3745-300-08 Generic Numerical Standards.

(A) Definitions. As used in this rule:

(1) "Generic direct-contact soil standard" or "GDCS" means a generic numerical standard based on a single chemical exposure resulting from ingestion of soil, dermal contact with soil and inhalation of volatile and particulate emissions from soil.

(2) "Generic numerical standard" or "GNS" means a concentration of a hazardous substance or petroleum that exists on a property that ensures protection of public health and safety and the environment for the reasonable exposures associated with a residential, commercial or industrial land use, construction or excavation activities, or potable ground water use. For purposes of this chapter, generic numerical standards include generic direct-contact soil standards, generic unrestricted potable use standards, and surface water standards.

(3) "Support document for generic standards" means the "Support Document for the Development of Generic Numerical Standards and Risk Assessment Procedures," Ohio EPA, February 2002.

(B) Generic direct-contact soil standards.

(1) Applicability.

(a) The generic direct-contact soil standards at paragraph (B)(3) of this rule may apply to a property unless any of the circumstances identified in paragraphs (B)(1)(b), (B)(1)(c), and (B)(1)(d) of this rule apply.

(b) A property-specific risk assessment must be conducted in accordance with the procedures established in rule 3745-300-09 of the Administrative Code, to determine applicable standards in place of or in addition to using the generic direct-contact soil standards, if any of the following apply to the property:

(i) The exposure pathways as identified in accordance with paragraph (D)(2) of rule 3745-300-07 of the Administrative Code, for an intended land use, or construction or excavation activity, include pathways that are not listed in the support document for generic standards for that intended land use, or construction or excavation activity;

(ii) The exposure factors for the intended land use, or construction or excavation activity include exposure factor values not listed in the support document for generic standards or receptor populations that are not listed in paragraph (B)(2)(c) of this rule;

(iii) The chemicals of concern located on the property are not included in paragraph (B)(3) of this rule. If only some of the chemicals of concern identified have a generic direct-contact soil standard listed in paragraph (B)(3) of this rule, a volunteer may use the applicable generic direct-contact soil standards for the chemicals of concern having listed standards. To determine applicable standards for the chemicals of concern that do not have generic direct-contact soil standards, the volunteer must conduct a property-specific risk assessment in accordance with rule 3745-300-09 of the Administrative Code. When using a combination of generic direct-contact soil standards and applicable standards determined by a property-specific risk assessment, the volunteer must adjust the values of the applicable standards, in accordance with paragraph (B)(2)(b) of this rule, to meet the human health risk goals described in paragraphs (B)(1)(e) of this rule; or

(iv) It is determined, as a result of a "Phase II Property Assessment" conducted in accordance with rule 3745-300-07 of the Administrative Code, that important ecological resources or sediments are impacted by hazardous substances or petroleum.

(c) If radioactive materials are identified at a property, the property may be subject to the Atomic Energy Act of 1954, 68 Stat. 919, 42 U.S.C.A. 2011, as amended, and regulations adopted thereunder and Chapters 3701. and 3747. of the Revised Code and rules adopted thereunder.

[Comment: Radioactive materials separate or mixed with hazardous substances or petroleum are not encompassed by this chapter or Chapter 3746 of the Revised Code.]

(d) If polychlorinated biphenyls (PCBs) are identified at a property, the property may be subject to cleanup levels or other provisions of the Toxic Substances Control Act, 90 Stat. 2003 (1976), 15 U.S.C.A. 2601, as amended, and regulations adopted thereunder.

[Comment: Federal regulations contained in 40 C.F.R. part 761 (effective Aug. 28, 1998) authorize alternate PCB cleanup levels at a property contingent on implementation of institutional controls, or engineering controls or other remedy subject to operation and maintenance. Compliance with the federal cleanup levels and related provisions may serve to comply in part with applicable provisions of this chapter. For example, use of a compacted soil cap pursuant to 40 C.F.R. part 761 to cover PCBs exceeding

one part per million in soils may comprise part of a minimum two foot point of compliance for commercial or industrial land use, or an engineering control subject to operation and maintenance under this chapter.]

(e) If the generic direct-contact soil standards, listed in paragraph (B)(3) of this rule are applied to one or more identified areas of the property and applicable standards, as determined in accordance with rule 3745-300-09 of the Administrative Code, are applied to one or more other areas of the property, then the volunteer must ensure that the risks for the property do not exceed:

(i) One excess cancer in a population of 100,000 (1×10^{-5}); and

(ii) A hazard index of 1.

(2) Assumptions.

(a) Single chemical.

The generic direct-contact soil standards presented in paragraph (B)(3) of this rule assume a single chemical of concern is present on a property.

(i) The generic direct-contact soil standards set forth in paragraph (B)(3) of this rule are based on the following risk goals. For the purposes of this rule, the term "risk goal" includes both carcinogenic risk and noncarcinogenic hazard.

(*a*) For hazardous substances having carcinogenic effects, the chemical-specific carcinogenic risk must not exceed one excess cancer in a population of 100,000 (i.e., 1×10^{-5}); and

(*b*) For hazardous substances having noncarcinogenic effects, the chemical-specific risk must not exceed a hazard index of 1.

(ii) The concentration of a chemical of concern, as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code, must not exceed the single chemical generic direct-contact soil standard for that chemical.

(b) Cumulative adjustment for multiple chemicals.

When more than one chemical of concern is present on a property and an applicable generic direct-contact soil standard for each of the chemicals of

concern is contained in paragraph (B)(3)(a)(ii), (B)(3)(b), (B)(3)(c) or (B)(3)(d) of this rule, the standard for each chemical of concern must be adjusted to meet the risk goals described in paragraph (B)(2)(a) of this rule. A cumulative adjustment for multiple chemicals must also be made when using a combination of generic direct-contact soil standards and applicable standards, as determined by a property specific risk assessment. The cumulative adjustment must be made in accordance with paragraph (D)(1) of this rule.

[Comment: A cumulative adjustment for multiple chemicals is made independently of, and is not additive for, each environmental media and land use and activity categories. For example, when more than one chemical of concern is present in soils and the land use category is industrial with construction or excavation activity, the cumulative adjustment for multiple chemicals is not combined for the construction or excavation activity and the industrial land use.]

(c) Land use and activity categories.

The generic direct-contact soil standards established in this rule are based upon the intended use of the property after the completion of a voluntary action. Land use and activity categories must be determined as follows:

(i) Residential land use category.

Residential land use is land use with a high frequency of potential exposure of adults and children to dermal contact with soil, inhalation of vapors and particles from soil and ingestion of soil. Residential land use is considered protective for, and may be applied to, all categories of land use, without further restriction. Examples of residential land uses include, but are not limited to residences; day care facilities; schools, colleges and other educational institutions; nursing homes, elder care and other long-term health care facilities; and correctional facilities; and may include green spaces and recreational areas.

(ii) Commercial land use category.

Commercial land use is land use with potential exposure of adult workers during a business day and potential exposures of adults and children who are customers, patrons or visitors to commercial facilities during the business day. Commercial land use has potential exposure of adults to dermal contact with soil, inhalation of vapors and particles from soil and ingestion of soil. Examples of commercial land uses include, but are not limited to warehouses; building supply facilities; retail gasoline stations; automobile service stations; automobile dealerships; retail warehouses; repair and service establishments for appliances and other goods; professional offices; banks and credit unions; office buildings; retail businesses selling food or merchandise; golf courses; hospitals and clinics; religious institutions; hotels; motels; and parking facilities.

(iii) Industrial land use category.

Industrial land use is land use with potential exposure of adult workers during a business day and potential exposures of adults and children who are visitors to industrial facilities during the business day. Industrial land use has potential exposure of adults to dermal contact with soil, inhalation of vapors and particles from soil and ingestion of soil. Examples of industrial land uses include, but are not limited to: lumberyards; power plants; manufacturing facilities such as metal-working shops, plating shops, blast furnaces, coke plants, oil refineries, brick factories, chemical plants and plastics plants; assembly plants; non-public airport areas; limited access highways; railroad switching yards; and marine port facilities.

[Comment: For the majority of applicable standards under this chapter, the generic direct-contact soil standards derived for the commercial land use category and the industrial land use category are equivalent. As an example, the generic direct-contact soil standards listed in Table III of this rule apply to both commercial land use and industrial land use. The distinction between commercial and industrial land use is maintained for application of paragraph (B)(3)(a) of this rule and application of paragraph (C)(1)(b) of rule 3745-300-09 of the Administrative Code.]

(iv) Construction or excavation activities. Construction or excavation activities include invasive activities that result in potential exposure of adult workers to contact with environmental media during the business day for a portion of one year. Exposures during construction

or excavation activities are of greater intensity and shorter duration than those for the commercial and industrial land use categories. Construction or excavation activities have potential exposures of adults to dermal contact with soil, inhalation of vapors and particles from soil, and ingestion of soil. Examples of construction or excavation activities include but are not limited to maintenance or installation of utilities; installation of building footers or foundations; grading; trenching; or laying utility lines or cables; and repair of engineering controls where there is significant exposure to soils.

[Comment: Generic direct contact soil standards for construction or excavation activities are applicable in addition to the generic direct contact soil standards derived for residential, commercial, or industrial land use when construction activities are reasonably anticipated at a property. Direct contact soil standards for construction or excavation activities may apply to exposure pathways both within and below the point of compliance, as determined in accordance with paragraph (G) of rule 3745-300-07 of the Administrative Code.]

[Comment: A volunteer must select a generic land use or activity category consistent with the exposure factors for the generic land use or activity category contained in paragraph (B)(2)(c) of this rule when the exposure assumptions determined for the property are consistent with the exposure factor distributions used to calculate the generic direct-contact soil standards for the selected generic land use or activity category. The exposure factor distributions for the land use and activity categories are contained in the support document for generic standards. For example, if a volunteer has a property for which the intended land use is a park and the exposure assumptions are consistent with all of the exposure factor distributions contained in the support document for generic standards for the residential land use category, the volunteer must apply the residential generic direct contact standards listed in paragraph (B)(3) of this rule.]

[Comment: If a volunteer has an intended use for a property which is included within the residential, commercial or industrial land use category but the exposure assumptions determined for a portion of the property are not consistent with exposure factor distributions used to calculate the generic direct-contact soil standards for the land use category, the volunteer may divide the property into two (or more) portions by legal description, and apply the appropriate generic direct contact standards to each portion separately. For example, if a volunteer has a property that is a university where the exposure assumptions for the area where the dormitories are located are consistent with the residential exposure factor distributions and the exposure assumptions for the area where the teaching facilities are located are consistent with

the commercial exposure factor distributions, the volunteer may divide the property into a residential land use category portion and a commercial land use category portion. The volunteer needs to provide a separate legal description of each portion of the property subject to a separate land use category and apply the appropriate institutional control as directed by paragraph (G) of rule 3745-300-07 of the Administrative Code. Division of the property is only appropriate when separated land uses can be reasonably maintained.]

(d) Points of compliance.

The volunteer must comply with the applicable standards at all points of compliance at the property, for each environmental media and complete exposure pathway, in accordance with paragraph (G) of rule 3745-300-07 of the Administrative Code.

[Comment: Paragraph (G) of rule 3745-300-07 of the Administrative Code describes how applicable standards and the points of compliance are determined for each environmental media and complete exposure pathway for a property. For the unrestricted residential land use category, the point of compliance is a minimum depth of ten feet from the property's surface. For the commercial and the industrial land use categories, the point of compliance is a minimum depth of two feet from the property's surface.]

(3) Generic direct-contact soil standards.

(a) Petroleum standards.

The generic direct-contact soil standards for petroleum at commercial or residential properties are the standards established in rules adopted under division (B) of section 3737.882 of the Revised Code, as provided in division (B)(1) of section 3746.04 of the Revised Code.

[Comment: The standards adopted under division (B) of section 3737.882 of the Revised Code are located in rules adopted by the state fire marshal. Division (B) of section 3737.882 of the Revised Code provides the state fire marshal's authority to establish standards for corrective actions for suspected and confirmed releases of petroleum. The state fire marshal's bureau of underground storage tank regulations (BUSTR) administers the rules adopted under this authority. BUSTR may be contacted for information on how to comply with the corrective action standards applicable to petroleum releases at residential and commercial properties.]

(ii) Petroleum standards for industrial land use and construction and excavation activities.

The generic direct-contact soil standards for total petroleum hydrocarbons for industrial land use and construction and excavation activities must be determined by the following method:

(*a*) If the total petroleum hydrocarbons in the soils on the property come from light petroleum fractions, such as natural gasoline, gasohol and naphtha solvents, the soils on the property must be analyzed for benzene, toluene, ethylbenzene, methyl tert-butyl ether (MTBE) and total xylenes. The concentrations of chemicals of concern in soils on the property must meet the generic direct-contact soil standards listed in Table III of this rule for the chemicals specified in this subparagraph for the industrial land use category or, as appropriate, Table IV of this rule for construction and excavation activities. In addition, the concentrations of total petroleum hydrocarbons in the soils on the property must not exceed the residual soil saturation concentration listed in Table I of this paragraph for the property-specific soil type and petroleum fraction.

(*b*) If the total petroleum hydrocarbons in the soils on the property come from middle petroleum fractions, such as kerosene, diesel fuel and jet fuel, the soils on the property must be analyzed for benzene, toluene, ethylbenzene, total xylenes, naphthalene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]flouranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, acenaphthene, anthracene, flouranthene, fluorene, MTBE and pyrene. The concentrations of chemicals of concern in soils on the property must meet the generic direct-contact soil standards listed in Table III of this rule for the chemicals specified in this subparagraph for the industrial land use category or, as appropriate, Table IV of this rule for construction and excavation activities. In addition, the concentration of total petroleum hydrocarbons in the soils on the property must not exceed the residual saturation concentration listed in Table I of this paragraph for the property-specific soil type and petroleum fraction.

(*c*) If the total petroleum hydrocarbons in the soils on the property come from heavy petroleum fractions, such as hydraulic oil, lube oil, and residual fuel oils, the soils on the property must be analyzed for benzo[a]pyrene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]flouranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, acenaphthene, anthracene, flouranthene, fluorene and pyrene. Where petroleum hydrocarbons come from products of heavy petroleum fractions that have been used in a process such as used motor oil, used cutting oil, or hydraulic oil, additional chemicals of concern that may be typical impurities of the used heavy petroleum fractions product must be identified and included in the analysis as appropriate. The concentrations of chemicals of concern in soils on the property must meet the generic direct-contact soil standards listed in Table III of this rule for the chemicals specified in this subparagraph for the industrial land use category or, as appropriate, Table IV of this rule for construction and excavation activities. In addition, the concentration of total petroleum hydrocarbons in the soils on the property must not exceed the residual saturation concentration listed in Table I of this rule for the property-specific soil type and petroleum fraction.

(*d*) If the total petroleum hydrocarbons in the soils on the property come from an unknown source, the soils on the property must be analyzed for benzene, ethylbenzene, toluene, total xylenes, *n*-hexane, naphthalene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]flouranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, acenaphthene, anthracene, flouranthene, fluorene and pyrene. The concentrations of chemicals of concern in soils on the property must meet the generic direct-contact soil standards for the chemicals specified in this subparagraph listed in Table III of this rule for the industrial land use category, or Table IV of this rule for construction and excavation activities. In addition, the concentrations of total petroleum hydrocarbons in the soils on the property must not exceed the residual saturation concentration listed in Table I of this rule for the property-specific soil type and the lightest petroleum fraction present on the property.

(*e*) Soil saturation concentrations of total petroleum hydrocarbons must be determined for the industrial land use category by determining the vertical hydraulic conductivity of the unsaturated soil and applying the residual saturation concentration contained in Table I of this rule corresponding to the property-specific petroleum fraction. The residual saturation concentrations contained in Table I of this rule are based on residual soil saturation with additional consideration for the toxicity of the uncharacterized portion of total petroleum hydrocarbon.

[Comment: For example, if the source of petroleum contamination is from a light petroleum fraction, such as gasoline, and the soils on the property are determined to have a vertical hydraulic conductivity (K_V) of 10^{-3} cm/s then, in addition to meeting the industrial generic direct-contact soil standards for benzene, ethylbenzene, toluene, total xylenes and *n*-hexane, the total petroleum hydrocarbon concentration must not exceed one thousand mg/kg.]

Table I: Total Petroleum Hydrocarbon Soil Saturation Concentration (values are in mg/kg).

Petroleum Fraction	Residual Saturation Concentrations for: Sand and Gravel; Unknown Soil Type K_V: 10^{-3} - 10^{-4} cm/s	Residual Saturation Concentrations for: Silty/Clayey Sand K_V: 10^{-4} - 10^{-5} cm/s	Residual Saturation Concentrations for: Glacial Till and Silty Clay K_V: < 10^{-5} cm/s
Light (C_4 -C_{12})	1,000	5,000	8,000
Middle (C_7-C_{16})	2,000	10,000	20,000
Heavy (C_{16}-C_{32})	5,000	20,000	40,000

Where: "mg/kg" means milligrams per kilogram,"K_V" means vertical hydraulic conductivity of the unsaturated soil, "cm/s" means centimeters per second, and "C_x" means carbon chain length.

(b) Table II: Generic Direct-Contact Soil Standards for Carcinogenic and Noncarcinogenic Chemicals of Concern - Residential Land Use Category (values are in mg/kg)*.

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDARD FOR A
VOLATILE ORGANIC CHEMICALS				
Acetone	7,300.00	NA	100,000.00	7,300.00
Benzene	9.80	67.00	900.00	9.80
Carbon Disulfide	350.00	NA	720.00	350.00
Carbon Tetrachloride	1.70	7.00	990.00	1.70
Chlorobenzene	150.00	NA	690.00	150.00
Chloroethane	8,800.00	NA	NA	8,800.00
Chloroform	110.00	7.30	3,500.00	7.30
Dibromochloromethane	1,500.00	130.00	1,300.00	130.00
Dichlorodifluoromethane	120.00	NA	850.00	120.00
Dichloroethane, 1,1 -	580.00	NA	2,300.00	580.00
Dichloroethane, 1,2 -	1,700.00	10.00	2,900.00	10.00
Dichloroethene, 1,1 -	680.00	1.60	1,600.00	1.60
Dichloroethene, cis - 1,2	760.00	NA	1,200.00	760.00
Dichloroethene, trans - 1,2 -	1,500.00	NA	2,500.00	1,500.00
Dichloropropane, 1,2 -	6.40	160.00	1,100.00	6.40
Dichloropropene, 1,3 -	13.00	19.00	1,000.00	13.00
Dioxane, 1,4 -	NA	980.00	200,000.00	980.00
Ethly Ether	15,000.00	NA	NA	15,000.00
Ethylbenzene	1,500.00	NA	230.00	230.00
Formaldehyde	15,000.00	1,000,000.00	NA	15,000.00
Formic acid	150,000.00	NA	NA	150,000.00
Hexane, n -	71.00	NA	180.00	71.00
Isobutyl Alcohol	22,000.00	NA	25,000.00	22,000.00
Methanol	38,000.00	NA	NA	38,000.00
Methyl Ethyl Ketone	6,700.00	NA	97,000.00	6,700.00
Methyl Isobutyl Ketone	700.00	NA	16,000.00	700.00
Methyl tert- Butyl Ether	5,300.00	NA	7,200.00	5,300.00
Methylene Chloride	1,900.00	250.00	2,300.00	250.00
Styrene	4,600.00	NA	1,700.00	1,700.00
Tetrachloroethane, 1,1,1,2 -	2,300.00	95.00	2,800.00	95.00
Tetrachloroethane, 1,1,2,2 -	4,500.00	11.00	1,700.00	11.00
Tetrachloroethene	260.00	130.00	370.00	130.00
Toluene	590.00	NA	520.00	520.00
Trichloroethane, 1,1,1 -	990.00	NA	1,400.00	990.00
Trichloroethane, 1,1,2 -	300.00	24.00	2,500.00	24.00
Trichloroethene	450.00	80.00	800.00	80.00
Trichlorofluoromethane	490.00	NA	2,000.00	490.00
Trichloropropane, 1,2,3 -	450.00	1.50	1,000.00	1.50
Vinyl Acetate	410.00	NA	2,700.00	410.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDARD FOR A
Vinyl Chloride	38.00	3.70	1,200.00	3.70
Xylenes, Total	660.00	NA	160.00	160.00
SEMI-VOLATILE ORGANIC COMPOUNDS				
Acenaphthene	4,600.00	NA	NA	4,600.00
Acetophenone	7,600.00	NA	NA	7,600.00
Acrylonitrile	4.30	3.70	7,800.00	3.70
Aniline	5.80	1,900.00	9,300.00	5.80
Anthracene	23,000.00	NA	NA	23,000.00
Benzidine	230.00	0.05	NA	0.05
Benzo(a)anthracene	NA	11.00	NA	11.00
Benzo(a)pyrene	NA	1.10	NA	1.10
Benzo(b)fluoranthene	NA	11.00	NA	11.00
Benzo(k)fluoranthene	NA	110.00	NA	110.00
Bis (2-ethylhexyl) Phthalate	1,500.00	760.00	230.00	230.00
Butyl Benzyl Phthalate	15,000.00	NA	220.00	220.00
Carbazole	NA	530.00	NA	530.00
Chlordane	34.00	28.00	NA	28.00
Chrysene	NA	1,100.00	NA	1,100.00
Dibenz(a,h)anthracene	NA	1.10	NA	1.10
Dichlorobenzene, 1,2 -	150.00	NA	370.00	150.00
Dichlorobenzene, 1,3 -	68.00	NA	240.00	68.00
Dichlorobenzene, 1,4 -	1,600.00	95.00	NA	95.00
Dichlorobenzidine, 3,3 -	NA	24.00	NA	24.00
Dichlorodiphenyldichloroethane (DDD)	NA	41.00	NA	41.00
Dichlorodiphenyldichloroethene (DDE)	NA	29.00	NA	29.00
Dichlorodiphenyltrichloroethane (DDT)	35.00	29.00	NA	29.00
Dichlorophenoxyacetic acid	760.00	NA	NA	760.00
Diethyl Phthalate	61,000.00	NA	640.00	640.00
Dimethylphenol, 2,4 -	1,500.00	NA	NA	1,500.00
Di-n-butyl Phthalate	7,600.00	NA	100.00	100.00
Dinitrobenzene, meta -	7.60	NA	NA	7.60
Dinitrobenzene, ortho -	31.00	NA	NA	31.00
Dinitrotoluene, 2,4 -	150.00	NA	NA	150.00
Dinitrotoluene, 2,6 -	76.00	NA	NA	76.00
Endrin	23.00	NA	NA	23.00
Ethylene Glycol	150,000.00	NA	120,000.00	120,000.00
Fluoranthene	2,300.00	NA	NA	2,300.00
Fluorene	3,100.00	NA	NA	3,100.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDARD FOR A
Heptachlor	39.00	2.60	NA	2.50
Heptachlor Epoxide	1.00	1.20	NA	1.00
Hexachloro-1,3-Butadiene	15.00	140.00	1,000.00	15.00
Hexachlorobenzene	62.00	6.90	NA	6.90
Hexachloroethane	77.00	790.00	NA	77.00
Indeno(1,2,3-c,d)pyrene	NA	11.00	NA	11.00
Isophorone	15,000.00	12,000.00	4,600.00	4,600.00
Isopropylbenzene (Cumene)	1,800.00	NA	860.00	860.00
Lindane	21.00	7.60	NA	7.60
m-cresol	3,900.00	NA	NA	3,900.00
Methoxychlor	390.00	NA	NA	390.00
Methylnaphthalene, 1-	5,400.00	NA	120.00	120.00
Naphthalene	54.00	NA	NA	54.00
Nitrobenzene	23.00	NA	1,700.00	23.00
Nitrosodiphenylamine, n-	NA	2,200.00	NA	2,200.00
o-cresol	390.00	NA	NA	390.00
Octyl Phthalate, di(n)-	1,500.00	NA	10,000.00	1,500.00
p-cresol	390.00	NA	8,500.00	390.00
Pentachlorophenol	1,300.00	51.00	NA	51.00
Phenol	46,000.00	NA	NA	46,000.00
Polychlorinated Biphenyls	1.10	3.80	NA	1.10
Pyrene	1,700.00	NA	NA	1,700.00
Pyridine	77.00	NA	300,000.00	77.00
Silvex (2,4,5-TP)	620.00	NA	NA	620.00
Toxaphene	NA	10.00	NA	10.00
Trichlorophenol, 2,4,5-	7,700.00	NA	NA	7,700.00
Trichlorophenol, 2,4,6-	NA	1,000.00	NA	1,000.00
Trimethylbenzene, 1,2,4-	22.00	NA	250.00	22.00
Trimethylbenzene, 1,3,5-	19.00	NA	200.00	19.00
Trinitrobenzene, 1,3,5-	2,300.00	NA	NA	2,300.00
INORGANIC COMPOUNDS				
Aluminum	75,000.00	NA	NA	75,000.00
Antimony	31.00	NA	NA	31.00
Arsenic, Inorganic	22.00	6.80	NA	6.80
Barium and Compounds	5,400.00	NA	NA	5,400.00
Beryllium and Compounds	150.00	33,000.00	NA	150.00
Cadmium	35.00	44,000.00	NA	35.00
Chromium (III)	120,000.00	NA	NA	120,000.00
Chromium (VI)	230.00	6,600.00	NA	230.00
Cobalt	1,400.00	NA	NA	1,400.00
Cyanide, Free	1,600.00	NA	NA	1,600.00
Fluorides, Soluble	4,700.00	NA	NA	4,700.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDARD FOR A
Mercury	7.80	NA	NA	7.80
Nickel (Soluble Salts)	1,500.00	NA	NA	1,500.00
Selenium and Compounds	390.00	NA	NA	390.00
Silver	390.00	NA	NA	390.00
Thallium	6.20	NA	NA	6.20
Vanadium	700.00	NA	NA	700.00
Zinc and Compounds	23,000.00	NA	NA	23,000.00

(c) Table III: Generic Direct-Contact Soil Standards for Carcinogenic and Noncarcinogenic Chemicals of Concern - Commercial and Industrial Land Use Categories (values are in mg/kg)*.

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL [illegible]	STANDARD FOR SINGLE [illegible]	SOIL SATURATION**	GENERIC DIRECT CONTACT [illegible]
VOLATILE ORGANIC CHEMICALS				
Acetone	250,000.00	NA	100,000.00	100,000.00
Benzene	100.00	320.00	900.00	100.00
Carbon Disulfide	3,500.00	NA	720.00	720.00
Carbon Tetrachloride	16.00	34.00	990.00	16.00
Chlorobenzene	1,600.00	NA	690.00	690.00
Chloroethane	100,000.00	NA	NA	100,000.00
Chloroform	1,200.00	32.00	3,500.00	32.00
Dibromochloromethane	58,000.00	2,500.00	1,300.00	1,300.00
Dichlorodifluoromethane	1,100.00	NA	850.00	850.00
Dichloroethane, 1,1-	5,900.00	NA	2,300.00	2,300.00
Dichloroethane, 1,2-	38,000.00	49.00	2,900.00	49.00
Dichloroethene, 1,1-	26,000.00	7.50	1,600.00	7.50
Dichloroethene, cis-, 1,2-	29,000.00	NA	1,200.00	1,200.00
Dichloroethene, trans-, 1,2-	58,000.00	NA	2,500.00	2,500.00
Dichloropropane, 1,2-	60.00	3,100.00	1,100.00	60.00
Dichloropropene, 1,3-	130.00	95.00	1,000.00	95.00
Dioxane, 1,4-	NA	19,000.00	200,000.00	19,000.00
Ethly Ether	580,000.00	NA	NA	580,000.00
Ethylbenzene	17,000.00	NA	230.00	230.00
Formaldehyde	580,000.00	1,000,000.00	NA	580,000.00
Formic acid	1,000,000.00	NA	NA	1,000,000.00
Hexane, n-	690.00	NA	180.00	180.00
Isobutyl Alcohol	890,000.00	NA	25,000.00	25,000.00
Methanol	1,000,000.00	NA	NA	1,000,000.00
Methyl Ethyl Ketone	72,000.00	NA	97,000.00	71,600.00
Methyl Isobutyl Ketone	7,400.00	NA	16,000.00	7,400.00
Methyl tert- Butyl Ether	52,000.00	NA	7,200.00	7,200.00
Methylene Chloride	27,000.00	1,300.00	2,300.00	1,300.00
Styrene	56,000.00	NA	1,700.00	1,700.00
Tetrachloroethane, 1,1,1,2-	89,000.00	490.00	2,800.00	490.00
Tetrachloroethane, 1,1,2,2-	180,000.00	55.00	1,700.00	55.00
Tetrachloroethene	3,200.00	1,000.00	370.00	370.00
Toluene	5,900.00	NA	520.00	520.00
Trichloroethane, 1,1,1-	9,800.00	NA	1,400.00	1,400.00
Trichloroethane, 1,1,2-	12,000.00	120.00	2,500.00	120.00
Trichloroethene	18,000.00	380.00	800.00	380.00
Trichlorofluoromethane	4,900.00	NA	2,000.00	2,000.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINO	STANDARD FOR SINGLE CHEMICAL	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDAR
Trichloropropane, 1,2,3-	18,000.00	29.00	1,000.00	29.00
Vinyl Acetate	4,000.00	NA	2,700.00	2,700.00
Vinyl Chloride	420.00	25.00	1,200.00	25.00
Xylenes, Total	6,400.00	NA	160.00	160.00
SEMI-VOLATILE ORGANIC COMPOUNDS				
Acenaphthene	180,000.00	NA	NA	180,000.00
Acetophenone	290,000.00	NA	NA	290,000.00
Acrylonitrile	43.00	18.00	7,800.00	18.00
Aniline	56.00	36,000.00	9,300.00	56.00
Anthracene	880,000.00	NA	NA	880,000.00
Benzidine	8,700.00	0.88	NA	0.88
Benzo(a)anthracene	NA	63.00	NA	63.00
Benzo(a)pyrene	NA	6.30	NA	6.30
Benzo(b)fluoranthene	NA	63.00	NA	63.00
Benzo(k)fluoranthene	NA	630.00	NA	630.00
Bis (2-ethylhexyl) Phthalate	59,000.00	15,000.00	230.00	230.00
Butyl Benzyl Phthalate	590,000.00	NA	220.00	220.00
Carbazole	NA	10,000.00	NA	10,000.00
Chlordane	850.00	300.00	NA	300.00
Chrysene	NA	6,700.00	NA	6,700.00
Dibenz(a,h)anthracene	NA	6.70	NA	6.70
Dichlorobenzene, 1,2-	1,400.00	NA	370.00	370.00
Dichlorobenzene, 1,3-	2,600.00	NA	240.00	240.00
Dichlorobenzene, 1,4-	31,000.00	470.00	NA	470.00
Dichlorobenzidine, 3,3	NA	450.00	NA	450.00
Dichlorodiphenyldichloroethane (DDD)	NA	500.00	NA	500.00
Dichlorodiphenyldichloroethene (DDE)	NA	350.00	NA	350.00
Dichlorodiphenyltrichloroethane (DDT)	1,000.00	350.00	NA	350.00
Dichlorophenoxyacetic	29,000.00	NA	NA	29,000.00
Diethyl Phthalate	1,000,000.00	NA	640.00	640.00
Dimethylphenol, 2,4-	59,000.00	NA	NA	59,000.00
Di-n-butyl Phthalate	290,000.00	NA	100.00	100.00
Dinitrobenzene, meta-	290.00	NA	NA	290.00
Dinitrobenzene, ortho-	1,200.00	NA	NA	1,200.00
Dinitrotoluene, 2,4-	5,800.00	NA	NA	5,800.00
Dinitrotoluene, 2,6-	2,900.00	NA	NA	2,900.00
Endrin	870.00	NA	NA	870.00
Ethylene Glycol	1,000,000.00	NA	120,000.00	120,000.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINO	STANDARD FOR SINGLE CHEMICAL	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDAR
Fluoranthene	33,000.00	NA	NA	33,000.00
Fluorene	120,000.00	NA	NA	120,000.00
Heptachlor	1,500.00	44.00	NA	44.00
Heptachlor Epoxide	38.00	22.00	NA	22.00
Hexachloro-1,3-Butadiene	580.00	2,600.00	1,000.00	580.00
Hexachlorobenzene	2,300.00	120.00	NA	120.00
Hexachloroethane	2,900.00	14,000.00	NA	2,900.00
Indeno(1,2,3-c,d)pyrene	NA	67.00	NA	67.00
Isophorone	590,000.00	210,000.00	4,600.00	4,600.00
Isopropylbenzene (Cumene)	21,000.00	NA	860.00	860.00
Lindane	510.00	80.00	NA	80.00
m-cresol	150,000.00	NA	NA	150,000.00
Methoxychlor	15,000.00	NA	NA	15,000.00
Methylnaphthalene, 1-	210,000.00	NA	120.00	120.00
Naphthalene	530.00	NA	NA	530.00
Nitrobenzene	370.00	NA	1,700.00	370.00
Nitrosodiphenylamine, n-	NA	41,000.00	NA	41,000.00
o-cresol	15,000.00	NA	NA	15,000.00
Octyl Phthalate, di(n)-	58,000.00	NA	10,000.00	10,000.00
p-cresol	15,000.00	NA	8,500.00	8,500.00
Pentachlorophenol	15,000.00	240.00	NA	240.00
Phenol	1,000,000.00	NA	NA	1,000,000.00
Polychlorinated Biphenyls	16.00	23.00	NA	16.00
Pyrene	25,000.00	NA	NA	25,000.00
Pyridine	2,900.00	NA	300,000.00	2,900.00
Silvex (2,4,5-TP)	23,000.00	NA	NA	23,000.00
Toxaphene	NA	180.00	NA	180.00
Trichlorophenol, 2,4,5-	290,000.00	NA	NA	290,000.00
Trichlorophenol, 2,4,6-	NA	18,000.00	NA	18,000.00
Trimethylbenzene, 1,2,4-	210.00	NA	250.00	210.00
Trimethylbenzene, 1,3,5-	180.00	NA	200.00	180.00
Trinitrobenzene, 1,3,5-	87,000.00	NA	NA	87,000.00
INORGANIC COMPOUNDS				
Aluminum	1,000,000.00	NA	NA	1,000,000.00
Antimony	1,200.00	NA	NA	1,200.00
Arsenic, Inorganic	590.00	80.00	NA	80.00
Barium and Compounds	200,000.00	NA	NA	200,000.00
Beryllium and Compounds	5,700.00	NA	NA	5,700.00
Cadmium	770.00	190,000.00	NA	770.00
Chromium (III)	1,000,000.00	NA	NA	1,000,000.00
Chromium (VI)	8,900.00	28,000.00	NA	8,900.00
Cobalt	40,000.00	NA	NA	40,000.00
Cyanide, Free	60,000.00	NA	NA	60,000.00
Fluorides, Soluble	180,000.00	NA	NA	180,000.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINO	STANDARD FOR SINGLE CHEMICAL	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDAR
Mercury	300.00	NA	NA	300.00
Nickel (Soluble Salts)	57,000.00	NA	NA	57,000.00
Selenium and Compounds	15,000.00	NA	NA	15,000.00
Silver	15,000.00	NA	NA	15,000.00
Thallium	240.00	NA	NA	240.00
Vanadium	27,000.00	NA	NA	27,000.00
Zinc and Compounds	900,000.00	NA	NA	900,000.00

d) Table IV: Generic direct-contact Soil Standards for Carcinogenic and Noncarcinogenic Chemicals of Concern - Construction and Excavation Activities Category: (values are in mg/kg)*

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL	SOIL SATURATION**	GENERIC DIRECT CONTACT STANDARD FOR A
VOLATILE ORGANIC CHEMICALS				
Acetone	580,000.00	NA	100,000.00	100,000.00
Benzene	310.00	3,700.00	900.00	310.00
Carbon Disulfide	3,700.00	NA	720.00	720.00
Carbon Tetrachloride	63.00	390.00	990.00	63.00
Chlorobenzene	16,000.00	NA	690.00	690.00
Chloroethane	92,000.00	NA	NA	92,000.00
Chloroform	1,200.00	410.00	3,500.00	410.00
Dibromochloromethane	170,000.00	7,100.00	1,300.00	1,300.00
Dichlorodifluoromethane	12,000.00	NA	850.00	850.00
Dichloroethane, 1,1-	62,000.00	NA	2,300.00	2,300.00
Dichloroethane, 1,2-	1,100.00	560.00	2,900.00	560.00
Dichloroethene, 1,1-	7,600.00	87.00	1,600.00	87.00
Dichloroethene, cis-, 1,2-	85,000.00	NA	1,200.00	1,200.00
Dichloroethene, trans-, 1,2-	170,000.00	NA	2,500.00	2,500.00
Dichloropropane, 1,2-	210.00	8,700.00	1,100.00	210.00
Dichloropropene, 1,3-	19.00	1,000.00	1,000.00	19.00
Dioxane, 1,4-	NA	54,000.00	200,000.00	54,000.00
Ethly Ether	1,000,000.00	NA	NA	1,000,000.00
Ethylbenzene	160,000.00	NA	230.00	230.00
Formaldehyde	120,000.00	1,000,000.00	NA	120,000.00
Formic acid	1,000,000.00	NA	NA	1,000,000.00
Hexane, n-	770.00	NA	180.00	180.00
Isobutyl Alcohol	1,000,000.00	NA	25,000.00	25,000.00
Methanol	1,000,000.00	NA	NA	1,000,000.00
Methyl Ethyl Ketone	80,000.00	NA	97,000.00	80,000.00
Methyl Isobutyl Ketone	74,000.00	NA	16,000.00	16,000.00
Methyl tert- Butyl Ether	57,000.00	NA	7,200.00	7,200.00
Methylene Chloride	21,000.00	14,000.00	2,300.00	2,300.00
Styrene	180,000.00	NA	1,700.00	1,700.00
Tetrachloroethane, 1,1,1,2-	26,000.00	5,400.00	2,800.00	2,800.00
Tetrachloroethane, 1,1,2,2-	34,000.00	580.00	1,700.00	580.00
Tetrachloroethene	28,000.00	2,400.00	370.00	370.00
Toluene	24,000.00	NA	520.00	520.00
Trichloroethane, 1,1,1-	100,000.00	NA	1,400.00	1,400.00

Trichloroethane, 1,1,2 -	34,000.00	1,300.00	2,500.00	1,300.00
Trichloroethene	51,000.00	4,500.00	800.00	800.00
Trichlorofluoromethane	50,000.00	NA	2,000.00	2,000.00
Trichloropropane, 1,2,3 -	51,000.00	85.00	1,000.00	85.00
Vinyl Acetate	4,400.00	NA	2,700.00	2,700.00
Vinyl Chloride	16.00	200.00	1,200.00	16.00
Xylenes, Total	7,000.00	NA	160.00	160.00
SEMI-VOLATILE ORGANIC COMPOUNDS				
Acenaphthene	530,000.00	NA	NA	530,000.00
Acetophenone	870,000.00	NA	NA	870,000.00
Acrylonitrile	48.00	200.00	7,800.00	48.00
Aniline	570.00	110,000.00	9,300.00	570.00
Anthracene	1,000,000.00	NA	NA	1,000,000.00
Benzidine	2,600.00	2.60	NA	2.60
Benzo(a)anthracene	NA	810.00	NA	810.00
Benzo(a)pyrene	NA	81.00	NA	81.00
Benzo(b)fluoranthene	NA	810.00	NA	810.00
Benzo(k)fluoranthene	NA	8,100.00	NA	8,100.00
Bis (2-ethylhexyl) Phthalate	18,000.00	44,000.00	230.00	230.00
Butyl Benzyl Phthalate	1,000,000.00	NA	220.00	220.00
Carbazole	NA	31,000.00	NA	31,000.00
Chlordane	400.00	1,300.00	NA	400.00
Chrysene	NA	41,000.00	NA	41,000.00
Dibenz(a,h)anthracene	NA	41.00	NA	41.00
Dichlorobenzene, 1,2 -	75,000.00	NA	370.00	370.00
Dichlorobenzene, 1,3 -	780.00	NA	240.00	240.00
Dichlorobenzene, 1,4 -	18,000.00	5,300.00	NA	5,300.00
Dichlorobenzidine, 3,3 -	NA	1,400.00	NA	1,400.00
Dichlorodiphenyldichloroethane (DDD)	NA	2,100.00	NA	2,100.00
Dichlorodiphenyldichloroethene (DDE)	NA	1,500.00	NA	1,500.00
Dichlorodiphenyltrichloroethane (DDT)	360.00	1,500.00	NA	360.00
Dichlorophenoxyacetic	8,700.00	NA	NA	8,700.00
Diethyl Phthalate	1,000,000.00	NA	640.00	640.00
Dimethylphenol, 2,4 -	180,000.00	NA	NA	180,000.00
Di-n-butyl Phthalate	880,000.00	NA	100.00	100.00
Dinitrobenzene, meta -	870.00	NA	NA	870.00
Dinitrobenzene, ortho -	3,400.00	NA	NA	3,400.00
Dinitrotoluene, 2,4 -	1,700.00	NA	NA	1,700.00
Dinitrotoluene, 2,6 -	8,800.00	NA	NA	8,800.00
Endrin	260.00	NA	NA	260.00
Ethylene Glycol	1,000,000.00	NA	120,000.00	120,000.00
Fluoranthene	170,000.00	NA	NA	170,000.00
Fluorene	340,000.00	NA	NA	340,000.00

Heptachlor	430.00	130.00	NA	130.00
Heptachlor Epoxide	11.00	66.00	NA	11.00
Hexachloro-1,3-Butadiene	170.00	7,700.00	1,000.00	170.00
Hexachlorobenzene	690.00	370.00	NA	370.00
Hexachloroethane	8,600.00	43,000.00	NA	8,600.00
Indeno(1,2,3-c,d)pyrene	NA	410.00	NA	410.00
Isophorone	1,000,000.00	630,000.00	4,600.00	4,600.00
Isopropylbenzene (Cumene)	130,000.00	NA	860.00	860.00
Lindane	2,000.00	350.00	NA	350.00
m-cresol	430,000.00	NA	NA	430,000.00
Methoxychlor	4,300.00	NA	NA	4,300.00
Methylnaphthalene, 1-	60,000.00	NA	120.00	120.00
Naphthalene	1,900.00	NA	NA	1,900.00
Nitrobenzene	2,400.00	NA	1,700.00	1,700.00
Nitrosodiphenylamine, n-	NA	120,000.00	NA	120,000.00
o-cresol	4,300.00	NA	NA	4,300.00
Octyl Phthalate, di(n)-	17,000.00	NA	10,000.00	10,000.00
p-cresol	4,300.00	NA	8,500.00	4,300.00
Pentachlorophenol	8,700.00	1,700.00	NA	1,700.00
Phenol	510,000.00	NA	NA	510,000.00
Polychlorinated Biphenyls	25.00	140.00	NA	25.00
Pyrene	130,000.00	NA	NA	130,000.00
Pyridine	8,600.00	NA	300,000.00	8,600.00
Silvex (2,4,5-TP)	6,900.00	NA	NA	6,900.00
Toxaphene	NA	540.00	NA	540.00
Trichlorophenol, 2,4,5-	860,000.00	NA	NA	860,000.00
Trichlorophenol, 2,4,6-	NA	54,000.00	NA	54,000.00
Trimethylbenzene, 1,2,4-	230.00	NA	250.00	230.00
Trimethylbenzene, 1,3,5-	200.00	NA	200.00	200.00
Trinitrobenzene, 1,3,5-	26,000.00	NA	NA	26,000.00
INORGANIC COMPOUNDS				
Aluminum	140,000.00	NA	NA	140,000.00
Antimony	340.00	NA	NA	340.00
Arsenic, Inorganic	210.00	300.00	NA	210.00
Barium and Compounds	45,000.00	NA	NA	45,000.00
Beryllium and Compounds	600.00	9,900.00	NA	600.00
Cadmium	420.00	14,000.00	NA	420.00
Chromium (III)	850,000.00	NA	NA	850,000.00
Chromium (VI)	12,000.00	2,000.00	NA	2,000.00
Cobalt	660.00	NA	NA	660.00
Cyanide, Free	17,000.00	NA	NA	17,000.00
Fluorides, Soluble	51,000.00	NA	NA	51,000.00
Mercury	84.00	NA	NA	84.00
Nickel (Soluble Salts)	5,000.00	NA	NA	5,000.00
Selenium and Compounds	4,300.00	NA	NA	4,300.00
Silver	4,300.00	NA	NA	4,300.00
Thallium	680.00	NA	NA	680.00
Vanadium	7,700.00	NA	NA	7,700.00

Zinc and Compounds	260,000.00	NA	NA	260,000.00

*The generic direct-contact soil standards for carcinogenic and noncarcinogenic chemicals of concern are derived considering exposures from ingestion of soil, dermal contact with soil, inhalation of volatile organic compounds in outdoor air and inhalation and ingestion of particulate emissions. When more than one chemical of concern is present, the appropriate multiple chemical adjustments need to be made in accordance with this rule. The generic direct-contact soil standards do not include exposures to volatile organic compounds in indoor air (e.g. vapor intrusion into basements), leaching of chemicals of concern from soils to ground water, or other exposure pathways not described in the support document for generic standards.

** The soil saturation concentrations are calculated using the U.S. EPA recommended soil saturation equation specified in paragraph (B)(3)(e) of this rule. U.S. EPA does not recommend using this equation for compounds which are at solid phase at ambient soil temperatures; therefore, no generic soil saturation values were calculated for those chemicals whose melting point is greater than 17° C. Further, soil saturation values were determined only for those chemicals whose physicochemical parameters used to derive the soil saturation concentrations could be verified. The volunteer may use the equation specified in paragraph (B)(3)(e) of this rule, along with property-specific information, to calculate a property-specific soil saturation concentration in lieu of the generic soil saturation concentrations listed in Table II through Table IV of this rule.

(e) Calculating property-specific soil saturation concentrations.

(i) In lieu of using the generic soil saturation concentrations listed in Table II through Table IV of this rule, the volunteer may use the following equation to calculate a property-specific soil saturation concentration:

$$C_{sat} = \frac{S}{\rho_b}(K_d \rho_b + \theta_w + H\text{À-}\_\_\eta_a)$$

Where:

C_{sat} *is the soil saturation concentration* (*mg/kg*)

S is the water solubility (*mg/L water*)

ρ_b *is dry soil bulk density* (*kg/L*)

K_d *is the soil-water partition coefficient* (*L/kg*) (*default is* $K_d = K_{oc} \times f_{oc}$)

K_{oc} *is the soil organic carbon/water partition coefficient* (*L/kg*)

f_{oc} *is the fraction organic carbon of soil* (*g/g*)

θ_w *is the water-filled soil porosity* (L_{water}/L_{soil})

HÀ-__s the dimensionless Henry¢s Law constant

θ_a *is the air-filled soil porosity* (L_{pore}/L_{soil}),

(ii) All chemical-specific values for the above equation must be obtained from one of the following sources:

(*a*) U.S. EPA, "Soil Screening Guidance: Technical Background Document." publication 9355.4-17a, May 1996;

(*b*) Support document for generic standards;

(*c*) "Hazardous Substances Data Bank" (referred to as "HSDB"), toxicology data network, national library of medicine. http://toxnet.nlm.nih.gov/; or

(*d*) If chemical-specific values for the equation specified in this paragraph are not available in the sources listed in this paragraph, contact an Ohio EPA division of emergency and remedial response representative.

(iii) Physical values must be obtained from one of the following sources:

(*a*) Property specific data that meet the criteria contained in paragraph (D)(3)(b)(iv) of rule 3745-300-09 of the Administrative Code; or

(*b*) The physical input default values for soil saturation are as follows:

P_d (dry soil bulk density) = 1.5 kg/l
Θ_w (water-filled soil porosity) = 0.15 (unitless)
F_{oc} (fraction organic carbon of soil) = 0.006 (unitless)
Θ_a (air-filled soil porosity) = 0.28 (unitless)
P_s (soil particle density) = 2.65 kg/l
N/total soil porosity = 0.43 (unitless)

(f) Table V: Generic Direct-Contact Standards for Lead (values are in mg/kg).

	Residential Land Use	Commercial/Industrial Land Use	Construction and Excavation Activities
Lead	400	1800	1600

The lead standards contained in the Table V take into account other factors and assumptions in addition to the carcinogenic or noncarcinogenic risk of lead. Therefore, using the cumulative risk adjustment equations contained in paragraph (D)(1) of this rule is not appropriate and need not be performed.

(C) Generic unrestricted potable use standards for ground water.

(1) Applicability.

(a) The generic unrestricted potable use standards contained in paragraph (C)(3) of this rule apply as determined in accordance with rule 3745-300-10 of the Administrative Code.

(b) A property-specific risk assessment must be conducted in accordance with the procedures established in rule 3745-300-09 of the Administrative Code to determine applicable standards in place of or in addition to using the generic unrestricted potable use standards if any of the following apply to the property:

(i) Ground water on, underlying or emanating from a property is used for activities other than drinking, showering, bathing or cooking, and those exposures are required to be evaluated under rule 3745-300-10 of the Administrative Code;

(ii) The chemicals of concern in ground water on, underlying or emanating from the property are not listed in Table VI or Table VII of this rule.

(c) If radioactive materials are identified in the ground water on, underlying, or emanating from the property, the property may be subject to the Atomic Energy Act of 1954, 68 Stat. 919, 42 U.S.C.A. 2011, as amended, and regulations adopted thereunder and Chapters 3701. and 3747. of the Revised Code and rules adopted thereunder.

(d) If PCBs are identified at a property, the property may be subject to cleanup levels or other provisions of the Toxic Substances Control Act, 90 Stat. 2003 (1976), 15 U.S.C.A. 2601, as amended, and regulations adopted thereunder.

(2) Assumptions.

The generic unrestricted potable use standards contained in Table VI or Table VII of this rule were determined using the assumption that the ground water on, underlying and emanating from the property will be used as a source of water for drinking, cooking, showering and bathing.

(a) The generic unrestricted potable use standards listed in Table VI of this rule are maximum contaminant levels (MCLs) or other regulatory established criteria which take into account factors and assumptions in addition to carcinogenic risk and noncarcinogenic hazards of the chemical. Therefore, the volunteer does not need to include the values for the chemicals of concern in Table VI in the cumulative adjustment for multiple chemicals required by paragraph (C)(2)(c) of this rule.

(b) The risk-derived generic unrestricted potable use standards presented in Table VII of this rule assume a single chemical of concern is present in the ground water on, underlying, or emanating from the property.

(i) The generic unrestricted potable use standards presented in Table VII of this rule are based on the following risk goals:

(*a*) For hazardous substances having carcinogenic effects, the chemical-specific carcinogenic risk must not exceed one excess cancer in a population of 100,000 (i.e. 1×10^{-5}); and

(*b*) For hazardous substances having noncarcinogenic effects, the chemical-specific hazard must not exceed a hazard index of 1.

(ii) The concentration of chemicals of concern, as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code, must not exceed the single chemical generic unrestricted potable use standard.

(c) Multiple chemicals.

When more than one chemical of concern is present at a property and applicable generic unrestricted potable use standards for the chemicals of concern are contained in Table VII of this rule, the values for each chemical of concern contained in Table VII must be adjusted to meet the human health risk goals described in paragraph (C)(2)(b)(i) of this rule. A cumulative adjustment for multiple chemicals must also be made when using a combination of values listed in Table VII and applicable standards determined by a property-specific risk assessment. The cumulative adjustment must be made in accordance with paragraph (D)(2) of this rule.

[Comment: Chemicals of concern contained in Table VI of paragraph (C)(3)(c) of this rule do not need to be included in the cumulative adjustment for multiple chemicals.]

(3) The generic unrestricted potable use standards for ground water.

(a) The generic unrestricted potable use standards for petroleum at commercial or residential properties are the standards established in rules adopted under division (B) of section 3737.882 of the Revised Code, as provided by division (B)(1) of section 3746.04 of the Revised Code.

(b) Table VI: Generic Unrestricted Potable Use Standards Based on MCLs or Other Regulatory Established Criteria (values are in µg/l, or micrograms per liter).

CHEMICAL OF CONCERN	GENERIC UNRESTRICTED POTABLE USE STANDARD
VOLATILE ORGANIC CHEMICALS	
Benzene	5.00
Carbon Tetrachloride	5.00
Chlorobenzene	100.00
Dichlorobenzene, *o*-	600.00
Dichlorobenzene, *p*-	75.00
Dichloroethane, 1,2 -	5.00
Dichloroethene, 1,1-	7.00
Dichloroethene, *cis* - 1,2	70.00
Dichloroethene, *trans* - 1,2 -	100.00
Dichloropropane, 1,2 -	5.00
Ethylbenzene	700.00
Methylene Chloride	5.00
Methyl *tert* - Butyl Ether	40.00
Monochlorobenzene	100.00
Styrene	100.00
Tetrachloroethene	5.00
Trichloroethene	5.00
Toluene	1,000.00
Trichlorobenzene, 1,2,4 -	70.00
Trichloroethane, 1,1,1 -	200.00
Trichloroethane, 1,1,2 -	5.00
Vinyl Chloride	2.00
Xylenes, Total	10,000.00

CHEMICAL OF CONCERN	GENERIC UNRESTRICTED POTABLE USE STANDARD
INORGANIC COMPOUNDS	
Antimony	6.00
Arsenic, Inorganic	50.00
Asbestos	7*
Barium and Compounds	2,000.00
Beryllium and Compounds	4.00
Cadmium	5.00
Chromium (Total)	100.00
Cyanide (free)	200.00
Fluorides, Soluble	4,000.00
Lead	15.00
Mercury	2.00
Nickel (Soluble Salts)	100.00
Nitrate (as N)	10,000.00
Nitrate - Nitrite (as N)	10,000.00
Nitrite (as N)	1,000.00
Selenium and Compounds	50.00
Thallium	2.00
PESTICIDE AND OTHER CHEMICALS (SOCs)	
Alachlor	2.00
Atrazine	3.00
Benzo(a)pyrene	0.20
Carbofuran	40.00
Chlordane	2.00
Dalapon	200.00
Dichlorophenoxyacetic acid 2,4 -	70.00
Di(2-ethylhexyl)adipate	400.00
Di(2-ethylhexyl)phthalate	6.00

CHEMICAL OF CONCERN	GENERIC UNRESTRICTED POTABLE USE STANDARD
Dibromochloropropane (DBCP)	0.20
Dinoseb	7.00
Diquat	20.00
Endothall	100.00
Endrin	2.00
Ethylene Dibromide (EDB)	0.05
Glyphosate	700.00
Heptachlor	0.40
Heptachlor Epoxide	0.20
Hexachlorobenzene	1.00
Hexachlorocyclopentadiene	50.00
Lindane	0.20
Methoxychlor	40.00
Oxamyl (Vydate)	200.00
Pentachlorophenol	1.00
Picloram	500.00
Polychlorinated Biphenyls	0.50
Silvex (2,4,5 TP)	50.00
Simazine	4.00
Toxaphene	3.00
2,3,7,8-TCDD (Dioxin)	0.00003
TRIHALOMETHANES (TMHs)	
Total Trihalomethanes	100.00

*** Units for this Standard are in Million Fibers per Liter, for all fibers longer than 10 Micrometers in length.**

(c) Table VII: Risk-Derived Generic Unrestricted Potable Use Standards (values are in µg/l, or micrograms per liter)*.

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	GENERIC UNRESTRICTED POTABLE USE STANDARD FOR A SINGLE CHEMICAL
VOLATILE ORGANIC CHEMICALS			
Acetone	1,600.00	NA	1,600.00
Carbon Disulfide	1,400.00	NA	1,400.00
Chloroethane	6,100.00	NA	6,100.00
Chloroform	150.00	50.00	50.00
Dibromochloromethane	310.00	19.00	19.00
Dichlorodifluoromethane	1,900.00	NA	1,900.00
Dichloroethane, 1,1 -	1,400.00	NA	1,400.00
Dichloropropene, 1,3 -	370.00	14.00	14.00
Dioxane, 1,4 -	NA	140.00	140.00
Ethyl Ether	3,100.00	NA	3,100.00
Formaldehyde	3,200.00	NA	3,200.00
Formic acid	31,000.00	NA	31,000.00
Hexane, n -	560.00	NA	560.00
Isobutyl Alcohol	4,700.00	NA	4,700.00
Methanol	7,900.00	NA	7,900.00
Methyl Ethyl Ketone	6,800.00	NA	6,800.00
Methyl Isobutyl Ketone	760.00	NA	760.00
Tetrachloroethane , 1,1,1,2 -	460.00	44.00	44.00
Tetrachloroethane, 1,1,2,2 -	930.00	5.90	5.90
Trichlorofluoromethane	3,700.00	NA	3,700.00
SEMIVOLATILE ORGANIC CHEMICALS			
Acenaphthene	680.00	NA	680.00
Acetophenone	1,600.00	NA	1,600.00
Aniline	49.00	280.00	49.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	GENERIC UNRESTRICTED POTABLE USE STANDARD FOR A SINGLE CHEMICAL
Anthracene	2,600.00	NA	2,600.00
Bis (2-ethylhexyl) Phthalate	110.00	19.00	19.00
Butyl Benzyl Phthalate	2,900.00	NA	2,900.00
Carbazole	NA	64.00	64.00
Chrysene	NA	47.00	47.00
Dichlorobenzene, 1,3 -	13.00	NA	13.00
Dichlorodiphenyldichloroethane (DDD)	NA	2.30	2.30
Dichlorodiphenyldichloroethene (DDE)	NA	0.70	0.70
Dichlorodiphenyltrichloroethane (DDT)	4.30	1.40	1.40
Dichlorophenoxyacetic acid, 2,4 -	160.00	NA	160.00
Diethyl Phthalate	13,000.00	NA	13,000.00
Dimethylphenol, 2,4 -	310.00	NA	310.00
Di-n-butyl Phthalate	1,400.00	NA	1,400.00
Dinitrotoluene, 2,4 -	32.00	NA	32.00
Dinitrotoluene, 2,6 -	16.00	NA	16.00
Ethylene Glycol	32,000.00	NA	32,000.00
Fluoranthene	370.00	NA	370.00
Fluorene	500.00	NA	500.00
Hexachloroethane	15.00	100.00	15.00
Isophorone	3,100.00	1,700.00	1,700.00
Isopropylbenzene (Cumene)	1,300.00	NA	1,300.00
m-cresol	780.00	NA	780.00
Methylnaphthalene, 1 -	910.00	NA	910.00
Naphthalene	140.00	NA	140.00
Nitrosodiphenylamine, n -	NA	300.00	300.00

CHEMICAL OF CONCERN	STANDARD FOR SINGLE CHEMICAL NONCARCINOGENS	STANDARD FOR SINGLE CHEMICAL CARCINOG	GENERIC UNRESTRICTED POTABLE USE STANDARD FOR A SINGLE CHEMICAL
o-cresol	78.00	NA	78.00
Octyl Phthalate, di(n) -	41.00	NA	41.00
p-cresol	78.00	NA	78.00
Phenol	9,400.00	NA	9,400.00
Pyrene	280.00	NA	280.00
Pyridine	16.00	NA	16.00
Trichlorophenol, 2,4,5 -	1,400.00	NA	1,400.00
Trichlorophenol, 2,4,6 -	NA	120.00	120.00
Trimethylbenzene, 1,2,4 -	290.00	NA	290.00
Trimethylbenzene, 1,3,5 -	300.00	NA	300.00
Trinitrobenzene, 1,3,5 -	470.00	NA	470.00
Vinyl Acetate	8,400.00	NA	8,400.00
INORGANIC COMPOUNDS			
Aluminum	16,000.00	NA	16,000.00
Cobalt	317.00	NA	317.00
Silver	78.00	NA	78.00
Vanadium	140.00	NA	140.00
Zinc and Compounds	4,700.00	NA	4,700.00

*The risk-based generic unrestricted potable use standards contained in Table VII of this rule for carcinogenic and noncarcinogenic chemicals of concern were derived considering exposures from the ingestion of water, the dermal contact with water, and the inhalation of volatile compounds from water to indoor air during showering. When more than one chemical of concern is present, a cumulative adjustment of multiple chemicals needs to be made in accordance with this rule.

(D) Procedures for cumulative adjustment for multiple chemicals

(1) Concentration of chemicals of concern in soils.

(a) For cancer risk estimates, determine the cancer risk ratio for each chemical of concern by dividing the concentration of each carcinogenic chemical of concern on the property ([$chem_x$]), as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code, by the appropriate value that is listed in the "Standard for Single Chemical Carcinogens" column contained in Table II, Table III, or Table IV of this rule, as appropriate, or the applicable single chemical standard determined for soils in accordance with rule 3745-300-09 of the Administrative Code. The cancer risk ratios for all of the carcinogenic chemicals of concern in soils identified at the property must be added to calculate a cumulative risk ratio

$$\left(\frac{[chem_a]}{GDCSC_a} + \frac{[chem_b]}{GDCSC_b} + \ldots\right) = \begin{array}{c}\textit{cumulative cancer risk ratio for}\\ \textit{direct contact soils on the property}\end{array}$$

using the following equation:

For soils:

Where "GDCSC" means generic direct-contact soil standard that is listed in the "Standard for Single Chemical Carcinogens" column in Table II, Table III, or Table IV of this rule, of this rule, as appropriate, and [$chem_x$] means chemical-specific exposure point concentration for the direct-contact soils.

If the cumulative cancer risk ratio exceeds one, then a generic direct-contact soil standard for multiple chemicals must be derived for each carcinogenic chemical of concern. The multiple chemical generic direct-contact standard for each carcinogenic chemical of concern identified at a property must be calculated so that the sum of the risk ratios of the multiple chemical generic direct-contact standard to the single chemical generic direct-contact standard does not exceed one, as described in the following equation:

$$\left(\frac{MCS_a}{GDCSC_a} + \frac{MCS_b}{GDCSC_b} + \ldots\right) £ 1$$

Where "GDCSC" means generic direct-contact soil standard that is listed in the "Standard for Single Chemical Carcinogens" column in Table II, Table

III, or Table IV of this rule, as appropriate, and "MCS" means generic direct-contact soil standard adjusted for the presence of multiple carcinogenic chemicals of concern. The applicable standard for each carcinogen will be the lowest of the values representing the appropriately adjusted single chemical carcinogen standard or, if appropriate, the soil saturation concentration.

(b) For noncarcinogenic hazard index estimates, determine the non-cancer risk ratio for each chemical of concern by dividing the concentration of each noncarcinogenic chemical of concern on the property ([$chem_x$]), as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code by the appropriate value that is listed in the "Standard for Single Chemical Noncarcinogens" column contained in Table II, Table III, or Table IV of this rule, as appropriate, or the applicable single chemical standard determined in accordance with rule 3745-300-09 of the Administrative Code. The non-cancer risk ratios for all the noncarcinogenic chemicals of concern for soils identified at a property must be added to determine a cumulative non-cancer risk ratio for soils using the following equation:

$$\left(\frac{[chem_a]}{GDCSN_a} + \frac{[chem_b]}{GDCSN_b} + ...\right) = \textit{cumulative noncancer risk ratio for direct contact soils on the Property}$$

Where "GDCSN" means the generic direct-contact soil standard that is listed in the "Standard for Single Chemical Noncarcinogens" column in Table II, Table III, or Table IV of this rule, as appropriate, and [$chem_x$] means chemical-specific exposure point concentration for direct-contact soils. Non-cancer risk ratios for noncarcinogenic chemicals of concern which do not exhibit the same toxic endpoint may be excluded from the calculation of the cumulative non-cancer risk ratio described above if a written justification for such an exclusion is submitted. The consideration of all major toxic endpoints and mechanisms of action must include, at a minimum, those identified with the critical effect upon which the "Reference dose" or "Reference concentration" for each noncarcinogenic chemical of concern is based. The source for each "Reference dose" and "Reference concentration" for each noncarcinogenic chemical for which generic direct contact soil standards have been derived, are cited in the support document for generic standards.

[Comment: It may be necessary to calculate more than one cumulative non-cancer risk ratio for a property resulting from the segregation of noncarcinogenic chemicals of concern on the basis of toxic endpoints or mechanisms of action.]

If any of the one or more cumulative non-cancer risk ratios calculated exceeds one, then a direct-contact soil standard for multiple chemicals must be derived for each noncarcinogenic chemical of concern included in the calculation of that cumulative non-cancer risk ratio. The multiple chemical standard for each noncarcinogenic chemical of concern identified at a property must be calculated so that the sum of the non-cancer risk ratios of the multiple chemical generic standard to the single chemical generic standard does not exceed one, as described in the following equation:

$$\left(\frac{MNCS_a}{GDCSN_a} + \frac{MNCS_b}{GDCSN_b} + \ldots\right) \leq 1.0 \text{ (}a \textit{ hazard index of } 1.0\text{)}$$

Where "GDCSN" means the generic direct-contact soil standard that is listed in the "Standard for Single Chemical Noncarcinogens" column in Table II, Table III, or Table IV of this rule, as appropriate, and "MNCS" means generic direct-contact soil standard adjusted for the presence of multiple noncarcinogenic chemicals of concern. The applicable standard for each noncarcinogenic chemical will be the lowest of the values representing the appropriately adjusted single chemical noncarcinogen standard or, if appropriate, the soil saturation standard.

(c) For situations where a chemical of concern poses both carcinogenic and noncarcinogenic risks and a value for the chemical of concern is listed in both the "Standard for Single Chemical Carcinogens" column and the "Standard for Single Chemical Noncarcinogens" column contained in paragraph (B)(3)(b) of this rule or an applicable single chemical carcinogen and noncarcinogen standard has been determined in accordance with rule 3745-300-09 of the Administrative Code, the chemical of concern must be included in the multiple carcinogenic chemical adjustment calculation under paragraph (D)(1)(a) of this rule and the adjustment calculation for multiple noncarcinogenic chemicals under paragraph (D)(1)(b) of this rule. The applicable standard for the chemical of concern will be the lowest of the values determined by using the equations in this paragraph or, if appropriate, the soil saturation concentration.

(2) Concentration of chemicals of concern in ground water.

(a) For cancer risk estimates, determine the cancer risk ratio for each chemical of concern by dividing the concentration of each carcinogenic chemical of concern in ground water on, underlying or emanating from the property ([$chem_x$]), as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code by the appropriate value listed in the "Standard for Single Chemical Carcinogens" column contained in Table VII of this rule or the applicable single chemical standard determined in accordance with rule 3745-300-09 of the Administrative Code. The cancer risk ratios for all of the carcinogenic chemicals of concern identified in ground water at the property must be added to calculate a cumulative risk ratio by the following equation:

$$\left(\frac{[chem_a]}{GUPCS_a} + \frac{[chem_b]}{GUPCS_b} + ...\right) = \begin{array}{c}\textit{cumulative cancer risk ratio for}\\ \textit{generic unrestricted potable use}\\ \textit{ground water on the property}\end{array}$$

Where "GUPCS" means generic unrestricted potable use standard listed in the "Standard for Single Chemical Carcinogens" column in Table VII of this rule and [$chem_x$] means chemical-specific exposure point concentration for the potable use of ground water.

If the cumulative cancer risk ratio exceeds one, then a multiple chemical generic unrestricted potable use standard must be derived for each carcinogenic chemical. The multiple chemical generic unrestricted potable use standard for each carcinogenic chemical of concern identified at a property must be calculated so that the sum of the risk ratios of the multiple chemical generic standard to the single chemical generic standard does not exceed one, as described in the following equation:

$$\left(\frac{MCS_a}{GUPCS_a} + \frac{MCS_b}{GUPCS_b} + ...\right) £ 1$$

Where "GUPCS" means generic unrestricted potable use standard listed in the "Standard for Single Chemical Carcinogens" column in Table VIII of this rule, and "MCS" means generic unrestricted potable use ground water standard adjusted for the presence of multiple carcinogenic chemicals of concern. The applicable standard for each carcinogen will be the lowest of the values representing the appropriately adjusted single chemical carcinogen concentration.

(b) For noncarcinogenic hazard index estimates, determine the non-cancer risk ratio for each chemical of concern by dividing the concentration of each

noncarcinogenic chemical of concern on the property ([$chem_x$]), as determined in accordance with paragraph (D)(6) of rule 3745-300-07 of the Administrative Code by the appropriate value listed in the "Standard for Single Chemical Noncarcinogens" column contained in Table VII of this rule or the applicable single chemical standard determined in accordance with rule 3745-300-09 of the Administrative Code. The non-cancer risk ratios for all the noncarcinogenic chemicals of concern identified at a property must be added to determine a cumulative non-cancer risk ratio using the following equation:

$$\left(\frac{[chem_a]}{GUPNS_a} + \frac{[chem_b]}{GUPNS_b} + ...\right) = \begin{array}{c}\textit{cumulative noncancer risk ratio for}\\ \textit{generic potable use ground water}\\ \textit{on the Property}\end{array}$$

Where "GUPNS" means the generic unrestricted potable use standard listed in the "Standard for Single Chemical Noncarcinogens" column in Table VII of paragraph (C)(3)(d) of this rule, and [$chem_x$] means chemical-specific exposure point concentration for direct-contact soils. Non-cancer risk ratios for noncarcinogenic chemicals of concern which do not exhibit the same toxic endpoint may be excluded from the calculation of the cumulative non-cancer risk ratio described above if a written justification for such an exclusion is submitted. The consideration of all major toxic endpoints and mechanisms of action must include, at a minimum, those identified with the critical effect upon which the "Reference dose" or "Reference concentration" for each noncarcinogenic chemical of concern is based. The source for each "Reference dose" and "Reference concentration" for each noncarcinogenic chemical for which generic direct contact soil standards have been derived, are cited in the support document for generic standards.

[Comment: It may be necessary to calculate more than one cumulative non-cancer risk ratio for a property resulting from the segregation of noncarcinogenic chemicals of concern on the basis of toxic endpoints or mechanisms of action.]

If any of the one or more cumulative non-cancer risk ratios calculated exceeds one, then a multiple chemical generic unrestricted potable use standard must be derived for each noncarcinogenic chemical of concern in ground water included in the calculation of that cumulative non-cancer risk

ratio. The multiple chemical generic standard for each noncarcinogenic chemical of concern identified at a property in ground water must be calculated so that the sum of the non-cancer risk ratios of the multiple chemical generic standard to the single chemical generic standard does not exceed one, as determined by the following equation:

$$\left(\frac{MNCS_a}{GUPNS_a} + \frac{MNCS_b}{GUPNS_b} + \ldots\right) \leq 1.0 \text{ (}a \text{ hazard index of } 1.0\text{)}$$

Where "GUPNS" means the generic unrestricted potable use standard listed in the "Standard for Single Chemical Noncarcinogens" column in Table VII of this rule, and "MNCS" means generic unrestricted potable use standard for the presence of multiple noncarcinogenic chemicals of concern. The applicable standard for each noncarcinogenic chemical will be the lowest of the values representing the appropriately adjusted standard for a single noncarcinogenic chemical.

(c) For situations where a chemical of concern poses both carcinogenic and noncarcinogenic risk and a value for the chemical of concern is listed in both the "Standard for Single Chemical Carcinogens" column and the "Standard for Single Chemical Noncarcinogens" column contained in Table VII of this rule or an applicable single chemical carcinogen and noncarcinogen standard has been determined in accordance with rule 3745-300-09 of the Administrative Code, the chemical of concern must be evaluated in the adjustment calculation for multiple carcinogenic chemicals under paragraph (D)(2)(a) of this rule and the multiple noncarcinogenic chemical adjustment calculation under paragraph (D)(2)(b)of this rule. The applicable standard for the chemical of concern is the lowest value determined by using the equations in this paragraph.

(E) Generic standards for surface water.

(1) Applicability.

(a) The generic standards for surface water in paragraph (E)(2) of this rule apply to a property as determined in accordance with rule 3745-300-07 of the Administrative Code, unless any of the circumstances identified in paragraphs (E)(1)(b) or (E)(1)(c) of this rule apply.

(b) If radioactive materials are identified at a property, the property may be subject to the Atomic Energy Act of 1954, 68 Stat. 919, 42 U.S.C.A. 2011, as amended, and regulations adopted thereunder and Chapters 3701. and 3747. of the Revised Code and rules adopted thereunder.

(c) If PCBs are identified at a property, the property may be subject to cleanup levels or other provisions of the Toxic Substances Control Act, 90 Stat. 2003 (1976), 15 U.S.C.A. 2601, as amended, and regulations adopted thereunder.

(2) Generic surface water standards.

(a) For all releases or source areas of hazardous substances or petroleum on, underlying or emanating from the property to surface waters of the state, the applicable standards must be determined in accordance with the water quality standards established or developed under the Federal Water Pollution Control Act, 86 Stat. 886, 33 U.S.C.A. 1251, as amended, and Chapter 6111. of the Revised Code, and the regulations adopted thereunder.

[Comment: The applicable standards for releases or source areas of hazardous substances or petroleum include the water quality standards established or developed in accordance with Chapter 3745-1 of the Administrative Code. Examples of such standards include but are not limited to: (a) the general water quality criteria; (b) water use designations and statewide water quality criteria; (c) the criteria provided for the applicable drainage basin; (d) the site-specific modifications to criteria and values; and (e) the methodologies for the development of criteria and values. For the purposes of this chapter, the applicable standards for surface water apply regardless of whether the release or source area of hazardous substances or petroleum is a point source or nonpoint source.]

(b) All regulated point source discharges of pollutants to surface waters of the state and any other regulated discharges that occur from or on the property must comply with all permit and other applicable requirements of the Federal Water Pollution Control Act and Chapter 6111. of the Revised Code, and the regulations adopted thereunder.

[Comment: The permit and other applicable requirements of point source discharges include but are not limited to: (a) the national pollutant discharge elimination system permit issued pursuant to Chapter 3745-33 of the Administrative Code (also referred to as Ohio NPDES permit), and (b) the water quality certification issued pursuant to Chapter 3745-32 of the Administrative Code. A volunteer may obtain a consolidated standards permit for activities conducted in connection with a voluntary action which require permits from the director.]

(c) Storm water associated with industrial activity that is discharged to surface waters of the state or is discharged through a separate municipal storm sewer system must comply with the applicable requirements contained in 40 C.F.R. 122.26.

(F) Reporting limits for certified laboratories. The volunteer must determine that the certified laboratory that performs analyses that form the basis for the issuance of a no further action letter, is capable of detecting the chemicals of concern at the property at or below the applicable generic direct-contact soil standards or unrestricted potable use standards, as applicable to the property. The volunteer must contact the certified laboratory to determine if the standards contained in paragraph (B)(3) and (C)(3) of this rule are within the laboratory's reporting limits. In addition, the volunteer should be aware that even if the standards contained in paragraph (B)(3) and (C)(3) of this rule are within the certified laboratory's reporting limits, the actual levels that must be met at a property may be lower if multiple chemicals of concern exist at the property. Properties with multiple chemicals of concern must perform a cumulative adjustment following the procedure contained in paragraph (D) of this rule. The volunteer must verify that the standards derived through cumulative adjustment of multiple chemicals are not below the certified laboratory's reporting limits.

Generic numerical standards for sediment (reserved).

(H) Generic numerical soil standards for protection of ecological receptors (reserved).

Effective:

Certification:_____

Date:_____

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