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

March 12, 1980

H. Zander Corporation
P.O. Box 225
Paola, Kansas 66071

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Day Lease, Well No. A-4, Miami County, Kansas, and submitted to our laboratory on February 21, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/tem

3 c to Paola, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company H. Zander Corporation Lease Day Well No. A-4

Location NW¼

Section 22 Twp. 19S. Rge. 22E County Miami State Kansas

Elevation, Feet	-
Name of Sand	Lower Squirrel
Top of Core	507.0
Bottom of Core	521.5
Top of Sand	509.
Bottom of Sand	521.5
Total Feet of Permeable Sand	5.8
Total Feet of Floodable Sand	0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	4.4	4.4
5 - 10	1.4	5.8

Average Permeability Millidarcys	2.9
Average Percent Porosity	13.1
Average Percent Oil Saturation	26.0
Average Percent Water Saturation	61.9
Average Oil Content, Bbls./A. Ft.	279.
Total Oil Content, Bbls./Acre	2,258.
Average Percent Oil Recovery by Laboratory Flooding Tests	0
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	0
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	0
Total Calculated Oil Recovery, Bbls./Acre	0

The core was sampled and the samples sealed in plastic bags by a representative of the client. Fresh water mud was used as a drilling fluid. The core was reported to be from a virgin area.

Since the core did not respond to floodpot testing, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
507.0 - 509.0	Gray sandy shale.
509.0 - 510.9	Grayish brown very shaly sandstone.
510.9 - 515.3	Gray sandy shale.
515.3 - 516.7	Grayish brown shaly sandstone.
516.7 - 519.1	Brown and gray laminated sandstone and shale.
519.1 - 520.7	Grayish brown shaly sandstone.
520.7 - 521.5	Gray very shaly sandstone.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company H. Zander Corporation **Lease** Day **Well No.** A-4

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	509.5	15.7	24	61	85	292	Imp.	1.0	1.0	292	0.00
2	510.5	15.3	23	73	96	273	0.33	0.9	1.9	246	0.30
3	515.6	18.6	51	43	94	736	7.8	0.7	2.6	515	5.46
4	516.5	13.4	27	70	97	281	3.6	0.7	3.3	197	2.52
5	517.5	3.5	20	60	80	54	Imp.	1.3	4.6	70	0.00
6	518.6	11.9	29	60	89	268	0.52	1.1	5.7	295	0.57
7	519.5	15.7	33	50	83	402	4.1	0.9	6.6	362	3.69
8	520.5	15.5	27	59	86	325	5.8	0.7	7.3	228	4.06
9	521.2	14.1	6	82	88	66	0.54	0.8	8.1	53	0.43

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company H. Zander Corporation Lease Day Well No. A-4

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
509.0 - 521.5	5.8	2.9	17.03

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
509.0 - 521.5	8.1	13.1	26.0	61.9	279	2,258

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company H. Zander Corporation Lease Day Well No. A-4

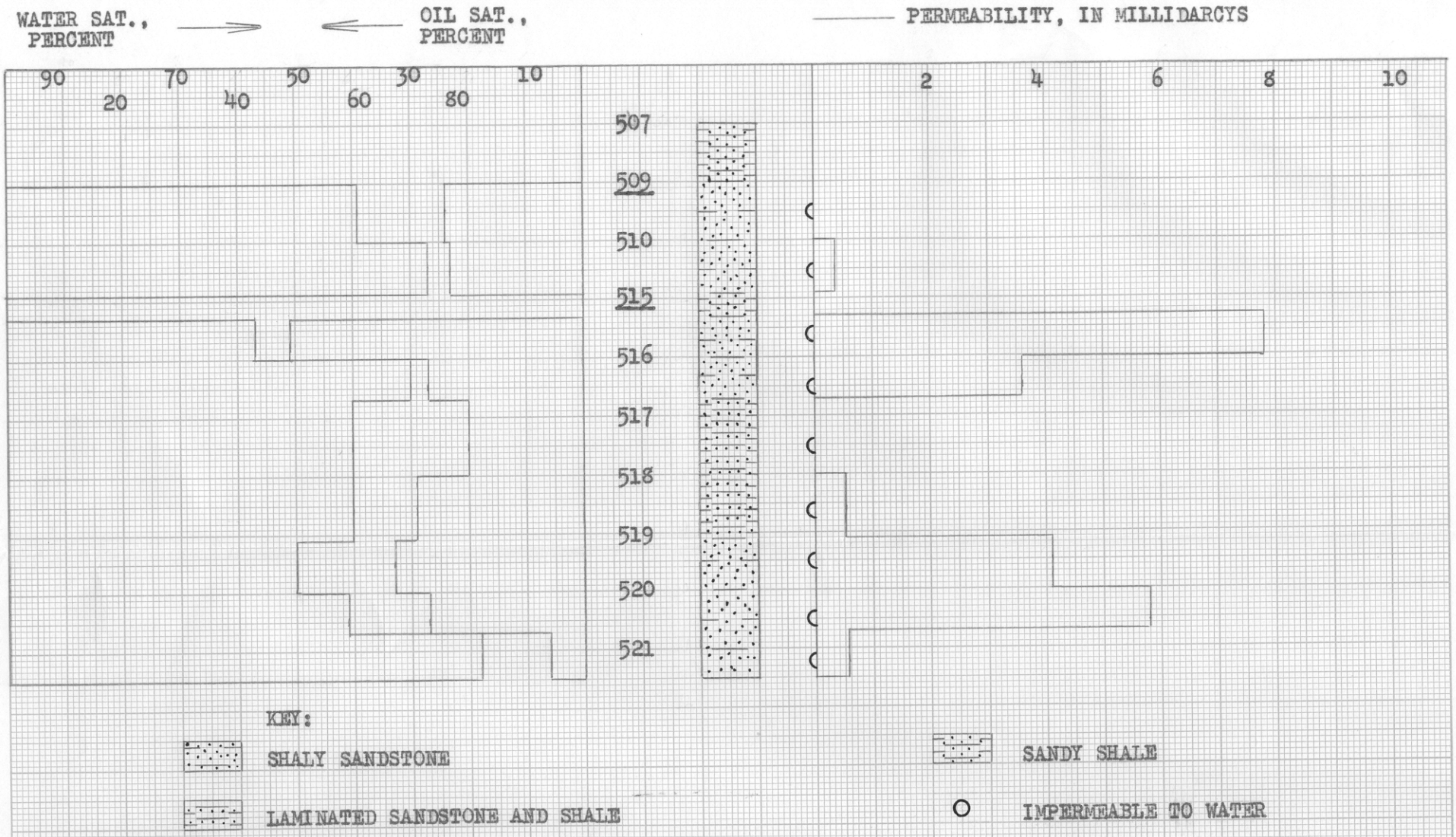
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	509.5	15.2	26	307	0	0	26	62	307	0	Imp.	-
2	510.5	15.4	23	275	0	0	23	74	275	0	Imp.	-
3	515.6	18.3	51	724	0	0	51	45	724	0	Imp.	-
4	516.5	13.9	25	270	0	0	25	73	270	0	Imp.	-
5	517.5	3.8	19	56	0	0	19	64	56	0	Imp.	-
6	518.6	12.0	29	270	0	0	29	62	270	0	Imp.	-
7	519.5	16.1	32	400	0	0	32	54	400	0	Imp.	-
8	520.5	15.2	28	330	0	0	28	60	330	0	Imp.	-
9	521.2	14.5	6	67	0	0	6	83	67	0	Imp.	-

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.

K+E 10 X 10 TO THE CENTIMETER • 25 X 38 CM. KEUFFEL & ESSER CO. MADE IN U.S.A.



H. ZANDER CORPORATION

DAY LEASE WELL NO. A - 4

MIAMI COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS./ACRE
[illegible]	[illegible]	13.1	26.9	61.9	2.9	—

DAY LEASE WELL NO. A - 4

MIAMI COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS./ACRE
509.0 - 521.5	8.1	13.1	26.0	61.9	2.9	—

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CHANUTE, KANSAS
MARCH, 1980. HR