

## NJDEP 2021 Soil-Water Partition Equation Calculator

		Date:	6/10/2021
Contaminant:	methanol	CAS No.:	67-56-1
		Evaluated by:	

  

$$MGW_c = GWRS * \frac{mg}{1000 \mu g} * \left\{ K_d + \frac{\theta_w + \theta_a * H'}{\rho_b} \right\} * DAF$$

$$K_d = K_{oc} * f_{oc}$$

$$DAF = 1 + \frac{K * i * d}{I * L}$$

  

$$d = (0.0112 * L^2)^{0.5} + d_a * \{1 - \exp [(-L * I) / (K * i * d_a)]\}$$

$$C_{sat} = \frac{S}{\rho_b} * [(K_d * \rho_b) + \theta_w + (H' * \theta_a)]$$

### Contaminant Parameters:

Parameter	Definition	Units	Value
GWRS	Ground Water Remediation Standard	µg/L	4000
K <sub>oc</sub>	Soil Organic Carbon-Water Partition Coefficient	L/kg	1.00E+00
K <sub>d</sub>	Soil-Water Partition Coefficient	L/kg	
H'	Henry's Law Constant	dimensionless	1.90E-04
S	Water Solubility	mg/L	1.00E+06
C <sub>sat</sub>	Soil Saturation Limit	mg/kg	160000

ENTER ONE OF THESE

← enter zero if nonvolatile

← enter NA if inorganic

### Soil Parameters:

Parameter	Definition	Units	Value
θ <sub>w</sub>	Water-filled soil porosity	dimensionless (v/v)	0.23
θ <sub>a</sub>	Air-filled Soil Porosity	dimensionless (v/v)	0.18
f <sub>oc</sub>	(Fraction) Organic Carbon Content of Soil	dimensionless (w/w)	0.002
ρ <sub>b</sub>	Dry Soil Bulk Density	kg/L	1.5

NOTES: (click outside box when finished)

### DAF Parameters:

Parameter	Definition	Value units		Converted to metric:	
		Value	units	Value	units
L	Length of Area of Concern Parallel to Ground Water Flow	100	ft	30.5	m
d <sub>a</sub>	Aquifer Thickness	11.5	ft	3.5	m
I	Infiltration Rate	11	in/yr	0.28	m/yr
K	Aquifer Hydraulic Conductivity	51865	ft/yr	15808	m/yr
i	Gradient	0.003	dimensionless	0.003	dimensionless
d	Mixing Zone Depth			3.4	m
DAF	Dilution-Attenuation Factor			20	dimensionless

Soil criterion before Csat adjustment: 12

Site-specific Migration to Ground Water Soil Criterion:

12 mg/kg