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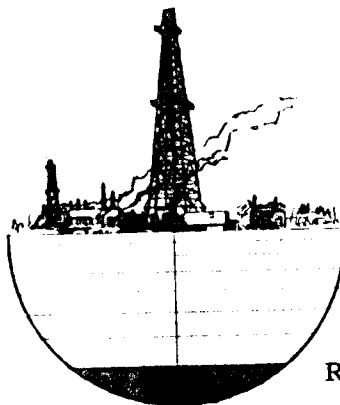
P. O. Box 1683

GREAT BEND, KANSAS 67530

Boger Brothers Drilling, Inc.

P.O. Box 723

Great Bend, KS 67530



25-19-15W

Member

AAPG

KGS

Phone (316) 792-7447

February 24, 1986

Re: SOUTHARD-DONOVAN #1
NW-NW-SW
25-19-15W
Barton County, Kansas

Gentlemen:

The above captioned well was drilled via rotary tools commencing on 2-14-86 to a rotary depth of 3659' (-1739' subsea datum) and completed drilling operations on 2-20-86. The following is the Geological Report for this well.

OPERATOR:	Boger Brothers Drilling, Inc.
CONTRACTOR:	Boger Brothers Drilling Rig #1
ELEVATIONS:	1920' K.B. 1918' D.F. 1915' G.L.
DEPTH MEASURED FROM:	1920' K.B.
GEOLOGIC SUPERVISION FROM:	2900' to L.T.D.
DRILLING TIME KEPT FROM:	2800' to R.T.D.
SAMPLES KEPT FROM:	2800' to R.T.D. (Sent to K.G.S.)
DRILL STEM TESTS:	2 - Western Testing
ELECTRIC LOGS RUN:	Welex: Gamma-Guard, SWN, Dip Meter, CAL
PRODUCTION CASING:	3652' 5-1/2" 14# w/150 sx. 50/50 Pozmix

STRUCTURAL COMPARISONS TO NEARBY TESTS

<u>FORMATION</u>	<u>BOGER BROTHERS DRILLING</u>	<u>BOGER BROTHERS DRILLING</u>
	<u>SCHARTZ #4</u>	<u>SOUTHARD-DONOVAN #1</u>
	NE-NW-SE	NW-NW-SW
	26-19-15W	25-19-15W
ANHYDRITE	+1057	+1062
HEEBNER	-1252	-1247
TORONTO	-1267	-1263
DOUGLAS	-1280	-1276
IATAN	-1334	-1332
LANSING	-1345	-1340
BASE K.C.	-1567	-1565
CONGLOMERATE	-1579	-1577
ARBUCKLE	-1670	-1639

DRILL STEM TESTS

	<u>FORMATION</u>	<u>DEPTH</u>	<u>TIMES</u>
DST #1	Arbuckle	3499'-3580'	30"-30"-30"-30"
BLOW:	I.F. - Weak increasing to strong in 12" F.F. - Strong throughout		
RECOVERY:	80' Oil & gas cut mud (30% oil) 240' Gas & mud cut oil (70% oil) 320' Total Fluid		
PRESSURES:	IHP: 1710# FHP: 1691# IFP: 114-114# FFP: 133-133# ISIP: 343# FSIP: 391# T: 113° F		

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DST #2	Arbuckle	3580'-3596'	45"-45"-45"-45"
BLOW:	Strong throughout blow flow periods		
RECOVERY:	120' Gas in pipe 280' Clean gassy oil 90' Oil cut muddy water (10% oil, 30% water, 60% mud) 240' Gassy salt water 70,000 ppm 610' Total Fluid		
PRESSURES:	IHP: 1748# FHP: 1779# IFP: 76-143# FFP: 209-257# ISIP: 1137# FSIP: 1147# T: 119° F		

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ZONES OF INTEREST

<u>FORMATION</u>	<u>DEPTH</u>	<u>DESCRIPTION</u>
Lansing "A"	3266-3270'	Limestone - White, fine crystalline, very poor leached vugular porosity, no odor, very slight staining, no show of free oil, no fluorescence.
Lansing "E"	3308-3313'	Limestone - Gray, white, crystalline, oolitic with oolites in place, very poor leached, vugular porosity, no odor, fair staining, poor show of free oil (heavy & tarry appearance), no fluorescence.

ZONES OF INTEREST

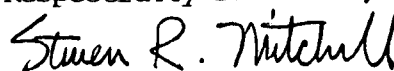
<u>FORMATION</u>	<u>DEPTH</u>	<u>DESCRIPTION</u>
Lansing "H"	3396-3400'	Limestone - Tan, white, crystalline, oolitic with oolitic and fossiliferous matrix, very poor intercrystalline porosity, very poor staining, poor show of free oil, no odor.
Lansing "J"	3432-3436'	Limestone - White, fine crystalline, oolitic with oolites in place, poor scattered leached vugular porosity, poor show of "heavy tarry oil", no odor, mineral fluorescence.
Conglomerate Sand	3518-3520'	Sandstone - Quartz arenite, poorly sorted, subrounded, CaCO ₃ cement, poor friability, poor staining, no show of free oil, a light residual film after acid cut, cherty inclusions. <u>COVERED BY DST #1.</u>
	3529-3531'	
	3550-3553'	Sandstone - As immediately above, fair saturation, gassy appearance, moderately friable. <u>COVERED BY DST #1.</u>
Arbuckle	3559-3580'	Dolomite - White, medium coarse crystalline, fair to poor intercrystalline porosity, rhombic crystals, strong odor, very good show of free oil, heavily saturated, abundant free oil in tray, fair green fluorescence. <u>COVERED BY DST #1.</u>
	3580-3590'	Dolomite - As immediately above <u>COVERED BY DST #2.</u>
	3590-3596'	Dolomite - White, fine crystalline, poor intercrystalline porosity, good odor, trace: cherty and sand grain inclusions, fair show of free oil. <u>COVERED BY DST #2.</u>

APR 21 1986

SUMMARY

Structurally, the SOUTHARD-DONOVAN #1 ran high on the Arbuckle formation to all Arbuckle producers in the Clarence Pool. Therefore, in view of favorable structural position, and adequate drill stem test recoveries, it was recommended that production casing be set to further evaluate the commercial potential of this test. Dip log results were unknown at the time of this report.

Respectfully submitted,



Steven R. Mitchell
Petroleum Geologist