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

February 26, 1980

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 Bain-Tract 1 Lease, Well No. 11, Anderson County, Kansas, and submitted to our laboratory on February 4, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/tem

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

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company James E. Russell Petroleum, Inc. Lease B. Bain-Tract 1 Well No. 11

Location 1100' EWL & 2420' SNL $E\frac{1}{2}$ $SE\frac{1}{4}$

Section 10 Twp. 23S Rge. 19E County Anderson State Kansas

Elevation, Feet Datum: Mean Sea Level (Ground Level) 1083.6

Name of Sand	Squirrel
Top of Core	738.0
Bottom of Core	778.3
Top of Sand	738.0
Bottom of Sand	772.0
Total Feet of Permeable Sand	26.2
Total Feet of Floodable Sand	0

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 1	14.5	14.5
1 - 5	2.8	17.3
5 - 10	4.9	22.2
10 - 20	3.0	25.2
20 - 30	1.0	26.2

Average Permeability Millidarcys	4.9
Average Percent Porosity	14.8
Average Percent Oil Saturation	31.7
Average Percent Water Saturation	47.9
Average Oil Content, Bbls./A. Ft.	370.
Total Oil Content, Bbls./Acre	11,036.
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

The core was sampled by a representative of Oilfield Research Laboratories. Fresh water mud was used as a drilling fluid. The core was from a semi-virgin area.

Since the core did not respond to floodpot testing, no calculated recovery is given. However, an estimate of primary reserves is presented.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
738.0 - 738.9	Sandstone and shale, brown and gray, laminated, first oil show.
738.9 - 740.4	Shale, gray and sandy.
740.4 - 741.8	Sandstone and shale, brown and gray laminated.
741.8 - 742.3	Shale, gray, sandy.
742.3 - 742.9	Sandstone and shale, brown and gray laminated.
742.9 - 743.9	Shale, gray, sandy.
743.9 - 744.6	Sandstone, brown, shaly.
744.6 - 745.3	Shale, gray, sandy.
745.3 - 751.3	Sandstone and shale, brown and gray, laminated.
751.3 - 753.8	Sandstone, brown, shaly.
753.8 - 754.9	Shale, gray, sandy.
754.9 - 759.0	Sandstone and shale, brown and gray, laminated.
759.0 - 759.9	Shale, gray, sandy.
759.9 - 768.0	Sandstone, brown.
768.0 - 768.8	Sandstone, brown, slightly shaly.

Depth Interval, Feet	Description
768.8 - 772.0	Sandstone and shale, brown and gray, laminated.
772.0 - 775.3	Shale, gray.
775.3 - 778.3	Shale, hard, gray, calcareous, sandy.

PRIMARY RESERVES ESTIMATE

Average porosity for pay sand (749.0 - 772.0) (permeability 1.0 millidarcy or greater, oil saturation 25% or greater)	16.8
Net pay sand thickness	12.9'
Original formation volume factor	1.05
Reservoir water saturation, percent, estimated	25.0
Estimated primary reserves, barrels per acre foot	37.
Estimated primary reserves, barrels per acre	620.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company James E. Russell Petroleum, Inc. Lease Bain-Tract 1 Well No. 11

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	738.5	10.8	27	70	97	226	Imp.	0.9	0.9	203	0.00
2	739.5	11.5	12	84	96	107	0.16	1.5	2.4	161	0.24
3	740.5	13.5	33	55	88	346	Imp.	0.7	3.1	242	0.00
4	741.7	14.8	27	41	68	310	0.51	0.7	3.8	217	0.36
5	742.6	12.2	37	60	97	350	0.32	0.6	4.4	210	0.19
6	744.5	16.4	31	38	69	394	0.52	0.7	5.1	276	0.36
7	745.5	13.1	26	67	93	264	Imp.	0.7	5.8	185	0.00
8	746.5	13.9	21	61	82	227	0.50	1.0	6.8	227	0.50
9	747.5	12.4	21	69	90	202	1.0	1.0	7.8	202	1.00
10	748.5	14.0	14	62	76	152	0.22	1.0	8.8	152	0.22
11	749.5	13.8	37	46	83	396	0.82	1.0	9.8	396	0.82
12	750.5	13.9	26	54	80	280	Imp.	1.3	11.1	364	0.00
13	751.5	16.1	26	44	70	325	0.32	0.7	11.8	228	0.22
14	752.5	17.0	36	26	62	475	1.3	1.0	12.8	475	1.30
15	753.5	16.8	33	33	66	430	3.2	0.8	13.6	344	2.56
16	755.5	12.9	36	47	83	360	0.24	1.1	14.7	396	0.26
17	756.5	11.6	35	54	89	315	0.70	1.0	15.7	315	0.70
18	757.5	13.3	33	52	85	341	0.82	1.0	16.7	341	0.82
19	758.9	17.5	31	38	69	421	0.74	1.0	17.7	421	0.74
20	760.5	18.6	31	36	67	447	9.6	1.1	18.8	492	10.56
21	761.5	17.7	35	33	68	481	8.3	1.0	19.8	481	8.30
22	762.6	20.0	34	34	68	528	30.	1.0	20.8	528	30.00
23	763.5	17.4	39	33	72	527	7.5	1.0	21.8	527	7.50
24	764.6	17.7	37	36	73	508	15.	1.0	22.8	508	15.00
25	765.5	13.8	36	53	89	385	14.	1.0	23.8	385	14.00
26	766.8	16.7	38	29	67	492	14.	1.0	24.8	492	14.00
27	767.9	16.9	44	28	72	577	10.	1.0	25.8	577	10.00
28	768.6	15.7	50	34	84	609	6.0	0.8	26.6	487	4.80

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RESULTS OF SATURATION & PERMEABILITY TESTS

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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.		
29	769.5	13.6	36	49	85	380	1.0	1.2	27.8	456	1.20
30	770.5	16.7	39	40	79	505	1.6	1.0	28.8	505	1.60
31	771.5	9.5	33	61	94	243	0.41	1.0	29.8	243	0.41

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company James E. Russell Petroleum, Inc. Lease Bain-Tract 1 Well No. 11

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
738.0 - 749.0	6.5	0.44	2.87
749.0 - 772.0	19.7	6.3	124.79
738.0 - 772.0	26.2	4.9	127.66

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
738.0 - 749.0	8.8	13.1	23.0	63.4	236	2,075
749.0 - 772.0	21.0	15.5	35.4	41.4	427	8,961
738.0 - 772.0	29.8	14.8	31.7	47.9	370	11,036

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Bain-Tract 1 Well No. 11

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	Bbls./A. Ft.			
1	738.5	11.2	26	226	0	0	26	71	226	0	Imp.	-
2	739.5	11.5	12	107	0	0	12	85	107	0	Imp.	-
3	740.5	13.8	32	343	0	0	32	60	343	0	Imp.	-
4	741.7	14.6	27	306	0	0	27	61	306	0	Imp.	-
5	742.6	12.7	35	345	0	0	35	63	345	0	Imp.	-
6	744.5	16.0	32	397	0	0	32	45	397	0	Imp.	-
7	745.5	13.3	25	258	0	0	25	70	258	0	Imp.	-
8	746.5	13.8	21	225	0	0	21	65	225	0	Imp.	-
9	747.5	12.7	20	197	0	0	20	71	197	0	Imp.	-
10	748.5	13.5	16	168	0	0	16	70	168	0	Imp.	-
11	749.5	13.4	36	374	0	0	36	51	374	0	Imp.	-
12	750.5	13.9	26	280	0	0	26	60	280	0	Imp.	-
13	751.5	16.4	25	318	0	0	25	50	318	0	Imp.	-
14	752.5	16.7	38	493	0	0	38	40	493	0	Imp.	-
15	753.5	17.0	32	422	0	0	32	44	422	0	Imp.	-
16	755.5	13.3	35	362	0	0	35	50	362	0	Imp.	-
17	756.5	12.0	34	317	0	0	12	80	317	0	Imp.	-
18	757.5	13.6	32	337	0	0	32	58	337	0	Imp.	-
19	758.9	17.9	29	403	0	0	29	52	403	0	Imp.	-
20	760.5	19.0	30	442	0	0	30	50	442	0	Imp.	-
21	761.5	17.6	35	478	0	0	35	51	478	0	Imp.	-
22	762.6	19.5	35	530	0	0	35	42	530	0	Imp.	-
23	763.5	17.4	39	527	0	0	39	41	527	0	Imp.	-
24	764.6	17.3	38	510	0	0	38	42	510	0	Imp.	-
25	765.5	14.3	35	389	0	0	35	58	389	7	0.15	50
26	766.8	17.0	37	488	0	0	37	40	488	11	0.30	50
27	767.9	16.4	45	573	0	0	45	40	573	0	Imp.	-
28	768.6	15.5	50	601	0	0	50	41	601	0	Imp.	-
29	769.5	14.1	34	372	0	0	34	54	372	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.

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Bain-Tract 1 Well No. 11

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	Bbls./A. Ft.			
30	770.5	16.2	40	503	0	0	40	42	503	0	Imp.	-
31	771.5	10.0	31	240	0	0	31	65	240	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.