

# STGIIP @model

@wikipedia

Volumetric value of [Gas Initial In Place \(GIIP\)](#) recalculated to [NTP](#) conditions:

$$(1) \quad V_{\text{STGIIP}} = \int_{\Omega} \left[ \frac{s_{gi}(\mathbf{r})}{B_g} + \frac{R_s s_{oi}(\mathbf{r})}{B_o} \right] \phi_e(\mathbf{r}) dV$$

where

$\Omega$	Petroleum reservoir
$\mathbf{r} = (x, y, z)$	Position vector to some location in a <a href="#">reservoir</a>
$dV = dx dy dz$	Volume element of a <a href="#">reservoir</a>
$p_i(\mathbf{r}), T_i(\mathbf{r})$	Initial formation pressure and <a href="#">temperature</a> at location $\mathbf{r}$
$\phi_e(\mathbf{r})$	Effective porosity at location $\mathbf{r}$
$s_{oi}(\mathbf{r}), s_{gi}(\mathbf{r})$	Initial Oil saturation and Gas saturation at location $\mathbf{r}$
$B_o(p_i, T_i), B_g(p_i, T_i)$	Oil FVF and Gas FVF at Initial formation pressure and temperature
$R_s(p_i, T_i), R_v(p_i, T_i)$	Solution GOR and Vaporized Oil Ratio at Initial formation pressure and temperature

For practical implementation of (1) one needs to build a [Geological Model \(GM\)](#) and perform a numerical integration.

## See Also

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[Petroleum Industry](#) / [Upstream](#) / [Exploration](#) / [Booking Reserves](#) / [Gas Initial In Place \(GIIP\)](#) / [Stock-Tank Gas Initial In-Place \(STGIIP\)](#)