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### GEOLOGICAL EXPLANATION OF THE PROPOSED MEDANO DELAWARE POOL, EDDY COUNTY, NEW MEXICO

The proposed Medano Delaware Pool will encompass the south half of Section 9, Section 16, and the north half of Section 21 of Township 23S - Range 31E. The pool will be located at the eastern edge of the Sand Dunes West Atoka Pool and two and one-half miles west of the Sand Dunes Cherry Canyon Pool.

The stratigraphic cross-section A - A' is oriented north - south and shows the two productive zones of the Delaware. The upper part of the cross-section, using the top of the Delaware as a datum, shows the Medano zone within the upper Bell Canyon Formation. The lower part of the cross-section, using a shale marker as a datum, shows the Basal Brushy zone, which is in the lower Brushy Canyon Formation and approximately 250 feet above the top of the Bone Spring Formation. The reservoirs are colored orange. Both the Medano and Basal Brushy zones are within the Permian Delaware Group.

The Bell Canyon structure map, using the top of the Bell Canyon as a datum, shows a general eastward dip. A structural high, with closure, is present in Section 16 of 23S - 31E. This structural high enhances production and suggests the Medano zone will be "wet" to the south.

The Medano zone net porosity map shows the limits of the reservoir. This zone is interpreted as a submarine channel facies trending north - south. The net porosity map represents the thickness of the reservoir with a porosity of 22% or greater. The cutoff value of 22% is used because it appears to distinguish between productive and nonproductive reservoirs.

The Basal Brushy Canyon structure map, with the top of a shale marker as a datum, shows a general eastward dip.

The Basal Brushy zone net porosity map shows the outline of the reservoir and illustrates the depositional pattern of a submarine fan system and its associated channel complex. A cutoff value of 18% was used for this map. Lower porosities will produce at greater depths, thus 18% was used instead of the 22% utilized for the Medano zone. The east channel has been tested and proven productive, while the west channel is untested.

In summary, the Medano zone is productive throughout most of the proposed pool and "wet" to the south. The Basal Brushy zone is also productive in this proposed pool, but the west channel is untested. Both the Medano and Basal Brushy zones are within the Delaware. Neither of these zones are stratigraphically equivalent to the productive zones found in the Sand Dunes Cherry Canyon Pool, which is the nearest established Delaware production.

YATES PETROLEUM CORP.  
BEFORE EXAMINER STOGNER  
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