

Table 4 Tier 1 Environmental Quality Standards for Groundwater (µg/L)

Soil Texture	Potable Groundwater [1] (Fine Grained Soil)		Potable Groundwater [1] (Coarse Grained Soil)		Non Potable Groundwater [2] Fine Grained Soil		Non Potable Groundwater [2] (Coarse Grained Soil)	
	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial
Land Use								
Parameter								
Inorganic Parameters								
Antimony	6	6	6	6	-	-	-	-
Arsenic	10	10	10	10	-	-	-	-
Barium	1,000	1,000	1,000	1,000	-	-	-	-
Beryllium	4	4	4	4	-	-	-	-
Boron	5,000	5,000	5,000	5,000	-	-	-	-
Cadmium	5	5	5	5	-	-	-	-
Chromium (hexavalent)	25	25	25	25	-	-	-	-
Chromium (total)	50	50	50	50	-	-	-	-
Cobalt	10	10	10	10	-	-	-	-
Cyanide	200	200	200	200	-	-	-	-
Lead	10	10	10	10	-	-	-	-
Mercury (total)	1	1	1	1	-	-	-	-
Methylmercury	0.3	0.3	0.3	0.3	-	-	-	-
Molybdenum	70	70	70	70	-	-	-	-
Nickel	100	100	100	100	-	-	-	-
Selenium	10	10	10	10	-	-	-	-
Silver	100	100	100	100	-	-	-	-
Strontium	4,400	4,400	4,400	4,400	-	-	-	-
Thallium	2	2	2	2	-	-	-	-
Tin	4400	4400	4400	4400	-	-	-	-
Uranium	20	20	20	20	-	-	-	-
Vanadium	6.2	6.2	6.2	6.2	-	-	-	-
Zinc	5,000	5,000	5,000	5,000	-	-	-	-
General Chemistry Parameters								
Chloride	250,000	250,000	250,000	250,000	-	-	-	-
Sodium	200,000	200,000	200,000	200,000	-	-	-	-
Petroleum Hydrocarbons (PHC) Parameters								
Benzene	5	5	5	5	13,000	20,000	2,600	20,000
Toluene	24	24	24	24	20000	20000	20000	20000
Ethylbenzene	2.4	2.4	2.4	2.4	20000	20000	20000	20000
Xylene	300	300	300	300	20,000	20000	20,000	20,000
Modified TPH (Gas)	4,400	4,400	4,400	4,400	20,000	20,000	20,000	20,000
Modified TPH (Fuel)	3,200	3,200	3,200	3,200	20,000	20,000	20,000	20,000
Modified TPH (Lube)	7,800	7,800	7,800	7,800	20,000	20,000	20,000	20,000
MTBE	15	15	15	15	6,100	40,000	340	4,300
Polycyclic Aromatic Hydrocarbons (PAH) Parameters								
PAH Compounds								
Naphthalene	470	470	470	470	14,000	-	600	7,000
1 - Methylnaphthalene	12	12	12	12	35,000	150,000	6,200	38,000
2 - Methylnaphthalene	12	12	12	12	35,000	150,000	6,200	38,000
Acenaphthene	1,400	1,400	1,400	1,400	-	-	-	-
Acenaphthylene	4.5	4.5	4.5	4.5	120	1700	36	750
Anthracene	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	-

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	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial
Parameter								
Fluorene	940	940	940	940	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	-
Pyrene	710	710	710	710	-	-	-	-
Carcinogenic PAH Compounds								
BaP Total Potency Equivalents	-	-	-	-	-	-	-	-
Benz[a]anthracene	-	-	-	-	-	-	-	-
Benzo[a]pyrene	0.01	0.01	0.01	0.01	-	-	-	-
Benzo[b,j,k]fluoranthene isomers	-	-	-	-	-	-	-	-
Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-
Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-
Indeno[1,2,3-c,d]pyrene	-	-	-	-	-	-	-	-
Volatile Organic Compound (VOC) Parameters								
Bromodichloromethane	100	100	100	100	-	-	-	-
Bromoform	100	100	100	100	7,700	130,000	3,800	84,000
Bromomethane	0.89	0.89	0.89	0.89	56	230	5.6	33
Carbon Tetrachloride (Tetrachloromethane)	2	2	0.56	2	11	78	0.56	6.8
Chlorobenzene	30	30	14	30	300	2200	14	180
Chloroethane	-	-	-	-	-	-	-	-
Chloroform	50	100	3	40	50	350	3	40
Chloromethane	38	38	38	38	-	-	-	-
Dibromochloromethane	100	100	100	100	26,000	250,000	1,100	10,000
1,2-Dichlorobenzene	200	200	200	200	116,000	-	5,400	64,000
1,3-Dichlorobenzene	59	59	59	59	-	-	-	-
1,4-Dichlorobenzene	5	5	5	5	4,600	32,000	220	2,600
1,1-Dichloroethane	5	5	5	5	3,100	45,000	320	6,600
1,2-Dichloroethane	5	5	5	5	120	1,600	16	300
1,1-Dichloroethylene	14	14	14	14	680	4,500	39	490
cis-1,2-Dichloroethylene	17	20	1.6	20	17	230	1.6	30
trans-1,2-Dichloroethylene	17	20	1.6	20	17	230	1.6	30
1,2-Dichloropropane	5	5	5	5	140	2,000	16	330
1,3-Dichloropropene	0.5	0.5	0.5	0.5	45	610	5.2	100
Ethylene Dibromide	0.2	0.2	0.2	0.2	8.3	120	2.5	51
Methylene Chloride (Dichloromethane)	50	50	50	50	61,000	410,000	3,400	43,000
Styrene	100	100	100	100	11,000	160,000	1,300	26,000
1,1,2,2-Tetrachloroethane	1	1	1	1	150	2,100	32	630
Tetrachloroethylene	30	30	30	30	2,300	16,000	110	1,300
1,1,1-Trichloroethane	200	200	200	200	6,700	95,000	640	13,000
1,1,2-Trichloroethane	5	5	5	5	300	4,100	47	910
Trichloroethylene	5	5	5	5	410	2,800	20	250
Vinyl Chloride	2	2	1.1	2	18	120	1.1	13
Pesticides								
Aldicarb	9	9	9	9	-	-	-	-
Aldrin	0.7	0.7	0.7	0.7	-	-	-	-
Atrazine	5	5	5	5	-	-	-	-

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	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial	Agricultural/ Residential	Commercial/ Industrial
Land Use								
Parameter								
Azinphos-methyl	20	20	20	20	-	-	-	-
Bendiocarb	40	40	40	40	-	-	-	-
Bromoxynil	5	5	5	5	-	-	-	-
Carbaryl	90	90	90	90	-	-	-	-
Carbofuran	90	90	90	90	-	-	-	-
Chlorothalonil	140	140	140	140	-	-	-	-
Chlorpyrifos	90	90	90	90	-	-	-	-
Cyanazine	10	10	10	10	-	-	-	-
2,4-D	100	100	100	100	-	-	-	-
DDT	93	93	93	93	-	-	-	-
Diazinon	20	20	20	20	-	-	-	-
Dicamba	120	120	120	120	-	-	-	-
Dichlorfop-methyl	9	9	9	9	-	-	-	-
Dieldrin	0.7	0.7	0.7	0.7	-	-	-	-
Dimethoate	20	20	20	20	-	-	-	-
Dinoseb	10	10	10	10	-	-	-	-
Diquat	70	70	70	70	-	-	-	-
Diuron	150	150	150	150	-	-	-	-
Endosulfan	57	57	57	57	-	-	-	-
Endrin	2.8	2.8	2.8	2.8	-	-	-	-
Glyphosate	280	280	280	280	-	-	-	-
Heptachlor	4.3	50	0.24	2	4.3	51	0.24	2
Lindane	2.8	2.8	2.8	2.8	-	-	-	-
Linuron	19	19	19	19	-	-	-	-
Malathion	190	190	190	190	-	-	-	-
MCPA	100	100	100	100	-	-	-	-
Methoxychlor	900	900	900	900	-	-	-	-
Metolachlor	50	50	50	50	-	-	-	-
Metribuzin	80	80	80	80	-	-	-	-
Paraquat	10	10	10	10	-	-	-	-
Parathion	50	50	50	50	-	-	-	-
Phorate	2	2	2	2	-	-	-	-
Picloram	190	190	190	190	-	-	-	-
Simazine	10	10	10	10	-	-	-	-
Tebuthiuron	660	660	660	660	-	-	-	-
Terbufos	1	1	1	1	-	-	-	-
Toxaphene	0.43	0.43	0.43	0.43	6,400	75,000	310	2,900
Triallate	120	120	120	120	-	-	-	-
Trifluralin	45	45	45	45	-	-	-	-
Other Parameters								
Polychlorinated Biphenyl (Total PCB)	9.4	9.4	7.8	9.4	15	250	7.8	180
Dioxins and Furans (TEQ)	0.00012	0.00012	0.00012	0.00012	0.023	0.45	0.014	0.37
Pentachlorophenol (PCP)	30	30	30	30	-	-	-	-
Organotins - Tributyltin	2,200	2,200	2,200	2,200	-	-	-	-
Ethylene Glycol	31	31	31	31	-	-	-	-

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Land Use								
Parameter								
Propylene Glycol	-	-	-	-	-	-	-	-
Phenol	0.8	0.8	0.8	0.8	73,000	-	3,700	45,000

Notes:

[1] Potable groundwater criteria is based on the lowest of potable groundwater drinking water (MAC-Maximum Acceptable Concentration, or IMAC- Interim MAC) or vapour migration from groundwater to indoor air values

[2] Non potable groundwater criteria includes vapour migration from groundwater to indoor air values only

[3] All values in µg/L

[4] "-" = No guideline available or no guideline required

[5] In the Tier 1 EQS Groundwater tables, the Upper Concentration Limit (UCL) of 20,000 ug/L in water is applied to any petroleum hydrocarbon value that is >SOL (solubility) or exceeds 20,000 ug/L, following Atlantic RBCA 2012.

[6] Groundwater discharging to a watercourse should be assessed and compared to the Groundwater Discharging to Surface Water pathway in the Tier 2 PSS Groundwater table

[7] Dioxins and Furans TEQ, Toxic Equivalent, are to be calculated following methodology shown in " Canadian Council of Ministers of the Environment. 2002. Canadian soil quality guidelines for the protection of environmental and human health: Dioxins and Furans"