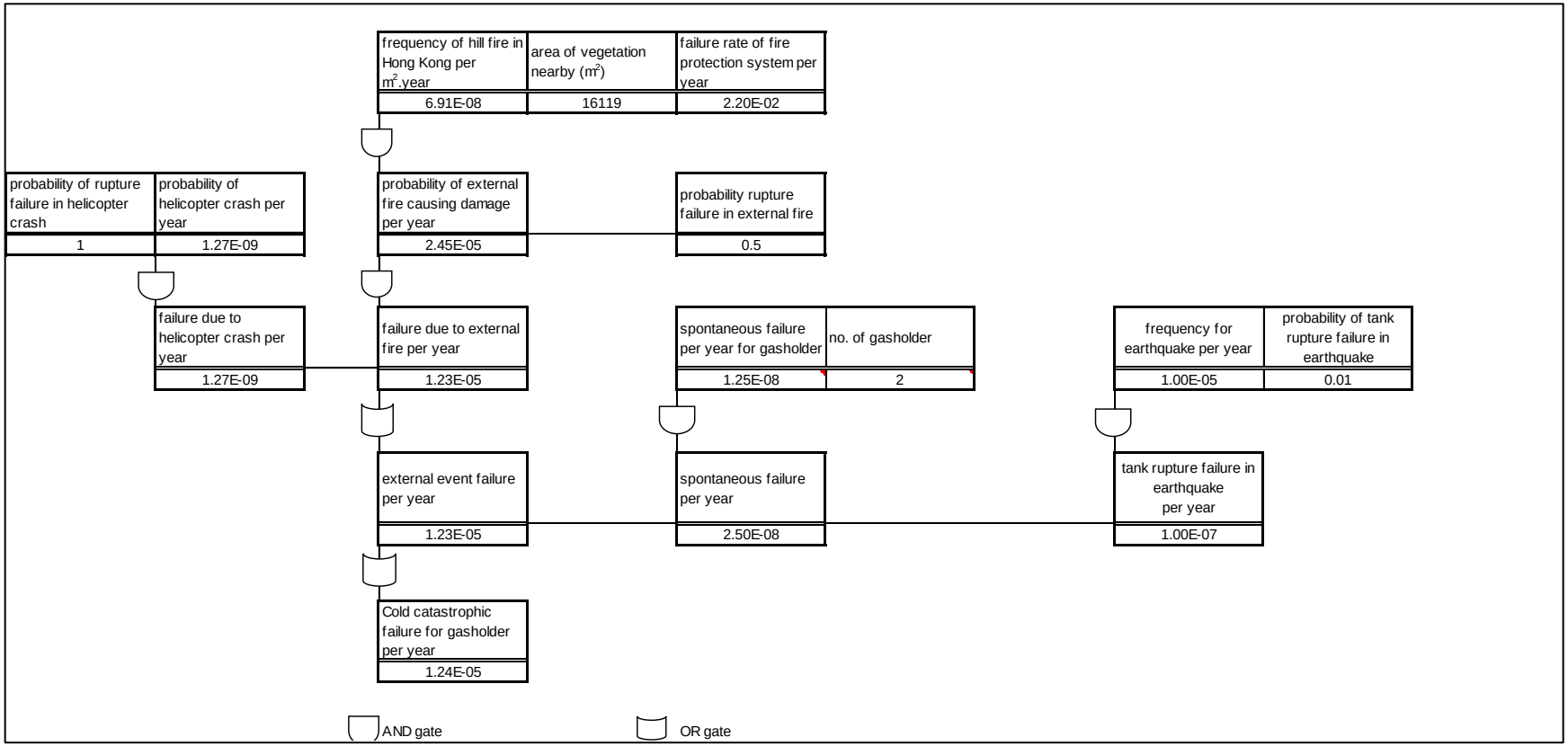
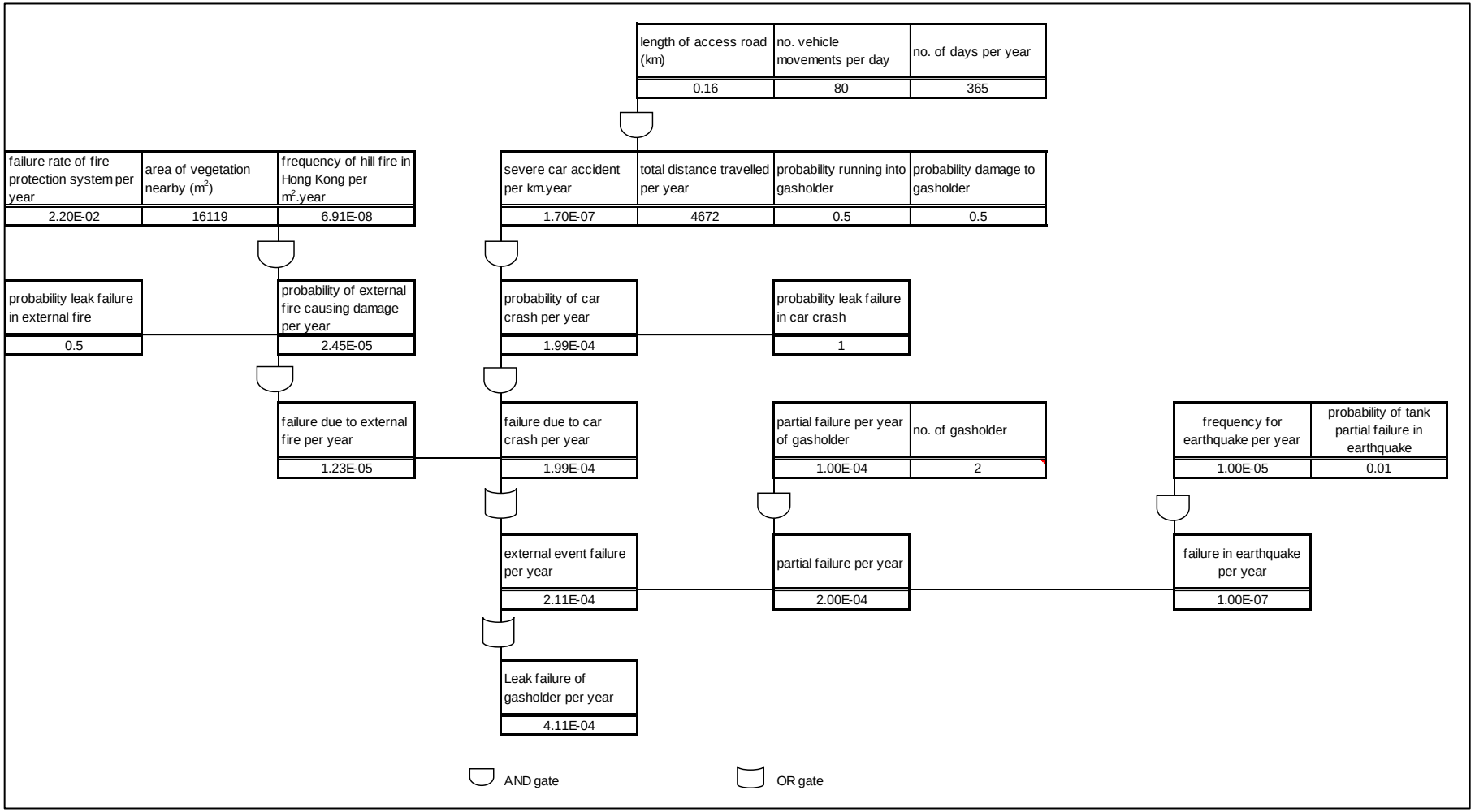
Appendix 11.4 Fault Tree Analysis

11.4a Fault Tree Analysis for OWTF2

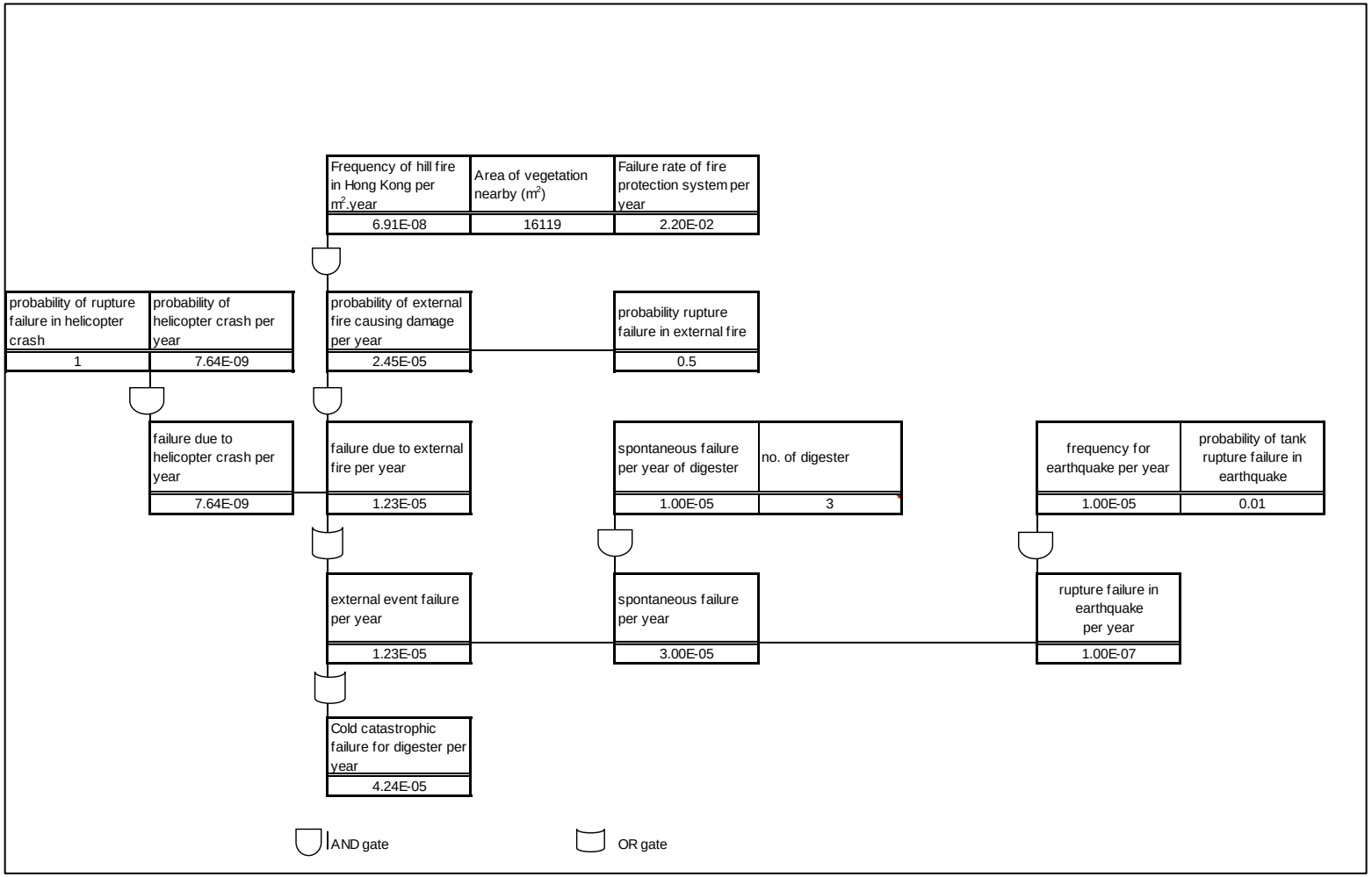
1. Catastrophic Failure of Gasholder



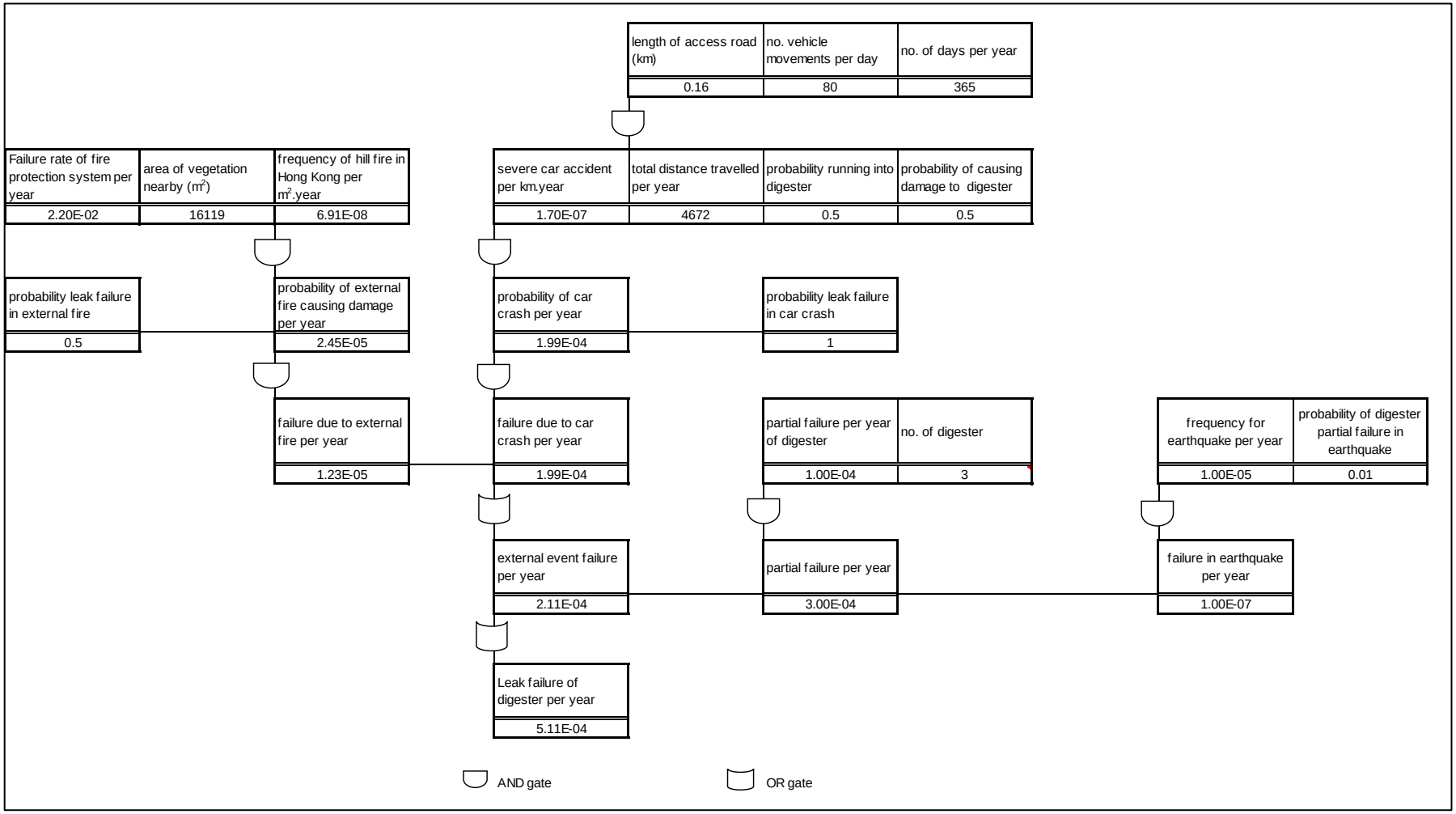
2. Partial Failure of Gasholder



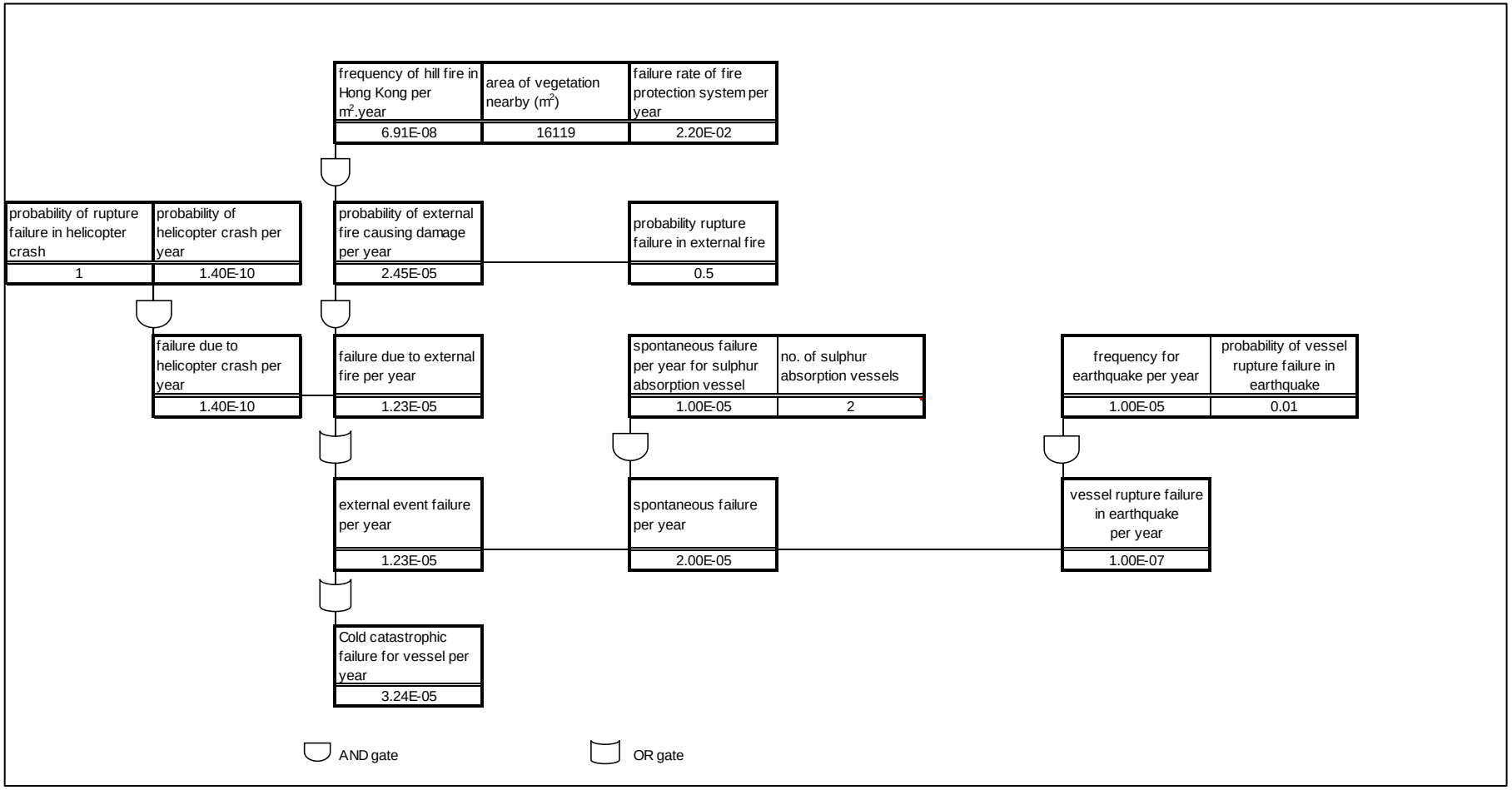
3. Catastrophic Failure of Digesters



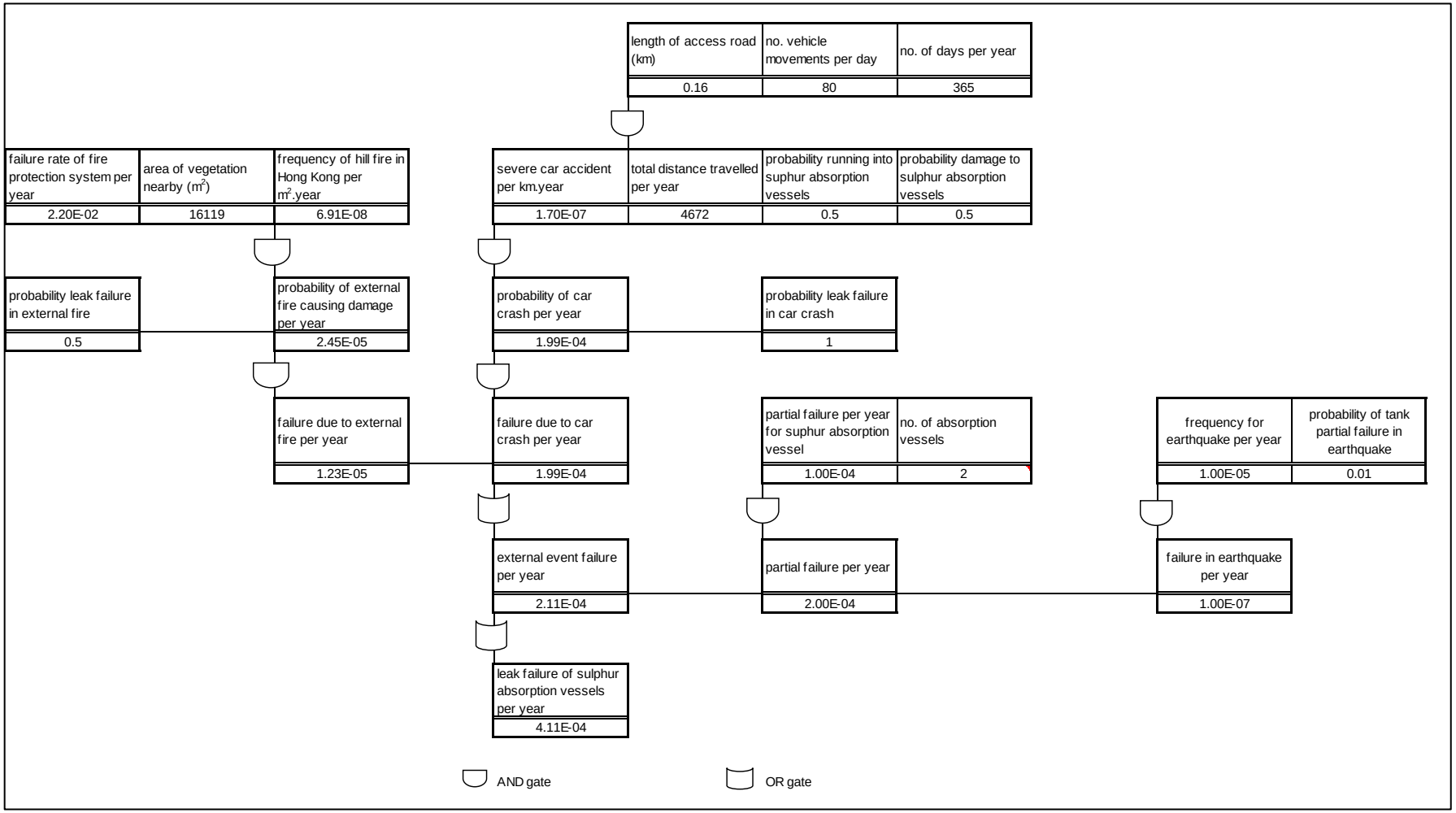
4. Partial Failure of Digesters



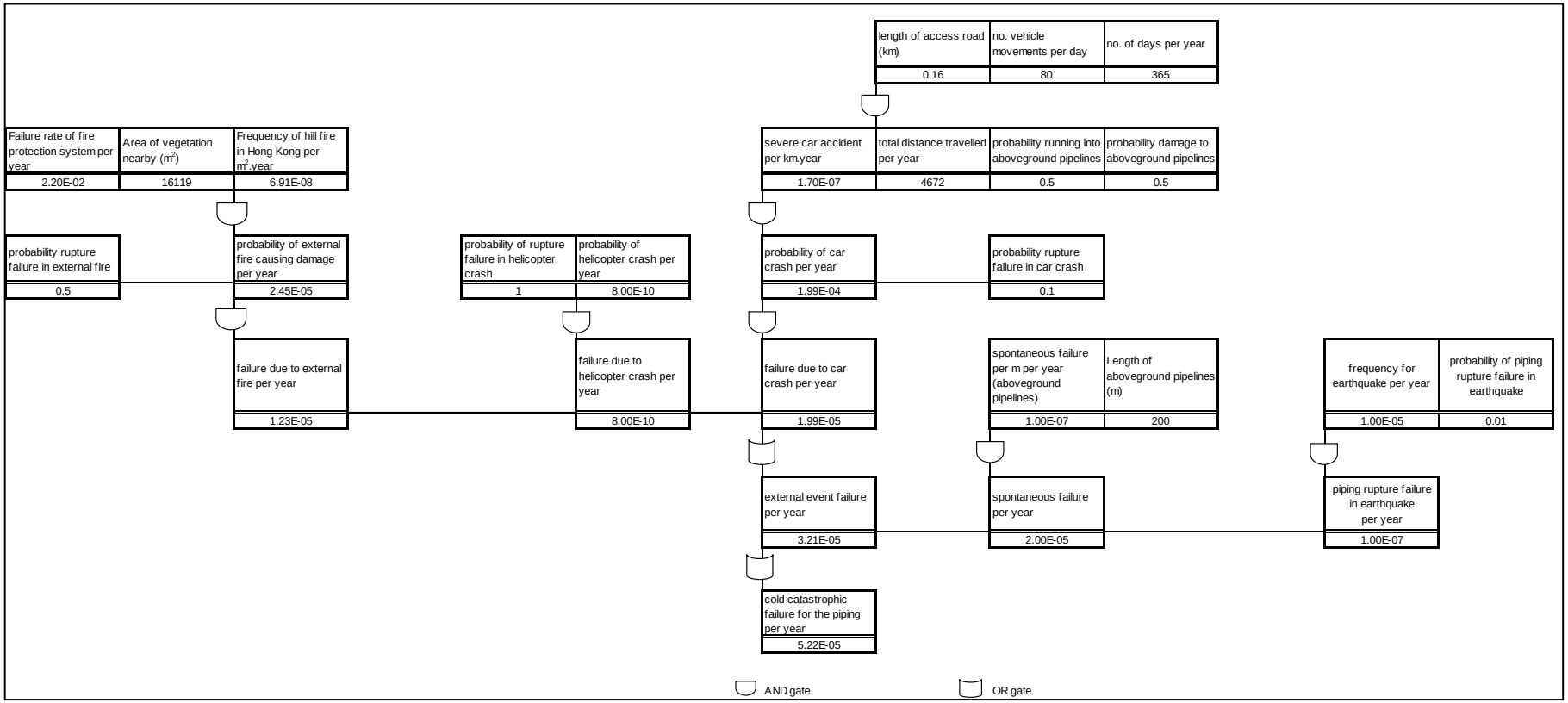
5. Catastrophic Failure of Sulphur Absorption Vessels



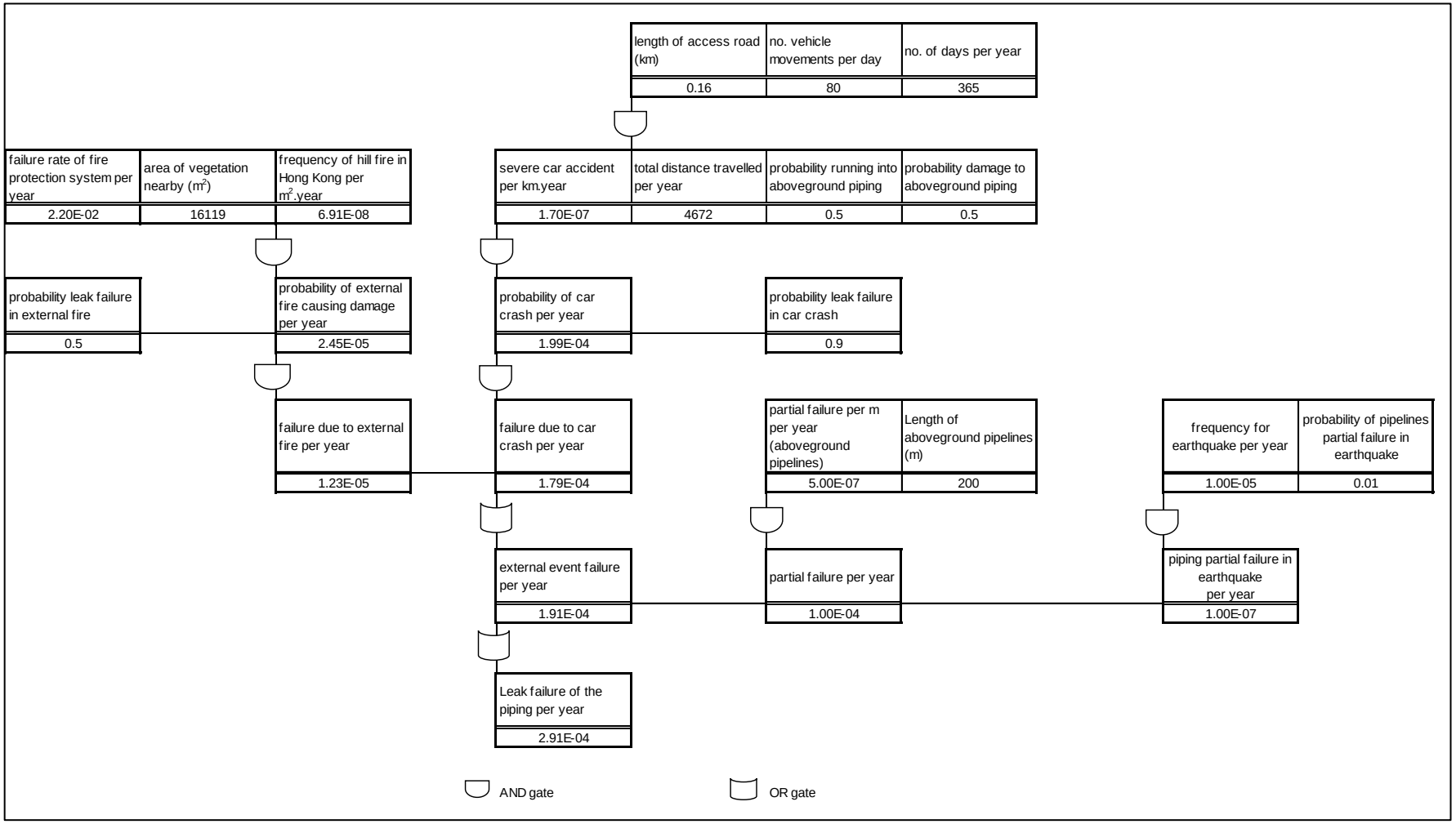
6. Partial Failure of Sulphur Absorption Vessels



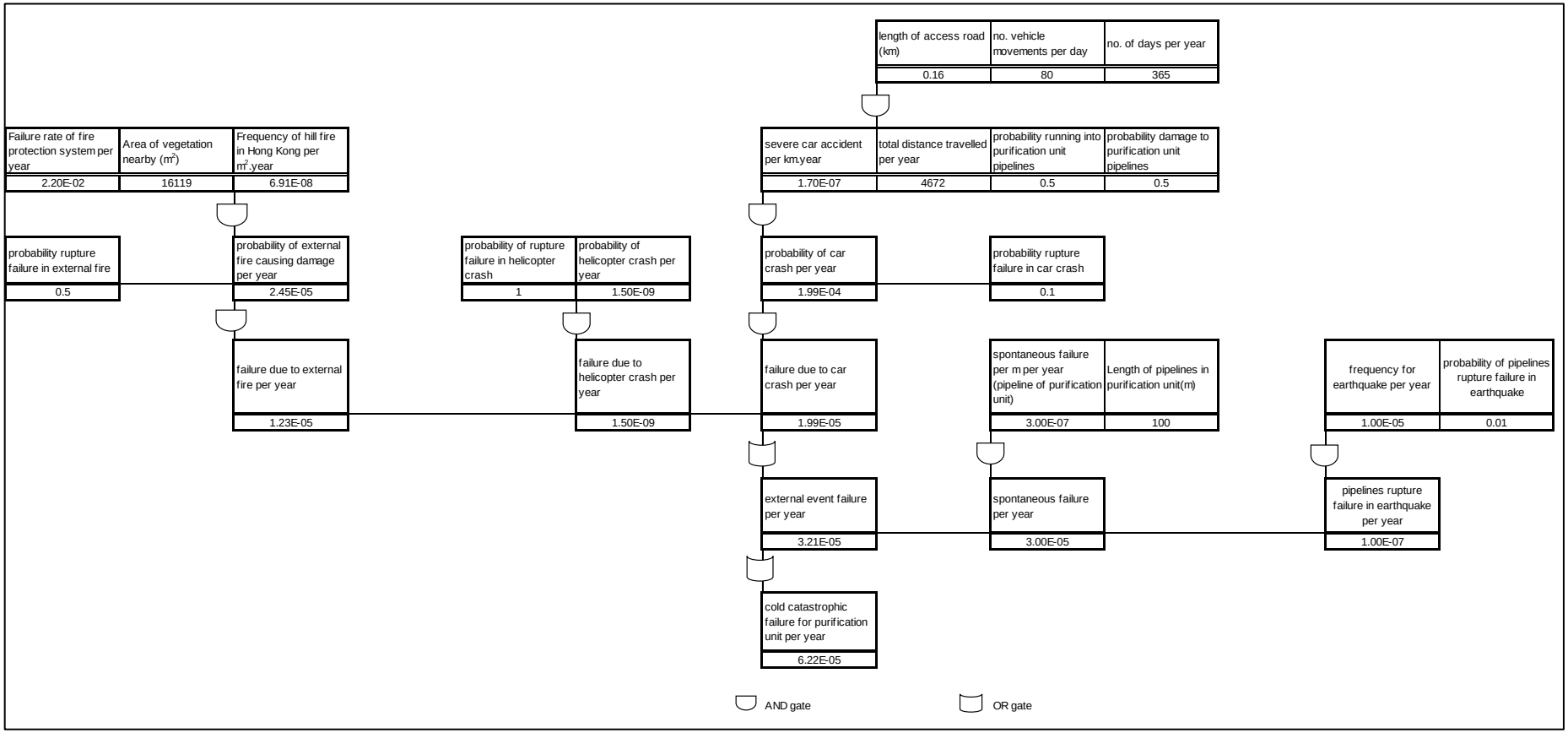
7. Catastrophic Failure of Aboveground Pipeline



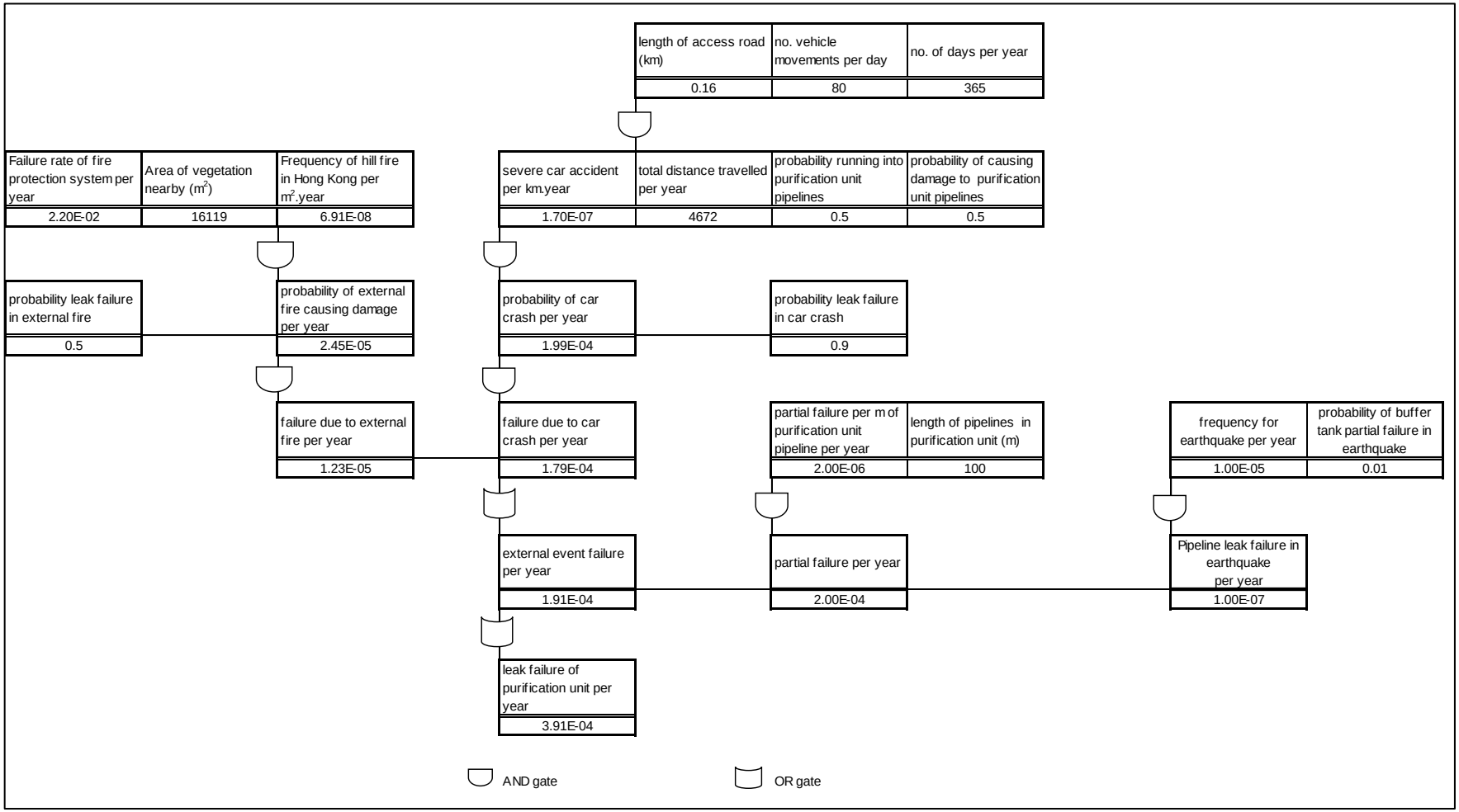
8. Partial Failure of Aboveground Pipeline



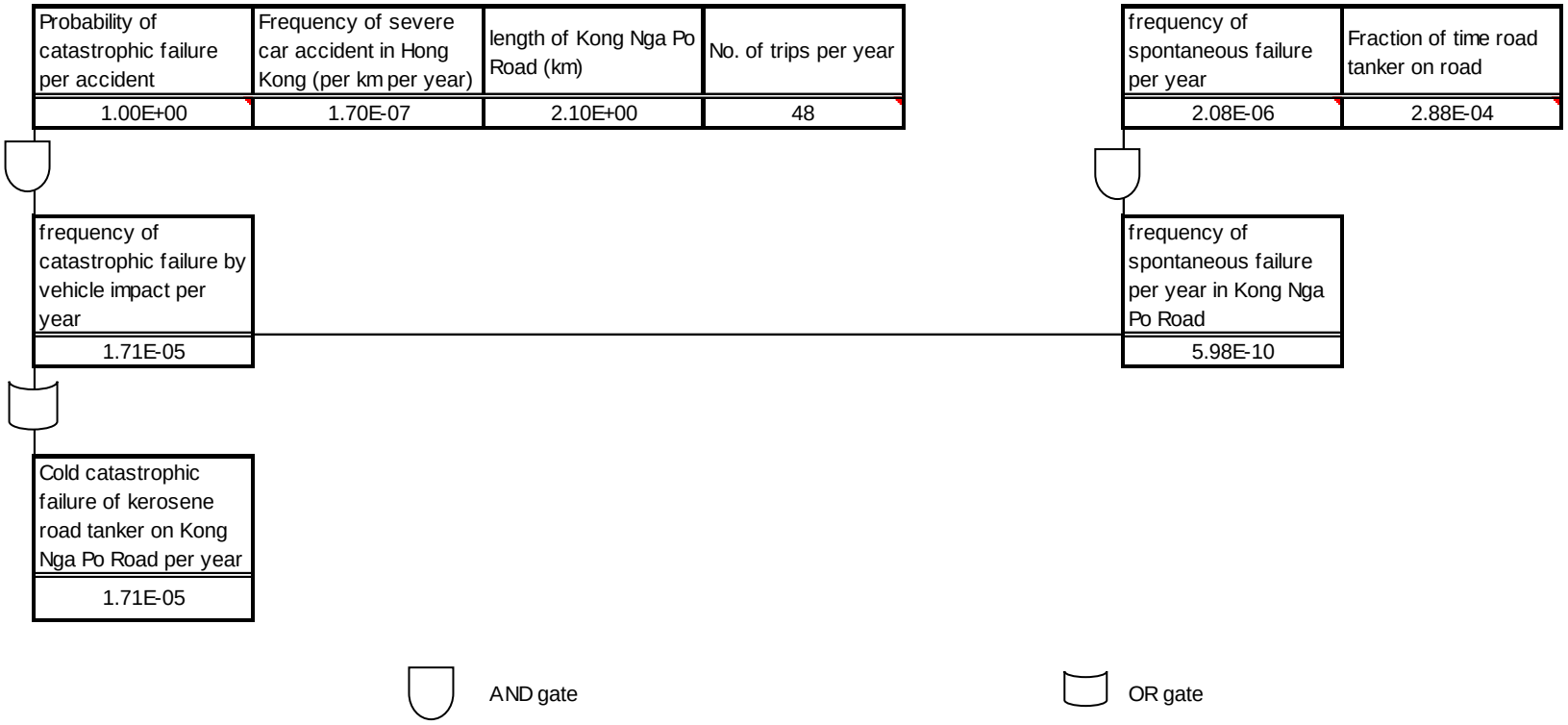
9. Catastrophic Failure of Purification Unit



10. Partial Failure of Purification Unit



Appendix 11.4b Fault Tree for catastrophic rupture of tanker during kerosene transport



Note:

1. The number of trips per year includes round-trips twice a month(50% chance with full inventory, 50% chance with reserve inventory)
2. Fraction of time on road is calculated by:

   Length of Kong Nga Po Road (2.1km) x No. of trips per year (48)

   ÷ Travel speed (assume 40km/hr for long truck in narrow roads)

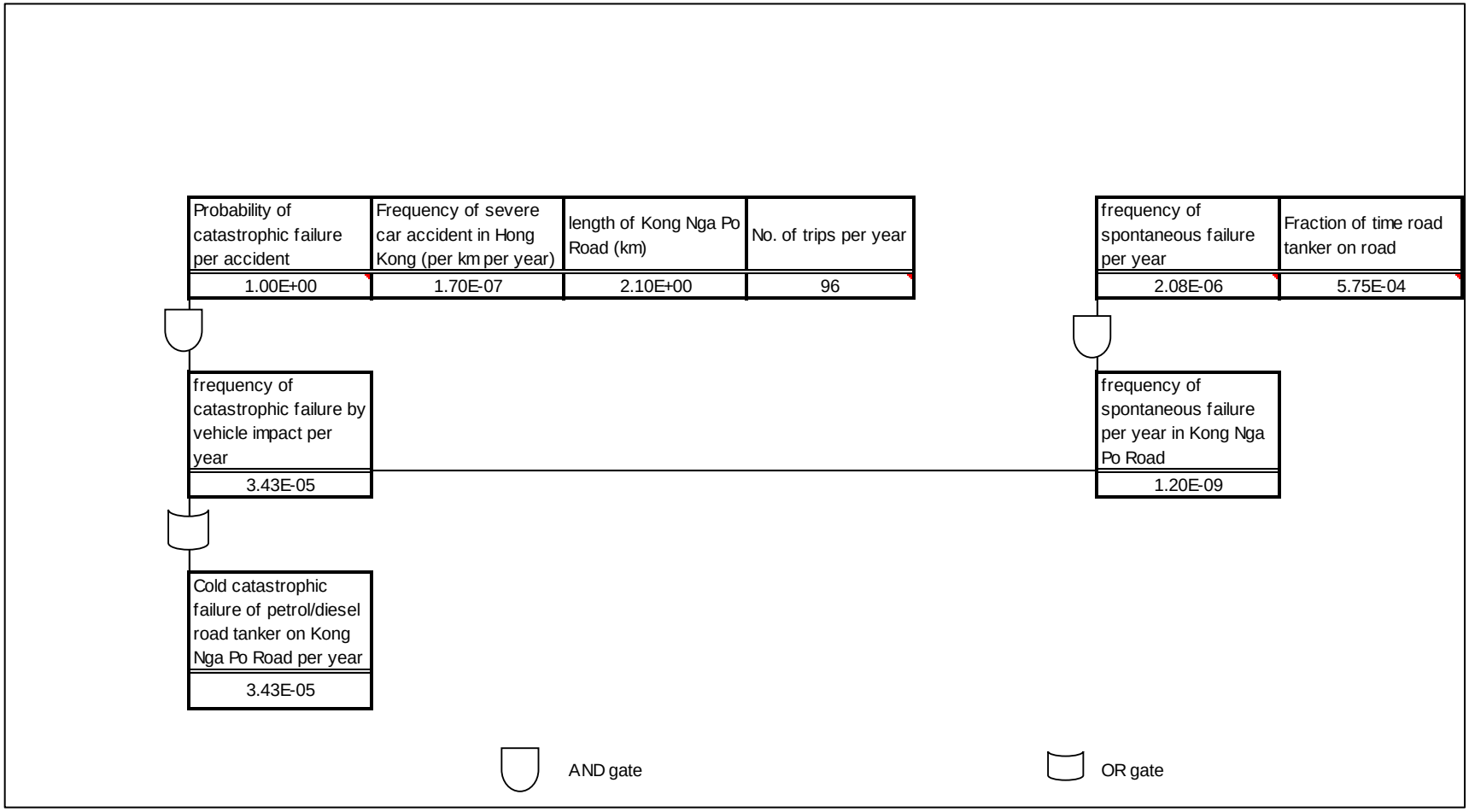
   ÷ Number of hours per year (8760)

   = 2.88e-4
3. Spontaneous failure frequency of road tanker is referenced from the road tanker failure frequency from the following references:

   A.B. Reeves, F. C. Minah, and V. H. K. Chow, "Quantitative Risk Assessment Methodology for LPG Installations, Conference on Risk & Safety Management in the Gas Industry," Hong Kong, 1997.

   "South Island Line (East) Environmental Impact Assessment," MTR Corporation Limited, Hong Kong2010.

Appendix 11.4c Fault Tree for catastrophic rupture of road tanker during petrol/diesel transport



Note:

1. The number of trips per year includes round-trips twice a month for petrol and diesel respectively (50% chance with full inventory, 50% chance with reserve inventory)

2. Fraction of time on road is calculated by:

   Length of Kong Nga Po Road (2.1km) x No. of trips per year (96)

   ÷ Travel speed (assume 40km/hr for long truck in narrow roads)

   ÷ Number of hours per year (8760)

   =5.75e-4

4. Spontaneous failure frequency of road tanker is referenced from the road tanker failure frequency from the following references:

   A.B. Reeves, F. C. Minah, and V. H. K. Chow, "Quantitative Risk Assessment Methodology for LPG Installations, Conference on Risk & Safety Management in the Gas Industry," Hong Kong, 1997.

   "South Island Line (East) Environmental Impact Assessment," MTR Corporation Limited, Hong Kong2010.