

Volumetric Calculations

Sapient Energy Corp

Barber # 12

Assumptions:

A= ??? acres
h avg = 30 feet
Porosity = 0.122
Sw = 0.27
Pi = 2597 psia
Zi = 0.7837
P/Zi = 3314
P/Z abd = 300
RF = 0.9095
T = 558 deg R

Calculations:

Original Recoverable Gas In Place =

$$1541 \times 0.122 \times (1 - 0.27) \times 3314 \times 0.9095 / 558 \\ = 741.3 \text{ MCF/acre-ft}$$

$$\text{Original Gas In Place} = 1541 \times 0.122 \times (1 - 0.27) \times 3314 / 558 \\ = 815.1 \text{ MCF/acre-ft}$$

Planimetered Volumes:

E/2 of NE/4 of Sec 7 (Sapient's 80 Acres) = 2706 acre-ft
W/2 of NE/4 of Sec 7 (Conoco, et al 80 Acres) = 1997 acre-ft
Total NE/4 of Sec 7 = 4703 acre-ft

Planimetered Gas In Place:

$$\text{E/2 of NE/4 of Sec 7 (Sapient's 80 acres)} = \\ 2706 \text{ acre-ft} \times 815.1 \text{ MCF/acre-ft} = 2206 \text{ MMCF}$$

$$\text{W/2 of NE/4 of Sec 7 (Conoco, et al 80 acres)} = \\ 1997 \text{ acre-ft} \times 815.1 \text{ MCF/acre-ft} = 1628 \text{ MMCF}$$

$$\text{Total NE/4 of Sec 7} = 3834 \text{ MMCF}$$

BEFORE THE
OIL CONSERVATION COMMISSION
Case No. 12605 Denovo Exhibit No. 16
Submitted By:
Sapient Energy Corp.
Hearing Date: November 6, 2001