

OILFIELD RESEARCH LABORATORIES

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

March 9, 1982

James E. Russell Petroleum, Inc.
P. O. Box 2618
Abilene, Texas 79604

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Minckley "B", Section 3 Lease, Well No. W-14, located in Anderson County, Kansas and submitted to our laboratory on March 4, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

3 c to Abilene, Texas
2 c to Chanute, Kansas

- REGISTERED ENGINEERS -

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

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company James E. Russell Petroleum, Inc. Lease Minckley "B", Section 3 Well No. W-14
 Location 880' EWL & 880' SNL, SW $\frac{1}{4}$
 Section 3 Twp. 23S Rge. 19E County Anderson State Kansas

Elevation, Feet Datum: Mean Sea Level (Ground Level) 1084.5
 Name of Sand Squirrel
 Top of Core 724.0
 Bottom of Core 742.0
 Top of Sand 724.7
 Bottom of Sand 731.7
 Total Feet of Permeable Sand 7.0
 Total Feet of Floodable Sand 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 1	1.9	1.9
1 - 2	1.7	3.6
2 - 6	3.4	7.0

Average Permeability Millidarcys 2.3
 Average Percent Porosity 13.6
 Average Percent Oil Saturation 49.6
 Average Percent Water Saturation 37.0
 Average Oil Content, Bbls./A. Ft. 523.
 Total Oil Content, Bbls./Acre 3,659.
 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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The core was sampled by a representative of Oilfield Research Laboratories. Fresh water mud was used as a drilling fluid. The core was reported to be from a non-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>
724.0 - 724.7	Shale, gray.
724.7 - 726.6	Sandstone, shaly, brown with shale partings, gray scattered.
726.6 - 730.0	Sandstone, shaly, brown.
730.0 - 731.7	Shale and sandstone, laminated gray and brown.
731.7 - 742.0	Shale, gray.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company James E. Russell Petroleum, Inc. Lease Minckley "B", Section 3 Well No. W-14

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbbs. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	725.5	10.2	50	28	78	396	0.63	0.9	0.9	356	0.57
2	726.5	13.9	34	50	84	367	0.76	1.0	1.9	367	0.76
3	727.4	12.9	63	35	98	631	2.4	1.4	3.3	883	3.36
4	728.4	16.4	50	27	77	636	3.5	1.0	4.3	636	3.50
5	729.4	14.2	53	32	85	584	5.8	1.0	5.3	584	5.80
6	730.5	14.8	51	33	84	586	1.3	1.0	6.3	586	1.30
7	731.4	12.3	37	61	98	353	1.0	0.7	7.0	247	0.70

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		James E. Russell Petroleum, Inc.		Lease Minckley "B", Section 3		Well No. W-14	
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.				
724.7 - 731.7	7.0	2.3	15.99				
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	
724.7 - 731.7	7.0	13.6	49.6	37.0	523	3,659	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Minckley "B", Section 3 Well No. W-14

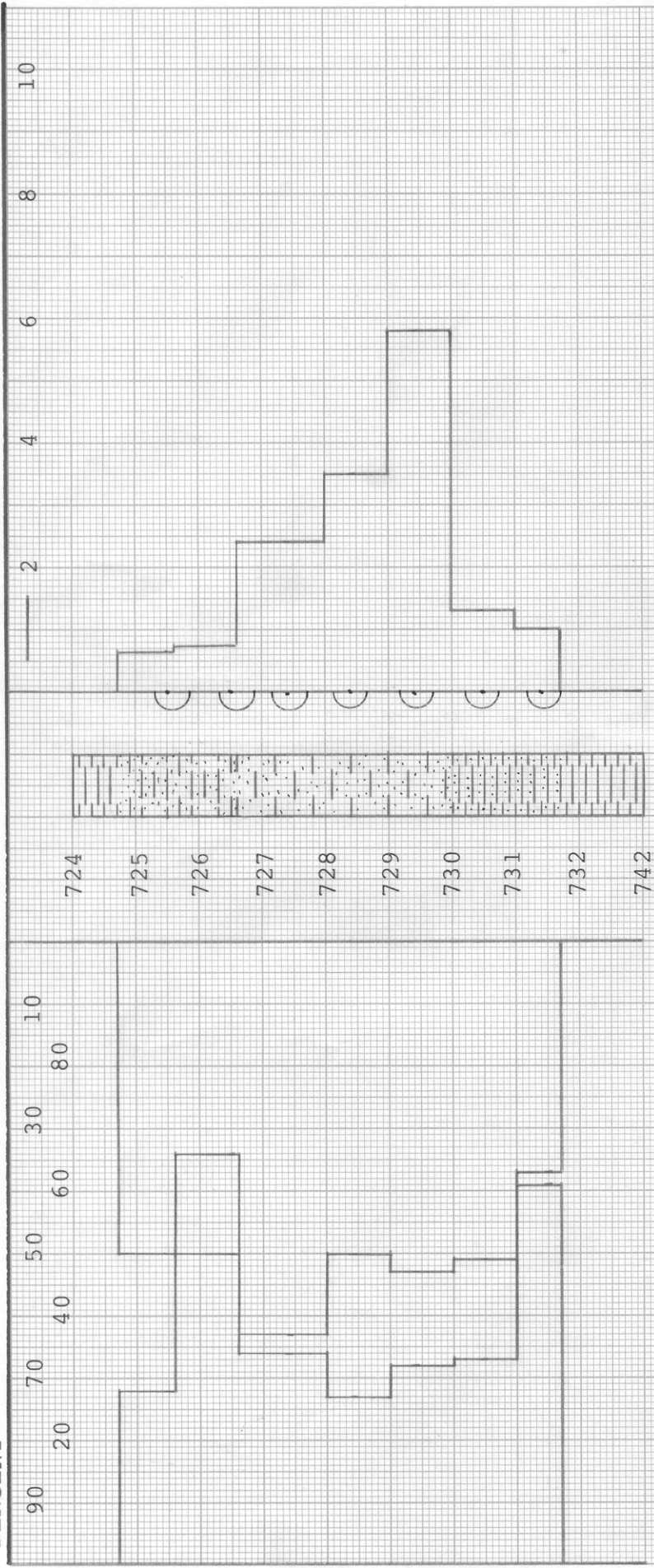
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbbls./A. Ft.	%	Bbbls./A. Ft.	% Oil	% Water	Bbbls./A. Ft.			
1	725.5	10.3	50	400	0	0	50	29	400	0	Imp.	-
2	726.5	13.4	35	364	0	0	35	50	364	0	Imp.	-
3	727.4	13.0	63	635	0	0	63	35	635	0	Imp.	-
4	728.4	16.3	50	632	0	0	50	28	632	0	Imp.	-
5	729.4	14.3	53	588	0	0	53	33	588	0	Imp.	-
6	730.5	14.7	51	582	0	0	51	33	582	0	Imp.	-
7	731.4	12.4	37	356	0	0	37	61	356	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 SANDSTONE



IMPERMEABLE TO WATER



SHALY SANDSTONE WITH SHALE PARTINGS



LAMINATED SANDSTONE AND SHALE

JAMES E. RUSSELL PETROLEUM, INC.

MINCKLEY "B" SECTION 3 LEASE
WELL NO. W-14

ANDERSON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. / ACRE
724.7 - 731.7	7.0	13.6	49.6	37.0	2.3	-

JAMES E. RUSSELL PETROLEUM, INC.
MINCKLEY "B" SECTION 3 LEASE
WELL NO. W-14
ANDERSON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLs. / ACRE
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724.7 - 731.7	7.0	13.6	49.6	37.0	2.3	-
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NOTE: ELEVATION, FEET - DATUM: MEAN SEA LEVEL (GROUND LEVEL) 1084.5

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
MARCH, 1982

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