



OILFIELD RESEARCH LABORATORIES

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September 17, 1982

Triple-I Energy Corporation
8100 Marty, Suite 117
Overland Park, Kansas 66204

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the McGinnis Lease, Well No. 3, located in Franklin County, Kansas and submitted to our laboratory on September 13, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/rmc

4 c to Overland Park, Kansas
1 c to Hutchinson, Kansas

- REGISTERED ENGINEERS -

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

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GENERAL INFORMATION & SUMMARY

Company Triple-I Energy Corporation Lease McGinnis Well No. 3
 Location 165' FNL & 825' FWL, NW¼
 Section 33 Twp. 17S Rge. 21E County Franklin State Kansas

Elevation, Feet
 Name of Sand ?
 Top of Core 673.0
 Bottom of Core 682.0
 Top of Sand 673.7
 Bottom of Sand 680.0
 Total Feet of Permeable Sand 5.8
 Total Feet of Floodable Sand 4.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 9	1.8	1.8
27 - 63	3.2	5.0
104 - 106	0.8	5.8

Average Permeability Millidarcys 44.1
 Average Percent Porosity 19.7
 Average Percent Oil Saturation 49.4
 Average Percent Water Saturation 40.9
 Average Oil Content, Bbls./A. Ft. 705.
 Total Oil Content, Bbls./Acre 4,088.
 Average Percent Oil Recovery by Laboratory Flooding Tests 16.8
 Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. 250.
 Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre 998.
 Total Calculated Oil Recovery, Bbls./Acre.....

See "Calculated Recovery"
Section

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The core was sampled and the samples sealed in plastic bags by a representative of the client. The core was reported to be from a non-virgin area.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
673.0 - 673.7	Grayish black shale.
673.7 - 675.0	Brown sandstone containing shale partings.
675.0 - 675.8	Brown slightly shaly sandstone containing shale partings.
675.8 - 676.3	Gray sandy shale containing brown sandstone partings
676.3 - 677.8	Brown sandstone.
677.8 - 679.0	Brown sandstone containing scattered shale partings.
679.0 - 680.0	Alternate layers of gray shale and brown sandstone.
680.0 - 682.0	Gray sandy shale.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 998 barrels of oil per acre was obtained from 4.0 feet of sand. The weighted average percent oil saturation was reduced from 48.2 to 31.4, or represents an average recovery of 16.8 percent. The weighted average effective permeability of the samples is 5.72 millidarcys, while the average initial fluid production pressure is 15.0 pounds per square inch (See Table V).

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By observing the data given in Table IV, you will note that of the 6 samples tested, 4 produced water and oil. This indicates that approximately 67 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 1,070 barrels of oil per acre. This is an average recovery of 267 barrels per acre foot from 4.0 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.05
Reservoir water saturation, percent, estimated	30.0
Average porosity, percent	19.5
Oil saturation after flooding, percent	31.4
Performance factor, percent, estimated	50.0
Net floodable sand, feet	4.0

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Triple-I Energy Corporation Lease McGinnis Well No. 3

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation		Oil Content Bbbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water			Ft.	Cum. Ft.		
1	674.5	18.5	58	39	832	27.	1.3	1.3	1,406	45.63
2	675.5	16.5	24	56	307	8.0	0.8	2.1	2,246	6.40
3	676.7	18.6	58	38	837	58.	0.7	2.8	586	40.60
4	677.5	20.6	42	31	671	105.	0.8	3.6	537	84.00
5	678.4	20.4	36	31	570	62.	1.2	4.8	684	74.40
6	679.7	15.6	52	38	629	4.8	1.0	5.8	629	4.80

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Lease	Well No.			
Triple-I Energy Corporation	McGinnis	3			
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.
673.7 - 680.0	5.8	44.1	255.83	49.4	705
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Total Oil Content Bbbl./Acre	
673.7 - 680.0	5.8	19.7	40.9	4,088	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company		Triple-I Energy Corporation		Lease		McGinnis		Well No.		3	
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			
1	674.5	18.6	58	837	23	331	35	63	312	12.16	15
2	675.5	17.0	23	303	0	0	23	57	0	Imp.	-
3	676.7	18.7	58	841	26	377	32	63	390	6.50	10
4	677.5	20.5	42	668	12	191	30	66	180	2.92	15
5	678.4	20.3	36	567	8	126	28	60	12	0.15	20
6	679.7	15.6	52	629	0	0	52	39	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	Triple-I Energy Corporation	Lease	McGinnis	Well No.	3
Depth Interval, Feet	673.7 - 680.0				
Feet of Core Analyzed	4.0				
Average Percent Porosity	19.5				
Average Percent Original Oil Saturation	48.2				
Average Percent Oil Recovery	16.8				
Average Percent Residual Oil Saturation	31.4				
Average Percent Residual Water Saturation	62.7				
Average Percent Total Residual Fluid Saturation	94.1				
Average Original Oil Content, Bbls./A. Ft.	724.				
Average Oil Recovery, Bbls./A. Ft.	250.				
Average Residual Oil Content, Bbls./A. Ft.	474.				
Total Original Oil Content, Bbls./Acre	2,892.				
Total Oil Recovery, Bbls./Acre	998.				
Total Residual Oil Content, Bbls./Acre	1,894.				
Average Effective Permeability, Millidarcys	5.72				
Average Initial Fluid Production Pressure, p.s.i.	15.0				

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

