

## Dempster Exploratory Unit Geologic Justification

Yates Petroleum Corporation requests the formation of the Dempster Exploratory Unit to support the drilling of a wildcat well in the south half of section 30, T11S R36E. The footage of the location will be 660' FSL and 1980' FWL of section 30. An accompanying structure map shows the location of the unit outline. Sands within the Atoka-Morrow formations are the primary target, however, the well will TD at 13,600, in the Lower Mississippian limestone.

Atoka-Morrow sands are gas productive and are distributed within a braided channel system. Sands in these channels are of limited aerial extent, developing in structural lows proximal to paleo-highs. Uplift and deposition were occurring simultaneously during Atoka-Morrow time.

The accompanying map shows structure on the top of the Mississippian. A series of braided channels are shown in blue descending off a faulted high on the east side of the unit. These channels are narrow but can be quite prolific. This area contains few drill holes. Only one is productive, that being the State-Gulf A #1, producing from the lower Wolfcamp carbonate. At 15 MBO even this well is far from economic. All wells that penetrate the Atoka and Morrow are either located on a high or appear to have by-passed productive sands. A successful first well in this unit will lead to others being drilled within this braided stream network.

The accompanying W-E cross-section illustrates the presence of a significantly thickened Atoka-Morrow section and additional sands in wells located in the prospective downthrown block. The Stone Pet State #1 well is on the high side of this fault. This well contains much less Atoka-Morrow section and fewer sands.

The proposed unit contains a regional scale fault on its eastern side. Yates Petroleum Corporation believes there are channel sands within a braided stream network trending WSW off of this high. This is a high risk well which will cost \$1.5 million to drill and complete. The formation of this exploratory unit would aid in the reasonable development of these potential reservoirs.