DEPARTMENT OF

ENVIRONMENTAL CONSERVATION

18 AAC 75

Oil and Other Hazardous Substances
Pollution Control

Public Comment Draft

October 1, 2018

Comment Period Ends
5:00 p.m Monday, November 5, 2018

Comment Period Extended to 5:00 p.m. Tuesday, November 13, 2018

Bill Walker
Governor

Larry Hartig
Commissioner

18 AAC 75.325(g) is amended to read:

(g) If using method two or method three for determining the applicable soil cleanup levels as described in 18 AAC 75.340 and 18 AAC 75.341, or if applying the groundwater cleanup levels at Table C in 18 AAC 75.345, a responsible person shall ensure that, after completing site cleanup, the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one, reported to one significant figure, across all exposure pathways. Instructions for determining cumulative risk are provided in the department's *Procedures for Calculating Cumulative Risk,* dated **September 25, 2018,** [FEBRUARY 1, 2018] and adopted by reference. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 6/17/2015, Register 214; am 1/1/2016, Register 217; am 11/6/2016, Register 220; am 9/29/2018, Register 227; am __/__/____, Register ___)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.020
AS 46.03.050 AS 46.03.745 AS 46.04.070
AS 46.03.710 AS 46.03.822 AS 46.09.020

18 AAC 75.330 is amended by adding a new subsection to read:

(f) As an interim removal action, where groundwater contamination exceeds the cleanup levels established under 18 AAC 75.345(b)(2), (3), or (4), the department may require a responsible person to provide an alternative source of drinking water for the affected parties or implement other institutional controls under 18 AAC 75.375. (Eff. 1/22/99, Register 149; am __/__/____, Register ___)

Authority:	AS 46.03.020	AS 46.03.740	AS 46.04.070
	AS 46.03.050	AS 46.03.745	AS 46.09.020
	AS 46.03.710	AS 46.04.020	

18 AAC 75.340(e)(1) is amended to read:

(1) migration to groundwater or human health pathway in Table B1 or migration to groundwater or inhalation pathway in Table B2, based on the use of approved site-specific soil data, and the equations set out in the department's *Procedures for Calculating Cleanup Levels*, dated **September 25, 2018** [FEBRUARY 1, 2018], and adopted by reference; (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 1/1/2016, Register 217; am 11/6/2016, Register 220; am 9/29/2018, Register 227; am __/__/____, Register ___)

Authority:	AS 46.03.020	AS 46.03.740	AS 46.04.070
	AS 46.03.050	AS 46.03.745	AS 46.09.020
	AS 46.03.710	AS 46.04.020	

18 AAC 75.341(c) is repealed and readopted to read:

(c) If a responsible person uses method two for chemicals other than petroleum hydrocarbons under 18 AAC 75.340, the soil cleanup levels must be based on Table B1 in this subsection.

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2] Human Health[5] (mg/kg)	Under 40 Inch Zone[3] Human Health[5] (mg/kg)	Over 40 Inch Zone[4] Human Health[5] (mg/kg)	Migration to Groundwater[6] (mg/kg)
Acenaphthene[7]	83-32-9	nc	6300	4600	3800	37
Acenaphthylene[7,8]	208-96-8	nc	3100	2300	1900	18
Acetone	67-64-1	nc	1.0 x 10^5; [9]	81000	65000	38
Aldrin	309-00-2	ca	0.67	0.49	0.40	0.0099
Anthracene[7]	120-12-7	nc	31000	23000	19000	390
Antimony (metallic)	7440-36-0	nc	55	41	33	4.6
Arsenic, Inorganic[11]	7440-38-2	ca	12	8.8	7.2	0.20
Barium	7440-39-3	nc	25000	20000	17000	2100
Benz[a]anthracene[7]	56-55-3	m	20	14	12	0.70
Benzaldehyde	100-52-7	nc	770 (3000)[10]	770 (2300) [10]	770 (1800) [10]	0.52
Benzene[7]	71-43-2	ca	16	11	8.1	0.022

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Benzo[a]pyrene[7]	50-32-8	m	2.0	1.5	1.2	1.9
Benzo[b]fluoranthene[7]	205-99-2	m	20	15	12	20
Benzo[g,h,i]perylene[7,8]	191-24-2	nc	3100	2300	1900	15000
Benzo[k]fluoranthene[7]	207-08-9	m	200	150	120	190
Benzoic Acid	65-85-0	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	200
Benzyl Alcohol	100-51-6	nc	11000	8200	6700	5.7
Beryllium and compounds	7440-41-7	nc	270	200	170	260
Bis(2-chloroethyl)ether	111-44-4	ca	4.0	2.8	2.1	0.00042
Bis(2-ethylhexyl)phthalate	117-81-7	ca	680	500	410	88
Bromobenzene	108-86-1	nc	160 (410)[10]	160 (290)[10]	160 (215)[10]	0.36
Bromodichloromethane	75-27-4	ca	5.3	3.6	2.6	0.0043
Bromoform	75-25-2	ca	340	240	170	0.10

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Bromomethane	74-83-9	nc	15	10	7.4	0.024
Butadiene, 1,3-	106-99-0	ca	1.2	0.86	0.64	0.0012
Butanol, N-	71-36-3	nc	6500 (14000)[10]	6500 (10000)[10]	6500 (8300)[10]	5.3
Butyl Benzyl Phthalate	85-68-7	ca	5000	3700	3000	16
Butylbenzene, n-	104-51-8	nc	20 (6800)[10]	20 (5000)[10]	20 (4150)[10]	23
Butylbenzene, sec-	135-98-8	nc	28 (14000)[10]	28 (10000)[10]	28 (8300)[10]	42
Butylbenzene, tert-	98-06-6	nc	36 (14000)[10]	36 (10000)[10]	36 (10000)[10]	11
Cadmium	7440-43-9	nc	120	92	76	9.1
Carbon Disulfide	75-15-0	nc	500	500	500 (800)[10]	2.9

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			(1600)[10]	(1100)[10]		
Carbon Tetrachloride	56-23-5	ca	13	9.1	6.6	0.021
Chlordane	12789-03-6	ca	29	22	17	0.18
Chlordecone (Kepone)	143-50-0	ca	0.95	0.70	0.58	0.0083
Chloroaniline, p-	106-47-8	ca	47	35	29	0.015
Chlorobenzene	108-90-7	nc	180 (370)[10]	180 (250)[10]	180 (180)[10]	0.46
Chloroform	67-66-3	ca	5.8	4.0	2.9	0.0071
Chloromethane	74-87-3	nc	250	170	120	0.61
Chloronaphthalene, Beta-	91-58-7	nc	8400	6200	5100	26
Chlorophenol, 2-	95-57-8	nc	680	510	410	0.71
Chromium(III), Insoluble Salts[12]	16065-83-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]
Chromium(VI)[12]	18540-29-9	m	4.9	3.9	3.2	0.089

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Chrysene[7]	218-01-9	m	2000	1500	1200	600
Copper	7440-50-8	nc	5500	4100	3300	370
Cresol, m-	108-39-4	nc	5500	4100	3400	6.1
Cresol, o-	95-48-7	nc	5500	4100	3400	6.2
Cresol, p-	106-44-5	nc	11000	8200	6700	12
Cumene	98-82-8	nc	54 (2500)[10]	54 (1700)[10]	54 (1300)[10]	5.6
Cyanide (CN-)[13]	57-12-5	nc	48	34	26	0.20
Cyclohexane	110-82-7	nc	77 (14000)[10]	77 (9400)[10]	77 (6700)[10]	150
DDD	72-54-8	ca	3.3	2.5	2.0	0.098
DDE, p,p'-	72-55-9	ca	34	25	20	0.72
DDT	50-29-3	ca	33	24	20	5.1

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Dibenz[a,h]anthracene[7]	53-70-3	m	2.0	1.5	1.2	6.3
Dibenzofuran	132-64-9	nc	130	95	77	0.97
Dibromochloromethane	124-48-1	ca	140	110	88	0.0027
Dibromoethane, 1,2- (Ethylene Dibromide)	106-93-4	ca	0.62	0.42	0.31	0.00024
Dibromomethane (Methylene Bromide)	74-95-3	nc	45	31	22	0.025
Dibutyl Phthalate	84-74-2	nc	11000	8200	6700	16
Dichlorobenzene, 1,2-	95-50-1	nc	78 (2300)[10]	78 (1600)[10]	78 (1200)[10]	2.4
Dichlorobenzene, 1,3-[8]	541-73-1	nc	62 (2000)[10]	62 (1400)[10]	62 (1000)[10]	2.3
Dichlorobenzene, 1,4-	106-46-7	ca	31	21	15	0.037
Dichlorobenzidine, 3,3'-	91-94-1	ca	21	16	13	0.056
Dichlorodifluoromethane	75-71-8	nc	220	150	110	3.9
Dichloroethane, 1,1-	75-34-3	ca	67	46	33	0.092

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Dichloroethane, 1,2-	107-06-2	ca	8.0	5.5	3.9	0.0055
Dichloroethylene, 1,1-	75-35-4	nc	480	330	240	1.2
Dichloroethylene, 1,2-cis-	156-59-2	nc	270	200	170	0.12
Dichloroethylene, 1,2-trans-	156-60-5	nc	960 (2700)[10]	960 (2000)[10]	960 (1700)[10]	1.3
Dichlorophenol, 2,4-	120-83-2	nc	330	250	200	0.21
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	nc	1200	910	740	0.53
Dichloropropane, 1,2-	78-87-5	nc	25	17	12	0.030
Dichloropropene, 1,3-	542-75-6	ca	30	21	15	0.018
Dieldrin	60-57-1	ca	0.59	0.44	0.36	0.0047
Diethyl Phthalate	84-66-2	nc	88000	66000	54000	60
Dimethylphenol, 2,4-	105-67-9	nc	2200	1600	1300	3.2

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			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Dimethylphthalate[8]	131-11-3	nc	88000	66000	54000	48
Dinitrobenzene, 1,2-	528-29-0	nc	11	8.2	6.7	0.014
Dinitrobenzene, 1,3-	99-65-0	nc	11	8.2	6.7	0.014
Dinitrobenzene, 1,4-	100-25-4	nc	11	8.2	6.7	0.014
Dinitrophenol, 2,4-	51-28-5	nc	220	160	130	0.34
Dinitrotoluene, 2,4-	121-14-2	ca	30	23	18	0.024
Dinitrotoluene, 2,6-	606-20-2	ca	6.3	4.7	3.8	0.0050
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	nc	270	200	160	0.25
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	nc	270	200	160	0.25
Dioxane, 1,4-	123-91-1	ca	100	73	58	0.012
Diphenylamine	122-39-4	nc	11000	8200	6700	17
Endosulfan (Endosulfan I + Endosulfan II)	115-29-7	nc	820	610	500	9.3

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Endrin	72-20-8	nc	33	25	20	0.61
Ethyl Chloride	75-00-3	nc	1400 (29000)[10]	1400 (20000)[10]	1400 (14000)[10]	72
Ethylbenzene[7]	100-41-4	ca	72	49	35	0.13
Ethylene Glycol	107-21-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	110
Fluoranthene[7]	206-44-0	nc	4200	3100	2500	590
Fluorene[7]	86-73-7	nc	4200	3100	2500	36
Formaldehyde	50-00-0	ca	430	290	210	0.011
Heptachlor	76-44-8	ca	2.2	1.6	1.3	0.0076
Heptachlor Epoxide	1024-57-3	ca	1.2	0.86	0.69	0.0019
Hexachlorobenzene	118-74-1	ca	2.8	2.0	1.5	0.0082
Hexachlorobutadiene	87-68-3	nc	3.3 (14)[10]	3.3 (10)[10]	3.3 (7.2)[10]	0.020

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Hexachlorocyclohexane, Alpha-	319-84-6	ca	1.5	1.1	0.91	0.0029
Hexachlorocyclohexane, Beta-	319-85-7	ca	5.3	3.9	3.2	0.010
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	ca	9.9	7.4	6.0	0.016
Hexachlorocyclopentadiene	77-47-4	nc	2.0	1.4	1.0	0.0093
Hexachloroethane	67-72-1	ca	25	17	12	0.018
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	ca	110	79	64	0.027
Hexane, N-	110-54-3	nc	140 (1600)[10]	140 (1100)[10]	140 (750)[10]	130[10]
Hexanone, 2-	591-78-6	nc	380	270	210	0.11
Hydrazine	302-01-2	ca	0.76	0.55	0.40	3.1×10^{-5}
Indeno[1,2,3-cd]pyrene[7]	193-39-5	m	20	15	12	65
Isophorone	78-59-1	ca	10000	7400	6100	2.7

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Isopropanol	67-63-0	nc	14000	9500	6800	1.1
Lead and Compounds[14]	7439-92-1	nc	400	400	400	n/a
Manganese	7439-96-5	nc	2900	2700	2000	370
Mercuric Chloride[8]	7487-94-7	nc	41	30	25	3.9
Mercury (elemental)	7439-97-6	nc	3.1 (28)[10]	3.1 (19)[10]	3.1 (14)[10]	0.36
Methanol	67-56-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	54
Methoxychlor	72-43-5	nc	550	410	340	13
Methyl Ethyl Ketone (2-Butanone)	78-93-3	nc	23000 (53000)[10]	23000 (38000)[10]	23000 (30000)[10]	15
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	nc	2200 (69000)[10]	2200 (47000)[10]	2200 (34000)[10]	18
Methyl Mercury	22967-92-6	nc	14	10	8.3	180

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Methyl tert-Butyl Ether (MTBE)	1634-04-4	ca	970	670	480	0.40
Methylene Chloride	75-09-2	nc	630	460	360	0.33
Methylnaphthalene, 1-	90-12-0	ca	68 (310)[10]	68 (230)[10]	68 (190)[10]	0.41
Methylnaphthalene, 2-	91-57-6	nc	420	310	250	1.3
Naphthalene[7]	91-20-3	ca	42	29	20	0.038
Nickel Soluble Salts	7440-02-0	nc	2600	2000	1700	340
Nitrobenzene	98-95-3	ca	64	43	31	0.0079
Nitroglycerin	55-63-0	nc	11	8.2	6.7	0.0082
Nitroguanidine	556-88-7	nc	11000	8200	6700	5.8
Nitrosodimethylamine, N-	62-75-9	m	0.036	0.026	0.020	3.3×10^{-6}
Nitroso-di-N-propylamine, N-	621-64-7	ca	1.4	1.00	0.82	0.00068
Nitrosodiphenylamine, N-	86-30-6	ca	1900	1400	1200	4.6

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Nitrotoluene, m-	99-08-1	nc	11	8.2	6.7	0.013
Nitrotoluene, o-	88-72-2	ca	55	41	34	0.024
Nitrotoluene, p-	99-99-0	nc	440	330	270	0.32
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	nc	6700	5000	4100	9.7
Octyl Phthalate, di-N-	117-84-0	nc	1100	820	670	370
Pentachlorophenol	87-86-5	ca	18	13	11	0.0043
Pentaerythritol tetranitrate (PETN)	78-11-5	nc	220	160	130	0.43
Perchlorate and Perchlorate salts	14797-73-0	nc	96	71	58	0.037
Perfluorobutane Sulfonic Acid (PFBS)[8]	375-73-5	nc	2200	1600	1300	1.4
Perfluoroheptanoic Acid (PFHpA)[8]	375-85-9	nc	2.2	1.6	1.3	0.00024
Perfluorohexane Sulfonic Acid (PFHxS)[8]	355-46-4	nc	2.2	1.6	1.3	0.00029
Perfluorononanoic Acid (PFNA)[8]	375-95-1	nc	2.2	1.6	1.3	0.00041

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Perfluorooctane Sulfonic Acid (PFOS)[8]	1763-23-1	nc	2.2	1.6	1.3	0.00053
Perfluorooctanoic Acid (PFOA)[8]	335-67-1	nc	2.2	1.6	1.3	0.00029
Phenanthrene[7,8]	85-01-8	nc	3100	2300	1900	39
Phenol	108-95-2	nc	33000	25000	20000	29
Phosphorus, White	7723-14-0	nc	2.7	2.0	1.7	0.020
Polychlorinated Biphenyls (total)[15]	1336-36-3	ca	1.0	1.0	1.0	n/a
Propyl benzene	103-65-1	nc	52 (5200)[10]	52 (3700)[10]	52 (2800)[10]	9.1
Pyrene[7]	129-00-0	nc	3100	2300	1900	87
Selenium	7782-49-2	nc	680	510	410	6.9
Silver	7440-22-4	nc	680	510	410	11
Strontium	7440-24-6	nc	82000	61000	50000	5600
Styrene	100-42-5	nc	180	180	180	10

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			(8100)[10]	(5700)[10]	(4200)[10]	
TCDD, 2,3,7,8-[16]	1746-01-6	ca	8.2×10^{-5}	6.0×10^{-5}	4.9×10^{-5}	3.9×10^{-6}
Tetrachloroethane, 1,1,1,2-	630-20-6	ca	30	21	15	0.022
Tetrachloroethane, 1,1,2,2-	79-34-5	ca	8.8	6.1	4.4	0.0030
Tetrachloroethylene	127-18-4	nc	68 (140)[10]	68 (95)[10]	68 (69)[10]	0.19
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	nc	270	200	170	2.5
Thallium (Soluble Salts)	7440-28-0	nc	1.4	1.00	0.83	0.19
Toluene[7]	108-88-3	nc	200 (8000)[10]	200 (5800)[10]	200 (4500)[10]	6.7
Toxaphene	8001-35-2	ca	8.6	6.4	5.2	0.72
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	nc	740 (16000)[10]	740 (11000)[10]	740 (7700)[10]	310

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)

Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2] Human Health[5] (mg/kg)	Under 40 Inch Zone[3] Human Health[5] (mg/kg)	Over 40 Inch Zone[4] Human Health[5] (mg/kg)	Migration to Groundwater[6] (mg/kg)
Trichlorobenzene, 1,2,3-	87-61-6	nc	110	81	66	0.15
Trichlorobenzene, 1,2,4-	120-82-1	nc	66	45	32	0.082
Trichloroethane, 1,1,1-	71-55-6	nc	360 (160000)[10]	360 (11000)[10]	360 (7800)[10]	32
Trichloroethane, 1,1,2-	79-00-5	nc	2.3	1.6	1.1	0.0014
Trichloroethylene	79-01-6	nc	7.1	4.9	3.5	0.011
Trichlorofluoromethane	75-69-4	nc	980 (41000)[10]	980 (30000)[10]	980 (25000)[10]	41
Trichlorophenol, 2,4,5-	95-95-4	nc	11000	8200	6700	28
Trichlorophenol, 2,4,6-	88-06-2	nc	110	82	67	0.092
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	nc	1100	820	670	0.66
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	nc	880	660	540	0.55

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)

Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2] Human Health[5] (mg/kg)	Under 40 Inch Zone[3] Human Health[5] (mg/kg)	Over 40 Inch Zone[4] Human Health[5] (mg/kg)	Migration to Groundwater[6] (mg/kg)
Trichloropropane, 1,2,3-	96-18-4	m	0.089	0.066	0.054	3.1×10^{-5}
Trimethylbenzene, 1,2,4-	95-63-6	nc	43 (400)[10]	43 (280)[10)]	43 (210)[10]	0.61
Trimethylbenzene, 1,3,5-	108-67-8	nc	37 (360)[10]	37 (250)[10]	37 (180)[10]	0.66
Tri-n-butyltin	688-73-3	nc	41	30	25	0.68
Trinitrobenzene, 1,3,5-	99-35-4	nc	3900	2900	2400	15
Trinitrotoluene, 2,4,6-	118-96-7	nc	64	47	39	0.39
Vanadium and Compounds	7440-62-2	nc	680	510	420	1100
Vinyl Acetate	108-05-4	nc	2100	1400	1000	1.1
Vinyl Chloride	75-01-4	ca	0.69	0.65	0.61	0.00080
Xylenes[7]	1330-20-7	nc	57 (710)[10]	57 (490)[10]	57 (350)[10]	1.5
Zinc and Compounds	7440-66-6	nc	41000	30000	25000	4900

See notes to table for further requirements. “n/a” means not applicable.

(Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 11/6/2016, Register 220; am 9/29/2018, Register 227; am __/__/____, Register ___)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

18 AAC 75.345(b)(1) is repealed and readopted to read:

(1) the cleanup levels in Table C if the current use or the reasonably expected potential future use of the groundwater, determined under 18 AAC 75.350, is a drinking water source;

TABLE C. GROUNDWATER CLEANUP LEVELS

Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Acenaphthene	83-32-9	nc	530
Acenaphthylene[3]	208-96-8	nc	260
Acetone	67-64-1	nc	14000
Aldrin	309-00-2	ca	0.0092
Anthracene	120-12-7	nc	43 (1800)[4]
Antimony (metallic)	7440-36-0	nc	7.8
Arsenic, Inorganic[5]	7440-38-2	ca	0.52
Barium	7440-39-3	nc	3800

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Benz[a]anthracene	56-55-3	m	0.30
Benzaldehyde	100-52-7	nc	190
Benzene	71-43-2	ca	4.6
Benzo[a]pyrene	50-32-8	m	0.25
Benzo[b]fluoranthene	205-99-2	m	2.5
Benzo[g,h,i]perylene[3]	191-24-2	nc	0.26 (600)[4]
Benzo[k]fluoranthene	207-08-9	m	0.80 (25)[4]
Benzoic Acid	65-85-0	nc	75000
Benzyl Alcohol	100-51-6	nc	2000
Beryllium and compounds	7440-41-7	nc	25
Bis(2-chloroethyl)ether	111-44-4	ca	0.14
Bis(2-ethylhexyl)phthalate	117-81-7	ca	56
Bromobenzene	108-86-1	nc	62
Bromodichloromethane	75-27-4	ca	1.3
Bromoform	75-25-2	ca	33
Bromomethane	74-83-9	nc	7.5
Butadiene, 1,3-	106-99-0	ca	0.18
Butanol, N-	71-36-3	nc	2000
Butyl Benzyl Phthalate	85-68-7	ca	160
Butylbenzene, n-	104-51-8	nc	1000
Butylbenzene, sec-	135-98-8	nc	2000

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Butylbenzene, tert-	98-06-6	nc	690
Cadmium (Diet)	7440-43-9	nc	9.2
Carbon Disulfide	75-15-0	nc	810
Carbon Tetrachloride	56-23-5	ca	4.6
Chlordane	12789-03-6	ca	0.20
Chlordecone (Kepone)	143-50-0	ca	0.035
Chloroaniline, p-	106-47-8	ca	3.7
Chlorobenzene	108-90-7	nc	78
Chloroform	67-66-3	ca	2.2
Chloromethane	74-87-3	nc	190
Chloronaphthalene, Beta-	91-58-7	nc	750
Chlorophenol, 2-	95-57-8	nc	91
Chromium(III), Insoluble Salts[6]	16065-83-1	nc	22000
Chromium(VI)[6]	18540-29-9	m	0.35
Chrysene	218-01-9	m	2.0 (250)[4]
Copper	7440-50-8	nc	800
Cresol, m-	108-39-4	nc	930
Cresol, o-	95-48-7	nc	930
Cresol, p-	106-44-5	nc	1900
Cumene	98-82-8	nc	450
Cyanide (CN-)	57-12-5	nc	1.5

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Cyclohexane	110-82-7	nc	13000
DDD	72-54-8	ca	0.060
DDE, p,p'-	72-55-9	ca	0.46
DDT	50-29-3	ca	2.3
Dibenz[a,h]anthracene	53-70-3	m	0.25
Dibenzofuran	132-64-9	nc	7.9
Dibromochloromethane	124-48-1	ca	8.7
Dibromoethane, 1,2- (Ethylene Dibromide)	106-93-4	ca	0.075
Dibromomethane (Methylene Bromide)	74-95-3	nc	8.3
Dibutyl Phthalate	84-74-2	nc	900
Dichlorobenzene, 1,2-	95-50-1	nc	300
Dichlorobenzene, 1,3-[3]	541-73-1	nc	300
Dichlorobenzene, 1,4-	106-46-7	ca	4.8
Dichlorobenzidine, 3,3'-	91-94-1	ca	1.3
Dichlorodifluoromethane	75-71-8	nc	200
Dichloroethane, 1,1-	75-34-3	ca	28
Dichloroethane, 1,2-	107-06-2	ca	1.7
Dichloroethylene, 1,1-	75-35-4	nc	280
Dichloroethylene, 1,2-cis-	156-59-2	nc	36
Dichloroethylene, 1,2-trans-	156-60-5	nc	360
Dichlorophenol, 2,4-	120-83-2	nc	46

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	nc	170
Dichloropropane, 1,2-	78-87-5	nc	8.2
Dichloropropene, 1,3-	542-75-6	ca	4.7
Dieldrin	60-57-1	ca	0.018
Diethyl Phthalate	84-66-2	nc	15000
Dimethylphenol, 2,4-	105-67-9	nc	360
Dimethylphthalate[3]	131-11-3	nc	16000
Dinitrobenzene, 1,2-	528-29-0	nc	1.9
Dinitrobenzene, 1,3-	99-65-0	nc	2.0
Dinitrobenzene, 1,4-	100-25-4	nc	2.0
Dinitrophenol, 2,4-	51-28-5	nc	39
Dinitrotoluene, 2,4-	121-14-2	ca	2.4
Dinitrotoluene, 2,6-	606-20-2	ca	0.49
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	nc	39
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	nc	39
Dioxane, 1,4-	123-91-1	ca	4.6
Diphenylamine	122-39-4	nc	1300
Endosulfan	115-29-7	nc	100
Endrin	72-20-8	nc	2.3
Ethyl Chloride	75-00-3	nc	21000
Ethylbenzene	100-41-4	ca	15

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Ethylene Glycol	107-21-1	nc	40000
Fluoranthene	206-44-0	nc	260 (800)[4]
Fluorene	86-73-7	nc	290
Formaldehyde	50-00-0	ca	4.3
Heptachlor	76-44-8	ca	0.014
Heptachlor Epoxide	1024-57-3	ca	0.014
Hexachlorobenzene	118-74-1	ca	0.098
Hexachlorobutadiene	87-68-3	nc	1.4
Hexachlorocyclohexane, Alpha-	319-84-6	ca	0.072
Hexachlorocyclohexane, Beta-	319-85-7	ca	0.25
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	ca	0.42
Hexachlorocyclopentadiene	77-47-4	nc	0.41
Hexachloroethane	67-72-1	ca	3.3
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	ca	7.0
Hexane, N-	110-54-3	nc	1500
Hexanone, 2-	591-78-6	nc	38
Hydrazine	302-01-2	ca	0.011
Indeno[1,2,3-cd]pyrene	193-39-5	m	0.19 (2.5)[4]
Isophorone	78-59-1	ca	780
Isopropanol	67-63-0	nc	410
Lead and Compounds[7]	7439-92-1	nc	15

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Manganese	7439-96-5	nc	430
Mercuric Chloride[3]	7487-94-7	nc	5.7
Mercury (elemental)	7439-97-6	nc	0.52
Methanol	67-56-1	nc	20000
Methoxychlor	72-43-5	nc	37
Methyl Ethyl Ketone (2-Butanone)	78-93-3	nc	5600
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	nc	6300
Methyl Mercury	22967-92-6	nc	2.0
Methyl tert-Butyl Ether (MTBE)	1634-04-4	ca	140
Methylene Chloride	75-09-2	nc	110
Methylnaphthalene, 1-	90-12-0	ca	11
Methylnaphthalene, 2-	91-57-6	nc	36
Naphthalene	91-20-3	ca	1.7
Nickel Soluble Salts	7440-02-0	nc	390
Nitrobenzene	98-95-3	ca	1.4
Nitroglycerin	55-63-0	nc	2.0
Nitroguanidine	556-88-7	nc	2000
Nitrosodimethylamine, N-	62-75-9	m	0.0011
Nitroso-di-N-propylamine, N-	621-64-7	ca	0.11
Nitrosodiphenylamine, N-	86-30-6	ca	120
Nitrotoluene, m-	99-08-1	nc	1.7

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Nitrotoluene, o-	88-72-2	ca	3.1
Nitrotoluene, p-	99-99-0	nc	43
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	nc	1000
Octyl Phthalate, di-N-	117-84-0	nc	22 (200)[4]
Pentachlorophenol	87-86-5	ca	0.41
Pentaerythritol tetranitrate (PETN)	78-11-5	nc	39
Perchlorate and Perchlorate Salts	14797-73-0	nc	14
Perfluorobutane Sulfonic Acid (PFBS)[3]	375-73-5	nc	400
Perfluoroheptanoic Acid (PFHpA)	375-85-9	nc	0.070[9]
Perfluorohexane Sulfonic Acid (PFHxS)	355-46-4	nc	0.070[9]
Perfluorononanoic Acid (PFNA)	375-95-1	nc	0.070[9]
Perfluorooctane Sulfonic Acid (PFOS)	1763-23-1	nc	0.070[9]
Perfluorooctanoic Acid (PFOA)	335-67-1	nc	0.070[9]
Phenanthrene[3]	85-01-8	nc	170
Phenol	108-95-2	nc	5800
Phosphorus, White	7723-14-0	nc	0.40
Polychlorinated Biphenyls (PCBs)	1336-36-3	ca	0.44
Propyl benzene	103-65-1	nc	660
Pyrene	129-00-0	nc	120
Selenium	7782-49-2	nc	100
Silver	7440-22-4	nc	94

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Styrene	100-42-5	nc	1200
Strontium	7440-24-6	nc	12000
TCDD, 2,3,7,8-[8]	1746-01-6	ca	1.2×10^{-6}
Tetrachloroethane, 1,1,1,2-	630-20-6	ca	5.7
Tetrachloroethane, 1,1,2,2-	79-34-5	ca	0.76
Tetrachloroethylene	127-18-4	nc	41
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	nc	39
Thallium (Soluble Salts)	7440-28-0	nc	0.20
Toluene	108-88-3	nc	1100
Toxaphene	8001-35-2	ca	0.71
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	nc	10000
Trichlorobenzene, 1,2,3-	87-61-6	nc	7.0
Trichlorobenzene, 1,2,4-	120-82-1	nc	4.0
Trichloroethane, 1,1,1-	71-55-6	nc	8000
Trichloroethane, 1,1,2-	79-00-5	nc	0.41
Trichloroethylene	79-01-6	nc	2.8
Trichlorofluoromethane	75-69-4	nc	5200
Trichlorophenol, 2,4,5-	95-95-4	nc	1200
Trichlorophenol, 2,4,6-	88-06-2	nc	12
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	nc	160
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	nc	110

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Trichloropropane, 1,2,3-	96-18-4	m	0.0075
Trimethylbenzene, 1,2,4-	95-63-6	nc	56
Trimethylbenzene, 1,3,5-	108-67-8	nc	60
Tri-n-butyltin	688-73-3	nc	3.7
Trinitrobenzene, 1,3,5-	99-35-4	nc	590
Trinitrotoluene, 2,4,6-	118-96-7	nc	9.8
Vanadium and Compounds	7440-62-2	nc	86
Vinyl Acetate	108-05-4	nc	410
Vinyl Chloride	75-01-4	ca	0.19
Xylenes	1330-20-7	nc	190
Zinc and Compounds	7440-66-6	nc	6000
PETROLEUM HYDROCARBONS			
C_6-C_{10} GRO		nc	2200
C_{10}-C_{25} DRO		nc	1500
C_{25}-C_{36} RRO		nc	1100

Notes to Table C:

1. "CAS Number" means the Chemical Abstract Service (CAS) registry number uniquely assigned to chemicals by the American Chemical Society and recorded in the CAS Registry System.

2. The “Human Health” exposure pathway is the cumulative exposure pathway through dermal contact, ingestion, and inhalation of volatile compounds from hazardous substances in the water.

3. Where one or more toxicological values were unavailable, toxicity values from surrogate compounds or other sources were used as presented in Table 6 from the Procedures for Calculating Cleanup Levels, adopted by reference in 18 AAC 75.340.

4. This level is set at the compound’s solubility concentration using the equations set out in the *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340. The solubility value is listed first, followed by the human health risk-based cleanup level in parentheses. The human health risk-based cleanup level assumptions do not take free product into consideration. In accordance with 18 AAC 75.325(f), free product must be recovered to the maximum extent practicable. Contaminant concentrations above the solubility value trigger the need to assess the practicability of product recovery; if the department determines product recovery is impracticable, the risk-based cleanup level may be applied as long as the cumulative risk standards are met.

5. Due to the prevalence of naturally occurring arsenic throughout the state, arsenic at a site will be considered background arsenic unless anthropogenic contribution from a source, activity, or mobilization by means of another introduced contaminant is known or suspected.

6. Due to the prevalence of naturally occurring chromium III throughout the state, sample results reported for total chromium detected at a site will be considered background chromium III unless anthropogenic contribution of chromium III or VI from a source, activity, or mobilization by means of another introduced contaminant is known or suspected.

7. The lead cleanup level is taken from EPA's action level for lead in water.

8. This cleanup level is for 2,3,7,8-Tetrachlorodibenzo-*p*-Dioxin (TCDD) only; all cleanup levels for polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF) congeners must be determined on a site-specific basis using the TCDD toxicity equivalent (TEQ) approach described in the *Procedures for Calculating Cumulative Risk,* adopted by reference in 18 AAC 75.325.

9. The value is based off EPA health advisories values for drinking water for PFOS and PFOA. The sum of five per- and poly-fluroalkyl substances (PFAS) (Perfluorooctane Sulfonic Acid (PFOS), Perfluorooctanoic Acid (PFOA), Perfluorononanoic acid (PFNA), Perfluorohexane Sulfonic Acid (PFHxS), and Perfluoroheptanoic Acid (PFHpA) may not exceed the limit of 0.07 µg/L. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 6/17/2015, Register 214; am 11/6/2016, Register 220; am 9/29/2018, Register 227; am __/__/____, Register ___)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.010
AS 46.03.710 AS 46.04.020 AS 46.09.020