# Ovalle Dew Point Pressure Correlation @model

| | |
|---|---|
| (1) $P_d = 8.48 + 0.32239 \cdot Z + 0.000477 \cdot Z^2$ | |
| (2) $Z = \sum_{n=1}^{3} Z_n$ | (3) $Z_n = C_{n0} + C_{n1} \cdot \mathrm{VAR}_n + C_{n2} \cdot \mathrm{VAR}_n^2$ |

where

| | | |
|---|---|---|
| $p_d$ | psia | Dew point pressure |

and

| n | $\mathrm{VAR}_n$ | | | $C_{n0}$ | $C_{n1}$ | $C_{n2}$ |
|---|---|---|---|---|---|---|
| 1 | $\ln R_{vd}$ | Vaporized Oil Ratio at Dew point pressure | stb/MMscf | 9.8895 | -0.87528 | -0.01691 |
| 2 | $\gamma_{o\mathrm{API}}$ | Initial stock-tank condensate API gravity | °API | 11.7 | -0.29709 | 0.00151 |
| 3 | $\gamma_{gRd}$ | Gas specific gravity recombined to the dew point | frac | 3.5202 | -2.9145 | -0.81744 |

The correlation is built over the following range:

| | | | Minimum | Median | Maximum |
|---|---|---|---|---|---|
| **Vaporized Oil Ratio for recombined dewpoint gas composition** | $R_{vd}$ | stb/MMscf | 8.82 | 47.05 | 436.8 |
| **Initial stock-tank condensate API gravity for recombined dewpoint gas composition** | $\gamma_{o\mathrm{API}}$ | °API | 35.6 | 55.1 | 76.5 |
| **Gas specific gravity for recombined dewpoint gas composition** | $\gamma_{gRd}$ | frac | 0.609 | 0.95 | 1.623 |
| **Fluid temperature** | T | °F | 93 | 266.7 | 348 |
| **Dew point pressure** | $p_d$ | psia | 1,870 | 5,093 | 10,980 |

The correlation has been built for the $R_v$ measured at the first stage of separator (as the oil yield measurements at second stage separator and stock tank are not readily available).

This means that further corrections may be required to get accurate values of $R_v$ in respect to STP.

## See also

Natural Science / Physics /Thermodynamics / Equation of State / Vaporized Oil Ratio (Rv)

## References

Ovalle, Adriana P., Lenn, Christopher Peter, and William D. McCain. "Tools To Manage Gas/Condensate Reservoirs; Novel Fluid-Property Correlations on the Basis of Commonly Available Field Data." SPE Res Eval & Eng 10 (2007): 687–694. doi.org/10.2118/112977-PA