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

April 14, 1982

Inco Resources, Inc.
8100 Marty, Suite 117
Overland Park, Kansas 66204

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary cores taken from the Stevenson Lease, Well No. 5, located in Franklin County, Kansas and submitted to our laboratory on April 7, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

3 c to Overland Park, Kansas
2 c to Hutchinson, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Inco Resources, Inc. Lease Stevenson Well No. 5

Location 890' SNL & 1090' WEL, NE¼

Section 33 Twp. 17S Rge. 21E County Franklin State Kansas

	Brown Limestone	Cattleman
Elevation, Feet		
Name of Sand		
Top of Core	477.0	595.0
Bottom of Core	482.3	600.4
Top of Sand	477.0	595.0
Bottom of FORMATION (Tested)	481.9	599.6
Total Feet of Permeable Sand	3.9	3.6
Total Feet of Floodable Sand	2.7	2.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
	BROWN LIMESTONE	
0 - 11	1.9	1.9
169 - 2454	2.0	3.9
	CATTLEMAN SAND	
0 - 2	1.6	1.6
44 - 138	2.0	3.6

Average Permeability Millidarcys	791.7	50.7
Average Percent Porosity	18.8	15.3
Average Percent Oil Saturation	37.3	35.7
Average Percent Water Saturation	23.2	46.1
Average Oil Content, Bbls./A. Ft.	567.	417.
Total Oil Content, Bbls./Acre	2,776.	1,919.
Average Percent Oil Recovery by Laboratory Flooding Tests	15.3	7.5
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	257.	115.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	693.	230.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section	

The core was sampled by a representative of Oilfield Research Laboratories. Air and KCL were used as a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
	BROWN LIMESTONE
477.0 - 477.8	Light brown calcareous sandstone.
477.8 - 479.0	Brown slightly vuggy calcareous sandstone.
479.0 - 480.0	Grayish light brown fossiliferous limestone (coral).
480.0 - 480.7	Brown calcareous slightly vuggy sandstone.
480.7 - 481.9	Gray slightly sandy limestone.
481.9 - 482.3	Gray shale.
	CATTLEMAN SAND
595.0 - 597.0	Grayish brown slightly calcareous very shaly sandstone.
597.0 - 599.0	Brown sandstone.
599.0 - 599.6	Grayish brown shaly sandstone.
599.6 - 600.4	Gray shale.

LABORATORY FLOODING TESTS

CATTLEMAN SAND

The Cattleman Sand in this core responded to laboratory flooding tests, as a total recovery of 230 barrels of oil per acre was obtained from 2.0 feet of sand. The weighted average percent oil saturation was reduced from 36.5 to 29.0, or represents an average recovery of 7.5 percent

The weighted average effective permeability of the samples is 3.38 millidarcys, while the average initial fluid production pressure is 22.5 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 5 samples tested, 2 produced water and oil. This indicates that approximately 40 percent of the sand represented by these samples is floodable pay sand.

BROWN LIMESTONE

The Brown Limestone in this core responded to laboratory flooding tests, as a total recovery of 693 barrels of oil per acre was obtained from 2.7 feet of formation. The weighted average percent oil saturation was reduced from 51.5, to 36.2, or represents an average recovery of 15.3 percent. The weighted average effective permeability of the samples is 120.6 millidarcys, while the average initial fluid production pressure is 11.7 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 5 samples tested, 3 produced water and oil. This indicates that approximately 60 percent of the sand represented by these samples is floodable pay sand.

CALCULATED RECOVERY

It would appear from a study of the core data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 900 barrels of oil per acre from the Brown Limestone, and approximately 740 barrels of oil per acre from the Cattleman Sand. This is an average recovery of 333 barrels per acre foot from 2.7 feet of floodable sand from the Brown Limestone, and an average recovery of 371 barrels per acre foot from 2.0 feet of floodable sand from the Cattleman Sand.

These recovery values were calculated using the following data and assumptions:

	Brown Limestone	Cattleman Sand
Original formation volume factor, estimated	1.04	1.05
Reservoir water saturation, percent, estimated	20.0	25.0
Average porosity, percent	21.1	20.5
Oil saturation after flooding, percent	36.2	29.0
Performance factor, percent, estimated	50.0	55.0
Net floodable pay sand, feet	2.7	2.0

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Inco Resources, Inc. Lease Stevenson Well No. 5

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.		
						BROWN LIMESTONE					
1	477.6	18.9	41	39	80	601	169.	0.8	0.8	481	135.20
2	478.5	23.2	50	21	71	900	2453.	1.2	2.0	1080	2943.60
3	479.6	24.5	16	30	46	304	Imp.	1.0	3.0	304	0.00
4	480.4	20.1	66	25	91	1029	10.	0.7	3.7	720	7.00
5	481.4	8.9	23	8	31	159	1.5	1.2	4.9	191	1.80
						CATTLEMAN SAND					
6	595.5	12.2	22	70	92	208	0.40	1.0	1.0	208	0.40
7	596.4	8.8	46	50	96	314	Imp.	1.0	2.0	314	0.00
8	597.5	22.0	32	28	60	546	137.	1.0	3.0	546	137.00
9	598.5	19.0	41	30	71	604	44.	1.0	4.0	604	44.00
10	599.4	13.6	39	57	96	412	1.6	0.6	4.6	247	0.96

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Inco Resources, Inc. Lease Stevenson Well No. 5

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
	BROWN LIMESTONE		
477.0 - 481.9	3.9	791.7	3,087.60
	CATTLEMAN SAND		
595.0 - 599.6	3.6	50.7	182.36

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
			BROWN LIMESTONE			
477.0 - 481.9	4.9	18.8	37.3	23.2	567	2,776
			CATTLEMAN SAND			
595.0 - 599.6	4.6	15.3	35.7	46.1	417	1,919

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Inco Resources, Inc. Lease Stevenson Well No. 5

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.			
						BROWN LIMESTONE						
1	477.6	18.9	41	601	12	176	29	60	425	570	12.64	5
2	478.5	23.2	50	900	20	360	30	43	540	175	262.40	5
3	479.6	24.3	16	302	0	0	16	54	302	0	Imp.	-
4	480.4	20.0	66	1024	11	171	55	39	853	50	1.07	25
5	481.4	8.6	24	160	0	0	24	12	160	0	Imp.	-
						CATTLEMAN SAND						
6	595.5	12.6	21	205	0	0	21	72	205	0	Imp.	-
7	596.4	8.9	45	311	0	0	45	51	311	0	Imp.	-
8	597.5	22.1	32	549	4	69	28	60	480	396	6.30	15
9	598.5	18.9	41	601	11	161	30	62	440	26	0.45	30
10	599.4	13.3	40	413	0	0	40	57	413	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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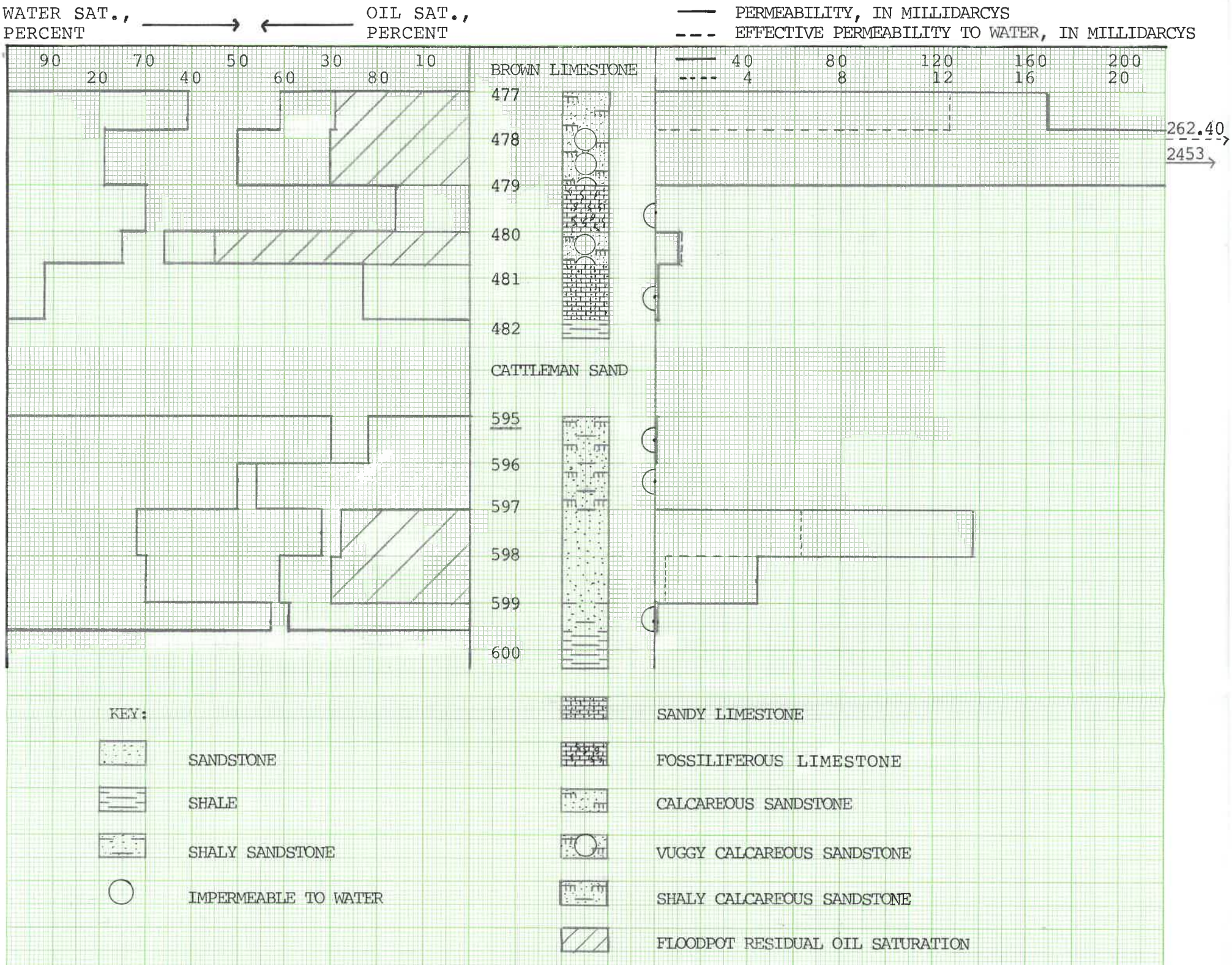
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Inco Resources, Inc. Lease Stevenson Well No. 5

	BROWN LIMESTONE	CATTLEMAN SAND
Depth Interval, Feet	477.0 - 481.9	595.0 - 599.6
Feet of Core Analyzed	2.7	2.0
Average Percent Porosity	21.1	20.5
Average Percent Original Oil Saturation	51.5	36.5
Average Percent Oil Recovery	15.3	7.5
Average Percent Residual Oil Saturation	36.2	29.0
Average Percent Residual Water Saturation	47.0	61.0
Average Percent Total Residual Fluid Saturation	83.2	90.0
Average Original Oil Content, Bbls./A. Ft.	844.	575.
Average Oil Recovery, Bbls./A. Ft.	257.	115.
Average Residual Oil Content, Bbls./A. Ft.	587.	460.
Total Original Oil Content, Bbls./Acre	2,278.	1,150.
Total Oil Recovery, Bbls./Acre	693.	230.
Total Residual Oil Content, Bbls./Acre	1,585.	920.
Average Effective Permeability, Millidarcys	120.6	3.38
Average Initial Fluid Production Pressure, p.s.i.	11.7	22.5

NOTE: Only those samples which recovered oil were used in calculating the above averages.



INCO RESOURCES, INC.

STEVENSON LEASE — WELL NO. 5

FRANKLIN 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
		BROWN LIMESTONE				
477.0 - 481.9	4.9	18.8	37.3	23.2	791.7	900 (PRIMARY AND WATERFLOODING)
		CATTLEMAN SAND				
595.0 - 599.6	4.6	15.3	35.7	46.1	50.7	740 (PRIMARY AND WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
APRIL, 1982

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