

# OILFIELD RESEARCH LABORATORIES

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

July 24, 1980

KLI Petroleum Corporation  
808 Southeast Sixth Street  
Evansville, Indiana 47708

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Nelson Lease, Well No. K-51, Allen County, Kansas, and submitted to our laboratory on July 1, 1980.

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

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

  
Sanford A. Michel

SAM/tem

5 c to Evansville, Indiana

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

Company KLI Petroleum Corporation Lease Nelson Well No. K-51  
 Location 900' WEL & 400' NSL SW $\frac{1}{4}$   
 Section 21 Twp. 26S Rge. 21E County Allen State Kansas

Elevation, Feet . . . . .	
Name of Sand . . . . .	Bartlesville
Top of Core . . . . .	645.0
Bottom of Core . . . . .	713.4
Top of Sand . . . . .	645.0
Bottom of Sand . . . . .	711.2
Total Feet of Permeable Sand . . . . .	50.1

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	20.5	20.5
10 - 20	7.3	27.8
20 - 30	2.2	30.0
30 - 60	9.0	39.0
60 - 90	6.5	45.5
100 & Above	4.6	50.1

Average Permeability Millidarcys . . . . .	35.3
Average Percent Porosity . . . . .	18.1
Average Percent Oil Saturation . . . . .	41.9
Average Percent Water Saturation . . . . .	38.3
Average Oil Content, Bbls./A. Ft. . . . .	595.
Total Oil Content, Bbls./Acre . . . . .	33,661.

## OILFIELD RESEARCH LABORATORIES

LOGName  KLI Petroleum Corporation  Lease  Nelson  Well No.  K-51 

<u>Depth Interval, Feet</u>	<u>Description</u>
645.0 - 647.2	Light brown sandstone.
647.2 - 648.0	Light brown very shaly sandstone.
648.0 - 648.6	Light brown sandstone.
648.6 - 648.9	✓ Gray sandy shale.
648.9 - 654.3	Brown slightly calcareous sandstone.
654.3 - 654.8	Gray very shaly sandstone.
654.8 - 656.2	Brown sandstone.
656.2 - 670.2	✓ Brown very shaly slightly carbonaceous sandstone
670.2 - 671.1	✓ Gray sandy shale.
671.1 - 671.4	Light brown shaly sandstone.
671.4 - 673.3	Brown sandstone.
673.3 - 674.2	Light brown slightly shaly sandstone.
674.2 - 687.2	Brown sandstone.
687.2 - 687.9	Light brown shaly sandstone.
687.9 - 691.0	Brown sandstone.
691.0 - 691.8	✓ Brown carbonaceous sandstone.
691.8 - 694.9	Brown sandstone.
694.9 - 699.9	✓ Gray sandy shale.
699.9 - 700.6	Brown slightly shaly sandstone.
700.6 - 700.9	Gray shale.
700.9 - 702.8	Brown sandstone.

-2-

LOG

cont.

702.8 - 706.7	Brown shaly sandstone.
706.7 - 709.9	Brown very shaly sandstone.
709.9 - 711.2	Brown and gray conglomeratic sandstone and shale.
711.2 - 711.4	Gray shale.
711.4 - 712.2	✓ Coal.
712.2 - 713.4	Gray shale.

**Oilfield Research Laboratories**

**RESULTS OF SATURATION & PERMEABILITY TESTS**

**TABLE 1-B**

Company KLI Petroleum Corporation Lease Nelson Well No. K-51

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	645.5	21.9	16	69	85	272	188.	1.0	1.0	272	188.00
2	646.5	22.2	11	84	95	190	110.	1.2	2.2	228	132.00
3	647.5	14.5	11	59	70	124	0.68	1.0	3.2	124	0.68
4	648.5	20.6	22	61	83	352	84.	0.4	3.6	141	33.60
5	649.5	18.4	27	67	94	385	42.	1.0	4.6	385	42.00
6	650.5	20.7	21	46	67	337	43.	1.0	5.6	337	43.00
7	651.5	11.3	9	64	73	79	74.	1.0	6.6	79	74.00
8	652.5	22.2	41	38	79	706	141.	1.0	7.6	706	141.00
9	653.5	23.5	38	36	74	693	103.	1.4	9.0	970	144.20
10	654.5	8.7	9	86	95	61	Imp.	0.5	9.5	31	0.00
11	655.5	16.3	37	48	85	468	19.	1.4	10.9	655	26.60
12	656.5	18.2	57	28	85	805	1.3	1.0	11.9	805	1.30
13	657.5	18.0	43	40	83	601	0.59	1.0	12.9	601	0.59
14	658.5	13.9	30	55	85	324	0.55	1.0	13.9	324	0.55
15	659.5	20.8	55	13	68	888	1.0	1.0	14.9	888	1.00
16	660.5	16.2	44	30	74	553	0.59	1.0	15.9	553	0.59
17	661.5	14.5	32	45	77	360	Imp.	1.0	16.9	360	0.00
18	662.5	18.8	64	21	85	933	Imp.	1.0	17.9	933	0.00
19	663.5	15.2	52	37	89	613	Imp.	1.0	18.9	613	0.00
20	664.5	15.9	54	30	84	666	Imp.	0.5	19.4	333	0.00
21	664.9	16.7	51	20	71	661	Imp.	0.5	19.9	331	0.00
22	665.5	19.4	55	23	78	828	Imp.	0.5	20.4	414	0.00
23	666.5	15.0	51	35	86	594	Imp.	1.5	21.9	891	0.00
24	667.5	14.2	35	42	77	386	3.5	1.0	22.9	386	3.50
25	668.5	15.4	47	38	85	562	0.20	1.0	23.9	562	0.20
26	669.3	15.1	37	50	87	433	0.38	1.0	24.9	433	0.38
27	671.5	20.8	40	28	68	646	44.	1.9	26.8	1227	83.60
28	673.7	17.1	55	31	86	730	6.5	0.9	27.7	657	5.85
29	674.5	18.2	47	26	73	664	12.	1.0	28.7	664	12.00
30	677.5	20.2	50	15	65	784	43.	1.0	29.7	784	43.00

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE I-B

Company  KLI Petroleum Corporation  Lease  Nelson  Well No.  K-51

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.		
31	678.5	19.2	50	23	73	745	19.	1.0	30.7	745	19.00
32	679.5	17.1	45	34	79	597	19.	1.0	31.7	597	19.00
33	681.4	19.4	51	30	81	768	77.	1.0	32.7	768	77.00
34	682.6	20.3	51	21	72	803	58.	1.0	33.7	803	58.00
35	683.4	20.2	41	19	60	643	19.	1.0	34.7	643	19.00
36	684.9	17.1	57	35	92	756	56.	1.0	35.7	756	56.00
37	685.7	19.6	49	31	80	745	25.	1.0	36.7	745	25.00
38	686.3	19.3	46	31	77	689	27.	1.2	37.9	827	32.40
39	687.4	16.3	51	42	93	645	5.6	0.7	38.6	452	3.92
40	688.5	20.8	59	24	83	952	41.	1.1	39.7	1047	45.10
41	689.4	20.6	40	21	61	639	89.	1.0	40.7	639	89.00
42	690.5	21.3	53	24	77	876	71.	1.0	41.7	876	71.00
43	691.5	17.4	57	31	88	769	0.76	0.8	42.5	615	0.61
44	692.4	21.1	58	20	78	949	78.	1.1	43.6	1044	85.80
45	693.3	20.9	53	28	81	859	50.	1.0	44.6	859	50.00
46	694.5	20.9	58	30	88	940	72.	1.0	45.6	940	72.00
47	700.5	17.5	34	43	77	462	9.1	0.7	46.3	323	6.37
48	701.5	22.3	37	41	78	640	19.	1.0	47.3	640	19.00
49	702.5	18.9	38	37	75	557	10.	0.9	48.2	501	9.00
50	703.3	16.1	38	53	91	475	9.1	1.5	49.7	713	13.65
51	705.0	14.9	37	49	86	428	4.0	1.4	51.1	599	5.60
52	706.5	18.2	42	41	83	593	6.7	1.0	52.1	593	6.70
53	707.5	17.2	45	41	86	601	1.2	1.2	53.3	721	1.44
54	708.7	15.8	42	42	84	515	1.1	1.0	54.3	515	1.10
55	709.4	16.4	36	43	79	458	1.1	1.0	55.3	458	1.10
56	710.4	15.3	36	50	86	427	2.4	1.3	56.6	555	3.12

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### SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company KLI Petroleum Corporation Lease Nelson Well No. K-51

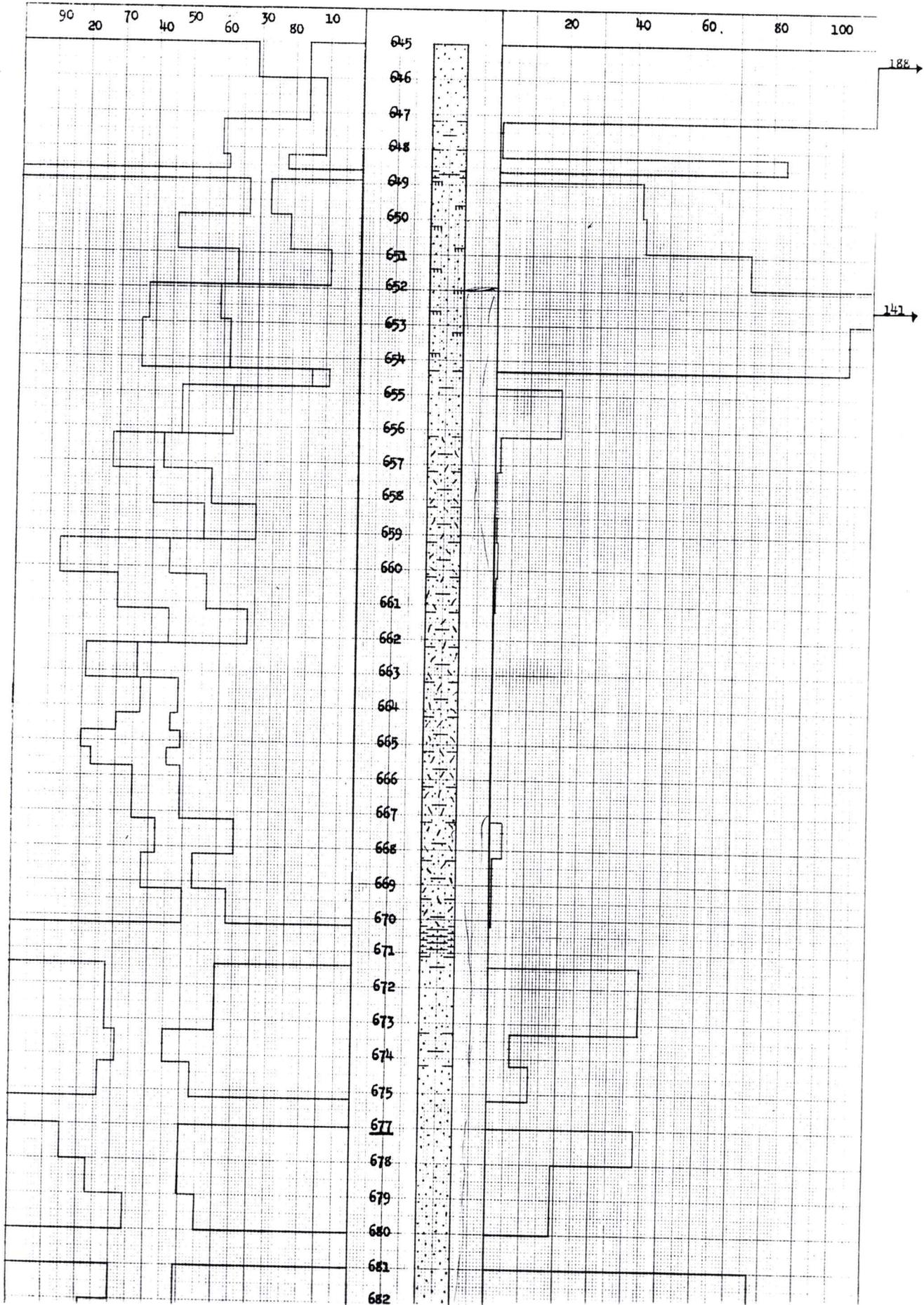
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
645.0 - 670.2	18.4	45.3	833.19
671.4 - 711.2	31.7	29.5	934.36
645.0 - 711.2	50.1	35.3	1,767.55

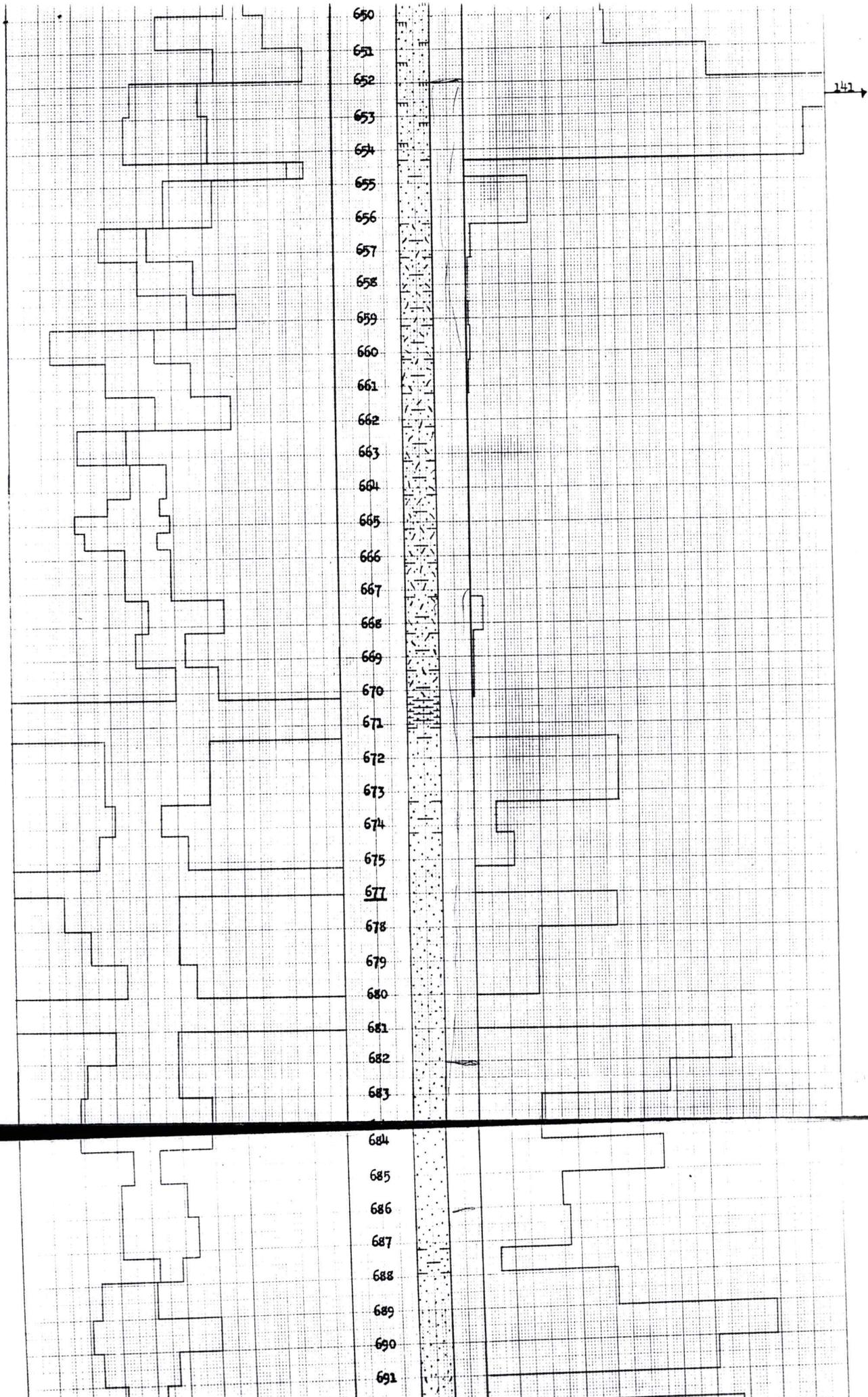
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
645.0 - 670.2	24.9	17.4	36.5	44.9	497	12,355
671.4 - 711.2	31.7	18.7	46.1	33.2	672	21,306
645.0 - 711.2	56.6	18.1	41.9	38.3	595	33,661

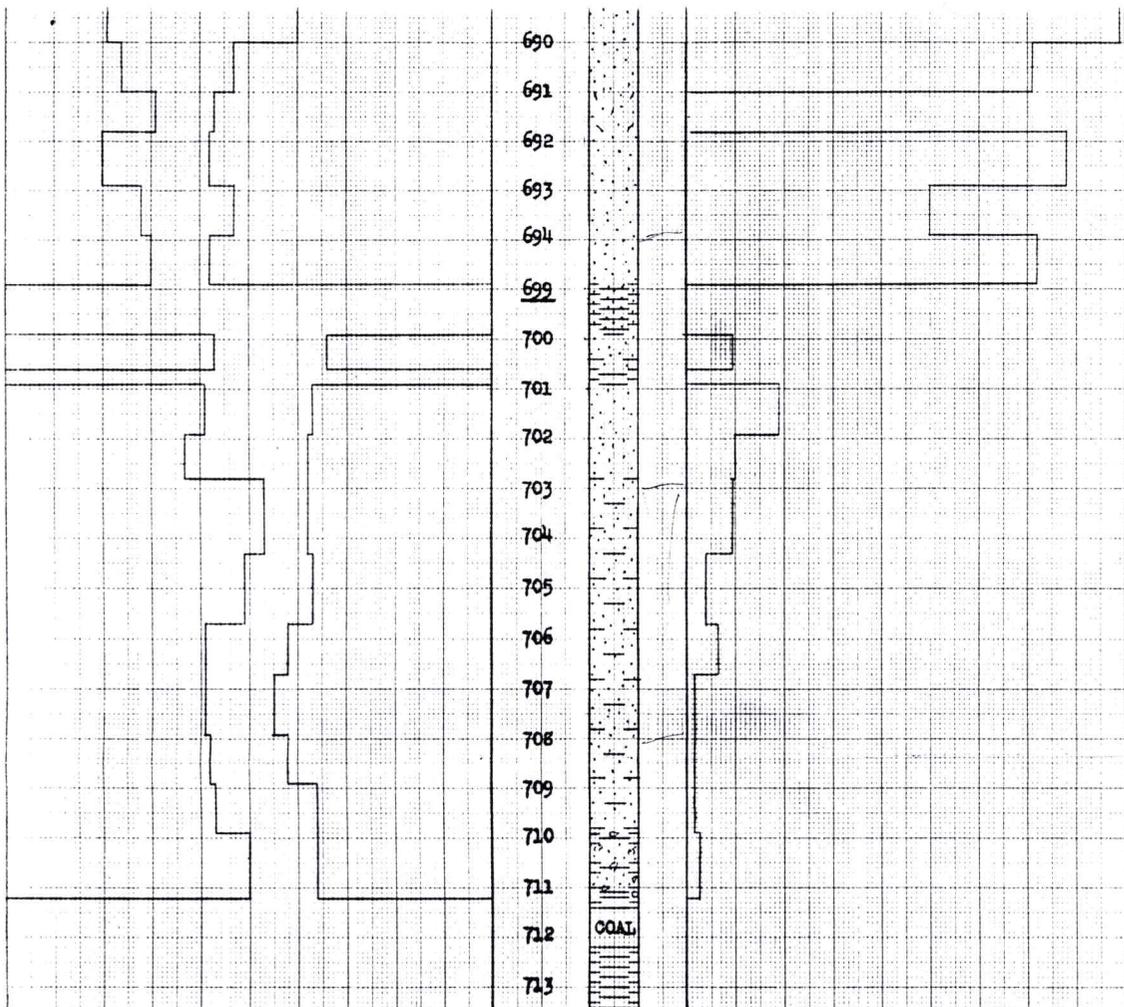
WATER SAT., PERCENT

OIL SAT., PERCENT

PERMEABILITY, IN MILLIDARCY







KEY:

- |  |                              |  |                                 |
|--|------------------------------|--|---------------------------------|
|  | SANDSTONE                    |  | SHALY SANDSTONE                 |
|  | SANDY SHALE                  |  | CALCAREOUS SANDSTONE            |
|  | SHALY CARBONACEOUS SANDSTONE |  | CARBONACEOUS SANDSTONE          |
|  | SHALE                        |  | CONGLOMERATIC SANDSTONE & SHALE |
|  | COAL                         |  |                                 |

## KLI PETROLEUM CORP.

NELSON LEASE

WELL NO. K-51

ALLEN COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYs
645.0 - 670.2	24.9	17.4	36.5	44.9	45.3
671.4 - 711.2	31.7	18.7	46.1	33.2	29.5
645.0 - 711.2	56.6	18.1	41.9	38.3	35.3

OIL-FIELD RESEARCH LABORATORIES  
CHANDLER, KANSAS  
JULY, 1980

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