

OILFIELD RESEARCH LABORATORIES

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

February 27, 1982

Ridge Oil & Gas, Inc.
Box 812
Chanute, Kansas 66720

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Benjegerdes Lease, Well No. 16, located in Wilson County, Kansas.

The core was sampled and sealed in plastic bags by a representative of the client and was submitted to our laboratory on February 24, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

5 c to Chanute, Kansas

- REGISTERED ENGINEERS -

CORE ANALYSIS - WATER ANALYSIS - REPRESSURING ENGINEERING - SURVEYING & MAPPING - PROPERTY EVALUATION & OPERATION

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GENERAL INFORMATION & SUMMARY

Company Ridge Oil & Gas, Inc. Lease Benjegardes Well No. 16
 Location 1980' FNL & 660' FEL, NE $\frac{1}{4}$
 Section 19 Twp. 27S Rge. 16E County Wilson State Kansas

Elevation, Feet

Name of Sand.....

Bartlesville

Top of Core

1044.0

Bottom of Core

1073.2

Top of Sand

1044.0

Bottom of Sand

1073.2

Total Feet of Permeable Sand

16.0

Total Feet of Floodable Sand

*6.5

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	4.0	4.0
50 - 81	1.5	5.5
110 - 130	5.0	10.5
155 - 170	2.0	12.5
247 - 348	3.5	16.0

Average Permeability Millidarcys

129.2

Average Percent Porosity

17.9

Average Percent Oil Saturation

36.7

Average Percent Water Saturation.....

34.4

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

513.

Total Oil Content, Bbls./Acre.....

8,214.

Average Percent Oil Recovery by Laboratory Flooding Tests.....

*8.2

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.

*117.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre

*759.

Total Calculated Oil Recovery, Bbls./Acre.....

Note: * At the request of the client, only the top 8 feet
 was subjected to flooding susceptibility tests.

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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.

At the request of the client, the first eight feet of the core was subjected to flooding susceptibility tests.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
1044.0 - 1050.5	Dark brown sandstone.
1050.5 - 1052.0	Brown sandstone.
1052.0 - 1053.0	Light brown slightly calcareous slightly shaly slightly vuggy sandstone.
1053.0 - 1063.0	Light brown sandstone.
1063.0 - 1073.2	Gray (salt and pepper) slightly carbonaceous sandstone

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company			Ridge Oil & Gas, Inc.			Lease			Benjeжерdes			Well No.			16		
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	1044.6	19.1	44	22	66	652	121.	1.0	1.0	652	121.00						
2	1045.7	19.5	49	17	66	741	280.	1.0	2.0	741	280.00						
3	1046.6	18.7	48	19	67	696	123.	1.0	3.0	696	123.00						
4	1047.6	18.5	43	27	70	617	169.	1.0	4.0	617	169.00						
5	1048.8	17.6	44	27	71	601	123.	1.0	5.0	601	123.00						
6	1049.5	18.1	47	26	73	660	110.	1.0	6.0	660	110.00						
7	1050.4	16.1	55	28	83	687	52.	0.5	6.5	344	26.00						
8	1051.7	19.2	41	20	61	611	247.	1.5	8.0	917	370.50						
9	1052.5	13.9	27	67	94	333	7.7	1.0	9.0	333	7.70						
10	1055.6	20.5	17	64	81	270	346	1.0	10.0	270	346.00						
11	1058.5	17.9	16	45	61	222	158.	1.0	11.0	222	158.00						
12	1061.6	18.4	20	56	76	290	127.	1.0	12.0	290	127.00						
13	1064.5	17.4	36	30	66	486	80.	1.0	13.0	486	80.00						
14	1067.4	16.4	36	43	79	458	8.3	1.0	14.0	458	8.30						
15	1070.2	17.0	33	36	69	435	9.6	1.0	15.0	435	9.60						
16	1072.6	16.7	38	28	66	492	7.4	1.0	16.0	492	7.40						

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		Ridge Oil & Gas, Inc.		Lease	Benjejerdes	Well No.	
						16	
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 Bbl./Acre	
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 Bbl./Acre	
1044.0 - 1052.0	8.0	18.6	45.5	22.8	654	5,228	
1052.0 - 1073.2	8.0	17.3	27.9	46.1	373	2,986	
1044.0 - 1073.2	16.0	17.9	36.7	34.4	513	8,214	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Ridge Oil & Gas, Inc. Lease Benjegerdes Well No. 16

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	1044.6	19.0	44	649	9	133	35	53	516	324	6.37	30
2	1045.7	19.3	49	734	12	180	37	44	554	450	7.12	20
3	1046.6	19.0	47	693	10	147	37	49	546	184	16.74	20
4	1047.6	18.4	43	614	3	43	40	54	571	490	7.05	20
5	1048.8	17.7	44	604	5	69	39	47	535	324	24.98	20
6	1049.5	17.8	48	663	8	110	40	47	553	234	10.92	20
7	1050.4	16.4	54	687	12	153	42	49	534	294	13.12	20
8	1051.7	19.1	41	608	0	0	41	44	608	140	1.72	25

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.

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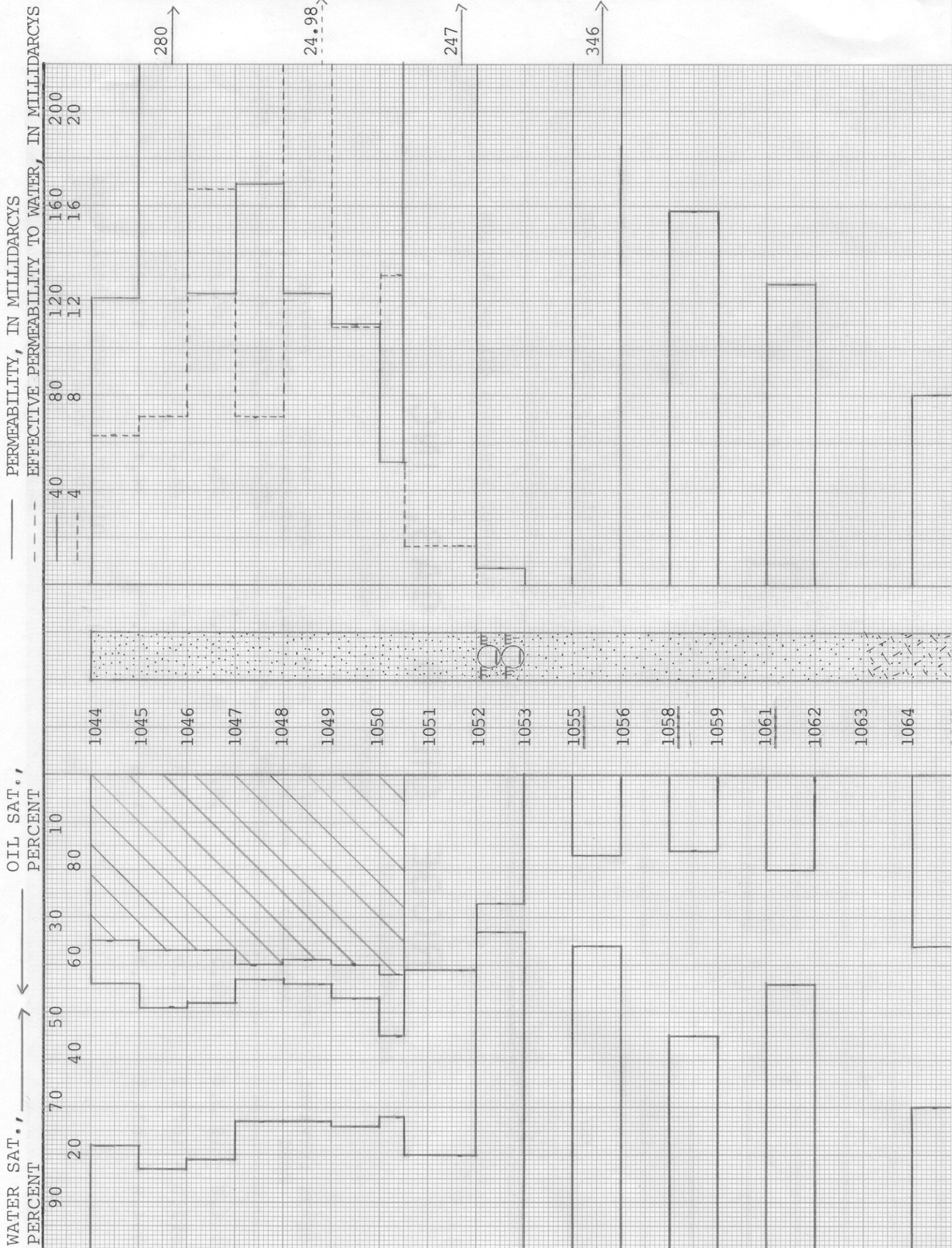
SUMMARY OF LABORATORY FLOODING TESTS

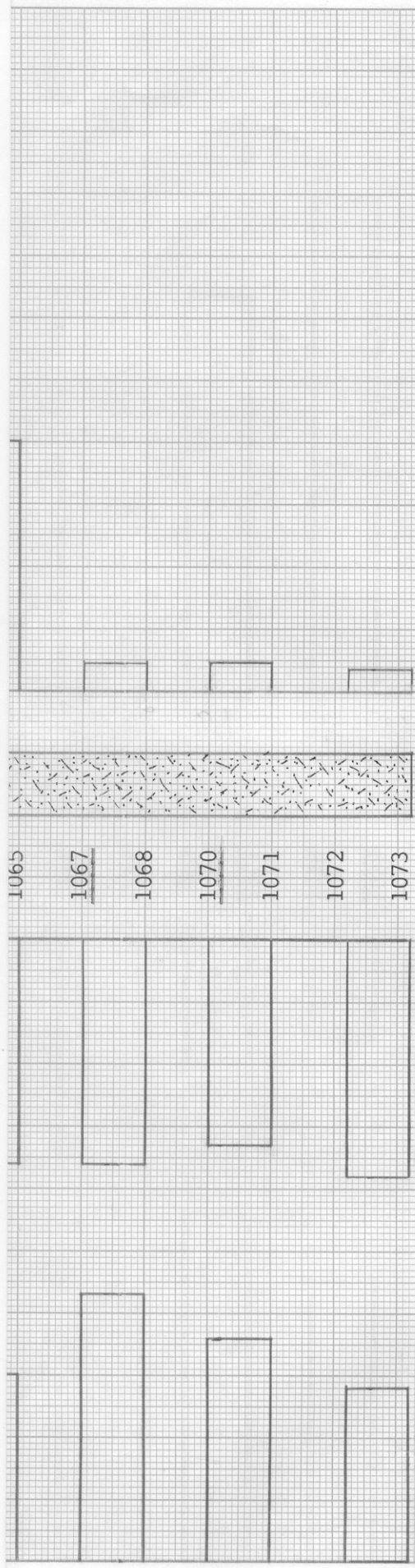
TABLE V

Company	Ridge Oil & Gas, Inc.	Lease	Benjeqerdes	Well No.	16
Depth Interval, Feet	1044.0 - 1052.0				
Feet of Core Analyzed	6.5				
Average Percent Porosity	18.4				
Average Percent Original Oil Saturation	46.5				
Average Percent Oil Recovery	8.2				
Average Percent Residual Oil Saturation	38.3				
Average Percent Residual Water Saturation	49.0				
Average Percent Total Residual Fluid Saturation	87.3				
Average Original Oil Content, Bbbls./A. Ft.	662.				
Average Oil Recovery, Bbbls./A. Ft.	117.				
Average Residual Oil Content, Bbbls./A. Ft.	545.				
Total Original Oil Content, Bbbls./Acre	4,301.				
Total Oil Recovery, Bbbls./Acre	759.				
Total Residual Oil Content, Bbbls./Acre	3,542.				
Average Effective Permeability, Millidarcys	12.27				
Average Initial Fluid Production Pressure, p.s.i.	21.4				

NOTE: Only those samples which recovered oil were used in calculating the above averages.

WATER SAT., PERCENT → ← OIL SAT., PERCENT





KEY:



SANDSTONE



CARBONACEOUS SANDSTONE



FLOODPOT RESIDUAL OIL SATURATION

VUGGY SHALY CALCAREOUS SANDSTONE

RIDGE OIL & GAS, INC.

BENJEGERDES LEASE

WILSON COUNTY, KANSAS

WELL NO. 16

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLs. / ACRE
1044.0 - 1052.0	8.0	18.6	45.5	22.8	165.3	
1052.0 - 1073.2	8.0	17.3	27.9	46.1	93.0	
1044.0 - 1073.2	16.0	17.9	36.7	34.4	129.2	

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CHANUTE, KANSAS
FEBRUARY, 1982

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