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SEP 9 1980

SOUTHLAND ROYALTY COMPANY

Empire Federal "20" #1
1980' FNL & 660' FEL
Sec. 20, T-18-S, R-29-E
Eddy County, New Mexico
LC-062404

O. C. D.
ARTESIA, OFFICE

To supplement USGS Form 9-331C "Application to Drill" the following additional information is submitted concerning questions on Page 5 of NTL-6:

1. See Form 9-331C.
2. See Form 9-331C.
3. The geological name of surface formation is: Guadalupian
4. See Form 9-331C.
5. See Form 9-331C.
6. The estimated tops of important geological markers are:

T/salt	350'	San Andres	2825'	Morrow	10,650'
B/salt	800'	Wolfcamp	8700'	Mississippian	11,400'
Yates	1050'	Cisco	9700'		
Queen	1975'	Strawn	9900'		
Grayburg	2350'	Atoka	10,450'		

7. The estimated depths at which anticipated water, oil, gas and mineral bearing strata are as follows:

San Andres (Oil)	2825'
Wolfcamp (Oil)	8700'
Cisco (Gas)	9700'
Strawn (Gas)	9900'
Atoka (Gas)	10,450'

8. See Form 9-331C. All casing will be new.
9. See Form 9-331C for depths of strings. Cement volumes and additions as follows:
 - a. 11 3/4" casing: Cement w/275 sx. Class "C" cement w/2% CaCl. Cement to be circulated back to surface.
 - b. 8 5/8" casing: Cement w/880 sx. Class "C" Lite, 18% salt/sx, 10# Gilsonite/sx, 1/2# Flocele/sx. plus 300 sx. Class "C" w/3# salt/sx. Circulate cement back to surface. A caliper log will be run in conjunction with other logs prior to running casing to obtain exact hole volumes. It is estimated that the volumes used will circulate cement back to surface of ground.
 - c. 4 1/2" casing: Cement w/435 sx. Class "C" Lite .6% Halad 22/sx, 3# KCL/sx. plus 300 sx. Class "H" 50-50 Pozmix A, 2% Gel/sx., .6% Halad 22/sx, .4% CFR-2/sx, 3# KCL/sx. Will run caliper in conjunction w/open hole logs prior to setting 4 1/2" casing to determine exact cementing volumes. Top cement estimated to be at 8500'. Cementing volumes could vary depending on development of intermediate horizons.
10. The pressure control diagram is attached to Form 9-331C. The following additional information is as follows:

11 3/4" casing installation: 10" Ser 900 3000 psi double hydraulic pipe and blind rams.

8 5/8" casing installation: 10" Ser 900 3000 psi double hydraulic pipe and blind rams plus 10" Ser 900 3000 psi Hydril plus 10" Ser 900 3000 psi Rotating Head.