

	CARLEY DAINES & PARTNERS TIER 1 ASSESSMENT CRITERIA		
LAND USE	Residential with Plant Uptake		
CONTAMINANT	1%	2.50%	6%
^a Arsenic	32	32	32
^a Cadmium	10	10	10
^b Chromium III	614	614	614
^o Chromium VI	4.15	4.15	4.15
^{cd} Lead	450	450	450
^d Mercury	170	170	170
^a Selenium	350	350	350
^a Nickel	130	130	130
^b Phenols	184	290	415
^b Copper	2330	2330	2330
^b Zinc	3750	3750	3750
^o Cyanide	34	34	34
^b Benzene	0.08	0.157	0.332
^b Toluene	119	270	611
^b Ethylbenzene	65	154	354
^b <i>o</i> -xylene	45	106	246
^b <i>m</i> - xylene	44	103	240
^b <i>p</i> - xylene	42	98.2	228
^b / _f Acenaphthene	210 ⁽³²⁶⁾	480	1000
^b / _f Acenaphthylene	168	400	850
^b / _f Anthracene	2300	4900	9200
^b Benzo(a)anthracene	3.1	4.7	5.9
^b Benzo(a)pyrene	0.83	0.94	1
^b Benzo(b)fluoranthene	5.6	6.5	7
^o Benzo(ghi)perylene	40	46	47
^b Benzo(k)fluoranthene	8.5	9.6	10
^o Chrysene	6	8	9.3
^b DiBenzo(ah)anthracene	0.76	0.86	0.9
^o Fluoranthene	260	460	670
^o / _f Fluorene	160	380	780
^b Ideno(1,2,3-cd)pyrene	3.2	3.9	4.2
^b Napthalene	1.5	3.7	8.7
^b / _f Phenanthrene	92	200	380
^b Pyrene	560	1000	1600
ALIPHATIC HYDROCARBONS			
^b / _f C5-C6	30	55	110
^b / _f C6-C8	73	160	370
^b / _f C8-C10	19	46	110
^b / _f C10-C12	93 ⁽⁴⁸⁾	230 ⁽¹¹⁸⁾	540 ⁽²⁸³⁾
^b / _f C12-C16	740 ⁽²⁴⁾	1700 ⁽⁵⁹⁾	3000 ⁽¹⁴²⁾
? C16-C35	45000	64000	76000
AROMATIC HYDROCARBONS			
^b / _f C5-7 (benzene)	65	130	280
^b / _f C7-8 (toluene)	120	270	611
^b / _f C8-C10	27	65	151
^b / _f C10-C12	69	160	346
^b / _f C12-C16	140	310	593
C16-C21	250	480	770
C21-C35	890	1110	1230

Notes

- ^a SGV (2009)
- ^b LQM/CIEH values or derived using CLEAv1.06 with LQM/CIEH Data
- ^c 2002 SGV values used until further guidance is published
- ^d SGV for inorganic Hg used (ref.2009 SGV, Pg5, Para.4)
- ^e Atkins ATRISKsoil Value
- ^f Oral, dermal and inhalation exposure compared with Oral HCV
Values in brackets present TAC exceeding solubility and vapour saturation limits

Table 1a

UKDWS			EQS (µg/l)*
Parameter	Concentration	Units	
Acrylamide	0.1	µg/l	-
Aluminium	200	µgAl/l	-
Ammonium	0.5	mgNH ₄ /l	0.2
Anlimony	5	µgSb/l	-
Arsenic	10	µgAs/l	50 (dissolved)
Benzene	1	µg/l	10
Boron	1	mgB/l	2000
Bromale	10	µgBrO ₃ /l	-
Cadmium	5	µgCd/l	See Table 2b
Chromium	50	µgCr/l	-
Chromium (III)		µg/l	4.7
Chromium (VI)		µg/l	3.4
Chloride (i)	250	mgCl/l	250
Conductivity (i)	2500	µS/cm at 20°C	-
Copper (ii)	2	mg/l	See Table 2a
Cyanide	50	µgCN/l	1
1, 2 dichloroethane	3	µg/l	10
Dichloromethane		µg/l	20
Epichlorohydrin	0.1	µg/l	-
Flouride	1.5	mgF/l	1 (Hardness 50mg/l CaCO ₃) 2 (Hardness 50mg/l CaCO ₃)
Hydrogen ion	10	pH value	-
Iron	200	µgFe/l	1000 (dissolved)
Lead (ii)	25	µgpb/l	1.2 (dissolved & bioavailable)
Manganese	50	µgMn/l	30
Mercury	1	µgHg/l	0.07 (dissolved)
Mineral Oil (TPH)	10	µg/l	5000 (total) ****
Nickel (ii)	20	µgNi/l	4 (dissolved & bioavailable)
Nitrate (iii)	50	mgNO ₃ /l	-
Nitrite (iii)	0.5	mgNO ₂ /l	-
Phenol	0.5	µg/l	7.7
Polycyclic Aromatic Hydrocarbons (vii)*	0.1	µg/l	-
Fluoranthene		µg/l	0.0063
Naphthalene		µg/l	2
Benzo(a)pyrene	0.01	µg/l	0.00017
Benzo(b)fluoranthene		µg/l	-
Benzo(k)fluoranthene		µg/l	-
Benzo(g,h,i)perylene		µg/l	-
Indeno(1,2,3co)pyrene		µg/l	-
Anthracene		µg/l	0.1
Selenium	10	µgSe/l	-
Sodium	200	mgNa/l	-
Sulphate (i)	250	mgSO ₄ /l	-
Tetrachloroethane & Trichloroethene (viii)	10	µg/l	10
Tetrachloromethane	3	µg/l	12
Toluene	700***	µg/l	50
Xylene	500***	µg/l	30
Ethylbenzene	300***	µg/l	20**
1.1.1-Trichloroethane		µg/l	400
Trichlorobenzenes		µg/l	0.4
Trichloromethane		µg/l	2.5
Vinyl chloride	0.5	µg/l	N/A
Carbon Tetrachloride		µg/l	12
Zinc	5000	µg/l	See Table 2a

Table 1b

Pesticides			EQS (µg/l)*
Aldrin	0.03	µg/l	
Dieldrin	0.03	µg/l	
Heplachlor	0.03	µg/l	
Heplachlor epoxide	0.03	µg/l	
other pesticides	0.1	µg/l	
Cyclodiene pesticides		µg/l	0.01 (sum)
Pesticides Total (vi)	0.5	µg/l	

Table 2a

EQS for Hardness Related Substances*							
Substance	EQS Type	EQS (ug/l) for Hardness bands (mg/lCaCo ₂)					
		0-50	>50-100	>100-150	>150-200	>200-250	>260
Freshwaters, suitable for all fish life							
Copper (dissolved)	Annual average	1	6	10	10	10	28
Zinc (total)	Annual average	8	50	75	75	75	125

Table 2b

Substance	EQS Type	EQS for Hardness Related Substances*				
		<40	40-50	50-100	100-200	>200
Cadmium (dissolved)	Annual average	<0.08	0.08	0.09	0.15	0.25

Reference

* The River Basin District Typology . Standards & Groundwater Threshold Values (Water Framework Directive) (England & Wales) Direction 2010

** Provisional EQS Value

*** WHO Drinking Water Standard

** EA PPG3