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August 20, 1992  
Case 10519  
Hearing: Unorthodox Location of Yates Petroleum  
Diamond "AKI" Fed. #1

In Case 10519, Yates Petroleum requests approval for the unorthodox location of the Diamond "AKI" Fed. #1 located 360 feet from the south line and 2080 feet from the west line of section 34, Township 20 South, Range 24 East, Eddy County, New Mexico. Yates Petroleum originally asked for an orthodox location to be permitted at a location of 660 feet from the south line and 1980 feet from the west line of said section 34, in the South Dagger Draw Pool. The BLM denied this orthodox location for archaeological and topographical reasons as described by the previous witness and has approved drilling at a location of 360 feet from the south lease line and 2080 feet from the west lease line. This new location now becomes unorthodox. Yates Petroleum seeks approval for this unorthodox location in the South Dagger Draw Upper Penn. Associated Pool.

EXHIBIT A <sup>10</sup>

Exhibit ~~A~~ is the first exhibit submitted to assist in showing why the Diamond AKI #1 was originally permitted to be drilled for the Canyon or Upper Penn. reservoir in the South Dagger Draw Pool. This exhibit is an isopach map of the Canyon or Upper Penn dolomite reservoir. The orthodox location represented by a small red circle, along with the unorthodox location as a large purple circle around the location symbol.

YATES PETROLEUM CORP.  
BEFORE EXAMINER CATANACH  
NMOCD CASE NO. 10519  
DATE: 08/20/92  
EXHIBIT NO. 9

The bold line which represents cross section A-A' will be explained in exhibit C. The isopach contour on this map is in 50 foot intervals.

In this region of the South Dagger Draw Pool the isopach map shows the extent of the dolomite reservoir as being along the western portion of section 34, with the NW/4 being out of the reservoir and SW/4 being on the edge. The Diamond should encounter approximately 250 feet of Canyon dolomite at the unorthodox location. This is an optimistic map for predicting the dolomite limit. The dolomite edge can feather out rapidly in this area, as represented by the well in unit G with 0 feet of dolomite and the well in unit J with 300 feet of dolomite. The thickness of the dolomite in the SE/4 of the SW/4 shows that unit N is the most logical location in this spacing unit for drilling a step-out well to the west of the established pool.

#### EXHIBIT B<sup>11</sup>

Exhibit B is a structure map on the top of the Canyon dolomite. The structure contours on this map are in 50 foot intervals. Structure on top of the dolomite is not locally significant. The map shows that this proposed location is expected to be about flat with proven gas production to the west. As stated earlier, the concern at this proposed location is focused on the stratigraphic aspect of the dolomite.

#### EXHIBIT C<sup>12</sup>

Exhibit C is a northwest to southeast structural cross section labeled A to A' that passes through the proposed location of the Diamond AKI Fed. #1. A subsea datum has been chosen at -3700 feet. There is 0 feet of dolomite existing in the Preston Fed. #2 and approximately 307 feet of dolomite present in the Mojave #1. As stated earlier, the Diamond is expected to encounter 250 feet of dolomite. Experience in the Dagger Draw Pool has shown that wells near the feathered edge of the dolomite reservoir tend to be tight and not as productive as wells with thicker dolomites intervals. Therefore the better locations for drilling should try to stay away from the edge of the dolomite reservoir.

#### EXHIBIT D<sup>13</sup>

This is a portion of the Foster Ranch 7.5 minute USGS topographical map in Eddy County, New Mexico. This is being submitted as an exhibit to show the location of the Box Canyon Draw. The dolomite

boundary and the hundred foot contours from the isopach map have been transferred to the topographical map to show the relationship of the subsurface to the surface topography.

## SUMMARY

To sum up, the original location was permitted as an orthodox location. The BLM denied this original location and requested it be moved for archaeological and topographical reasons. The new location becomes unorthodox, and it is for this unorthodox location that Yates Petroleum seeks approval.