

OILFIELD RESEARCH LABORATORIES

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

July 16, 1980

Tech-Air, Incorporated
East Mill
P.O. Box 337
Osawatomie, Kansas 66064

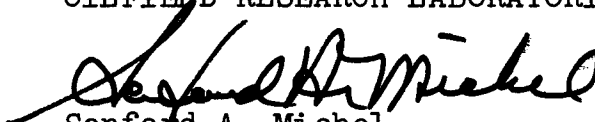
Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Tech-Air Lease, Well No. 4, Linn 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

5 c to Osawatomie, Kansas

SAM/tem

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Tech-Air, Incorporated Lease Tech-Air Well No. 4
 Location 1220' E & 1050' S of NW Corner of the NE $\frac{1}{4}$
 Section 28 Twp 19S Rge 22E County Linn State Kansas
 Elevation, Feet - - - - -

Name of Sand - - - - -	Lower Squirrel
Top of Core - - - - -	536.0
Bottom of Core - - - - -	541.4
Top of Sand - - - - -	536.0
Bottom of Sand - - - - -	541.4
Total Feet of Permeable Sand - - - - -	5.4
Total Feet of Floodable Sand - - - - -	0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 1	1.4	1.4
1 - 5	1.9	3.3
10 - 15	1.4	4.7
15 - 20	0.7	5.4

Average Permeability Millidarcys - - - - -	5.9
Average Percent Porosity - - - - -	14.9
Average Percent Oil Saturation - - - - -	27.5
Average Percent Water Saturation - - - - -	62.4
Average Oil Content, Bbls./A. Ft. - - - - -	315.
Total Oil Content, Bbls./Acre - - - - -	1,700.
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. 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 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>
536.0 - 536.6	Brown shaly sandstone.
536.6 - 538.7	Brown slightly shaly sandstone.
538.7 - 540.6	Brown shaly sandstone.
540.6 - 541.4	Gray and brown shaly sandstone.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

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	536.5	12.3	41	46	87	391	1.9	0.6	0.6	235	1.14
2	537.5	15.1	32	53	85	375	12.	1.4	2.0	525	16.80
3	538.5	16.0	31	57	88	385	17.	0.7	2.7	270	11.90
4	539.5	14.8	21	77	98	241	1.3	1.3	4.0	313	1.69
5	540.5	15.8	26	64	90	319	0.45	0.6	4.6	191	0.27
6	541.2	14.9	18	77	95	208	0.38	0.8	5.4	166	0.30

Company Tech-Air, Incorporated

Lease Tech-Air

Well No. 4

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		Tech-Air, Incorporated		Lease		Tech-Air		Well No. 4					
Depth Interval, Feet		Feet of Core Analyzed		Average Permeability, Millidarcys		Permeability Capacity Ft. x Md.							
536.0 - 541.4		5.4		5.9		32.10							
Depth Interval, Feet		Feet of Core Analyzed		Average Percent Porosity		Average Percent Oil Saturation		Average Oil Content Bbl./A. Ft.		Total Oil Content Bbls./Acre			
536.0 - 541.4		5.4		14.9		27.5		62.4		315		1,700	

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

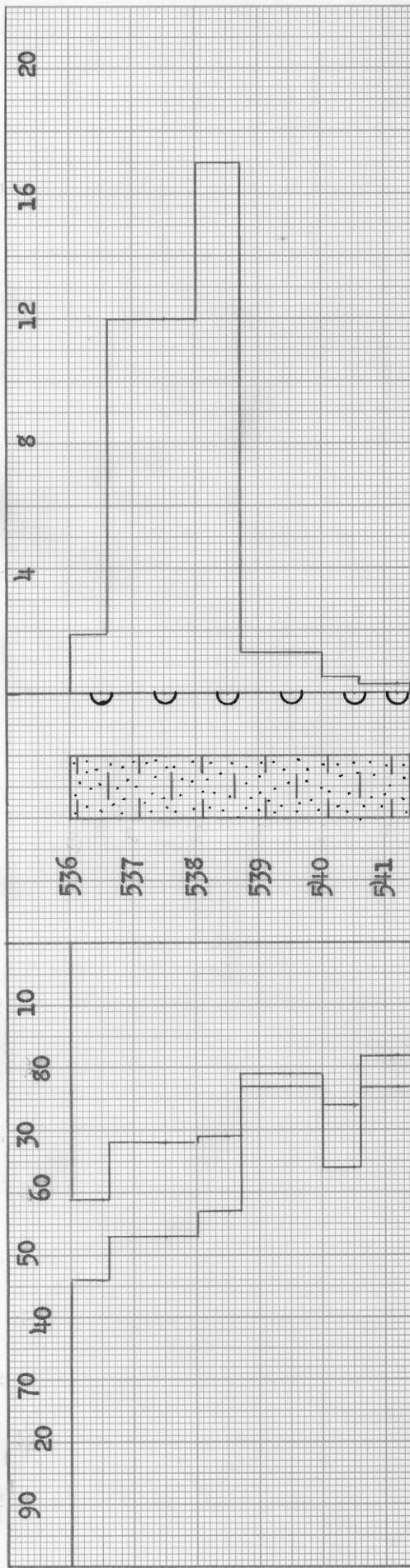
Notes: cc—cubic centimeter.

•—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:

SEALY SANDSTONE

○ IMPERMEABLE TO WATER

TECH - AIR, INC.

TECH-AIR LEASE WELL NO. 4

LINN 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 BELS./ACRE
----------------------	-----------------------	--------------------------	-----------------------------	-------------------------------	---------------------------------	------------------------------------

536.0 - 541.4

5.4

14.9

27.5

62.4

5.9

—