Burkley-Phillips No. 1

1 message

[redacted] Thu, May 12, 2011 at 1:38 PM

[redacted] I have read Mr. Burch's comments on his evaluation of the Burkley-Phillips No. 1 well. Some of his observations were correct; however, he came to some invalid conclusions. I have run through some quick calculations showing how much the original gas in place can be as well as the gas remaining in place at an assumed abandonment BHP of 3000 psi. Assuming a porosity of 20% and a water saturation of 25%; the recoverable gas assuming volumetric depletion is 1970 MCF/AF.

His remarks about all deep high pressure wells that he has knowledge of produces mostly CO2 might hold for his experience. Does he believe that Mainland would drill a well to 22,000 well without a mud-logging unit that constantly monitors gas units as well as gas composition?

[redacted]

5/12/11

Assume Gas Gravity = 0.6 (very dry)
BHT = 460°F BHPi = 20,000

Critical temperature = 360°R
Critical pressure = 672 psi

Pseudo reduced pressure = $\frac{20,000}{672}$ = 29.76

Pseudo reduced temperature = $\frac{460 + 460}{360}$ = 2.56

Zi = 1.82

Bgi = $\frac{5.15\ z\ T}{P}$ $\frac{RVB}{MCF}$ = $\frac{5.15 \times 1.82 \times 920}{20,000}$

= 0.431 RVB/ MCF

Assuming 20% porosity and 25% connate water

Gas in place = 7758 x 0.20 x (0.75) / 0.431
= 2700 MCF/AF

Assume abandonment pressure of 3000 psi.

Pr = $\frac{3000}{672}$ = 4.46

Tr = $\frac{460 + 460}{360}$ = 2.56

Z = 1.01

Bga = $\frac{5.15\ ZT}{P}$ = $\frac{5.15 \times 1.01 \times 920}{3000}$ = 1.595 $\frac{RVB}{MCF}$

Gas in place at 3000 psi

Gα = 7758 x 0.2 (0.75) / 1.595

= 730 MCF/AF

Recovery = 2700 – 730 MCF/AF
= 1970 MCF/AF