

# HORSESHOE PROSPECT

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This package includes maps supporting Mewbourne Oil Company's request for the formation of a state unit targeting the Upper Strawn Carbonate reservoir. Included in this package are the following maps:

1. Upper Strawn Gross Clean Lime Isopach (GC cutoff < 40 API Gamma Ray)
2. Upper Strawn Net Permeable Lime Isopach (Net Permeable =  $R_t < 1000$  Ohms)
3. Base of Strawn/Top of Atoka Structure Map
4. Strawn-Atoka Cumulative Production Map
5. Morrow Cumulative Production Map
6. Strawn-Atoka Stratigraphic Cross-Section Z-Z'

The Upper Strawn Gross Clean Lime Isopach illustrates a well defined interval at the top of the Strawn formation that is productive within this area. The zone is characterized by an interval 35-50 feet thick that has a gamma ray log value less than 40 API units. This facies in the Upper Strawn is approximately one half mile wide and trends from southwest to northeast along the paleo-Strawn shelf slope. The reservoir quality rock is defined by zones within this gross clean interval trend with an  $R_t$  value less than 1000 Ohms, indicating a permeable zone. These reservoir extents are illustrated in the Upper Strawn Net Permeable Lime Isopach. This zone has been targeted and successfully developed in fields to the southwest. The reservoir is not continuous, but has developed in topographic lows that can be seen in the structure at the base of the Strawn interval/Top of Atoka formation (see Base of Strawn/Top of Atoka Structure Map). The Strawn Producer Mosley Canyon 5-1 in the SW/4 of sec. 5 penetrated a porous Upper Strawn interval in a structurally low position in the Strawn structure. This well produced 3.36 Bcf and 26 MBO since 1989. In 2005, Mewbourne Oil Company drilled the Mosley Canyon 4-1 in the NW/4 of sec. 4. This well encountered a "tight" zone in the Upper Strawn. This zone is currently producing low volume gas, but no evidence of pressure depleting due to the producer to the southwest. The lack of pressure depletion and structural position suggest the discovery of a new reservoir in the trend. The Mosley Spring 32-3 well in the NE/4 of Sec. 32 contains a thick gross interval with no net porosity, which wouldn't be expected as it is west of the reservoir trend. However, this thick gross interval well, and the evidence of a strong re-entrant or low in the basal Strawn structure suggest a sizable area that would be optimal for development of this Upper Strawn carbonate reservoir. This area is wholly contained within the W/2 sec. 33 of T23S/R25E, and the S/2 of T23S/R25E.

*Attachment 3*