APPENDIX D

Exposure Dose Calculations for Exposure to TCE in Water from the Scituate Municipal Water Supply
Scituate, Massachusetts

1. Ingestion of Municipal Water Containing TCE by Adults or Children

$$WD = \frac{[C]_{municipal\ water} \times IR \times EF}{BW}$$

Where:

WD	= Water Ingestion Exposure Dose (mg/kg/day)
$[C]_{municipal\ water}$	= Maximum Potential TCE Concentration in Municipal Water (mg/L)
IR	= Water Ingestion Rate (L/day)
EF	= Exposure Factor (unitless)
BW	= Body Weight (kg)

Assumptions:

1) The receptor evaluated was an adult or child ingesting water from the Scituate municipal water supply.
2) The maximum concentration of TCE detected in water from the utility sink in Scituate Town Hall was assumed as the potential TCE concentration in the municipal supply.
3) The amount of water ingested was assumed to be 2 liters per day for adults and 1 liter per day for children.
4) The exposure factor was determined assuming the receptor consumed water from the municipal supply 7 days per week for 70 years.
5) The average body weight of an adult was assumed to be 70 kilograms. The average body weight of a child was assumed to be 10 kilograms

Exposure Dose Calculation:

$$WD_{adult} = \frac{0.0096\ mg/L \times 2\ L/day \times 1}{70\ kg} = 0.0003\ mg/kg/day$$

$$WD_{child} = \frac{0.0096\ mg/L \times 1\ L/day \times 1}{10\ kg} = 0.00096\ mg/kg/day$$