

$$GHG_i = \sum_{j=1}^n \left[N_j \times V_j \times \left(\frac{T_{SC}}{T_B \times P_{SC}} \right) \times (P_{d1} - P_{d2}) \right] \times MF_i \times \rho_i \times 0.001$$

Where:

GHG_i = Annual emissions of greenhouse gas *i* attributable to natural gas emissions to the atmosphere from equipment

blowdown vent stacks, in metric tons;

n = Total number of types of equipment;

j = Type of equipment with the same natural gas volume in the blowdown equipment chambers between isolation valves;

N_j = Annual number of blowdowns for each equipment type *j*, determined in accordance with paragraph 2 of QC.33.4.7;

V_j = Total volume in blowdown equipment chambers, between isolation valves, for equipment type *j*, determined in accordance with paragraph 1 of QC.33.4.7, in cubic metres;

T_{SC} = Temperature at standard conditions of 293.15 kelvin;

T_B = Temperature at blowdown conditions, in kelvin;

P_{SC} = Pressure at standard conditions of 101.325 kPa;

P_{d1} = Absolute pressure before depressurization, in kilopascals;

P_{d2} = Absolute pressure after depressurization or a value of 0 if the equipment is purged using a gas other than CO₂ or CH₄, in kilopascals;

MF_i = Molar fraction of greenhouse gas *i* in natural gas, determined in accordance with paragraph 3 of QC.33.4;

ρ_i = Density of greenhouse gas *i* that is 1.893 kg per cubic metre for CO₂ and 0.690 kg per cubic metre for CH₄ at standard conditions;

0.001 = Conversion factor, kilograms to metric tons;

i = CO₂ or CH₄.

