



OILFIELD RESEARCH LABORATORIES

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

August 2, 1979

Mid-States Energy Corporation
P. O. Box 371
Paola, Kansas 66071

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Bauer Lease, Well No. 1, Miami County, Kansas, and submitted to our laboratory on July 30, 1979.

The core was sampled on location by a representative of the client and delivered to the laboratory by Oilfield Research Laboratories.

The core was approximately $3\frac{1}{2}$ days old before being sampled.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman
Benjamin R. Pearman

BRP:dlb

5 c to Paola, Kansas

- REGISTERED ENGINEERS -

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

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GENERAL INFORMATION & SUMMARY

Company Mid-States Energy Corporation Lease Bauer Well No. 1

Location SE SE NE NW

Section 21 Twp. 17S Rge. 25E County Miami State Kansas

Name of Sand	- - - - -	Peru
Top of Core	- - - - -	447.0
Bottom of Core	- - - - -	460.3
Top of Sand	- - - - -	449.0
Bottom of Sand	- - - - -	460.3
Total Feet of Permeable Sand	- - - - -	9.6
Total Feet of Floodable Sand	- - - - -	

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

	Feet	Cum. Ft.
0 - 5	3.3	3.3
47 - 100	3.0	6.3
100 - 150	2.7	9.0
150 & Above	0.6	9.6

Average Permeability Millidarcys	- - - - -	64.9
Average Percent Porosity	- - - - -	13.7
Average Percent Oil Saturation	- - - - -	41.6
Average Percent Water Saturation	- - - - -	25.4
Average Oil Content, Bbls./A. Ft.	- - - - -	434.
Total Oil Content, Bbls./Acre	- - - - -	4,160.
Average Percent Oil Recovery by Laboratory Flooding Tests	- - - - -	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	- - - - -	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	- - - - -	
Total Calculated Oil Recovery, Bbls./Acre	- - - - -	
Packer Setting, Feet	- - - - -	
Viscosity, Centipoises @	- - - - -	
A. P. I. Gravity, degrees @ 60 °F	- - - - -	
Elevation, Feet	- - - - -	

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LOG

Company Mid-States Energy Corporation Lease Bauer Well No. 1

Depth Interval,
Feet

Description

447.0 - 449.0

Grayish light brown calcareous shale.

449.0 - 452.6

Brown slightly calcareous sandstone.

452.6 - 454.3

Hard gray limestone.

454.3 - 460.3

Light brown slightly calcareous sandstone.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Mid-States Energy Corporation Lease Bauer Well No. 1

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.		
1	449.5	11.7	41	4	45	113.	1.0	1.0	372	113.00
2	450.5	10.4	53	8	61	96.	1.0	2.0	428	96.00
3	451.3	11.6	40	6	46	121.	1.0	3.0	360	121.00
4	452.5	15.4	39	9	48	158.	0.6	3.6	280	94.80
5	454.6	21.6	38	5	43	110.	0.7	4.3	446	77.00
6	455.5	19.1	36	2	38	47.	1.0	5.3	533	47.00
7	456.5	16.1	46	50	96	1.4	1.0	6.3	575	1.40
8	457.5	14.8	33	55	88	68.	1.0	7.3	379	68.00
9	458.6	14.2	44	50	94	4.1	1.0	8.3	485	4.10
10	459.5	6.8	44	46	90	0.33	1.3	9.6	302	0.43

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Lease	Bauer	Well No.		
Mid-States Energy Corporation			1		
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
449.0 - 456.0	5.3	103.6	548.80		
456.0 - 460.3	4.3	17.2	73.93		
449.0 - 460.3	9.6	64.9	622.73		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
449.0 - 456.0	5.3	14.6	41.5	456	2,419
456.0 - 460.3	4.3	12.3	42.0	405	1,741
449.0 - 460.3	9.6	13.7	41.6	434	4,160

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RESULTS OF SAND CHLORIDE TESTS

TABLE VI

Company Mid-States Energy Corporation Lease Bauer Well No. 1

Sample No.	Depth, Feet	Chloride Content of Brine in Sand ppm	Percent Water Saturation	
			Connate	Drilling & Foreign Total
1	449.5	139,304		
2	450.5	111,194		
3	451.3	172,712		
4	452.4	114,905		
5	454.6	129,917		
6	455.5	311,201		
7	456.5	19,306		
8	457.5	20,214		
9	458.6	10,617		
10	459.5	40,117		
<u>NOTE:</u>	These chloride values are extremely high as a result of the very low water saturations in the core.			