OILFIELD RESEARCH LABORATORIES
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November 18, 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 Nolin Lease, Well No. 32, located in Linn County, Kansas and submitted to our laboratory on November 12, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/rmc

5 c to Overland Park, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Triple-I Energy Corporation Lease Nolin Well No. 32

Location

Section 23 Twp. 19S Rge. 22E County Linn State Kansas

Elevation, Feet	
Name of Sand	Bartlesville
Top of Core	639.0
Bottom of Core	656.3
Top of Sand (Tested)	641.0
Bottom of Sand	656.3
Total Feet of Permeable Sand	14.4
Total Feet of Floodable Sand	13.8

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
3 - 36	2.6	2.6
60 - 100	4.2	6.8
115 - 146	6.6	13.4
230 - 232	1.0	14.4

Average Permeability Millidarcys	102.7
Average Percent Porosity	21.4
Average Percent Oil Saturation	39.1
Average Percent Water Saturation	38.5
Average Oil Content, Bbls./A. Ft.	655.
Total Oil Content, Bbls./Acre	9,435.
Average Percent Oil Recovery by Laboratory Flooding Tests	10.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	173.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	2,385.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section

The core was sampled and the samples sealed in plastic bags by a representative of the client.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
639.0 - 641.0	Grayish brown very shaly sandstone.
641.0 - 643.0	Brown sandstone.
643.0 - 643.6	Grayish brown shaly sandstone.
643.6 - 644.1	Gray shale.
644.1 - 645.0	Brown sandstone.
645.0 - 645.4	Grayish brown very shaly sandstone.
645.4 - 649.1	Brown sandstone.
649.1 - 650.0	Alternate layers of brown sandstone and gray shale.
650.0 - 656.3	Brown sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 2,385 barrels of oil per acre was obtained from 13.8 feet of sand. The weighted average percent oil saturation was reduced from 40.4 to 30.1, or represents an average recovery of 10.3 percent. The weighted average effective permeability of the samples is 9.80 millidarcys, while the average initial fluid production pressure is 15.4 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 15 samples tested, 14 produced water and oil, and 1 produced water only. This indicates that approximately 93 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 5,350 barrels of oil per acre. This is an average recovery of 388 barrels per acre foot from 13.8 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	20.0
Average porosity, percent	21.7
Oil saturation after flooding, percent	30.1
Performance factor, percent, estimated	50.0
Net floodable sand, feet	13.8

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Triple-I Energy Corporation Lease Nolin Well No. 32

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	641.5	19.7	48	31	79	734	31.	1.0	1.0	734	31.00
2	642.6	21.7	34	51	85	572	35.	1.0	2.0	572	35.00
3	643.5	15.3	9	74	83	107	3.9	0.6	2.6	64	2.34
4	644.6	20.7	54	19	73	867	60.	0.9	3.5	780	54.00
5	645.5	21.5	32	51	83	534	121.	0.7	4.2	374	84.70
6	646.4	21.2	40	41	81	658	72.	1.0	5.2	658	72.00
7	647.5	22.1	38	36	74	652	145.	1.0	6.2	652	145.00
8	648.5	23.2	42	39	81	756	121.	1.0	7.2	756	121.00
9	649.5	22.5	52	27	79	908	115.	0.9	8.1	817	103.50
10	650.6	24.5	47	27	74	893	231.	1.0	9.1	893	231.00
11	651.5	21.4	41	31	72	681	96.	1.0	10.1	681	96.00
12	652.6	22.2	34	35	69	586	130.	1.0	11.1	586	130.00
13	653.5	19.5	39	47	86	590	133.	1.0	12.1	590	133.00
14	654.6	21.8	32	44	76	541	115.	1.0	13.1	541	115.00
15	655.5	21.5	34	39	73	567	96.	1.3	14.4	737	124.80

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Triple-I Energy Corporation Lease Nolin Well No. 32

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
641.0 - 647.1	5.2	53.7	279.04
647.1 - 656.3	9.2	130.4	1199.30
641.0 - 656.3	14.4	102.7	1478.34

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
641.0 - 647.1	5.2	20.3	38.2	42.3	612	3,182
647.1 - 656.3	9.2	22.1	39.6	36.3	680	6,253
641.0 - 656.3	14.4	21.4	39.1	38.5	655	9,435

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Triple-I Energy Corporation Lease Nolin Well No. 32

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	641.5	19.8	48	737	20	307	28	66	430	96	1.50	20
2	642.6	21.5	34	567	7	117	27	63	450	74	1.12	20
3	643.5	15.8	9	110	0	0	9	76	110	6	0.45	45
4	644.6	20.7	54	867	23	369	31	54	498	66	0.90	20
5	645.5	21.6	32	536	3	50	29	60	486	348	9.16	15
6	646.4	21.3	40	661	9	149	31	63	512	368	9.15	20
7	647.5	22.2	38	654	10	172	28	59	482	436	13.16	10
8	648.5	23.3	42	759	8	145	34	60	614	286	20.74	10
9	649.5	22.4	52	904	23	400	29	63	504	218	19.49	10
10	650.6	24.6	47	897	16	305	31	56	592	254	23.09	10
11	651.5	21.2	41	674	8	132	33	58	542	154	2.70	25
12	652.6	22.4	34	591	2	35	32	63	556	274	8.50	15
13	653.5	19.6	39	593	9	137	30	61	456	284	11.43	15
14	654.6	22.0	32	546	3	51	29	63	495	236	11.14	10
15	655.5	21.5	34	567	5	83	29	64	484	450	6.15	15

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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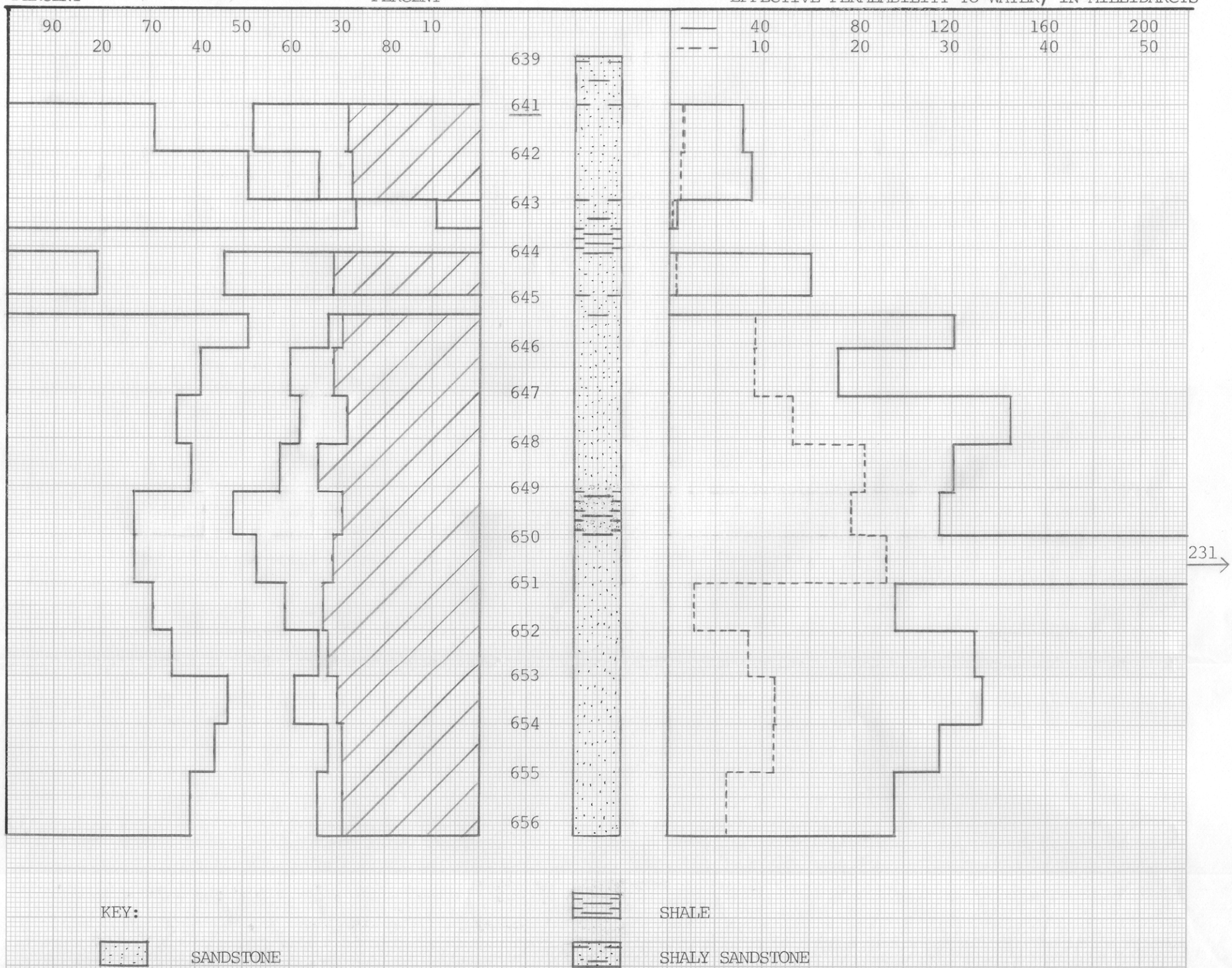
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Triple-I Energy Corporation Lease Nolin Well No. 32

Depth Interval, Feet	641.0 - 647.1	647.1 - 656.3	641.0 - 656.3
Feet of Core Analyzed	4.6	9.2	13.8
Average Percent Porosity	20.9	22.1	21.7
Average Percent Original Oil Saturation	42.0	39.5	40.4
Average Percent Oil Recovery	12.8	9.0	10.3
Average Percent Residual Oil Saturation	29.2	30.5	30.1
Average Percent Residual Water Saturation	61.4	60.9	61.1
Average Percent Total Residual Fluid Saturation	90.6	91.4	91.2
Average Original Oil Content, Bbls./A. Ft.	678.	681.	680.
Average Oil Recovery, Bbls./A. Ft.	204.	157.	173.
Average Residual Oil Content, Bbls./A. Ft.	474.	524.	507.
Total Original Oil Content, Bbls./Acre	3,120.	6,265.	9,385.
Total Oil Recovery, Bbls./Acre	940.	1,445.	2,385.
Total Residual Oil Content, Bbls./Acre	2,180.	4,820.	7,000.
Average Effective Permeability, Millidarcys	4.13	12.64	9.80
Average Initial Fluid Production Pressure, p.s.i.	19.0	13.3	15.4

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


WATER SAT., PERCENT
OIL SAT., PERCENT
90 70 50 30 10
20 40 60 80
PERMEABILITY, IN MILLIDARCYS
EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS
40 80 120 160 200
10 20 30 40 50
639
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
231
KEY:
SANDSTONE
SHALE
SHALY SANDSTONE

KEY:

SANDSTONE

FLOODPOT RESIDUAL OIL SATURATION

SHALE

SHALY SANDSTONE

ALTERNATE LAYERS OF SANDSTONE AND SHALE

TRIPLE I ENERGY CORPORATION

NOLIN LEASE

WELL NO. 32

LINN 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
641.0 - 647.1	5.2	20.3	38.2	42.3	53.7	
647.1 - 565.3	9.2	22.1	39.6	36.3	130.4	
641.0 - 656.3	14.4	21.4	39.1	38.5	102.7	5350 (PRIMARY AND WATERFLOODING)

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CHANUTE, KANSAS
NOVEMBER, 1982 PDC