

Sapient's Bertha Barber #12
Material Balance Method of Estimated Ultimate Recovery

BEFORE THE OIL CONSERVATION
 COMMISSION
 Santa Fe, New Mexico
 Case Nos. 12605/12587 de novo
 Conoco/Chevron Exhibit No. 14
 Hearing Date: December 4, 2001

Initial Conditions

BHP_i = 2461.69 psia
 Z_i = 0.7687
 P_i/Z_i = 3202.4 psia

BHP[9/06/01] = 1446 psia
 Z [9/06/01] = 0.8026
 P/Z [9/06/01] = 1801.6 psi

Well SI for work over from 08/23/01 - 09/08/01
 Cum Prod, Gp [8/23/01] = 799.6 MMSCF

$$\text{Slope} = \frac{(3202.4 - 1801.6)}{799.6 \text{ MMSCF}} = 1.7519 \text{ psi/MMSCF}$$

At Economic Limit

BHP[ab] = 250 psia
 Z[ab] = 0.962
 P/Z[ab] = 259.8 psi

$$\text{EUR} = \frac{P_i/Z_i - P/Z[\text{ab}]}{\text{slope}} = \frac{3202.4 \text{ psi} - 259.8 \text{ psi}}{1.7519 \text{ psi/MMSCF}} = 1679.7 \text{ MMCF}$$

$$\text{EUR/ Acre-ft} = \frac{1679.7 \text{ MMCF}}{26.5 \text{ ft} * 164 \text{ acres}} = 0.3865 \text{ MMCF/ Acre-ft}$$

