

Ezeanyim, Richard, EMNRD

From: jamesbruc@aol.com
Sent: Thursday, August 19, 2010 4:22 PM
To: Ezeanyim, Richard, EMNRD
Subject: Mewbourne/Case 14523
Attachments: moc-pine box-N-S_versus_E-W_orietation.doc

Richard: Attached is an explanation from the geologist on the north-south orientation of the well. I am putting together the additional information you requested, and will ship that to you tomorrow.

Jim

Pine Box 21 CN Fed Com #1H

N-S versus E-W

The decision to drill a N-S horizontal versus an E-W horizontal was based on a few points which I have listed below.

- 1.) We have run two separate micro-seismic tests in the immediate area with results indicating that neither N-S or E-W lateral orientations are preferred. Mewbourne has drilled 3 horizontal Yeso wells in the area, 2 of which were oriented E-W and the third N-S. Echo has drilled a N-S horizontal well directly to the North of this proposed horizontal and we have plans to drill both N-S and E-W in Sec. 9. Marbob has drilled numerous N-S horizontals in the area. There is no immediate data that suggests one lateral orientation performs better than the other.
- 2.) Drilling in the E1/2 W1/2 of Sec. 21 allows us to drill our first well of the section as close as possible to proven Yeso production in Section 15. We know from previous production in the area that we have encountered increased water production both updip and downdip of Section 15. The proposed location in Section 21 is on the same structural trend as Section 15, so we hope that we would see similar production results.
- 3.) Drilling N-S allows us to be drilling roughly on strike with Yeso structure. Strike in Section 21 is dominantly N to NE. Since the proposed horizontal will have a lateral length of approximately 4100' with a relatively shallow TVD of 2700', our operations group feels much more confident in their ability to steer the end of the lateral being drilled 5' downdip instead of 60' updip.

Uphole Potential

There are possible uphole reserves in the San Andres and Grayburg formations.

Jason Lodge
Geologist
Mewbourne Oil Company