

# OILFIELD RESEARCH LABORATORIES

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

June 30, 1981

Vic Cook Systems/Reese Exploration, Inc.  
515 East Main  
Chanute, Kansas 66720

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Mix Lease, Well No. 37, located in Bourbon County, Kansas and submitted to our laboratory on June 22, 1981.

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

**Oilfield Research Laboratories**  
**GENERAL INFORMATION & SUMMARY**

Company Vic Cook Systems/ Reese Exploration, Inc. Lease Mix Well No. 37  
 Location SE $\frac{1}{4}$  SW $\frac{1}{4}$  SE $\frac{1}{4}$   
 Section 22 Twp. 24S Rge. 22E County Bourbon State Kansas

Elevation, Feet .....

Name of Sand..... Squirrel

Top of Core ..... 463.0

Bottom of Core ..... 479.0

Top of Sand ..... 463.8

Bottom of Sand ..... 476.0

Total Feet of Permeable Sand ..... 8.7

Total Feet of Floodable Sand ..... 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 4	5.0	5.0
4 - 8	3.7	8.7

Average Permeability Millidarcys ..... 3.6

Average Percent Porosity ..... 14.5

Average Percent Oil Saturation ..... 43.5

Average Percent Water Saturation ..... 44.0

Average Oil Content, Bbls./A. Ft. .... 493.

Total Oil Content, Bbls./Acre..... 5,175.

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.

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-2-

The core was sampled and the samples sealed in plastic bags by a representative of the client. 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>
463.0 - 463.8	Gray shale.
463.8 - 468.8	Grayish light brown slightly calcareous shaly sandstone.
468.8 - 471.6	Gray slightly calcareous very shaly sandstone.
471.6 - 474.3	Brown slightly calcareous shaly sandstone.
474.3 - 476.0	Grayish light brown slightly calcareous shaly sandstone.
476.0 - 479.0	Gray sandy shale.
Sample A	Brown slightly calcareous shaly sandstone.

## RESULTS OF SATURATION &amp; PERMEABILITY TESTS

TABLE 1-B

Vic Cook Systems/

Company Reese Exploration, Inc.Lease MixWell No. 37

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	464.4	18.0	39	47	86	545	2.8	1.0	1.0	545	2.80
2	465.5	16.0	48	47	95	596	1.5	1.0	2.0	596	1.50
3	466.5	8.2	64	30	94	407	0.51	1.0	3.0	407	0.51
4	467.5	11.5	40	41	81	357	1.8	1.0	4.0	357	1.80
5	468.5	16.5	65	19	84	832	7.7	1.0	5.0	832	7.70
6	470.6	10.9	18	70	88	152	Imp.	1.1	6.1	167	0.00
7	472.5	15.7	43	46	89	524	4.3	1.4	7.5	734	6.02
8	473.4	19.6	46	30	76	699	6.3	1.3	8.8	909	8.19
9	474.5	9.4	36	57	93	263	Imp.	0.7	9.5	184	0.00
10	475.6	15.9	36	58	94	444	3.1	1.0	10.5	444	3.10
A		13.5	49	8	57	513	1.5	0.6	0.6	308	0.90

NOTE: Sample A was not included in averages as the client was not sure of its location.

## SUMMARY OF PERMEABILITY &amp; SATURATION TESTS

TABLE III

Vic Cook Systems/

Well No. 37

Company Reese Exploration, Inc.

Lease

Mix

Permeability  
Capacity  
Ft. x Md.Average  
Permeability,  
MillidarcysFeet of Core  
AnalyzedDepth Interval,  
Feet

31.62

3.6

8.7

463.8 - 476.0

Total Oil  
Content  
Bbls./AcreAverage  
Oil Content  
Bbl./A. Ft.Average  
Percent Water  
SaturationAverage  
Percent Oil  
SaturationAverage  
Percent  
PorosityFeet of Core  
AnalyzedDepth Interval,  
Feet

493

44.0

43.5

14.5

10.5

463.8 - 476.0

5,175

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## RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Vic Cook Systems/  
Reese Exploration, Inc.

Lease Mix

Well No. 37

Company

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	464.4	18.1	39	548	0	0	39	48	0	Imp.	-
2	465.5	16.4	47	598	0	0	47	49	0	Imp.	-
3	466.5	8.3	64	412	0	0	64	31	0	Imp.	-
4	467.5	11.6	40	360	0	0	40	42	0	Imp.	-
5	468.5	16.8	64	834	0	0	64	21	12	0.45	50
6	470.6	10.8	18	151	0	0	18	71	0	Imp.	-
7	472.5	15.8	43	527	0	0	43	47	0	Imp.	-
8	473.4	19.2	47	700	0	0	47	32	0	Imp.	-
9	474.5	9.5	36	265	0	0	36	58	0	Imp.	-
10	475.6	16.0	36	447	0	0	36	59	0	Imp.	-
A		13.4	49	509	0	0	49	9	0	Imp.	-

Notes: cc—cubic centimeter.

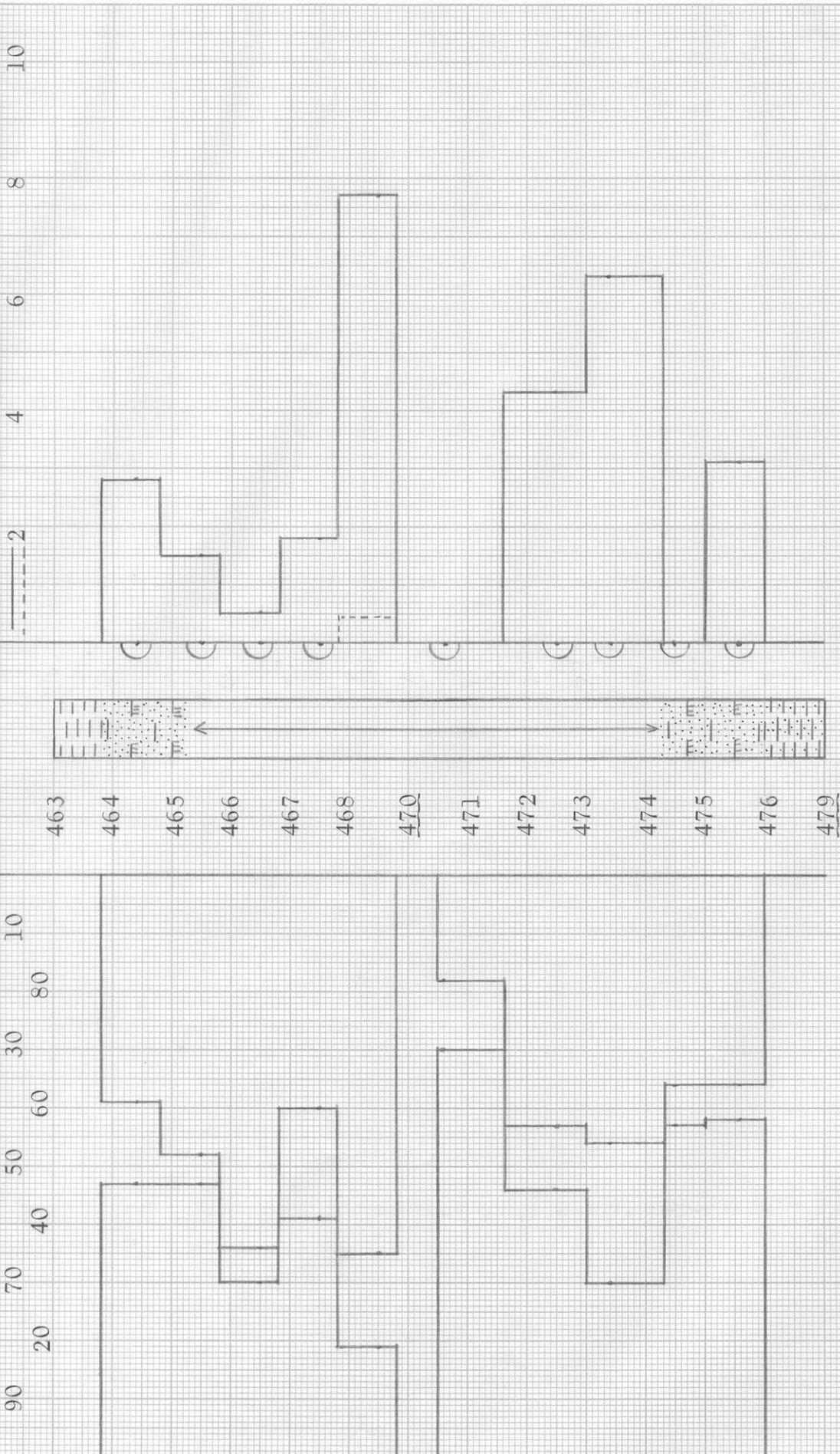
\*—Volume of water recovered at the time of maximum oil recovery.

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

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

— PERMEABILITY, IN MILLIDARCYS

- - - - - EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS



KEY:

SHALY CALCAREOUS SANDSTONE  
 SANDY SHALE  
 SHALE  
 IMPERMEABLE TO WATER



SANDY SHALE



IMPERMEABLE TO WATER

# VIC COOK SYSTEMS/ REESE EXPLORATION, INC.

MIX LEASE

WELL NO. 37

BOURBON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCY	CALCULATED OIL RECOVERY BBL. / ACRE
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463.8 - 476.0	10.5	14.5	43.5	44.0	3.6	-
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NOTE: SAMPLE A WAS NOT INCLUDED ON THE CORE GRAPH

OILFIELD RESEARCH LABORATORIES  
CHANUTE, KANSAS  
JUNE, 1981

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