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GEOLOGISTS REPORT

for

William Karl #1-85

A.P.I. #15-087-20191

C, E2, SE, NW, Sec. 8, T9S, R20E

Jefferson County, Kansas

August 1985

by

George E. Petersen C.P.G.S.

DEACON GEOLOGY INC.



*professional geologists*

# GEOLOGISTS REPORT

William Karl #1-85

August 18, 1985: On location @ 10 PM. Drlg. @ 1320'.  
 August 19, 1985: Released from location @ 6:15 PM.

Elevation: 1035 G.L. (Topo)

Formation Tops	Log Depth	Datum	Thickness
Hushpuckney Sh.	745	+290	--
Marmaton Gp.	888	+147	88'
Cherokee Sh.	976	+59	504'
"U. McLouth Sd."	1,433	-398	17'
"M. McLouth Sd."	1,450	-415	22'
"L. McLouth Sd."	1,472	-437	6'
Mississippian Lm.	1,480	-445	--
RTD	1,526		
LTD	1,524		

Sample returns were examined from a drilled depth of 800 feet to TD for the presence of visible hydrocarbons. Formation tops and intervals for this report were picked from the drilling time log, sample returns and the Neutron-Density Porosity Log. There was no evidence of the presence of visible hydrocarbons in any of the geologic units above the "McLouth Sands".

## CHEROKEE GROUP:

There were several sand intervals between 1110 and the top of the McLouth which may contain some gas. The sand interval between 1224 and 1240 was calculated by Mr. Glenn Schmeidler of Log-Tech Inc. because of the good porosity values and good Rt readings. The following values were used to make these calculations:  $R_w = .2$ ,  $M = 1.8$ .

Interval	$\phi$	Rt	Sw
1227-38	20	20	43

There was no evidence of oil staining or fluorescence in the samples obtained from this interval. The zone should be perforated to fully evaluate it before eventual abandonment of the well.

The "McLouth Sands" were divided into an upper, middle and lower interval based on correlation with other well logs from the area.

The "Upper McLouth" was a medium to coarse, slightly shaly, subrounded tan sand which contained a show of free brown oil. There was a strong odor present throughout the interval and application of trichlorethane yielded streaming cuts and bright yellow fluorescence. Total thickness of this interval was 17'.

The "Middle McLouth" sequence consisted of an upper and lower sand with approximately five feet of shale in the middle of it. This sand was more shaly than the "Upper McLouth" but still contained a show of free oil and a strong odor. The make up of the sand was the same as in the upper unit. It had a total thickness of 22' which includes the shale separation.

The "Lower McLouth Sand" had a thickness of six feet and consisted of a clear, coarse grained, subrounded quartz sand. A show of dark brown to black, heavy oil was observed in the samples. There was a strong odor and the application of trichloroethane yielded streaming cuts and bright fluorescence.

Calculations for the Sw content were prepared on location by Mr. Glenn Schmeidler of Log-Tech Inc. using the following values: M=1.8, Rw= .2.

<u>Interval</u>	<u>Ø</u>	<u>Rt</u>	<u>Sw</u>
1434-36	16	11	67
36-38	22	25	36
38-40	20	15	48
40-42	20	20	42
42-44	16	45	32
44-46	12	12	75
46-48	16	10	70
48-50	14	10	82

Interval	$\emptyset$	Rt	Sw
1454-56	13	28	54
56-58	13	15	73
58-60	14	15	68
60-62	13	14	75
1468-70	11	15	82
70-72	11	15	82
72-74	14	20	58
74-76	13	25	57
76-78	8	20	93

Although there was no cross-over noted on the logs thru the "McLouth Sands", there was a slight gas effect noted on the Neutron curve. Comparison with logs from the Sedlak well to the north showed that the wells are very similar and there was little or no cross-over in the Sedlak logs. The Sedlak well produces commercial quantities of gas.

This well should also be capable of producing commercial quantities of gas.

#### MISSISSIPPIAN LIME:

The Mississippian Lime was topped at a log depth of 1480 feet (-445) where a semi-lithographic to very coarsely crystalline limestone was found. There was a strong petroleum odor and a good show of dark brown, heavy oil. There was moderate fluorescence and the application of trichlorethane yielded bright yellow fluorescence and streaming cuts. The oil appeared on fracture faces and in pinpoint secondary porosity.

The shows of oil decreased until there was no apparent oil show below 1500 feet.

Log calculations were prepared using the following values:  
Rw= .2, M= .2.

<u>Interval</u>	<u>Ø</u>	<u>Rt</u>	<u>Sw</u>
1480-82	3	270	93
82-84	4	270	63
84-86	3	80	100
86-88	4	65	100
88-90	6	70	100
1508-10	10	30	82
10-12	10	40	70

It does not appear that commercial production is possible from the upper Mississippian in this well; however, as additional wells are drilled on adjoining locations, this interval should be carefully examined for any increase in porosity which may make the production of oil possible.

CONCLUSIONS AND RECOMMENDATIONS:

The "McLouth Sands" should produce commercial quantities of gas in this well based on the log analysis, comparison of the logs to similar wells in the vicinity, and the sample returns. It was recommended that pipe be set to attempt production from the "McLouth" interval.

Other sand intervals within the Cherokee section should be carefully evaluated and tested before eventual abandonment of the well.

Should additional information be required, please contact me.

Respectfully submitted,

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DEACON GEOLOGY INC.