Big Bear ATN #2 -- Drainage Area

1. Original Oil in Place (stock-tank barrels) is given by the equation

   OOIP = 7758*A*h* phi*So/Boi

   where h*phi*So is the hydrocarbon pore volume.

2. The log calculations for hydrocarbon pore volume yield **h*phi*So = 0.6781**.

3. **Boi = 1.42** from the Standing Correlations where the parameters are as follows:

Solution GOR	=	800
Temperature	=	179 degrees F
Gas Gravity	=	0.72
Tank Oil Gravity	=	42 degrees API

4. Ultimate Primary Recovery (Np) = Recovery Factor*OOIP

   where Recovery Factor **(Rf)** = **0.25**

   from 1957 paper entitled "Estimation of Ultimate Recovery from Solution Gas-Drive Reservoirs" by Wahl, Mullins and Elfrink of Magnolia Petroleum.

5. Then, Np = Rf*7758*A*h*phi*So/Boi

   and, by rearranging, A = Np*Boi/(Rf*7758*h*phi*So) in acres

   A = 69116*1.42/(0.25*7758*0.6781) in acres

   A = 74.6 acres is the Drainage Area in the Atoka

BEFORE THE OIL CONSERVATION DIVISON
Santa Fe, New Mexico
Case No. 12681 Exhibit No. 9
Submitted by:
Yates/David
Hearing Date: June 28, 2001