

15-033-20601

30-31-16W

State Geological Survey  
WICHITA BRANCH *Qnd*

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GEOLOGICAL REPORT

RECEIVED  
STATE CORPORATION COMMISSION  
SEP 12 1983  
CONSERVATION DIVISION  
Wichita, Kansas

LUFF EXPLORATION COMPANY

E-30 LGK

C 30 NW Sec 30-31S-16W  
CCLANCHE COUNTY, KANSAS

30-31-16W<sup>PC</sup>



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## GEOLOGICAL REPORT

Luff Exploration Company  
E-30 LGK  
C SW NW Sec 30-31S-16W  
COMANCHE COUNTY, KANSAS

ELEVATIONS: 1903 Kelly Bushing  
1896 Ground Level

CONTRACTOR: H-30 Drilling, Inc., Rig #5

COMMENCED: August 20, 1983  
COMPLETED: September 2, 1983

ROTARY TOTAL DEPTH: 4950 feet  
LOGGED TOTAL DEPTH: 4948 feet

SURFACE PIPE: 16" @ 40' 13 Jts new 8 5/8" 24# @ 524'  
w/200 sx Lite and 100 sx Class A, 3%  
cc, 2% Gel, Cement did circ. plug down  
@ 1315, 8-21-83.

PRODUCTION PIPE: D & A

LOGS: Welex:  
1. DIGL  
2. DSN-DEN  
3. CAL

DAILY PENETRATION RATE:

August 21, 1983	0700	1095 feet, Drlg.
August 22, 1983	"	1820 feet, Drlg.
August 23, 1983	"	2395 feet, Swivel Repair
August 24, 1983	"	2725 feet, Drlg.
August 25, 1983	"	3384 feet, Purp Repair
August 26, 1983	"	3685 feet, Drlg.
August 27, 1983	"	4243 feet, Drlg.
August 28, 1983	"	4650 feet, Drlg.
August 29, 1983	"	4740 feet, DST #1
August 30, 1983	"	4867 feet, DST #2
August 31, 1983	"	4950 feet, Prep to Log
September 1, 1983	"	4950 feet, DST #3
September 2, 1983	"	4950 feet, P & A

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REMARKS:

All measurements are from Kelly Bushing (1903). RTD was 4950, LTD was 4948 (-3045).

One foot drilling time was plotted from 3900-TD. Ten foot samples were examined from 2900-4800, and five foot samples from 4800-TD.

Three drill stem tests were taken covering Marmaton and Mississippian zones.

Although there is a two foot difference between RTD and LTD, there is a consistant six foot difference in the correlation of drilling time to the log.

FORMATIONS:

The following are the depths and datums of formation tops encountered as determined by sample and electrical/nuclear log analysis.

<u>Formation</u>	<u>Sample</u>	<u>Log</u>	<u>Datum</u>
Chase	-	2288	- 385
Council Grove	-	2668	- 765
Onaga Shale	-	3117	-1214
Howard	-	3531	-1628
Topeka	-	3707	-1804
Heebner	4036	4030	-2127
Lansing	4235	4229	-2326
Base/Kansas City	4654	4648	-2745
Marmaton	4675	4669	-2766
Marmaton 'X'	4706	4700	-2797
Cherokee Shale	4798	4791	-2888
Rew, Mississippian	4834	4827	-2924
Sol. Mississippian	4853	4846	-2943
TD	4950	4948	-3045

DRILL STEM TESTS:

A geological log is included with this report and is considered a part of it. Refer to it for sample descriptions. The following are drill stem test results.

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Marmaton 'X' 4706 (4700 EL)

DST No. 1  
4692-4740 feet

Open 15 minutes, weak blow died in 12 minutes. Shut-in 60 minutes. Open 90 minutes, no blow. Shut-in 120 minutes.  
Recovered 5' drilling mud.

Initial Hydrostatic Head 2318 psi  
Initial Flow Pressure 3-3 psi  
Initial Shut-in Pressure 5 psi  
Final Flow Pressure 3-3 psi  
Final Shut-in Pressure 5 psi  
Final Hydrostatic Head 2309 psi  
Temperature 116°

Mississippian 4834 (4827 EL)

DST No. 2  
4814-4867 feet

Open 15 minutes, fair blow increased to strong in 2 minutes. Shut-in 60 minutes. Open 90 minutes, strong blow immediately, GTS in 11 minutes, gauged 10.3 mcf/gpd. Shut-in 120 minutes.

Second open:

<u>Time</u>	<u>Choke</u>	<u>PSI</u>	<u>Flow Rate (mcf)</u>
11 Min.	1/4"	5	7.36
21 Min.	"	5	7.36
31 Min.	"	5.5	8.1
41 Min.	"	5.5	8.1
51 Min.	"	6	8.836
61 Min.	"	6	8.836
71 Min.	"	6.5	9.573
81 Min.	"	6.75	9.88
91 Min.	"	7	10.3

Recovered 90' of slightly gas cut mud.

Initial Hydrostatic Head 2412 psi  
Initial Flow Pressure 59-59 psi  
Initial Shut-in Pressure 1677 psi  
Final Flow Pressure 59-59 psi  
Final Shut-in Pressure 1703 psi  
Final Hydrostatic Head 2343 psi  
Temperature 119°

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Mississippian

DST No. 3  
4810-4865 feet  
(Log Measurement)  
STRADDLE TEST

Open 30 minutes, weak blow increased to strong in 8 minutes. Shut-in 90 minutes. Open 120 minutes, strong blow immediately. Shut-in 180 minutes. Recovered 217' of very slightly gas cut mud.

Initial Hydrostatic Head 2303 psi  
Initial Flow Pressure 103-103 psi  
Initial Shut-in Pressure 1025 psi  
Final Flow Pressure 123-144 psi  
Final Shut-in Pressure 1621 psi  
Final Hydrostatic Head 2324 psi

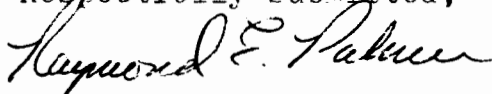
RECOMMENDATIONS AND CONCLUSIONS:

The following is a structural comparison of the E-30 LGK to the Mesa Petroleum #1-20 Kay, 2400 FSL and 400 FWL Sec 20-31S-16W, and the M. L. Brown #1 V. L. Smith, 530 FWL and 415 FWL, Sec 26-31S-16W.

<u>Formation</u>	<u>E-30 LGK</u>	<u>#1-20 Kay</u>	<u>#1 V. L. Smith</u>
Chase	- 385	- 381	- 391
Council Grove	- 765	- 761	- 764
Cnaga Shale	-1214	-1203	-1209
Howard	-1628	-1604	-1635
Topeka	-1804	-1768	-1805
Heebner	-2127	-2106	-2120
Lansing	-2326	-2306	-2314
Base/Kansas City	-2745	-2728	-2743
Marmaton	-2766	-2745	-2760
Marmaton 'X'	-2797	-2779	-2794
Cherokee Shale	-2888	-2866	-4857
Rew. Mississippian	-2924	-2895	-2926
Sol. Mississippian	-2943	-2930	-2938
TD	-3045	-3644	-3095

At a rotary total depth of 4950 feet, the E-30 LGK was logged by Welox. Due to lack of zone development and negative drill stem test results, it was recommended that this well be plugged and abandoned.

Respectfully submitted,



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9-6-83