

**Table 2.1  
Risk-Based Remediation Goals (RBRGs) for Soil & Soil Saturation Limit**

Chemical	Risk-Based Remediation Goals for Soil				Soil Saturation Limit (C <sub>sat</sub> ) (mg/kg)
	Urban Residential (mg/kg)	Rural Residential (mg/kg)	Industrial (mg/kg)	Public Parks (mg/kg)	
<b>VOCs</b>					
Acetone	9.59E+03	4.26E+03	1.00E+04*	1.00E+04*	***
Benzene	7.04E-01	2.79E-01	9.21E+00	4.22E+01	3.36E+02
Bromodichloromethane	3.17E-01	1.29E-01	2.85E+00	1.34E+01	1.03E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	1.32E-01	5.29E-02	1.54E+00	2.53E+02	1.10E+03
Ethylbenzene	7.09E+02	2.98E+02	8.24E+03	1.00E+04*	1.38E+02
Methyl tert-Butyl Ether	6.88E+00	2.80E+00	7.01E+01	5.05E+02	2.38E+03
Methylene Chloride	1.30E+00	5.29E-01	1.39E+01	1.28E+02	9.21E+02
Styrene	3.22E+03	1.54E+03	1.00E+04*	1.00E+04*	4.97E+02
Tetrachloroethene	1.01E-01	4.44E-02	7.77E-01	1.84E+00	9.71E+01
Toluene	1.44E+03	7.05E+02	1.00E+04*	1.00E+04*	2.35E+02
Trichloroethene	5.23E-01	2.11E-01	5.68E+00	6.94E+01	4.88E+02
Xylenes (Total)	9.50E+01	3.68E+01	1.23E+03	1.00E+04*	1.50E+02
<b>SVOCs</b>					
Acenaphthene	3.51E+03	3.28E+03	1.00E+04*	1.00E+04*	6.02E+01
Acenaphthylene	2.34E+03	1.51E+03	1.00E+04*	1.00E+04*	1.98E+01
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.56E+00
Benzo(a)anthracene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Benzo(a)pyrene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Benzo(b)fluoranthene	9.88E+00	1.01E+01	1.78E+01	2.04E+01	
Benzo(g,h,i)perylene	1.80E+03	1.71E+03	1.00E+04*	5.74E+03	
Benzo(k)fluoranthene	1.20E+02	1.14E+02	9.18E+02	3.83E+02	
bis-(2-Ethylhexyl)phthalate	3.00E+01	2.80E+01	9.18E+01	9.42E+01	
Chrysene	8.71E+02	9.19E+02	1.14E+03	1.54E+03	
Dibenzo(a,h)anthracene	1.20E+00	1.14E+00	9.18E+00	3.83E+00	
Fluoranthene	2.40E+03	2.27E+03	1.00E+04*	7.62E+03	
Fluorene	2.38E+03	2.25E+03	1.00E+04*	7.45E+03	5.47E+01
Hexachlorobenzene	2.43E-01	2.20E-01	5.82E-01	7.13E-01	
Indeno(1,2,3-cd)pyrene	1.20E+01	1.14E+01	9.18E+01	3.83E+01	
Naphthalene	1.82E+02	8.56E+01	4.53E+02	9.14E+02	1.25E+02
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	2.80E+01
Phenol	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	7.26E+03
Pyrene	1.80E+03	1.71E+03	1.00E+04*	5.72E+03	
<b>Metals</b>					
Antimony	2.95E+01	2.91E+01	2.61E+02	9.79E+01	
Arsenic	2.21E+01	2.18E+01	1.96E+02	7.35E+01	
Barium	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Cadmium	7.38E+01	7.28E+01	6.53E+02	2.45E+02	
Chromium III	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Chromium VI	2.21E+02	2.18E+02	1.96E+03	7.35E+02	
Cobalt	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Copper	2.95E+03	2.91E+03	1.00E+04*	9.79E+03	
Lead	2.58E+02	2.55E+02	2.29E+03	8.57E+02	
Manganese	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Mercury	1.10E+01	6.52E+00	3.84E+01	4.56E+01	
Molybdenum	3.69E+02	3.64E+02	3.26E+03	1.22E+03	
Nickel	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
Tin	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
Zinc	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	
<b>Dioxins / PCBs</b>					
Dioxins (I-TEQ)	1.00E-03	1.00E-03	5.00E-03	1.00E-03	
PCBs	2.36E-01	2.26E-01	7.48E-01	7.56E-01	
<b>Petroleum Carbon Ranges</b>					
C6 - C8	1.41E+03	5.45E+02	1.00E+04*	1.00E+04*	1.00E+03
C9 - C16	2.24E+03	1.33E+03	1.00E+04*	1.00E+04*	3.00E+03
C17 - C35	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+04*	5.00E+03
<b>Other Inorganic Compounds</b>					
Cyanide, free	1.48E+03	1.46E+03	1.00E+04*	4.90E+03	
<b>Organometallics</b>					
TBTO	2.21E+01	2.18E+01	1.96E+02	7.35E+01	

**Notes:**

- (1) For Dioxins, the cleanup levels in USEPA Office of Solid Waste and Emergency Response (OSWER) Directive of 1998 have been adopted. The OSWER Directive value of 1 ppb for residential use has been applied to the scenarios of "Urban Residential", "Rural Residential", and "Public Parks", while the low end of the range of values for industrial, 5 ppb, has been applied to the scenario of "Industrial".
- (2) Soil saturation limits for petroleum carbon ranges taken from the Canada-Wide Standards for Petroleum Hydrocarbons in Soil, CCME 2000.
- (3) \* indicates a 'ceiling limit' concentration.
- (4) \*\*\* indicates that the C<sub>sat</sub> value exceeds the 'ceiling limit' therefore the RBRG applies.

**Table 2.2  
Risk-Based Remediation Goals (RBRGs) for Groundwater and Solubility Limit**

Chemical	Risk-Based Remediation Goals for Groundwater			Solubility Limit (mg/L)
	Urban Residential (mg/L)	Rural Residential (mg/L)	Industrial (mg/L)	
<b>VOCs</b>				
Acetone	1.00E+04*	1.00E+04*	1.00E+04*	***
Benzene	3.86E+00	1.49E+00	5.40E+01	1.75E+03
Bromodichloromethane	2.22E+00	8.71E-01	2.62E+01	6.74E+03
2-Butanone	1.00E+04*	1.00E+04*	1.00E+04*	***
Chloroform	9.56E-01	3.82E-01	1.13E+01	7.92E+03
Ethylbenzene	1.02E+03	3.91E+02	1.00E+04*	1.69E+02
Methyl tert-Butyl Ether	1.53E+02	6.11E+01	1.81E+03	***
Methylene Chloride	1.90E+01	7.59E+00	2.24E+02	***
Styrene	3.02E+03	1.16E+03	1.00E+04*	3.10E+02
Tetrachloroethene	2.50E-01	9.96E-02	2.95E+00	2.00E+02
Toluene	5.11E+03	1.97E+03	1.00E+04*	5.26E+02
Trichloroethene	1.21E+00	4.81E-01	1.42E+01	1.10E+03
Xylenes (Total)	1.12E+02	4.33E+01	1.57E+03	1.75E+02
<b>SVOCs</b>				
Acenaphthene	1.00E+04*	7.09E+03	1.00E+04*	4.24E+00
Acenaphthylene	1.41E+03	5.42E+02	1.00E+04*	3.93E+00
Anthracene	1.00E+04*	1.00E+04*	1.00E+04*	4.34E-02
Benzo(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthene	5.39E-01	2.03E-01	7.53E+00	1.50E-03
Benzo(g,h,i)perylene				
Benzo(k)fluoranthene				
bis-(2-Ethylhexyl)phthalate				
Chrysene	5.81E+01	2.19E+01	8.12E+02	1.60E-03
Dibenzo(a,h)anthracene				
Fluoranthene	1.00E+04*	1.00E+04*	1.00E+04*	2.06E-01
Fluorene	1.00E+04*	1.00E+04*	1.00E+04*	1.98E+00
Hexachlorobenzene	5.89E-02	2.34E-02	6.95E-01	6.20E+00
Indeno(1,2,3-cd)pyrene				
Naphthalene	6.17E+01	2.37E+01	8.62E+02	3.10E+01
Phenanthrene	1.00E+04*	1.00E+04*	1.00E+04*	1.00E+00
Phenol				
Pyrene	1.00E+04*	1.00E+04*	1.00E+04*	1.35E-01
<b>Metals</b>				
Antimony				
Arsenic				
Barium				
Cadmium				
Chromium III				
Chromium VI				
Cobalt				
Copper				
Lead				
Manganese				
Mercury	4.86E-01	1.84E-01	6.79E+00	
Molybdenum				
Nickel				
Tin				
Zinc				
<b>Dioxins / PCBs</b>				
Dioxins (I-TEQ)				
PCBs	4.33E-01	1.71E-01	5.11E+00	3.10E-02
<b>Petroleum Carbon Ranges</b>				
C6 - C8	8.22E+01	3.17E+01	1.15E+03	5.23E+00
C9 - C16	7.14E+02	2.76E+02	9.98E+03	2.80E+00
C17 - C35	1.28E+01	4.93E+00	1.78E+02	2.80E+00
<b>Other Inorganic Compounds</b>				
Cyanide, free				
<b>Organometallics</b>				
TBTO				

**Notes:**

- (1) Blank indicates that RBRG could not be calculated because the toxicity or physical/chemical values were unavailable, or the condition of Henry's Law Constant > 1.00E-05 was not met for the inhalation pathway.
- (2) Water solubilities for Petroleum Carbon Range aliphatic C9-C16 and greater than C16 generally are considered to be effectively zero and therefore the aromatic solubility for C9-C16 is used.
- (3) \* indicates a 'ceiling limit' concentration.
- (4) \*\*\* indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.