

Risk of Serious Accidental Spillage

- RL road length in km
- SS serious accidental spillage rate (from DMRB Vol. 11, Part 10, Annex I, Table D.1)
- AADT annual average daily traffic
- %HGV percentage of heavy goods vehicles
- P_{acc} probability of a serious accidental spillage in one year over a given road length
- P_{pol} The risk reduction factor (from DMRB Vol. 11, Part 10, Annex I, Table D.2)

EXISTING ROAD CONFIGURATION (2004 AADT FIGURES)

Mainline >100m from Junctions A68	Mainline <100m from Junction A68	Side Road U60	Side Road U77	Side Road U78	Side Road Lay-by
RL 1.440	RL 1.000	RL 0.100	RL 0.100	RL 0.100	RL 0.100
SS 0.29	SS 0.93	SS 0.93	SS 0.93	SS 0.93	SS 0.93
AADT 9075	AADT 9075	AADT 21	AADT 90	AADT 56	AADT 50
%HGV 8	%HGV 8	%HGV 8	%HGV 8	%HGV 8	%HGV 20

$$P_{acc} = RL \times SS \times (AADT \times 365 \times 10^{-9}) \times (\% HGV \div 100)$$

$$P_{acc} = 0.000111 \quad P_{acc} = 0.000246 \quad P_{acc} = 0.000001 \quad P_{acc} = 0.000000 \quad P_{acc} = 0.000000 \quad P_{acc} = 0.000000$$

$$P_{pol/year} = \sum P_{acc} \times P_{pol} \quad P_{pol} = 0.6$$

$$P_{pol/year} = 0.000216 \quad \equiv \quad \text{Return Period 1 in 4639 years for Mainline}$$

The DMRB indicates that the acceptable risk of a pollution incident should normally be 1 in 100 years for discharges to aquifers and to reaches of sensitive watercourses.