

## Otis Exploratory Unit Geologic Justification

Yates Petroleum Corporation requests the formation of the Otis Exploratory Unit to support the re-entry and deepening of a well in the N/2 of section 30, T15S, R34E. Exxon drilled the original well (New Mexico State FE #1) at a footage location of 660' FNL and 660' FEL of section 30. The proposed unit outline is shown on both the geologic structure map, and the land map. The primary target of the initial well will be the Atoka-Morrow, but the well will TD in the Mississippian limestone at a depth of 13,900'.

The Atoka-Morrow sands are gas productive channel sands of limited aerial extent, which develop from erosion of structural highs. Deposition and uplift were occurring simultaneously during Atoka-Morrow time. The source of the sand was erosion from uplifted fault blocks immediately to the southeast and west during late Mississippian and early Pennsylvanian time.

The top Morrow structure map shows the sand channels coming off these highs with a blue line. These sand channels are narrow, elongate features, but they can be very prolific when discovered. There are no productive wells and no lower Atoka or Morrow penetrations within the unit outline. The last well drilled within the proposed unit outline was an Exxon dry hole drilled in 1987. This Exxon dry hole, which originally reached a TD in the upper Atoka, is the proposed re-entry candidate.

Cross section A-A' shows several Morrow age sands which are trending toward the Exxon well. The sands are shown in yellow on the cross section. The Humble, Federal Elliott #1 had good shows, but was P & A'd. The Yates Petroleum Corporation recent re-entry (Calfrope #1) is waiting on a pipeline hookup, but the logs are encouraging. A successful first well in the Unit outline also will lead to the other wells being drilled as the channel system is followed downdip.

Yates Petroleum Corporation believes there is a channel system which crosses the proposed Otis Unit. This is a high risk well which will cost \$851,500 to drill and complete. The formation of this exploratory unit would aid in the development of these potential reservoirs.