

**Recommended Soil Cleanup Objectives for  
Fuel Oil Contaminated Soil**

Contaminant	CAS Registry Number	Partition coefficient Koc	Recommended EPA Method	Groundwater Standards/ Criteria Cw ug/l or ppb.	Allowable Soil Concentration Cs <sup>1</sup> (ppm)	Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (HEAST) (ppm)		Detection Limit Solid (ppb)	Rec.soil Cleanup Objective (ppm)
							Carcinogens	Systemic Toxicants		
Benzene	71-43-2	83	8021/8260	0.7	0.0006	0.06	24	N/A	2	0.06 or MDL
Ethylbenzene	100-41-4	1,100	8021/8260	5	0.055	5.5	N/A	8,000	2	5.5
Toluene	108-88-3	300	8021/8260	5	0.015	1.5	N/A	20,000	2	1.5
Mixed Xylenes	N/A	240	8021/8260	5	0.012	1.2	N/A	200,000	2	1.2
Isopropylbenzene	98-82-8	454	8021/8260	5	0.023	2.3	N/A	3,100	1	2.3
n-Propylbenzene	103-65-1	741	8021/8260	5	0.037	3.7	N/A	N/A	1	3.7
p-Isopropyltoluene	99-87-6	2,114	8021/8260	5	0.11	11.0	N/A	N/A	1	10.0*
1,2,4 - Trimethylbenzene	95-63-6	2,590	8021/8260	5	0.13	13.0	N/A	N/A	1	10.0*
1,3,5 - Trimethylbenzene	108-67-8	661	8021/8260	5	0.033	3.3	N/A	N/A	1	3.3
n-Butyl-Benzene	104-51-8	2,455	8021/8260	5	0.12	12.0	N/A	N/A	1	10.0*
sec-Butyl-Benzene	135-98-8	2,200	8021/8260	5	0.11	11.0	N/A	N/A	1	10.0*
Tert-Butyl-Benzene	98-06-6	2,200	8021/8260	5	0.11	11.0	N/A	N/A	1	10.0*
Naphthalene	91-20-3	1,300	8021/8260/8270	10	0.13	13.0	N/A	300	1(330)	13.0
Anthracene	120-12-7	14,000	8270	50	7.00	700.0	N/A	20,000	330	50.0**
Acenaphthene	83-32-9	4,600	8270	20	0.92	92.0	N/A	5,000	330	50.0**
Acenaphthylene	208-96-8	2,056	8270	50	1.03	103.0	N/A	N/A	330	50.0**
Benzo(a)anthracene	56-55-3	1,380,000	8270	0.002	0.028	2.8	0.224	N/A	330	0.224 or MDL
Benzo(b)fluoranthene	205-99-2	550,000	8270	0.002	0.011	1.1	0.220	N/A	330	0.220 or MDL
Benzo(k)fluoranthene	207-8-9	550,000	8270	0.002	0.011	1.1	0.220	N/A	330	0.220 or MDL
Benzo(g,h,i)perylene	191-24-2	1,600,000	8270	5	80.00	8,000.0	N/A	N/A	330	50.0**
Benzo(a)pyrene	50-32-8	5,500,000	8270	0.002	0.11	11.0	0.061	N/A	330	0.061 or MDL
Chrysene	218-01-9	200,000	8270	0.002	0.004	0.40	N/A	N/A	330	0.4
Dibenzo(a,h)anthracene	53-70-3	3,300,000	8270	50	1,650.00	165,000.0	0.0143	N/A	330	0.0143 or MDL
Fluoranthene	206-44-0	38,000	8270	50	19.00	1,900.0	N/A	3,000	330	50.0**
Fluorene	86-73-7	7,300	8270	50	3.65	365.0	N/A	3,000	330	50.0**
Indeno(1,2,3-cd)pyrene	193-39-5	1,600,000	8270	0.002	0.032	3.2	N/A	N/A	330	3.2
Phenanthrene	85-01-5	4,365	8270	50	2.18	218.0	N/A	N/A	330	50.0**
Pyrene	129-00-0	13,295	8270	50	6.65	665.0	N/A	2,000	330	50.0**
N/A- Not Applicable	*As per TAGM 4046 individual and the sum of VOCs not listed (Tentatively Identified Compounds(TICs))≤ 10 ppm									
MDL - Method Detection Limit	**As per TAGM 4046 individual non-carcinogenic semivolatiles ≤ 50 ppm and total semivolatiles not listed (Tentatively Identified Compounds(TICs))≤ 500ppm									
1 - Allowable concentration with no Dilution Attenuation Factor - see TAGM 4046	<b>Note:</b> Soil cleanup objectives are developed for soil organic carbon content (f) of 1%, and should be adjusted for the actual soil organic carbon if it is known.									