

OILFIELD RESEARCH LABORATORIES

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

July 16, 1980

Unionville Exploration
3005 South Harbor Blvd.
Santa Ana, California 92704

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Ballard E Lease, Well No. W-1, Chautauqua County, Kansas, and submitted to our laboratory on May 23, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Sanford A. Michel

SAM/tem

4 c to Santa Ana, California
1 c to Sedan, Kansas

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GENERAL INFORMATION & SUMMARY

Company Unionville Exploration Lease Ballard E Well No. W-1

Location -

Section 20 Twp. 33S Rge. 13E County Chautauqua State Kansas

Elevation, Feet - - - - -

Name of Sand - - - - - Wisner

Top of Core - - - - - 1055.0

Bottom of Core - - - - - 1076.0

Top of Sand - - - - - 1065.3

Bottom of Sand - - - - - 1076.0

Total Feet of Permeable Sand - - - - - 6.0

Total Feet of Floodable Sand - - - - - 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 1	6.0	6.0

Average Permeability Millidarcys - - - - - 0.46

Average Percent Porosity - - - - - 11.4

Average Percent Oil Saturation - - - - - 21.3

Average Percent Water Saturation - - - - - 74.2

Average Oil Content, Bbls./A. Ft. - - - - - 187.

Total Oil Content, Bbls./Acre - - - - - 1,793.

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

-2-

The core was sampled and the samples sealed in plastic bags by a representative of the client. Salt and 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:

<u>Depth Interval, Feet</u>	<u>Description</u>
1055.0 - 1065.3	Gray shale.
1065.3 - 1065.9	Brown shaly sandstone.
1065.9 - 1076.0	Brown and gray laminated shale and sandstone.

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Unionville Exploration Lease Ballard E Well No. W-1

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	1065.6	8.1	14	84	98	88	Imp.	0.6	0.6	53	0.00
2	1067.5	12.3	19	70	89	181	Imp.	1.0	1.6	181	0.00
3	1068.6	10.8	23	75	98	193	0.29	1.0	2.6	193	0.29
4	1069.5	11.8	22	74	96	201	Imp.	1.0	3.6	201	0.00
5	1070.7	10.5	28	70	98	228	0.84	1.0	4.6	228	0.84
6	1071.6	10.4	29	69	98	234	0.29	1.0	5.6	234	0.29
7	1072.5	9.8	22	75	97	167	Imp.	1.0	6.6	167	0.00
8	1073.5	12.0	6	85	91	56	0.49	1.0	7.6	56	0.49
9	1074.5	12.3	29	69	98	277	0.59	1.0	8.6	277	0.59
10	1075.3	14.5	18	75	93	203	0.27	1.0	9.6	203	0.27

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		Unionville Exploration		Lease Ballard E		Well No. W-1	
Depth Interval, Feet		Feet of Core Analyzed		Average Permeability, Millidarcys		Permeability Capacity Ft. x Md.	
1065.3 - 1076.0		6.0		0.46		2.77	
Depth Interval, Feet		Feet of Core Analyzed		Average Percent Oil Saturation		Average Percent Water Saturation	
1065.3 - 1076.0		9.6		21.3		74.2	
Depth Interval, Feet		Average Percent Porosity		Average Oil Content Bbl./A. Ft.		Total Oil Content Bbls./Acre	
1065.3 - 1076.0		11.4		187		1,793	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Unionville Exploration Lease Ballard E Well No. W-1

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			
1	1065.6	8.2	14	89	0	0	14	84	0	Imp.	-
2	1067.5	12.0	19	177	0	0	19	71	0	Imp.	-
3	1068.6	11.0	23	196	0	0	23	75	0	Imp.	-
4	1069.5	11.4	23	203	0	0	23	73	0	Imp.	-
5	1070.7	10.5	28	228	0	0	28	70	0	Imp.	-
6	1071.6	10.9	28	237	0	0	28	70	0	Imp.	-
7	1072.5	10.0	22	171	0	0	22	75	0	Imp.	-
8	1073.5	12.1	6	56	0	0	6	86	0	Imp.	-
9	1074.5	12.1	29	272	0	0	29	69	0	Imp.	-
10	1075.3	14.1	19	208	0	0	19	74	0	Imp.	-

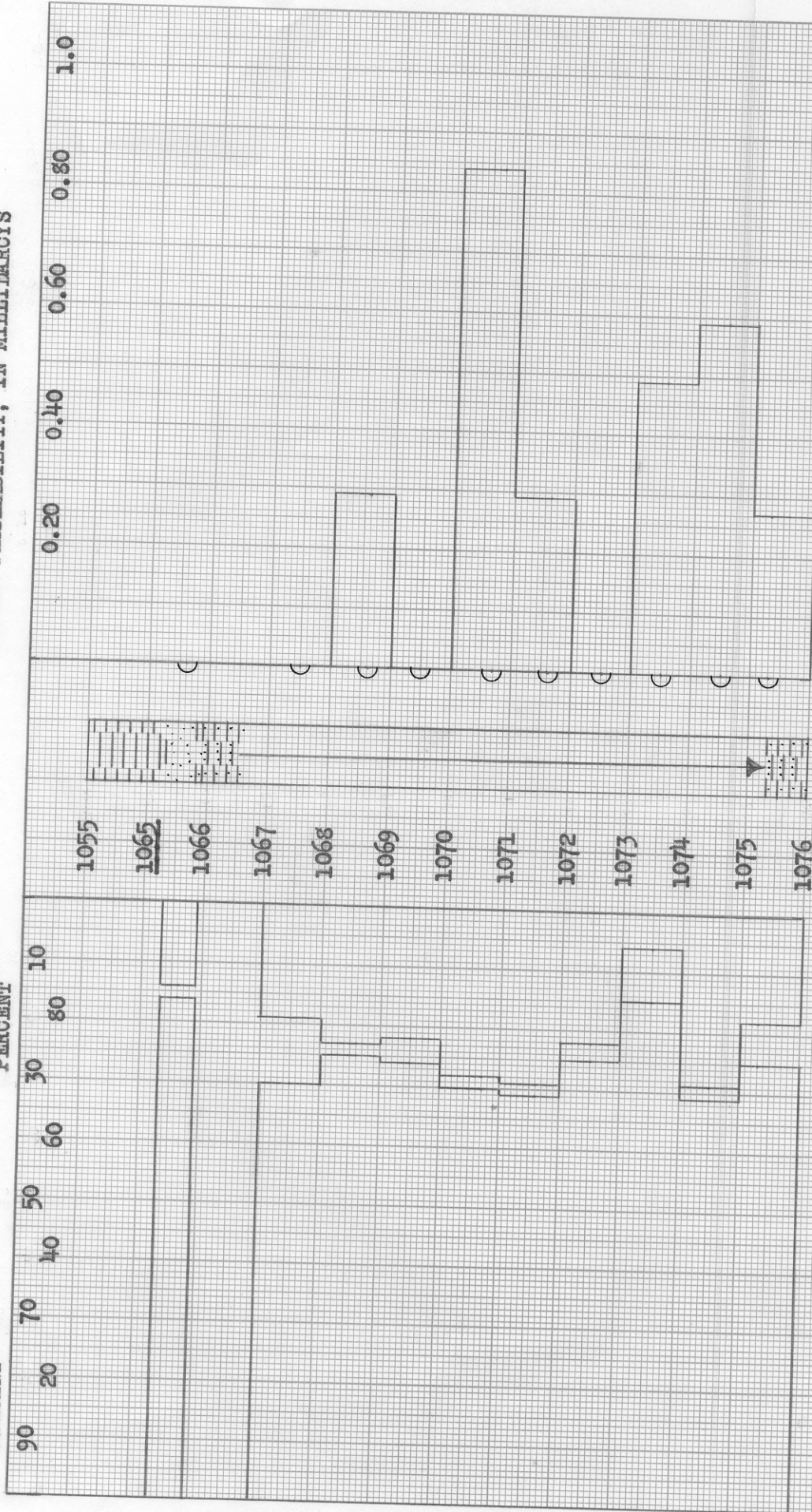
Notes: cc—cubic centimeter.

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

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

WATER SAT., ———→ OIL SAT.,
PERCENT PERCENT

———— PERMEABILITY, IN MILLIDARCS



KEY:



SHALE



LAMINATED SANDSTONE & SHALE



SEALY SANDSTONE



IMPERMEABLE TO WATER

UNIONVILLE EXPLORATION

BALLARD E. LEASE

WELL NO. W-1

CHAUTAUQUA COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY MILLIDARCS	CALCULATED OIL RECOVERY BBL./ACRE
1065.3 - 1076.0	9.6	11.4	21.3	74.2	0.46	---

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CHANUTE, KANSAS
JULY, 1980
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