Internal Management Directive

Clean Fill Determinations

State of Oregon
Department of
Environmental
Quality

Solid Waste Program
811 SW 6th Avenue
Portland, OR 97204
Phone: (541) 687-7427
(800) 452-4011
Fax: (541) 686-7551
Contact: Bill Mason
mason.bill@deq.state.or.us
www.oregon.gov/DEQ

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

Last Updated: 7/23/2014
By: Bill Mason

Alternative formats (Braille, large type) of this document can be made available.
Contact DEQ's Office of Communications & Outreach, Portland, at (503) 229-5696, or toll-free in Oregon at
1-800-452-4011, ext. 5696.

Disclaimer

This directive is intended solely as guidance for DEQ employees. It does not constitute rulemaking by the Environmental Quality Commission and may not be relied upon to create an enforceable right or benefit, substantive or procedural, enforceable at law or in equity, by any person. With written managerial approval, DEQ employees may deviate from this directive. DEQ anticipates revising this directive from time to time as conditions warrant.

Document Development

Prepared By: Bill Mason

Reviewed By: Audrey O'Brien

Approved By: _____ Date: 7.16.14

1. Scope

This directive describes the risk screening criteria DEQ Solid Waste staff will use to evaluate whether material such as soil or sediments excavated from a construction site meets DEQ's definition of clean fill for purposes of reuse or disposal.

2. Purpose/Need

DEQ has been receiving an increasing number of requests to determine whether solid waste generated during various construction projects or generated by dredging qualifies as clean fill. The rules define clean fill and allow DEQ to exempt clean fill from regulation. This process and its associated screening table will give DEQ Solid Waste staff a consistent procedure to us to determine whether a waste material is clean fill or needs to be regulated as a solid waste.

3. Directive

The directive, therefore, lays out a process and provides screening values that DEQ Solid Waste staff should use to:

- Encourage the generators of excavated material (or their consultants) to make their own clean fill determination using risk-based screening levels available on our web site[1]; or
- If generators still would like DEQ to review clean fill determinations and provide approval, direct them to apply for a permit exemption (OAR 340-093-0080) and pay any associated fees.

This directive also outlines the process DEQ Solid Waste staff will use to use to make clean-fill determinations (Attachment A) and explains how we derived our risk-based clean fill screening table (Attachment B). Attachment C contains a flow chart for making clean-fill determinations.

When generators of excavated materials or their consultants ask how they can make their own clean fill determinations, DEQ Solid Waste staff should explain that, when presented with a permit-exemption application, DEQ evaluates whether a solid waste is clean fill or substantially like clean fill according to the process outlined in this Internal Management Directive.

A generator always has the option to do their own statistical analysis and make site-specific clean fill decisions based on the specific material being generated and details of the location where it will be placed.

If a generator is remediating a site under our Cleanup, Tanks, or Spills programs, DEQ Solid Waste staff should involve DEQ's project manager for the site.

4. Legal Authority

Clean fill means "material consisting of soil, rock, concrete, brick, building block, tile or asphalt paving, which do not contain contaminants which could adversely impact the waters of the State or public health." [OAR 340-093-0030(18)]. *Asphalt paving* means "asphalt which has been applied to the land to form a street, road, path, parking lot, highway, or similar paved surface and that is weathered, consolidated, and does not contain visual evidence of fresh oil." [OAR 340-093-0030(9)].

[1] The most current clean fill table is located at: http://www.oregon.gov/deq/docs/CleanFillIMD.pdf

Clean fill still must be managed so that, when placed or disposed, it will not create an adverse impact on groundwater, surface water, or public health or safety. [340-093-0050(3)(c)]. If generators of clean fill plan to place the material in wetlands or other waters of the state, DEQ Solid Waste staff should direct them to the Army Corps of Engineers and the Department of State Lands to obtain the appropriate permits.

5. Review Schedule

This Directive and its referenced clean fill screening table should be reviewed annually. In particular, the clean fill table will need to be updated when DEQ or EPA risk-based screening levels change.

6. Contact Person

Bill Mason, DEQ-Eugene, mason.bill@deq.state.or.us, 541-687-7427

Attachment A

How to evaluate whether a material is clean fill:

1. Characterize the fill for chemical quality.
    a. DEQ Solid Waste staff should check to see if the applicants chose what chemicals to sample and analyze for based on an understanding of the historical site use, processes that were used at the site, spatial variability of site soils, and potential chemicals that were handled, used, or stored at the site. For instance, materials sourced from agricultural lands should have been tested at least for metals and pesticides/herbicides, or materials from a facility whose history is uncertain should have been tested for a fuller suite of organic and inorganic analytes. Often, this historical information is contained in an environmental site assessment or the equivalent conducted in accordance with standard practices (for instance, ASTM E1903)[2]. If the material is sediment that is being dredged and will be placed upland, DEQ solid waste staff should work with DEQ water quality staff to determine if sampling done for the 401 water quality certification or dredging permits is sufficient to adequately characterize the sediment that will be placed upland
    b. Ensure that the applicant collected a sufficient number of samples to characterize the chemical quality of the material. The number collected should depend on the size, condition, spatial variability of the soils, and history of the area the generator will excavate (or has excavated). For instance, fewer samples would need to be collected along long stretches of highway through a single land use (such as agricultural fields with similar crops), and comparatively more samples would need to be collected in areas where land use changes frequently. Because a designing a sampling program to collect data representative of material with a heterogeneous nature is potentially complex, DEQ Solid Waste staff should refer generators to sampling guidance such as EPA (1986)[3] or EPA (2002)[4] or an experienced consultant when asked "how many samples should I collect?" during the pre-application period.

[2] ASTM, 2011. Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, E1903-11. http://www.astm.org/Standards/E1903.htm
[3] EPA, 1986. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), Chapter 9, http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/chap9.pdf
[4] EPA, 2002. Guidance on Choosing a Sampling Design for Environmental Data Collection, EPA QA/G-5S. http://www.epa.gov/quality/qs-docs/g5s-final.pdf

2. Determine whether the materials "*consist of soil, rock, concrete, brick, building block, tile* [unpainted, unless the painted concrete, brick, blocks, or tile have been evaluated for hazardous constituents], *or asphalt paving* [large, intact chunks, not ground up], *which do not contain contaminants which could adversely impact the waters of the State or public health. This term does not include putrescible wastes, construction and demolition wastes and industrial solid wastes*"? [OAR 340-093-0030(18)].
    a. If no, stop. This material is not clean fill for the purposes of unrestricted use. It is solid waste that can be disposed under a location-specific permit exemption, a solid waste letter authorization, or disposed of in a permitted landfill. The material also potentially may be reused under the authority of a Beneficial Use Determination.
3. If yes, the does the material appear chemically stained or does it have a chemical smell?
    a. If yes, stop. This material is not clean fill. Chemicals that stain or produce odors are not "*soil, rock, concrete, brick, building block, tile or asphalt paving.*"
4. If no, does it contain a listed or characteristic hazardous waste?
    a. If yes, stop. This material is not clean fill, even if the chemicals are below clean fill table values. The generator may use alternative methods such as "contained-in" determinations to decide the ultimate disposition of the material.
5. If no, does it contain a chemical that exceeds clean fill table values?
    a. If no, this is clean fill.
    b. If yes, the material still may be clean fill. For instance, statistical analysis may demonstrate that the average concentration of the material is substantially like the clean fill screening values.
    c. If the statistical analysis does not show that the material is substantially like clean fill, explore other disposal options such as site-specific or material-specific disposal determinations (solid waste letter authorization, permit exemption, mine reclamation material, restricted beneficial use as fill, or restricted uses such as use as fill at Cleanup sites with deed restrictions, etc.)

Important considerations and other notes:

- This process applies only to terrestrial disposal. The Clean Water Act and associated state water-quality rules, rather than the solid waste rules, govern the filling of wetlands or waters of the state.
- **Because Total Petroleum Hydrocarbon concentrations correlate poorly with certain ubiquitous chemical compounds such as benzo[a]pyrene, DEQ Solid Waste staff should not use TPH results as a screening tool to decide whether to recommend or require constituent analysis for clean fill determinations.**
- Most metals and metalloids in the clean fill table are grouped by physiographic provinces in order to align with the Cleanup Program's background metals technical report[5]. DEQ Solid Waste staff should note that clean fill generated in one physiographic province may not qualify as clean fill in another physiographic province with lower background metals concentrations.
- DEQ's Risk-Based Concentrations table[6] includes indoor vapor intrusion pathways that are not represented in EPA's Regional Screening Levels table[7]. For many volatile organic compounds, the RBCs for the volatilization pathways are lower than for direct contact with residential soils. Therefore, using the RSL table in-lieu of DEQ's RBC table means that some clean fill screening criteria for volatiles may be higher than a true risk-based value. DEQ Solid Waste staff should consider calculating a chemical-specific risk-based screening level when VOCs are detected that are not included in our RBC table

[5] http://www.deq.state.or.us/lq/pubs/docs/cu/DebORbackgroundMetal.pdf
[6] http://www.deq.state.or.us/lq/pubs/docs/RBDMTable.pdf
[7] http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

- DEQ does not yet have background values for ubiquitous anthropogenic chemicals like dioxin, PAHs, lead, and the like. However, the Portland-area background lead value in the Cleanup Program's Background Metals document likely includes anthropogenic influences (it is 79 mg/kg compared to no more than about 36 mg/kg in the rest of the state). The Solid Waste Program instead has chosen to use a statewide background lead value in the Clean Fill table.
- Make sure the laboratory Method Detection Limit is lower than the screening table value.

Attachment B

How was the clean fill table derived?

1. Used the lowest Risk-Based Concentration for soil on DEQ's Risk-Based Decision Making table (http://www.deq.state.or.us/lq/pubs/docs/RBDMTable.pdf);
2. If a chemical was not on DEQ's RBC table, used EPA's Regional Screening Level table (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm)(lowest value, typically residential soils);
3. Compared the above values to DEQ's Ecological Screening Level Values (http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceEcologicalRisk.pdf), and used the SLV if it was lower than the RBC or RSL screening value;
4. For many metals, polycyclic aromatic hydrocarbons, DDT, and dieldrin, Ecological Soil Screening Levels (EPA, 2005 or 2007; http://www.epa.gov/ecotox/ecossl/) were available. We used them instead of SLVs;
5. Typically, ecological screening values for metals were below background, and when they were, we used background metals values as established by the Cleanup Program (see Table 4, page 35 in the guidance document: http://www.deq.state.or.us/lq/pubs/docs/cu/DebORbackgroundMetal.pdf), unless risk-based human or ecological screening values are above background. Other metal screening values on the clean fill table come from a variety of sources (references listed in the footnotes of the table);
6. For chemicals not found in DEQ's RBDM table (that is, those from EPA's RSL table), we calculated a chemical-specific leaching to groundwater pathway value using DEQ or EPA Henry's constants and other risk-based defaults. We used the chemical-specific leaching value if it was lower than the screening values listed above. The calculation is outlined below.
7. Removed chemicals with concentrations above 1,500 mg/kg that are rarely seen in Oregon soils from the table. For instance, high concentrations of relatively non-toxic chemicals like rubbing alcohol are not likely to be clean fill based on odor or staining at high concentrations anyway.

The most current table is posted in the internet at the following location:

http://www.oregon.gov/deq/docs/CleanFillIMD.pdf

Chemical-specific leaching calculation[8]:

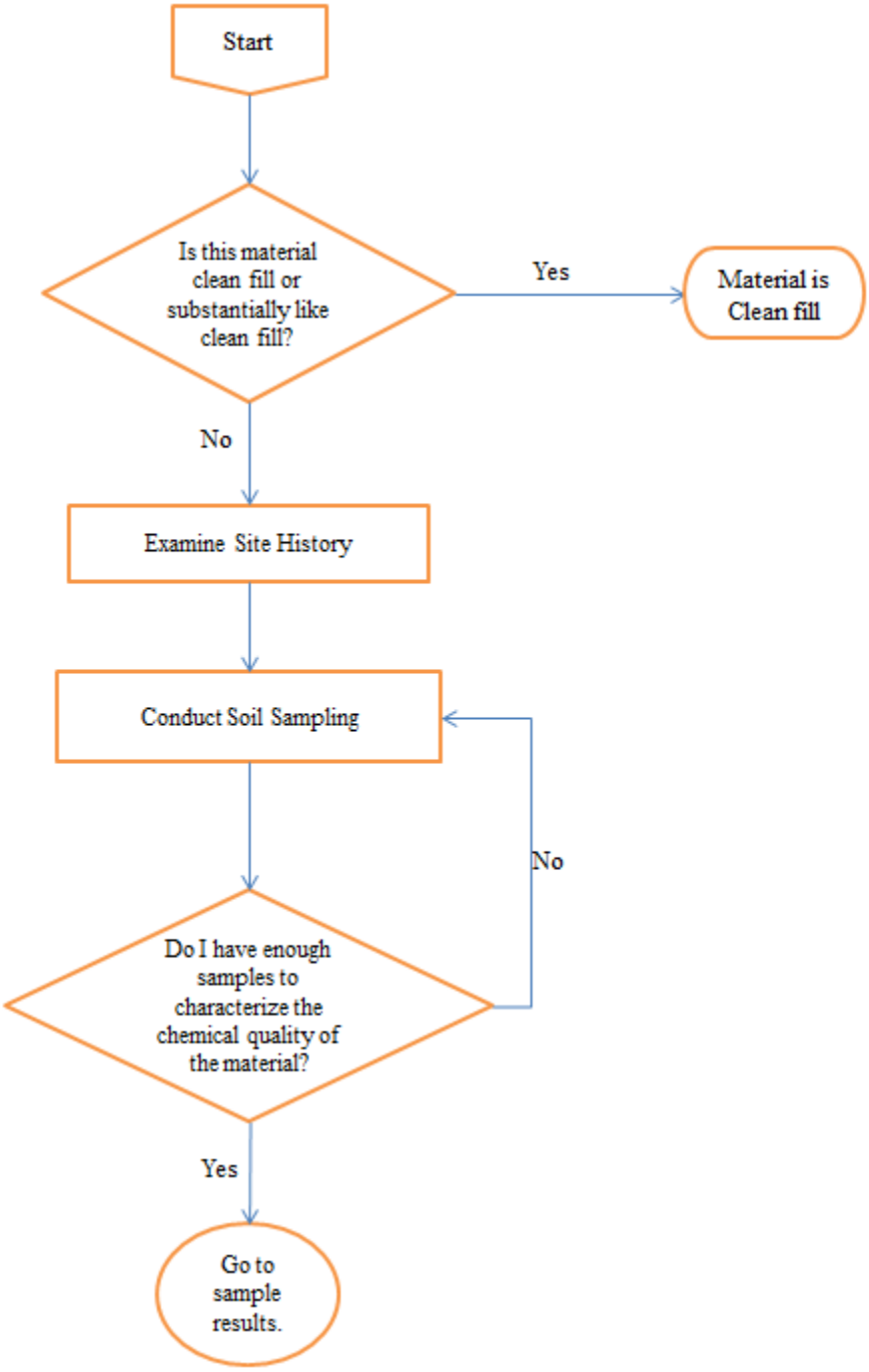
$$C_t = C_w * \left[(k_{oc} * f_{oc}) + \frac{P_w + (P_a * H_d)}{P_b} \right] * \text{DAF}$$

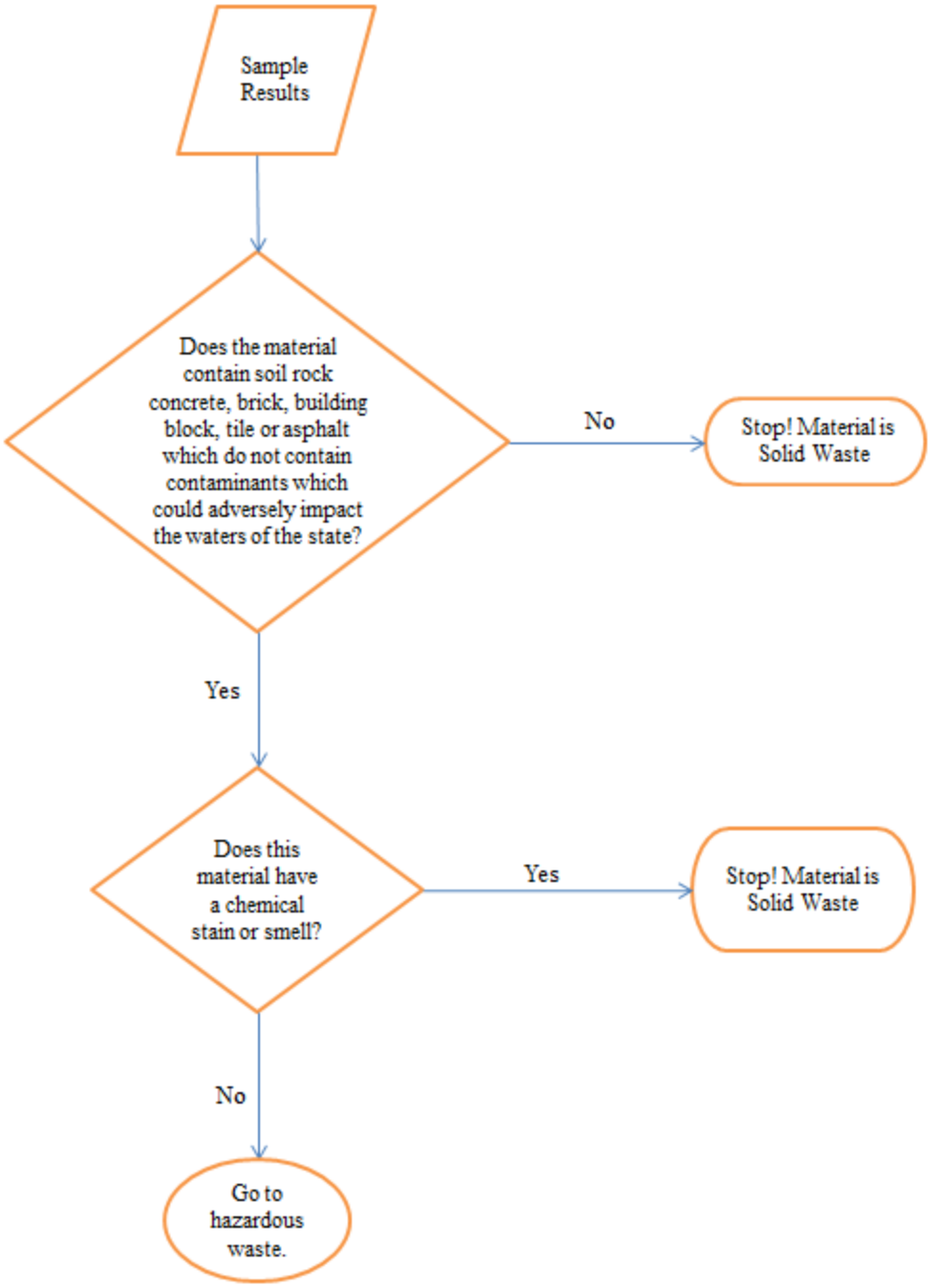
Where:
C_t = soil concentration (mg/kg)
C_w = aqueous concentration (mg/L)
k_{oc} = soil organic carbon/water partition coeffiecient (L/kg)
f_{oc} = fraction organic carbon (kg/kg)
P_w = water-filled soil porosity
P_a = air filled soil porosity
P_b = dry soil bulk density (kg/L)
H_d = dimensionless Henry's Law

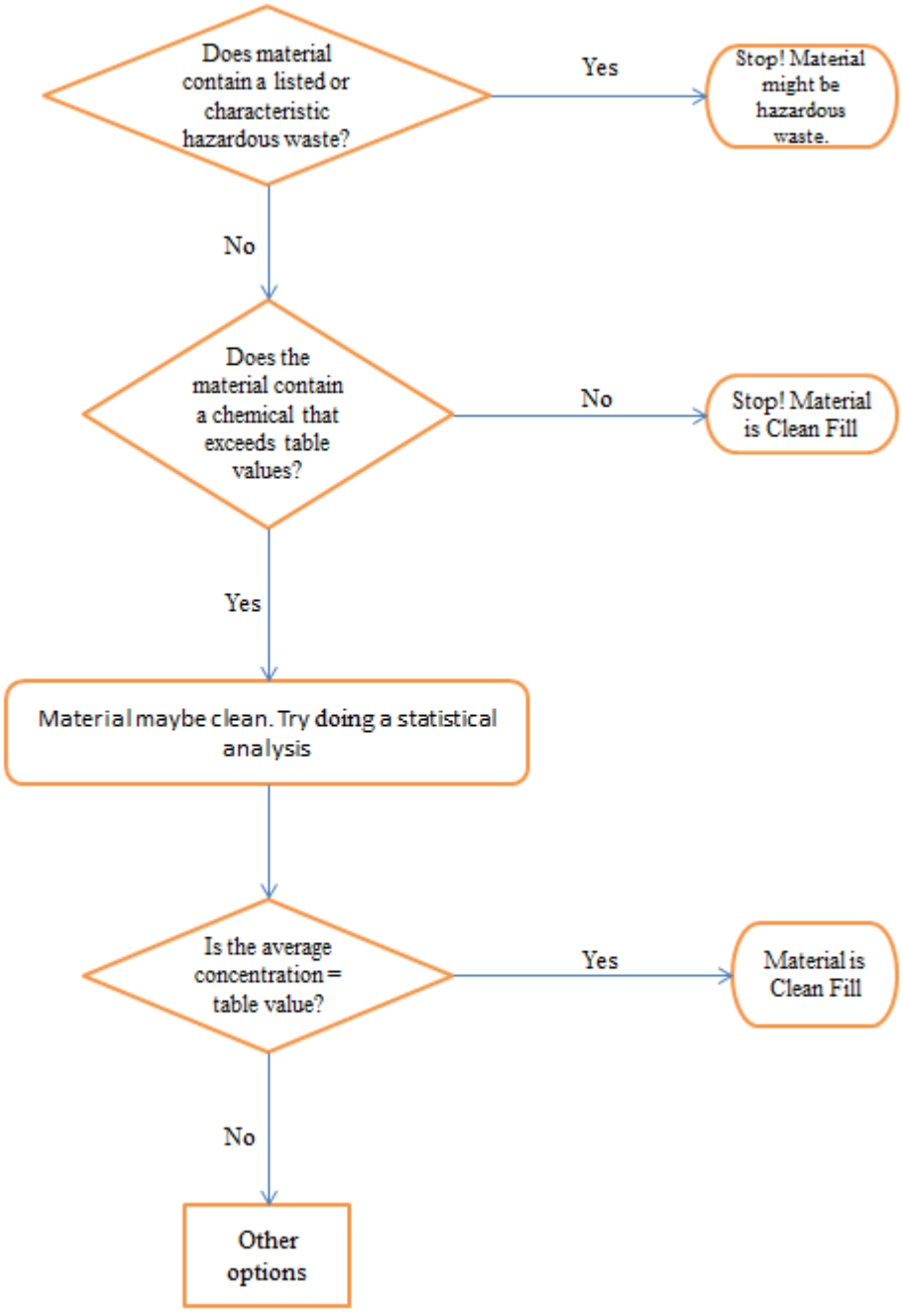
C_t: Soil concentration protective of the leaching-to-groundwater pathway
C_w: Use a tap-water RBC or RSL for this variable
k_{oc}: Use the value in RBC or RSL table
f_{oc}: Use 0.005 (DEQ RBDM Guidance, 2003)
P_w: Use 0.12 (DEQ RBDM Guidance, 2003)
P_a: Use 0.26 (DEQ RBDM Guidance, 2003)
H_d: Use Henry's Law Constant from RSL table (EPA, current version is from November 2012)
P_b: Use 1.7 (DEQ RBDM Guidance, 2003)
DAF: Dilution Attenuation Factor = 60

[8] DEQ RBDM Guidance, 2003. http://www.deq.state.or.us/lq/rbdm.htm

Attachment C




Sample Results
Does the material contain soil rock concrete, brick, building block, tile or asphalt which do not contain contaminants which could adversely impact the waters of the state?
No
Stop! Material is Solid Waste
Yes
Does this material have a chemical stain or smell?
Yes
Stop! Material is Solid Waste
No
Go to hazardous waste.


Does material contain a listed or characteristic hazardous waste?
Yes
Stop! Material might be hazardous waste.
No
Does the material contain a chemical that exceeds table values?
No
Stop! Material is Clean Fill
Yes
Material maybe clean. Try doing a statistical analysis
Is the average concentration = table value?
Yes
Material is Clean Fill
No
Other options

Record of Revisions to IMD

Revision	Date	Changes	Editor
0	7/15/2014	New document	Bill Mason
1	7/23/2014	a. Corrected URL in footnote 1 b. Corrected OAR reference on page 3	Bill Mason

Clean Fill Table for Uplands (all values in mg/kg)												
	Statewide	Province* Background										
Elements	Clean Fill Value	Basin and Range	Blue Mountains	Cascade Range	Coast Range	Deschutes-Columbia Plateau	High Lava Plains	Klamath Mountains	Owyhee Uplands	South Willamette Valley	Portland Basin	Note
Aluminum	103,000											d
Antimony and compounds		0.86	N/A	0.67	0.55	1.3	0.35	0.59	N/A	0.39	0.56	a
Arsenic		12	14	19	12	6.8	7.2	12	17	18	8.8	a
Barium and compounds		790	950	630	840	700	790	630	970	730	790	a
Beryllium and compounds	21											e
Bismuth	20											b
Cadmium and compounds		0.81	0.69	0.54	0.54	0.4	0.78	0.52	N/A	1.6	0.63	a
Chromium (total)		100	190	200	240	170	140	890	120	100	76	a
Cobalt	43											d
Copper and compounds		110	120	73	100	29	62	110	50	140	34	a
Iron	86000											d
Lanthanum	50											e
Lead		29	21	34	34	18	21	36	30	28	28[f]	a
Lithium	35											d
Manganese and compounds		1600	1800	2100	2100	1300	1500	3000	1200	2900	1800	a
Mercury (elemental, total)		0.28	1.4	0.24	0.11	0.04	0.06	0.17	0.75	0.07	0.23	a
Molybdenum	2.1											d
Nickel		66	92	110	160	78	75	630	53	50	47	a
Niobium	23											d
Selenium		0.41	0.93	0.52	1.5	0.46	0.54	0.8	0.49	0.68	0.71	a
Silver and compounds	4.2											e
Strontium (stable)	4,700											d
Technetium	0.2											b
Tellurium	2											b
Thallium		0.22	N/A	2.8	5.4	4.6	0.21	0.31	N/A	5.7	5.2	a
Tin (inorganic)	50											b
Titanium	14,000											d
Tungsten	400											b
Uranium	5											b
Vanadium		270	400	280	260	300	220	290	190	370	180	a
Zinc		130	160	170	140	130	140	140	120	200	180	a

Notes:

a - Table 4, Development of Oregon Background Metals Concentrations in Soil, Technical Report, DEQ (2013), http://www.deq.state.or.us/lq/pubs/docs/cu/DebORbackgroundMetal.pdf

b - Table 1, Guidance for Ecological Risk Assessment, Level II Screening Level Values, DEQ (2001), http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceEcologicalRisk.pdf

c - Regional Screening Levels, EPA (May 2014), http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm

d - 95% Upper Prediction Limit calculated using USGS data for Oregon, Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013, Geochemical and mineralogical data for soils of the conterminous United States: U.S. Geological Survey Data Series 801, 19 p., http://pubs.usgs.gov/ds/801/

e - Ecological Soil Screening Levels, EPA (2005, 2007), http://www.epa.gov/ecotox/ecossl/

f - Lead concentrations in the Portland area are elevated compared to other parts of Oregon, and is representative of anthropogenic background. Therefore, this value differs from the document in Note a.

* - Province boundaries are presented in Figure 2 of the Background Metals report referenced in Note a: http://www.deq.state.or.us/lq/pubs/docs/cu/DebORbackgroundMetal.pdf#page=15

Last updated by Bill Mason, DEQ-Eugene, on June 10, 2014

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Acenaphthene	29	e	83-32-9
Acephate	0.0558	f	30560-19-1
Acetaldehyde	0.0102	f	75-07-0
Acetochlor	25.32	f	34256-82-1
Acetone	59.52	f	67-64-1
Acetone cyanohydrin	0.1542	f	75-86-5
Acetonitrile	0.732	f	75-05-8
Acetophenone	29.7	f	98-86-2
Acetylaminofluorene, 2-	0.13	c	53-96-3
Acrolein (Propenal)	0.00018	f	107-02-8
Acrylamide	0.00024	f	79-06-1
Acrylic Acid	35.94	f	79-10-7
Acrylonitrile	0.00029	f	107-13-1
Alachlor	0.0894	f	15972-60-8
Alar	0.027	f	1596-84-5
Aldicarb	0.1746	f	116-06-3
Aldicarb sulfone	0.1158	f	1646-88-4
Aldrin	0.011	f	309-00-2
Allyl alcohol	0.375	f	107-18-6
Allyl chloride	0.0126	f	107-05-1
Amdro	18	c	67485-29-4
Ametryn	15.9	f	834-12-8
Aminobiphenyl, 4-	0.023	c	92-67-1
Aminophenol, m-	37.56	f	591-27-5
Aminophenol, p-	9.72	f	123-30-8
Amitraz	150	c	33089-61-1
Amyl alcohol, tert-	88	c	75-85-4
Aniline	0.3036	f	62-53-3
Anthracene	29	e	120-12-7
Anthraquinone, 9,10-	12	c	84-65-1
Apollo	790	c	74115-24-5
Aramite	19	c	140-57-8
Assure	550	c	76578-14-8
Asulam	9.78	f	3337-71-1
Atrazine	0.0186	f	1912-24-9
Auramine	0.55	c	492-80-8
Avermectin B1	24	c	65195-55-3
Azobenzene	0.1134	f	103-33-3
Baygon	1.356	f	114-26-1
Bayleton	40.32	f	43121-43-3
Baythroid	1500	c	68359-37-5
Benomyl	78.6	f	17804-35-2
Bentazon	3.186	f	25057-89-0
Benzaldehyde	11.34	f	100-52-7
Benzene	0.0093	f	71-43-2
Benzenediamine-2-methyl sulfate, 1,4-	0.0486	f	6369-59-1
Benzidine	0.000077	f	92-87-5
Benzo(a)anthracene	0.15	a	56-55-3
Benzo(a)pyrene	0.015	a	50-32-8
Benzo(b)fluoranthene	0.15	a	205-99-2
Benzo(j)fluoranthene	0.38	c	205-82-3
Benzo(k)fluoranthene	1.1	e	207-08-9
Benzotrichloride	0.0006	f	98-07-7
Benzyl alcohol	16.02	f	100-51-6
Benzyl chloride	0.0108	f	100-44-7
Bidrin (Dicrotophos)	0.015	f	141-66-2
Bifenox	550	c	42576-02-3
Biphenthrin	920	c	82657-04-3
Biphenyl, 1,1'-	1.278	f	92-52-4
Bis(2-chloro-1-methylethyl) ether (a.k.a. Bis(2-chloroisopropyl) ether)	0.009	f	108-60-1
Bis(2-chloroethoxy)methane	0.402	f	111-91-1
Bis(2-chloroethyl)ether (dichloroethyl ether)	0.0001	f	111-44-4
Bis(2-ethylhexyl)phthalate	4.5	d	117-81-7
Bis(chloromethyl)ether	0.00000054	f	542-88-1
Bromate	0.91	c	15541-45-4
Bromo-2-chloroethane, 1-	0.00012	f	107-04-0
Bromoaniline, 4-	100	d	106-40-1
Bromobenzene	4.068	f	108-86-1
Bromochloromethane	0.936	f	74-97-5
Bromodichloromethane	0.0025	f	75-27-4
Bromoform (tribromomethane)	0.084	f	75-25-2
Bromomethane	0.098	f	74-83-9
Bromophos	15.84	f	2104-96-3
Bromoxynil	32.04	f	1689-84-5
Bromoxynil octanoate	1200	c	1689-99-2
Butadiene, 1,3-	0.0006	f	106-99-0

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Butanol, N-	7.92	f	71-36-3
Butyl alcohol, sec-	30.12	f	78-92-2
Butyl benzyl phthlate	260	c	85-68-7
Butylate	40.8	f	2008-41-5
Butylated hydroxyanisole	87	f	25013-16-5
Butylated hydroxytoluene	140	c	128-37-0
Cacodylic acid	1200	c	75-60-5
Caprolactam	89.4	f	105-60-2
Captafol	0.0834	f	2425-06-1
Captan	2.16	f	133-06-2
Carbofuran	2.394	f	1563-66-2
Carbon disulfide	11.64	f	75-15-0
Carbon tetrachloride	0.028	f	56-23-5
Carbosulfan	610	c	55285-14-8
Carboxin	82.8	f	5234-68-4
Chloral hydrate	6.78	f	302-17-0
Chloramben	2.448	f	133-90-4
Chloranil	0.0162	f	118-75-2
Chlordane, technical	1.3	f	12789-03-6
Chlorfenvinphos	43	c	470-90-6
Chlorimuron, ethyl-	7.74	f	90982-32-4
Chloro-1,3-butadiene, 2- (Chloroprene)	0.0094	c	126-99-8
Chloro-2-methylaniline HCl, 4-	0.0078	f	3165-93-3
Chloro-2-methylaniline, 4-	0.0402	f	95-69-2
Chloroacetaldehyde, 2-	0.0012	f	107-20-0
Chloroacetamide	2	d	79-07-2
Chloroacetic acid	0.1446	f	79-11-8
Chloroaniline, p- (4-Chloroaniline)	0.012	f	106-47-8
Chlorobenzene	6.5	f	108-90-7
Chlorobenzilate	0.126	f	510-15-6
Chlorobenzoic acid, p-	4.758	f	74-11-3
Chlorobenzotrifluoride, 4-	210	c	98-56-6
Chlorobutane, 1-	15.42	f	109-69-3
Chlorodibromomethane	0.0033	f	124-48-1
Chloroethane	320	f	75-00-3
Chloroethanol, 2-	1200	c	107-07-3
Chloroform	0.0033	f	67-66-3
Chloromethane	2.2	f	74-87-3
Chloromethyl methyl ether	0.000036	f	107-30-2
Chloronitrobenzene, o-	0.0228	f	88-73-3
Chloronitrobenzene, p-	1.062	f	100-00-5
Chlorophenol, 2-	60	d	95-57-8
Chlorophenol, 3-	7	d	108-43-0
Chlorophenol, 4-	50	d	106-48-9
Chloropicrin	0.015	f	76-06-2
Chlorothalonil	6	f	1897-45-6
Chlorotoluene, o-	21.66	f	95-49-8
Chlorotoluene, p-	22.5	f	106-43-4
Chlorozotocin	0.0000018	f	54749-90-5
Chlorpyrifos	61	c	2921-88-2
Chlorpyrifos methyl	610	c	5598-13-0
Chlorsulfuron	77.4	f	64902-72-3
Chlorthiophos	49	c	60238-56-4
Chrysene	14	a	218-01-9
Cresol, m- (3-methylphenol)	67.8	f	108-39-4
Cresol, o- (2-methylphenol)	50	d	95-48-7
Cresol, p- (4-methylphenol)	310	c	106-44-5
Crotonaldehyde, trans-	0.00018	f	123-73-9
Cupferron	0.072	f	135-20-6
Cyanazine	0.0036	f	21725-46-2
Cyanide (hydrogen cyanide)	47	a	74-90-8
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	21	c	87-84-3
Cyclohexene	310	c	110-83-8
Cyclohexylamine	41.64	f	108-91-8
Cyhalothrin/karate	310	c	68085-85-8
Cypermethrin	610	c	52315-07-8
Cyromazine	1.542	f	66215-27-8
Dacthal	14.64	f	1861-32-1
Dalapon	2.448	f	75-99-0
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	430	c	1163-19-5
Demeton	2.4	c	8065-48-3
Di(2-ethylhexyl)adipate	410	c	103-23-1
Diallate	0.0906	f	2303-16-4
Diazinon	43	c	333-41-5
Dibenz(a,h)anthracene	0.015	a	53-70-3

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Dibenzo(a,e)pyrene	0.038	c	192-65-4
Dibenzofuran	0.002	d	132-64-9
Dibenzothiophene	780	c	132-65-0
Dibromo-3-chloropropane, 1,2-	0.000012	f	96-12-8
Dibromobenzene, 1,4-	11.46	f	106-37-6
Dibromoethane, 1,2-	0.00012	f	106-93-4
Dibromoethane, 1,2- (EDB)	0.00081	f	106-93-4
Dibromomethane (methylene bromide)	0.0876	f	74-95-3
Dibutyl phthalate (Di-n-butyl phthalate)	0.45	d	84-74-2
Dicamba	5.694	f	1918-00-9
Dichloro-2-butene, 1,4-	0.000054	f	764-41-0
Dichloro-2-butene, cis-1,4-	0.000054	f	1476-11-5
Dichloro-2-butene, trans-1,4-	0.000054	f	110-57-6
Dichloroacetic acid	0.0066	f	79-43-6
Dichloroaniline, 2,4-	100	d	554-00-7
Dichloroaniline, 3,4-	10	d	95-76-1
Dichlorobenzene, 1,2-	70	f	95-50-1
Dichlorobenzene, 1,4-	0.081	f	106-46-7
Dichlorobenzidine, 3,3-	0.028	f	91-94-1
Dichlorobenzophenone, 4,4'-	550	c	90-98-2
Dichlorodifluoromethane	94	c	75-71-8
Dichlorodiphenyldichloroethane, 4,4- (DDD)	0.021	e	72-54-8
Dichlorodiphenyldichloroethene, 4,4- (DDE)	0.021	e	72-55-9
Dichlorodiphenyltrichloroethane, 4,4- (DDT)	0.021	e	50-29-3
Dichloroethane, 1,1-	0.037	f	75-34-3
Dichloroethane, 1,2- (EDC)	0.0014	f	107-06-2
Dichloroethene, 1,1-	11	f	75-35-4
Dichloroethene, cis-1,2-	1.2	f	156-59-2
Dichloroethene, trans-1,2-	2.5	f	156-60-5
Dichloroethylene, 1,2- (mixed isomers)	2.292	f	540-59-0
Dichloromethane (methylene chloride)	0.038	f	75-09-2
Dichlorophenol, 2,4-	20	d	120-83-2
Dichlorophenol, 3,4-	20	d	95-77-2
Dichlorophenoxyacetic acid, 2,4- (2,4-D)	4.8	f	94-75-7
Dichlorophenoxybutyric acid, 4-(2,4) (2,4-DB)	3.072	f	94-82-6
Dichloropropane, 1,2-	0.009	f	78-87-5
Dichloropropane, 1,3-	7.62	f	142-28-9
Dichloropropanol, 2,3-	0.2778	f	616-23-9
Dichloropropene, 1,3-	0.0114	f	542-75-6
Dichlorvos	0.0048	f	62-73-7
Dicyclopentadiene	31	c	77-73-6
Dieldrin	0.0049	e	60-57-1
Diethanolamine	120	c	111-42-2
Diethyl ether (Ethyl ether)	23.58	f	60-29-7
Diethyl phthalate	100	d	84-66-2
Diethylene glycol monobutyl ether	3.402	f	112-34-5
Diethylene glycol monoethyl ether	4.266	f	111-90-0
Diethylformamide	0.0774	f	617-84-5
Diethylstilbestrol	0.0014	c	56-53-1
Diflubenzuron	31.5	f	35367-38-5
Dihydrosafrole	0.0384	f	94-58-6
Diisopropyl ether (DIPE)	18.06	f	108-20-3
Diisopropyl methylphosphonate	20.28	f	1445-75-6
Dimethipin	2.244	f	55290-64-7
Dimethoate	0.0252	f	60-51-5
Dimethoxybenzidine, 3,3'-	0.3	c	119-90-4
Dimethyl methylphosphonate	0.2286	f	756-79-6
Dimethyl phthalate	200	d	131-11-3
Dimethylamino azobenzene [p-]	0.0024	f	60-11-7
Dimethylaniline HCl, 2,4-	0.0066	f	21436-96-4
Dimethylaniline, 2,4-	0.0192	f	95-68-1
Dimethylaniline, N,N-	0.75	f	121-69-7
Dimethylbenz(a)anthracene, 7,12-	0.00043	c	57-97-6
Dimethylbenzidine, 3,3'-	0.044	c	119-93-7
Dimethylformamide	7.26	f	68-12-2
Dimethylhydrazine, 1,1-	0.0126	f	57-14-7
Dimethylhydrazine, 1,2-	0.0000012	f	540-73-8
Dimethylphenol, 2,4-	20	d	105-67-9
Dimethylphenol, 2,6-	1.254	f	576-26-1
Dimethylphenol, 3,4-	2.124	f	95-65-8
Dimethylterephthalate	19.02	f	120-61-6
Dimethylvinylchloride	0.0156	f	513-37-1
Dinitrobenzene, 1,2-	0.168	f	528-29-0
Dinitrobenzene, 1,3-	0.1644	f	99-65-0
Dinitrobenzene, 1,4-	0.1644	f	100-25-4

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Dinitro-o-cresol, 4,6- (4,6-Dinitro-2-methylphenol)	0.2766	f	534-52-1
Dinitro-o-cyclohexyl phenol, 4,6-	120	c	131-89-5
Dinitrophenol, 2,4-	20	d	51-28-5
Dinitrotoluene mixture, 2,4/2,6-	0.0168	f	25321-14-6
Dinitrotoluene, 2,4-	0.0354	f	121-14-2
Dinitrotoluene, 2,6-	4.2	f	606-20-2
Dinitrotoluene, 2-amino-4,6-	2.676	f	35572-78-2
Dinitrotoluene, 4-amino-2,6-	2.676	f	19406-51-0
Dinitrotoluene, technical grade	1.1	c	25321-14-6
Dinoseb	61	c	88-85-7
Dioxane, 1,4-	0.0026	f	123-91-1
Diphenyl sulfone	49	c	127-63-9
Diphenylamine	60.6	f	122-39-4
Diphenylhydrazine, 1,2-	0.0306	f	122-66-7
Diquat	130	c	85-00-7
Direct Black 38	0.066	c	1937-37-7
Direct Blue 6	0.066	c	2602-46-2
Direct Brown 95	0.073	c	16071-86-6
Disulfoton	0.0972	f	298-04-4
Dithiane, 1,4-	7.2	f	505-29-3
Diuron	1.038	f	330-54-1
Dodine	240	c	2439-10-3
Endosulfan, (alpha-beta)	20	d	115-29-7
Endothall	3.018	f	145-73-3
Endrin	0.04	d	72-20-8
Epichlorohydrin	0.0144	f	106-89-8
Epoxybutane, 1,2-	0.3054	f	106-88-7
EPTC	15.48	f	759-94-4
Ethephon	0.4482	f	16672-87-0
Ethion	0.858	f	563-12-2
Ethoxyethanol acetate, 2-	8.4	f	111-15-9
Ethoxyethanol, 2-	28.14	f	110-80-5
Ethyl acetate	670	c	141-78-6
Ethyl acrylate	0.0108	f	140-88-5
Ethyl methacrylate	3.966	f	97-63-2
Ethylbenzene	0.16	f	100-41-4
Ethylene cyanohydrin	2.13	f	109-78-4
Ethylene diamine	12.18	f	107-15-3
Ethylene glycol monobutyl ether	7.62	f	111-76-2
Ethylene oxide	0.00024	f	75-21-8
Ethylene thiourea	0.0096	f	96-45-7
Ethyleneimine	0.0000012	f	151-56-4
Ethyl-p-nitrophenyl phosphonate (EPN)	0.61	c	2104-64-5
Express	4.242	f	101200-48-0
Fenamiphos	0.4206	f	22224-92-6
Fenpropathrin	1500	c	39515-41-8
Fluometuron	17.04	f	2164-17-2
Fluoranthene	29	e	206-44-0
Fluorene	29	e	86-73-7
Flurprimidol	1200	c	56425-91-3
Fluvalinate	610	c	69409-94-5
Folpet	0.162	f	133-07-3
Fomesafen	2.6	c	72178-02-0
Fonofos	4.698	f	944-22-9
Formaldehyde	33	f	50-00-0
Formic acid	63.6	f	64-18-6
Furan	0.4536	f	110-00-9
Furazolidone	0.0048	f	67-45-8
Furfural	0.279	f	98-01-1
Furium	0.0078	f	531-82-8
Furmecyclox	0.1278	f	60568-05-0
Glufosinate, ammonium	0.0456	f	77182-82-2
Glycidyl	0.0288	f	765-34-4
Glyphosate	6100	c	1071-83-6
Goal	180	c	42874-03-3
Guthion (Azinphos-methyl)	0.852	f	86-50-0
Haloxyfop, methyl	3.1	c	69806-40-2
Harmony	3.894	f	79277-27-3
Heptachlor	0.1	a	76-44-8
Heptachlor epoxide	0.053	a	1024-57-3
Heptane	1	d	142-82-5
Hexabromobenzene	120	c	87-82-1
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	12	c	68631-49-2
Hexachlorobenzene	0.26	a	118-74-1
Hexachlorobutadiene	0.0678	f	87-68-3

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Hexachlorocyclohexane, alpha- (a.k.a. alpha-HCH or alpha-BHC)	0.07	a	319-84-6
Hexachlorocyclohexane, Beta- (beta-BHC)	0.27	c	319-85-7
Hexachlorocyclohexane, gamma- (a.k.a. gamma-BHC or Lindane)	0.38	a	58-89-9
Hexachlorocyclohexane, technical	0.27	c	608-73-1
Hexachlorocyclopentadiene	10	d	77-47-4
Hexachloroethane	0.51	f	67-72-1
Hexachlorophene	18	c	70-30-4
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.0186	f	121-82-4
Hexamethylene disocyanate, 1,6-	0.0306	f	822-06-0
Hexamethylphosphoramide	0.045	f	680-31-9
Hexane, N-	570	c	110-54-3
Hexanone, 2-	0.2982	f	591-78-6
Hexazinone	21.54	f	51235-04-2
Hydrazine	0.21	c	302-01-2
Hydrazine sulfate	0.21	c	10034-93-2
Hydroquinone	0.084	f	123-31-9
Imazalil	790	c	35554-44-0
Indeno(1,2,3-cd)pyrene	0.15	a	193-39-5
Iprodione	11.4	f	36734-19-7
Isobutyl alcohol	23.52	f	78-83-1
Isophorone	1.596	f	78-59-1
Isopropalin	920	c	33820-53-0
Isopropyl methyl phosphonic acid	10.5	f	1832-54-8
Kepone (chlordecone)	0.049	c	143-50-0
Lactofen	120	c	77501-63-4
Linuron	2.76	f	330-55-2
Londax	38.94	f	83055-99-6
Malathion	4.086	f	121-75-5
Maleic anhydride	6.78	f	108-31-6
Maleic hydrazide	40.74	f	123-33-1
Malononitrile	0.0084	f	109-77-3
Mancozeb	87.6	f	8018-01-7
Maneb	14.52	f	12427-38-2
MCPA (2-methyl-4-chlorophenoxyacetic acid)	0.24	f	94-74-6
MCPB (4-(2-methyl-4-chlorophenoxy)butyric acid)	5.4	f	94-81-5
MCPP (2-(2-methyl-4-chlorophenoxy)propionic acid)	0.2256	f	93-65-2
Mephosfolan	0.273	f	950-10-7
Mepiquat chloride	0.0252	f	24307-26-4
Merphos	1.8	c	150-50-5
Merphos oxide	0.0432	f	78-48-8
Metalaxyl	14.52	f	57837-19-1
Methacrylonitrile	0.006	f	126-98-7
Methamidophos	0.0048	f	10265-92-6
Methanol	35.4	f	67-56-1
Methidathion	0.159	f	950-37-8
Methomyl	2.82	f	16752-77-5
Methoxy-5-nitroaniline, 2-	0.0336	f	99-59-2
Methoxychlor	310	c	72-43-5
Methoxyethanol acetate, 2-	0.648	f	110-49-6
Methoxyethanol, 2-	0.354	f	109-86-4
Methyl acetate	83.4	f	79-20-9
Methyl acrylate	2.79	f	96-33-3
Methyl ethyl ketone (2-butanone)	27.48	f	78-93-3
Methyl hydrazine	0.1314	f	60-34-4
Methyl isobutyl ketone (4-methyl-2-pentanone)	8.04	f	108-10-1
Methyl isocyanate	0.0348	f	624-83-9
Methyl mercury	7.8	c	22967-92-6
Methyl methacrylate	9.96	f	80-62-6
Methyl methanesulfonate	4.9	c	66-27-3
Methyl parathion	15	c	298-00-0
Methyl phosphonic acid	6.66	f	993-13-5
Methyl styrene (mixed isomers)	0.0036	f	25013-15-4
Methyl tert-butyl ether (MTBE)	0.092	f	1634-04-4
Methyl-1,4-benzenediamine dihydrochloride, 2-	0.2004	f	615-45-2
Methyl-5-nitroaniline, 2- (5-Nitro-o-toluidine)	0.405	f	99-55-8
Methylaniline Hydrochloride, 2-	0.0192	f	636-21-5
Methylarsonic acid	610	c	124-58-3
Methylbenzene,1-4-diamine monohydrochloride, 2-	12	c	74612-12-7
Methylbenzene-1,4-diamine sulfate, 2-	4.9	c	615-50-9
Methylcholanthrene, 3-	0.0052	c	56-49-5
Methylene-bis(2-chloroaniline), 4,4'-	1.2	c	101-14-4
Methylene-bis(N,N-dimethyl) aniline, 4,4'-	0.4824	f	101-61-1
Methylenebisbenzenamine, 4,4'-	0.3	c	101-77-9
Methylnaphthalene, 1-	0.738	f	90-12-0
Methylnaphthalene, 2-	310	c	91-57-6

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Methyl-N-nitro-N-nitrosoguanidine, N-	0.00018	f	70-25-7
Metribuzin	7.68	f	21087-64-9
Mirex	0.027	c	2385-85-5
Molinate	1.35	f	2212-67-1
Monomethylaniline	0.864	f	100-61-8
N,N'-Diphenyl-1,4-benzenediamine	18	c	74-31-7
Naled	1.308	f	300-76-5
Naphthalene	0.087	f	91-20-3
Naphthylamine, 2-	0.27	c	91-59-8
Nitroaniline, 2-	5.646	f	88-74-4
Nitroaniline, 3-	70	d	99-09-2
Nitroaniline, 4-	0.1218	f	100-01-6
Nitrobenzene	0.0084	f	98-95-3
Nitrofurantoin	43.2	f	67-20-9
Nitrofurazone	0.0054	f	59-87-0
Nitroglycerin	0.0582	f	55-63-0
Nitroguanidine	16.68	f	556-88-7
Nitromethane	0.0042	f	75-52-5
Nitropropane, 2-	0.013	c	79-46-9
Nitropyrene, 4-	0.38	c	57835-92-4
Nitrosodiethanolamine, N-	0.17	c	1116-54-7
Nitrosodiethylamine, N-	0.00077	c	55-18-5
Nitrosodimethylamine, N-	0.0023	c	62-75-9
Nitroso-di-N-butylamine, N-	0.0006	f	924-16-3
Nitroso-di-N-propylamine, N-	0.0012	f	621-64-7
Nitrosodiphenylamine, N-	4.5	f	86-30-6
Nitrosodiphenylamine, n- (diphenylnitrosamine)	20	d	86-30-6
Nitrosomethylethylamine, N-	0.022	c	10595-95-6
Nitrosomorpholine [N-]	0.073	c	59-89-2
Nitroso-N-ethylurea, N-	0.0043	c	759-73-9
Nitroso-N-methylurea, N-	0.00096	c	684-93-5
Nitrosopiperidine [N-]	0.0006	f	100-75-4
Nitrosopyrrolidine, N-	0.0012	f	930-55-2
Nitrotoluene, m-	0.147	f	99-08-1
Nitrotoluene, o-	0.0312	f	88-72-2
Nitrotoluene, p-	0.4188	f	99-99-0
Nonane, n-	12	c	111-84-2
Nustar	43	c	85509-19-9
Octabromodiphenyl Ether	180	c	32536-52-0
Octamethylpyrophosphoramide	0.3186	f	152-16-9
Octyl Phthalate, di-N-	610	c	117-84-0
Oxadiazon	310	c	19666-30-9
Oxamyl	2.82	f	23135-22-0
Paclobutrazol	790	c	76738-62-0
Paraquat Dichloride	270	c	1910-42-5
Parathion	370	c	56-38-2
Pebulate	39.48	f	1114-71-2
Pentabromodiphenyl ether	120	c	32534-81-9
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	6.1	c	60348-60-9
Pentachlorobenzene	40	d	608-93-5
Pentachloroethane	0.0258	f	76-01-7
Pentachloronitrobenzene	1.9	c	82-68-8
Pentachlorophenol	0.14	f	87-86-5
Pentaerythritol tetranitrate (PETN)	3.18	f	78-11-5
Pentane, n-	870	c	109-66-0
Perchlorate and perchlorate salts	55	c	14797-73-0
Perchlorate, ammonium	55	c	7790-98-9
Perchlorate, lithium	55	c	7791-03-9
Perchlorate, potassium	55	c	7778-74-7
Perchlorate, sodium	55	c	7601-89-0
Phenacetin	0.4962	f	62-44-2
Phenol	30	d	108-95-2
Phenothiazine	1.428	f	92-84-2
Phenylenediamine, m-	1.35	f	108-45-2
Phenylenediamine, o-	0.0204	f	95-54-5
Phenylenediamine, p-	43.14	f	106-50-3
Phenylphenol, 2-	250	c	90-43-7
Phorate	0.327	f	298-02-2
Phosgene	0.33	c	75-44-5
Phosmet	2.1	f	732-11-6
Phosphine	23	c	7803-51-2
Phosphorus, white	1.6	c	7723-14-0
Picloram	17.46	f	1918-02-1
Picramic acid (2-amino-4,6-dinitrophenol)	0.108	f	96-91-3
Pirimiphos, methyl	10.62	f	29232-93-7

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Polybrominated biphenyls	0.016	c	59536-65-1
Polychlorinated biphenyls (PCBs)	0.2	a	1336-36-3
Prochloraz	3.2	c	67747-09-5
Profluralin	370	c	26399-36-0
Prometon	8.64	f	1610-18-0
Prometryn	9.06	f	7287-19-6
Propachlor	12.48	f	1918-16-7
Propanil	3.594	f	709-98-8
Propargite	1200	c	2312-35-8
Propargyl alcohol	0.1488	f	107-19-7
Propazine	27.96	f	139-40-2
Propham	18.84	f	122-42-9
Propiconazole	790	c	60207-90-1
Propionaldehyde	0.0774	f	123-38-6
Propylbenzene, iso (cumene)	85.2	f	98-82-8
Propylene glycol dinitrate	57	c	6423-43-4
Propylene glycol monoethyl ether	50.88	f	1569-02-4
Propylene glycol monomethyl ether	49.92	f	107-98-2
Propylene oxide	0.0012	f	75-56-9
Pydrin	1500	c	51630-58-1
Pyrene	1700	a	129-00-0
Pyridine	0.3864	f	110-86-1
Quinalphos	31	c	13593-03-8
Quinoline	0.0096	f	91-22-5
Rotenone	240	c	83-79-4
Safrole	0.0042	f	94-59-7
Savey	51.84	f	78587-05-0
Simazine	0.0252	f	122-34-9
Sodium acifluorfen	790	c	62476-59-9
Sodium azide	310	c	26628-22-8
Sodium diethyldithiocarbamate	1.8	c	148-18-5
Sodium fluoroacetate	0.0012	f	62-74-8
Stirofos (tetrachlorovinphos)	1.002	f	961-11-5
Strychnine	18	c	57-24-9
Styrene	300	d	100-42-5
Sulfolane	0.1116	f	126-33-0
Sulfonylbis(4-chlorobenzene), 1,1'-	49	c	80-07-9
Systhane	1500	c	88671-89-0
TCDD, 2,3,7,8- (dioxin)	4.40E-06	a	1746-01-6
Tebuthiuron	18.66	f	34014-18-1
Temephos	1200	c	3383-96-8
Terbacil	3.852	f	5902-51-2
Terbufos	0.0546	f	13071-79-9
Terbutryn	1.866	f	886-50-0
Tetrabromodiphenyl ether, 2,2',4,4'- (BDE-47)	6.1	c	5436-43-1
Tetrachloroaniline, 2,3,5,6-	20	d	3481-20-7
Tetrachlorobenzene, 1,2,3,4-	10	d	634-66-2
Tetrachlorobenzene, 1,2,4,5-	0.804	f	95-94-3
Tetrachloroethane, 1,1,1,2-	0.0156	f	630-20-6
Tetrachloroethane, 1,1,2,2-	0.0024	f	79-34-5
Tetrachloroethene (PCE)	2.4	b	127-18-4
Tetrachlorophenol, 2,3,4,6-	20	d	58-90-2
Tetrachlorotoluene, p- alpha, alpha, alpha-	0.024	c	5216-25-1
Tetraethyl dithiopyrophosphate	0.4446	f	3689-24-5
Tetraethyl lead	0.0061	c	78-00-2
Tetrahydrofuran	23.94	f	109-99-9
Tetryl (trinitrophenylmethylnitramine)	120	c	479-45-8
Thiobencarb	610	c	28249-77-6
Thiodiglycol	4.986	f	111-48-8
Thiofanox	0.1062	f	39196-18-4
Thiophenol (Benzenethiol)	0.966	f	108-98-5
Thiram	14.28	f	137-26-8
Toluene	200	d	108-88-3
Toluene-2,5-diamine	0.0078	f	95-70-5
Toluidine, p-	0.0132	f	106-49-0
Toxaphene	0.44	a	8001-35-2
Triallate	26.7	f	2303-17-5
Triasulfuron	21.18	f	82097-50-5
Tribromobenzene, 1,2,4-	14.7	f	615-54-3
Tributyl phosphate	3.192	f	126-73-8
Tributyltin compounds	18	c	636-30-6
Tributyltin oxide (TBTO)	18	c	56-35-9
Trichloroacetic acid	0.0048	f	73-03-9
Trichloroaniline HCl, 2,4,6-	0.888	f	33663-50-2
Trichloroaniline, 2,4,5-	0.4008	f	636-30-6

Clean Fill Table for Uplands (all values in mg/kg) (Last updated by Bill Mason, DEQ-Eugene, June 10, 2014)			
Contaminant of Concern	**Clean Fill Screening Level (mg/kg)**	**Note**	**CAS No.**
Trichloroaniline, 2,4,6-	1.8	c	634-93-5
Trichlorobenzene, 1,2,3-	20	d	87-61-6
Trichlorobenzene, 1,2,4-	0.4074	f	120-82-1
Trichloroethane, 1,1,1-	400	f	71-55-6
Trichloroethane, 1,1,2-	0.0046	f	79-00-5
Trichloroethene	0.02	f	79-01-6
Trichlorofluoromethane (Freon 11)	190	b	75-69-4
Trichlorophenol, 2,4,5-	4	d	95-95-4
Trichlorophenol, 2,4,6-	1.9	f	88-06-2
Trichlorophenoxyacetic acid, 2,4,5-	4.362	f	93-76-5
Trichlorophenoxypropionic acid, -2,4,5	4.776	f	93-72-1
Trichloropropane, 1,1,2-	2.562	f	598-77-6
Trichloropropane, 1,2,3-	0.005	c	96-18-4
Trichloropropene, 1,2,3-	0.0282	f	96-19-5
Tridiphane	180	c	58138-08-2
Triethylamine	0.2928	f	121-44-8
Trifluralin	63	c	1582-09-8
Trimethyl phosphate	0.0252	f	512-56-1
Trimethylbenzene, 1,2,3-	1.938	f	526-73-8
Trimethylbenzene, 1,2,4-	16	f	95-63-6
Trimethylbenzene, 1,3,5-	92	f	108-67-8
Tri-n-butyltin	18	c	688-73-3
Trinitrotoluene, 2,4,6-	19	c	118-96-7
Triphenylphosphine oxide	1200	c	791-28-6
Tris(1,3-dichloro-2-propyl)phosphate	1200	c	13674-87-8
Tris(2-chloroethyl)phosphate	0.3984	f	115-96-8
Tris(2-ethylhexyl)phosphate	150	c	78-42-2
Urethane (Ethyl carbamate)	0.12	c	51-79-6
Vernolate	0.78	f	1929-77-7
Vinclozolin	30.36	f	50471-44-8
Vinyl acetate	2.502	f	108-05-4
Vinyl bromide	0.0024	f	593-60-2
Vinyl chloride	0.00051	f	75-01-4
Warfarin	0.5808	f	81-81-2
Xylene, o-	1	d	95-47-6
Xylenes, mixed	25	f	1330-20-7

Notes:

a - DEQ Risk-Based Concentrations table (2012), residential soil, http://www.deq.state.or.us/lq/pubs/docs/RBDMTable.pdf

b - DEQ Risk-Based Concentrations table (2012), residential vapor intrusion, http://www.deq.state.or.us/lq/pubs/docs/RBDMTable.pdf

c - EPA Regional Screening Levels (May 2014), residential soil, http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

d - DEQ ecological Screening Level Values (2001), Table 1, http://www.deq.state.or.us/lq/pubs/docs/cu/GuidanceEcologicalRisk.pdf

e - EPA Eco-SSLs (2005 or 2007), http://www.epa.gov/ecotox/ecossl/

f - Leaching to groundwater pathway using chemical-specific parameters; see Clean Fill Internal Management Directive for derivation. http://www.oregon.gov/deq/docs/CleanFillIMD.pdf