where

C_1 = aqueous concentration in water column, (kg/m^3)

C_2 = aqueous concentration in benthic region, (kg/m^3)

C_{sed} = concentration of suspended sediment in water column = m_{sed1}/v_1 (kg/m^3)

C_{DOC} = concentration of DOC in water column = m_{DOC}/v_1 (kg/m^3)

m_{sed1} = aqueous concentration in water column, (kg/m^3)

m_{DOC1} = mass of DOC in water column, (kg)

m_{sed2} = mass of suspended sediment in water column, (kg)

S_{sed1} = sorbed concentration on suspended sediment in water column, (kg/kg)

S_{DOC1} = sorbed concentration on suspended DOC in water column, (kg/kg)

S_{sed2} = sorbed pesticide concentration on benthic sediment, (kg/kg)

v_1 = volume of water in region 1 on the specific day, (m^3)

v_2 = volume of water in region 2, (m^3)

Q = volumetric leakage flow rate, (m^3/s)

ω = 1^{st} order water-column-to-benthic mass transfer coefficient, (m^3/s^{-1})

μ_{hydr} = 1^{st} order hydrolysis rate coefficient, (s^{-1})

μ_{photo} = 1^{st} order photolyisis rate coefficient, (s^{-1})

μ_{vol} = effective 1^{st} order volatilization rate coefficient, (s^{-1})

μ_{bio-a1} = 1^{st} order aqueous-phase metabolic degradation rate coefficient in water column, (s^{-1})

$\mu_{bio-sed1}$ = 1^{st} order sediment-sorbed metabolic degradation rate coefficient in water column, (s^{-1})

$\mu_{bio-DOC1}$ = 1^{st} order DOC-sorbed metabolic degradation rate coefficient in water column, (s^{-1})

μ_{bio-a2} = 1^{st} order aqueous-phase metabolic degradation rate coefficient in benthic region, (s^{-1})

$\mu_{bio-sed2}$ = 1^{st} order sediment-sorbed metabolic degradation rate coefficient in benthic region, (s^{-1})