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JUL 26 1996

GEOLOGICAL REPORT

**A.C. WIDENER, INC.
NO. 2 THUL (WIDENER)
W/2-W/2-SW
SECTION 23-21S-12W
STAFFORD COUNTY, KANSAS**

15-185-23021

OPERATOR: A.C. Widener, Inc.

WELL: No. 2 Thul (Widener)
API # 15-185-23,021

LOCATION: W/2-W/2-SW
1320' from the S.L.
330' from the W.L.
Section 23-21S-12W
Stafford County, Kansas

FIELD: Sandra

CONTRACTOR: L.D. Drilling Company, Rig 1

DRILLING COMMENCED: 01-02-96

DRILLING COMPLETED: 01-08-96

DRILLING TIME: One (1) foot drilling time was recorded
from 2800 to 3700' RTD.

SAMPLES: Samples were saved and examined from 3000'
to 3700' RTD.

ELEVATIONS: 1845' Ground Level 1850' Kelly Bushing

MEASUREMENTS: All depths are measured from 1850' K.B.

CASING RECORD: 8 5/8" set @ 300' with 225 sacks.
4 1/2" set @ 3697' with 150 sacks.

FORMATION TESTING: Two (2) tests were run by Western Testing Co.

MUD: Chemical

OPEN HOLE LOGS: No logs were run.

PRODUCTION: Oil (Arbuckle)

ORIGINAL

FORMATION TOPS:

<u>FORMATION</u>	<u>SAMPLE</u>	<u>DATUM</u>
ANHYDRITE	Not Called	N/A
BASE ANHYDRITE	Not Called	N/A
TOPEKA	2828'	-978'
HEEBNER	3118'	-1268'
TORONTO	3136'	-1286'
DOUGLAS	3148'	-1298
BROWN LIME	3253'	-1403'
LANSING	3267'	-1417'
BASE KANSAS CITY	3489'	-1639'
VIOLA	3519'	-1669'
SIMPSON	3540'	-1690'
ARBUCKLE	3587'	-1737'
ROTARY TOTAL DEPTH	3700'	-1850'

SAMPLE DESCRIPTIONS AND TEST DATA:

TOPEKA: No shows of oil were noted throughout the Topeka.

TORONTO:
3136-3148 Limestone, grey, finely crystalline, dense, slightly fossiliferous, cherty, with fair visible,intercrystalline porosity, no shows of oil were noted.

LANSING:
3335-3340 Limestone, grey, dense, finely crystalline, slightly fossiliferous, poor to fair intercrystalline porosity, no show were noted.

- 3349-3353 Limestone, cream to tan, finely crystalline, fossiliferous in part, slightly chalky, fair to good visible porosity, trace of scattered stain, very slight show of free oil on break, no odor.
- 3391-3395 Limestone, white and grey, finely crystalline, oolitic and slightly oolitic, chalky in part, fair porosity, trace of staining, some dark dead tarry, no show of free oil, no odor.
- 3480-3486 Limestone, white and grey, finely crystalline, oolitic, with rare interoolitic porosity, trace of scattered staining, no show of free oil, no odor.

VIOLA:

- 3519-3539 Chert, white, tan, and bone, slightly tripolitic with fair porosity, some fractures, with trace of staining and saturation, fair show of gassy free oil, no odor.

SIMPSON:

- 3568-3572 Sandstone, light brown, tan and clear, fine to medium grained, sub-rounded, poor intergranular porosity, tightly cemented in-part, trace of dark dead staining, no show of free oil or odor.

ARBUCKLE:

- 3537-3596 Dolomite, tan and light brown, dense to finely crystalline, poor to fair intercrystalline and some pinhole porosity, fair show of free oil, good odor. (Covered by DST #1)

FORMATION TEST NO. 1

3588-3596

Strong Blow in 2 min.	45 min.	I.H.P.	1807#
	45 min.	I.F.P.	62#-72#
Strong Blow Throughout	45 min.	I.S.I.P.	281#
	45 min.	F.F.P.	83#-93#
	45 min.	F.S.I.P.	218#
		F.H.P.	1786#

RECOVERY:

1455' Gas in Pipe
 60' Clean Gassy Oil (39* gravity)
165' Gassy Muddy Oil (80% Oil, 15% Gas, 5% Mud)
 225' Total Fluid Recovered

TEMPERATURE:

106*

CHLORIDES:

N/A

- 3597-3611 Dolomite, fine to medium crystalline, with fair to good visible intercrystalline porosity, some pinhole and vugular, good staining and saturation, good show of free oil, strong odor. (Covered by DST #2)

FORMATION TEST NO. 2
3597-3611

Strong blow in 3 min.	45 min.	I.H.P.	1796#
		I.F.P.	31#-41#
Strong blow in 6 min.	45 min.	I.S.I.P.	385#
	45 min.	F.F.P.	72#-72#
	45 min.	F.S.I.P.	281#
		F.H.P.	1796#

RECOVERY: 1260' Gas In Pipe
120' Clean Oil (Gravity 36)
120' Slightly Muddy Gassy Oil (80% Oil, 17% Gas, 3% Mud)
240' Total Fluid

TEMPERATURE: 107*

CHLORIDES: N/A

- 3612-3625 Dolomite, as above.
- 3635-3641 Dolomite, grey and white, fine to medium crystalline, rhombic in-part, fair to good intercrystalline porosity, fair staining and saturation, fair show of free oil, fair odor.
- 3651-3658 Dolomite, grey and white, fine to medium crystalline, some coarse rhombic, fair to good intercrystalline porosity, fair staining and saturation, fair to good show of free oil, good odor.
- 3660-3665 Dolomite, grey and white, fine to medium crystalline, some rhombic, fair intercrystalline porosity, fair staining and saturation, fair show of free oil, fair odor. (Overall less show than as above)
- 3665-3675 Dolomite, as above.
- 3675-3690 Dolomite, grey and white, fine to medium crystalline, some rhombic, some dense, fair intercrystalline porosity, fair staining and saturation, some dark tarry, slight show of free oil, fair odor.
- 3691-3700 Dolomite, white and grey, fine to medium crystalline, some rhombic, fair intercrystalline porosity, fair staining and saturation, some dark tarry staining, slight show of free oil, light odor.

SUMMARY:

The No. 2 Thul (Widener) was under geological supervision from 3000' to 3700' RTD. This well ran structurally lower on most of the upper markers and no commercial shows were noted. The Arbuckle, the primary producing zone in the area, ran 6' high to the north offset (No. 1 Thul). With the oil recovery from the two drill stem tests, it was decided to run 4 1/2" production casing and complete the No. 2 Thul (Widener) in the Arbuckle through perforations.

Respectfully submitted,


Todd E. Morgenstern

DRILLER'S TIME LOG

A.C. WIDENER, INC.

ELEVATION: 1850 K.B.

THULL (WIDENER) NO. 2
W/2-W/2-SW
SECTION 23-21S-12W
STAFFORD COUNTY, KANSAS

DEPTH	MINUTES	REMARKS
2800	2810	1-1-1-1-1-1-1-1-1
	2820	1-1-1-1-1-2-1-1-1-2
	2830	1-1-1-1-1-2-1-2-3-4
	2840	4-4-3-4-3-3-4-5-4-3
	2850	2-3-2-2-4-3-3-3-3-3
	2860	2-3-3-3-2-2-2-2-3-2
	2870	3-2-3-2-1-1-2-1-1-1
	2880	1-2-1-2-1-2-2-2-2-2
	2890	3-3-3-2-2-1-1-2-3-4
	2900	3-4-3-3-2-2-2-1-2-2
2900	2910	2-2-3-3-2-2-4-3-3-3
	2920	2-3-4-3-4-3-4-3-2-3
	2930	2-3-1-2-2-1-1-1-2-1
	2940	2-3-2-1-1-1-2-2-2-2
	2950	2-2-2-2-2-2-2-2-2-2
	2960	1-1-2-1-2-2-2-1-1-1
	2970	1-1-1-1-1-1-1-1-1-1
	2980	1-1-1-1-1-1-1-1-1-1
	2990	1-1-1-1-1-1-1-1-1-1
	3000	1-1-1-2-1-1-2-2-2-1
3000	3010	2-1-2-1-2-4-3-3-3-3
	3020	2-4-3-4-4-3-2-3-4-3
	3030	3-2-2-1-1-1-1-1-1-1
	3040	1-2-3-3-2-1-1-1-1-1
	3050	1-1-1-1-1-1-1-1-2-4
	3060	5-4-3-3-5-5-6-6-5-4
	3070	2-1-2-4-3-3-2-2-2-2
	3080	4-4-3-3-3-4-2-2-3-2
	3090	3-2-3-4-3-2-1-3-5-4
	3100	4-3-2-3-2-3-2-4-3-3
3100	3110	3-4-4-4-4-4-4-3-4-4
	3120	4-3-3-4-3-4-3-4-2-1
	3130	1-1-2-3-4-2-2-3-2-2
	3140	2-3-2-2-2-2-3-3-1-1
	3150	2-3-2-4-3-3-4-3-1-2
	3160	2-2-1-2-2-2-2-2-2-2
	3170	2-2-2-2-2-1-2-2-2-2
	3180	1-2-2-2-2-2-1-2-1-2
	3190	2-2-1-2-2-1-2-1-2-2
	3200	1-2-1-2-1-2-1-2-2-2
3200	3210	1-2-2-1-1-2-1-2-1-1
	3220	2-1-1-2-1-1-2-1-2-1
	3230	1-2-1-1-2-2-1-1-1-2
	3240	1-1-2-1-1-2-1-1-1-1
	3250	2-1-1-2-1-1-2-1-1-2
	3260	1-1-2-3-3-3-3-3-3-2
	3270	3-3-3-2-3-3-2-4-4-3
	3280	3-4-2-4-2-4-2-3-3-3
	3290	4-2-3-3-3-4-3-3-3-2
	3300	3-2-3-3-2-3-3-2-2-3

DRILLING TIMES: (Cont)

3300	3310	3-2-3-1-2-1-3-2-2-3
	3320	3-2-3-4-2-2-4-3-4-3
	3330	2-2-2-2-3-2-2-2-2-3
	3340	3-2-4-3-2-3-2-3-3-2
	3350	3-3-4-4-5-5-3-3-3-2
	3360	3-2-3-3-4-5-5-5-5-4
	3370	4-5-5-4-4-5-4-5-4-5
	3380	4-4-4-4-4-4-4-4-4-4
	3390	4-3-4-3-4-3-3-4-4-3
	3400	2-3-1-1-2-1-2-3-3-3
3400	3410	3-3-3-4-3-3-4-3-3-3
	3420	3-4-3-4-4-4-3-4-4-3
	3430	4-3-4-3-4-3-4-4-4-3
	3440	4-4-3-3-3-4-4-4-5-5
	3450	4-4-4-4-4-3-5-3-4-3
	3460	3-3-4-3-3-3-3-2-3-3
	3470	3-3-3-3-4-4-3-4-5-4
	3480	5-3-3-4-4-4-4-4-4-4
	3490	4-5-4-4-4-4-4-3-4-3
	3500	3-4-4-3-3-5-4-3-4-3
3500	3510	4-4-4-4-4-4-3-3-3-3
	3520	4-4-4-4-5-4-4-4-3-3
	3530	3-2-2-1-2-2-2-2-2-2
	3540	2-2-2-2-2-2-3-3-3-4
	3550	3-3-4-4-3-5-4-5-4-4
	3560	4-4-4-4-4-5-4-3-4-4
	3570	4-5-4-4-4-4-4-4-4-3
	3580	3-4-3-3-4-3-3-3-4-4
	3590	4-4-4-4-5-3-3-2-3-2
	3600	2-1-3-2-2-2-1-1-1-2
3600	3610	2-2-2-3-2-2-2-2-1-2
	3620	2-1-1-2-2-2-2-2-3-2
	3630	2-2-1-2-2-2-2-1-2-2
	3640	2-3-2-2-2-1-3-2-1-2
	3650	3-2-2-2-2-2-3-3-3-3
	3660	1-1-1-2-2-2-2-4-1-2
	3670	4-2-3-3-3-2-2-2-2-3
	3680	2-2-2-2-3-2-2-2-1-2
	3690	2-2-1-2-2-2-3-2-3-3
	3700	2-3-2-3-2-3-3-2-3-2 Rotary Total Depth