES INC.

D A T A S U M M A R Y

COMPANY : COL KAN DEVELOPMENT                      WELL NAME : REIN #1  
DATE OF TEST : 3-1-1989                              LOCATION : 100'W-C/W2-SE-SW 27-14-13  
DST. NO : 1    SHUT-IN PERIOD : 1

INTERPRETIVE DATA                      (OIL)

EXTRAPOLATED RESERVOIR PRESSURE (psi): ..... 1091.00  
Slope of Build-up Curve (psi/log cycle): ..... 11.62  
Effective Producing Time (min): ..... 30.00

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

SUPERIOR TESTERS ENTERPRISES INC.

DATA SUMMARY

COMPANY : COL KAN DEVELOPMENT                      WELL NAME : REIN #1  
 DATE OF TEST : 3-1-1989                              LOCATION : 100'W-C/W2-SE-SW 27-14-13  
 DST. NO : 1    SHUT-IN PERIOD : 2

INTERPRETIVE DATA                      (OIL)

TRANSMISSIBILITY

Oil (md.ft/cp): ..... 1657.34  
 Gas (md.ft/cp): ..... 0.00

EFFECTIVE PERMEABILITY

Oil (md): ..... 161.76  
 Gas (md): ..... 0.00

TOTAL MOBILITY (md/cp): ..... 322.26

TOTAL COMPRESSIBILITY (psi<sup>-1</sup>): ..... 5.72E-06

ESTIMATED DAMAGE RATIO: ..... 4.83

CALCULATED DAMAGE RATIO: ..... 3.43

Reservoir Temperature (F): ..... 113.00

Formation Porosity : ..... .18

Formation Thickness (ft): ..... 10.00

Wellbore Radius (in): ..... 3.94

Reservoir Compressibility (psi<sup>-1</sup>): ..... 4.80E-07

Calculated Skin Factor : ..... 17.39

PRODUCTION WITH DAMAGE REMOVED (bbl/D): ..... 880.27

PRODUCTIVITY INDEX (bbl/psi): ..... .48

Final Flow Pressure (psi): ..... 561.00

APPROXIMATE RADIUS OF INVESTIGATION (ft): ..... 561.40

Total Flowing Time (min): ..... 58.00

EXTRAPOLATED RESERVOIR PRESSURE (psi): ..... 1098.00

Slope of Build-up Curve (psi/log cycle): ..... 25.18

Effective Producing Time (min): ..... 58.00