

Sapient Energy Corp.  
Bertha J. Barber #12

Below is the argument for approving 80 acre Tubb spacing.

THE SHORT VERSION

- 1) Define original gas in place (OGIP) & estimated ultimate recovery (EUR). (Engineering data)
- 2) Apply wellbore data to calculate a drained area. (Engineering & Petrophysical data)
- 3) Define the distribution of the Tubb reservoir. (Geologic Map of reservoir)

ANSWERS TO SHORT VERSION

- 1) Material Balance (P/Z) calculations indicate OGIP of 1458 MMCF. Recoverable gas (P/Z) matches decline curve EUR.
- 2) Drained area equals 60 acres or less. Calculations are based on rigorous petrophysical and reservoir data from the Barber #12 wellbore measurements or best estimates from other Tubb reservoir measurements in the immediate area.
- 3) Geologic mapping of Tubb reservoir indicates drainage is most likely to be towards the south. This is based on the fact that the reservoir thins abruptly to the north and thickens to the south.
- 4) The planimetered OGIP within Sapient's 80-acre tract (E/2, NE/4) exceeds the calculated OGIP as defined by the Barber 12. Therefore, the mapped "tank" on Sapient's acreage is more than adequate to contain the produced gas.
- 5) The appropriate spacing unit for the Barber #12 Tubb gas well is 80 acres.

OVERALL APPROACH

Sapient has attempted to generate the highest confidence data for the Tubb Reservoir, as it occurs in the Barber #12 wellbore, and as it occurs in the offsetting acreage. Accepted engineering, and geological practices are applied to these data in order to generate a high confidence interpretation on which the NMOCD may base an interpretation.

In addition to using the best data, Sapient has endeavored to use *all* data available - specifically the Conoco Barber Federal #1 mudlog to estimate the net Tubb porosity encountered by that well. Sapient was criticized for extending the net porosity isopach to the southwest on its original map in March 2001. This well provides exactly such a data point for mapping the reservoir in that direction.

Sapient's overall position is to provide high quality data, combined with a thorough integration of all data available to provide the NMOCD the best possible basis for a decision in this case.