$$CH_4 = \frac{A_e}{\rho_{ref}} \sqrt{\frac{2000 \cdot K}{K-1} P_a \rho_a \left[\left(\frac{P_{Atm}}{P_a} \right)^{2/K} - \left(\frac{P_{Atm}}{P_a} \right)^{(K+1)/K} \right]} \times Cd \times t \times \left[\frac{T_{SC} \times P_{ge}}{T_{ge} \times P_{SC}} \right] \times \rho_{ref} \times 0.001$$

Where:

CH_4 = Annual CH_4 emissions attributable to third party pipeline puncture incident when the flow is not choked, in metric tons;
A_e = Leak area in the pipe determined in accordance with paragraph 3 of QC.29.4.9, in square metres;
K = Specific heat ratio of CH_4, namely 1.299;
ρ_{ref} = Density of CH_4, namely 0.690 kg per cubic metre at standard conditions;
ρ_a = Density of CH_4 inside the pipe at the puncture location, in kilograms per cubic metre;
P_a = Absolute pressure inside the pipe, determined in accordance with paragraph 2 of QC.29.4.9, in kilopascals;
P_{Atm} = Absolute pressure at the damage point, in kilopascals;
R = Universal gas constant, namely 8.3145 kPa m^3 per kilmole per Kelvin;
Cd = Discharge coefficient, determined by the emitter or a default value of 1;
t = Duration of venting following puncture incident, in hours;
T_{SC} = Temperature at standard conditions of 293.15 kelvin;
T_{ge} = Temperature of gas emitted, in kelvin;
P_{ge} = Absolute pressure of gas emitted, in kilopascals;
P_{SC} = Pressure at standard conditions of 101.325 kPa;
0.001 = Conversion factor, kilograms to metric tons.