

BASIN DAKOTA
SECTION 28-T28N-R10W
1st SAND

Fluid Properties

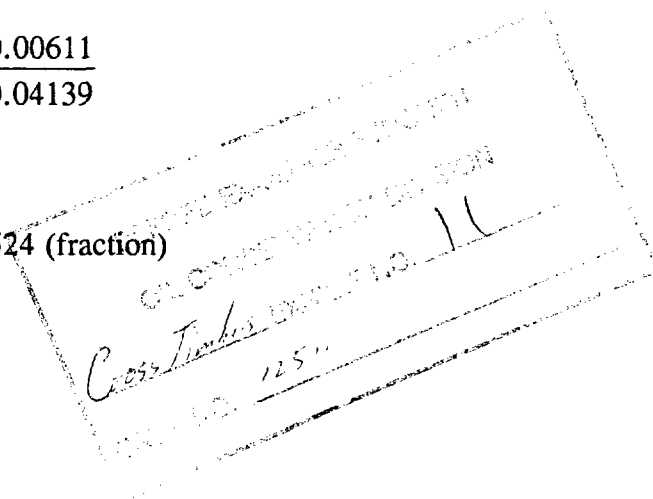
Gas Gravity	=	0.646	Gas Analysis
T _c	=	365°R	Standing's Correlation
P _c	=	678 psi	Standing's Correlation
T _r	=	150 °F	Log Measurement
P _{ri}	=	2,400 psi	Public Data
P _{ra}	=	400 psi	Estimate
B _{gi}	=	0.00611 ft ³ /SCF	Standing & Katz's Correlation
B _{ga}	=	0.04139 ft ³ /SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RF_i = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_i = 1 - \frac{0.00611}{0.04139}$$

$$RF_i = 0.8524 \text{ (fraction)}$$



Rock Properties

Acre - Feet	=	1,615	Planimetered from net sand thickness maps
Average Porosity	=	0.09	(Fraction) ϕ_{dn} Avg. of offsets
Water Saturation	=	0.44	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356Ah_{\phi}(1-S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(1,615)(0.09)(1-0.44)}{0.00611} MMCF$$

$$GIP = 580 \text{ MMCF}$$

$$EUR_t = RF_t \times GIP$$

$$EUR_t = (0.8524)(580)$$

$$EUR_t = 495 \text{ MMCF}$$

BASIN DAKOTA
SECTION 28-T28N-R10W
2nd SAND

Fluid Properties

Gas Gravity	=	0.646	Gas Analysis
T _c	=	365°R	Standing's Correlation
P _c	=	678 psi	Standing's Correlation
T _r	=	150 °F	Log Measurement
P _{ri}	=	2,400 psi	Public Data
P _{ra}	=	400 psi	Estimate
B _{gi}	=	0.00611 ft ³ /SCF	Standing & Katz's Correlation
B _{ga}	=	0.04139 ft ³ /SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RF_i = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_i = 1 - \frac{0.00611}{0.04139}$$

$$RF_i = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	6,102	Planimetered from net sand thickness maps
Average Porosity	=	0.12	(Fraction) ϕ_{dn} Avg. of offsets
Water Saturation	=	0.46	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356Ah_{\phi}(1-S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(6,102)(0.12)(1-0.46)}{0.00611} MMCF$$

$$GIP = 2,819 \text{ MMCF}$$

$$EUR_t = RF_t \times GIP$$

$$EUR_t = (0.8524)(2,819)$$

$$EUR_t = 2,403 \text{ MMCF}$$

BASIN DAKOTA
SECTION 28-T28N-R10W
3rd SAND

Fluid Properties

Gas Gravity	=	0.646	Gas Analysis
T _c	=	365°R	Standing's Correlation
P _c	=	678 psi	Standing's Correlation
T _r	=	150 °F	Log Measurement
P _{ri}	=	2,400 psi	Public Data
P _{ra}	=	400 psi	Estimate
B _{gi}	=	0.00611 ft ³ /SCF	Standing & Katz's Correlation
B _{ga}	=	0.04139 ft ³ /SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RF_i = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_i = 1 - \frac{0.00611}{0.04139}$$

$$RF_i = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	49,398	Planimetered from net sand thickness maps
Average Porosity	=	0.08	(Fraction) ϕ_{dn} Avg. of offsets
Water Saturation	=	0.27	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356Ah_o(1-S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(49,398)(0.08)(1-0.27)}{0.00611} MMCF$$

$$GIP = 20,567 \text{ MMCF}$$

$$EUR_t = RF_t \times GIP$$

$$EUR_t = (0.8524)(20,567)$$

$$EUR_t = 17,531 \text{ MMCF}$$