

GEOLOGICAL REPORT

Wayne Lebsack
Petroleum Geologist
603 S. Douglas
Lyons, Kansas 67554

Steve E. McClain
Geologist
P.O. Box 8731
Pratt, Kansas 67124

KCC

AUG 28 1994

Sterling Drilling Company**Bainum 1-12**

C Se Sw
Sec. 12 25s-9w
Reno County, Kansas
API # 15-155-21,274

Contractor Sterling Drilling Company, Rig #4
Date Commenced July 12, 1993, Spud at 7:00 am
Date Rotary Completed July 20, 1993, RTD at 6:27 am
Total Depth RTD = 4767', LTD = TD not Logged
Casing Record Surface - 8-5/8" set at 215' KB
..... cemented with 190 sx.
..... 5-1/2" (Used) set at 4364' KB
..... cemented with 275 sx.
Elevations Ground Level = 1657'
..... Kelly Bushing = 1666'
..... All Measurements taken from KB
Drilling Time Logged 2200' to 4767' (RTD)
Samples Logged 2200' to 3050' (20' samples)
..... 3050' to 4767' (10' samples)
..... (Samples sent to KGS Library)
Open Hole Logs HLS: Dual Induction Log, Comp.
..... Density/Neutron Log, Fracture
..... Finder Micro-Seismogram Log,
..... CORAL
Cased Hole Log HLS: Bond Log, TOC at 3020'
Gas Detector 2000' to 4767' (RTD), HW and CH
..... Blue Jay Logging, Pratt
Mud Company MUDCO, Chemical Mud, Displace at
..... 2904'.

RECEIVED
STATE CORPORATION COMMISSION

JAN 21 1994

GEOLOGICAL FORMATION TOPS

FORMATION TOP	ELECTRIC LOG DEPTH	DRILLING TIME DEPTH	SUB-SEA DEPTH (E-LOG)
Langdon Sandstone	2350	2390	-684
Heebner Shale	3132	3131	-1466
Brown Limestone	3302	3301	-1636
Lansing	3329	Not Called	-1663
Stark Shale	3597	Not Called	-1931
Hushpuckney Shale	3633	Not Called	-1967
BKC	3690	3692	-2022
Marmaton	3698	3696	-2030
Cherokee Shale	3792	Not Called	-2126
Mississippian Chert	3838	3832	-2172
Mississippian 'B' Zone	3846	Not Called	-2180
Mississippian Ls	3895	Not Called	-2229
Kinderhook Shale	3914	3913	-2248
Viola *	4134	4126	-2468
Simpson Shale *	4194	4202	-2528
Arbuckle *	4278	4279	-2612
Total Depth	Not Logged	4767	-3101

- * Hole was logged with a TD in the Kinderhook Shale. Hole was then deepened into the Arbuckle and production casing was run. A cased hole Bond Log was run and the log tops were picked off of this log.

RECEIVED
STATE CORPORATION COMMISSION

JAN 21 1994

CONSERVATION DIVISION
Wichita, Kansas

INTERVALS CONTAINING HYDROCARBONS

Marmaton Ls	3698' to 3705'	7' thick	Gas/ Oil
-------------	----------------	----------	-------------

Samples from this limestone were white and dense with around 16% oolitic porosity. The samples contained a light oil staining and odor. Traces of free oil was noted. A small HW gas kick was observed. This zone was tested by DST #2.

Log analysis calculates the following averages:

Porosity = .16
 Deep Induction (ohms) .. = 10 ohm-m
 Water Saturation = .88 (average from HLS)

Mississippian Chert 'A' Zone	3838' to 3842'	4' thick	Gas/ Oil
---------------------------------	----------------	----------	-------------

Samples from this high porosity chert were white and granular. A 100 unit HW gas kick was observed. This zone was tested by DST #1.

Log analysis calculates the following averages:

Porosity = .25 (x-plot average)
 Deep Induction (ohms) .. = 1.6 ohm-m
 Water Saturation = .57 (average from HLS)

INTERVALS CONTAINING HYDROCARBONS

Mississippian Chert was CORED from 3840' to 3865'. The core was broken and difficult to examine in relation to its depth. Only 12' of the 25' cored was recovered. We are assuming that the 12' recovered corresponds to the depth interval from 3840' to 3852'. Visual inspection of the core immediately after it was recovered would seem to verify the depth of recovery to be 3840' to 3852'. The reason for the poor recovery is that the I.D. of the core bit became worn down and the core of the larger diameter could not fit into the core barrel so the core that was drilled after the I.D. was enlarged was ground up and not recovered.

Core Description before being sent to Core Labs.

3840'-44' Gray dense claystone. No shows.
3844'-47' White Crystalline chert, with some vugular porosity, trace of oil staining.
3848'-50' White dense fractured chert, with some oil staining on the fracture surfaces.
3850'-52' Only pieces of core recovered here. No description.

* Core Labs will be sending out a detailed description of the rock properties and lithology.

Mississippian Chert 'B' Zone	3846' to 3858'	12' thick	Gas/ Oil
---------------------------------	----------------	-----------	-------------

Samples from this chert were white and granular. No fossiliferous porosity was observed in this interval as in the offset wells. Part of this interval was cored (see description above). This zone was tested by DST #2.

Log analysis calculates the following averages:

Porosity = .21 (x-plot average)
Deep Induction (ohms) .. = 1.8 ohm-m
Water Saturation = .65 (average from HLS)

DRILL STEM TEST RESULTS

DST No. 1 Mississippian Chert			
Interval: 3790' to 3865' (75' of anchor)			
Intervals tested: 'A' and 'B' Zones			
Period	Time	Pressure	Description
IHSP		1917	
IFP	30	59-64	Weak blow building to strong blow in 14 minutes.
ISIP	30	482	
FFP	65	78-84	1" blow to 7" in the bucket.
FSIP	90	955	
FHSP		1863	BHT = 124 deg. F.
Recovery:	460' Gas in the pipe. 80' 2% Oil, 98% Mud.		

DST No. 2 Marmaton/Cherokee and Mississippian Formations			
Interval: 3690' to 3970' (280' of anchor)			
Intervals tested: Marm/Cherokee/Mississippian Zones			
Period	Time	Pressure	Description
IHSP		1863	
IFP	15	203-290	Weak blow to bottom in 2".
ISIP	30	1115	
FFP	45	396-525	Weak blow to strong in 3".
FSIP	60	1106	
FHSP		1788	BHT = 125 deg. F.
Recovery:	720' Gas in Pipe 120' 1% Oil, 10% Gas, 0% Water, 89% Mud 120' 6% Oil, 12% Gas, 10% Water, 72% Mud 180' 3% Oil, 20% Gas, 32% Water, 45% Mud 300' 3% Oil, 17% Gas, 42% Water, 38% Mud 300' 2% Oil, 6% Gas, 82% Water, 10% Mud ---- 1020' Total Fluid Recovered. Chl. = 42,000		

**BAINUM 1-12
LOG STRUCTURAL COMPARISON**

	Bainum 1-12 "SWDW"	Hayes 2-13	Brooks- Johnson 1-13	Henson 1-14
	C Se Sw of	C Ne Nw of	C W/2 Nw Ne of	C Ne Ne of
FORMATION TOPS	12 25-9 Reno Co. Sterling KB=1666' (Arbuckle Disposal)	13 25-9 Reno Co. Sterling KB=1669' (Miss Oil/ Gas Well)	13 25-9 Reno Co. Griggs Oil KB=1661' (Miss Oil/ Gas Well)	14 25-9 Reno Co. Sterling KB=1675' (Miss Oil Gas Well)
Langdon Ss	-684' (46')	-722 (23')	-717 (41')	-745 (8')
Heebner Sh	-1466	-1464	-1469	-1460
Brown Ls	-1636	-1635	-1638	-1635
Lansing	-1663	-1668	-1673	-1658
Stark	-1931	-1933	-1932	-1932
Hushpuck	-1967	-1970	-1968	-1968
BKC	-2022	-2025	-2024	-2025
Cherokee	-2126	-2127	-2128	-2129
Miss. 'A'	-2172	-2168	-2166	-2164
Miss. 'B'	-2180	-2187	-2186	-2187
Miss. Ls	-2229	-2232	-2230	-2236
Kind. Sh	-2248	-2255	-2255	-2248
Totl Depth	-3001	-2307	-2339	-2325

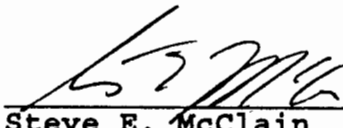
BAINUM 1-12 SUMMARY

DST #2 displayed a reservoir in either the Marmaton Ls or Lower Mississippian Chert section. Both zones will be tested for production before converting the well into an Arbuckle disposal well.

Suggested Perforations: Mississippian 3863' -77', Marmaton 3699' -3705'.

Submitted by,

Wayne Lebsack
Petroleum Geologist


Steve E. McClain
Geologist

RECEIVED
STATE CORPORATION COMMISSION

JAN 21 1994

CONSERVATION DIVISION
Wichita, Kansas