

# OILFIELD RESEARCH LABORATORIES

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

May 27, 1981

Harvest Oil Company  
c/o Jay Robertson  
P. O. Box 169  
Nowata, Oklahoma 74048

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Brewer Lease, Well No. 1, located in Bourbon County, Kansas.

The core was sampled and sealed in plastic bags by a representative of the client and was submitted to our laboratory on May 21, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

4 c to Nowata, Oklahoma  
1 c to Dallas, Texas

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Harvest Oil Company Lease Brewer Well No. 1  
 Location SE SE SW NW  
 Section 21 Twp. 26S Rge. 24E County Bourbon State Kansas

Elevation, Feet .....

Name of Sand.....

Tucker

Top of Core .....

420.0

Bottom of Core .....

440.0

Top of Sand .....

421.5

Bottom of Sand .....

440.0

Total Feet of Permeable Sand .....

11.9

**Distribution of Permeable Sand:**  
**Permeability Range**  
**Millidarcys**

**Feet**

**Cum. Ft.**

0 - 5

4.7

4.7

5 - 10

5.2

9.9

10 - 12

2.0

11.9

Average Permeability Millidarcys .....

6.3

Average Percent Porosity .....

12.5

Average Percent Oil Saturation .....

21.9

Average Percent Water Saturation.....

66.1

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

232.

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

4,293.

## OILFIELD RESEARCH LABORATORIES

LOGName Harvest Oil Company Lease Brewer Well No. 1

<u>Depth Interval, Feet</u>	<u>Description</u>
420.0 - 421.5	Gray sandy shale.
421.5 - 422.1	Hard gray fossiliferous calcareous sandy shale.
422.1 - 426.8	Gray laminated sandstone and shale.
426.8 - 430.8	Light brown and gray laminated sandstone and shale.
430.8 - 436.0	Brown shaly sandstone.
436.0 - 438.0	Light brown and gray laminated sandstone and shale.
438.0 - 440.0	Gray laminated sandstone and shale.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Harvest Oil Company Lease Brewer Well No. 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	421.6	1.6	12	81	93	15	Imp.	0.6	0.6	9	0.00
2	422.4	5.1	11	82	93	44	Imp.	1.0	1.6	44	0.00
3	423.5	5.6	16	80	96	70	Imp.	1.0	2.6	70	0.00
4	424.5	6.7	21	73	94	109	0.57	1.0	3.6	109	0.57
5	425.6	13.2	27	68	95	277	1.04	1.0	4.6	277	1.04
6	426.6	13.0	4	91	95	40	0.76	0.7	5.3	28	0.53
7	427.5	13.2	42	52	94	430	0.66	1.0	6.3	430	0.66
8	428.5	8.5	37	58	95	244	Imp.	1.0	7.3	244	0.00
9	429.5	15.6	13	48	61	157	11.	1.0	8.3	157	11.00
10	430.6	14.9	12	82	94	139	11.	1.0	9.3	139	11.00
11	431.4	19.3	49	48	97	734	8.7	1.2	10.5	880	10.44
12	432.4	16.9	33	52	85	433	8.5	1.0	11.5	433	8.50
13	433.6	16.1	24	50	74	300	9.9	1.0	12.5	300	9.90
14	434.4	15.8	38	48	86	466	9.6	1.0	13.5	466	9.60
15	435.5	15.7	17	63	80	207	9.2	1.0	14.5	207	9.20
16	436.6	16.9	25	51	76	328	2.6	1.0	15.5	328	2.60
17	437.6	11.0	13	72	85	111	Imp.	1.0	16.5	111	0.00
18	438.6	11.7	3	83	86	27	Imp.	1.0	17.5	27	0.00
19	439.5	10.8	4	91	95	34	Imp.	1.0	18.5	34	0.00

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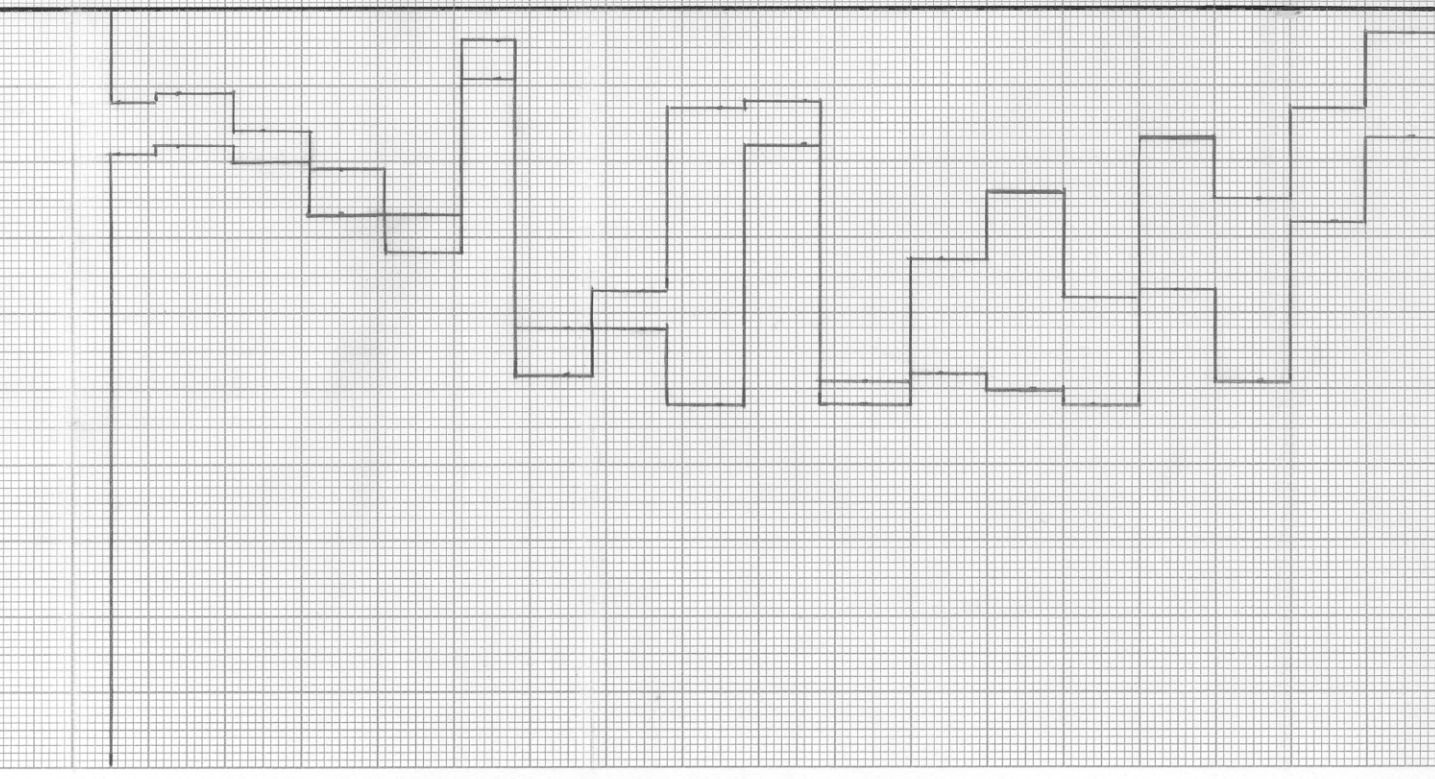
## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Harvest Oil Company	Lease	Brewer	Well No.	
				1	
Depth Interval, Feet	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	
	421.5 - 430.8	5.7	4.4	24.80	
	430.8 - 437.0	6.2	8.1	50.24	
	437.0 - 440.0	0.0	0.0	0.00	
	421.5 - 440.0	11.9	6.3	75.04	
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
421.5 - 430.8	9.3	10.0	70.5	162	1,507
430.8 - 437.0	6.2	16.9	51.9	422	2,614
437.0 - 440.0	3.0	11.2	82.0	57	172
421.5 - 440.0	18.5	12.5	66.1	232	4,293

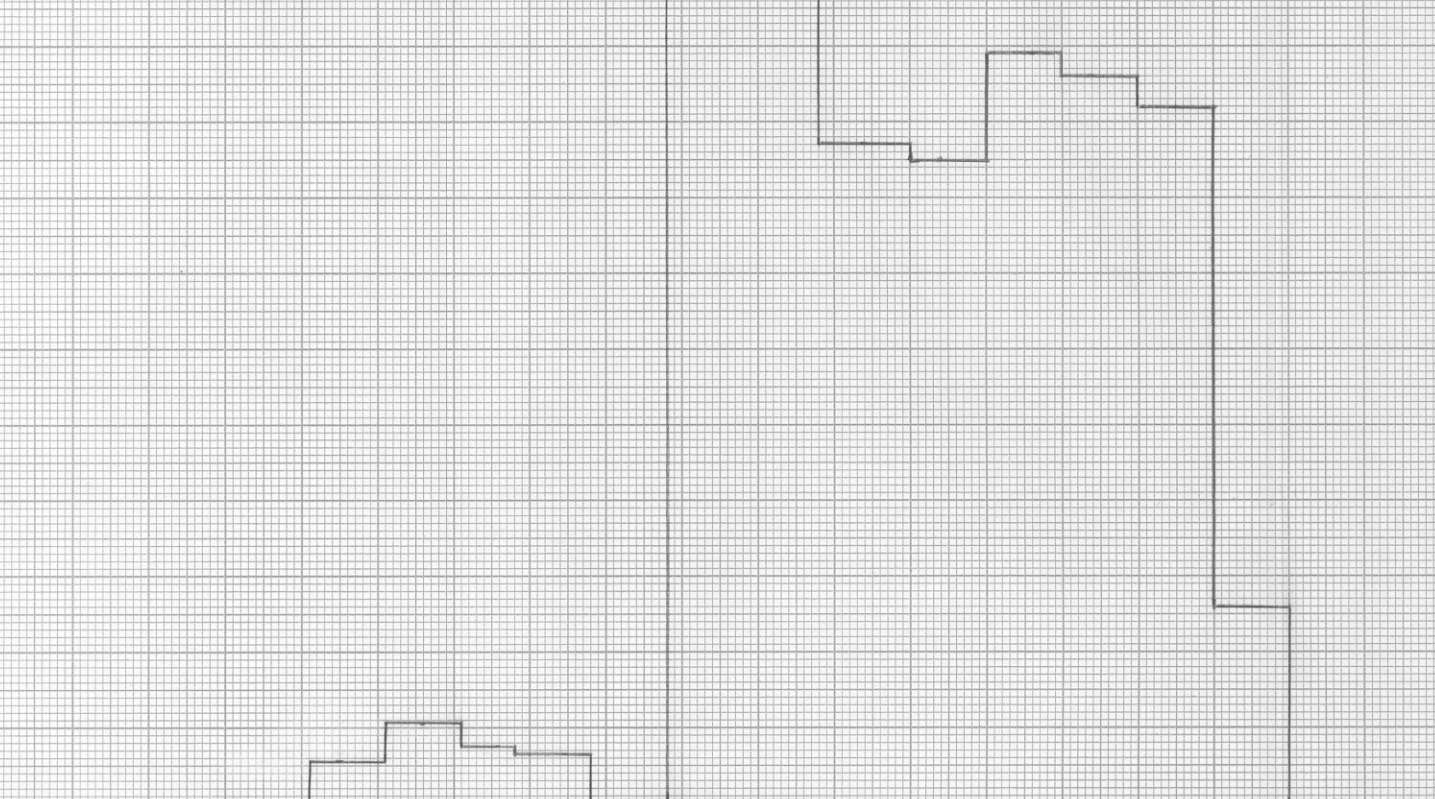
WATER SAT., PERCENT → ← OIL SAT., PERCENT

90 80 70 60 50 40 30 20 10

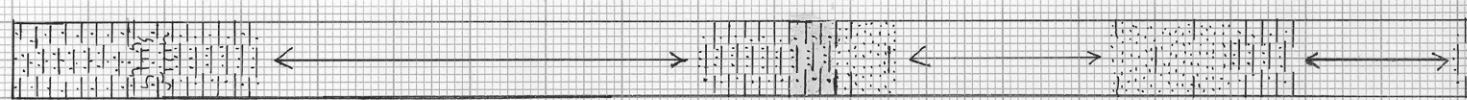


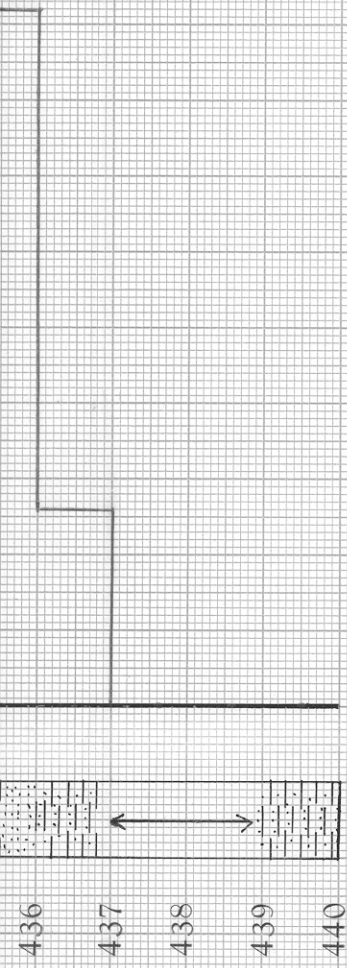
— PERMEABILITY, IN MILLIDARCYS

10 8 6 4 2




420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439







KEY:

 SHALY SANDSTONE

 LAMINATED SANDSTONE AND SHALE

 SANDY SHALE

 FOSSILIFEROUS SANDY CALCAREOUS SHALE

# HARVEST OIL COMPANY

BREWER LEASE

WELL NO. 1

BOURBON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE		AVG. OIL		AVG. WATER		AVERAGE	
		POROSITY PERCENT	SATURATION PERCENT	SATURATION PERCENT	SATURATION PERCENT	SATURATION PERCENT	PERMEABILITY, MILLIDARCS		
421.5 - 430.8	9.3	10.0	20.3	70.5	4.4				
430.8 - 437.0	6.2	16.9	31.9	51.9	8.1				
<del>437.0 - 440.0</del>	3.0	11.2	6.7	82.0	0.0				
421.5 - 440.0	18.5	12.5	21.9	66.1	6.3				

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 CHANUTE, KANSAS  
 MAY, 1981

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