

OILFIELD RESEARCH LABORATORIES

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

November 4, 1980

Enutrof Productions
Falcon Oilfield Services
P. O. Box 707,
Chanute, Kansas 66720

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary cores taken from the Carr Lease, Well No. 3, located in Montgomery County, Kansas and submitted to our laboratory on August 6, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES


Sanford A. Michel

SAM/ks

5 c to Chanute, Kansas

T315, R.16E., Sec. 3

- REGISTERED ENGINEERS -

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

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Enutrof Productions Lease Carr Well No 3

Location _____

Section - Twp - Rge - County Montgomery State Kansas

Elevation, Feet - - - - -

Name of Sand	Wiser	Bartlesville
Top of Core	388.0	790.0
Bottom of Core	401.3	809.3
Top of Sand	388.0	790.0
Bottom of Sand	398.4	802.2
	(Tested)	
Total Feet of Permeable Sand	10.4	3.7
Total Feet of Floodable Sand	0.0	-

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

WISER SAND

0 - 10	4.3	4.3
10 - 20	4.9	9.2
20 - 30	1.2	10.4

BARTLESVILLE SAND

0 - 1	2.7	2.7
3 & Above	1.0	3.7

Average Permeability Millidarcys	11.8	1.2
Average Percent Porosity	15.4	13.9
Average Percent Oil Saturation	26.6	35.1
Average Percent Water Saturation	54.2	46.7
Average Oil Content, Bbls./A. Ft.	323.	387.
Total Oil Content, Bbls./Acre	3,357.	3,099.
Average Percent Oil Recovery by Laboratory Flooding Tests	0.0	-
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	0.0	-
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	0.0	-
Total Calculated Oil Recovery, Bbls./Acre	0.0	-

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.

At the request of the client, the Wiser sand portion of the core was subjected to flooding susceptibility tests. Since the Wiser sand did not respond, 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>
	<u>WISER SAND</u>
388.0 - 389.9	Light brown shaly slightly calcareous sandstone.
389.9 - 391.1	Brown slightly calcareous sandstone.
391.1 - 391.8	Brown shaly slightly calcareous sandstone.
391.8 - 393.2	Brown slightly calcareous sandstone containing a vertical fracture.
393.2 - 394.3	Brown shaly slightly calcareous sandstone containing a vertical fracture.
394.3 - 397.8	Brown slightly calcareous sandstone.
397.8 - 398.4	Brown shaly slightly calcareous sandstone.
398.4 - 398.8	Gray shaly sandstone.
398.8 - 401.3	Gray sandy shale.
	<u>BARTLESVILLE SAND</u>
790.0 - 794.7	Grayish brown very shaly sandstone.
794.7 - 797.1	Dark brown slightly carbonaceous very shaly sandstone
797.1 - 801.3	Gray laminated sandstone and shale.
801.3 - 802.2	Gray and light brown laminated sandstone and shale.
802.2 - 809.3	Gray laminated sandstone and shale.

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE I-B

Company Enutrof Productions Lease Carr Well No. 3

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.		
						<u>WISER SAND</u>					
1	388.5	12.3	26	49	75	248	6.0	1.0	1.0	248	6.00
2	389.5	15.2	18	60	78	212	4.5	0.9	1.9	191	4.05
3	390.5	15.4	22	57	79	263	21.	1.2	3.1	316	25.20
4	391.3	14.2	21	61	82	231	6.8	0.7	3.8	162	4.76
5	392.5	14.3	25	59	84	277	10.	1.4	5.2	388	14.00
6	393.5	13.8	26	60	86	278	6.7	1.1	6.3	306	7.37
7	394.5	17.7	31	50	81	426	11.	1.0	7.3	426	11.00
8	395.5	16.3	24	56	80	304	19.	1.0	8.3	304	19.00
9	396.6	15.1	29	51	80	340	18.	1.0	9.3	340	18.00
10	397.5	19.5	36	37	73	545	19.	0.5	9.8	273	9.50
11	398.3	18.8	46	42	88	671	6.3	0.6	10.4	403	3.78
						<u>BARTLESVILLE SAND</u>					
1	790.5	14.1	37	47	84	405	Imp.	1.0	1.0	405	0.00
2	791.5	13.1	30	53	83	305	0.44	1.0	2.0	305	0.44
3	792.3	15.8	29	38	67	356	0.45	1.0	3.0	356	0.45
4	793.5	15.1	31	43	74	363	3.3	1.0	4.0	363	3.30
5	794.5	16.3	37	32	69	468	0.16	0.7	4.7	328	0.11
6	795.5	14.0	56	33	89	608	Imp.	1.0	5.7	608	0.00
7	796.5	14.3	40	47	87	444	Imp.	1.4	7.1	622	0.00
8	801.5	8.9	18	79	97	124	Imp.	0.9	8.0	112	0.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Enutrof Productions	Lease	Carr	Well No.
				3
	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
		<u>WISER SAND</u>		
	388.0 - 398.4	10.4	11.8	122.66
		<u>BARTLESVILLE SAND</u>		
	790.0 - 802.2	3.7	1.2	4.30
		<u>WISER SAND</u>		
	388.0 - 398.4	10.4	26.6	323
		Average Percent Porosity	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.
		15.4	54.2	3,357
		<u>BARTLESVILLE SAND</u>		
	790.0 - 802.2	8.0	35.1	387
		Average Percent Porosity	Average Percent Water Saturation	Total Oil Content Bbls./Acre
		13.9	46.7	3,099

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc ^e	Effective Permeability Millidarcys ^{ee}	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water			
					<u>WISER SAND</u>						
1	388.5	12.8	25	248	0	0	25	61	17	0.75	40
2	389.5	15.1	18	211	0	0	18	66	8	0.45	50
3	390.5	15.6	22	266	0	0	22	64	16	0.30	45
4	391.3	14.3	21	233	0	0	21	64	18	0.42	45
5	392.5	14.4	25	279	0	0	25	64	8	0.30	50
6	393.5	14.0	26	282	0	0	26	65	0	Imp.	-
7	394.5	17.6	31	423	0	0	31	61	16	0.56	40
8	395.5	16.5	24	307	0	0	24	68	22	0.86	35
9	396.6	15.1	29	340	0	0	29	63	37	0.75	30
10	397.5	19.4	36	542	0	0	36	58	23	0.64	35
11	398.3	19.2	45	670	0	0	45	47	13	0.38	40

Enutrof Productions

Lease Carr

Well No. 3

Company

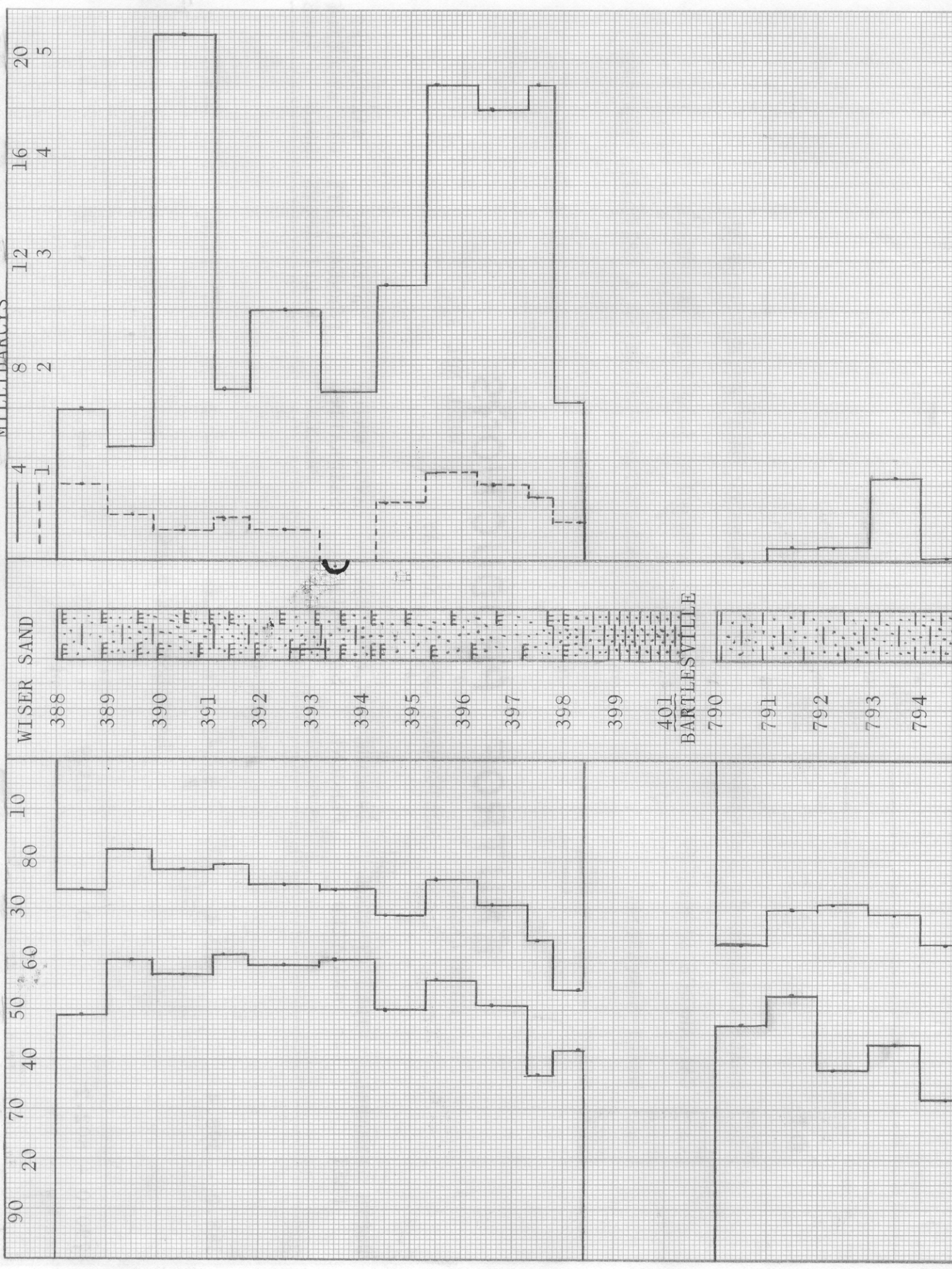
Notes: cc—cubic centimeter.

^e—Volume of water recovered at the time of maximum oil recovery.

^{ee}—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



796
797
801
802
809

KEY:

-  SHALY CALCAREOUS SANDSTONE
-  CALCAREOUS SANDSTONE
-  SHALY SANDSTONE
-  SANDY SHALE

-  CARBONACEOUS SHALY SANDSTONE
-  LAMINATED SANDSTONE AND SHALE
-  STRUCTURES CONTAINING A VERTICAL FRACTURE
-  IMPERMEABLE TO WATER

ENUTROF PRODUCTIONS

CARR LEASE

WELL NO. 3

MONTGOMERY COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVG. OIL SATURATION PERCENT		AVG. WATER SATURATION PERCENT		AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY / ACRE
		POROSITY	PERCENT	SATURATION	PERCENT		

WISER SAND

388.0 - 398.4	10.4	15.4	26.6	54.2	11.8		-----
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BARTLESVILLE SAND

790.0 - 802.2	8.0	13.9	35.1	46.7	1.2		-----
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CHANUTE, KANSAS
OCTOBER, 1980