

Table 1

Petroleum-Release Confirmation Risked-Based Screening Levels (RBSLs) for Soil

Laboratory analytical results that exceed the Table 1 Release Confirmation Soil RBSLs listed below confirm that a release has occurred per ARM 17.56.506. These represent the most conservative Tier 1 RBSLs (compiled in Table 2) for Leaching to groundwater and Residential Direct Contact including ingestion, inhalation, and dermal routes of exposure.

Chemical / Analyte / Compound	Effects - carcinogenicity	RBSL, mg/kg	Basis
For Gasoline & Light Hydrocarbons measured using the Montana Method for Volatile Petroleum Hydrocarbons (VPH)			
MTBE	c	0.078 *	l
Benzene	c	0.07	l
Toluene	n	21	l
Ethylbenzene	c	8.4	dc
Xylenes	n	75	dc
Naphthalene	c	2.9	dc
C9-C10 Aromatics	n	60	dc
C5-C8 Aliphatics	n	90	dc
C9-C12 Aliphatics	n	160	dc
Lead Scavengers			
1,2-Dichloroethane (DCA)	c	0.019	l
1,2-Dibromoethane (EDB)	c	0.000086 *	l
For Diesel & Heavy Hydrocarbons measured using Montana Method for Extractable Petroleum Hydrocarbons (EPH)			
**EPH Screen	n/a	200	n/a
C9-C18 Aliphatics	n	290	dc
C19-C36 Aliphatics	n	25,000	dc
C11-C22 Aromatics	n	370	l
Acenaphthene	n	27	l
Anthracene	n	2,300	dc
Benz(a)anthracene	c	1.6	dc
Benzo(a)pyrene	c	0.17	dc
Benzo(b)fluoranthene	c	1.7	dc
Benzo(k)fluoranthene	c	17	dc
Chrysene	c	170	dc
Dibenzo(a,h)anthracene	c	0.17	dc
Fluoranthene	n	85	l
Fluorene	n	35	l
Indeno(1,2,3-cd)pyrene	c	1.7	dc
Naphthalene	c	2.9	dc
Pyrene	n	83	l
1-Methylnaphthalene	c	2.1	l
2-Methylnaphthalene	n	6.9	l

Notes:

* = Best achievable practical quantitation limit exceeds RBSL; therefore, if compound detected, additional evaluation may be necessary.

** = the 200 ppm EPH screen concentration is used to determine that additional analysis -- fractionation -- is needed

n/a = Not applicable; EPH screen is an indicator concentration requiring fractionation and not a Risked-Based Screening Level

n = based on non-carcinogenic effects

l = leaching

c = based on carcinogenic effects

dc = direct contact

mg/kg = milligrams per kilogram

Soil RBSLs are not designed to be protective of a vapor intrusion (VI) pathway; refer to the most recent DEQ Vapor Intrusion Guidance.