



OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

December 9, 1980

City Service Gas
Welda, Kansas 66091

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Brecheisen Section 10 Lease, Well No. 28, located in Anderson County, Kansas and submitted to our laboratory on October 2, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/mkf

4 c to Welda, Ks.
1 c to Garnett, Ks.

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company City Service Gas Lease Brecheisen, Sec. 10 Well No. 28

Location _____

Section 10 Twp. 22S Rge. 19E County Anderson State Kansas

Elevation, Feet	-
Name of Sand	Squirrel
Top of Core	794.0
Bottom of Core	815.0
Top of Sand	794.0
Bottom of Sand	808.0
Total Feet of Permeable Sand	7.0
Total Feet of Floodable Sand	0.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

	Feet	Cum. Ft.
0 - 5	5.0	5.0
5 - 10	2.0	7.0

Average Permeability Millidarcys	3.3
Average Percent Porosity	12.1
Average Percent Oil Saturation	36.1
Average Percent Water Saturation	56.4
Average Oil Content, Bbls./A. Ft.	341.
Total Oil Content, Bbls./Acre	4777.
Average Percent Oil Recovery by Laboratory Flooding Tests	0.0
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	0.0
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	0.0
Total Calculated Oil Recovery, Bbls./Acre	0.0

The core was sampled by a representative of Oilfield Research Laboratories. Fresh water was used as a drilling fluid. The core was reported to be from a virgin area.

Since the core did not respond to flooding susceptibility tests, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, <u>Feet</u>	<u>Description</u>
794.0 - 799.2	Grayish light brown very shaly sandstone.
799.2 - 799.7	Brown shaly sandstone.
799.7 - 804.2	Brown and gray laminated sandstone and shale.
804.2 - 808.0	Grayish light brown very shaly sandstone.
808.0 - 815.0	Gray sandy shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company City Service Gas Lease Brecheisen, Sec. 10 Well No. 28

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbbs. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	794.5	12.2	39	50	89	369	Imp.	1.0	1.0	369	0.00
2	795.5	7.4	47	50	97	270	Imp.	1.0	2.0	270	0.00
3	796.5	14.6	65	29	94	736	Imp.	1.0	3.0	736	0.00
4	797.5	11.0	31	67	98	265	2.8	1.0	4.0	265	2.80
5	798.5	12.5	32	61	93	310	Imp.	1.2	5.2	372	0.00
6	799.5	18.0	30	30	60	419	7.5	0.5	5.7	210	3.75
7	800.5	9.7	38	59	97	286	8.9	1.5	7.2	429	13.35
8	801.5	11.4	22	73	95	195	1.0	1.0	8.2	195	1.00
9	802.5	13.5	38	54	92	398	1.6	1.0	9.2	398	1.60
10	803.5	14.7	53	44	97	604	0.50	1.0	10.2	604	0.50
11	804.5	11.8	36	61	97	330	Imp.	0.8	11.0	264	0.00
12	805.5	11.5	19	74	93	170	Imp.	1.0	12.0	170.	0.00
13	806.5	14.1	20	59	79	219	0.18	1.0	13.0	219	0.18
14	807.5	11.1	32	64	96	276	Imp.	1.0	14.0	276	0.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company City Service Gas Lease Brecheisen, Sec. 10 Well No. 28

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
794.0 - 808.0	7.0	3.3	33.18

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Ebls./Acre
794.0 - 808.0	14.0	12.1	36.1	341	4,777

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	794.5	12.5	38	369	0	0	38	52	369	0	Imp.	-
2	795.5	7.3	47	266	0	0	47	50	266	0	Imp.	-
3	796.5	14.4	66	737	0	0	66	28	737	0	Imp.	-
4	797.5	11.0	31	265	0	0	31	67	265	0	Imp.	-
5	798.5	13.0	31	313	0	0	31	63	313	0	Imp.	-
6	799.5	17.9	30	417	0	0	30	32	417	0	Imp.	-
7	800.5	9.9	37	284	0	0	37	60	284	0	Imp.	-
8	801.5	11.5	22	196	0	0	22	73	196	0	Imp.	-
9	802.5	13.3	38	392	0	0	38	55	392	0	Imp.	-
10	803.5	14.2	54	595	0	0	54	43	595	0	Imp.	-
11	804.5	12.2	35	331	0	0	35	62	331	0	Imp.	-
12	805.5	11.4	19	168	0	0	19	75	168	0	Imp.	-
13	806.5	13.7	21	223	0	0	21	62	223	0	Imp.	-
14	807.5	11.1	32	276	0	0	32	65	276	0	Imp.	-

Company City Service Gas Lease Brecheisen, Sec. 10 Well No. 28

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.