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GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY ROBERT R. PRICE, INC.
LEASE #11 CAVE
FIELD
LOCATION W/2-W/2-SW/4
SEC. 7 TWSP. 11S RNG. 18W
COUNTY ELLIS STATE KANSAS

CONTRACTOR RANGER DRILLING
SPUD 11-22-80 COMP. 11-27-80
RTD 3620 LTD
MUD UP 2900 TYPE MUD STARCH

CASING
SURFACE 8-5/8 @ 1354
PRODUCTION 5-1/2 @ 3619

ELECTRICAL SURVEYS
CASED HOLE - GR/N

ELEVATIONS
K.B. 1982
D.F.
G.L. 1977

Measurements Are All From K.B.

FORMATION TOPS & STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION A	B	C
Topeka	2981	2977	-995	-990	-993	-993
King Hill Shale	3083	3078	-1096	-1091	-1095	-1092
Queen Hill Shale	3139	3135	-1153	-1146	-1153	-1149
Heebner Shale	3204	3200	-1218	-1211	-1219	-1215
Toronto	3219	3216	-1234	-1228	-1233	-1230
Lansing-Kansas City	3245	3241	-1259	-1252	-1258	-1255
* Base Kansas City	3472	3467	-1485	-1480	-1483	-1481
Simpson	3551	3547	-1565	-1564	-1571	-1564
Arbuckle	3569	3566	-1584	-1584	-1592	-1592
R.T.D.	3620		-1638	-1802	-1640	-1603

Strap @ 3205-3.25' long (sample tops not corrected)

* 2 board corrections below L-KC

REFERENCE WELLS FOR STRUCTURE

A #10 Cave	W/2-NW-SW	Sec. 7-11S-18W
B #9 Cave	W/2-W/2-W/2	Sec. 7-11S-18W
C #1 Gladys Collins	E/2-S/2-S/2	Sec. 12-11S-19W

ZONES OF INTEREST**

INTERVAL	SAMPLE DESCRIPTION
Topeka	
2978-2983	Cream-light gray, fine crystalline, slightly chalky, slightly fossiliferous LIMESTONE; poor visable porosity, barren.
3005-3013	Light gray, fine crystalline, slightly sucrosic, chalky-mealy LIMESTONE; fair pinpoint and vugular porosity; trace stain.
3068-3078	Light gray-tan, fine crystalline, slightly chalky-mealy LIMESTONE; poor intercrystalline porosity, scattered pin-point porosity; barren.
3111-3116	Cream-white, fine crystalline, chalky LIMESTONE; poor visable porosity; barren.
3144-3149 3153-3157	Cream-white, fine crystalline, slightly chalky and fossiliferous LIMESTONE; poor intercrystalline porosity, scattered pinpoint porosity; barren.
3164-3172	White, fine-trace medium crystalline, slightly sucrosic-chalky LIMESTONE; very spotted fair intercrystalline porosity, occasional vugular porosity; trace stain.
Toronto	
*3217-3222	White, fine-medium crystalline, chalky-dense, slightly fossiliferous LIMESTONE; very spotted fair-poor intercrystalline porosity; very spotted stain.
Lansing-Kansas City	
*3241-3246	Cream, slightly oolitic, chalky-dense LIMESTONE; very spotted interoolitic and vugular porosity; very spotted stain.
3256-3261	Light gray-tan, fine crystalline, chalky-argelaceous, slightly dense LIMESTONE; poor visable porosity; barren.
*3274-3280	White-cream oolitic, slightly chalky-dense LIMESTONE; occasional fair interoolitic and vugular porosity; rare stain; very slight show free oil when sample broken.
*3324-3329	Cream, fine crystalline, slightly dense, slightly chalky, fossiliferous LIMESTONE; spotted fair fossil cast and vugular porosity; spotted stain; very slight show free oil; weak odor.
3374-3376	White, chalky, dense LIMESTONE; spotted pinpoint porosity; trace residual stain.
*3397-3403	Cream, fine crystalline, slightly sucrosic, chalky-dense LIMESTONE; fair intercrystalline porosity; very spotted stain-trace saturation.
*3408-3413	Tan, fine crystalline, slightly sucrosic, slightly oolitic, very slightly chalky LIMESTONE; fair intercrystalline and spotted fair-good oolicastic porosity; spotted stain - occasional saturation; slight show free oil; faint odor.
*3436-3440	Light gray, slightly oolitic LIMESTONE; occasional interoolitic porosity; very spotted stain.
*3458-3463	Tan-light gray, fine crystalline, slightly oolitic; slightly chalky LIMESTONE; spotted fair oolicastic and intercrystalline porosity; spotted stain; very slight show free oil.
Marmaton	
*3491-3500	?White, fine crystalline chalky-dense, white cherty LIMESTONE; poor visable porosity; barren.
Conglomerate	
*3505-3516 *3520-3528	Vari-colored CHERTS, with occasional clear, medium grained, quartz cemented subangular, quartz SANDSTONE; fair intergranular porosity; spotted residual stain.
Simpson Dolomite	
*3547-3554	Vari-colored, medium crystalline, rhombic, slightly sandy, DOLOMITE; spotted fair intercrystalline porosity; spotted dark stain; slight show of free oil; weak odor.
Arbuckle	
*3567-3584	Cream, fine-medium crystalline, rhombic DOLOMITE; spotted fair-good intercrystalline porosity, occasional vugular porosity; spotted black stain-tarry saturation; fair-good show free oil; fair odor.

* recommend testing
** correlated to electric log

SUMMARY

This hole was under geological supervision from 3000' to 3620' (R.T.D.). Wet and dry samples were analyzed from 3000' to R.T.D. No drill stem tests or open hole logs were run. Production casing was set for further testing.

Respectfully submitted,

Curtis R. Longpine

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