

**CHAPTER 250. ADMINISTRATION OF LAND
RECYCLING PROGRAM**

Subch.	Sec.
A. GENERAL PROVISIONS	250.1
B. BACKGROUND STANDARD	250.201
C. STATEWIDE HEALTH STANDARDS	250.301
D. SITE-SPECIFIC STANDARD	250.401
E. SIA STANDARDS	250.501
F. EXPOSURE AND RISK DETERMINATIONS	250.601
G. DEMONSTRATION OF ATTAINMENT	250.701

Authority

The provisions of this Chapter 250 issued under sections 104(a), 301(c) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a), 6026.301(c) and 6026.303(a); section 105(a) of the Solid Waste Management Act (35 P. S. § 6018.105(a)); and section 1917-A of The Administrative Code of 1929 (71 P. S. § 510-17), unless otherwise noted.

Source

The provisions of this Chapter 250 adopted August 15, 1997, effective August 16, 1997, 27 Pa.B. 4181, unless otherwise noted.

Cross References

This chapter cited in 25 Pa. Code § 287.101 (relating to general requirements for permit).

Subchapter A. GENERAL PROVISIONS

Sec.	
250.1.	Definitions.
250.2.	Application of remediation standards.
250.3.	Management of contaminated media.
250.4.	Limits related to PQLs.
250.5.	Public notice by applicant.
250.6.	Public participation.
250.7.	Fees.
250.8.	Publication.
250.9.	Interaction with other environmental statutes.
250.10.	Measurement of regulated substances in media.
250.11.	Periodic review of MSCs.

§ 250.1. Definitions.

In addition to the words and terms defined in the act, the following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

ASTM—The American Society for Testing and Materials.

Act—The Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.101—6026.909).

Agricultural purposes—Commercial agricultural activities, including, but not limited to, irrigation of crops, watering of livestock, and food production, processing or packaging.

Anisotropy—The variability of a physical property based on direction, for example, variation in permeability in relation to direction of groundwater flow.

Community water system—As defined in the Pennsylvania Safe Drinking Water Act (35 P. S. §§ 721.1—721.17), a public water system, which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

EQL—Estimated quantitation limit—The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Enterprise zone—An area specially designated as an enterprise zone under requirements determined by the Department of Community and Economic Development.

Environmental covenant—A servitude, as set forth in a document prepared under 27 Pa.C.S. Chapter 65 (relating to Uniform Environmental Covenants Act), arising under an environmental response project which imposes activity and use limitations.

Environmental protection acts—Includes:

- (i) The Clean Streams Law (35 P. S. §§ 691.1—691.1001).
- (ii) The Municipal Waste Planning, Recycling and Waste Reduction Act (53 P. S. §§ 4001.101—4001.1904).
- (iii) The Hazardous Sites Cleanup Act (35 P. S. §§ 6020.101—6020.1305).
- (iv) The Low-Level Radioactive Waste Disposal Act (35 P. S. §§ 7130.101—7130.906).
- (v) The act of July 13, 1988 (35 P. S. §§ 6019.1—6019.6), known as the Infectious and Chemotherapeutic Waste Disposal Law.
- (vi) The Air Pollution Control Act (35 P. S. §§ 4001—4015).
- (vii) The Surface Mining Conservation and Reclamation Act (52 P. S. §§ 1396.1—1396.31).
- (viii) The Noncoal Surface Mining Conservation and Reclamation Act (35 P. S. §§ 3301—3326).
- (ix) The Dam Safety and Encroachments Act (32 P. S. §§ 693.1—693.27).
- (x) The Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003).
- (xi) Other State or Federal statutes relating to environmental protection or the protection of public health.

Habitats of concern—A habitat defined as one of the following:

- (i) Typical wetlands with identifiable function and value, except for exceptional value wetlands as defined in § 105.17 (relating to wetlands).
- (ii) Breeding areas for species of concern.
- (iii) Migratory stopover areas for species of concern.
- (iv) Wintering areas for species of concern.
- (v) Habitat for State endangered plant and animal species.
- (vi) Federal, State and local parks and wilderness areas, and areas designated as wild, scenic or recreational.

(vii) Areas otherwise designated as critical or of concern by the Game Commission, the Fish and Boat Commission or the Department of Conservation and Natural Resources.

Heterogeneity—Nonhomogeneous structure, composition and physical properties.

MCL—Maximum contaminant level.

MSC—Medium-specific concentration.

NIR—Notice of Intent to Remediate.

NPDES—*National Pollutant Discharge Elimination System*—The National system for the issuance of permits under section 402 of the Federal Clean Water Act (33 U.S.C.A. § 1342) including a state or interstate program which has been approved in whole or in part by the EPA.

PQL—*Practical quantitation limit*—The lowest limit that can be reliably achieved within specified limits of precision and accuracy under routine laboratory conditions for a specified matrix and based on quantitation, precision and accuracy, normal operation of a laboratory and the practical need in a compliance-monitoring program to have a sufficient number of laboratories available to conduct the analyses.

Property—A parcel of land defined by the metes and bounds set forth in the deed for that land.

Regulated discharge—A point or nonpoint source discharge subject to the permit or approval requirements of Chapters 91—96, 97 (reserved) and 102—105 and any diffuse surface or groundwater discharge to surface waters which has the potential to cause an exceedance of the water quality standards in Chapter 93 (relating to water quality standards).

Risk assessment—A process to quantify the risk posed by exposure of a human or ecological receptor to regulated substances. The term includes baseline risk assessment, development of site-specific standards and risk assessment of the remedial alternatives.

SIA—*special industrial area*—Property where there is no financially viable responsible person to perform remediation or property located within an enterprise zone, and where the property was used for industrial activity.

Secondary contaminants—A regulated substance for which a secondary MCL exists, and no lifetime health advisory level exists.

Site—The extent of contamination originating within the property boundaries and all areas in close proximity to the contamination necessary for the implementation of remediation activities to be conducted under the act.

Species of concern—Species designated as of special concern, rare, endangered, threatened or candidate by the Game Commission, the Fish and Boat Commission or the Department of Conservation and Natural Resources, if the species has not also been designated threatened or endangered by the Federal government.

TF—Transfer factor.

Volatile compound—A chemical compound with a boiling point less than 200° centigrade at 1 atmosphere.

Authority

The provisions of this § 250.1 amended under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.1 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395; amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285753) to (285755).

§ 250.2. Application of remediation standards.

(a) This chapter provides remediation standards which shall be used whenever site remediation is voluntarily conducted or is required under environmental statutes in section 106 of the act (35 P. S. § 6026.106).

(b) A person who is required to perform a remediation under an enforcement action of the Department shall meet the following:

(1) Select one or a combination of the background standards contained in Subchapter B (relating to background standard), Statewide health standards contained in Subchapter C (relating to Statewide health standards) and site-specific standards, contained in Subchapter D (relating to site-specific standards).

(2) Demonstrate compliance with the substantive, procedural and notice requirements of the act and this chapter.

(c) To qualify for liability protection under the act, a person conducting remediation shall comply with this chapter and the act. Administrative and procedural requirements for remediations in paragraphs (1) and (2) shall be used in lieu of those requirements listed in this chapter to qualify for liability protection under the act.

(1) Persons remediating sites placed on the Pennsylvania Priority List shall comply with the Hazardous Sites Cleanup Act (35 P. S. §§ 6020.101—6020.1305), except for the cleanup levels which are set by the act.

(2) Persons remediating releases from storage tanks regulated under the Storage Tank and Spill Prevention Act (35 P. S. §§ 6021.101—6021.2104) shall comply with the requirements of the corrective action process under the Storage Tank and Spill Prevention Act, except for the cleanup levels which are set by the act.

Cross References

This section cited in 25 Pa. Code § 250.201 (relating to scope).

§ 250.3. Management of contaminated media.

(a) Contaminated media removed for reuse, treatment or disposal shall be managed in accordance with the Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003), The Clean Streams Law (35 P. S. §§ 691.1—691.1001), the act of July 13, 1988 (P. L. 525, No. 93) (35 P. S. §§ 6019.1—6019.6), known as the Infectious and Chemotherapeutic Waste Law, the Air Pollution Control Act (35 P. S. §§ 4001—4015) and the regulations thereunder.

(b) The Department may waive procedural and operating requirements for onsite remediation activities based on a written demonstration of any of the criteria in section 902(b) of the act (35 P. S. § 6026.902).

§ 250.4. Limits related to PQLs.

(a) The PQLs shall be selected from the PQLs specified by the EPA as EQLs in the most current version of the EPA RCRA Manual SW-846 (U. S. EPA, 1990. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Third Edition. Office of Solid Waste and Emergency Response) for soil listed as “low level soil” and for groundwater listed as “groundwater” in accordance with the following:

(1) For inorganic compounds, the PQLs under this chapter shall be the values listed for methods associated with analysis by Inductively Coupled Plasma (ICP) with the following exceptions:

(i) For lead, cadmium, arsenic and selenium, values listed for the atomic absorption graphite furnace methods for water shall be used.

(ii) Mercury shall be the value listed for the cold vapor method.

(2) For organic compounds, the PQLs shall be the EQLs listed for the GC/Mass spec methods—for example, Method 8240 for volatile organic compounds.

(b) If the PQL selected under subsection (a) is higher than the MCL or HAL for an organic regulated substance in groundwater, the PQLs shall be derived from the analytical methodologies published under the drinking water program in the most current version of *Methods for the Determination of Organic Compounds in Drinking Water* (U. S. EPA, 1988, Environmental Monitoring Systems Laboratory, EPA/600/4-88/039). If a PQL determined under this subsection is not below a HAL, the methodologies in subsection (c)(1) or (2) shall be used unless those quantitation limits are higher than the PQL determined under this subsection.

(c) For regulated substances when EQLs set by the EPA have a health risk that is greater (less protective) than the risk levels set in sections 303(c) and 304(b) and (c) of the act (35 P. S. §§ 6026.303(c) and 6026.304(b) and (c)) or for substances when no EQL has been established by the EPA, the limits related to the PQL shall be the quantitation limits established by the methodologies in paragraph (1) or (2).

(1) A level set by multiplying 3.18 by the published method detection limit (MDL) of the most recently approved EPA methodology.

(2) A level representing the lowest calibration point that can consistently be determined to have a percent relative standard deviation (%RSD) of less than 30% or correlation coefficient of greater than 0.995 using reagent water.

(d) For regulated substances which have no limits related to PQLs identified in subsection (c)(1) or (2), a person shall demonstrate attainment under the site-specific standard or the background standard.

(e) When a minimum threshold MSC is used as a Statewide health standard, the minimum threshold MSC is the Statewide health standard regardless of whether it is higher or lower than a quantitation limit established by this section.

(f) Nothing in this section restricts the selection of valid and generally accepted methods to be used to analyze samples of environmental media.

Cross References

This section cited in 25 Pa. Code § 250.701 (relating to scope).

§ 250.5. Public notice by applicant.

(a) Public notice under the background, Statewide health or site-specific standard and under a special industrial area cleanup shall be initiated by the applicant through an NIR. For remediations proposing the use of a site-specific standard or, for remediations under an SIA agreement, the public and the municipality where the site is located shall be provided a 30-day period, in the NIR, in which the municipality may request to be involved in the development of the remediation and reuse plans for the site.

(b) The remedial investigation report, the risk assessment report and the cleanup plan, prepared under a site-specific remediation, may not be submitted to the Department until after the initial 30-day public and municipal comment period following the submission of the NIR has expired.

(c) The baseline environmental report, prepared under an SIA remediation, shall be submitted after the initial 30-day public and municipal comment period has expired.

(d) For areas not covered entirely by a nonuse aquifer areawide certification granted under § 250.303(f) (relating to aquifer determination; current use and currently planned use of aquifer groundwater), at the same time a request for a nonuse aquifer designation under the Statewide health standard is made to the Department, the remediator shall send notice to every municipality and community water supplier servicing the area requested for designation as nonuse under § 250.303(b). The notice shall include a copy of the request for determination of nonuse aquifer submitted to the Department.

(e) Upon receipt of notice of a request for a nonuse aquifer designation, the municipality and community water supplier shall have 45 days to indicate to the Department and the remediator any information relevant to the requirements of § 250.303.

Source

The provisions of this § 250.5 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395. Immediately preceding text appears at serial pages (233641) to (233642).

§ 250.6. Public participation.

(a) The publication date of the summary of the NIR in a newspaper of general circulation in the area of the site shall initiate the 30-day public and municipal comment period during which the municipality can request to be involved in the development of the remediation and reuse plans for a site being remediated

to a site-specific standard or for remediation at an SIA.

(b) The person proposing remediation shall be responsible for developing and implementing a public involvement plan if both of the following circumstances exist:

(1) The remediation involves a site-specific standard or an SIA cleanup.

(2) A municipality, through its official representatives, has requested, in writing, to be involved in the development of the remediation and reuse plans within the 30-day public and municipal comment period identified in the notice to the municipality and the newspaper notice.

(c) If a public involvement plan has been initiated, the person proposing remediation shall, at a minimum, provide:

(1) Public access at convenient locations for document review.

(2) Designation of a single contact person to address questions from the community.

(3) A location near the remediation site for any public hearings and meetings that may be part of the public involvement plan.

(d) If a public involvement plan has been requested, it shall be submitted with one of the following:

(1) A remedial investigation report under a site-specific remediation.

(2) A baseline environmental report under an SIA cleanup.

Source

The provisions of this § 250.6 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395. Immediately preceding text appears at serial page (233642).

§ 250.7. Fees.

(a) Resubmission of a cleanup plan, remedial investigation, risk assessment or final report will require payment of the appropriate fee identified in the act for each resubmission.

(b) The Department will disapprove a plan or report that is submitted without the appropriate fee.

§ 250.8. Publication.

The Department will publish a notice of its final actions on plans and reports in the *Pennsylvania Bulletin*.

§ 250.9. Interaction with other environmental statutes.

(a) A release of a regulated substance at a solid waste facility which did not receive waste after September 7, 1980, shall be remediated in accordance with this chapter and the act.

(b) Nothing in this chapter affects the permitting, operation, design, performance or closure requirements under the environmental protection acts or regulations thereunder. The remediation standards as defined in Chapters 271 and 287 (relating to municipal waste management—general provisions; and residual waste management—general provisions), do not substitute for design and performance standards required under the solid waste management regulations. See Articles VIII and IX (relating to municipal waste; and residual waste management). In the case of hazardous waste facilities, remediations shall comply with requirements applicable under the Resource Conservation and Recovery Act (42 U.S.C.A. §§ 6901—6986).

(c) An unpermitted release or spill of a regulated substance at a permitted solid waste facility that is outside a disposal or processing unit, including surface impoundments, waste storage areas, associated piping and underlying containment systems, shall be remediated in accordance with this chapter and the act.

Authority

The provisions of this § 250.9 amended under sections 5(b) and 402 of The Clean Streams Law (35 P. S. §§ 691.5(b) and 691.402); section 302 of the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P. S. § 4000.302); section 408(e) of the Pennsylvania Used Oil Recycling Act (58 P. S. § 408(e)); sections 1905-A, 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-5, 510-17 and 510-20); sections 104(a), 301(c) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a), 6026.301(c) and 6026.303(a)); section 105(4) of the Waste Tire Recycling Act (35 P. S. § 6029.105(4)); sections 301 and 302 of the Radiation Protection Act (35 P. S. §§ 7110.301 and 7110.302); and the Vehicle Code, 75 Pa.C.S. § 4909(e).

Source

The provisions of this § 250.9 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (233643).

§ 250.10. Measurement of regulated substances in media.

(a) For measuring regulated substances in soil and sediments, analyses shall be performed on a dry weight basis.

(b) For metals in soil, analyses shall be performed on total metals, except for hexavalent and trivalent chromium, which analyses shall be performed individually.

(c) For groundwater, samples for metals analysis shall be field filtered and field acidified in accordance with the most current version of the *Groundwater Monitoring Guidance Manual*, Department of Environmental Protection, 3610-BK-DEP1973.

(d) For groundwater where monitoring is being performed at a drinking water well, samples for metals analysis shall be field acidified and unfiltered in accordance with the most current version of *Groundwater Monitoring Guidance Manual*, Department of Environmental Protection, 3610-BK-DEP1973.

(e) For surface water, samples for metals analysis shall be field acidified in accordance with approved EPA analytical methods in § 16.102 (relating to approved EPA analytical methods and detection limits).

(f) For air, samples and analyses shall be performed in accordance with Chapters 131 and 139 (relating to ambient air quality standards; and sampling and testing).

§ 250.11. Periodic review of MSCs.

The Department will review new scientific information that relates to the basis of the MSCs as it becomes available and will propose appropriate changes for the consideration of the EQB as necessary, but in no case more than 36 months after the effective date of the most recently promulgated MSCs.

Source

The provisions of this § 250.11 adopted January 7, 2011, effective January 8, 2011, 41 Pa.B. 230.

Subchapter B. BACKGROUND STANDARD

Sec.

250.201. Scope.

250.202. Establishing background concentrations.

250.203. Points of compliance.

250.204. Final report.

Cross References

This subchapter cited in 25 Pa. Code § 250.2 (relating to application of remediation standards); 25 Pa. Code § 250.9 (relating to interaction with other environmental statutes); 25 Pa. Code § 250.703 (relating to general attainment requirements for soil); and 25 Pa. Code § 250.704 (relating to general attainment requirements for groundwater).

§ 250.201. Scope.

This subchapter sets forth requirements and procedures for a person selecting the background standard, as provided in § 250.2 (relating to application of remediation standards).

§ 250.202. Establishing background concentrations.

(a) Background concentrations shall be established based on a site characterization, as set forth in § 250.204(a)—(e) (relating to final report).

(b) The background concentrations shall be established using analysis of samples of regulated substances present at the property but not related to any release at the property. If all areas on the property are affected by a release, background shall be determined at points off the property in accordance with § 250.204(f)(7) and (8).

(c) Background concentrations shall be established by a methodology that is statistically valid and consistent with the methodology used to demonstrate attainment under Subchapter G (relating to demonstration of attainment).

Cross References

This section cited in 25 Pa. Code § 271.1 (relating to definitions); and 25 Pa. Code § 287.1 (relating to definitions).

§ 250.203. Points of compliance.

(a) For attainment of the background standard for groundwater, the point of compliance shall be throughout the contaminant plume, including areas of the plume that are outside the property boundary, as determined by the site characterization.

(b) For attainment of a background soil standard, the point of compliance shall be throughout the area of the soil that has become contaminated as a result of releases on the property.

(c) For attainment of a surface water quality standard, compliance shall be measured for point source discharges at the point of discharge in accordance with limits specified in the NPDES permit.

(d) For the emission of regulated substances to outdoor air, the point of compliance for any applicable air quality standard shall be as specified in the air quality regulations in Subpart C, Article III (relating to air resources).

Cross References

This section cited in 25 Pa. Code § 250.701 (relating to scope).

§ 250.204. Final report.

(a) For sites remediated under the background standard, the person conducting the remediation shall submit a final report to the Department which documents attainment of the selected standard. The final report shall include site characterization information in subsections (b)—(e). The site characterization shall be conducted in accordance with scientifically recognized principles, standards and procedures. The level of detail in the investigation, and the selected methods and analyses, that may include models, shall sufficiently define the rate of movement and the present and future extent and fate of contaminants to ensure continued attainment of the remediation standard. Interpretations of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in this Commonwealth.

(b) As derived from specific knowledge of the subject property, historic use of the subject property or regulated substance usage information regarding the subject property, an appropriate number of sample locations should be investigated from the identified media of concern to characterize the nature and composition of the contaminants including the following:

- (1) Source characterization or development of a conceptual site model.
- (2) The vertical and horizontal extent of contamination within each media of concern.
- (3) The direction and rate of contaminant movement and fate and transport of all contaminants within each media of concern.
- (4) A determination of the appropriate remedial technology for each media of concern.

(c) Descriptions of sampling and decontamination methodologies and analytical quality assurance/quality control procedures should be included within a Sampling and Analysis Plan and Quality Assurance Plan. Copies of soil and geologic boring descriptions and as-built construction drawings of wells used for site characterization should be included in the report. Copies of laboratory analytical results and applicable laboratory quality control results should be included within the report, including historical data and data eliminated from consideration based on data validation protocols. Analytical results should be presented within the report in table form.

(d) If soil is determined to be a media of concern, the site characterization shall determine the relative location of soil samples necessary to characterize the horizontal and vertical extent of contamination based on factors such as hydraulic conductivity of the soils, heterogeneity of the soils and the nature of the contaminants. The horizontal and vertical extent of soil with concentrations of regulated substances above the selected standard shall be defined by an appropriate number of samples inside and outside of the area that exceeds the standard. Soil samples from the area with the anticipated highest levels of contamination shall be obtained, as appropriate, to determine the applicability of the proposed remedial action or handling and disposal requirements, or both, for that soil during remediation.

(e) If groundwater is determined to be a media of concern, the site characterization shall characterize the effects of a release on groundwater to adequately determine how naturally occurring physical and geochemical characteristics define the movement of groundwater and contaminants beneath the surface, including the delineation of the position of aquifers, as well as geologic units which inhibit groundwater flow. The site characterization shall meet the following conditions:

(1) If appropriate, the characterization shall consider the heterogeneity and anisotropy of aquifer materials based on hydraulic conductivity values (measured or published), and the effect of local and regional groundwater flow directions and any influence from pumping wells.

(2) Defining the horizontal extent of concentrations of regulated substances above the standard shall require more than one round of groundwater sampling from properly constructed and developed monitoring wells taken a sufficient number of days apart to yield independently valid results.

(3) When characterizing the vertical extent of groundwater contamination, the person shall perform more than one round of groundwater sampling and shall consider the specific gravity of the regulated substances identified in the groundwater in the site, and the potential for naturally occurring or induced downward vertical hydraulic gradients.

(4) When characterizing the vertical extent of groundwater contamination, properly constructed monitoring wells or nested monitoring wells should be utilized to focus groundwater sampling in zones of potential contaminant accu-

mulation such as zones directly above a confining layer. Samples shall be taken a sufficient number of days apart to yield independently valid results.

(f) Final reports for the background standard shall include the following additional information:

(1) Descriptions of treatment, removal or decontamination procedures performed in remediation. The description shall include the methodology and analytical results used to direct the remediation and determine the cessation of remediation.

(2) Descriptions of the sampling methodology and analytical results, including the appropriate statistical methodologies, which pertain to whether the remediation has attained the selected standard, following the requirements of Subchapter G (relating to demonstration of attainment).

(3) Documentation of compliance with postremediation care requirements, if they are needed to maintain the selected standard.

(4) All sampling data.

(5) For fate and transport analyses, submission of the following information:

(i) The name and version of the analysis, a description of the analysis, and the name of the organization or person which developed the analysis, if modeling is used.

(ii) The site characterization data used in the analysis.

(iii) Any assumptions used in the analysis and justification for the assumptions.

(iv) Appropriate documentation of the quality assurance and quality control of the analysis.

(v) Documentation of the results of the analysis in appropriate figures and tables.

(6) A summary of sampling methodology and analytical results that relate to the determination of the background concentration. The summary shall contain the following:

(i) For soil, the final report shall identify the background reference region within which all background samples were collected.

(ii) For groundwater, the final report shall identify background reference wells.

(7) Documentation that background reference areas for soil meet the following criteria:

(i) The background reference region and background reference areas shall be free of contamination from any release at the site.

(ii) Sampling at the background reference area and the contaminated area shall be comparable and random.

(iii) A background reference area selected for comparison with a given contaminated area may not differ significantly from that contaminated area

in physical, chemical or biological characteristics that might cause measurements in the background reference area and the contaminated area to differ.

(8) Documentation that background reference groundwater concentrations have been determined at hydrogeologically upgradient points that characterize the groundwater flow onto the site that are not affected by any release at the property.

(g) If engineering controls are needed to attain or maintain a standard, if institutional controls are needed to maintain a standard, if the fate and transport analysis indicates that the remediation standard may be exceeded at the point of compliance in the future, or, if the remediation relies on natural attenuation, a postremediation care plan shall be documented in the final report. The plan shall include the following:

- (1) Reporting of any instance of nonattainment.
- (2) Reporting of measures to correct nonattainment conditions.
- (3) Monitoring on a quarterly basis, or as otherwise approved by the Department, that demonstrates the effectiveness of the remedy and periodic reporting of monitoring results and analysis.
- (4) Maintenance of records at the property where the remediation is being conducted for monitoring, sampling and analysis.
- (5) A schedule for operation and maintenance of the controls and submission of proposed changes.
- (6) If requested by the Department, documentation of financial ability to implement the remedy and the postremediation care plan.

Cross References

This section cited in 25 Pa. Code § 245.312 (relating to remedial action); 25 Pa. Code § 245.313 (relating to remedial action completion report); 25 Pa. Code § 250.202 (relating to establishing background concentrations); 25 Pa. Code § 250.312 (relating to final report); 25 Pa. Code § 250.411 (relating to final report); and 25 Pa. Code § 253.1 (relating to definitions).

Subchapter C. STATEWIDE HEALTH STANDARDS

Sec.

- 250.301. Scope.
- 250.302. Point of compliance.
- 250.303. Aquifer determination; current use and currently planned use of aquifer groundwater.
- 250.304. MSCs for groundwater.
- 250.305. MSCs for soil.
- 250.306. Ingestion numeric values.
- 250.307. Inhalation numeric values.
- 250.308. Soil to groundwater pathway numeric values.
- 250.309. MSCs for surface water.
- 250.310. Minimum threshold MSCs.
- 250.311. Evaluation of ecological receptors.

250.312. Final report.

Cross References

This subchapter cited in 25 Pa. Code § 250.2 (relating to application of remediation standards); 25 Pa. Code § 250.9 (relating to interaction with other environmental statutes); 25 Pa. Code § 250.602 (relating to risk assessment procedures); 25 Pa. Code § 250.603 (relating to exposure factors for site-specific standards); 25 Pa. Code § 250.605 (relating to sources of toxicity information); 25 Pa. Code § 250.703 (relating to general attainment requirements for soil); and 25 Pa. Code § 250.704 (relating to general attainment requirements for groundwater).

§ 250.301. Scope.

(a) This subchapter sets forth generic Statewide health standards as one of three remediation standards that a person may select. The Statewide health standards are concentrations of regulated substances associated with a specific environmental medium, and are designated as the MSCs. The values used to determine the MSCs are contained in Appendix A, Tables 1—4 and 6 and are the concentrations of regulated substances that shall be met to demonstrate attainment of a Statewide health standard. Appendix A, Table 5 presents the toxicological and physical parameters used to calculate the MSCs in Appendix A, Tables 1—4.

(b) This subchapter sets forth generic Statewide health standards for regulated substances determined by the EPA to be mutagens. Tables 1—4 contain Statewide health standards based upon the methodology for mutagens in §§ 250.306 and 250.307 (relating to ingestion numeric values; and inhalation numeric values) for the following substances classified as mutagens:

<i>Regulated Substance</i>	<i>CAS Number</i>
Benzo[a]anthracene	56-55-3
Benzidine	92-87-5
Benzo[a]pyrene	50-32-8
Benzo[b]fluoranthene	205-99-2
Benzo[k]fluoranthene	207-08-9
Chrysene	218-01-9
Dibenzo[a,h]anthracene	53-70-3
Dibromo-3-chloropropane, 1,2-	96-12-8
Indeno[1,2,3-cd]pyrene	193-39-5
Methylene bis(2-chloroaniline), 4,4'-	101-14-4
Nitrosodiethylamine, N-	55-18-5

<i>Regulated Substance</i>	<i>CAS Number</i>
Nitrosodimethylamine, N-	62-75-9
Nitroso-N-ethylurea, N-	759-73-9
Vinyl chloride	75-01-4

(c) This subchapter sets forth minimum threshold MSCs for soil and groundwater that shall be met to demonstrate attainment of the Statewide health standards for regulated substances in Appendix A, Table 6. Minimum threshold MSCs are standards developed for regulated substances for which no chemical-specific toxicological data exist.

(d) For regulated substances which do not have an MSC for the relevant medium on Appendix A, Tables 1—4 or 6, the background standard or site-specific standard shall be met to qualify for a release of liability under the act.

Authority

The provisions of this § 250.301 amended under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.301 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial page (285763).

§ 250.302. Point of compliance.

(a) For attainment of the Statewide health standard for groundwater, the point of compliance is the property boundary that existed at the time the contamination was discovered. Statewide health standards shall be attained at and beyond the point of compliance. The Department may determine, in writing, a point of compliance beyond the property boundary to be appropriate if one of the following situations is demonstrated:

- (1) Structures are located on the property boundary which prohibit internal or external access for a drill rig.
- (2) The property is a small parcel of land with limited space for onsite monitoring wells.
- (3) It is not physically possible to monitor groundwater quality at the property boundary.
- (4) The downgradient property was owned by the same party at the time the contamination was discovered and the use of the groundwater on the downgradient property can be controlled to prevent unacceptable exposure.
- (5) For measuring compliance with the groundwater MSCs that apply to secondary contaminants.

(b) For attainment of the Statewide health standard for soil, the MSC as determined in § 250.305 (relating to MSCs for soil) shall be met at the specified depth.

(c) For the emission of regulated substances to outdoor air, the point of compliance for any applicable air quality standard shall be as specified in the air quality regulations.

Cross References

This section cited in 25 Pa. Code § 250.303 (relating to aquifer determination; current use and currently planned use of aquifer groundwater); and 25 Pa. Code § 250.701 (relating to scope).

§ 250.303. Aquifer determination; current use and currently planned use of aquifer groundwater.

(a) With the exception of seasonal, localized and hydrologically isolated perched systems under a property, all geologic formations or parts or groups of formations in this Commonwealth which are saturated are presumed to be aquifers for the purpose of applying the Statewide health standards. The term includes saturated residuum such as saprolite and other weathered rock strata or intervals developed from underlying bedrock and other saturated deposits overlying these formations to which the geologic formations are hydrologically connected.

(b) All groundwater in aquifers is presumed to be used or currently planned for use, unless determined otherwise by the Department under this section.

(1) The Department may determine, in writing, based on a demonstration by the person remediating a site identified in an NIR, that groundwater is not used or currently planned to be used, if:

(i) The public participation requirements of § 250.5 (relating to public notice by applicant) are met.

(ii) The requirements in subsection (c) are met within the site on the property and within a radius of 1,000 feet downgradient of the points of compliance plus any additional areas to which the contamination has migrated and might reasonably migrate at concentrations that exceed the MSC for groundwater used or currently planned to be used.

(2) Methods appropriate for determining current or currently planned future use may include door-to-door surveys, verifying community water system billing records and interviewing community water system suppliers with regard to their currently planned future groundwater use.

(c) The following requirements shall be met within the area described in subsection (b):

(1) No groundwater derived from wells or springs is used for drinking water or agricultural purposes.

(2) All downgradient properties are connected to a community water system.

(3) The area described in subsection (b) does not intersect a radius of 1/2 mile from a community water supply well source or does not intersect an area designated by the Department as a zone 2 wellhead protection area under Chapter 109 (relating to safe drinking water).

- (4) At the time the nonuse aquifer determination request under subsection (b) is submitted to the Department, there are no existing documents developed by political subdivisions or community water system suppliers detailing the implementation of groundwater resources development (that is, no currently planned future uses) in the area specified in subsection (b)(1)(ii).
- (d) If the Department determines that groundwater is not used or currently planned to be used, the following requirements apply within the area identified in subsection (b):
- (1) The requirements in § 250.309 (relating to MSCs for surface water).
 - (2) The ecological screening process identified in § 250.311 (relating to evaluation of ecological receptors).
 - (3) The remediator shall establish institutional controls to maintain the integrity of the nonuse aquifer determination, or include a postremediation care plan in the final report detailing the process of routinely assessing and reporting to the Department compliance with subsection (c).
 - (i) Postremediation care plan provisions shall be implemented through an environmental covenant to insure compliance with subsection (c).
 - (ii) Postremediation assessment and reporting requirements shall continue until the property owner can demonstrate that the MSC for groundwater in aquifers used or currently planned for use is not exceeded at the point of compliance, and fate and transport analysis shows that the MSC will not be exceeded at that point in the future.
- (e) The MSCs for groundwater in an aquifer that is not used or currently planned for use, under § 250.304(d) (relating to MSCs for groundwater), shall be met at the points of compliance identified in § 250.302 (relating to point of compliance)
- (f) A nonuse aquifer areawide certification obtained under this subsection may be used by the remediator to demonstrate that the requirements of subsection (c) are met.
- (1) With or without the presence of an associated NIR, the Department may determine, in writing, based on a demonstration by a municipal authority or political subdivision, that groundwater is not used or currently planned to be used in a specific geographic area, if the following conditions exist:
 - (i) The municipal authority or political subdivision demonstrates that the requirements of subsection (c) are met in the specific geographic area.
 - (ii) Municipal ordinances are in effect that prohibit the use of groundwater from wells or springs for drinking water or agricultural purposes.
 - (iii) Municipal ordinances are in effect that require all water users to connect to a community water supply system.
 - (2) If the municipal ordinances relied upon to make the demonstration in paragraph (1) are amended or repealed, the political subdivision or municipal authority who requested the areawide designation shall notify the Department in writing within 30 days of the effective date of the amendment or repeal.

Authority

The provisions of this § 250.303 amended under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.303 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395; amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285764) to (285766).

Cross References

This section cited in 25 Pa. Code § 245.313 (relating to remedial action completion report); 25 Pa. Code § 250.5 (relating to public notice by applicant).

§ 250.304. MSCs for groundwater.

(a) A person shall implement a remedy under the Statewide health standard that is protective of human health and the environment.

(b) The MSCs for regulated substances in groundwater are presented in Appendix A, Tables 1 and 2. The methodology used by the Department for calculating MSCs in groundwater is detailed in subsections (c)—(f).

(c) The MSCs for regulated substances contained in groundwater in aquifers used or currently planned to be used for drinking water or for agricultural purposes is the MCL as established by the Department or the EPA as established in § 109.202 (relating to state MCLs, MRDLs and treatment technique requirements) and Health Advisory Levels (HALs) set forth in Drinking Water Standards and Health Advisories, EPA Office of Water Publication No. EPA 822-R-09-011 (October, 2009). For a regulated substance where no MCL has been established, the MSC is the lifetime HAL for that compound. For a regulated substance where neither an MCL nor a lifetime HAL has been established, the MSC is the lowest concentration calculated using the appropriate residential and nonresidential exposure assumptions and the equations in §§ 250.306 and 250.307 (relating to ingestion numeric values; and inhalation numeric values). New or revised MCLs or HALs promulgated by the Department or the EPA shall become effective immediately for any demonstration of attainment completed after the date the new or revised MCLs or HALs become effective.

(d) For regulated substances contained in aquifers not used or currently planned to be used, the MSCs in Appendix A, Tables 1 and 2 are calculated by the following:

(1) For volatile organic regulated substances with an attenuation factor of less than 20, as calculated by the methodology in paragraph (7), ten times the appropriate residential or nonresidential MSC for groundwater in aquifers used or currently planned to be used containing less than 2,500 mg/l total dissolved solids.

(2) For volatile organic regulated substances with an attenuation factor of greater than or equal to 20, as calculated by the methodology in paragraph (7),

100 times the appropriate residential or nonresidential MSC for groundwater in aquifers used or currently planned to be used containing less than 2,500 mg/l total dissolved solids.

(3) For semivolatile organic and inorganic regulated substances, regardless of the attenuation factor, 1,000 times the appropriate residential or nonresidential MSC for groundwater in aquifers used or currently planned to be used containing less than 2,500 mg/l total dissolved solids.

(4) For benzene, 100 times the appropriate residential or nonresidential MSC for groundwater in aquifers used or currently planned to be used containing less than 2,500 mg/l total dissolved solids.

(5) For regulated substances with no calculated attenuation factor because of a lack of data in Howard, P. H., R. S. Boethling, W. F. Jarais, W. M. Meylan and E. M. Michalenko. 1991. *Handbook of Environmental Degradation Rates*. Lewis Publishers, Inc., Chelsea, MI., the appropriate residential or nonresidential MSC for groundwater in aquifers used or currently planned to be used containing less than 2,500 mg/l total dissolved solids.

(6) For minimum threshold MSCs, 5 micrograms per liter in groundwater shall be used.

(7) The attenuation factor (AF) for an organic regulated substance shall be calculated according to the following formula:

$$AF = K \times KOC$$

Where:

$$K = \text{degradation coefficient} = \frac{0.693}{T_{1/2}}$$

$T_{1/2}$ —half-life of organic regulated substance in groundwater as reported in Howard, P. H., R. S. Boethling, W. F. Jarais, W. M. Meylan and E. M. Michalenko, 1991. *Handbook of Environmental Degradation Rates*. Lewis Publishers, Inc., Chelsea, MI.

KOC—organic carbon partitioning coefficient (See Appendix A Table 5).

(e) If the groundwater in aquifers used or currently planned for use at the site has naturally occurring background total dissolved solids concentrations greater than 2,500 milligrams per liter, the Statewide health standard for a regulated substance dissolved in the groundwater may be adjusted by multiplying the MSC for groundwater in aquifers by 100. The adjusted Statewide health standard shall then be used in calculating the soil to groundwater pathway numeric value as specified in § 250.308 (relating to soil to groundwater pathway numeric values).

(f) In addition to the requirements in this section, the MSCs are further limited by solubility as identified in Appendix A, Table 5. The solubility limits are derived from the references in subsection (g), which are keyed to the numbers in Table 5. The following procedure was used to determine the appropriate solubility value for each regulated substance: where multiple sources are cited in Table 5, the value for the solubility limit is the median of the values in the indicated references.

(1) Using the hierarchy established in subsection (g), the first two references were consulted. If the solubility values agreed within 5%, the selected value is the lower of the two values.

(2) If the values in step (1) did not agree within 5%, the next references in order were consulted until two values that did agree within 5% were found. The selected value is then the median of all the values consulted.

(3) If none of the values in all of the references in subsection (g) agreed within 5%, the selected value is the median of all values in all references.

(g) The references referred to in subsection (f) are:

(1) Lide, D. R., ed. 1996. *CRC Handbook of Chemistry and Physics*, 77th Edition. CRC Press.

(2) Budavari, S., ed. 1996. *The Merck Index*, 12th Ed. Merck and Co.

(3) Perry, R. H., et al. 1997. *Perry's Chemical Engineer's Handbook*, 7th ed. McGraw-Hill, New York.

(4) Howard, P. H. 1991. *Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Vol. III Pesticides*, Lewis Publishers.

(5) Verschueren, K. 1977, *Handbook of Environmental Data on Organic Chemicals*, Van Nostrand Reinhold.

(6) MacKay, D., et al. 1997, *Illustrated Handbook of Physical-Chemical Properties and Environmental Fate for Organic Chemicals*, 5 Volumes. Lewis Publishers, New York.

(7) Montgomery, J. H. 1991, *Groundwater Chemicals Desk Reference*, Vol. II. Lewis Publishers and Montgomery, J. H., and L. M. Welkom. 1990, *Groundwater Chemicals Desk Reference Vol I*, Louis Publishers.

(8) Milne, G.W.A., ed. 1995, *CRC Handbook of Pesticides*, CRC Press, Inc.

(9) National Library of Medicine (Grateful Med), *Hazardous Substances Databank*.

(10) EPA. 1994, *Superfund Chemical Data Matrix. Office of Solid Waste and Emergency Response*, EPA 540-R-94-009.

(11) Mabey, et al. 1982, *Aquatic Fate Process Data for Organic Priority Pollutants*, SRI. EPA Contract Nos. 68-01-3867, 68-03-2981.

Authority

The provisions of this § 250.304 amended under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.304 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395; amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285766) to (285768).

Cross References

This section cited in 25 Pa. Code § 250.303 (relating to aquifer determination; current use and currently planned use of aquifer groundwater); 25 Pa. Code § 250.308 (relating to soil to groundwater pathway numeric values); 25 Pa. Code § 250.312 (relating to final report); 25 Pa. Code § 271.1 (relating to definitions); and 25 Pa. Code § 287.1 (relating to definitions).

§ 250.305. MSCs for soil.

(a) A person shall implement a remedy under the Statewide health standard that is protective of human health and the environment.

(b) The MSCs for regulated substances in soil are presented in Appendix A, Tables 3 and 4. The methodology for calculating MSCs in soil is detailed in subsections (c)—(e) and the MSCs are further limited to not exceed the physical capacity of the soil to contain a regulated substance. This physical limitation is based on an assumed porosity of 0.35, an assumed dry bulk density of soil of 1.8 kilograms per liter and an assumed density of a regulated substance of 1.0 kilograms per liter. This is calculated according to the equation in paragraph (1). For regulated substances which are organics and liquids at standard temperature and pressure (STP) as identified in Appendix A, Table 5 (Chemical Properties), the physical limitation is further limited based on residual saturation with the additional assumption of a residual saturation ratio of substance volume to soil volume of 0.051, as calculated in Equation (2).

$$(1) \quad C_{PL} = \frac{\rho_{RS} n}{\rho_B}$$

$$(2) \quad MSC = S_r * \frac{\rho_{RS} n}{\rho_B} * 1,000,000 \text{ mg/kg} = 10,000 \text{ mg/kg}$$

where:

ρ_{rs} = density of the regulated substance = 1.0 kg/L

n = porosity of the soil = 0.35

ρ_B = dry bulk density of the soil = 1.8 kg/L

Sr = residual saturation ratio (substance vol./soil vol.) = 0.051

(c) For the residential standard, the MSC for regulated substances contained in soil is one of the following:

(1) The lowest of the following:

(i) The ingestion numeric value throughout the soil column to a depth of up to 15 feet from the existing ground surface as determined by the methodology in § 250.306 (relating to ingestion numeric values), using the appropriate default residential exposure assumptions contained in § 250.306(e).

(ii) The inhalation numeric value throughout the soil column to a depth of up to 15 feet in soil from the existing ground surface, which considers volatilization into the outdoor air and inhalation of particulates, as determined by the methodology in § 250.307 (relating to inhalation numeric values), using the appropriate default residential exposure assumptions contained in § 250.307(d).

- (iii) The soil-to-groundwater pathway numeric value throughout the entire soil column as determined by the methodology in § 250.308 (relating to soil to groundwater pathway numeric values).
- (2) The lowest of paragraph (1)(i) and (ii) and, in addition, one of the following:
 - (i) A demonstration of the soil-to-groundwater pathway soil buffer as identified in § 250.308(b), if applicable.
 - (ii) A soil-to-groundwater pathway equivalency demonstration as identified in § 250.308(d).
- (d) For the nonresidential standard, the MSC for regulated substances contained in soil throughout the soil column to a depth of 2 feet from the existing ground surface is one of the following:
 - (1) The lowest of the following:
 - (i) The ingestion numeric value as determined by the methodology in § 250.306, using the appropriate default nonresidential exposure assumptions contained in § 250.306(e).
 - (ii) The inhalation numeric value which is the lower of the values for volatilization into the outdoor air and the inhalation of particulates, as determined by the methodology in § 250.307, using the appropriate default nonresidential exposure assumptions contained in § 250.307(d).
 - (iii) The soil-to-groundwater pathway numeric value throughout the entire soil column as determined by the methodology in § 250.308.
 - (2) The lowest of paragraph (1)(i) or (ii) and, in addition, one of the following:
 - (i) A demonstration of the soil-to-groundwater pathway soil buffer as identified in § 250.308(b), if applicable.
 - (ii) A soil-to-groundwater pathway equivalency demonstration as identified in § 250.308(d).
- (e) For the nonresidential standard, the MSC for regulated substances contained in soils at depths greater than 2 feet through 15 feet from the existing ground surface, is one of the following:
 - (1) The lowest of the following:
 - (i) The inhalation numeric value which considers volatilization to the outdoor air, as determined by the methodology in § 250.307, using the appropriate default nonresidential exposure assumptions contained in § 250.307(d), and using a transfer factor (TF) based upon the calculated emission rate from subsurface soil as specified in the method of Jury, et al. 1990. *Water Resources Research*, Vol. 26, No. 1, pp. 13—20.
 - (ii) The soil-to-groundwater pathway numeric value throughout the entire soil column as determined by the methodology in § 250.308.
 - (2) The value identified in paragraph (1)(i) and one of the following:
 - (i) A demonstration of the soil-to-groundwater pathway soil buffer as identified in § 250.308(b), if applicable.
 - (ii) A soil-to-groundwater pathway equivalency demonstration as identified in § 250.308(d).

(f) The MSC for regulated substances contained in soil at depths greater than 15 feet is one of the following:

(i) The soil-to-groundwater pathway numeric value as determined by § 250.308(a).

(ii) A demonstration of the soil-to-groundwater pathway soil buffer as identified in § 250.308(b), if applicable.

(iii) A soil-to-groundwater pathway equivalency demonstration as identified in § 250.308(d).

(g) A person conducting a remediation of soils contaminated with a substance having a secondary MCL will not be required to comply with the soil-to-groundwater pathway requirements for those substances to protect groundwater in aquifers for drinking water.

Cross References

This section cited in 25 Pa. Code § 250.302 (relating to point of compliance); 25 Pa. Code § 271.1 (relating to definitions); and 25 Pa. Code § 287.1 (relating to definitions).

§ 250.306. Ingestion numeric values.

(a) For a regulated substance which is a systemic toxicant, the ingestion numeric value for that substance was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equation:

$$MSC = \frac{THQ \times RfD_o \times BW \times AT_{nc} \times 365 \text{ days/year}}{Abs \times EF \times ED \times IngR \times CF}$$

(b) For a regulated substance which is a carcinogen, the ingestion numeric value for that substance was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equations:

(1) For regulated substances not identified as a mutagen in § 250.301(b) (relating to scope):

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year}}{CSF_o \times Abs \times EF \times IFadj \times CF}$$

(2) For regulated substances identified as a mutagen, except for vinyl chloride, in § 250.301(b):

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year}}{CSF_o \times Abs \times EF \times AIFadj \times CF}$$

(3) For vinyl chloride:

$$MSC = \frac{TR}{[CSF_o \times Abs \times EF \times IFadj \times CF / (AT_c \times 365 \text{ days/year})] + (CSF_o \times Abs \times IR_c \times CF/BW_c)}$$

(c) For a regulated substance that has both an oral reference dose and an oral cancer slope factor, the ingestion numeric value is the lower of the two numbers as calculated by the equations in subsections (a) and (b).

(d) The default exposure assumptions used to calculate the ingestion numeric values are as follows:

	<i>Term</i>	<i>Residential</i>		<i>Nonresidential (Onsite Worker)</i>
		<i>Systemic¹</i>	<i>Carcinogens^{2,6}</i>	
THQ	Target Hazard Quotient	1	N/A	1
RfD _o	Oral Reference Dose (mg/kg-day)	Chemical-specific	N/A	Chemical-specific
BW	Body Weight (kg) Soil Groundwater	15 70	N/A	70 70
AT _{nc}	Averaging Time for systemic toxicants (yr) Soil Groundwater	6 30	N/A N/A	25 25
Abs	Absorption (unitless) ³	1	1	1
EF	Exposure Frequency (d/yr) Soil Groundwater	250 350	250 350	180 250
ED	Exposure Duration (yr) Soil Groundwater	6 30	N/A N/A	25 25
IngR	Ingestion Rate Soil (mg/day) GW (L/day)	100 2	N/A N/A	50 1

(Footnotes on next page)

	Term	Residential		Nonresidential (Onsite Worker)
		Systemic ¹	Carcinogens ^{2,6}	
CF	Conversion Factor Soil (kg/mg) GW (unitless)	1×10^{-6} 1	1×10^{-6} 1	1×10^{-6} 1
TR	Target Risk	N/A	1×10^{-5}	1×10^{-5}
CSF _O	Oral Cancer Slope Factor (mg/kg-day) ⁻¹	N/A	Chemical-specific	Chemical-specific
AT _C	Averaging Time for carcinogens (yr)	N/A	70	70
If _{adj} ⁴	Ingestion Factor Soil (mg-yr/kg-day) GW (L-yr/kg-day)	N/A	57.1 1.1	17.9 0.4
AI _{Fadj} ⁵	Combined Age-Dependent Adjustment Factor and Ingestion Factor Soil (mg-yr/kg-day) GW (L-yr/kg-day)	N/A	245 3.39	N/A

Notes:

¹Residential exposure to noncarcinogens is based on childhood (ages 1-6) exposure for soil, and adult exposure for groundwater, consistent with USEPA (1991).

²Residential exposure to carcinogens is based on combined childhood and adult exposure.

³The oral absorption factor takes into account absorption and bioavailability. In cases where the oral RfD or CSF is based on administered oral dose, the absorption factor would be limited to bioavailability. The default value is 1.

⁴The Ingestion Factor for the residential scenario is calculated using the equation $I_{adj} = ED_c \times IR_c / BW_c + ED_a \times IR_a / BW_a$, where $ED_c = 6$ yr, $IR_c = 100$ mg/day for soils and 1 L/day for groundwater, $BW_c = 15$ kg, $ED_a = 24$ yr, $IR_a = 50$ mg/day

for soils and 2 L/day for groundwater, and $BW_a = 70$ kg. The ingestion factor for the nonresidential scenario is calculated using the equation $I_{adj} = ED \times IR/BW$, where $ED = 25$ yr, $IR = 50$ mg/day for soils and 1 L/day for groundwater, and $BW = 70$ kg.

⁵The Combined Age-Dependent Adjustment Factor and Ingestion Factor (AIFadj) for the residential scenario is calculated using the equation $AIFadj = [(ADAF_{<2} \times ED_{<2}) + (ADAF_{2-6} \times ED_{2-6})] \times IRC / BW_c + [(ADAF_{>6-16} \times ED_{>6-16}) + (ADAF_{>16} \times ED_{>16})] \times IR_a / BW_a$, where $ADAF_{<2} = 10$, $ED_{<2} = 2$ yr, $ADAF_{2-6} = 3$, $ED_{2-6} = 4$ yr, $IRC = 100$ mg/day for soils and 1 L/day for groundwater, $BW_c = 15$ kg, $ADAF_{>6-16} = 3$, $ED_{>6-16} = 10$ yr, $ADAF_{>16} = 1$, $ED_{>16} = 14$ yr, $IR_a = 50$ mg/day for soils and 2 L/day for groundwater, and $BW_a = 70$ kg.

⁶For the equation to calculate the vinyl chloride residential MSC based on the carcinogenic effect, $IRC = 100$ mg/day for soils and 1 L/day for groundwater, $BW_c = 15$ kg.

(e) The residential ingestion numeric value for lead in soil was developed using the Uptake Biokinetic (UBK) Model for Lead (version 0.4) developed by the EPA (U. S. Environmental Protection Agency, (1990). Uptake Biokinetic (UBK) Model for Lead (version 0.4). U. S. EPA/ECAO. August 1990, in lieu of the algorithms presented in subsections (a) and (b). Default input values are identified in Appendix A, Table 7. Because the UBK model is applicable only to children, the nonresidential ingestion numeric value was calculated according to the method developed by the Society for Environmental Geochemistry and Health (Wixson, B. G. (1991)). The Society for Environmental Geochemistry and Health (SEGH) Task Force Approach to the Assessment of Lead in Soil. *Trace Substances in Environmental Health*. (11-20), using the following equations:

$$S = \frac{1000 \left[\left(\frac{T}{G^n} \right) - B \right]}{\delta}$$

Table 7 identifies each of the variables in this equation.

Authority

The provisions of this § 250.306 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.306 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230; corrected March 19, 2011, effective March 5, 2011, 41 Pa.B. 1458; corrected May 16, 2014, effective March 5, 2011, 44 Pa.B. 2975. Immediately preceding text appears at serial pages (356272) to (356274).

Cross References

This section cited in 25 Pa. Code § 250.304 (relating to MSCs for groundwater); 25 Pa. Code § 250.305 (relating to MSCs for soil); and 25 Pa. Code § 250.310 (relating to minimum threshold MSCs).

§ 250.307. Inhalation numeric values.

(a) For a regulated substance which is a systemic toxicant, the following applies:

(1) For a volatile compound, the numeric value for inhalation from soil shall be calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equation using TF for volatiles:

$$MSC = \frac{THQ \times RfCi \times AT_{nc} \times 365 \text{ days/yr} \times 24 \text{ hr/day} \times TF}{ET \times EF \times ED}$$

(2) For a regulated substance attached to particulates, the numeric value for inhalation from soil was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the equation in paragraph (1) using TF for particulates.

(b) For a regulated substance which is a carcinogen, the following apply:

(1) For a volatile compound, the numeric value for inhalation from soil was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equation using TF for volatiles:

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year} \times 24\text{hr/day} \times TF}{IUR \times ET \times EF \times ED \times CF}$$

(2) For a regulated substance attached to particulates, the numeric value for inhalation from soil was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the equation in paragraph (1) using TF for particulates.

(3) For a regulated substance identified in § 250.301(b) (relating to scope) as a mutagen, except for vinyl chloride, the numeric value for inhalation from soil was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equation using the TF for volatiles:

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year} \times 24\text{hr/day} \times TF}{IUR \times ET \times EF \times AED \times CF}$$

(4) For vinyl chloride, the numeric value for inhalation from soil was calculated using the appropriate residential or nonresidential exposure assumptions from subsection (d) according to the following equation using the TF for volatiles:

$$MSC = \frac{TR}{[IUR \times ET \times EF \times ED \times CF / (AT_c \times 365 \text{ days/yr} \times 24 \text{ hr/d} \times TF)] + (IUR \times CF \times TF)}$$

(c) For a regulated substance which is both a systemic toxicant and a carcinogen, the inhalation numeric value is the lower of the two numbers as calculated by the equations in subsections (a) and (b).

(d) The default exposure assumptions used to calculate the inhalation numeric values for soil are as follows:

	<i>Term</i>	<i>Residential</i>		<i>Nonresidential (Onsite Worker)</i>
		<i>Systemic¹</i>	<i>Carcinogens²</i>	
THQ	Target Hazard Quotient	1	N/A	1
RfCi	Inhal. Reference Concentration (mg/m ³)	Chemical-specific	N/A	Chemical-specific
ATnc	Averaging Time for systemic toxicants (yr)	30	N/A	25
TF	Transport Factor (mg/kg)/(mg/m ³) Volatilization ³ Particulate ⁴	Chemical-specific 1 × 10 ¹⁰	Chemical-specific 1 × 10 ¹⁰	Chemical-specific 1 × 10 ¹⁰
ET	Exposure Time (hr/day)	24	24	8
EF	Exposure Frequency ⁵ (d/yr)	250	250	180
ED	Exposure Duration (yr)	30	N/A	25
CF	Conversion Factor	1,000 µg/mg	1,000 µg/mg	1,000 µg/mg
TR	Target Risk	N/A	1 × 10 ⁻⁵	1 × 10 ⁻⁵
IUR	Inhalation Unit Risk (µg/m ³) ⁻¹	N/A	Chemical-specific	Chemical-specific

(Footnotes on next page)

Term		Residential		Nonresidential (Onsite Worker)
		Systemic ¹	Carcinogens ²	
ATc	Averaging Time for carcinogens (yr)	N/A	70	70
AED	Combined Age-Dependent Adjustment Factor and Exposure Duration (yr) ⁶	N/A	76	N/A

Notes: Modified from USEPA Region III Risk-based Concentration Table, dated October 20, 1995.

N/A = Not Applicable

¹Residential exposure to systemic toxicants is based on adult exposure, consistent with USEPA (1991).

²Residential exposure to carcinogens is based on combined child and adult exposure.

³Volatilization transport factor is calculated using $TF = (ER \times DF)^{-1}$, where $DF = 12 \text{ (mg/m}^3\text{)/(m}^2\text{-sec)}$. See soil depth-specific algorithm for the calculation of ER.

⁴Particulate transfer factor was calculated using $TF = (ER \times DF)^{-1}$, where $ER = 8.25 \times 10^{-12} \text{ (mg/m}^2\text{-sec)/(mg/kg)}$ and $DF = 12 \text{ (mg/m}^3\text{)/(mg/m}^2\text{-sec)}$.

⁵Assumes approximately 100 days/yr with the ground being frozen. Exposure to surficial soils when the ground is frozen is considered *de minimis*. The nonresidential exposure frequency is defined as $5/7 \times 250 \text{ days/yr}$.

⁶The Combined Age-Dependent Adjustment Factor and Exposure Duration (AED) is calculated using the equation $AED = ADAF_{<2} \times ED_{<2} + ADAF_{2-16} \times ED_{2-16} + ADAF_{>16} \times ED_{>16}$, where $ADAF_{<2} = 10$, $ED_{<2} = 2 \text{ yr}$, $ADAF_{2-16} = 3$, $ED_{2-16} = 14 \text{ yr}$, $ADAF_{>16} = 1$, $ED_{>16} = 14 \text{ yr}$.

(e) For the inhalation numeric values in subsections (a) and (b), the TF was calculated by the following equation:

$$TF = (ER \times DF)^{-1}$$

The Dispersion Factor (DF) value of 12 (mg/m³)/(mg/m²/sec) is taken from the default value in the EPA Draft Soil Screening Guidance (U. S. EPA, 1994. *Technical Background Document for Soil Screening Guidance*. Review Draft. Office of Emergency and Remedial Response. EPA-540/R-94/106) and the Emission Rate (ER) is calculated by the following equations (from Jury et al. 1990. *Water Resources Research*, Vol. 26. No. 1. pp. 13-20):

(i) For surficial soils:

$$ER = \frac{1}{T} \int_0^T \left(\frac{C_O}{C_S} \right) (D_E/\pi t)^{0.5} \left[1 - \exp^{(-L^2/(4D_E t))} \right] \bullet (10^3) dt$$

$$D_E = \frac{D_G}{\frac{\rho_b K_d}{H} + \frac{\theta_m}{H} + \theta_a} + \frac{D_L}{\rho_b K_d + \theta_m + \theta_a H}$$

where:

$$D_G = \left(\frac{\theta_a^{10/3}}{\theta^2} \right) D_{ai}$$

$$D_L = \left(\frac{\theta_m^{10/3}}{\theta^2} \right) D_{Li}$$

(ii) For subsurface soils:

$$ER = \frac{1}{T} \int_0^T \left(\frac{C_O}{C_S} \right) (D_E/\pi t)^{0.5} \left[\exp^{(-L^2/4D_E t)} - \exp^{-(1+W)^2/(4D_E t)} \right] \bullet (10^3) dt$$

$$D_E = \frac{D_G}{\frac{\rho_b K_d}{H} + \frac{\theta_m}{H} + \theta_a} + \frac{D_L}{\rho_b K_d + \theta_m + \theta_a H}$$

where:

$$D_G = \left(\frac{\theta_a^{10/3}}{\theta^2} \right) D_{ai}$$

$$D_L = \left(\frac{\theta_m^{10/3}}{\theta^2} \right) D_{Li}$$

<i>Parameter</i>	<i>Definition</i>	<i>Unit</i>	<i>Recommended Value⁽¹⁾</i>
ER	Chemical vapor emission rate from surface soil or subsurface soil	mg/m ² -sec per mg/kg	Chemical-specific
C _o	Chemical concentration in soil, C _o = C _s ρ _b	g/m ³	1.8
C _s	Chemical concentration in soil	mg/kg (ppm)	1
D _E	Effective diffusion coefficient	m ² /sec	Chemical-specific
D _{ai}	Air diffusivity for chemical i	m ² /sec	Chemical-specific
D _{Li}	Water diffusivity for chemical i	m ² /sec	Chemical-specific
t	Time	sec	N/A
T	Emission averaging time	sec	Equal to exposure duration
θ	Total soil porosity, θ = θ _a + θ _m	cm ³ /cm ³	0.32 ⁽²⁾
θ _a	Air-filled soil porosity	cm ³ /cm ³	0.12 ⁽²⁾
θ _m	Moisture-filled soil porosity, θ _m = wρ _b	cm ³ /cm ³	0.20 ⁽²⁾
w	Moisture content for soil	g water/g soil	0.11
ρ _b	Dry bulk density of soil, ρ _b = (1-θ) ρ	g/cm ³	1.8 ⁽²⁾

(Footnotes on next page)

<i>Parameter</i>	<i>Definition</i>	<i>Unit</i>	<i>Recommended Value⁽¹⁾</i>
ρ	Soil particle density	g/cm ³	2.65
K_d	Partition coefficient, $K_d = K_{oc}f_{oc}$	cm ³ /g	Chemical-specific
H	Henry's Law constant	dimensionless	Chemical-specific
D_G	Effective gas-phase diffusion coefficient	m ² /sec	Chemical-specific
D_L	effective liquid-phase diffusion coefficient	m ² /sec	Chemical-specific
L	Depth of the contaminated surface soil	m	0.6 ⁽³⁾
I	Depth of the clean soil cover	m	0.6 ⁽³⁾
W	Thickness of the contaminated subsurface soil	m	4.0 ⁽³⁾
K_{OC}	Organic carbon partition coefficient for chemical i	cm ³ /g	Chemical-specific
f_{OC}	Fraction of organic carbon in soil	dimensionless	0.005 ⁽⁴⁾

⁽¹⁾All default values from USEPA (1994) Draft Soil Screening Guidance, EPA-540/R-94/106, except as noted.

⁽²⁾Consistent with Standards Subcommittee recommendation.

⁽³⁾Based on Act 2 SAB-agreed depths.

⁽⁴⁾The Risk Assessment Subcommittee selected a f_{oc} of 0.005, which falls between f_{oc} 's of 0.006 for surface soil and 0.002 for subsurface soil.

(f) For a regulated substance which is a systemic toxicant and is a volatile compound, the numeric value for the inhalation of volatiles from groundwater was calculated by using the appropriate residential or nonresidential exposure assumptions from subsection (h) according to the following equation:

$$MSC = \frac{THQ \times RfCi \times AT_{nc} \times 365 \text{ days/year} \times 24\text{hr/day}}{ET \times EF \times ED \times TF}$$

(g) For a regulated substance which is a carcinogen and is a volatile compound, the numeric value for the inhalation of volatiles from groundwater shall be calculated by using the appropriate residential or nonresidential exposure assumptions from subsection (h) according to the following equations:

(1) For regulated substances not identified as a mutagen in § 250.301(b):

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year}}{IUR \times ET \times EF \times ED \times TF \times CF}$$

(Editor's Note: The Department of Environmental Protection notes that the numerator of the equation in subsection (g)(1) should be TR × AT_c × 365 days/year × 24 hr/day. See the proposed rulemaking published at 44 Pa.B. 2980, 2985 (May 17, 2014).)

(2) For regulated substances identified as a mutagen, except for vinyl chloride, in § 250.301(b):

$$MSC = \frac{TR \times AT_c \times 365 \text{ days/year} \times 24\text{hr/day}}{IUR \times ET \times EF \times AED \times TF \times CF}$$

(3) For vinyl chloride:

$$MSC = \frac{TR}{[IUR \times ET \times EF \times ED \times TF \times CF] / (AT_c \times 365 \text{ days/year} \times 24 \text{ hr/day}) + (IUR \times TF \times CF)}$$

(h) The default exposure assumptions used to calculate the inhalation numeric values for the inhalation of volatiles from groundwater are as follows:

	<i>Term</i>	<i>Residential</i>		<i>Nonresidential (Onsite Worker)</i>
		<i>Systemic¹</i>	<i>Carcinogens²</i>	
THQ	Target Hazard Quotient	1	N/A	1
RfCi	Inhal. Reference Concentration (mg/m ³)	Chemical-specific	N/A	Chemical-specific
ATnc	Averaging Time for systemic toxicants (yr)	30	N/A	25
ET	Exposure Time (hr/day)	24	24	8
EF	Exposure Frequency (d/yr)	350	350	250
ED	Exposure Duration (yr)	30	30	25
TF	Transfer Factor (L/m ³) ³	0.5	0.5	0.5
CF	Conversion Factor	N/A	1,000 µg/mg	1,000 µg/mg
TR	Target Risk	N/A	1 × 10 ⁻⁵	1 × 10 ⁻⁵
IUR	Inhalation Unit Risk (µg/m ³) ⁻¹	N/A	Chemical-specific	Chemical-specific
ATc	Averaging Time for carcinogens (yr)	N/A	70	70
AED	Combined Age-Dependent adjustment Factor and Exposure Duration (yr) ⁴	N/A	76	N/A
(Footnotes on next page)				

Notes: Modified from USEPA Region III Risk-based Concentration Table, dated October 20, 1995.

N/A = Not Applicable

¹Residential exposure to systemic toxicants is based on adult exposure, consistent with USEPA (1991).

²Residential exposure to carcinogens is based on combined child and adult exposure.

³Default Transfer Factor is as presented in USEPA's RAGS, Part B.

⁴The Combined Age-Dependent Adjustment Factor and Exposure Duration (AED) is calculated using the equation $AED = ADAF_{<2} \times ED_{<2} + ADAF_{2-16} \times ED_{2-16} + ADAF_{>16} \times ED_{>16}$ where $ADAF_{<2} = 10$, $ED_{<2} = 2$ yr, $ADAF_{2-16} = 3$, $ED_{2-16} = 14$ yr, $ADAF_{>16} = 1$, $ED_{>16} = 14$ yr.

Authority

The provisions of this § 250.307 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.307 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230; corrected March 19, 2011, effective March 5, 2011, 41 Pa.B. 1458; corrected May 16, 2014, effective March 5, 2011, 44 Pa.B. 2975. Immediately preceding text appears at serial pages (356274) to (356284).

Cross References

This section cited in 25 Pa. Code § 250.304 (relating to MSCs for groundwater); and 25 Pa. Code § 250.305 (relating to MSCs for soil).

§ 250.308. Soil to groundwater pathway numeric values.

(a) A person may use the soil-to-groundwater pathway numeric values listed in Appendix A, Tables 3B and 4B, as developed using the methods contained in paragraph (1), (2) or (4), may use a concentration in soil at the site which does not produce a leachate in excess of the MSC for groundwater contained in Appendix A, Tables 1 and 2, when subjected to the Synthetic Precipitation Leaching Procedure (Method 1312 of SW-846, Test Methods for Evaluating Solid Waste, promulgated by the U. S. EPA), or may use the soil-to-groundwater pathway soil buffer criteria in subsection (b) or may use the soil-to-groundwater pathway equivalency demonstration in subsection (d).

(1) A value which is 100 times the applicable MSC for groundwater identified in § 250.304(c) or (d) (relating to MSCs for groundwater), expressed as milligrams per kilogram of soil.

(2) For organic compounds, a generic value determined not to produce a concentration in groundwater in the aquifer in excess of the MSC for groundwater as calculated by the equation in paragraph (3).

(i) For soil not in the zone of groundwater saturation, the generic value shall be calculated by the equation in paragraph (3).

(ii) For soil in the zone of groundwater saturation, the standard is 1/10th of the generic value calculated by the equation in paragraph (3).

(3) The equation referenced in paragraphs (1) and (2) is the following:

$$MSC_S = MSC_{GW} ((K_{oc} * f_{oc}) + \theta_w / \rho_b) DF$$

where: MSC_S (mg/kg) = the generic value for a regulated substance in soil

MSC_{GW} (mg/L) = MSC of a regulated substance in groundwater

K_{oc} (L/kg) = organic carbon partition coefficient for a regulated substance

f_{oc} = fraction of organic carbon in soil (default value = 0.0025)

θ_w = water-filled porosity of soil (default value = 0.2)

ρ_b (kg/L) = dry bulk density of soil (default value = 1.8 kg/l)

DF = dilution factor (default value = 100)

(4) For inorganic regulated substances, a generic value determined not to produce a concentration in groundwater in the aquifer in excess of the MSC for groundwater as calculated by the equation in paragraph (5) and listed in Appendix A, Table 4B.

(i) For soil not in the zone of groundwater saturation, the generic value shall be calculated by the equation in paragraph (5).

(ii) For soil in the zone of groundwater saturation, the standard is 1/10th of the generic value calculated by the equation in paragraph (5).

(5) The equation referenced in paragraph (4) is the following:

$$MSC_S = MSC_{GW} (K_d + \theta_w/\rho_b) DF$$

where: MSC_S (mg/kg) = the generic value for the inorganic regulated substance in soil

MSC_{GW} (mg/L) = MSC of the inorganic regulated substance in groundwater

K_d (L/kg) = soil to water partition coefficient for the inorganic regulated substance

θ_w = water-filled porosity of soil (default value = 0.2)

ρ_b (kg/L) = dry bulk density of soil (default value = 1.8 kg/L)

DF = dilution factor (default value = 100)

(b) The soil-to-groundwater pathway soil buffer is the entire area between the bottom of the area of contamination and the groundwater or bedrock and shall meet the following criteria:

(1) The soil depths established in Appendix A, Tables 3B and 4B for each regulated substance.

(2) The concentration of the regulated substance cannot exceed the limit related to the PQL or background throughout the soil buffer.

(3) No Karst carbonate formation underlies or is within 100 feet of the perimeter of the contaminated soil area.

(c) The soil-to-groundwater pathway soil buffer distances were developed by using the following equations.

(1) The following equations were used iteratively for each layer of soil for each time increment in a total time period of 30 years and pertain to a soil column where the first 4 feet of soil are contaminated with a regulated substance at a concentration of 10,000 mg/kg.

$$C_{\text{soil}(it)} = C_{\text{soil}(i(t-1))} - \frac{(TI)(R)(C_{\text{aq}(i(t-1))} - C_{\text{aq}(i+1)(t-1)})}{(360)(DI)(\rho_b)}$$

$$TI = (360)(DI)(\theta_w)/R$$

$$C_{\text{aq}(i(t-1))} = \frac{(\rho_b)(C_{\text{soil}(i(t-1))})}{(K_d)(\rho_b) + \theta_w}$$

$$C_{\text{aq}(i+1)(t-1)} = \frac{(\rho_b)(C_{\text{soil}(i+1)(t-1)})}{(K_d)(\rho_b) + \theta_w}$$

where: $C_{\text{soil}(it)}$ (mg/kg) = concentration of regulated substance in soil at layer i at time increment TI

$C_{\text{soil}(i(t-1))}$ (mg/kg) = concentration of regulated substance in soil at layer i at time increment immediately preceding TI

$C_{\text{soil}(i+1)(t-1)}$ (mg/kg) = concentration of regulated substance in soil at layer immediately above layer i at time increment immediately preceding TI

R (cm/yr) = recharge rate of water infiltrating soil (default value = 33 cm/yr)

DI (feet) = thickness of each layer i of soil (default value = 1 foot)

ρ_b (kg/L) = dry bulk density of soil (default value = 1.8 kg/L)

360 (month-cm/yr-ft) = conversion factor

TI (months) = time duration of each time increment
 θ_w = water-filled porosity (default value = 0.2)
 $C_{aq(i)(t-1)}$ (mg/L) = concentration of regulated substance in soil pore water at layer i at time increment immediately preceding TI

$C_{aq(i+1)(t-1)}$ (mg/L) = concentration of regulated substance in soil pore water at layer immediately above layer i at time increment immediately preceding TI

K_d (L/kg) = soil to water partition coefficient for the regulated substance where five different contaminant-specific values are used: 2.5, 5, 10, 100 and 1,000.

K_d values of organic regulated substances are based on the following equation:

$$K_d = (f_{oc})(K_{oc})$$

where: f_{oc} = fraction of organic carbon in soil (default value = 0.005)

K_{oc} (L/kg) = organic carbon partition coefficient for a regulated substance

(2) The buffer distances listed for regulated substances in Tables 3B and 4B were determined by the Department using these equations to model the distance that the regulated substance travels from the bottom of the first 4 feet of contaminated soil through the soil column in 30 years at a concentration at or above 1 $\mu\text{g/L}$ in the water infiltrating the soil.

(d) For any regulated substance, an equivalency demonstration may be substituted for the soil-to-groundwater numeric value throughout the site and the soil-to-groundwater pathway soil buffer if the groundwater is below the MSC value or the background standard prior to remediation. This equivalency demonstration shall include the following:

(1) Fate and transport analysis of the regulated substance from the deepest point of contamination in the soil through unsaturated zone soil and shall include the use of soil-to-water partition coefficients. The analysis shall demonstrate that the regulated substances will not migrate to bedrock or the groundwater within 30 years at concentrations exceeding the greater of the groundwater MSC or background in groundwater as the endpoint in soil pore water directly under the site.

(2) In addition to sampling required for attainment of the inhalation or ingestion numeric values for soils up to 15 feet, as applicable, reporting and monitoring for eight quarters that shows no exceedances of the greater of the groundwater MSCs or of the background standard for groundwater beneath the contaminated soil and no indications of an increasing trend of concentration over time that may exceed the standard.

Authority

The provisions of this § 250.308 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.308 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (233669) to (233671).

Cross References

This section cited in 25 Pa. Code § 250.304 (relating to MSCs for groundwater); 25 Pa. Code § 250.305 (relating to MSCs for soil); 25 Pa. Code § 250.310 (relating to minimum threshold MSCs); 25 Pa. Code § 250.312 (relating to final report); 25 Pa. Code § 250.604 (relating to fate and transport modeling requirements for exposure assessments); and 25 Pa. Code § 271.1 (relating to definitions); and 25 Pa. Code § 287.1 (relating to definitions).

§ 250.309. MSCs for surface water.

(a) Any regulated discharge to surface waters shall comply with the applicable provisions of Chapters 91—96, 97 (reserved), 102, 103 and 105, including antidegradation requirements, and may not cause an exceedance of the applicable water quality standards for the surface water in question.

(b) For point source discharges to surface water, compliance shall be measured at the point of discharge in accordance with limits specified in the NPDES permit.

(c) For purposes of determining compliance with surface water quality standards from a diffuse surface or groundwater discharge, the person shall determine the expected instream regulated substance concentrations, that are attributable to releases at the site, using mass balance techniques for groundwater/surface water mixing at design flow conditions.

(1) If the results indicate that surface water quality standards are being achieved, no action is required.

(2) If results indicate that surface water quality standards are not being achieved, additional sampling may be performed to help evaluate whether surface water quality standards are being achieved.

(3) If the results of the sampling indicate surface water quality standards are being met, no further action is required.

(4) If the results of the modeling, and sampling if any, indicate that surface water quality standards are not being met, the person shall perform further remedial action to attain the surface water quality standards.

(d) Except if an NPDES permit is required, for purposes of complying with surface water quality standards in a spring, the point of compliance is the point of first designated or existing use, as defined in §§ 93.1, 93.4 and 93.9 (relating to definitions; Statewide water uses; and designated water uses and water quality criteria). If the point of first designated or existing use occurs in a surface water into which a spring flows, compliance with surface water quality standards shall be determined in the manner specified in subsection (c).

Cross References

This section cited in 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.303 (relating to aquifer determination; current use and currently planned use of aquifer groundwater); and 25 Pa. Code § 250.707 (relating to statistical tests).

§ 250.310. Minimum threshold MSCs.

(a) For regulated substances listed in Appendix A, Table 6 that are found in groundwater, the minimum threshold MSC of 5 micrograms per liter in groundwater, shall be used.

(b) For regulated substances listed in Appendix A, Table 6 that are found in soil, the lowest of one of the following values shall be used as the minimum threshold MSC:

(1) An ingestion numeric value of 100 milligrams per kilogram in soil.

(2) The soil-to-groundwater pathway numeric value throughout the soil column as determined by the methodology in § 250.308 (relating to soil-to-groundwater pathway numeric values), but substituting 5 micrograms per liter in groundwater for the groundwater MSC. The soil-to-groundwater pathway

numeric value shall be calculated by using a concentration in soil at the site which does not produce a leachate in excess of the MSC for groundwater or by using a value which is 100 times the MSC for groundwater, expressed in milligrams per kilogram of soil. An equivalency demonstration under § 250.308(d) may be substituted for the soil-to-groundwater numeric value.

(c) The minimum threshold MSC in subsection (a) and the ingestion numeric value in subsection (b)(1) are calculated according to the following exposure assumption and equation: 0.50 ppb dietary intake corresponds to a 1×10^{-6} risk (USFDA Threshold of Regulation Final Rule July 17, 1995) assuming the substance is a carcinogen. Correcting this value (or 5.0 ppb) to the 10^{-5} risk level, in Statewide health standard formulation, the threshold of regulation concentrations are determined by the following exposure assumptions and calculations:

Five $\mu\text{g}/\text{kg}$ (substance of concern) threshold level corresponding to 1×10^{-5} risk

Dietary intake $2 \text{ kg}/\text{day} \times 5 \mu\text{g}/\text{kg}$ (substance – $10 \mu\text{g}/\text{day}$ (daily intake of substance of concern)

For soil ingestion: $10 \mu\text{g}/100 \text{ mg soil or } 100 \text{ mg}/\text{kg} = \text{Threshold concentration for soils}$

For groundwater ingestion: $10 \mu\text{g}/2\text{L water} = 5 \mu\text{g}/\text{L} = \text{Threshold concentration for water}$

The 100 mg soil and 2L water factors are the default ingestion rates from § 250.306(c) (relating to ingestion numeric values).

§ 250.311. Evaluation of ecological receptors.

(a) In addition to any protection afforded under other requirements for meeting surface water and air quality standards and MSCs under this chapter, based on the screening process in this section, direct impacts from regulated substances to the following receptors shall be assessed and addressed to implement a remedy that is protective of the environment:

(1) Individuals of threatened or endangered species as designated by the United States Fish and Wildlife Service under the Endangered Species Act (16 U.S.C.A. §§ 1531—1544).

(2) Exceptional value wetlands as defined in § 105.17 (relating to wetlands).

(3) Habitats of concern.

(4) Species of concern.

(b) For purposes of determining impacts on ecological receptors, no additional evaluation is required if the remediation attains a level equal to 1/10th of the value in Appendix A, Tables 3 and 4, except for constituents of potential ecological concern identified in Table 8, or if the criteria in paragraph (1), (2) or (3) are met. Information that supports a determination that no additional evaluation is required shall be documented in the final report.

(1) Jet fuel, gasoline, kerosene, number two fuel oil or diesel fuel are the only constituents detected onsite.

(2) The area of contaminated soil is less than 2 acres and the area of contaminated sediment is less than 1,000 square feet.

(3) The site has features, such as buildings, parking lots or graveled paved areas, which would obviously eliminate the specific exposure pathways, such as soils exposure.

(c) If none of the criteria in subsection (b) are met and if no Constituents of Potential Ecological Concern (CPECs) associated with the release being addressed as part of an NIR at the site, as identified in Appendix A, Table 8, are detected onsite, an onsite evaluation shall be conducted to document any indications of ecological impact. Ecological impacts requiring more detailed evaluation exist if there are differences of greater than 50% in the density or diversity of species or habitats of concern when compared with nearby reference areas representing equivalent ecological areas without contamination, if available. This evaluation shall also document the presence of threatened and endangered species and exceptional value wetlands. If no ecological impacts requiring further evaluation are identified, and no threatened and endangered species exist within a 2,500-foot radius of the site and no exceptional value wetlands exist on the site, no further evaluation is required and that determination shall be documented in the final report.

(d) If none of the criteria in subsection (b) are met and if CPECs associated with the release being addressed as part of an NIR at the site are detected onsite or ecological impacts requiring more detailed evaluation, threatened and endangered species, or exceptional value wetlands as identified in subsection (c) exist, a detailed onsite evaluation shall be conducted by a person qualified to perform environmental risk assessments to document any substantial ecological impacts. Substantial ecological impacts exist if there are differences of greater than 20% in the density of species of concern or greater than 50% in the diversity and extent of habitats of concern when compared with nearby reference areas representing equivalent ecological areas without contamination, if available. If there are no substantial ecological impacts identified and there are no threatened or endangered species on or within a 2,500-foot radius of the site and no exceptional value wetlands on the site, that determination shall be provided in the final report.

(e) If the person cannot demonstrate that they meet the criteria in subsection (b), and cannot demonstrate that the evaluation performed under subsection (c) identified no ecological impacts requiring more detailed evaluation under subsection (d), or cannot demonstrate that the evaluation performed under subsection (d) identified no substantial ecological impacts, or threatened or endangered species or exceptional value wetlands, one of the following shall be met:

(1) A person shall demonstrate in the final report that attainment of the Statewide health standard MSCs are protective of the ecological receptors.

(2) If a demonstration cannot be made that the Statewide health standard MSCs are protective of ecological receptors, a person shall demonstrate in the final report that postremedy use will eliminate complete exposure pathways at the time of the final report or in accordance with a postremediation care plan, or that mitigative measures identified in subsection (f) have been instituted and are subject to postremediation care plan requirements as described in § 250.312(b) (relating to final report).

(3) A person shall demonstrate attainment of the background standard.

- (4) A person shall follow the procedures in §§ 250.402(c) and 250.409 (relating to human health and environmental protection goals; and risk assessment report) and demonstrate attainment of the site-specific standard for protection of ecological receptors.
- (f) Mitigation measures to restore or replace equivalent ecological resources in the local area of the site may be applied if the following are met:
- (1) No exceptional value wetlands have been identified by the screening process.
 - (2) No Federal or State laws and regulations prohibit or restrict the elimination of habitats or species identified by the screening process.
 - (3) A mitigation measure is selected based on the following hierarchy:
 - (i) Restoration onsite of species and habitats identified in the screening process.
 - (ii) Replacement onsite of species and habitats identified in the screening process.
 - (iii) Replacement on an adjacent area to the site of species and habitats identified in the screening process.
 - (iv) Replacement at a location within the municipality where the site is located of species and habitats identified in the screening process.
 - (4) The Department will review and approve mitigation measures prior to implementation to ensure that the proposed remedy and intended use of the property minimize the impacts to ecological receptors identified in the screening procedure.
 - (5) The postremediation care plan requirements in § 250.312(e) or § 250.411(f) (relating to final report) are implemented.

Source

The provisions of this § 250.311 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395. Immediately preceding text appears at serial pages (233673) to (233675).

Cross References

This section cited in 25 Pa. Code § 245.309 (relating to site characterization); 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.303 (relating to aquifer determination; current use and currently planned use of aquifer groundwater); 25 Pa. Code § 250.312 (relating to final report); 25 Pa. Code § 250.402 (relating to human health and environmental protection goals); 25 Pa. Code § 250.411 (relating to final report); and 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.312. Final report.

(a) For sites remediated under the Statewide health standard, the person conducting the remediation shall submit a final report to the Department which documents attainment of the selected standard. This final report must include site characterization information identified in § 250.204(b)—(e) (relating to final report). The site characterization shall be conducted in accordance with scientifically recognized principles, standards and procedures. The level of detail in the investigation, and the selected methods and analyses, that may include models, must sufficiently define the rate of movement and the present and future extent and fate of contaminants to ensure continued attainment of the remediation standard. The final report must include, as appropriate, an assessment that addresses

the vapor intrusion exposure pathway. Interpretations of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in this Commonwealth.

(b) The final report for the Statewide health standard shall include the results of the evaluation of ecological receptors. If a person relies on a postremedy use to eliminate complete exposure pathways that is not implemented at the time of the final report submission, a postremediation care plan shall be submitted to document that the postremedy use is implemented within 1 year from final report approval, unless the Department approves an extension of time. If mitigation measures are implemented under § 250.311 (relating to evaluation of ecological receptors), a postremediation care plan shall be documented in the final report that includes the following:

(1) A plan to maintain the mitigated ecological resource.

(2) Reporting of the ongoing success or failure of the mitigation measure implemented.

(3) Mitigation measures, instituted at the time of the final report, shall be successfully accomplished and sustained up to 5 years from final report approval.

(c) Final reports for the Statewide health standard shall include information on the basis for selecting residential or nonresidential standards and the additional information identified in § 250.204(f)(1)—(5).

(d) The final report for the Statewide health standard shall include all sampling data and descriptions of the sampling methodology and analytical results, including the appropriate statistical methodologies, which pertain to whether the remediation has attained the selected standard, following the requirements of Subchapter G (relating to demonstration of attainment).

(e) If engineering controls are needed to attain or maintain a standard, if institutional controls are needed to maintain a standard, if the fate and transport analysis indicates that the remediation standard, including the solubility limitation in § 250.304(b) (relating to MSCs for groundwater), may be exceeded at the point of compliance in the future, or if the remediation relies on natural attenuation, a postremediation care plan shall be documented in the final report that includes the information identified in § 250.204(g).

(f) If the soil to groundwater pathway soil buffer distances are used, as identified in § 250.308 (relating to soil-to-groundwater pathway numeric values), the following information shall be included in the final report:

(1) Information demonstrating that the actual site soil column thickness below the contaminated soil by the information gathered from soil sample borings conducted during the site characterization is at least the thickness identified in Appendix A, Tables 3 and 4.

(2) Information gathered during the field investigation phase and the laboratory analyses conducted on the soil samples.

(3) The boring logs and all other data presented in appropriate maps, cross sections, figures and tables.

(g) If an equivalency demonstration is used under § 250.308(d), the following information shall be included in the final report:

- (1) Information describing the actual site soil column below the contaminated soil determined by soil sample borings conducted during the site characterization.
 - (2) Information gathered during the field investigation phase and the laboratory analyses conducted on the groundwater samples beneath the contaminated soil.
 - (3) The boring logs and all other data presented in appropriate maps, cross sections, figures and tables.
 - (4) Sampling data, in a tabular format, that shows no exceedances of groundwater MSCs or the background standard, under § 250.308(d)(2).
 - (5) A demonstration, submitted in a graphic format, that sampling data indicates no increasing trend of concentration over time that may exceed the standard.
- (h) When a person implements a remedy that relies on access to properties owned by third parties, for remediation or monitoring, documentation of cooperation or agreement shall be submitted as part of the final report.

Authority

The provisions of this § 250.312 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.312 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (233776) to (233777).

Cross References

This section cited in 25 Pa. Code § 245.313 (relating to remedial action completion report); 25 Pa. Code § 250.311 (relating to evaluation of ecological receptors); and 25 Pa. Code § 253.1 (relating to definitions).

Subchapter D. SITE-SPECIFIC STANDARD

Sec.

- 250.401. Scope.
- 250.402. Human health and environmental protection goals.
- 250.403. Use of groundwater.
- 250.404. Pathway identification and elimination.
- 250.405. When to perform a risk assessment.
- 250.406. Relationship to surface water quality requirements.
- 250.407. Point of compliance.
- 250.408. Remedial investigation report.
- 250.409. Risk assessment report.
- 250.410. Cleanup plan.
- 250.411. Final report.

Cross References

This subchapter cited in 25 Pa. Code § 250.2 (relating to application of remediation standards); 25 Pa. Code § 250.9 (relating to interaction with other environmental statutes); 25 Pa. Code § 250.602 (relating to risk assessment procedures); 25 Pa. Code § 250.703 (relating to general attainment requirements for soil); 25 Pa. Code § 250.704 (relating to general attainment requirements for groundwater); and 25 Pa. Code § 287.101 (relating to general requirements for permits).

§ 250.401. Scope.

(a) This subchapter sets forth requirements and procedures for any person selecting the site-specific standards.

(b) The Department may approve or disapprove a remedial investigation report, a risk assessment report or cleanup plan based on consideration of all subsections in section 304 of the act (35 P. S. § 6026.304).

§ 250.402. Human health and environmental protection goals.

(a) Site-specific standards shall be developed that meet the human health and environmental protection goals specified in this section. The development of site-specific standards shall be based on a site-specific risk assessment, if required.

(b) The site-specific standard shall be a protective level that eliminates or reduces any risk to human health in accordance with the following:

(1) For known or suspected carcinogens, soil and groundwater cleanup standards shall be established at exposures which represent an excess upper-bound lifetime risk of between 1 in 10,000 and 1 in 1 million. The cumulative excess risk to exposed populations, including sensitive subgroups, may not be greater than 1 in 10,000.

(2) For systemic toxicants, soil and groundwater cleanup standards shall represent the level to which the human population could be exposed on a daily basis without appreciable risk of deleterious effect to the exposed population. Where several systemic toxicants affect the same target organ or act by the same method of toxicity, the hazard index may not exceed one.

(c) In addition to any protection afforded under other requirements for meeting surface water and air quality standards under this chapter, direct impacts resulting from a release of regulated substances to the receptors identified in § 250.311(a) (relating to evaluation of ecological receptors) shall be assessed and addressed in the remedial investigation, risk assessment and cleanup plans.

(d) If a person is using the site-specific standard to protect ecological receptors under this subchapter or in accordance with § 250.311(e), the following shall be performed:

(1) An ecological risk assessment to determine if an impact has occurred or will occur if the release of a regulated substance goes unabated.

(2) An ecological risk assessment conducted in accordance with Department-approved EPA or ASTM guidance to establish acceptable remediation levels or alternative remedies based on current and future use that are protective of the ecological receptors.

(3) Implementation of the selected remedy, which may include mitigation measures under § 230.311(f), that is protective of the ecological receptors.

Cross References

This section cited in 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.311 (relating to evaluation of ecological receptors); 25 Pa. Code § 250.404 (relating to pathway identification and elimination); 25 Pa. Code § 250.602 (relating to risk assessment procedures); and 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.403. Use of groundwater.

(a) Groundwater will not be considered a current or potential source of drinking water where groundwater has a background total dissolved solids concentration greater than 2,500 milligrams per liter.

(b) Except as provided in subsection (a), current and probable future use of groundwater shall be determined on a site-specific basis.

(c) Drinking water use of groundwater shall be made suitable by at least meeting the primary and secondary MCLs at all points of exposure identified in § 250.404 (relating to pathway identification and elimination).

(d) Current drinking water or agricultural uses of groundwater, at the time contamination was discovered, shall be protected.

§ 250.404. Pathway identification and elimination.

(a) The person shall use Department-approved EPA or ASTM guidance to identify any potential current and future exposure pathways for both human receptors and environmental receptors identified in § 250.402 (relating to human health and environmental protection goals).

(b) The person shall summarize pathways for current land use and any probable future land use separately in the site-specific remedial investigation report.

(c) If no exposure pathway exists, and no remedy is required to be proposed and completed, the following apply:

(1) The remedial investigation report shall contain information necessary to determine that no current or future exposure pathway exists.

(2) A risk assessment, including an ecological risk assessment, and cleanup plan are not required.

(3) The remedial investigation report and the final report may be submitted simultaneously.

(d) Prior to performing a risk assessment as required in § 250.405 (relating to when to perform a risk assessment), the person may take into account the effect of engineering and institutional controls in eliminating pathways identified in subsection (b) and include this evaluation in the remedial investigation report.

Cross References

This section cited in 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.403 (relating to use of groundwater); and 25 Pa. Code § 250.405 (relating to when to perform a risk assessment).

§ 250.405. When to perform a risk assessment.

(a) Except as specified in subsections (b) and (c), a person who remediates under this subchapter shall develop site-specific standards based on a risk assessment. The person shall conduct the risk assessment according to the procedures specified in Subchapter F (relating to exposure and risk determinations).

(b) The risk assessment report is not required if a fate and transport analysis which takes into account the effects of engineering and institutional controls demonstrates that neither present nor future exposure pathways exist. This dem-

onstration shall follow the procedures described in § 250.404 (relating to pathway identification and elimination).

(c) The baseline risk assessment report is not required if the Department, in its remedial investigation report or cleanup plan approval, determines that a specific remediation measure that eliminates all pathways, other than a no-action remedial alternative, can be implemented to attain the site-specific standard in accordance with the requirements of attainment demonstration as specified in Subchapter G (relating to demonstration of attainment). A baseline risk assessment is that portion of a risk assessment that evaluates a risk in the absence of the proposed site-specific measure.

Cross References

This section cited in 25 Pa. Code § 250.404 (relating to pathway identification and elimination); 25 Pa. Code § 250.409 (relating to risk assessment report); and 25 Pa. Code § 250.602 (relating to risk assessment procedures).

§ 250.406. Relationship to surface water quality requirements.

(a) A regulated discharge to surface waters shall comply with the applicable provisions of Chapters 91—96, 97 (reserved) and 102—105, including antidegradation requirements.

(b) For point source discharges to surface water, compliance shall be measured at the point of discharge in accordance with limits specified in the NPDES permit.

(c) For purposes of determining compliance with surface water quality standards from a diffuse surface or groundwater discharge, the person shall determine the expected instream regulated substance concentrations, that are attributable to releases at the site, using mass balance techniques and appropriate sampling for groundwater/surface water mixing at design flow conditions. If the results indicate that surface water quality standards are being achieved, no action is required. If results indicate that surface water quality standards are not being achieved, additional sampling may be performed to help evaluate whether surface water quality standards are being achieved. If the results of the sampling indicate the surface water quality standards are being met, no further action is required. If the results of the modeling, and sampling if any, indicate the surface water quality standards are not being met, the person shall perform further remedial action to attain the surface water quality standards, unless a waiver of the surface water quality standards is obtained under paragraphs (1) and (2).

(1) In the case of a diffuse surface or groundwater discharge which existed at the time contamination was discovered, the Department may waive any otherwise applicable provisions, including the provisions of Chapter 93 (relating to water quality standards), under section 902(b) of the act (35 P. S. § 6026.902(b)).

(2) An applicant for a waiver of provisions in Chapter 93 shall demonstrate to the Department that the proposed remedial alternative will result in attainment of a concentration in the stream that does not exceed human health crite-

ria and aquatic life criteria under the requirements in Chapter 93. The person may propose the use of alternative site-specific exposure factors or design conditions that will demonstrate attainment of the human health criteria.

(d) Except if an NPDES permit is required, for purposes of complying with surface water quality standards in a spring, the point of compliance is the point of first designated or existing use, as defined in §§ 93.1, 93.4 and 93.9 (relating to definitions; Statewide water uses; and designated water uses and water quality criteria). Where the point of first designated or existing use occurs in a surface water into which a spring flows, compliance with surface water quality standards shall be determined in the manner specified in subsection (c).

Cross References

This section cited in 25 Pa. Code § 245.310 (relating to site characterization report).

§ 250.407. Point of compliance.

(a) For attainment of a site-specific standard in groundwater, the point of compliance is the property boundary that existed at the time the contamination was discovered. Site-specific standards shall be attained at and beyond the point of compliance. The Department may determine in writing a point of compliance beyond the property boundary to be appropriate if one of the following situations is demonstrated:

- (1) Structures are located on the property boundary which prohibit internal or external access for a drill rig.
- (2) The property is a small parcel of land with limited space for onsite monitoring wells.
- (3) It is not physically possible to monitor groundwater quality at the property boundary.
- (4) The downgradient property was owned by the same party at the time the contamination was discovered and the use of the groundwater on the downgradient property can be controlled to prevent unacceptable exposure.
- (5) For measuring compliance with secondary contaminants.

(b) For attainment of a site-specific standard in residential areas for volatilization directly to indoor air, the point of compliance is the point of exposure where there is exposure on the site in a below-grade occupied space.

(c) For attainment of site-specific soil standards in residential areas, the point of compliance for ingestion and inhalation exposure is up to 15 feet below the existing surface unless bedrock or physical structures are encountered which prevent safe continued remediation.

(d) For attainment of site-specific soil standards in nonresidential areas, the point of compliance for ingestion, inhalation and volatilization is the point of exposure as identified in an approved risk assessment report, if required.

(e) For the emission of regulated substances to outdoor air, the point of compliance for the air quality standard shall be as specified in the air quality regulations. See Article III (relating to air resources).

Authority

The provisions of this § 250.407 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.407 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285781) to (285782).

Cross References

This section cited in 25 Pa. Code § 250.701 (relating to scope).

§ 250.408. Remedial investigation report.

(a) Persons electing to remediate a site to the site-specific standard shall submit a remedial investigation report to the Department for review and approval. This report shall include documentation and a description of the procedures and conclusions from the site characterization conducted according to the requirements of subsections (b)—(e). The site characterization shall be conducted in accordance with scientifically recognized principles, standards and procedures. The level of detail in investigation, and the selected methods and analyses, that may include models, shall sufficiently define the rate of movement and the present and future extent and fate of contaminants, to ensure continued attainment of the remediation standard. Interpretations of geologic and hydrogeologic data shall be prepared by a professional geologist licensed in this Commonwealth.

(b) As directed from specific knowledge of the subject property, historic use of the subject property or regulated substance usage information regarding the subject property, an appropriate number of sample locations should be investigated from the identified media of concern to characterize the nature and composition of the contaminants including:

- (1) Source characterization or development of a conceptual site model.
- (2) The vertical and horizontal extent of contamination above the selected standard within each medium of concern.
- (3) The direction and rate of contaminant movement within each medium of concern.
- (4) Identification of the appropriate remedial technology options for each medium of concern.

(c) Descriptions of sampling and decontamination methodologies and analytical quality assurance/quality control procedures should be included within a sampling and analysis plan and quality assurance plan. Copies of soil and geologic boring descriptions and as-built construction drawings of wells used for site characterization should be included in the report. Copies of all laboratory analytical

results and applicable laboratory quality control results should be included within the report, including all historical data and data eliminated from consideration based on data validation protocols. Analytical results should be presented within the report in table form.

(d) If soil is determined to be a medium of concern, the site characterization shall determine the relative location of the soil samples necessary to characterize the horizontal and vertical extent of contamination, and factors which could relate to the movement of the contamination. The horizontal and vertical extent of soil with concentrations of regulated substances above the selected standard shall be defined by an appropriate number of samples inside and outside of the area that exceeds the standard. Soil samples from the area with the anticipated highest levels of contamination shall be obtained, as appropriate, to determine the applicability of the proposed remedial action and handling and disposal requirements for that soil during remediation.

(e) If groundwater is determined to be a medium of concern, the site characterization shall characterize the effects of a release on groundwater to adequately determine how naturally occurring physical and geochemical characteristics define the movement of groundwater and contaminants beneath the surface, including the delineation of the position of aquifers, as well as geologic units which inhibit groundwater flow. When appropriate, the characterization shall consider the heterogeneity and anisotropy of aquifer materials based on hydraulic conductivity values (measured or published), and the effect of local and regional groundwater flow directions and influence from pumping wells. Defining the horizontal extent of concentrations of regulated substances above the standard shall require more than one round of groundwater sampling from properly constructed and developed monitoring wells taken with a sufficient number of days apart to yield independently valid results. When characterizing the vertical extent of groundwater contamination, the person shall perform more than one round of groundwater sampling and shall consider the specific gravity of the regulated substances identified in the groundwater in the site, and the potential for naturally occurring or induced downward vertical hydraulic gradients. When characterizing the vertical extent of groundwater contamination, properly constructed monitoring wells or nested monitoring wells should be utilized to focus groundwater sampling in zones of potential contaminant accumulation (that is, directly above a confining layer) and sampling shall be taken with a sufficient number of days apart to yield independently valid results.

(f) The comments obtained as a result of a public involvement plan, if any, and the responses to those public comments shall be included in a remedial investigation report.

§ 250.409. Risk assessment report.

The risk assessment report shall conform to this subchapter and Subchapter F (relating to exposure and risk determinations), and shall include the following unless not required under § 250.405 (relating to when to perform a risk assessment):

- (1) A risk assessment report that describes the potential adverse effects, including the evaluation of ecological receptors, under both current and planned future conditions caused by the presence of regulated substances in the absence of any further control, remediation or mitigation measures.
- (2) The development of the site-specific standards risk assessment report that describes the methods used to calculate a concentration level at which human health and the environment are protected.
- (3) The comments obtained as a result of a public involvement plan, if any, and the responses to those public comments.

Cross References

This section cited in 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.311 (relating to evaluation of ecological receptors).

§ 250.410. Cleanup plan.

(a) A cleanup plan is required to be submitted to the Department for approval when the site-specific standard is selected as the remediation goal. The cleanup plan shall evaluate the relative abilities of the alternative remedies to achieve the site-specific standard and propose a remedial measure which shall achieve the standard established according to the procedures contained in this subchapter. The person submitting the plan shall evaluate additional alternative remedies that have been requested for evaluation by the Department in accordance with the act.

(b) Other components of the cleanup plan include:

- (1) Site maps.
- (2) The results of treatability, bench scale or pilot scale studies or other data collected to support the remedial actions.
- (3) Adequate design plans and specifications sufficient to evaluate the proposed remedy.
- (4) The comments obtained as a result of a public involvement plan and the responses to those public comments.
- (5) Documentation of proposed postremediation care requirements if they are needed to maintain the standard.

(c) When a person proposes a remedy that relies on access to properties owned by third parties, for remediation or monitoring, documentation of cooperation or agreement shall be submitted as part of the cleanup plan.

(d) A cleanup plan is not required and no remedy is required to be proposed or completed if no current or future exposure pathways exist.

§ 250.411. Final report.

(a) For sites remediated under the site-specific standard, the person conducting the remediation shall submit a final report to the Department which documents attainment of the selected standard.

(b) Final reports shall demonstrate that the remedy has been completed in accordance with an approved cleanup plan.

(c) Final reports shall include the information identified in § 250.204(f)(1)—(5) (relating to final report).

(d) If engineering or institutional controls are needed to maintain a standard, if the fate and transport analysis indicates that the remediation standard may be exceeded at the point of compliance in the future, or, if the remediation relies on natural attenuation, a postremediation care plan shall be documented in the final report that includes the information identified in § 250.204(g).

(e) The comments obtained as a result of a public involvement plan and the responses to those public comments shall be included in a final report.

(f) If mitigation measures are implemented in accordance with § 250.311(f) (relating to evaluation of ecological receptors), a postremediation care plan shall be documented in the final report that includes the following:

(1) A plan to maintain the mitigated ecological resource.

(2) Reporting of the ongoing success or failure of the mitigation measure implemented.

(3) Mitigation measures instituted at the time of the final report which shall be successfully accomplished and sustained up to 5 years from final report approval.

Cross References

This section cited in 25 Pa. Code § 245.313 (relating to remedial action completion report); 25 Pa. Code § 250.311 (relating to evaluation of ecological receptors); and 25 Pa. Code § 253.1 (relating to definitions).

Subchapter E. SIA STANDARDS

Sec.

250.501. Scope.

250.502. Eligibility determinations.

250.503. Remediation requirements.

§ 250.501. Scope.

(a) This subchapter sets forth requirements and procedures for any person who conducts remediation activities for property located in an SIA.

(b) A person who conducts remediation activities in an SIA shall comply with the requirements for notifying municipalities, the public and the Department.

§ 250.502. Eligibility determinations.

The person proposing remediation shall demonstrate:

- (1) The property was used for industrial activity.
- (2) The person did not cause or contribute to contamination on the property.
- (3) There is no financially viable responsible person to clean up the contamination; or the property is located within a designated enterprise zone.

§ 250.503. Remediation requirements.

(a) A person proposing remediation of an SIA shall perform a baseline remedial investigation that establishes a reference point for existing contamination.

(b) A work plan shall be prepared that will define the scope of the baseline remedial investigation and shall be submitted to the Department for approval prior to the initiation of the investigation.

(c) At a minimum, a baseline remedial investigation shall include the following:

- (1) Identification of the historical regulated substance use, handling and disposal activities on the property and any known or suspected releases associated with these activities by conducting environmental site assessment research and interviews with any person who may have knowledge of the property.
- (2) If indicated by the investigation, performance of environmental sampling, within all potential media of concern, to confirm that the releases have occurred.
- (3) Identification of potential migration pathways off the property and associated potential receptors of any confirmed releases on the property.
- (4) If migration pathways and associated potential receptors have been identified, performance of environmental sampling of groundwater and other media at the downgradient property boundary to determine if regulated substances from the releases on the property have migrated off the property.
- (5) Evaluation of exposure conditions within the portion of the property to be reused to identify existing contamination that poses an immediate, direct or imminent threat to public health or the environment which is inconsistent with the intended reuse of that portion of the property.

(d) The results of the baseline remedial investigation shall be included in a baseline environmental report. At a minimum, the baseline environmental report shall include the following:

- (1) A description of the location and boundaries of the SIA.
- (2) Identification of all areas of contamination.
- (3) A description of the intended reuse of the property and exposure patterns.
- (4) A remediation plan for the property that addresses all immediate, direct or imminent threats to public health and the environment which would prevent

the property from being occupied for its intended purpose and delineates methods of compliance monitoring. At a minimum, immediate, direct or imminent threats will entail:

- (i) Containerized wastes not intended in the property reuse, such as wastes in drums, above or below ground tanks and small containers.
 - (ii) Wastes not contained which present a direct threat to workers or other users or occupants of the property.
 - (iii) Contaminated soil presenting a direct threat to workers or other users or occupants of the property. The depth of consideration shall be the first 2 feet from the ground surface, unless reuse of the property presents exposure threats from depths greater than 2 feet.
 - (iv) Contaminated groundwater, if groundwater use will expose persons on the property to contaminants.
 - (v) Contaminated surface water and sediments, if use will expose persons on the property to contaminants.
- (5) A remediation plan to prevent access to portions of the property containing contaminated media that is not being required to be remediated and that poses unacceptable health risks to trespassers or workers on the site.
- (6) A description of the existing or potential public benefits of the reuse of the property, such as employment, housing, open space or recreation.
- (7) The comments obtained as a result of a public involvement plan and the responses to these public comments.
- (e) A person that changes the use of the property from nonresidential to residential, or changes the use of the property to create substantial changes in exposure conditions to contamination that existed prior to the person's reuse shall notify the Department of the changes and may be required to implement a remediation plan to address any new imminent, direct or immediate threats to human health and the environment resulting from the changes.
- (f) The baseline environmental report shall include and address any municipal and public comments and the response to those comments as developed by the public involvement plan.
- (g) The baseline environmental report shall be submitted to the Department after the date of approval of the baseline remedial investigation work plan, and the public participation period.

Subchapter F. EXPOSURE AND RISK DETERMINATIONS

Sec.

- 250.601. Scope.
- 250.602. Risk assessment procedures.
- 250.603. Exposure factors for site-specific standards.
- 250.604. Fate and transport modeling requirements for exposure assessments.
- 250.605. Sources of toxicity information.

250.606. Development of site-specific standards.

Cross References

This subchapter cited in 25 Pa. Code § 245.309 (relating to site characterization); 25 Pa. Code § 250.405 (relating to when to perform a risk assessment); 25 Pa. Code § 271.1 (relating to definitions); and 25 Pa. Code § 287.1 (relating to definitions).

§ 250.601. Scope.

(a) This subchapter specifies the information and procedures necessary to conduct a risk assessment.

(b) A risk assessment shall ensure adequate evaluation of the risks associated with human and ecological receptors exposed to regulated substances at contaminated sites.

(c) A risk assessment may include one or more of the following:

- (1) A baseline risk assessment.
- (2) A risk assessment to develop site-specific standards.

§ 250.602. Risk assessment procedures.

(a) Except as specified in § 250.405 (relating to when to perform a risk assessment), a person shall perform a risk assessment when using a site-specific standard under Subchapter D (relating to site-specific standards) to determine if there are unacceptable exposures to humans or unacceptable exposures to ecological receptors, or both.

(b) A person who proposes to perform a risk assessment under the site-specific standard shall use the methodologies used to develop the Statewide health standards contained in Subchapter C (relating to Statewide health standards) to conduct the risk assessment. If methodologies are not specified in Subchapter C or this subchapter, the risk assessment shall be conducted in accordance with the methodology specified in EPA or ASTM guidelines approved by the Department.

(c) A risk assessment for human exposure shall include the following components:

- (1) Data collection, including source characterization and development of a conceptual site model, and evaluation to identify contaminants of concern.
- (2) Exposure assessment that considers ingestion, inhalation and volatilization pathways and exposure assumptions based on land use.
- (3) Toxicity assessment that includes the use of toxicity information from sources identified in § 250.605 (relating to sources of toxicity information).
- (4) Risk characterization that evaluates if the risks meet the human health protection goals and ecological receptor protection specified in § 250.402 (relating to human health and environmental protection goals).

(d) An exposure assessment that is based on sampling shall use a data handling methodology that is consistent with the statistical method used to demonstrate attainment.

(e) When performing an exposure assessment, a person shall use the appropriate exposure factors identified in § 250.603 (relating to exposure factors for site-specific standards) and meet the requirements of § 250.604 (relating to fate and transport modeling requirements for exposure assessments).

(f) The risk assessment report shall discuss the degree of uncertainty associated with the risk assessment.

Cross References

This section cited in 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.603. Exposure factors for site-specific standards.

(a) A risk assessment for the site-specific standard shall use site-specific exposure factors under the EPA's *Final Guidelines for Exposure Assessment*, 1992 (57 FR 22888—22938) or exposure factors used in the development of the Statewide health standards identified in Subchapter C (relating to Statewide health standards).

(b) If a person uses site-specific exposure factors that deviate from the standard exposure factors in Subchapter C, the site-specific exposure factors shall be clearly justified by supporting data. The person shall provide the supporting data in the site-specific risk assessment report.

(c) The exposure factors shall be selected based on the land use of the site with reference to current and currently planned future land use and the effectiveness of institutional or legal controls placed on the future use of the land.

(d) The person shall document in the site-specific risk assessment report the future use of the site.

Cross References

This section cited in 25 Pa. Code § 250.602 (relating to risk assessment procedures); and 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.604. Fate and transport modeling requirements for exposure assessments.

(a) A person may use the soil-to-groundwater model in § 250.308(a)(2) (relating to soil to groundwater pathway numeric values) to estimate site-specific, soil-to-groundwater leaching potential for organic contaminants if the following conditions are met:

(1) Site-specific values of water-filled soil porosity, dry soil bulk density, dilution factors (DF) and fraction organic carbon in soil beneath the source of contamination (that is, not from top soil) are appropriately justified and the person provides supporting data to the Department.

(2) Koc values as provided in § 250.308(a)(2) are used or site-specific values which are appropriately justified are used and the person provides supporting data to the Department.

(3) There is no identified separate phase liquid contamination at the site.

(4) Other processes such as colloidal transport or transport by means of dissolved organic matter (DOM) are not significant at the site.

(5) The application of the soil-to-groundwater model shall meet the most current EPA or ASTM quality assurance/quality control criteria approved by the Department.

(b) Except for the soil-to-groundwater model in § 250.308(a)(2), a person planning to use other fate and transport models and methods to estimate exposure concentrations and to develop site-specific standards shall use appropriate models or methods approved by the Department. The application of groundwater models shall meet the most current EPA or ASTM quality assurance/quality control criteria approved by the Department.

Cross References

This section cited in 25 Pa. Code § 250.602 (relating to risk assessment procedures); and 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.605. Sources of toxicity information.

(a) For site-specific standards, the person shall use appropriate reference doses, reference concentrations, cancer slope factors and unit risk factors identified in Subchapter C (relating to Statewide health standards), unless the person can demonstrate that published data, available from one of the following sources, provides more current reference doses, reference concentrations, cancer slope factors or unit risk factors:

(1) Integrated Risk Information System (IRIS).

(2) United States Environmental Protection Agency, National Center for Environmental Assessment (NCEA) Provisional Peer-Reviewed Toxicity Values (PPRTV).

(3) Other sources

(i) Health Effects Assessment Summary Tables (HEAST)

(ii) Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles.

(iii) California EPA, California Cancer Potency Factors and Chronic Reference Exposure Levels.

(iv) EPA criteria documents, including drinking water criteria documents, drinking water health advisory summaries, ambient water quality criteria documents and air quality criteria documents.

(b) If no toxicity values are available from sources identified in subsection (a), the person may use the background standard or meet one of the following:

(1) Develop for the Department's review in the risk assessment report one of the following:

- (i) Chemical-specific toxicity values in accordance with the methods in the most current EPA guidelines or protocols, approved by the Department, using corroborated peer-reviewed data published in a scientific journal, if they exist.
 - (ii) Toxicity values developed from appropriately justified surrogates.
- (2) Use the minimum threshold medium-specific concentration, as the site-specific standard, with an assumed risk of 1×10^{-5} for purposes of calculating cumulative risk for the regulated substances identified in Appendix A, Table 6.

Authority

The provisions of this § 250.605 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.605 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230; corrected March 19, 2011, effective March 5, 2011, 41 Pa.B. 1458. Immediately preceding text appears at serial pages (355309) to (355310).

Cross References

This section cited in 25 Pa. Code § 250.602 (relating to risk assessment procedures); and 25 Pa. Code § 250.606 (relating to development of site-specific standards).

§ 250.606. Development of site-specific standards.

(a) If an unacceptable risk is identified by the assessments described in § 250.602 (relating to risk assessment procedures), a person shall perform one of the following:

- (1) A remediation that eliminates all current and probable future exposure pathways.
- (2) A remediation utilizing a standard developed under a site-specific risk assessment that is protective of human health and the environment.

(b) A person who chooses to use a standard developed under a site-specific risk assessment shall meet the human health and environmental protection requirements identified in § 250.402 (relating to human health and environmental protection goals).

(c) The development of site-specific standards shall be based on the standard in § 250.605(b)(2) (relating to sources of toxicity information) or the components of risk assessment in § 250.602, the appropriate exposure factors identified in § 250.603 (relating to exposure factors for site-specific standards), the fate and transport modeling requirements of § 250.604 (relating to fate and transport modeling requirements for exposure assessments) and the toxicity values of § 250.605 (relating to sources of toxicity information).

(d) The following factors shall be considered in the development of the risk assessment and in the development of site-specific standards:

- (1) Groundwater in aquifers.

- (i) Natural environmental conditions that affect the fate and transport of contaminants, such as natural attenuation, shall be determined.
 - (ii) The person shall identify routes of exposure for aquifer groundwater such as human exposure to groundwater by ingestion, human inhalation of regulated substances from volatilization and migration of these substances into buildings or other areas where humans could be exposed, human ingestion of regulated substances in surface water or other site-specific surface water exposure pathways with respect to groundwater discharges or releases to surface water, human inhalation of regulated substances in air, or other site-specific air exposure pathways with respect to release of regulated substances from groundwater to air.
- (2) Nonaquifer groundwater. The persons shall consider current and probable future exposure scenarios, such as human exposure as described in paragraph (1)(ii).
- (3) The person shall consider current and probable future exposure scenarios, such as:
- (i) Human ingestion of soil when direct contact exposure to the soil may reasonably occur.
 - (ii) Exposure to groundwater by ingestion with respect to leaching of regulated substances from soils to groundwater.
 - (iii) Human inhalation of regulated substances from volatilization and migration of these substances into below grade occupied space.
 - (iv) Human ingestion of regulated substances in surface water or other site-specific surface water exposure pathways with respect to regulated substances migration from soil to surface water.
 - (v) Human inhalation of regulated substances in air or other site-specific air exposure pathways with respect to the release of regulated substances from soil to air.
- (4) If ecological receptors have been identified under § 250.311 (relating to evaluation of ecological receptors) or § 250.402, and are impacted, a remedial activity that eliminates current or future exposure pathways, or a standard, shall be developed to protect the receptors from the direct impacts.
- (e) In determining soil and groundwater site-specific standards, the person shall identify the land use of the site with reference to current and currently planned future land use and the effectiveness of institutional or legal controls placed on the future use of the land.
- (f) In determining soil and groundwater site-specific standards, the person shall use appropriate statistical techniques, including Monte Carlo simulations as appropriate, to establish statistically valid cleanup standards. The report for a risk assessment to develop site-specific standards shall discuss the degree of uncertainty associated with the risk assessment.

Subchapter G. DEMONSTRATION OF ATTAINMENT

Sec.

- 250.701. Scope.
- 250.702. Attainment requirements.
- 250.703. General attainment requirements for soil.
- 250.704. General attainment requirements for groundwater.
- 250.705. Attainment requirements for groundwater in aquifers not used or currently planned to be used.
- 250.706. Demonstration of attainment of surface water and air quality standards.
- 250.707. Statistical tests.
- 250.708. Postremediation care attainment.

Cross References

This subchapter cited in 25 Pa. Code § 245.310 (relating to site characterization report); 25 Pa. Code § 250.202 (relating to establishing background concentrations); 25 Pa. Code § 250.204 (relating to final report); and 25 Pa. Code § 250.405 (relating to when to perform a risk assessment).

§ 250.701. Scope.

(a) This subchapter specifies the information and procedures necessary to demonstrate attainment with one or a combination of the background standard, Statewide health standard, site-specific standard and the minimum threshold standard, when a release of a regulated substance has occurred.

(b) This subchapter applies to persons who undertake a remediation in accordance with the act and this chapter.

(c) For purposes of determining attainment of one or a combination of remediation standards, the concentration of a regulated substance is not required to be less than the limits relating to the PQLs for a regulated substance in accordance with § 250.4 (relating to limits related to PQLs).

(d) Attainment of a standard shall be demonstrated at the point of compliance, as identified in § 250.203, 250.302 or 250.407 (relating to point of compliance), whichever is applicable.

§ 250.702. Attainment requirements.

(a) Attainment of a standard shall be demonstrated with adherence to Data Quality Objectives (DQO) and Data Quality Assessment (DQA) processes as specified by the EPA, as appropriate. Attainment of the Statewide health or site-specific standard will apply to the vertical and horizontal extent of soil identified as contaminated from the release of a regulated substance above the selected standard and of groundwater at the point of compliance and beyond in a site characterization. Attainment of the background standard will apply to the vertical and horizontal extent of soil and water identified as contaminated from the release across the site. Where multiple releases occur on a property which produce distinctly separate zones of contamination, the characterization and subsequent attainment demonstrations apply individually to the separate zones.

(b) Demonstration of attainment in a final report shall include the following:

(1) A demonstration that the analysis of the data, through the application of statistical tests provided for in § 250.707 (relating to statistical tests), indicates that the standard has been met.

(2) For groundwater, a demonstration of a statistical time trend analysis, knowledge of the plume stability or other acceptable method that shows contaminant concentration at the point of compliance will not exceed the selected standard. A statistical analysis shall be applied that indicates continued attainment of the standard.

(3) For the site-specific standard, the following apply:

(i) If pathway elimination is part of the remediation, it shall be demonstrated on the basis of either an engineering or hydrogeologic analysis, or both, which includes fate and transport analysis that some or all of the exposure pathways have been eliminated.

(ii) If pathway elimination is not part of the remediation or it cannot be demonstrated that all pathways have been eliminated, it shall be demonstrated that the calculated numerical site-specific standards for the remaining pathways have been attained in accordance with paragraphs (1) and (2), using the procedures in § 250.707(c) and (d), or that the risk level remaining at a site does not exceed a risk level of 1×10^{-4} and a hazard index of 1, provided for in the act. If separate phase liquids are present, it shall also be demonstrated that calculated site-specific numeric standards are attained within the soil and groundwater directly impacted by the separate phase liquids when those numeric standards are associated with exposure to separate phase liquids.

(4) For the background and Statewide health standards, if separate phase liquids are present, attainment at the point of compliance shall also be demonstrated within the soil and groundwater directly impacted by separate phase liquids.

Cross References

This section cited in 25 Pa. Code § 250.707 (relating to statistical tests).

§ 250.703. General attainment requirements for soil.

(a) For any standard selected, the attainment demonstration for the soil media shall be made at the point of compliance as defined in Subchapters B—D (relating to background standards; Statewide health standards; and site-specific standards)

(b) The soil to which the attainment criteria are applied shall be determined by circumscribing with an irregular surface those concentrations detected during characterization which exceed the selected standard. Where this soil is to be removed from the site, the attainment demonstration applies to the base of the excavation defined by the limit of excavation.

(c) Sampling points for demonstration of attainment of soils shall be selected to be random and representative both horizontally and vertically based on a systematic random sampling as set forth in a Department approved reference. If exceedances of a standard occur in a localized area, the Department may require additional characterization and remediation if three or more adjacent samples exceed the standard by more than ten times.

(d) For statistical methods under § 250.707(b)(1)(i) (relating to statistical tests), the number of sample points required for each distinct area of contamination to demonstrate attainment shall be determined in the following way:

- (1) For soil volumes equal to or less than 125 cubic yards, at least eight samples.
- (2) For soil volumes up to 3,000 cubic yards, at least 12 sample points.
- (3) For each additional soil volume of up to 3,000 cubic yards, an additional 12 sample points.
- (4) Additional sampling points may be required based on site-specific conditions.

(e) For statistical methods under § 250.707(b)(1)(ii) and (c), the minimum number of samples required for demonstrating attainment shall be as specified by the documentation of the chosen method.

Source

The provisions of this § 250.703 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395. Immediately preceding text appears at serial pages (233694) to (233695).

Cross References

This section cited in 25 Pa. Code § 250.707 (relating to statistical tests).

§ 250.704. General attainment requirements for groundwater.

(a) For any standard selected, the attainment demonstration for the groundwater media shall be made at the point of compliance as defined in Subchapters B—D (relating to background standards; Statewide health standards; and site-specific standards).

(b) A sufficient number and location of monitoring wells necessary to demonstrate attainment of each plume of contamination shall be installed at the point of compliance for each aquifer based on site-specific conditions. Well locations shall be selected to yield an adequate amount of water to produce statistically valid results.

(c) In cases where the site characterization has determined the groundwater contamination (plume) extends beyond the property boundary, and the concentration of regulated substances beyond the property is above the cleanup levels of the standard selected, then the location and number of wells shall determine compliance:

- (1) At and beyond the property boundary.

(2) Within the area of property shown, in the site investigation report, to be contaminated with regulated substances above the selected standard.

(d) For statistical methods under § 250.707(b)(2)(i) (relating to statistical tests), the demonstration of attainment for groundwater shall be based on at least eight consecutive quarters of groundwater data, which may include characterization data. As an alternative, the Department may accept fewer quarterly sampling events with written approval from the Department under the following conditions:

(1) There is adequate spatial monitoring of the plume upgradient which indicates a decreasing concentration trend toward the downgradient property boundary.

(2) Parameters affecting the fate and transport of regulated substances within the plume have been fully evaluated.

(3) Concentrations of regulated substances in the plume at the point of compliance monitoring wells along the downgradient property boundary are all less than or equal to the groundwater standard or the limit relating to the PQL, whichever is higher, in all samples collected during the quarters of monitoring.

(4) One of the following requirements are met:

(i) The age of the plume is sufficiently well known to permit a judgment to be made regarding its stability.

(ii) The remediation includes source removal or containment actions which would reduce the chemical flux into the plume.

(e) For statistical methods under § 250.707(b)(2)(ii) and (c), the minimum number of samples required for demonstrating attainment shall be as specified by the documentation of the chosen method.

Authority

The provisions of this § 250.704 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.704 amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285793) to (285794).

Cross References

This section cited in 25 Pa. Code § 250.707 (relating to statistical tests).

§ 250.705. Attainment requirements for groundwater in aquifers not used or currently planned to be used.

In addition to sampling and statistical analyses that apply to attainment of the Statewide health standards for groundwater in this subchapter, attainment of the MSC for aquifers not used or currently planned to be used shall include the following:

(1) A scientifically valid and applicable fate and transport analysis, based on sufficient sampling and monitoring data to calibrate the model.

(2) Based on the fate and transport analysis in paragraph (1), a demonstration that the MSC for groundwater in an aquifer used or currently planned for use is not exceeded at and beyond all points on a radius of 1,000 feet, down-gradient from the property boundary within a period of no more than 30 years.

§ 250.706. Demonstration of attainment of surface water and air quality standards.

A person shall demonstrate attainment within the surface water and the air media by demonstrating compliance with the applicable State and Federal laws and regulations.

§ 250.707. Statistical tests.

(a) For regulated substances which are naturally occurring, the person shall compare the analytical results of background reference samples, that are representative of naturally occurring concentrations of regulated substances on the site, with the analytical results of the medium of concern onsite. For nonnaturally occurring regulated substances for which a known background condition exists, the person shall compare the analytical results of background reference samples, which are related to the migration of contaminants onto the site, with the analytical results of the medium of concern onsite. In addition, application of statistical tests for the background standard shall be as follows:

(1) Soil. For soil, a person shall use one of the following statistical methods in subparagraphs (i)—(iii) and conditions relating to subparagraphs (i)—(iii) as described in subparagraphs (iv)—(vi) to demonstrate attainment of the background standard:

(i) The person shall demonstrate that the highest measurement from the area of concern is not greater than the highest measurement from the background area. The Department may accept insignificant variances in numbers. The minimum number of samples to be collected is ten from the background reference population and ten from each distinct area of contamination.

(ii) The Department may accept the use of a combination of the Wilcoxon rank-sum test (equivalent to the Mann-Whitney U test) and the quantile test for data from two populations. The application of these tests shall meet the criteria in subparagraphs (iv) and (vi).

(iii) The Department may accept other appropriate statistical methods that meet the requirements of subparagraphs (iv)—(vi).

(iv) For nonparametric and parametric methods under subparagraphs (ii) and (iii), the false-positive rate for a set of data applied to a statistical test may not be greater than 0.20. The minimum number of samples to be collected is ten from the background population and ten from each distinct area of contamination.

(v) For parametric methods under subparagraph (iii), the censoring level for each nondetect (ND) shall be the assigned value randomly generated that is between zero and the limit related to the PQL.

(vi) For nonparametric and parametric methods under subparagraphs (ii) and (iii), the application of a statistical method shall meet the criteria in subsection (d).

(2) Groundwater for known upgradient release of a regulated substance.

(i) The Department may accept the use of the nonparametric tolerance intervals that are applied in accordance with the procedures in subparagraphs (ii)—(vi) and (viii)—(x).

(ii) The upgradient concentration shall be determined by sampling in a background reference well shown on the basis of characterization to exhibit the highest concentration and by demonstrating that the groundwater is representative of concentrations in groundwater that are migrating onto the site.

(iii) The background reference well shall be sampled over a period of eight quarters to provide eight samples.

(iv) From these eight samples, the highest concentration for each regulated substance shall be selected as the upper tolerance limit.

(v) In each onsite well, eight samples shall also be collected during the same eight-quarter period.

(vi) The upper tolerance limit shall be met in each onsite well. The maximum of data collected from each onsite well shall be at or below the upper tolerance limit.

(vii) In lieu of subparagraphs (iv)—(vi), the Department may accept a retesting strategy using nonparametric prediction limit in accordance with current EPA guidance (EPA, Office of Solid Waste Management Division. "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities;" Addendum to Interim Final Guidance, EPA, Washington, D. C. June 1992). For each regulated substance, the highest concentration of the eight background reference samples shall be selected as the upper prediction limit, as determined by the most current EPA guidance.

(viii) The application of a statistical method for groundwater background standard shall meet the criteria in subsection (d).

(ix) For parametric methods, the censoring level for each nondetect (ND) shall be the assigned value randomly generated that is between zero and the limit related to the PQL.

(x) In lieu of eight-quarter sampling in subparagraphs (iii) and (v), the Department may allow the eight samples to be taken during a period of four quarters, or less with written approval from the Department if the following criteria can be met:

(A) There is adequate spatial monitoring of the plume upgradient of the property on which the release occurred which indicates a stable plume condition.

(B) Parameters affecting the fate and transport of regulated substances within the plume have been fully evaluated.

(C) Coefficient of variation for the eight samples collected over a 4-quarter period may not exceed 1.0 for metals and 2.0 for organic compounds.

(D) The age of the plume is sufficiently well known to permit a judgement to be made regarding its stability and remediation of the source associated with the upgradient contamination is not currently or has not recently occurred.

(3) Background groundwater conditions due to naturally occurring or area-wide contamination.

(i) To use this subparagraph for areawide contamination, the person performing remediation shall demonstrate to the Department, in writing, that the site conditions are due to areawide contamination and shall obtain the Department's approval to use this subsection.

(ii) A minimum of 12 samples shall be collected from any combination of monitoring wells, including upgradient locations, if all data collected is used in determination of background concentrations.

(iii) The same number of samples shall be collected within and representative of the area of groundwater contamination (plume) onsite as were collected in the upgradient sampling for each sampling event.

(iv) The samples from the upgradient wells and the wells in the plume onsite shall be collected during the same sampling event.

(v) Sampling may be accelerated so that all sampling events occur in as short a period of time as possible so as not to result in serial correlation in the data.

(vi) The resulting values may be used with appropriate nonparametric or parametric methods to compare the two populations.

(vii) The sampling results in the plume onsite may not exceed the sum of the background arithmetic average and three times the standard deviation calculated for the background area.

(viii) The application of a statistical method for groundwater background standard shall meet the criteria in subsection (d).

(ix) For parametric methods, the censoring level for each nondetect (ND) shall be the assigned value randomly generated that is between zero and the limit related to the PQL.

(b) The following statistical tests may be accepted by the Department to demonstrate attainment of the Statewide health standard. The statistical test for soil shall apply to each distinct area of contamination. The statistical test for groundwater will apply to each compliance monitoring well. Testing shall be performed individually for each regulated substance identified in the final report site

investigation as being present at the site for which a person wants relief from liability under the act. The application of a statistical method must meet the criteria in subsection (d).

(1) For soil attainment determination at each distinct area of contamination, subparagraph (i), (ii) or (iii) shall be met in addition to the attainment requirements in §§ 250.702 and 250.703 (relating to attainment requirements; and general attainment requirements for soil).

(i) Seventy-five percent of all samples, which shall be randomly collected in a single event from the site, shall be equal to or less than the Statewide health standard or the limit related to PQLs with no individual sample exceeding ten times the Statewide health standard.

(ii) As applied in accordance with EPA approved methods on statistical analysis of environmental data, as identified in subsection (e), the 95% UCL of the arithmetic mean shall be at or below the Statewide health standard.

(iii) For sites with a petroleum release where full site characterization, as defined in § 250.204(b) (relating to final report), has not been done in association with an excavation remediation, attainment of the Statewide health standard shall be demonstrated using the following procedure:

(A) For sites regulated under Chapter 245 (relating to administration of the storage tank and spill prevention program) where there is localized contamination as defined in the document “Closure Requirements for Underground Storage Tank Systems” (DEP technical document 2530-BK-DEP2008), samples shall be taken in accordance with that document.

(B) For sites not covered by clause (A), including all sites being remediated under an NIR under this chapter, samples shall be taken from the bottom and sidewalls of the excavation in a biased fashion that concentrates on areas where any remaining contamination above the Statewide health standard would most likely be found. The samples shall be taken from these suspect areas based on visual observation and the use of field instruments. If a sufficient number of samples has been collected from all suspect locations and the minimum number of samples has not been collected, or if there are no suspect areas, the locations to meet the minimum number of samples shall be based on a random procedure. The number of sample points required shall be determined in the following way:

(I) For 250 cubic yards or less of excavated contaminated soil, five samples shall be collected.

(II) For each additional 100 cubic yards of excavated contaminated soil, one sample shall be collected.

(III) For excavations involving more than 1,000 cubic yards of contaminated soil, the remediator shall identify the number and locations of samples in a confirmatory sampling plan submitted to the Department. The remediator shall obtain the Department’s approval of the confirmatory sampling plan prior to conducting attainment sampling.

(IV) Where water is encountered in the excavation and no obvious contamination is observed or indicated, soil samples collected just above the soil/water interface shall be equal to or less than the applicable Statewide health MSC determined by § 250.308(a)(2)(ii) (relating to soil to groundwater pathway numeric values).

(V) Where water is encountered in the excavation and no obvious contamination is observed or indicated, a minimum of two samples shall be collected from the water surface in the excavation.

(VI) For sites where there is a release to surface soils resulting in excavation of 50 cubic yards or less of contaminated soil, samples shall be collected as described in this clause, except that two samples shall be collected.

(C) All sample results shall be equal to or less than the applicable Statewide health MSC as determined using Tables 1—4 and 6 in Appendix A.

(2) For groundwater attainment determination at each compliance monitoring well, subparagraph (i) or (ii) shall be met in addition to the attainment requirements in § 250.702 and § 250.704 (relating to general attainment requirements for groundwater).

(i) Seventy-five percent of all samples collected within each monitoring well over time shall be equal to or less than the Statewide health standard or the limit related to PQLs with no individual sample exceeding both of the following:

(A) Ten times the Statewide health standard on the property.

(B) Two times the Statewide health standard beyond the property boundary.

(ii) As applied in accordance with EPA approved methods on statistical analysis of environmental data, as identified in subsection (e), the 95% UCL level of the arithmetic mean shall be at or below the Statewide health standard.

(3) In addition to the statistical tests identified in paragraphs (1) and (2), a person may use a statistical test that meets the requirements of subsection (d) to demonstrate attainment.

(c) To demonstrate attainment of the site-specific standard, a person may use a statistical test identified in subsection (b)(1)(ii) and (2)(ii) where the 95% UCL of the arithmetic mean is below the site-specific standard or a statistical test that meets the requirements of subsection (d). The attainment test and the methodology used in the risk assessment to evaluate exposure concentrations shall be the same.

(d) Except for the statistical methods identified in subsections (a)(1)(i) and (b)(1)(i) and (2)(i), a demonstration of attainment of one or a combination of remediation standards shall comply with the following:

(1) When statistical methods are to be used for demonstration of attainment of Statewide health or site-specific standards, the null hypotheses (Ho) shall be that the true site arithmetic average concentration is at or above the cleanup standard, and the alternative hypothesis (Ha) shall be that the true site arithmetic average concentration is below the cleanup standard. When statistical methods are to be used to determine that the background standard is exceeded, the null hypothesis (Ho) shall be that the background standard is achieved and the alternative hypothesis (Ha) shall be that the background standard is not achieved.

(2) A statistical method chosen shall comply with the following performance standards:

(i) The underlying assumptions of the statistical method shall be met, such as data distribution.

(ii) The statistical method shall be recommended for this use in Department-approved guidance or regulation and shall be generally recognized as appropriate for the particular remediation implemented at the site.

(iii) Compositing cannot be used with nonparametric methods or for volatile organic compounds.

(iv) For parametric methods, the censoring level for each nondetect shall be the assigned value randomly generated that is between zero and the limit related to the PQL.

(v) Tests shall account for seasonal and spatial variability as well as temporal correlation of data, unless otherwise approved by the Department.

(vi) Tests used to determine that the background standard is exceeded shall maintain adequate power to detect contamination in accordance with current EPA guidances, regulations or protocols.

(vii) For the limits relating to the PQLs, Statewide health and site-specific standards, the false-positive rate for a statistical test may not be greater than 0.20 for nonresidential and 0.05 for residential.

(viii) Statistical testing shall be done individually for each regulated substance present at the site.

(3) The following information shall be documented in a final report when a statistical method is applied:

(i) A description of the statistical method.

(ii) A clear statement of the applicable decision rule in the form of statistical hypotheses for each spatial unit and temporal boundary including the applicable statistical parameter of interest and the specific cleanup standard.

(iii) A description of the underlying assumptions of the method.

- (iv) Documentation showing that the sample data set meets the underlying assumptions of the method and demonstrating that the method is appropriate to apply to the data.
 - (v) Specification of false positive rates and, in addition for the background standard, specification of false negative rates.
 - (vi) Documentation of input and output data for the statistical test, presented in tables or figures, or both, as appropriate.
 - (vii) An interpretation and conclusion of the statistical test.
- (e) The references identified in subsection (b)(1)(ii) and (2)(ii) are as follows:
- (1) EPA, Office of Policy, Planning and Evaluation, *Methods for Evaluating the Attainment of Cleanup Standards*, Volume 1: Soils and Solid Media, EPA 230/02-89-042, Washington, D. C. 1989.
 - (2) EPA, Office of Solid Waste Management Division, *Test Methods for Evaluating Solid Waste*, SW-846 Volume II: Field Methods, EPA, November 1985, Third Edition.
 - (3) EPA, Office of Solid Waste Management Division, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, Interim Final Guidance, EPA, Washington, D.C., April, 1989.
 - (4) EPA, Office of Solid Waste Management Division, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, Addendum to Interim Final Guidance, EPA, Washington, D.C., June, 1992.
 - (5) 40 CFR 264 and 265 (relating to standards for owners and operators of hazardous waste treatment, storage, and disposal facilities; and interim status standards for owners and operators of hazardous waste treatment, storage, and disposal facilities).

Authority

The provisions of this § 250.707 issued under sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (35 P. S. §§ 6026.104(a) and 6026.303(a)).

Source

The provisions of this § 250.707 amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395; amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230. Immediately preceding text appears at serial pages (285794) to (285801).

Cross References

This section cited in 25 Pa. Code § 250.702 (relating to attainment requirements); 25 Pa. Code § 250.703 (relating to general attainment requirements for soil); 25 Pa. Code § 250.703 (relating to general attainment requirements for soil); and 25 Pa. Code § 250.704 (relating to general attainment requirements for groundwater).

§ 250.708. Postremediation care attainment.

- (a) After engineering controls are in place and the groundwater concentration levels have stabilized following any effects from the remediation, a statistical test shall be used to demonstrate that regulated substances in groundwater do not

exceed the selected standard at the point of compliance. A statistical trend analysis, knowledge of the plume stability, or other acceptable method shall be used to demonstrate that contaminant concentration at the point of compliance will not exceed the selected standard in the future.

(b) If engineering or institutional controls are utilized at a site to maintain the nonresidential Statewide health standard or the site-specific standard, a postremediation care program shall be implemented to protect human health and the environment.

(c) A person implementing engineering controls shall ensure the ongoing achievement of the performance standards in order to maintain attainment.

(d) A person shall implement a postremediation care plan, as identified in an approved final report.

(e) A person may terminate postremediation care as approved in the final report if the person can demonstrate attainment under this chapter without the engineering controls in place, and document a fate and transport analysis that shows the standard will not be exceeded in the future.

APPENDIX A

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
ACENAPHTHENE	83-32-9	2,200 G	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S	3,800 S
ACENAPHTHYLENE	208-96-8	2,200 G	6,100 G	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S	16,000 S
ACEPHATE	30560-19-1	76 G	300 G	7,600 G	30,000 G	30,000 G	76 G	76 G	76 G	76 G	76 G	76 G	300 G
ACETALDEHYDE	75-07-0	19 N	79 N	1,900 N	7,900 N	7,900 N	1,900 N	1,900 N	1,900 N	1,900 N	1,900 N	1,900 N	79 N
ACETONE	67-64-1	33,000 G	92,000 G	3,300,000 G	9,200,000 G	9,200,000 G	3,300,000 G	3,300,000 G	3,300,000 G	3,300,000 G	3,300,000 G	3,300,000 G	920,000 G
ACETONITRILE	75-05-8	130 N	530 N	13,000 N	53,000 N	53,000 N	13,000 N	13,000 N	13,000 N	13,000 N	13,000 N	13,000 N	5,300 N
ACETOPHENONE	98-86-2	3,700 G	10,000 G	370,000 G	1,000,000 G	1,000,000 G	370,000 G	370,000 G	370,000 G	370,000 G	370,000 G	370,000 G	10,000 G
ACETYLAMINOFLUORENE, 2- (2AAF)	53-96-3	0.17 G	0.68 G	17 G	68 G	68 G	17 G	17 G	17 G	17 G	17 G	17 G	680 G
ACROLEIN	107-02-8	0.042 N	0.18 N	4.2 N	18 N	18 N	4.2 N	4.2 N	4.2 N	4.2 N	4.2 N	4.2 N	1.8 N

All concentrations in µg/L
 NR = Non-Residential
 M = Maximum Contaminant Level
 R = Residential
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	NR	R	R	NR	R	NR	
ACRYLAMIDE	79-06-1	0.038 N	0.19 N	3.8 N	3.8 N	19 N	0.038 N	0.038 N	19 N	0.038 N	0.19 N		
ACRYLIC ACID	79-10-7	2.1 N	8.8 N	210 N	210 N	880 N	210 N	210 N	880 N	210 N	880 N		
ACRYLONITRILE	107-13-1	0.72 N	3.7 N	72 N	72 N	370 N	72 N	72 N	370 N	72 N	370 N		
ALACHLOR	15972-60-8	2 M	2 M	200 M	200 M	200 M	2 M	2 M	200 M	2 M	2 M		
ALDICARB	116-06-3	3 M	3 M	300 M	300 M	300 M	3 M	3 M	300 M	3,000 M	3,000 M		
ALDICARB SULFONE	1646-88-4	2 M	2 M	200 M	200 M	200 M	2 M	2 M	200 M	2 M	2 M		
ALDICARB SULFOXIDE	1646-87-3	4 M	4 M	400 M	400 M	400 M	4 M	4 M	400 M	4 M	4 M		
ALDRIN	309-00-2	0.039 G	0.15 G	3.9 G	3.9 G	15 G	0.039 G	0.039 G	15 G	20 S	20 S		
ALLYL ALCOHOL	107-18-6	0.63 N	2.6 N	63 N	63 N	260 N	0.63 N	0.63 N	260 N	63 N	260 N		
AMETRYN	834-12-8	60 H	60 H	6,000 H	6,000 H	6,000 H	60 H	60 H	6,000 H	60 H	60 H		

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 H = Lifetime health advisory level
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
AMINOBIHENYL, 4-	92-67-1	0.031 G	0.12 G	3.1 G	12 G	31 G	120 G			
AMITROLE	61-82-5	0.7 G	2.8 G	70 G	280 G	700 G	2,800 G			
AMMONIA	7664-41-7	30,000 H	30,000 H	3,000,000 H	3,000,000 H	30,000 H	30,000 H			
AMMONIUM SULFAMATE	7773-06-0	2,000 H	2,000 H	200,000 H	200,000 H	2,000 H	2,000 H			
ANILINE	62-53-3	2.1 N	8.8 N	210 N	880 N	2.1 N	8.8 N			
ANTHRACENE	120-12-7	66 S	66 S	66 S	66 S	66 S	66 S			
ATRAZINE	1912-24-9	3 M	3 M	300 M	300 M	3 M	3 M			
AZINPHOS-METHYL (GUTHION)	86-50-0	110 G	310 G	11,000 G	31,000 G	110 G	310 G			
BAYGON (PROPOXUR)	114-26-1	3 H	3 H	300 H	300 H	3,000 H	3,000 H			
BENOMYL	17804-35-2	1,800 G	2,000 S	2,000 S	2,000 S	1,800 G	2,000 S			

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 H = Lifetime health advisory level
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS						
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500			
		R	NR	H	R	NR	H	R	NR	H	R	NR	H	
BENTAZON	25057-89-0	200	200	H	20,000	H	20,000	H	20,000	H	200	H	200	H
BENZENE	71-43-2	5	5	M	500	M	500	M	500	M	500	M	500	M
BENZIDINE	92-87-5	0.00093	0.011	G	0.093	G	1.1	G	0.93	G	1.1	G	1.1	G
BENZO[A]ANTHRACENE	56-55-3	0.29	3.6	G	11	S	11	S	11	S	11	S	11	S
BENZO[A]PYRENE	50-32-8	0.2	0.2	M	3.8	S	3.8	S	3.8	S	3.8	S	3.8	S
BENZO[B]FLUORANTHENE	205-99-2	0.29	1.2	S	1.2	S	1.2	S	1.2	S	1.2	S	1.2	S
BENZO[GHI]PERYLENE	191-24-2	0.26	0.26	S	0.26	S	0.26	S	0.26	S	0.26	S	0.26	S
BENZO[K]FLUORANTHENE	207-08-9	0.55	0.55	S	0.55	S	0.55	S	0.55	S	0.55	S	0.55	S
BENZOIC ACID	65-85-0	150,000	410,000	G	2,700,000	S	2,700,000	S	150,000	G	150,000	G	410,000	G
BENZOTRICHLORIDE	98-07-7	0.051	0.2	G	5.1	G	20	G	51	G	200	G	200	G

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 H = Lifetime health advisory level
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
BENZYL ALCOHOL	100-51-6	18,000 G	51,000 G	1,800,000 G	1,800,000 G	5,100,000 G	18,000 G	18,000 G	51,000 G	
BENZYL CHLORIDE	100-44-7	1 N	5.1 N	100 N	100 N	510 N	100 N	100 N	510 N	
BETA PROPIOLACTONE	57-57-8	0.012 N	0.063 N	1.2 N	1.2 N	6.3 N	0.12 N	0.12 N	0.63 N	
BHC, ALPHA-	319-84-6	0.1 G	0.41 G	10 G	10 G	41 G	100 G	100 G	410 G	
BHC, BETA-	319-85-7	0.37 G	1.4 G	37 G	37 G	100 S	100 S	100 S	100 S	
BHC, GAMMA (LINDANE)	58-89-9	0.2 M	0.2 M	20 M	20 M	20 M	200 M	200 M	200 M	
BIPHENYL, 1,1-	92-52-4	1,800 G	5,100 G	7,200 S	7,200 S	7,200 S	7,200 S	7,200 S	7,200 S	
BIS(2-CHLOROETHOXY)METHANE	111-91-1	110 G	310 G	11,000 G	11,000 G	31,000 G	110 G	110 G	310 G	
BIS(2-CHLOROETHYL)ETHER	111-44-4	0.15 N	0.76 N	15 N	15 N	76 N	15 N	15 N	76 N	
BIS(2-CHLORO-ISOPROPYL)ETHER	108-60-1	300 H	300 H	30,000 H	30,000 H	30,000 H	30,000 H	30,000 H	30,000 H	

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R	NR	NR			
		R	NR	R	R	NR	R						
BIS(CHLOROMETHYL)ETHER	542-88-1	0.00079	N	0.004	N	0.079	N	0.079	N	0.079	N	0.4	N
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	6	M	6	M	290	S	290	S	290	S	290	S
BISPENOL A	80-05-7	1,800	G	5,100	G	120,000	S	120,000	S	120,000	S	120,000	S
BROMACIL	314-40-9	70	H	70	H	7,000	H	7,000	H	70	H	70	H
BROMOCHLOROMETHANE	74-97-5	90	H	90	H	9,000	H	9,000	H	90	H	90	H
BROMODICHLOROMETHANE	75-27-4	80	M	80	M	8,000	M	8,000	M	80	M	80	M
BROMOMETHANE	74-83-9	10	H	10	H	1,000	H	1,000	H	1,000	H	1,000	H
BROMOXYNIL	1689-84-5	730	G	2,000	G	73,000	G	73,000	G	730	G	2,000	G
BROMOXYNIL OCTANOATE	1689-99-2	80	S	80	S	80	S	80	S	80	S	80	S
BUTADIENE, 1,3-	106-99-0	0.19	G	0.76	G	19	G	19	G	19	G	76	G

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
BUTYL ALCOHOL, N-	71-36-3	3,700 G	10,000 G	370,000 G	370,000 G	1,000,000 G	37,000 G	37,000 G	100,000 G		
BUTYLATE	2008-41-5	400 H	400 H	40,000 H	40,000 H	40,000 H	400 H	400 H	400 H		
BUTYLBENZENE, N-	104-51-8	1,500 G	4,100 G	15,000 S	15,000 S	15,000 S	1,500 G	1,500 G	4,100 G		
BUTYLBENZENE, SEC-	135-98-8	1,500 G	4,100 G	17,000 S	17,000 S	17,000 S	1,500 G	1,500 G	4,100 G		
BUTYLBENZENE, TERT-	98-06-6	1,500 G	4,100 G	30,000 S	30,000 S	30,000 S	1,500 G	1,500 G	4,100 G		
BUTYLBENZYL PHTHALATE	85-68-7	350 G	1,400 G	2,700 S	2,700 S	2,700 S	2,700 S	2,700 S	2,700 S		
CAPTAN	133-36-2	290 G	500 S	500 S	500 S	500 S	500 S	500 S	500 S		
CARBARYL	63-25-2	3,700 G	10,000 G	120,000 S	120,000 S	120,000 S	120,000 S	120,000 S	120,000 S		
CARBAZOLE	86-74-8	33 G	130 G	1,200 S	1,200 S	1,200 S	1,200 S	1,200 S	1,200 S		
CARBOFURAN	1563-66-2	40 M	40 M	4,000 M	4,000 M	4,000 M	40 M	40 M	40 M		

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
CARBON DISULFIDE	75-15-0	1,500 N	6,200 N	150,000 N	150,000 N	620,000 N	1,500 N	6,200 N	6,200 N	
CARBON TETRACHLORIDE	56-23-5	5 M	5 M	500 M	500 M	500 M	50 M	50 M	50 M	
CARBOXIN	5234-68-4	700 H	700 H	70,000 H	70,000 H	70,000 H	700 H	700 H	700 H	
CHLORAMBEN	133-90-4	100 H	100 H	10,000 H	10,000 H	10,000 H	100 H	100 H	100 H	
CHLORDANE	57-74-9	2 M	2 M	56 S	56 S	56 S	56 S	56 S	56 S	
CHLORO-1,1-DIFLUOROETHANE, 1-	75-68-3	110,000 N	440,000 N	1,400,000 S	1,400,000 S	1,400,000 S	110,000 N	440,000 N	440,000 N	
CHLORO-1-PROPENE, 3- (ALLYL CHLORIDE)	107-05-1	2.1 N	8.8 N	210 N	210 N	880 N	210 N	210 N	880 N	
CHLOROACETOPHENONE, 2-	532-27-4	1.1 G	3.1 G	110 G	110 G	310 G	1,100 G	1,100 G	3,100 G	
CHLOROANILINE, P-	106-47-8	3.3 G	13 G	330 G	330 G	1,300 G	3.3 G	3.3 G	13 G	

All concentrations in µg/L
 G = Ingestion
 N = Inhalation
 R = Residential
 S = Aqueous solubility cap
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
CHLOROBENZENE	108-90-7	100 M	100 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	
CHLOROBENZILATE	510-15-6	6 G	24 G	600 G	2,400 G	6,000 G	6,000 G	13,000 S	13,000 S	
CHLOROBUTANE, 1-	109-69-3	1,500 G	4,100 G	150,000 G	410,000 G	1,500 G	1,500 G	4,100 G	4,100 G	
CHLORODIBROMOMETHANE	124-48-1	80 M	80 M	8,000 M	8,000 M	8,000 M	8,000 M	8,000 M	8,000 M	
CHLORODIFLUOROMETHANE	75-45-6	110,000 N	440,000 N	2,900,000 S	2,900,000 S	110,000 N	110,000 N	440,000 N	440,000 N	
CHLOROETHANE	75-00-3	230 G	900 G	23,000 G	90,000 G	23,000 G	23,000 G	90,000 G	90,000 G	
CHLOROFORM	67-66-3	80 M	80 M	8,000 M	8,000 M	8,000 M	8,000 M	800 M	800 M	
CHLORONAPHTHALENE, 2-	91-58-7	2,900 G	8,200 G	12,000 S	12,000 S	2,900 G	2,900 G	8,200 G	8,200 G	
CHLORONITROBENZENE, P-	100-00-5	37 G	100 G	3,700 G	10,000 G	37 G	37 G	100 G	100 G	
CHLOROPHENOL, 2-	95-57-8	40 H	40 H	4,000 H	4,000 H	4,000 H	4,000 H	40 H	40 H	

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
CHLOROPRENE	126-99-8	15 N	62 N	1,500 N	6,200 N	1,500 N	6,200 N	1,500 N	6,200 N	NR
CHLOROPROPANE, 2-	75-29-6	210 N	880 N	21,000 N	88,000 N	210 N	880 N	210 N	880 N	NR
CHLOROTHALONIL	1897-45-6	210 G	600 S	600 S	600 S	210 G	600 S	210 G	600 S	NR
CHLOROTOLUENE, O-	95-49-8	100 H	100 H	10,000 H	10,000 H	100 H	10,000 H	100 H	10,000 H	NR
CHLOROTOLUENE, P-	106-43-4	100 H	100 H	10,000 H	10,000 H	100 H	10,000 H	100 H	10,000 H	NR
CHLORPYRIFOS	2921-88-2	2 H	2 H	200 H	200 H	2 H	200 H	2 H	200 H	NR
CHLORSULFURON	64902-72-3	1,800 G	5,100 G	180,000 G	190,000 S	1,800 G	5,100 G	1,800 G	5,100 G	NR
CHLOROTHAL-DIMETHYL (DACTHAL) (DCPA)	1861-32-1	70 H	70 H	500 S	500 S	70 H	500 S	70 H	500 S	NR
CHRYSENE	218-01-9	1.9 S	1.9 S	1.9 S	1.9 S	1.9 S	1.9 S	1.9 S	1.9 S	NR

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	G	R	NR	G	R	NR	G	R	NR	G
CRESOLS	1319-77-3	180	510	18,000	18,000	51,000	18,000	51,000	18,000	51,000	18,000	51,000	
CRESOL, 4,6-DINITRO-O-	534-52-1	3.7	10	370	370	1,000	370	1,000	370	1,000	3,700	10,000	
CRESOL, 0- (METHYLPHENOL, 2-)	95-48-7	1,800	5,100	180,000	180,000	510,000	180,000	510,000	180,000	510,000	180,000	510,000	
CRESOL, M (METHYLPHENOL, 3-)	108-39-4	1,800	5,100	180,000	180,000	510,000	180,000	510,000	180,000	510,000	1,800,000	2,500,000	
CRESOL, P (METHYLPHENOL, 4-)	106-44-5	180	510	18,000	18,000	51,000	18,000	51,000	18,000	51,000	180,000	510,000	
CRESOL, P-CHLORO-M-	59-50-7	180	510	18,000	18,000	51,000	18,000	51,000	18,000	51,000	180	510	
CROTONALDEHYDE	4170-30-3	0.35	1.4	35	35	140	35	140	35	140	35	140	
CROTONALDEHYDE, TRANS-	123-73-9	0.35	1.4	35	35	140	35	140	35	140	35	140	
CUMENE (ISOPROPYL BENZENE)	98-82-8	840	3,500	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	
CYANAZINE	21725-46-2	1	1	100	100	100	100	100	100	100	1	1	

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 H = Lifetime health advisory level
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
CYCLOHEXANE	110-82-7	13,000 N	53,000 N	55,000 S	55,000 S	55,000 S	13,000 N	53,000 N	53,000 N	
CYCLOHEXANONE	108-94-1	180,000 G	510,000 G	18,000,000 G	18,000,000 G	37,000,000 S	180,000 G	510,000 G	510,000 G	
CYFLUTHRIN	68359-37-5	1 S	1 S	1 S	1 S	1 S	1 S	1 S	1 S	
CYROMAZINE	66215-27-8	270 G	770 G	27,000 G	27,000 G	77,000 G	270 G	770 G	770 G	
DDD, 4,4'-	72-54-8	2.8 G	11 G	160 S	160 S	160 S	160 S	160 S	160 S	
DDE, 4,4'-	72-55-9	1.9 G	7.6 G	40 S	40 S	40 S	40 S	40 S	40 S	
DDT, 4,4'-	50-29-3	1.9 G	5.5 S	5.5 S	5.5 S	5.5 S	5.5 S	5.5 S	5.5 S	
DI(2-ETHYLHEXYL)ADIPATE	103-23-1	400 M	400 M	40,000 M	40,000 M	40,000 M	200,000 S	200,000 S	200,000 S	
DIALATE	2303-16-4	11 G	43 G	1,100 G	1,100 G	4,300 G	11,000 G	11,000 G	40,000 S	

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
DIAMINOTOLUENE, 2,4-	95-80-7	0.17	G	0.68	G	17	G	68	G	170	G	680	G
DIAZINON	333-41-5	1	H	1	H	100	H	100	H	1	H	1	H
DIBENZO[A,H]ANTHRACENE	53-70-3	0.029	G	0.36	G	0.6	S	0.6	S	0.6	S	0.6	S
DIBENZOFURAN	132-64-9	37	G	100	G	3,700	G	4,500	S	4,500	S	4,500	S
DIBROMO-3-CHLOROPROPANE, 1,2-	96-12-8	0.2	M	0.2	M	20	M	20	M	20	M	20	M
DIBROMOBENZENE, 1,4-	106-37-6	370	G	1,000	G	20,000	S	20,000	S	370	G	1,000	G
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.05	M	0.05	M	5	M	5	M	5	M	5	M
DIBROMOMETHANE	74-95-3	370	G	1,000	G	37,000	G	100,000	G	37,000	G	100,000	G
DIBUTYL PHTHALATE, N-	84-74-2	3,700	G	10,000	G	370,000	G	400,000	S	400,000	S	400,000	S
DICAMBA	1918-00-9	4,000	H	4,000	H	400,000	H	400,000	H	4,000	H	4,000	H

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
DICHLOROACETIC ACID	76-43-6	60 M	60 M	6,000 M	6,000 M	6,000 M	60 M	60 M	60 M	
DICHLORO-2-BUTENE, 1,4-	764-41-0	0.012 N	0.06 N	1.2 N	1.2 N	6 N	0.012 N	0.012 N	0.06 N	
DICHLORO-2-BUTENE, TRANS-1,4,	110-57-6	0.012 N	0.06 N	1.2 N	1.2 N	6 N	0.012 N	0.012 N	0.06 N	
DICHLOROBENZENE, 1,2-	95-50-1	600 M	600 M	60,000 M	60,000 M	60,000 M	60,000 M	60,000 M	60,000 M	
DICHLOROBENZENE, 1,3-	541-73-1	600 H	600 H	60,000 H	60,000 H	60,000 H	60,000 H	60,000 H	60,000 H	
DICHLOROBENZENE, P-	106-46-7	75 M	75 M	7,500 M	7,500 M	7,500 M	7,500 M	7,500 M	7,500 M	
DICHLOROBENZIDINE, 3,3'-	91-94-1	1.5 G	5.8 G	150 G	150 G	580 G	1,500 G	1,500 G	3,100 S	
DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	1,000 H	1,000 H	100,000 H	100,000 H	100,000 H	100,000 H	100,000 H	100,000 H	
DICHLOROETHANE, 1,1-	75-34-3	31 N	160 N	3,100 N	3,100 N	16,000 N	310 N	310 N	1,600 N	
DICHLOROETHANE, 1,2-	107-06-2	5 M	5 M	500 M	500 M	500 M	50 M	50 M	50 M	

All concentrations in µg/L
 NR = Non-Residential
 R = Residential
 H = Lifetime health advisory level
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
DICHLOROETHYLENE, 1,1-	75-35-4	7 M	7 M	700 M	700 M	700 M	700 M	700 M	700 M	70 M	70 M	70 M	70 M
DICHLOROETHYLENE, CIS-1,2-	156-59-2	70 M	70 M	7,000 M	7,000 M	7,000 M	7,000 M	7,000 M	7,000 M	700 M	700 M	700 M	700 M
DICHLOROETHYLENE, TRANS-1,2-	156-60-5	100 M	100 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	1,000 M	1,000 M	1,000 M	1,000 M
DICHLOROMETHANE (METHYLENE CHLORIDE)	75-09-2	5 M	5 M	500 M	500 M	500 M	500 M	500 M	500 M	500 M	500 M	500 M	500 M
DICHLOROPHENOL, 2,4-	120-83-2	20 H	20 H	2,000 H	2,000 H	2,000 H	2,000 H	2,000 H	2,000 H	20,000 H	20,000 H	20,000 H	20,000 H
DICHLOROPHENOXACETIC ACID, 2,4- (2,4-D)	94-75-7	70 M	70 M	7,000 M	7,000 M	7,000 M	7,000 M	7,000 M	7,000 M	70,000 M	70,000 M	70,000 M	70,000 M
DICHLOROPROPANE, 1,2-	78-87-5	5 M	5 M	500 M	500 M	500 M	500 M	500 M	500 M	50 M	50 M	50 M	50 M
DICHLOROPROPENE, 1,3-	542-75-6	6.6 G	26 G	660 G	660 G	660 G	660 G	660 G	660 G	660 G	660 G	660 G	2,600 G
DICHLOROPROPIONIC ACID, 2,2- (DALAPON)	75-99-0	200 M	200 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M	20,000 M

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 N = Inhalation
 H = Lifetime health advisory level
 S = Aqueous solubility cap
 G = Ingestion

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R	NR	NR			
		R	NR	R	R	NR							
DICHLORVOS	62-73-7	2.3	G	9	G	230	G	900	G	2.3	G	9	G
DICYCLOPENTADIENE	77-73-6	15	N	62	N	1,500	N	6,200	N	15	N	62	N
DIELDRIN	60-57-1	0.041	G	0.16	G	4.1	G	16	G	41	G	160	G
DIETHYL PHTHALATE	84-66-2	29,000	G	82,000	G	1,100,000	S	1,100,000	S	1,100,000	S	1,100,000	S
DIFLUBENZURON	35367-38-5	200	S	200	S	200	S	200	S	200	S	200	S
DIISOPROPYL METHYLPHOSPHONATE	1445-75-6	600	H	600	H	60,000	H	60,000	H	600	H	600	H
DIMETHOATE	60-51-5	7.3	G	20	G	730	G	2,000	G	7,300	G	20,000	G
DIMETHOXYBENZIDINE, 3,3-	119-90-4	47	G	190	G	4,700	G	19,000	G	47,000	G	60,000	S
DIMETHRIN	70-38-2	36	S	36	S	36	S	36	S	36	S	36	S

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
DIMETHYLAMINOAZOBENZENE, P-	60-11-7	0.14 G	0.57 G	14 G	57 G	140 G	570 G				
DIMETHYLANILINE, N,N-	121-69-7	73 G	200 G	7,300 G	20,000 G	7,300 G	20,000 G				
DIMETHYLBENZIDINE, 3,3-	119-93-7	0.06 G	0.24 G	6 G	24 G	60 G	240 G				
DIMETHYL METHYLPHOSPHONATE	756-79-6	100 H	100 H	10,000 H	10,000 H	100 H	100 H				
DIMETHYLPHENOL, 2,4-	105-67-9	730 G	2,000 G	73,000 G	200,000 G	730,000 G	2,000,000 G				
DINITROBENZENE, 1,3-	99-65-0	1 H	1 H	100 H	100 H	1,000 H	1,000 H				
DINITROPHENOL, 2,4-	51-28-5	73 G	200 G	7,300 G	20,000 G	73,000 G	200,000 G				
DINITROTOLUENE, 2,4-	121-14-2	2.1 G	8.4 G	210 G	840 G	2,100 G	8,400 G				
DINITROTOLUENE, 2,6- (2,6-DNT)	606-20-2	37 G	100 G	3,700 G	10,000 G	37,000 G	100,000 G				
DINOSEB	88-85-7	7 M	7 M	700 M	700 M	7,000 M	7,000 M				

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
DIOXANE, 1,4-	123-91-1	6.4 N	32 N	640 N	3,200 N	64 N	320 N			
DIPHENAMID	957-51-7	200 H	200 H	20,000 H	20,000 H	200 H	200 H			
DIPHENYLAMINE	122-39-4	910 G	2,600 G	91,000 G	260,000 G	300,000 S	300,000 S			
DIPHENYLHYDRAZINE, 1,2-	122-66-7	0.83 G	3.3 G	83 G	250 S	250 S	250 S			
DIQUAT	85-00-7	20 M	20 M	2,000 M	2,000 M	20 M	20 M			
DISULFOTON	298-04-4	0.7 H	0.7 H	70 H	70 H	700 H	700 H			
DITHIANE, 1,4-	505-29-3	80 H	80 H	8,000 H	8,000 H	80 H	80 H			
DIURON	330-54-1	73 G	200 G	7,300 G	20,000 G	73 G	200 G			
ENDOSULFAN	115-29-7	220 G	480 S	480 S	480 S	480 S	480 S			
ENDOSULFAN I (ALPHA)	959-98-8	220 G	500 S	500 S	500 S	220 G	500 S			

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 N = Inhalation
 H = Lifetime health advisory level
 S = Aqueous solubility cap
 G = Ingestion

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
ENDOSULFAN II (BETA)	33213-65-9	220 G	450 S	450 S	450 S	450 S	220 G	450 S	220 G	450 S	
ENDOSULFAN SULFATE	1031-07-8	120 S	120 S	120 S	120 S	120 S	120 S	120 S	120 S	120 S	
ENDOTHALL	145-73-3	100 M	100 M	10,000 M	10,000 M	10,000 M	100 M	10,000 M	100 M	100 M	
ENDRIN	72-20-8	2 M	2 M	200 M	200 M	200 M	2 M	200 M	2 M	2 M	
EPICHLOROHYDRIN	106-89-8	2.1 N	8.8 N	210 N	210 N	880 N	210 N	880 N	210 N	880 N	
ETHEPHON	16672-87-0	180 G	510 G	18,000 G	18,000 G	51,000 G	180 G	18,000 G	180 G	510 G	
ETHION	563-12-2	18 G	51 G	850 S	850 S	850 S	18 G	850 S	18 G	51 G	
ETHOXYETHANOL, 2- (EGEE)	110-80-5	420 N	1,800 N	42,000 N	42,000 N	180,000 N	42,000 N	42,000 N	42,000 N	180,000 N	
ETHYL ACETATE	141-78-6	33,000 G	92,000 G	3,300,000 G	3,300,000 G	9,200,000 G	3,300,000 G	3,300,000 G	3,300,000 G	9,200,000 G	

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
ETHYL ACRYLATE	140-88-5	14 G	54 G	1,400 G	1,400 G	5,400 G	1,400 G	1,400 G	5,400 G	1,400 G	5,400 G	1,400 G	5,400 G
ETHYL BENZENE	100-41-4	700 M	700 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M	70,000 M
ETHYL DIPROPYLTHIOCARBAMATE, S- (EPTC)	759-94-4	910 G	2,600 G	91,000 G	91,000 G	260,000 G	91,000 G	91,000 G	260,000 G	91,000 G	260,000 G	91,000 G	260,000 G
ETHYL ETHER	60-29-7	7,300 G	20,000 G	730,000 G	730,000 G	2,000,000 G	730,000 G	730,000 G	2,000,000 G	730,000 G	2,000,000 G	730,000 G	2,000,000 G
ETHYL METHACRYLATE	97-63-2	3,300 G	9,200 G	330,000 G	330,000 G	920,000 G	330,000 G	330,000 G	920,000 G	330,000 G	920,000 G	330,000 G	920,000 G
ETHYLENE GLYCOL	107-21-1	14,000 H	14,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H	1,400,000 H
ETHYLENE THIOUREA (ETU)	96-45-7	2.9 G	8.2 G	290 G	290 G	820 G	290 G	290 G	820 G	290 G	820 G	290 G	820 G
ETHYLP-NITROPHENYL PHENYLPHOSPHOROTHIOATE	2104-64-5	0.37 G	1 G	37 G	37 G	100 G	37 G	37 G	100 G	37 G	100 G	37 G	100 G
FENAMIPHOS	22224- 92-6	0.7 H	0.7 H	70 H	70 H	70 H	70 H	70 H	70 H	70 H	70 H	70 H	70 H

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
FENVALERATE (PYDRIN)	51630-58-1	85 S	85 S	85 S	85 S	85 S	85 S	85 S	85 S	85 S
FLUOMETURON (FLUOMETRON IN EPA FEB 96)	2164-17-2	90 H	90 H	9,000 H	9,000 H	9,000 H	90 H	90 H	90 H	90 H
FLUORANTHENE	206-44-0	260 S	260 S	260 S	260 S	260 S	260 S	260 S	260 S	260 S
FLUORENE	86-73-7	1,500 G	1,900 S	1,900 S	1,900 S	1,900 S	1,900 S	1,900 S	1,900 S	1,900 S
FLUOROTRICHLOROMETHANE (FREON 11)	75-69-4	2,000 H	2,000 H	200,000 H	200,000 H	200,000 H	200,000 H	200,000 H	200,000 H	200,000 H
FONOFOS	944-22-9	10 H	10 H	1,000 H	1,000 H	1,000 H	10 H	10 H	10 H	10 H
FORMALDEHYDE	50-00-0	1,000 H	1,000 H	100,000 H	100,000 H	100,000 H	100,000 H	100,000 H	100,000 H	100,000 H
FORMIC ACID	64-18-6	6.3 N	26 N	630 N	630 N	2,600 N	63 N	63 N	260 N	260 N
FOSETYL-AL	39148-24-8	110,000 G	310,000 G	11,000,000 G	11,000,000 G	31,000,000 G	110,000 G	110,000 G	310,000 G	310,000 G

All concentrations in µg/L
 NR = Non-Residential
 M = Maximum Contaminant Level
 R = Residential
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
FURAN	110-00-9	37 G	100 G	3,700 G	10,000 G	3,700 G	10,000 G	3,700 G	10,000 G	NR
FURFURAL	98-01-1	110 N	310 G	11,000 N	31,000 G	11,000 N	31,000 G	110 N	310 G	NR
GLYPHOSATE	1071-83-6	700 M	700 M	70,000 M	70,000 M	70,000 M	70,000 M	700 M	700 M	NR
HEPTACHLOR	76-44-8	0.4 M	0.4 M	40 M	40 M	40 M	40 M	180 S	180 S	NR
HEPTACHLOR EPOXIDE	1024-57-3	0.2 M	0.2 M	20 M	20 M	20 M	20 M	200 M	200 M	NR
HEXACHLOROBENZENE	118-74-1	1 M	1 M	6 S	6 S	6 S	6 S	6 S	6 S	NR
HEXACHLOROBUTADIENE	87-68-3	8.5 G	33 G	850 G	2,900 S	850 G	2,900 S	2,900 S	2,900 S	NR
HEXACHLOROCYCLOPENTADIENE	77-47-4	50 M	50 M	1,800 S	1,800 S	1,800 S	1,800 S	1,800 S	1,800 S	NR
HEXACHLOROETHANE	67-72-1	1 H	1 H	100 H	100 H	100 H	100 H	100 H	100 H	NR
HEXANE	110-54-3	1,500 N	6,100 G	9,500 S	9,500 S	9,500 S	9,500 S	1,500 N	6,100 G	NR

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 N = Inhalation
 H = Lifetime health advisory level
 G = Ingestion
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	H	R	NR	H	R	NR	H	R	NR	H
HEXAZINONE	51235-04-2	400	H	400	H	40,000	H	40,000	H	40,000	H	400	H
HEXYTHIAZOX (SAVEY)	78587-05-0	500	S	500	S	500	S	500	S	500	S	500	S
HMX	2691-41-0	400	H	400	H	5,000	S	5,000	S	5,000	S	400	H
HYDRAZINE/HYDRAZINE SULFATE	302-01-2	0.01	N	0.051	N	1	N	5.1	N	0.1	N	0.51	N
HYDROQUINONE	123-31-9	12	G	46	G	1,200	G	4,600	G	12,000	G	46,000	G
INDENO[1,2,3-CD]PYRENE	193-39-5	0.29	G	3.6	G	29	G	62	S	62	S	62	S
IPRODIONE	36734-19-7	1,500	G	4,100	G	13,000	S	13,000	S	1,500	G	4,100	G
ISOBUTYL ALCOHOL	78-83-1	11,000	G	31,000	G	1,100,000	G	3,100,000	G	1,100,000	G	3,100,000	G
ISOPHORONE	78-59-1	100	H	100	H	10,000	H	10,000	H	100,000	H	100,000	H

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	H	R	NR	H	R	NR	H	R	NR	H
ISOPROPYLMETHYLPHOSPHONATE	1832-54-8	700	H	700	H	70,000	H	70,000	H	700	H	700	H
KEPONE	143-50-0	0.041	G	0.16	G	4.1	G	16	G	41	G	160	G
MALATHION	121-75-5	500	H	500	H	50,000	H	50,000	H	140,000	S	140,000	S
MALEIC HYDRAZIDE	123-33-1	4,000	H	4,000	H	400,000	H	400,000	H	4,000	H	4,000	H
MANEB	12427-38-2	180	G	510	G	18,000	G	23,000	S	180	G	510	G
MERPHOS OXIDE	78-48-8	1.1	G	3.1	G	110	G	310	G	1.1	G	3.1	G
METHACRYLONITRILE	126-98-7	1.5	N	6.2	N	150	N	620	N	1.5	N	6.2	N
METHAMIDOPHOS	10265-92-6	1.8	G	5.1	G	180	G	510	G	1.8	G	5.1	G
METHANOL	67-56-1	8,400	N	35,000	N	840,000	N	3,500,000	N	840,000	N	3,500,000	N

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
METHOMYL	16752-77-5	200 H	200 H	20,000 H	20,000 H	20,000 H	200 H	200 H	200 H	
METHOXYCHLOR	72-43-5	40 M	40 M	45 S	45 S	45 S	45 S	45 S	45 S	
METHOXYETHANOL, 2-	109-86-4	42 N	180 N	4,200 N	18,000 N	18,000 N	42 N	42 N	180 N	
METHYL ACETATE	79-20-9	37,000 G	100,000 G	3,700,000 G	10,000,000 G	10,000,000 G	37,000 G	37,000 G	100,000 G	
METHYL ACRYLATE	96-33-3	1,100 G	3,100 G	110,000 G	310,000 G	310,000 G	110,000 G	110,000 G	310,000 G	
METHYL CHLORIDE	74-87-3	30 H	30 H	3,000 H	3,000 H	3,000 H	3,000 H	3,000 H	3,000 H	
METHYL ETHYL KETONE	78-93-3	4,000 H	4,000 H	400,000 H	400,000 H	400,000 H	400,000 H	400,000 H	400,000 H	
METHYL ISOBUTYL KETONE	108-10-1	2,900 G	8,200 G	290,000 G	820,000 G	820,000 G	290,000 G	290,000 G	820,000 G	
METHYLISOCYANATE	624-83-9	2.1 N	8.8 N	210 N	880 N	880 N	2.1 N	2.1 N	8.8 N	

All concentrations in µg/L
 G = Ingestion
 N = Inhalation
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
METHYL-N-BUTYL KETONE (2-HEXANONE)	591-78-6	11 N	44 N	1,100 N	4,400 N	11 N	11 N	44 N		
METHYL METHACRYLATE	80-62-6	1,500 N	6,200 N	150,000 N	620,000 N	150,000 N	150,000 N	620,000 N		
METHYL METHANESULFONATE	66-27-3	6.7 G	26 G	670 G	2,600 G	670 G	6.7 G	26 G		
METHYL PARATHION	298-00-0	1 H	1 H	100 H	100 H	100 H	1,000 H	1,000 H		
METHYL STYRENE (MIXED ISOMERS)	25013- 15-4	84 N	350 N	8,400 N	35,000 N	84 N	84 N	350 N		
METHYL TERT-BUTYL ETHER (MTBE)	1634-04-4	20	20	2,000	2,000	200	200	200		
METHYCHLOROPHENOXYACETIC ACID (MCPA)	94-74-6	30 H	30 H	3,000 H	3,000 H	30,000 H	30,000 H	30,000 H		
METHYLENE BIS(2- CHLOROANILINE), 4,4'-	101-14-4	2.2 G	26 G	220 G	2,600 G	2.2 G	2.2 G	26 G		

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 N = Inhalation
 H = Lifetime health advisory level
 S = Aqueous solubility cap
 G = Ingestion

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			TDS ≤ 2500			TDS > 2500		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
METHYLNAPHTHALENE, 2-	91-57-6	150 G	410 G	15,000 G	15,000 G	25,000 S	150 G	150 G	410 G	410 G			
METHYLSTYRENE, ALPHA	98-83-9	2,600 G	7,200 G	260,000 G	260,000 G	560,000 S	2,600 G	2,600 G	7,200 G	7,200 G			
METOLACHLOR	51218-45-2	700 H	700 H	70,000 H	70,000 H	70,000 H	700 H	700 H	700 H	700 H			
METRIBUZIN	21087-64-9	70 H	70 H	7,000 H	7,000 H	7,000 H	70 H	70 H	70 H	70 H			
MONOCHLOROACETIC ACID	79-11-8	70 H	70 H	7,000 H	7,000 H	7,000 H	70 H	70 H	70 H	70 H			
NAPHTHALENE	91-20-3	100 H	100 H	10,000 H	10,000 H	10,000 H	100 H	100 H	30,000 S	30,000 S			
NAPHTHYLAMINE, 1-	134-32-7	0.37 G	1.4 G	37 G	37 G	140 G	0.37 G	0.37 G	1,400 G	1,400 G			
NAPHTHYLAMINE, 2-	91-59-8	0.37 G	1.4 G	37 G	37 G	140 G	0.37 G	0.37 G	1,400 G	1,400 G			
NAPROPAMIDE	15299-99-7	3,700 G	10,000 G	70,000 S	70,000 S	70,000 S	3,700 G	3,700 G	10,000 G	10,000 G			

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
NITROANILINE, M-	99-09-2	11 G	31 G	1,100 G	1,100 G	3,100 G	11 G	11 G	31 G	11 G	31 G		
NITROANILINE, O-	88-74-4	110 G	310 G	11,000 G	11,000 G	31,000 G	110 G	110 G	310 G	110 G	310 G		
NITROANILINE, P-	100-01-6	33 G	130 G	3,300 G	3,300 G	13,000 G	33 G	33 G	130 G	33 G	130 G		
NITROBENZENE	98-95-3	73 G	200 G	7,300 G	7,300 G	20,000 G	73,000 G	73,000 G	200,000 G	73,000 G	200,000 G		
NITROGUANIDINE	556-88-7	700 H	700 H	70,000 H	70,000 H	70,000 H	700 H	700 H	700 H	700 H	700 H		
NITROPHENOL, 2-	88-75-5	290 G	820 G	29,000 G	29,000 G	82,000 G	290,000 G	290,000 G	820,000 G	290,000 G	820,000 G		
NITROPHENOL, 4-	100-02-7	60 H	60 H	6,000 H	6,000 H	6,000 H	60 H	60 H	60,000 H	60,000 H	60,000 H		
NITROPROPANE, 2-	79-46-9	0.018 N	0.093 N	1.8 N	1.8 N	9.3 N	0.18 N	0.18 N	0.93 N	0.18 N	0.93 N		
NITROSODIETHYLAMINE, N-	55-18-5	0.00045 N	0.0058 N	0.045 N	0.045 N	0.58 N	0.0045 N	0.0045 N	0.058 N	0.0045 N	0.058 N		
NITROSODIMETHYLAMINE, N-	62-75-9	0.0014 N	0.018 N	0.14 N	0.14 N	1.8 N	0.014 N	0.014 N	0.18 N	0.014 N	0.18 N		

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 N = Inhalation
 H = Lifetime health advisory level
 S = Aqueous solubility cap
 G = Ingestion

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
NITROSO-DI-N-BUTYLAMINE, N-	924-16-3	0.12 G	0.48 G	12 G	48 G	120 G	480 G				
NITROSODI-N-PROPYLAMINE, N-	621-64-7	0.094 G	0.37 G	9.4 G	37 G	94 G	370 G				
NITROSODIPHENYLAMINE, N-	86-30-6	130 G	530 G	13,000 G	35,000 S	35,000 S	35,000 S				
NITROSO-N-ETHYLUREA, N-	759-73-9	0.008 G	0.096 G	0.8 G	9.6 G	8 G	96 G				
OCTYL PHTHALATE, DI-N-	117-84-0	1,500 G	3,000 S	3,000 S	3,000 S	3,000 S	3,000 S				
OXAMYL (VYDATE)	23135-22-0	200 M	200 M	20,000 M	20,000 M	200 M	200 M				
PARAQUAT	1910-42-5	30 H	30 H	3,000 H	3,000 H	30 H	30 H				
PARATHION	56-38-2	220 G	610 G	20,000 S	20,000 S	220 G	610 G				
PCB-1016 (AROCLOR)	12674-11-2	2.6 G	7.2 G	250 S	250 S	2.6 G	7.2 G				

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
PCB-1221 (AROCLOR)	11104-28-2	0.33 G	1.3 G	33 G	33 G	130 G	0.33 G	0.33 G	1.3 G	
PCB-1232 (AROCLOR)	11141-16-5	0.33 G	1.3 G	33 G		130 G	0.33 G	0.33 G	1.3 G	
PCB-1242 (AROCLOR)	53469-21-9	0.33 G	1.3 G	33 G	33 G	100 S	0.33 G	0.33 G	1.3 G	
PCB-1248 (AROCLOR)	12672-29-6	0.33 G	1.3 G	33 G	33 G	54 S	0.33 G	0.33 G	1.3 G	
PCB-1254 (AROCLOR)	11097-69-1	0.33 G	1.3 G	33 G	33 G	57 S	0.33 G	0.33 G	1.3 G	
PCB-1260 (AROCLOR)	11096-82-5	0.33 G	1.3 G	33 G	33 G	80 S	0.33 G	0.33 G	1.3 G	
PEBULATE	1114-71-2	1,800 G	5,100 G	92,000 S		92,000 S	1,800 G	1,800 G	5,100 G	
PENTACHLOROBENZENE	608-93-5	29 G	82 G	740 S	740 S	740 S	740 S	740 S	740 S	

All concentrations in µg/L
 NR = Non-Residential
 M = Maximum Contaminant Level
 R = Residential
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
PENTACHLOROETHANE	76-01-7	7.3 G	29 G	730 G	2900 G	7.3 G	29 G	7.3 G	29 G		
PENTACHLORONITROBENZENE	82-68-8	2.5 G	10 G	250 G	440 S	2.5 G	10 G	440 S	440 S		
PENTACHLOROPHENOL	87-86-5	1 M	1 M	100 M	100 M	1 M	1 M	1,000 M	1,000 M		
PHENACETIN	62-44-2	300 G	1,200 G	30,000 G	120,000 G	300 G	1,200 G	300,000 G	760,000 S		
PHENANTHRENE	85-01-8	1,100 S	1,100 S	1,100 S	1,100 S	1,100 S	1,100 S	1,100 S	1,100 S		
PHENOL	108-95-2	2,000 H	2,000 H	200,000 H	200,000 H	2,000 H	200,000 H	200,000 H	200,000 H		
PHENYL MERCAPTAN	108-98-5	0.37 G	1 G	37 G	100 G	0.37 G	1 G	0.37 G	1 G		
PHENYLENEDIAMINE, M-	108-45-2	220 G	610 G	22,000 G	61,000 G	220 G	610 G	220,000 G	610,000 G		
PHENYLPHENOL, 2-	90-43-7	350 G	1,400 G	35,000 G	140,000 G	350 G	1,400 G	350,000 G	700,000 S		
PHORATE	298-02-2	7.3 G	20 G	730 G	2,000 G	7.3 G	20 G	7.3 G	20 G		

All concentrations in µg/L

R = Residential

NR = Non-Residential

M = Maximum Contaminant Level

H = Lifetime health advisory level

G = Ingestion

N = Inhalation

S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	G	R	NR	S	R	NR	S	R	NR	S
PHTHALIC ANHYDRIDE	85-44-9	73,000	G	200,000	G	6,200,000	S	6,200,000	S	6,200,000	S	6,200,000	S
PICLORAM	1918-02-1	500	M	500	M	50,000	M	50,000	M	500	M	500	M
POLYCHLORINATED BIPHENYLS (PCBS)	1336-36-3	0.5	M	0.5	M	50	M	50	M	0.5	M	0.5	M
PROMETON	1610-18-0	400	H	400	H	40,000	H	40,000	H	400	H	400	H
PRONAMIDE	23950-58-5	2,700	G	7,700	G	15,000	S	15,000	S	2,700	G	7,700	G
PROPANIL	709-98-8	180	G	510	G	18,000	G	51,000	G	180	G	510	G
PROPANOL, 2-(ISOPROPYLALCOHOL)	67-63-0	15,000	N	62,000	N	1,500,000	N	6,200,000	N	15,000	N	62,000	N
PROPAZINE	139-40-2	10	H	10	H	1,000	H	1,000	H	10	H	10	H
PROPHAM	122-42-9	100	H	100	H	10,000	H	10,000	H	100	H	100	H

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MCSs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500					
		R	NR	R	R	NR	R	R	NR	
PROPYLBENZENE, N-	103-65-1	1,500 G	4,100 G	52,000 S	280 G	1,100 G	1,500 G	2.8 G	4,100 G	
PROPYLENE OXIDE	75-56-9	2.8 G	11 G	130 S	130 S	130 S	130 S	130 S	11 G	
PYRENE	129-00-0	130 S	130 S	100 G	3,700 G	10,000 G	370 G	1,000 G	130 S	
PYRIDINE	110-86-1	37 G	100 G	0.87 G	22 G	87 G	220 G	870 G	1,000 G	
QUINOLINE	91-22-5	0.22 G	0.87 G	300 S	200 H	200 H	200 H	2 H	2 H	
QUIZALOFOP (ASSURE)	76578-148	300 S	300 S	7,300,000 G	20,000,000 G	73,000 G	73,000 G	200,000 G	300 S	
RDX	121-82-4	2 H	2 H	40,000 S	400 M	400 M	400 M	4 M	2 H	
RESORCINOL	108-46-3	73,000 G	200,000 G	5,100 G	5,100 G	40,000 S	1,800 G	1,800 G	5,100 G	
RONNEL	299-84-3	1,800 G	5,100 G	4 M	4 M	4 M	4 M	4 M	4 M	
SIMAZINE	122-34-9	4 M	4 M	4 M	4 M	4 M	4 M	4 M	4 M	

All concentrations in µg/L
 NR = Non-Residential
 M = Maximum Contaminant Level
 R = Residential
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	R	R	NR	R	R	NR	R	R	NR	
STRYCHNINE	57-24-9	11 G	31 G	1,100 G	1,100 G	3,100 G	11,000 G	11,000 G	31,000 G	11,000 G	31,000 G	NR	NR
STYRENE	100-42-5	100 M	100 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	10,000 M	NR	M
TEBUTHURON	34014-18-1	500 H	500 H	50,000 H	50,000 H	50,000 H	500 H	500 H	500 H	500 H	500 H	NR	H
TERBACIL	5902-51-2	90 H	90 H	9,000 H	9,000 H	9,000 H	90 H	90 H	90 H	90 H	90 H	NR	H
TERBUFOS	13071-79-9	0.4 H	0.4 H	40 H	40 H	40 H	40 H	40 H	40 H	40 H	40 H	NR	H
TETRACHLOROBENZENE, 1,2,4,5-	95-94-3	11 G	31 G	580 S	580 S	580 S	580 S	580 S	580 S	580 S	580 S	NR	S
TETRACHLORODIBENZO-P-DIOXIN, 2,3,7,8- (TCDD)	1746-01-6	0.00003 M	0.00003 M	0.0003 M	0.0003 M	0.003 M	0.0003 M	0.0003 M	0.003 M	0.019 S	0.019 S	NR	S
TETRACHLOROETHANE, 1,1,1,2-	630-20-6	70 H	70 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	NR	H
TETRACHLOROETHANE, 1,1,2,2-	79-34-5	0.84 N	4.3 N	84 N	84 N	430 N	84 N	84 N	430 N	84 N	84 N	NR	N

All concentrations in µg/L
 M = Maximum Contaminant Level
 R = Residential
 NR = Non-Residential
 H = Lifetime health advisory level
 S = Aqueous solubility cap
 G = Ingestion
 N = Inhalation

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
TETRACHLOROETHYLENE (PCE)	127-18-4	5 M	5 M	500 M	500 M	500 M	50 M	50 M	50 M	50 M	
TETRACHLOROPHENOL, 2,3,4,6-	58-90-2	1,100 G	3,100 G	110,000 G	180,000 S	180,000 S	180,000 S	180,000 S	180,000 S	180,000 S	
TETRAETHYL LEAD	78-00-2	0.0037 G	0.01 G	0.37 G	1 G	1 G	3.7 G	3.7 G	10 G	10 G	
TETRAETHYLDITHIOPYRO- PHOSPHATE	3689-24-5	18 G	51 G	1,800 G	5,100 G	5,100 G	18 G	18 G	51 G	51 G	
TETRAHYDROFURAN	109-99-9	25 N	130 N	2,500 N	13,000 N	13,000 N	25 N	25 N	130 N	130 N	
THIOFANOX	39196- 18-4	11 G	31 G	1,100 G	3,100 G	3,100 G	11 G	11 G	31 G	31 G	
THIRAM	137-26-8	180 G	510 G	18,000 G	30,000 S	30,000 S	180 G	180 G	510 G	510 G	
TOLUENE	108-88-3	1,000 M	1,000 M	100,000 M	100,000 M	100,000 M	100,000 M	100,000 M	100,000 M	100,000 M	
TOLUIDINE, M-	108-44-1	3.7 G	14 G	370 G	1,400 G	1,400 G	3.7 G	3.7 G	14 G	14 G	

All concentrations in µg/L

H = Lifetime health advisory level

R = Residential

G = Ingestion

NR = Non-Residential

N = Inhalation

M = Maximum Contaminant Level

S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
TOLUIDINE, O	95-53-4	3.7 G	14 G	370 G	1,400 G	3,700 G	14,000 G			
TOLUIDINE, P-	106-49-0	3.5 G	14 G	350 G	1,400 G	3.5 G	14 G			
TOXAPHENE	8001-35-2	3 M	3 M	300 M	300 M	3 M	3 M			
TRIALATE	2303-17-5	470 G	1,300 G	4,000 S	4,000 S	470 G	1,300 G			
TRIBROMOMETHANE (BROMOFORM)	75-25-2	80 M	80 M	8,000 M	8,000 M	8,000 M	8,000 M			
TRICHLORO-1,2,2-TRIFLUOROETHANE, 1,1,2-	76-13-1	63,000 N	170,000 S	170,000 S	170,000 S	170,000 S	170,000 S			
TRICHLOROBENZENE, 1,2,4-	120-82-1	70 M	70 M	7,000 M	7,000 M	44,000 S	44,000 S			
TRICHLOROBENZENE, 1,3,5-	108-70-3	40 H	40 H	4,000 H	4,000 H	40 H	40 H			
TRICHLOROETHANE, 1,1,1-	71-55-6	200 M	200 M	20,000 M	20,000 M	2,000 M	2,000 M			

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 S = Aqueous solubility cap
 G = Ingestion
 N = Inhalation

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	R	R	NR	NR	R	R	NR	R	R	NR
TRICHLOROETHANE, 1,1,2-	79-00-5	5 M	5 M	500 M	500 M	500 M	500 M	500 M	500 M	50 M	50 M	50 M	50 M
TRICHLOROETHYLENE (TCE)	79-01-6	5 M	5 M	500 M	500 M	500 M	500 M	500 M	500 M	50 M	50 M	50 M	50 M
TRICHLOROPHENOL, 2,4,5-	95-95-4	3,700 G	10,000 G	370,000 G	370,000 G	1,000,000 G	370,000 G	1,000,000 G	1,000,000 G	1,000,000 S	1,000,000 S	1,000,000 S	1,000,000 S
TRICHLOROPHENOL, 2,4,6-	88-06-2	37 G	100 G	3,700 G	3,700 G	10,000 G	3,700 G	10,000 G	10,000 G	37,000 G	37,000 G	100,000 G	100,000 G
TRICHLOROPHENOXACETIC ACID, 2,4,5- (2,4,5-T)	93-76-5	70 H	70 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	7,000 H	70,000 H	70,000 H	70,000 H	70,000 H
TRICHLOROPHENOXYPROPIONIC ACID, 2,4,5- (2,4,5-TP)	93-72-1	50 M	50 M	5,000 M	5,000 M	5,000 M	5,000 M	5,000 M	5,000 M	50 M	50 M	50 M	50 M
TRICHLOROPROPANE, 1,1,2-	598-77-6	180 G	510 G	18,000 G	18,000 G	51,000 G	18,000 G	51,000 G	51,000 G	180 G	180 G	510 G	510 G
TRICHLOROPROPANE, 1,2,3-	96-18-4	40 H	40 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H	4,000 H
TRICHLOROPROPENE, 1,2,3-	96-19-5	2.1 N	8.8 N	210 N	210 N	880 N	210 N	880 N	880 N	2.1 N	2.1 N	8.8 N	8.8 N

All concentrations in µg/L

H = Lifetime health advisory level

R = Residential

G = Ingestion

NR = Non-Residential

N = Inhalation

M = Maximum

Contaminant Level

S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS		
		TDS ≤ 2500			TDS > 2500			R	NR	NR
		R	NR	R	R	NR	R			
TRIETHYLAMINE	121-44-8	15 N	62 N	1,500 N	6,200 N	15 N	15 N	62 N		
TRIFLURALIN	1582-09-8	10 H	10 H	1,000 H	1,000 H	10 H	10 H	10 H		
TRIMETHYLBENZENE, 1,3,4-(TRIMETHYLBENZENE, 1,2,4-)	95-63-6	15 N	62 N	1,500 N	6,200 N	1,500 N	1,500 N	6,200 N		
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13 N	53 N	1,300 N	5,300 N	13 N	13 N	53 N		
TRINITROGLYCEROL (NITROGLYCERIN)	55-63-0	5 H	5 H	500 H	500 H	5 H	5 H	5 H		
TRINITROTOLUENE, 2,4,6-	118-96-7	2 H	2 H	200 H	200 H	2 H	2 H	2 H		
VINYL ACETATE	108-05-4	420 N	1,800 N	42,000 N	180,000 N	420 N	420 N	1,800 N		
VINYL BROMIDE (BROMOETHENE)	593-60-2	1.5 N	7.8 N	150 N	780 N	15 N	15 N	78 N		
VINYL CHLORIDE	75-01-4	2 M	2 M	200 M	200 M	20 M	20 M	20 M		

All concentrations in µg/L
 H = Lifetime health advisory level
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

TABLE 1—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R		NR			
		R	NR	G	R	NR	G	R	NR	R	NR		
WARFARIN	81-81-2	11	G	31	G	1,100	G	3,100	G	11,000	G	17,000	S
XYLENES (TOTAL)	1330-20-7	10,000	M	10,000	M	180,000	S	180,000	S	180,000	S	180,000	S
ZINEB	12122-67-7	1,800	G	5,100	G	10,000	S	10,000	S	1,800	G	5,100	G

All concentrations in µg/L
 R = Residential
 NR = Non-Residential
 M = Maximum Contaminant Level
 H = Lifetime health advisory level
 G = Ingestion
 N = Inhalation
 S = Aqueous solubility cap

250-110

APPENDIX A
TABLE 2—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN GROUNDWATER

REGULATED SUBSTANCE	CASRN	USED AQUIFERS				NON-USE AQUIFERS			
		TDS ≤ 2500		TDS > 2500		R		NR	
		R	NR	R	NR	R	NR	R	NR
ANTIMONY	7440-36-0	6 M	6 M	600 M	600 M	6,000 M	6,000 M	6,000 M	6,000 M
ARSENIC	7440-38-2	10 M	10 M	1,000 M	1,000 M	10,000 M	10,000 M	10,000 M	10,000 M
ASBESTOS (fibers/L)	12001-29-5	7,000,000 M	7,000,000 M	7,000,000 M	7,000,000 M	7,000,000 M	7,000,000 M	7,000,000 M	7,000,000 M
BARIUM AND COMPOUNDS	7440-39-3	2,000 M	2,000 M	200,000 M	200,000 M	2,000,000 M	2,000,000 M	2,000,000 M	2,000,000 M
BERYLLIUM	7440-41-7	4 M	4 M	400 M	400 M	4,000 M	4,000 M	4,000 M	4,000 M
BORON AND COMPOUNDS	7440-42-8	6,000 H	6,000 H	600,000 H	600,000 H	6,000,000 H	6,000,000 H	6,000,000 H	6,000,000 H
CADMIUM	7440-43-9	5 M	5 M	500 M	500 M	5,000 M	5,000 M	5,000 M	5,000 M
CHROMIUM, TOTAL	7440-47-3	100 M	100 M	10,000 M	10,000 M	100,000 M	100,000 M	100,000 M	100,000 M
COBALT	7440-48-4	11 G	31 G	1,100 G	1,100 G	11,000 G	11,000 G	11,000 G	31,000 G

All concentrations in µg/L (except asbestos)
 M = Maximum Contaminant Level
 H = Lifetime Health Advisory Level
 SMCL = Secondary Maximum Contaminant Level
 G = Ingestion
 N = Inhalation
 R = Residential
 NR = Non Residential

TABLE 2—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS			
		TDS ≤ 2500			TDS > 2500			R		NR	
		R	NR	R	R	NR	R	NR	R	NR	
COPPER	7440-50-8	1,000 M	1,000 M	100,000 M	100,000 M	100,000 M	1,000,000 M	1,000,000 M	1,000,000 M	1,000,000 M	NR
CYANIDE, FREE	57-12-5	200 M	200 M	20,000 M	20,000 M	20,000 M	200,000 M	200,000 M	200,000 M	200,000 M	NR
FLUORIDE	16984-48-8	4,000 M	4,000 M	400,000 M	400,000 M	400,000 M	4,000,000 M	4,000,000 M	4,000,000 M	4,000,000 M	NR
LEAD	7439-92-1	5 M	5 M	500 M	500 M	500 M	5,000 M	5,000 M	5,000 M	5,000 M	NR
LITHIUM	7439-93-2	73 G	200 G	7,300 G	20,000 G	7,300 G	73,000 G	73,000 G	73,000 G	200,000 G	NR
MANGANESE	7439-96-5	300 H	300 H	30,000 H	30,000 H	30,000 H	300,000 H	300,000 H	300,000 H	300,000 H	NR
MERCURY	7439-97-6	2 M	2 M	200 M	200 M	200 M	2,000 M	2,000 M	2,000 M	2,000 M	NR
MOLYBDENUM	7439-98-7	40 H	40 H	4,000 H	4,000 H	4,000 H	40,000 H	40,000 H	40,000 H	40,000 H	NR
NICKEL	7440-02-0	100 H	100 H	10,000 H	10,000 H	10,000 H	100,000 H	100,000 H	100,000 H	100,000 H	NR

All concentrations in µg/L (except asbestos)
 taminant Level
 G = Ingestion
 N = Inhalation
 M = Maximum Contaminant Level
 H = Lifetime Health Advisory Level
 R = Residential
 NR = Non Residential
 SMCL = Secondary Maximum Con-

TABLE 2—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS					
		TDS ≤ 2500			TDS > 2500			R			NR		
		R	NR	M	R	NR	M	R	NR	M	R	NR	M
NITRATE NITROGEN	14797-55-8	10,000	10,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	10,000,000	10,000,000	10,000,000	10,000,000
NITRITE NITROGEN	14797-65-0	1,000	1,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000	1,000,000	1,000,000
PERCHLORATE	7790-98-9	15	15	1,500	1,500	1,500	1,500	1,500	1,500	15,000	15,000	15,000	15,000
SELENIUM	7782-49-2	50	50	5,000	5,000	5,000	5,000	5,000	5,000	50,000	50,000	50,000	50,000
SILVER	7440-22-4	100	100	10,000	10,000	10,000	10,000	10,000	10,000	100,000	100,000	100,000	100,000
THALLIUM	7440-28-0	2	2	200	200	200	200	200	200	2,000	2,000	2,000	2,000

All concentrations in µg/L (except asbestos)
M = Maximum Contaminant Level
H = Lifetime Health Advisory Level
SMCL = Secondary Maximum Contaminant Level
G = Ingestion
N = Inhalation
R = Residential
NR = Non Residential

TABLE 2—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN GROUNDWATER—(Continued)

REGULATED SUBSTANCE	CASRN	USED AQUIFERS						NON-USE AQUIFERS							
		TDS ≤ 2500			TDS > 2500			R			NR				
		R	NR	G	R	G	NR	R	G	NR	R	G	NR		
TIN	7440-31-5	22,000	G	61,000	G	2,200,000	G	2,200,000	G	6,100,000	G	22,000,000	G	61,000,000	G
VANADIUM	7440-62-2	260	G	720	G	26,000	G	26,000	G	72,000	G	260,000	G	720,000	G
ZINC AND COMPOUNDS	7440-66-6	2,000	H	2,000	H	200,000	H	200,000	H	200,000	H	2,000,000	H	2,000,000	H

SECONDARY CONTAMINANTS			
REGULATED SUBSTANCE	CASRN	SMCL	UNITS
ALUMINUM	7429-90-5	200	µg/L
CHLORIDE	7647-14-5	250,000	µg/L
FLUORIDE	7681-49-4	2,000	µg/L
IRON	7439-89-6	300	µg/L
MANGANESE	7439-96-5	50	µg/L
SULFATE	7757-82-6	250,000	µg/L

All concentrations in µg/L (except asbestos)
M = Maximum Contaminant Level
H = Lifetime Health Advisory Level
SMCL = Secondary Maximum Contaminant Level
G = Ingestion
N = Inhalation
R = Residential
NR = Nonresidential

APPENDIX A

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
ACENAPHTHENE	83-32-9	13,000	G	170,000	G	190,000	C
ACENAPHTHYLENE	208-96-8	13,000	G	170,000	G	190,000	C
ACEPHATE	30560-19-1	880	G	9,100	G	190,000	C
ACETALDEHYDE	75-07-0	170	N	720	N	830	N
ACETONE	67-64-1	10,000	C	10,000	C	10,000	C
ACETONITRILE	75-05-8	1,100	N	4,800	N	5,500	N
ACETOPHENONE	98-86-2	10,000	C	10,000	C	10,000	C
ACETYLAMINOFLUORENE, 2- (2AAF)	53-96-3	4.7	G	21	G	190,000	C
ACROLEIN	107-02-8	0.38	N	1.6	N	1.8	N
ACRYLAMIDE	79-06-1	0.34	N	1.7	N	2	N
ACRYLIC ACID	79-10-7	19	N	79	N	91	N
ACRYLONITRILE	107-13-1	6.6	N	33	N	38	N
ALACHLOR	15972-60-8	320	G	1,400	G	190,000	C
ALDICARB	116-06-3	220	G	2,800	G	190,000	C
ALDICARB SULFONE	1646-88-4	220	G	2,800	G	190,000	C
ALDICARB SULFOXIDE	1646-87-3	220	G	2,800	G	190,000	C
ALDRIN	309-00-2	1.1	G	4.7	G	190,000	C
ALLYL ALCOHOL	107-18-6	5.7	N	24	N	27	N
AMETRYN	834-12-8	2,000	G	25,000	G	190,000	C

All concentrations in mg/kg
G - Ingestion
N - Inhalation
C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
AMINOBIIPHENYL, 4-	92-67-1	0.85	G	3.8	G	190,000	C
AMITROLE	61-82-5	19	G	84	G	190,000	C
AMMONIA	7664-41-7	1,900	N	8,000	N	9,100	N
AMMONIUM SULFAMATE	7773-06-0	44,000	G	190,000	C	190,000	C
ANILINE	62-53-3	19	N	79	N	91	N
ANTHRACENE	120-12-7	66,000	G	190,000	C	190,000	C
ATRAZINE	1912-24-9	78	G	340	G	190,000	C
AZINPHOS-METHYL (GUTHION)	86-50-0	660	G	8,400	G	190,000	G
BAYGON (PROPOXUR)	114-26-1	880	G	11,000	G	190,000	C
BENOMYL	17804-35-2	11,000	G	140,000	G	190,000	C
BENTAZON	25057-89-0	6,600	G	84,000	G	190,000	C
BENZENE	71-43-2	57	N	290	N	330	N
BENZIDINE	92-87-5	0.018	G	0.34	G	190,000	C
BENZO[A]ANTHRACENE	56-55-3	5.7	G	110	G	190,000	C
BENZO[A]PYRENE	50-32-8	0.57	G	11	G	190,000	C
BENZO[B]FLUORANTHENE	205-99-2	5.7	G	110	G	190,000	C
BENZO[GHI]PERYLENE	191-24-2	13,000	G	170,000	G	190,000	C
BENZO[K]FLUORANTHENE	207-08-9	57	G	1,100	G	190,000	C
BENZOIC ACID	65-85-0	190,000	C	190,000	C	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
BENZOTRICHLORIDE	98-07-7	1.4	G	6.1	G	10,000	C
BENZYL ALCOHOL	100-51-6	10,000	C	10,000	C	10,000	C
BENZYL CHLORIDE	100-44-7	9	N	45	N	52	N
BETA PROPIOLACTONE	57-57-8	0.11	N	0.56	N	0.64	N
BHC, ALPHA	319-84-6	2.8	G	13	G	190,000	C
BHC, BETA-	319-85-7	9.9	G	44	G	190,000	C
BHC, GAMMA (LINDANE)	58-89-9	16	G	72	G	190,000	C
BIPHENYL, 1,1-	92-52-4	11,000	G	140,000	G	190,000	C
BIS(2-CHLOROETHOXY) METHANE	111-91-1	660	G	8,400	G	10,000	C
BIS(2-CHLOROETHYL) ETHER	111-44-4	1.3	N	6.7	N	7.7	N
BIS(2-CHLORO-ISOPROPYL) ETHER	108-60-1	44	N	220	N	250	N
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0072	N	0.036	N	0.041	N
BIS[2-ETHYLHEXYL] PHTHALATE	117-81-7	1,300	G	5,700	G	10,000	C
BISPHENOL A	80-05-7	11,000	G	140,000	G	190,000	C
BROMACIL	314-40-9	22,000	G	190,000	C	190,000	C
BROMOCHLOROMETHANE	74-97-5	2,200	G	10,000	C	10,000	C
BROMODICHLOROMETHANE	75-27-4	12	N	60	N	69	N
BROMOMETHANE	74-83-9	96	N	400	N	460	N
BROMOXYNIL	1689- 84-5	4,400	G	56,000	G	190,000	C
BROMOXYNIL OCTANOATE	1689- 99-2	4,400	G	56,000	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

250-117

(356309) No. 439 Jun. 11

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
BUTADIENE, 1,3-	106-99-0	5.3	G	23	G	85	N
BUTYL ALCOHOL, N-	71-36-3	10,000	C	10,000	C	10,000	C
BUTYLATE	2008-41-5	10,000	C	10,000	C	10,000	C
BUTYLBENZENE, N-	104-51-8	8,800	G	10,000	C	10,000	C
BUTYLBENZENE, SEC-	135-98-8	8,800	G	10,000	C	10,000	C
BUTYLBENZENE, TERT-	98-06-6	8,800	G	10,000	C	10,000	C
BUTYLBENZYL PHTHALATE	85-68-7	9,400	G	10,000	C	10,000	C
CAPTAN	133-06-2	7,800	G	34,000	G	190,000	C
CARBARYL	63-25-2	22,000	G	190,000	C	190,000	C
CARBAZOLE	86-74-8	900	G	4,000	G	190,000	C
CARBOFURAN	1563-66-2	1,100	G	14,000	G	190,000	C
CARBON DISULFIDE	75-15-0	10,000	C	10,000	C	10,000	C
CARBON TETRACHLORIDE	56-23-5	30	N	150	N	170	N
CARBOXIN	5234-68-4	22,000	G	190,000	C	190,000	C
CHLORAMBEN	133-90-4	3,300	G	42,000	G	190,000	C
CHLORDANE	57-74-9	51	G	230	G	190,000	C
CHLORO-1,1-DIFLUOROETHANE, 1-	75-68-3	10,000	C	10,000	C	10,000	C
CHLORO-1-PROPENE, 3-(ALLYL CHLORIDE)	107-05-1	19	N	80	N	91	N
CHLOROACETOPHENONE, 2-	532-27-4	190,000	C	190,000	C	190,000	C
CHLOROANILINE, P-	106-47-8	90	G	400	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
CHLOROBENZENE	108-90-7	960	N	4,000	N	4,600	N
CHLOROBENZILATE	510-15-6	160	G	720	G	190,000	C
CHLOROBUTANE, 1-	109-69-3	8,800	G	10,000	C	10,000	C
CHLORODIBROMOMETHANE	124-48-1	17	N	82	N	95	N
CHLORODIFLUOROMETHANE	75-45-6	10,000	C	10,000	C	10,000	C
CHLOROETHANE	75-00-3	6,200	G	10,000	C	10,000	C
CHLOROFORM	67-66-3	19	N	97	N	110	N
CHLORONAPHTHALENE, 2-	91-58-7	18,000	G	190,000	C	190,000	C
CHLORONITROBENZENE, P-	100-00-5	220	G	2,800	G	190,000	C
CHLOROPHENOL, 2-	95-57-8	1,100	G	10,000	C	10,000	C
CHLOROPRENE	126-99-8	130	N	560	N	640	N
CHLOROPROPANE, 2-	75-29-6	1,900	N	8,000	N	9,100	N
CHLOROTHALONIL	1897-45-6	3,300	G	26,000	G	190,000	C
CHLOROTOLUENE, O-	95-49-8	4,400	G	10,000	C	10,000	C
CHLOROTOLUENE, P-	106-43-4	10,000	C	10,000	C	10,000	C
CHLORPYRIFOS	2921-88-2	660	G	8,400	G	190,000	C
CHLORSULFURON	64902-72-3	11,000	G	140,000	G	190,000	C
CHLORTHAL-DIMETHYL (DACTHAL) (DCPA)	1861-32-1	2,200	G	28,000	G	190,000	C
CHRYSENE	218-01-9	570	G	11,000	G	190,000	C
CRESOL(S)	1319-77-3	1,100	G	10,000	C	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
CRESOL, 4,6-DINITRO-O-	534-52-1	22	G	280	G	190,000	C
CRESOL, 0- (2-METHYLPHENOL)	95-48-7	11,000	G	140,000	G	190,000	C
CRESOL, M (3-METHYLPHENOL)	108-39-4	10,000	C	10,000	C	10,000	C
CRESOL, P (4-METHYLPHENOL)	106-44-5	1,100	G	14,000	G	190,000	C
CRESOL, P-CHLORO-M-	59-50-7	1,100	G	14,000	G	190,000	C
CROTONALDEHYDE	4170- 30-3	9.4	G	42	G	10,000	C
CROTONALDEHYDE, TRANS-	123-73-9	9.4	G	42	G	10,000	C
CUMENE (ISOPROPYL BENZENE)	98-82-8	7,700	N	10,000	C	10,000	C
CYANAZINE	21725- 46-2	21	G	94	G	190,000	C
CYCLOHEXANE	110-82-7	10,000	C	10,000	C	10,000	C
CYCLOHEXANONE	108-94-1	10,000	C	10,000	C	10,000	C
CYFLUTHRIN	68359- 37-5	5,500	G	70,000	G	190,000	C
CYROMAZINE	66215- 27-8	1,700	G	21,000	G	190,000	C
DDD, 4,4'-	72-54-8	75	G	330	G	190,000	C
DDE, 4,4'-	72-55-9	53	G	230	G	190,000	C
DDT, 4,4'-	50-29-3	53	G	230	G	190,000	C
DI(2-ETHYLHEXYL)ADIPATE	103-23-1	10,000	C	10,000	C	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
DIALLATE	2303-16-4	290	G	1,300	G	10,000	C
DIAMINOTOLUENE, 2,4-	95-80-7	4.7	G	21	G	190,000	C
DIAZINON	333-41-5	150	G	2,000	G	10,000	C
DIBENZO[A,H]ANTHRACENE	53-70-3	0.57	G	11	G	190,000	C
DIBENZOFURAN	132-64-9	220	G	2,800	G	190,000	C
DIBROMO-3-CHLOROPROPANE, 1,2-	96-12-8	0.029	N	0.37	N	0.43	N
DIBROMOBENZENE, 1,4-	106-37-6	2,200	G	28,000	G	190,000	C
DIBROMOETHANE, 1,2-(ETHYLENE DIBROMIDE)	106-93-4	0.74	N	3.7	N	4.3	N
DIBROMOMETHANE	74-95-3	2,200	G	10,000	C	10,000	C
DIBUTYL PHTHALATE, N-	84-74-2	10,000	C	10,000	C	10,000	C
DICAMBA	1918-00-9	6,600	G	84,000	C	190,000	C
DICHLOROACETIC ACID	76-43-6	880	G	10,000	C	10,000	C
DICHLORO-2-BUTENE, 1,4-	764-41-0	0.11	N	0.53	N	0.61	N
DICHLORO-2-BUTENE, TRANS-1,4-	110-57-6	0.1	N	1	N	1	N
DICHLOROBENZENE, 1,2-	95-50-1	3,800	N	10,000	C	10,000	C
DICHLOROBENZENE, 1,3-	541-73-1	660	G	8,400	G	10,000	C
DICHLOROBENZENE, P-	106-46-7	40	N	200	N	230	N
DICHLOROBENZIDINE, 3,3'-	91-94-1	40	G	180	G	190,000	C
DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	3,900	N	10,000	C	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
DICHLOROETHANE, 1,1-	75-34-3	280	N	1,400	N	1,600	N
DICHLOROETHANE, 1,2-	107-06-2	17	N	86	N	98	N
DICHLOROETHYLENE, 1,1-	75-35-4	3,800	N	10,000	C	10,000	C
DICHLOROETHYLENE, CIS-1,2-	156-59-2	2,200	G	10,000	C	10,000	C
DICHLOROETHYLENE, TRANS-1,2-	156-60-5	1,100	N	4,800	N	5,500	N
DICHLOROMETHANE (METHYLENE CHLORIDE)	75-09-2	950	N	4,700	N	5,400	N
DICHLOROPHENOL, 2,4-	120-83-2	660	G	8,400	G	190,000	C
DICHLOROPHENOXYACETIC ACID, 2,4- (2,4-D)	94-75-7	2,200	G	28,000	G	190,000	C
DICHLOROPROPANE, 1,2-	78-87-5	45	N	220	N	260	N
DICHLOROPROPENE, 1,3-	542-75-6	110	N	560	N	640	N
DICHLOROPROPIONIC ACID, 2,2- (DALAPON)	75-99-0	6,600	G	10,000	C	10,000	C
DICHLORVOS	62-73-7	62	G	270	G	10,000	C
DICYCLOPENTADIENE	77-73-6	130	N	550	N	630	N
DIELDRIN	60-57-1	1.1	G	5	G	190,000	C
DIETHANOLAMINE	111-42-2	10,000	C	10,000	C	10,000	C
DIETHYL PHTHALATE	84-66-2	10,000	C	10,000	C	10,000	C
DIFLUBENZURON	35367-38-5	4,400	G	56,000	G	190,000	C
DIISOPROPYL METHYLPHOSPHONATE	1445-75-6	10,000	C	10,000	C	10,000	C
DIMETHOATE	60-51-5	44	G	560	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
DIMETHOXYBENZIDINE, 3,3-	119-90-4	1,300	G	5,700	G	190,000	C
DIMETHRIN	70-38-2	66,000	G	190,000	C	190,000	C
DIMETHYLAMINOAZO- BENZENE, P-	60-11-7	3.9	G	17	G	190,000	C
DIMETHYLANILINE, N,N-	121-69-7	440	G	5,600	G	10,000	C
DIMETHYLBENZIDINE, 3,3-	119-93-7	1.6	G	7.2	G	190,000	C
DIMETHYL METHYLPHOSPHONATE	756-79-6	10,000	C	10,000	C	10,000	C
DIMETHYLPHENOL, 2,4-	105-67-9	4,400	G	10,000	C	10,000	C
DINITROBENZENE, 1,3-	99-65-0	22	G	280	G	190,000	C
DINITROPHENOL, 2,4-	51-28-5	440	G	5,600	G	190,000	C
DINITROTOLUENE, 2,4-	121-14-2	58	G	260	G	190,000	C
DINITROTOLUENE, 2,6- (2,6- DNT)	606-20-2	220	G	2,800	G	190,000	C
DINOSEB	88-85-7	220	G	2,800	G	190,000	C
DIOXANE, 1,4-	123-91-1	58	N	290	N	330	N
DIPHENAMID	957-51-7	6,600	G	84,000	G	190,000	C
DIPHENYLAMINE	122-39-4	5,500	G	70,000	G	190,000	C
DIPHENYLHYDRAZINE, 1,2-	122-66-7	22	G	99	G	190,000	C
DIQUAT	85-00-7	480	G	6,200	G	190,000	C
DISULFOTON	298-04-4	8.8	G	110	G	10,000	C
DITHIANE, 1,4-	505-29-3	2,200	G	28,000	G	190,000	C
DIURON	330-54-1	440	G	5,600	G	190,000	C
ENDOSULFAN	115-29-7	1,300	G	17,000	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

250-123

(355375) No. 436 Mar. 11

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
ENDOSULFAN I (ALPHA)	959-98-8	1,300	G	17,000	G	190,000	C
ENDOSULFAN II (BETA)	33213-65-9	1,300	G	17,000	G	190,000	C
ENDOSULFAN SULFATE	1031-07-8	1,300	G	17,000	G	190,000	C
ENDOTHALL	145-73-3	4,400	G	56,000	G	190,000	C
ENDRIN	72-20-8	66	G	840	G	190,000	C
EPICHLOROHYDRIN	106-89-8	19	N	79	N	91	N
ETHEPHON	16672-87-0	1,100	G	14,000	G	190,000	C
ETHION	563-12-2	110	G	1,400	G	10,000	C
ETHOXYETHANOL, 2-(EGEE)	110-80-5	3,900	N	10,000	C	10,000	C
ETHYL ACETATE	141-78-6	10,000	C	10,000	C	10,000	C
ETHYL ACRYLATE	140-88-5	370	G	1,700	G	10,000	C
ETHYL BENZENE	100-41-4	10,000	C	10,000	C	10,000	C
ETHYL DIPROPYLTHIOCARBAMATE, S- (EPTC)	759-94-4	5,500	G	10,000	C	10,000	C
ETHYL ETHER	60-29-7	10,000	C	10,000	C	10,000	C
ETHYL METHACRYLATE	97-63-2	10,000	C	10,000	C	10,000	C
ETHYLENE GLYCOL	107-21-1	7,700	N	10,000	C	10,000	C
ETHYLENE THIOUREA (ETU)	96-45-7	18	G	220	G	190,000	C
ETHYLP-NITROPHENYL PHENYLPHOSPHOROTHIOATE	2104-64-5	2.2	G	28	G	190,000	C
FENAMIPHOS	22224-92-6	55	G	700	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
FENVALERATE (PYDRIN)	51630-58-1	5,500	G	10,000	C	10,000	C
FLUOMETURON	2164-17-2	2,900	G	36,000	G	190,000	C
FLUORANTHENE	206-44-0	8,800	G	110,000	G	190,000	C
FLUORENE	86-73-7	8,800	G	110,000	G	190,000	C
FLUOROTRICHLORO-METHANE (FREON 11)	75-69-4	10,000	C	10,000	C	10,000	C
FONOFOS	944-22-9	440	G	5,600	G	10,000	C
FORMALDEHYDE	50-00-0	34	N	170	N	200	N
FORMIC ACID	64-18-6	57	N	240	N	270	N
FOSETYL-AL	39148-24-8	190,000	C	190,000	C	190,000	C
FURAN	110-00-9	220	G	2,800	G	10,000	C
FURFURAL	98-01-1	660	G	4,000	N	4,500	N
GLYPHOSATE	1071-83-6	22,000	G	190,000	C	190,000	C
HEPTACHLOR	76-44-8	4	G	18	G	190,000	C
HEPTACHLOR EPOXIDE	1024-57-3	2	G	8.7	G	190,000	C
HEXACHLOROBENZENE	118-74-1	11	G	50	G	190,000	C
HEXACHLOROBUTADIENE	87-68-3	220	G	1,000	G	10,000	C
HEXACHLOROCYCLO-PENTADIENE	77-47-4	1,300	G	10,000	C	10,000	C
HEXACHLOROETHANE	67-72-1	110	N	550	N	640	N
HEXANE	110-54-3	10,000	C	10,000	C	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
HEXAZINONE	51235-04-2	7,300	G	92,000	G	190,000	C
HEXYTHIAZOX (SAVEY)	78587-05-0	5,500	G	70,000	G	190,000	C
HMX	2691-41-0	11,000	G	140,000	G	190,000	C
HYDRAZINE/HYDRAZINE SULFATE	302-01-2	0.09	N	0.45	N	0.52	N
HYDROQUINONE	123-31-9	320	G	1,400	G	190,000	C
INDENO[1,2,3-CD]PYRENE	193-39-5	5.7	G	110	G	190,000	C
IPRODIONE	36734-19-7	8,800	G	110,000	G	190,000	C
ISOBUTYL ALCOHOL	78-83-1	10,000	C	10,000	C	10,000	C
ISOPHORONE	78-59-1	10,000	C	10,000	C	10,000	C
ISOPROPYL METHYLPHOSPHONATE	1832-54-8	10,000	C	10,000	C	10,000	C
KEPONE	143-50-0	1.1	G	5	G	190,000	C
MALATHION	121-75-5	4,400	G	10,000	C	10,000	C
MALEIC HYDRAZIDE	123-33-1	110,000	G	190,000	C	190,000	C
MANEB	12427-38-2	1,100	G	14,000	G	190,000	C
MERPHOS OXIDE	78-48-8	6.6	G	84	G	10,000	C
METHACRYLONITRILE	126-98-7	13	N	56	N	64	N
METHAMIDOPHOS	10265-92-6	11	G	140	G	190,000	C
METHANOL	67-56-1	10,000	C	10,000	C	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
METHOMYL	16752-77-5	5,500	G	70,000	G	190,000	C
METHOXYCHLOR	72-43-5	1,100	G	14,000	G	190,000	C
METHOXYETHANOL, 2-	109-86-4	380	N	1,600	N	1,800	N
METHYL ACETATE	79-20-9	10,000	C	10,000	C	10,000	C
METHYL ACRYLATE	96-33-3	6,600	G	10,000	C	10,000	C
METHYL CHLORIDE	74-87-3	250	N	1,200	N	1,400	N
METHYL ETHYL KETONE	78-93-3	10,000	C	10,000	C	10,000	C
METHYL ISOBUTYL KETONE	108-10-1	10,000	C	10,000	C	10,000	C
METHYL ISOCYANATE	624-83-9	19	N	79	N	91	N
METHYL N-BUTYL KETONE (2-HEXANONE)	591-78-6	96	N	400	N	460	N
METHYL METHACRYLATE	80-62-6	10,000	C	10,000	C	10,000	C
METHYL METHANESULFONATE	66-27-3	180	G	800	G	10,000	C
METHYL PARATHION	298-00-0	55	G	700	G	190,000	C
METHYL STYRENE (MIXED ISOMERS)	25013-15-4	770	N	3,200	N	3,600	N
METHYL TERT-BUTYL ETHER (MTBE)	1634-04-4	620	G	3,200	N	3,700	N
METHYLCHLOROPHENOXY-ACETIC ACID (MCPA)	94-74-6	110	G	1,400	G	190,000	C
METHYLENE BIS(2-CHLOROANILINE), 4,4'-	101-14-4	42	G	790	G	190,000	C
METHYLNAPHTHALENE, 2-	91-57-6	880	G	11,000	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
METHYLSTYRENE, ALPHA	98-83-9	10,000	C	10,000	C	10,000	C
METOLACHLOR	51218-45-2	10,000	C	10,000	C	10,000	C
METRIBUZIN	21087-64-9	5,500	G	70,000	G	190,000	C
MONOCHLOROACETIC ACID	79-11-8	2,200	G	28,000	G	190,000	C
NAPHTHALENE	91-20-3	4,400	G	56,000	G	190,000	C
NAPHTHYLAMINE, 1-	134-32-7	9.9	G	44	G	190,000	C
NAPHTHYLAMINE, 2-	91-59-8	9.9	G	44	G	190,000	C
NAPROPAMIDE	15299-99-7	22,000	G	190,000	C	190,000	C
NITROANILINE, M-	99-09-2	66	G	840	G	190,000	C
NITROANILINE, O-	88-74-4	660	G	8,400	G	190,000	C
NITROANILINE, P-	100-01-6	880	G	4,000	G	190,000	C
NITROBENZENE	98-95-3	440	G	5,600	G	10,000	C
NITROGUANIDINE	556-88-7	22,000	G	190,000	C	190,000	C
NITROPHENOL, 2-	88-75-5	1,800	G	22,000	G	190,000	C
NITROPHENOL, 4-	100-02-7	1,800	G	22,000	G	190,000	C
NITROPROPANE, 2-	79-46-9	0.16	N	0.82	N	0.94	N
NITROSODIETHYLAMINE, N-	55-18-5	0.0041	N	0.051	N	0.059	N
NITROSODIMETHYLAMINE, N-	62-75-9	0.012	N	0.16	N	0.18	N
NITROSO-DI-N-BUTYLAMINE, N-	924-16-3	3.3	G	15	G	10,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
NITROSODI-N- PROPYLAMINE, N-	621-64-7	2.6	G	11	G	10,000	C
NITROSODIPHENYLAMINE, N-	86-30-6	3,700	G	16,000	G	190,000	C
NITROSO-N-ETHYLUREA, N-	759-73-9	0.15	G	2.9	G	190,000	C
OCTYL PHTHALATE, DI-N-	117-84-0	8,800	G	10,000	C	10,000	C
OXAMYL (VYDATE)	23135- 22-0	5,500	G	70,000	G	190,000	C
PARAQUAT	1910- 42-5	990	G	13,000	G	190,000	C
PARATHION	56-38-2	1,300	G	10,000	C	10,000	C
PCB-1016 (AROCLOR)	12674- 11-2	15	G	200	G	10,000	C
PCB-1221 (AROCLOR)	11104- 28-2	9	G	40	G	10,000	C
PCB-1232 (AROCLOR)	11141- 16-5	9	G	40	G	10,000	C
PCB-1242 (AROCLOR)	53469- 21-9	9	G	40	G	10,000	C
PCB-1248 (AROCLOR)	12672- 29-6	9	G	40	G	10,000	C
PCB-1254 (AROCLOR)	11097- 69-1	4.4	G	40	G	10,000	C
PCB-1260 (AROCLOR)	11096- 82-5	9	G	40	G	190,000	C
PEBULATE	1114-71-2	10,000	C	10,000	C	10,000	C
PENTACHLOROBENZENE	608-93-5	180	G	2,200	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
PENTACHLOROETHANE	76-01-7	200	G	880	G	10,000	C
PENTACHLORONITRO-BENZENE	82-68-8	69	G	310	G	190,000	C
PENTACHLOROPHENOL	87-86-5	150	G	660	G	190,000	C
PHENACETIN	62-44-2	8,100	G	36,000	G	190,000	C
PHENANTHRENE	85-01-8	66,000	G	190,000	C	190,000	C
PHENOL	108-95-2	66,000	G	190,000	C	190,000	C
PHENYL MERCAPTAN	108-98-5	2.2	G	28	N	10,000	N
PHENYLENEDIAMINE, M-	108-45-2	1,300	G	17,000	G	190,000	C
PHENYLPHENOL, 2-	90-43-7	9,400	G	42,000	G	190,000	C
PHORATE	298-02-2	44	G	560	G	10,000	C
PHTHALIC ANHYDRIDE	85-44-9	190,000	C	190,000	C	190,000	C
PICLORAM	1918-02-1	15,000	G	190,000	C	190,000	C
PROMETON	1610-18-0	3,300	G	42,000	G	190,000	C
PRONAMIDE	23950-58-5	17,000	G	190,000	C	190,000	C
PROPANIL	709-98-8	1,100	G	14,000	G	190,000	C
PROPANOL 2- (ISOPROPYL ALCOHOL)	67-63-0	10,000	C	10,000	C	10,000	C
PROPAZINE	139-40-2	4,400	G	10,000	C	10,000	C
PROPHAM	122-42-9	4,400	G	56,000	G	190,000	C
PROPYLBENZENE, N-	103-65-1	8,800	G	10,000	C	10,000	C
PROPYLENE OXIDE	75-56-9	75	G	330	G	690	N

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
PYRENE	129-00-0	6,600	G	84,000	G	190,000	C
PYRIDINE	110-86-1	220	G	2,800	G	10,000	C
QUINOLINE	91-22-5	6	G	26	G	10,000	C
QUIZALOFOP (ASSURE)	76578-14-8	2,000	G	25,000	G	190,000	C
RDX	121-82-4	160	G	720	G	190,000	C
RESORCINOL	108-46-3	190,000	C	190,000	C	190,000	C
RONNEL	299-84-3	11,000	G	140,000	G	190,000	C
SIMAZINE	122-34-9	150	G	660	G	190,000	C
STRYCHNINE	57-24-9	66	G	840	G	190,000	C
STYRENE	100-42-5	10,000	C	10,000	C	10,000	C
TEBUTHIURON	34014-18-1	15,000	G	190,000	C	190,000	C
TERBACIL	5902-51-2	2,900	G	36,000	G	190,000	C
TERBUFOS	13071-79-9	5.5	G	70	G	10,000	C
TETRACHLOROBENZENE, 1,2,4,5-	95-94-3	66	G	840	G	190,000	C
TETRACHLORODIBENZO-P- DIOXIN, 2,3,7,8- (TCDD)	1746-01-6	0.00014	G	0.00061	G	190,000	C
TETRACHLOROETHANE, 1,1,1,2-	630-20-6	60	N	300	N	340	N
TETRACHLOROETHANE, 1,1,2,2-	79-34-5	7.7	N	38	N	44	N
TETRACHLOROETHYLENE (PCE)	127-18-4	340	G	1,500	G	4,400	N

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
TETRACHLOROPHENOL, 2,3,4,6-	58-90-2	6,600	G	84,000	G	190,000	C
TETRAETHYL LEAD	78-00-2	0.022	G	0.28	G	10,000	C
TETRAETHYLDITHIOPYRO- PHOSPHATE	3689- 24-5	110	G	1,400	G	10,000	C
TETRAHYDROFURAN	109-99-9	230	N	1,100	N	1,300	N
THIOFANOX	39196- 18-4	66	G	840	G	190,000	C
THIRAM	137-26-8	1,100	G	14,000	G	190,000	C
TOLUENE	108-88-3	10,000	C	10,000	C	10,000	C
TOLUIDINE, M-	108-44-1	99	G	440	G	10,000	C
TOLUIDINE, O-	95-53-4	99	G	440	G	10,000	C
TOLUIDINE, P-	106-49-0	94	G	420	G	190,000	C
TOXAPHENE	8001- 35-2	16	G	72	G	190,000	C
TRIALATE	2303- 17-5	2,900	G	10,000	C	10,000	C
TRIBROMOMETHANE (BROMOFORM)	75-25-2	410	N	2,000	N	2,300	N
TRICHLORO- 1,2,2- TRIFLUOROETHANE, 1,1,2-	76-13-1	10,000	C	10,000	C	10,000	C
TRICHLOROBENZENE, 1,2,4-	120-82-1	2,200	G	10,000	C	10,000	C
TRICHLOROBENZENE, 1,3,5-	108-70-3	1,300	G	17,000	G	190,000	C
TRICHLOROETHANE, 1,1,1-	71-55-6	10,000	C	10,000	C	10,000	C
TRICHLOROETHANE, 1,1,2-	79-00-5	28	N	140	N	160	N

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
TRICHLOROETHYLENE (TCE)	79-01-6	260	N	1,300	N	1,500	N
TRICHLOROPHENOL, 2,4,5-	95-95-4	22,000	G	190,000	C	190,000	C
TRICHLOROPHENOL, 2,4,6-	88-06-2	220	G	2,800	G	190,000	C
TRICHLOROPHENOXYACETIC ACID, 2,4,5- (2,4,5-T)	93-76-5	2,200	G	28,000	G	190,000	C
TRICHLOROPHENOXY- PROPIONIC ACID, 2,4,5- (2,4,5-TP)(SILVEX)	93-72-1	1,800	G	22,000	G	190,000	C
TRICHLOROPROPANE, 1,1,2-	598-77-6	1,100	G	10,000	C	10,000	C
TRICHLOROPROPANE, 1,2,3-	96-18-4	2.6	G	11	G	460	N
TRICHLOROPROPENE, 1,2,3-	96-19-5	19	N	80	N	91	N
TRIETHYLAMINE	121-44-8	130	N	560	N	640	N
TRIFLURALIN	1582- 09-8	1,700	G	10,000	G	190,000	C
TRIMETHYLBENZENE, 1,3,4- (TRIMETHYLBENZENE, 1,2,4-)	95-63-6	130	N	560	N	640	N
TRIMETHYLBENZENE, 1,3,5-	108-67-8	110	N	480	N	550	N
TRINITROGLYCEROL (NITROGLYCERIN)	55-63-0	22	G	280	G	10,000	C
TRINITROTOLUENE, 2,4,6-	118-96-7	110	G	1,400	G	190,000	C
VINYL ACETATE	108-05-4	3,900	N	10,000	C	10,000	C
VINYL BROMIDE (BROMOETHENE)	593-60-2	14	N	70	N	80	N
VINYL CHLORIDE	75-01-4	1.9	G	110	G	580	N

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL—(Continued)

A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet		Non-Residential			
				Surface Soil 0-2 feet		Subsurface Soil 2-15 feet	
WARFARIN	81-81-2	66	G	840	G	190,000	C
XYLENES (TOTAL)	1330- 20-7	1,900	N	8,000	N	9,100	N
ZINEB	12122- 67-7	11,000	G	140,000	G	190,000	C

All concentrations in mg/kg

G - Ingestion

N - Inhalation

C - Cap

APPENDIX A
TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)						
		TDS ≤ 2500						TDS > 2500												
		Residential		Non-Residential		Generic		Residential		Non-Residential		Generic								
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
ACENAPHTHENE	83-32-9	220	2,700 E	380	4,700 E	380	4,700 E	380	4,700 E	380	4,700 E	380	4,700 E	380	4,700 E	380	4,700 E	380	4,700 E	15
ACENAPHTHYLENE	208-96-8	220	2,500 E	610	6,900 E	1,600	18,000 E	1,600	18,000 E	1,600	18,000 E	1,600	18,000 E	1,600	18,000 E	1,600	18,000 E	1,600	18,000 E	15
ACETALDEHYDE	30560-19-1	7.6	0.9 E	30	3.6 E	760	90 E	3,000	360 E	7.6	0.9 E	30	3.6 E	7.6	0.9 E	30	3.6 E	7.6	0.9 E	NA
ACETONE	75-07-0	1.9	0.23 E	7.9	0.96 E	190	23 E	790	96 E	1.9	0.23 E	7.9	0.96 E	1.9	0.23 E	7.9	0.96 E	1.9	0.96 E	NA
ACETONITRILE	67-64-1	3,300	370 E	9,200	1,000 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ACETOPHENONE	98-86-2	370	200 E	1,000	540 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ACETYLAMINOFLOURENE, 2- (2AAF)	53-96-3	0.017	0.07 E	0.068	0.28 E	1.7	7 E	6.8	28 E	1.7	7 E	6.8	28 E	1.7	7 E	6.8	28 E	1.7	7 E	20
ACROLEIN	107-02-8	0.0043	0.00047 E	0.018	0.002 E	0.42	0.047 E	1.8	0.2 E	0.42	0.047 E	1.8	0.2 E	0.42	0.047 E	1.8	0.2 E	0.42	0.047 E	NA
ACRYLAMIDE	79-06-1	0.0038	0.00066 E	0.019	0.0033 E	0.4	0.07 E	1.9	0.33 E	0.4	0.07 E	1.9	0.33 E	0.4	0.07 E	1.9	0.33 E	0.4	0.07 E	NA
ACRYLIC ACID	79-10-7	0.21	0.039 E	0.88	0.16 E	21	3.9 E	88	16 E	21	3.9 E	88	16 E	21	3.9 E	88	16 E	21	3.9 E	NA
ACRYLONITRILE	107-13-1	0.072	0.01 E	0.37	0.051 E	7.2	1 E	37	5.1 E	7.2	1 E	37	5.1 E	7.2	1 E	37	5.1 E	7.2	1 E	NA
ALACHLOR	15972-60-8	0.2	0.077 E	0.2	0.077 E	20	7.7 E	20	7.7 E	20	7.7 E	20	7.7 E	20	7.7 E	20	7.7 E	20	7.7 E	NA
ALDICARB	116-06-3	0.3	0.05 E	0.3	0.05 E	30	5 E	30	5 E	30	5 E	30	5 E	30	5 E	30	5 E	30	5 E	NA
ALDICARB SULFONE	1646-88-4	0.2	0.027 E	0.2	0.027 E	20	2.7 E	20	2.7 E	20	2.7 E	20	2.7 E	20	2.7 E	20	2.7 E	20	2.7 E	NA
ALDICARB SULFOXIDE	1646-87-3	0.4	0.045 E	0.4	0.045 E	40	4.5 E	40	4.5 E	40	4.5 E	40	4.5 E	40	4.5 E	40	4.5 E	40	4.5 E	NA
ALDRIN	309-00-2	0.0039	0.47 E	0.015	1.8 E	0.39	47 E	1.5	180 E	0.39	47 E	1.5	180 E	0.39	47 E	1.5	180 E	0.39	47 E	10
ALLYL ALCOHOL	107-18-6	0.063	0.0075 E	0.26	0.031 E	6.3	0.75 E	26	3.1 E	6.3	0.75 E	26	3.1 E	6.3	0.75 E	26	3.1 E	6.3	0.75 E	NA
AMETRYN	834-12-8	6	6.5 E	6	6.5 E	600	650 E	600	650 E	600	650 E	600	650 E	600	650 E	600	650 E	600	650 E	NA
AMINOBIPHENYL, 4-	92-67-1	0.0031	0.0012 E	0.012	0.0046 E	0.31	0.12 E	1.2	0.46 E	0.31	0.12 E	1.2	0.46 E	0.31	0.12 E	1.2	0.46 E	0.31	0.12 E	NA
AMITROLE	61-82-5	0.07	0.029 E	0.28	0.12 E	7	2.9 E	28	12 E	7	2.9 E	28	12 E	7	2.9 E	28	12 E	7	2.9 E	NA
AMMONIA	7664-41-7	3,000	360 E	3,000	360 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
AMMONIUM SULFAMATE	7773-06-0	200	24 E	200	24 E	20,000	2,400 E	20,000	2,400 E	20,000	2,400 E	20,000	2,400 E	20,000	2,400 E	20,000	2,400 E	20,000	2,400 E	NA
ANILINE	62-53-3	0.21	0.12 E	0.88	0.52 E	21	12 E	88	52 E	21	12 E	88	52 E	21	12 E	88	52 E	21	12 E	NA
ANTHRACENE	120-12-7	6.6	350 E	6.6	350 E	66	350 E	6.6	350 E	6.6	350 E	6.6	350 E	6.6	350 E	6.6	350 E	6.6	350 E	10
ATRAZINE	1912-24-9	0.3	0.13 E	0.3	0.13 E	30	13 E	30	13 E	30	13 E	30	13 E	30	13 E	30	13 E	30	13 E	NA

¹For other options see § 250.308
All concentrations in mg/kg
E - Number calculated by the soil to groundwater equation in § 250.308
C - Cap
NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil		
		TDS ≤ 2500						TDS > 2500						Non-Use Aquifers		Buffer Distance (feet)
		Residential		Non-Residential		Residential		Non-Residential		Residential		Non-Residential		100 X GW MSC	Generic Value	
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value					
AZINPHOS-METHYL (GUTHION)	86-50-0	11	12 E	31	35 E	1,100	1,200 E	3,100	3,500 E	11	12 E	31	35 E	NA	NA	
BAYGON (PROPOXUR)	114-26-1	0.3	0.057 E	30	5.7 E	30	5.7 E	30	5.7 E	300	57 E	300	57 E	NA	NA	
BENOMYL	17804-35-2	180	880 E	200	970 E	200	970 E	200	970 E	180	880 E	200	970 E	20	20	
BENTAZON	23057-89-0	20	2.9 E	20	2.9 E	2,000	290 E	2,000	290 E	20	2.9 E	20	2.9 E	NA	NA	
BENZENE	71-43-2	0.5	0.13 E	0.5	0.13 E	50	13 E	50	13 E	50	13 E	50	13 E	NA	NA	
BENZIDINE	92-87-5	0.00093	0.12 E	0.0011	1.5 E	0.0093	12 E	0.11	150 E	0.093	120 E	1.1	1,500 E	5	5	
BENZO[ANTHRA]CENE	56-55-3	0.029	25 E	0.36	320 E	1.1	960 E	1.1	960 E	1.1	960 E	1.1	960 E	5	5	
BENZO[A]PYRENE	50-32-8	0.02	46 E	0.02	46 E	0.38	860 E	0.38	860 E	0.38	860 E	0.38	860 E	5	5	
BENZO[B]FLUORANTHENE	205-99-2	0.029	40 E	0.12	170 E	0.12	170 E	0.12	170 E	0.12	170 E	0.12	170 E	5	5	
BENZO[G]HUIPERYLENE	191-24-2	0.026	180 E	0.026	180 E	0.026	180 E	0.026	180 E	0.026	180 E	0.026	180 E	5	5	
BENZO[K]FLUORANTHENE	207-08-9	0.055	610 E	0.055	610 E	0.055	610 E	0.055	610 E	0.055	610 E	0.055	610 E	5	5	
BENZOIC ACID	65-85-0	15,000	2,900 E	41,000	7,800 E	190,000	52,000 E	190,000	52,000 E	15,000	2,900 E	41,000	7,800 E	NA	NA	
BENZOTRICHLORIDE	98-07-7	0.0051	0.012 E	0.02	0.048 E	0.51	1.2 E	2	4.8 E	5.1	12 E	20	48 E	30	30	
BENZYL CHLORIDE	100-51-6	1,800	650 E	5,100	1,800 E	10,000	10,000 C	10,000	10,000 C	1,800	650 E	5,100	1,800 E	NA	NA	
BETA PROIOLACTONE	100-44-7	0.1	0.059 E	0.51	0.3 E	10	5.9 E	51	30 E	10	5.9 E	51	30 E	NA	NA	
BHC, ALPHA	57-57-8	0.0012	0.00015 E	0.0063	0.00076 E	0.1	0.015 E	0.63	0.076 E	0.012	0.0015 E	0.063	0.0076 E	NA	NA	
BHC, BETA	319-85-7	0.037	0.22 E	0.14	0.82 E	3.7	22 E	4.1	19 E	10	46 E	41	190 E	20	20	
BHC, GAMMA (LINDANE)	58-89-9	0.02	0.072 E	0.02	0.072 E	2	7.2 E	2	7.2 E	20	72 E	20	72 E	15	15	
BIPHENYL, 1,1-	92-52-4	180	790 E	510	2,200 E	720	3,100 E	720	3,100 E	720	3,100 E	720	3,100 E	20	20	
BIS(2-CHLOROETHOXY) METHANE	111-91-1	11	2.9 E	31	8.2 E	1,100	290 E	3,100	820 E	11	2.9 E	31	8.2 E	NA	NA	
BIS(2-CHLOROETHYL)ETHER	111-44-4	0.015	0.0045 E	0.076	0.023 E	1.5	0.45 E	7.6	2.3 E	1.5	0.45 E	7.6	2.3 E	NA	NA	
BIS(2-CHLORO-ISOPROPYL)ETHER	108-60-1	30	8 E	30	8 E	3,000	800 E	3,000	800 E	3,000	800 E	3,000	800 E	NA	NA	
BIS(CHLOROMETHYL)ETHER	542-88-1	0.00079	0.000012 E	0.0004	0.00006 E	0.0079	0.001 E	0.04	0.006 E	0.0079	0.001 E	0.04	0.006 E	NA	NA	
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	0.6	130 E	0.6	130 E	29	6,300 E	29	6,300 E	29	6,300 E	29	6,300 E	10	10	
BISPHENOL A	80-05-7	180	700 E	510	2,000 E	12,000	46,000 E	12,000	46,000 E	12,000	46,000 E	12,000	46,000 E	20	20	
BROMACIL	314-40-9	7	1.8 E	7	1.8 E	700	180 E	700	180 E	7	1.8 E	7	1.8 E	NA	NA	

¹For other options see § 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in § 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)		
		TDS ≤ 2500						TDS > 2500								
		Residential			Non-Residential			Residential			Non-Residential					
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value			
BROMOCHLOROMETHANE	74-97-5	9	1.6 E	9	1.6 E	900	160 E	900	160 E	9	1.6 E	9	1.6 E	9	1.6 E	NA
BROMODICHLOROMETHANE	75-27-4	8	2.7 E	8	2.7 E	800	270 E	800	270 E	8	2.7 E	8	2.7 E	8	2.7 E	NA
BROMOMETHANE	74-83-9	1	0.54 E	1	0.54 E	100	54 E	100	54 E	100	54 E	100	54 E	100	54 E	NA
BROMOXYNIL	1689-84-5	73	63 E	200	170 E	7,300	6,300 E	13,000	11,000 E	73	63 E	200	170 E	73	63 E	15
BROMOXYNIL OCTANOATE	1689-99-2	8	360 E	8	360 E	8	360 E	8	360 E	8	360 E	8	360 E	8	360 E	15
BUTADIENE, 1,3-	106-99-0	0.019	0.0078 E	0.076	0.031 E	1.9	0.78 E	7.6	3.1 E	1.9	0.78 E	7.6	3.1 E	1.9	0.78 E	NA
BUTYLALCOHOL, N-	71-36-3	370	44 E	1,000	120 E	10,000	4,400 E	10,000	10,000 C	3,700	440 E	10,000	1,200 E	10,000	1,200 E	NA
BUTYLATE	2008-41-5	40	58 E	40	58 E	4,000	5,800 E	4,000	5,800 E	40	58 E	40	58 E	40	58 E	30
BUTYLBENZENE, N-	104-51-8	150	950 E	410	2,600 E	1,500	9,500 E	1,500	9,500 E	150	950 E	410	2,600 E	410	2,600 E	15
BUTYLBENZENE, SEC-	135-98-8	150	350 E	410	960 E	1,700	4,000 E	1,700	4,000 E	150	350 E	410	960 E	410	960 E	30
BUTYLBENZENE, TERT-	98-06-6	150	270 E	410	740 E	3,000	5,400 E	3,000	5,400 E	150	270 E	410	740 E	410	740 E	30
BUTYLBENZYL PHTHALATE	85-68-7	35	3,000 E	140	10,000 C	270	10,000 C	270	10,000 C	270	10,000 C	270	10,000 C	270	10,000 C	10
CAPTAN	133-06-2	29	18 E	50	31 E	50	31 E	50	31 E	50	31 E	50	31 E	50	31 E	NA
CARBARYL	63-25-2	370	220 E	1,000	590 E	12,000	7,000 E	12,000	7,000 E	12,000	7,000 E	12,000	7,000 E	12,000	7,000 E	NA
CARBAZOLE	86-74-8	3.3	21 E	13	83 E	120	760 E	120	760 E	120	760 E	120	760 E	120	760 E	15
CARBOFURAN	1563-66-2	4	0.87 E	4	0.87 E	400	87 E	400	87 E	4	0.87 E	4	0.87 E	4	0.87 E	NA
CARBON DISULFIDE	75-15-0	150	130 E	620	530 E	10,000	10,000 C	10,000	10,000 C	150	130 E	620	530 E	620	530 E	NA
CARBON TETRACHLORIDE	56-23-5	0.5	0.26 E	0.5	0.26 E	50	26 E	50	26 E	5	2.6 E	5	2.6 E	5	2.6 E	NA
CARBOXIN	5234-68-4	70	53 E	70	53 E	7,000	5,300 E	7,000	5,300 E	70	53 E	70	53 E	70	53 E	NA
CHLORAMBEN	133-90-4	10	1.6 E	10	1.6 E	1,000	160 E	1,000	160 E	10	1.6 E	10	1.6 E	10	1.6 E	NA
CHLORDANE	57-74-9	0.2	49 E	0.2	49 E	5.6	1,400 E	5.6	1,400 E	5.6	1,400 E	5.6	1,400 E	5.6	1,400 E	10
CHLORO-1,1-DIFLUOROETHANE, 1-	75-68-3	10,000	1,800 E	10,000	7,300 E	10,000	10,000 C	10,000	10,000 C	10,000	1,800 E	10,000	1,800 E	10,000	7,300 E	NA
CHLORO-1-PROPENE, 3- (ALLYL CHLORIDE)	107-05-1	0.21	0.049 E	0.88	0.2 E	21	4.9 E	88	20 E	21	4.9 E	88	20 E	88	20 E	NA
CHLOROACETOPHENONE, 2-	532-27-4	0.11	0.033 E	0.31	0.093 E	11	3.3 E	31	9.3 E	11	3.3 E	31	9.3 E	31	9.3 E	NA
CHLORANILINE, P-	106-47-8	0.33	0.42 E	1.3	1.6 E	33	42 E	130	160 E	0.33	0.42 E	1.3	1.6 E	1.3	1.6 E	NA
CHLOROBENZENE	108-90-7	10	6.1 E	10	6.1 E	1,000	610 E	1,000	610 E	1,000	610 E	1,000	610 E	1,000	610 E	NA
CHLOROBENZILATE	510-15-6	0.6	4 E	2.4	16 E	60	400 E	240	1,600 E	60	400 E	240	1,600 E	240	1,600 E	15
CHLOROBUTANE, 1-	109-69-3	150	230 E	410	640 E	10,000	10,000 C	10,000	10,000 C	150	230 E	410	640 E	410	640 E	30

¹For other options see § 250.308

All concentrations in mg/kg

E - Number calculated by the soil to groundwater equation in § 250.308

C - Cap

NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)		
		TDS ≤ 2500						TDS > 2500								
		Residential			Non-Residential			Residential			Non-Residential					
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value			
CYFLUTHRIN	68359-37-5	0.1	33 E	0.1	33 E	0.1	33 E	0.1	33 E	0.1	33 E	0.1	33 E	0.1	33 E	10
CYROMAZINE	66215-27-8	27	84 E	77	240 E	2,700	8,400 E	7,700	24,000 E	27	84 E	77	240 E	27	84 E	20
DDD, 4,4'-	72-54-8	0.28	31 E	1.1	120 E	16	1,800 E	16	1,800 E	16	1,800 E	16	1,800 E	16	1,800 E	10
DDE, 4,4'-	72-55-9	0.19	41 E	0.76	170 E	4	870 E	4	870 E	4	870 E	4	870 E	4	870 E	10
DDT, 4,4'-	50-29-3	0.19	110 E	0.55	330 E	0.55	330 E	0.55	330 E	0.55	330 E	0.55	330 E	0.55	330 E	5
DIC-ETHYLHEXYLADIPATE	103-23-1	40	10,000 C	40	10,000 C	4,000	10,000 C	4,000	10,000 C	4,000	10,000 C	4,000	10,000 C	4,000	10,000 C	5
DIALLATE	2303-16-4	1.1	0.64 E	4.3	2.5 E	110	64 E	430	250 E	1,100	640 E	4,000	2,300 E	4,000	2,300 E	NA
DIAMINOTOLUENE, 2,4-	95-80-7	0.017	0.0034 E	0.068	0.014 E	1.7	0.34 E	6.8	1.4 E	17	3.4 E	68	14 E	68	14 E	NA
DIAMINON	333-41-5	0.1	0.14 E	0.1	0.14 E	10	14 E	10	14 E	0.1	0.14 E	0.1	0.14 E	0.1	0.14 E	30
DIBENZO[A,H]ANTHRACENE	53-70-3	0.0029	13 E	0.036	160 E	0.06	270 E	0.06	270 E	0.06	270 E	0.06	270 E	0.06	270 E	5
DIBENZOFURAN	132-64-9	3.7	95 E	10	260 E	370	9,500 E	450	12,000 E	450	12,000 E	450	12,000 E	450	12,000 E	15
DIBROMO-3-CHLOROPROPANE, 1,2-	96-12-8	0.02	0.0092 E	0.02	0.0092 E	2	0.92 E	2	0.92 E	2	0.92 E	2	0.92 E	2	0.92 E	NA
DIBROMOBENZENE, 1,4-	106-37-6	37	150 E	100	410 E	2,000	8,200 E	2,000	8,200 E	37	150 E	100	410 E	37	150 E	20
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012 E	0.005	0.0012 E	0.5	0.12 E	0.5	0.12 E	0.5	0.12 E	0.5	0.12 E	0.5	0.12 E	NA
DIBROMOMETHANE	74-95-3	37	14 E	100	39 E	3,700	1,400 E	10,000	3,900 E	3,700	1,400 E	10,000	3,900 E	10,000	3,900 E	NA
DIBUTYL PHTHALATE, N-	84-74-2	370	1,500 E	1,000	4,100 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	20
DICAMBA	1918-00-9	400	45 E	400	45 E	40,000	4,500 E	40,000	4,500 E	400	45 E	400	45 E	400	45 E	NA
DICHLOROACETIC ACID	76-43-6	6	0.79 E	6	0.79 E	600	79 E	600	79 E	6	0.79 E	6	0.79 E	6	0.79 E	NA
DICHLORO-2-BUTENE, 1,4-	764-41-0	0.0012	0.00067 E	0.006	0.0034 E	0.12	0.07 E	0.6	0.34 E	0.012	0.0007 E	0.006	0.0034 E	0.006	0.0034 E	NA
DICHLORO-2-BUTENE, TRANS-1,4-	110-57-6	0.0012	0.00078 E	0.006	0.0039 E	0.12	0.078 E	0.6	0.39 E	0.012	0.00078 E	0.006	0.0039 E	0.006	0.0039 E	NA
DICHLOROBENZENE, 1,2-	95-50-1	60	59 E	60	59 E	6,000	5,900 E	6,000	5,900 E	6,000	5,900 E	6,000	5,900 E	6,000	5,900 E	NA
DICHLOROBENZENE, 1,3-	541-73-1	60	61 E	60	61 E	6,000	6,100 E	6,000	6,100 E	6,000	6,100 E	6,000	6,100 E	6,000	6,100 E	NA
DICHLOROBENZENE, P-	106-46-7	7.5	10 E	7.5	10 E	750	1,000 E	750	1,000 E	750	1,000 E	750	1,000 E	750	1,000 E	30
DICHLOROBENZIDINE, 3,3'-	91-94-1	0.15	8.3 E	0.58	32 E	15	830 E	58	3,200 E	150	8,300 E	310	17,000 E	310	17,000 E	10
DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	100	100 E	100	100 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
DICHLOROETHANE, 1,1-	75-34-3	3.1	0.75 E	16	39 E	310	75 E	1,600	390 E	31	7.5 E	160	39 E	31	7.5 E	NA
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1 E	0.5	0.1 E	50	10 E	50	10 E	5	1 E	5	1 E	5	1 E	NA

¹For other options see § 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in § 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential			Non-Residential			Residential			Non-Residential			
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
DICHLOROETHYLENE, 1,1-	75-35-4	0.7	0.19 E	0.7	0.19 E	70	19 E	70	19 E	7	1.9 E	7	1.9 E	NA
DICHLOROETHYLENE, CIS-1,2-	156-59-2	7	1.6 E	7	1.6 E	700	160 E	700	160 E	70	16 E	70	16 E	NA
DICHLOROETHYLENE, TRANS-1,2-	156-60-5	10	2.3 E	10	2.3 E	1,000	230 E	1,000	230 E	100	23 E	100	23 E	NA
DICHLOROMETHANE (METHYLENE CHLORIDE)	75-09-2	0.5	0.076 E	0.5	0.076 E	50	7.6 E	50	7.6 E	50	7.6 E	50	7.6 E	NA
DICHLOROPHENOL, 2,4-	120-83-2	2	1 E	2	1 E	200	100 E	200	100 E	2,000	1,000 E	2,000	1,000 E	NA
DICHLOROPHENOXYACETIC ACID, 2,4-(2,4-D)	94-75-7	7	1.8 E	7	1.8 E	700	180 E	700	180 E	7,000	1,800 E	7,000	1,800 E	NA
DICHLOROPROPANE, 1,2-	78-87-5	0.5	0.11 E	0.5	0.11 E	50	11 E	50	11 E	5	1.1 E	5	1.1 E	NA
DICHLOROPROPENE, 1,3-	542-75-6	0.66	0.12 E	2.6	0.46 E	66	12 E	260	46 E	66	12 E	260	46 E	NA
DICHLOROPROPIONIC ACID, 2,2-(DALAPON)	75-99-0	20	5.3 E	20	5.3 E	2,000	530 E	2,000	530 E	2,000	530 E	2,000	530 E	NA
DICHLOROVOS	62-73-7	0.23	0.054 E	0.9	0.21 E	23	5.4 E	90	21 E	0.23	0.054 E	0.9	0.21 E	NA
DICYCLOPENTADIENE	77-73-6	1.5	3.2 E	6.2	13 E	150	320 E	620	1,300 E	2	3 E	6	13 E	30
DIELDRIN	60-57-1	0.0041	0.11 E	0.016	0.44 E	0.41	11 E	1.6	44 E	4.1	110 E	1.6	44 E	15
DIETHANOLAMINE	111-42-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	84-66-2	2,900	910 E	8,200	2,600 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
DIFLUBENZURON	35367-38-5	20	52 E	20	52 E	20	52 E	20	52 E	20	52 E	20	52 E	20
DISOPROPYL METHYLPHOSPHONATE	1445-75-6	60	8.2 E	60	8.2 E	6,000	820 E	6,000	820 E	60	8.2 E	60	8.2 E	NA
DIMETHOATE	60-51-5	0.73	0.28 E	2	0.77 E	73	28 E	200	77 E	730	280 E	2,000	770 E	NA
DIMETHOXYBENZIDINE, 3,3-	119-90-4	4.7	16 E	19	64 E	470	1,600 E	1,900	6,400 E	4,700	16,000 E	6,000	20,000 E	20
DIMETHRIN	70-38-2	3.6	240 E	3.6	240 E	3.6	240 E	3.6	240 E	3.6	240 E	3.6	240 E	10
DIMETHYLAMINOAZOBENZENE, P-	60-11-7	0.014	0.037 E	0.057	0.15 E	1.4	3.7 E	5.7	15 E	1.4	3.7 E	5.7	15 E	20
DIMETHYLANILINE, N,N-	121-69-7	7.3	4.1 E	20	11 E	730	410 E	2,000	1,100 E	730	410 E	2,000	1,100 E	NA
DIMETHYLBENZIDINE, 3,3-	119-93-7	0.006	0.33 E	0.024	1.3 E	0.6	33 E	2.4	130 E	6	330 E	24	1,300 E	10
DIMETHYL METHYLPHOSPHONATE	756-79-6	10	1.2 E	10	1.2 E	1,000	120 E	1,000	120 E	10	1 E	10	1 E	NA
DIMETHYLPHENOL, 2,4-	105-67-9	73	32 E	200	87 E	7,300	3,200 E	10,000	8,700 E	10,000	10,000 C	10,000	10,000 C	NA
DINITROBENZENE, 1,3-	99-65-0	0.1	0.049 E	0.1	0.049 E	10	4.9 E	10	4.9 E	100	49 E	100	49 E	NA

¹For other options see § 250.308

All concentrations in mg/kg

E - Number calculated by the soil to groundwater equation in § 250.308

C - Cap

NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential			Non-Residential			Residential			Non-Residential			
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
DINITROPHENOL, 2,4-	51-28-5	7.3	0.83 E	20	2.3 E	730	83 E	2,000	230 E	7,300	830 E	20,000	2,300 E	NA
DINITROTOLUENE, 2,4-	121-14-2	0.21	0.05 E	0.84	0.2 E	21	5 E	84	20 E	210	50 E	840	200 E	NA
DINITROTOLUENE, 2,6- (2,6-DNT)	606-20-2	3.7	1.1 E	10	3 E	370	110 E	1,000	300 E	3,700	1,100 E	10,000	3,000 E	NA
DINOSIB	88-85-7	0.7	0.29 E	0.7	0.29 E	70	29 E	70	29 E	700	290 E	700	290 E	NA
DIOXANE, 1,4-	123-91-1	0.64	0.084 E	3.2	0.42 E	64	8.4 E	320	42 E	6.4	0.84 E	32	4.2 E	NA
DIPHENAMID	957-51-7	20	12 E	20	12 E	2,000	1,200 E	2,000	1,200 E	20	12 E	20	12 E	NA
DIPHENYLAMINE	122-39-4	91	53 E	260	150 E	9,100	5,300 E	26,000	15,000 E	30,000	18,000 E	30,000	18,000 E	NA
DIPHENYLHYDRAZINE, 1,2-	122-66-7	0.083	0.15 E	0.33	0.58 E	8.3	15 E	25	44 E	25	44 E	25	44 E	30
DIQUAT	85-00-7	2	0.24 E	2	0.24 E	200	24 E	200	24 E	2	0.24 E	2	0.24 E	NA
DISULFOTON	298-04-4	0.07	0.18 E	0.07	0.18 E	7	18 E	7	18 E	70	180 E	70	180 E	20
DITHIANE, 1,4-	505-29-3	8	1.3 E	8	1.3 E	800	130 E	800	130 E	8	1.3 E	8	1.3 E	NA
DIURON	330-54-1	7.3	6.3 E	20	17 E	730	630 E	2,000	1,700 E	7.3	6.3 E	20	17 E	NA
ENDOSULFAN	115-29-7	22	110 E	48	250 E	48	250 E	48	250 E	48	250 E	48	250 E	15
ENDOSULFAN I (ALPHA)	959-98-8	22	110 E	50	260 E	50	260 E	50	260 E	22	110 E	50	260 E	15
ENDOSULFAN II (BETA)	33213-65-9	22	130 E	45	260 E	45	260 E	45	260 E	22	130 E	45	260 E	15
ENDOSULFAN SULFATE	1031-07-8	12	70 E	12	70 E	12	70 E	12	70 E	12	70 E	12	70 E	15
ENDOTHALL	145-73-3	10	4.1 E	10	4.1 E	1,000	410 E	1,000	410 E	10	4.1 E	10	4.1 E	NA
ENDRIN	72-20-8	0.2	5.5 E	0.2	5.5 E	20	550 E	20	550 E	0.2	5.5 E	0.2	5.5 E	15
EPICHLOROHYDRIN	106-89-8	0.21	0.042 E	0.88	0.17 E	21	4.2 E	88	17 E	21	4.2 E	88	17 E	NA
ETHEPHON	16672-87-0	18	2.1 E	51	5.9 E	1,800	210 E	5,100	590 E	18	2.1 E	51	5.9 E	NA
ETHION	563-12-2	1.8	39 E	5.1	110 E	85	1,900 E	85	1,900 E	1.8	39 E	5.1	110 E	15
ETHOXYETHANOL, 2- (EGEE)	110-80-5	42	5.9 E	180	25 E	4,200	590 E	10,000	2,500 E	4,200	590 E	10,000	2,500 E	NA
ETHYL ACETATE	141-78-6	3,300	850 E	9,200	2,400 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ETHYL ACRYLATE	140-88-5	1.4	0.54 E	5.4	2.1 E	140	54 E	540	210 E	140	54 E	540	210 E	NA
ETHYL BENZENE	100-41-4	70	46 E	70	46 E	7,000	4,600 E	7,000	4,600 E	7,000	4,600 E	7,000	4,600 E	NA
ETHYL DIPROPYLTHIOCARBAMATE, S- (EPTC)	759-94-4	91	65 E	260	180 E	9,100	6,500 E	10,000	10,000 C	91	65 E	260	180 E	NA
ETHYL ETHER	60-29-7	730	210 E	2,000	560 E	10,000	10,000 C	10,000	10,000 C	730	210 E	2,000	560 E	NA

¹For other options see § 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in § 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)		
		TDS ≤ 2500						TDS > 2500								
		Residential			Non-Residential			Residential			Non-Residential					
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value			
ETHYL METHACRYLATE	97-63-2	330	150 E	920	5,500 E	10,000	5,500 E	10,000	10,000	10,000	10,000	330	55 E	920	150 E	NA
ETHYLENE GLYCOL	107-21-1	1,400	170 E	1,400	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ETHYLENE THIOUREA (ETU)	96-45-7	0.29	0.032 E	0.82	0.092 E	29	3.2 E	82	9.2 E	290	32 E	290	32 E	820	92 E	NA
ETHYL-P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	2104-64-5	0.037	0.12 E	0.1	0.31 E	3.7	12 E	10	31 E	0.037	0.12 E	0.1	0.31 E	0.1	0.31 E	20
FENAMIPHOS	22224-92-6	0.07	0.06 E	0.07	0.06 E	7	6 E	7	6 E	7	6 E	7	6 E	7	6 E	NA
FENVALERATE (PYDRIN)	51630-58-1	8.5	94 E	8.5	94 E	8.5	94 E	8.5	94 E	8.5	94 E	8.5	94 E	8.5	94 E	15
FLUOMETURON	2164-17-2	9	2.5 E	9	2.5 E	900	250 E	900	250 E	900	250 E	9	2.5 E	9	2.5 E	NA
FLUORANTHENE	206-44-0	26	3,200 E	26	3,200 E	26	3,200 E	26	3,200 E	26	3,200 E	26	3,200 E	26	3,200 E	10
FLUORENE	86-73-7	150	3,000 E	190	3,800 E	190	3,800 E	190	3,800 E	190	3,800 E	190	3,800 E	190	3,800 E	15
FLUOROTRICHLOROMETHANE (FREON 11)	75-69-4	200	87 E	200	87 E	100	290 E	100	290 E	100	290 E	100	290 E	100,000	8,700 E	NA
FONOFOS	944-22-9	1	2.9 E	1	2.9 E	100	290 E	100	290 E	100	290 E	1	2.9 E	1	2.9 E	20
FORMALDEHYDE	50-00-0	100	12 E	100	12 E	10,000	1,200 E	10,000	1,200 E	10,000	1,200 E	10,000	1,200 E	10,000	1,200 E	NA
FORMIC ACID	64-18-6	0.63	0.071 E	2.6	0.3 E	63	7.1 E	260	29 E	6.3	0.71 E	26	3 E	26	3 E	NA
FOSETYL-AL	39148-24-8	11,000	9,700 E	31,000	27,000 E	190,000	190,000 C	190,000	190,000 C	11,000	9,700 E	31,000	27,000 E	11,000	9,700 E	NA
FURAN	110-00-9	3.7	1.6 E	10	4.4 E	370	160 E	1,000	440 E	370	160 E	1,000	440 E	1,000	440 E	NA
FURFURAL	98-01-1	11	1.4 E	31	3.9 E	1,100	140 E	3,100	390 E	11	1.4 E	31	3.9 E	11	1.4 E	NA
GLYPHOSATE	1071-83-6	70	620 E	70	620 E	7,000	62,000 E	7,000	62,000 E	70	620 E	70	620 E	70	620 E	15
HEPTACHLOR	76-44-8	0.04	0.68 E	0.04	0.68 E	4	68 E	4	68 E	4	68 E	4	68 E	18	310 E	15
HEPTACHLOR EPOXIDE	1024-57-3	0.02	1.1 E	0.02	1.1 E	2	110 E	2	110 E	2	110 E	2	110 E	20	1,100 E	10
HEXACHLOROBENZENE	118-74-1	0.1	0.96 E	0.1	0.96 E	0.6	5.8 E	0.6	5.8 E	0.6	5.8 E	0.6	5.8 E	0.6	5.8 E	15
HEXACHLOROBUTADIENE	87-68-3	0.9	10 E	3.3	39 E	85	1,000 E	290	3,400 E	290	3,400 E	290	3,400 E	290	3,400 E	15
HEXACHLOROCYCLOPENTADIENE	77-47-4	5	91 E	5	91 E	180	3,300 E	180	3,300 E	180	3,300 E	180	3,300 E	180	3,300 E	15
HEXACHLOROETHANE	67-72-1	0.1	0.56 E	0.1	0.56 E	10	56 E	10	56 E	10	56 E	10	56 E	10	56 E	15
HEXANE	110-54-3	150	1,400 E	610	5,600 E	950	8,700 E	950	8,700 E	150	1,400 E	610	5,600 E	150	1,400 E	15
HEXAZINONE	51235-04-2	40	8.5 E	40	8.5 E	4,000	850 E	4,000	850 E	40	8.5 E	40	8.5 E	40	8.5 E	NA
HEXYTHIAZOX (SAVEY)	78587-05-0	50	820 E	50	820 E	50	820 E	50	820 E	50	820 E	50	820 E	50	820 E	15

¹For other options see § 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in § 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential		Non-Residential		Residential		Non-Residential		Residential		Non-Residential		
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
HMX	2691-41-0	40	4.8 E	40	4.8 E	500	60 E	500	60 E	40	4.8 E	40	438 E	NA
HYDRAZINE/HYDRAZINE SULFATE	302-01-2	0.001	0.00011 E	0.0051	0.00057 E	0.1	0.011 E	0.1	0.011 E	0.01	0.0011 E	0.051	0.0057 E	NA
HYDROQUINONE	123-31-9	1.2	0.16 E	4.6	0.62 E	120	16 E	120	16 E	1,200	160 E	4,600	620 E	NA
INDENO[1,2,3-CD]PYRENE	193-39-5	0.029	2,200 E	0.36	28,000 E	2.9	190,000 C	6.2	190,000 C	1,300	3,700 E	150	430 E	20
IPRODIONE	36734-19-7	150	430 E	410	1,200 E	1,300	3,700 E	1,300	3,700 E	10,000	10,000 C	10,000	10,000 C	5
ISOBUTYL ALCOHOL	78-83-1	1,100	290 E	3,100	810 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ISOPHORONE	78-59-1	10	1.9 E	10	1.9 E	1,000	190 E	1,000	190 E	70	8.1 E	70	8.1 E	NA
ISOPROPYL MEHTYLPHOSPHONATE	1832-54-8	70	8.1 E	70	8.1 E	7,000	810 E	7,000	810 E	4.1	560 E	16	2,200 E	10
KEPONE	143-50-0	0.0041	0.56 E	0.016	2.2 E	0.41	56 E	0.41	56 E	1.6	220 E	4.1	560 E	10
MALATHION	121-75-5	50	170 E	50	170 E	5,000	10,000 C	5,000	10,000 C	10,000	10,000 C	10,000	10,000 C	20
MALEIC HYDRAZIDE	123-33-1	400	47 E	400	47 E	40,000	4,700 E	40,000	4,700 E	400	47 E	400	47 E	NA
MANEB	12427-38-2	18	2 E	51	5.8 E	1,800	200 E	2,300	260 E	18	2 E	51	5.8 E	NA
MERPHOS OXIDE	78-48-8	0.11	15 E	0.31	41 E	11	1,500 E	31	4,100 E	0.11	15 E	0.31	41 E	10
METHACRYLONITRILE	126-98-7	0.15	0.025 E	0.62	0.1 E	15	2.5 E	62	10 E	0.15	0.025 E	0.62	0.1 E	NA
METHAMIDOPHOS	10265-92-6	0.18	0.022 E	0.51	0.063 E	18	2.2 E	51	6.3 E	0.18	0.022 E	0.51	0.063 E	NA
METHANOL	67-56-1	840	99 E	3,500	410 E	10,000	9,900 E	10,000	10,000 C	10,000	9,900 E	10,000	10,000 C	NA
METHOMYL	16752-77-5	20	3.2 E	20	3.2 E	2,000	320 E	2,000	320 E	20	3.2 E	20	3.2 E	NA
METHOXYCHLOR	72-43-5	4	630 E	4	630 E	4.5	710 E	4.5	710 E	4.5	710 E	4.5	710 E	10
METHOXYETHANOL, 2-	109-86-4	4.2	0.47 E	18	2 E	420	47 E	1,800	200 E	4.2	0.47 E	18	2 E	NA
METHYL ACETATE	79-20-9	3700	690 E	10,000	1,900 E	10,000	10,000 C	10,000	10,000 C	3,700	690 E	10,000	1,900 E	NA
METHYL ACRYLATE	96-33-3	110	27 E	310	77 E	10,000	2,700 E	10,000	7,700 E	10,000	2,700 E	10,000	7,700 E	NA
METHYL CHLORIDE	74-87-3	3	0.38 E	3	0.38 E	300	38 E	300	38 E	300	38 E	300	38 E	NA
METHYL ETHYL KETONE	78-93-3	400	76 E	400	76 E	10,000	7,600 E	10,000	7,600 E	10,000	7,600 E	10,000	7,600 E	NA
METHYL ISOBUTYL KETONE	108-10-1	290	45 E	820	130 E	10,000	4,500 E	10,000	10,000 C	10,000	4,500 E	10,000	10,000 C	NA
METHYL ISOCYANATE	624-83-9	0.21	0.029 E	0.88	0.12 E	21	2.9 E	88	12 E	0.21	0.029 E	0.88	0.12 E	NA
METHYL N-BUTYL KETONE (2-HEXANONE)	591-78-6	1.1	0.27 E	4.4	1.1 E	110	27 E	440	110 E	1.1	0.27 E	4.4	1.1 E	NA
METHYL METHACRYLATE	80-62-6	150	20 E	620	84 E	10,000	2,000 E	10,000	8,400 E	10,000	2,000 E	10,000	8,400 E	NA
METHYL METHANESULFONATE	66-27-3	0.67	0.083 E	2.6	0.32 E	67	8.3 E	260	32 E	0.67	0.083 E	2.6	0.32 E	NA

¹For other options see Section 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in Section 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential			Non-Residential			Residential			Non-Residential			
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
METHYL PARATHION	298-00-0	0.1	0.21 E	0.1	0.21 E	10	21 E	10	21 E	100	210 E	100	210 E	30
METHYL STYRENE (MIXED ISOMERS)	25013-15-4	8.4	47 E	35	200 E	840	4,700 E	3,500	10,000 C	8.4	47 E	35	200 E	15
METHYL TERT-BUTYL ETHER (MTBE)	1634-04-4	2	0.28 E	2	0.28 E	200	28 E	200	28 E	20	2.8 E	20	2.8 E	NA
METHYLCHLOROPHOXYACETIC ACID (MCPA)	94-74-6	3	1.2 E	3	1.2 E	300	120 E	300	120 E	3,000	1,200 E	3,000	1,200 E	NA
METHYLENE BIS(2-CHLOROANILINE), 4,4'-	101-14-4	0.22	1.7 E	2.6	20 E	22	170 E	260	2,000 E	0.22	1.7 E	2.6	20 E	15
METHYLNAPHTHALENE, 2-	91-57-6	15	600 E	41	1,600 E	1,500	60,000 E	2,500	100,000 E	15	600 E	41	1,600 E	15
METHYLSTYRENE, ALPHA	98-83-9	260	460 E	720	1,300 E	10,000	10,000 C	10,000	10,000 C	260	460 E	720	1,300 E	30
METOLACHLOR	51218-45-2	70	40 E	70	40 E	7,000	4,000 E	7,000	4,000 E	70	40 E	70	40 E	NA
METRIBUZIN	21087-64-9	7	2.4 E	7	2.4 E	700	240 E	700	240 E	7	2.4 E	7	2.4 E	NA
MONOCHLOROACETIC ACID	79-11-8	7	0.78 E	7	0.78 E	700	78 E	700	78 E	7	0.78 E	7	0.78 E	NA
NAPHTHALENE	91-20-3	10	25 E	10	25 E	1,000	2,500 E	1,000	2,500 E	3,000	7,500 E	3,000	7,500 E	30
NAPHTHYLAMINE, 1-	134-32-7	0.037	0.3 E	0.14	1.1 E	3.7	30 E	14	110 E	37	300 E	140	1,100 E	15
NAPHTHYLAMINE, 2-	91-59-8	0.037	0.012 E	0.14	0.046 E	3.7	1.2 E	14	4.6 E	37	12 E	140	46 E	NA
NAPROPAMIDE	15299-99-7	370	860 E	1,000	2,300 E	7,000	16,000 E	7,000	16,000 E	370	860 E	1,000	2,300 E	30
NITROANILINE, M-	99-09-2	1.1	0.17 E	3.1	0.48 E	110	17 E	310	48 E	1.1	0.17 E	3.1	0.48 E	NA
NITROANILINE, O-	88-74-4	11	2 E	31	5.5 E	1,100	200 E	3,100	550 E	11	2 E	31	5.5 E	NA
NITROANILINE, P-	100-01-6	3.3	0.49 E	13	1.9 E	330	49 E	1,300	190 E	3.3	0.49 E	13	1.9 E	NA
NITROBENZENE	98-95-3	7.3	3.2 E	20	8.7 E	730	320 E	2,000	870 E	7,300	3,200 E	10,000	8,700 E	NA
NITROGUANIDINE	556-88-7	70	7.8 E	70	7.8 E	7,000	780 E	7,000	780 E	70	7.8 E	70	7.8 E	NA
NITROPHENOL, 2-	88-75-5	29	5.9 E	82	17 E	2,900	590 E	8,200	1,700 E	29,000	5,900 E	82,000	17,000 E	NA
NITROPHENOL, 4-	100-02-7	6	4.1 E	6	4.1 E	600	410 E	600	410 E	6,000	4,100 E	6,000	4,100 E	NA
NITROPROPANE, 2-	79-46-9	0.0018	0.00029 E	0.0093	0.0015 E	0.18	0.029 E	0.93	0.15 E	0.018	0.0029 E	0.093	0.015 E	NA
NITROSODIETHYLAMINE, N-	55-18-5	0.000045	0.0000079 E	0.00058	0.0001 E	0.0045	0.0008 E	0.058	0.01 E	0.00045	0.00008 E	0.0058	0.001 E	NA
NITROSODIMETHYLAMINE, N-	62-75-9	0.00014	0.000019 E	0.0018	0.00024 E	0.014	0.0019 E	0.18	0.024 E	0.0014	0.00019 E	0.018	0.0024 E	NA
NITROSO-DI-N-BUTYLAMINE, N-	924-16-3	0.012	0.015 E	0.048	0.059 E	1.2	1.5 E	4.8	5.9 E	0.012	0.015 E	0.048	0.059 E	NA

¹For other options see Section 250.308

All concentrations in mg/kg

E - Number calculated by the soil to groundwater equation in Section 250.308

C - Cap

NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil		
		TDS ≤ 2500						TDS > 2500						Buffer Distance (feet)		
		Residential			Non-Residential			Residential			Non-Residential			Non-Residential		
		100 X GW MSC	Generic Value	100 X Generic Value	100 X GW MSC	Generic Value	100 X Generic Value	100 X GW MSC	Generic Value	100 X Generic Value	100 X GW MSC	Generic Value	100 X Generic Value	100 X GW MSC	Generic Value	100 X Generic Value
NITROSODI-N-PROPYLAMINE, N-	621-64-7	0.0094	0.0013 E	0.037	0.0051 E	0.94	0.13 E	3.7	0.51 E	9.4	1.3 E	37	5.1 E	NA	NA	
NITROSODIPHENYLAMINE, N-	86-30-6	13	20 E	53	83 E	1,300	2,000 E	3,500	5,500 E	3,500	5,500 E	3,500	5,500 E	30	30	
NITROSO-N-ETHYLUREA, N-	759-73-9	0.0008	0.000092 E	0.0096	0.0011 E	0.08	0.0092 E	0.96	0.11 E	0.8	0.092 E	9.6	1.1 E	NA	NA	
OCTYL PHTHALATE, DI-N-	117-84-0	150	10,000 C	300	10,000 C	300	10,000 C	300	10,000 C	300	10,000 C	300	10,000 C	300	10,000 C	5
OXAMYL (VYDATE)	23135-22-0	20	2.6 E	20	2.6 E	2,000	260 E	2,000	260 E	20	2.6 E	20	2.6 E	20	2.6 E	NA
PARAQUAT	1910-42-5	3	120 E	3	120 E	300	12,000 E	300	12,000 E	3	120 E	3	120 E	3	120 E	15
PARATHION	56-38-2	22	130 E	61	360 E	2,000	10,000 C	2,000	10,000 C	22	130 E	61	360 E	61	360 E	15
PCB-1016 (AROCLOL)	12674-11-2	0.26	0.13 E	0.26	0.13 E	25	6,900 E	25	6,900 E	0.26	0.13 E	0.26	0.13 E	0.26	0.13 E	20
PCB-1221 (AROCLOL)	11104-28-2	0.033	0.16 E	0.033	0.16 E	3.3	16 E	13	63 E	0.033	0.16 E	0.033	0.16 E	0.033	0.16 E	20
PCB-1232 (AROCLOL)	11141-16-5	0.033	0.13 E	0.033	0.13 E	3.3	13 E	13	50 E	0.033	0.13 E	0.033	0.13 E	0.033	0.13 E	20
PCB-1242 (AROCLOL)	53469-21-9	0.033	0.16 E	0.033	0.16 E	3.3	16 E	3.3	400 E	0.033	0.16 E	0.033	0.16 E	0.033	0.16 E	10
PCB-1248 (AROCLOL)	12672-29-6	0.033	0.16 E	0.033	0.16 E	3.3	1,600 E	5.4	2,600 E	0.033	0.16 E	0.033	0.16 E	0.033	0.16 E	10
PCB-1254 (AROCLOL)	11097-69-1	0.033	0.15 E	0.033	0.15 E	3.3	6,700 E	5.7	10,000 C	0.033	0.15 E	0.033	0.15 E	0.033	0.15 E	5
PCB-1260 (AROCLOL)	11096-82-5	0.033	0.15 E	0.033	0.15 E	3.3	15,000 E	8	36,000 E	0.033	0.15 E	0.033	0.15 E	0.033	0.15 E	5
PERULATE	1114-71-2	180	300 E	510	860 E	9,200	10,000 C	9,200	10,000 C	180	300 E	510	860 E	300	510	30
PENTACHLOROBENZENE	608-93-5	2.9	230 E	8.2	660 E	74	5,900 E	74	5,900 E	74	5,900 E	74	5,900 E	74	5,900 E	10
PENTACHLOROETHANE	76-01-7	0.73	3.6 E	2.9	14 E	73	360 E	290	1,400 E	0.73	3.6 E	2.9	14 E	2.9	14 E	20
PENTACHLORONITROBENZENE	82-68-8	0.25	5 E	1	20 E	25	500 E	44	870 E	0.25	5 E	1	20 E	44	870 E	15
PENTACHLOROPHENOL	87-86-5	0.1	5 E	0.1	5 E	10	500 E	10	500 E	10	500 E	10	500 E	100	5,000 E	10
PHENACETIN	62-44-2	30	12 E	120	46 E	3,000	1,200 E	12,000	4,600 E	30,000	12,000 E	76,000	29,000 E	NA	NA	NA
PHENANTHRENE	85-01-8	110	10,000 E	110	10,000 E	110	10,000 E	110	10,000 E	110	10,000 E	110	10,000 E	110	10,000 E	10
PHENOL	108-95-2	200	33 E	200	33 E	20,000	3,300 E	20,000	3,300 E	20,000	3,300 E	20,000	3,300 E	20,000	3,300 E	NA
PHENYL MERCAPTAN	108-98-5	0.037	0.056 E	0.1	0.15 E	3.7	5.6 E	10	15 E	0.037	0.056 E	0.1	0.15 E	0.1	0.15 E	30
PHENYLENEDIAMINE, M-	108-45-2	22	3.1 E	61	8.6 E	2,200	310 E	6,100	860 E	22,000	3,100 E	61,000	8,600 E	61,000	8,600 E	NA
PHENYLPHENOL, 2-	90-43-7	35	500 E	140	2,000 E	3,500	50,000 E	14,000	190,000 E	35,000	50,000 E	140,000	190,000 E	70,000	190,000 E	15
PHORATE	298-02-2	0.73	1.6 E	2	4.3 E	73	160 E	200	430 E	0.73	1.6 E	2	4.3 E	2	4.3 E	30
PHTHALIC ANHYDRIDE	85-44-9	7,300	2,300 E	20,000	6,200 E	190,000	190,000 C	190,000	190,000 C	190,000	190,000 C	190,000	190,000 C	190,000	190,000 C	NA

¹For other options see Section 250.308

All concentrations in mg/kg

E - Number calculated by the soil to groundwater equation in Section 250.308

C - Cap

NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil		
		TDS ≤ 2500						TDS > 2500						Non-Use Aquifers		Buffer Distance (feet)
		Residential		Non-Residential		Residential		Non-Residential		Residential		Non-Residential		100 X GW MSC	Generic Value	
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value					
PICLORAM	1918-02-1	50	7.4 E	50	7.4 E	5,000	740 E	5,000	740 E	50	7.4 E	50	7.4 E	50	7.4 E	NA
PROMETON	1610-18-0	40	39 E	40	39 E	4,000	3,900 E	4,000	3,900 E	40	39 E	40	39 E	40	39 E	NA
PROMAMIDE	23950-58-5	270	170 E	770	470 E	1,500	920 E	1,500	920 E	270	170 E	770	470 E	770	470 E	NA
PROPANIL	709-98-8	18	9.2 E	51	26 E	1,800	920 E	5,100	2,600 E	18	9.2 E	51	26 E	51	26 E	NA
PROPANOL, 2- (ISOPROPYL ALCOHOL)	67-63-0	1,500	260 E	6,200	1,100 E	10,000	10,000 C	10,000	10,000 C	1,500	260 E	6,200	1,100 E	6,200	1,100 E	NA
PROPRAZINE	139-40-2	1	0.5 E	1	0.5 E	100	50 E	100	50 E	1	0.5 E	1	0.5 E	1	0.5 E	NA
PROPHAM	122-42-9	10	2.4 E	10	2.4 E	1,000	240 E	1,000	240 E	10	2.4 E	10	2.4 E	10	2.4 E	NA
PROPYLBENZENE, N-	103-65-1	150	290 E	410	780 E	5,200	9,900 E	5,200	9,900 E	150	290 E	410	780 E	410	780 E	30
PROPYLENE OXIDE	75-56-9	0.28	0.049 E	1.1	0.19 E	28	4.9 E	110	19 E	0.28	0.049 E	1.1	0.19 E	1.1	0.19 E	NA
PYRENE	129-00-0	1.3	2,200 E	1.3	2,200 E	1.3	2,200 E	1.3	2,200 E	1.3	2,200 E	1.3	2,200 E	1.3	2,200 E	10
PYRIDINE	110-86-1	3.7	0.41 E	10	1.1 E	370	41 E	1,000	110 E	37	4.1 E	100	11 E	100	11 E	NA
QUINOLINE	91-22-5	0.022	0.074 E	0.087	0.29 E	2.2	7.4 E	8.7	29 E	22	74 E	87	290 E	87	290 E	20
QUINALOPO (ASSURE)	76578-14-8	30	47 E	30	47 E	30	47 E	30	47 E	30	47 E	30	47 E	30	47 E	30
RDX	121-82-4	0.2	0.057 E	20	5.7 E	20	5.7 E	20	5.7 E	0.2	0.057 E	20	5.7 E	0.2	0.057 E	NA
RESORCINOL	108-46-3	7,300	805 E	20,000	2,300 E	190,000	85,000 E	190,000	190,000 C	7,300	850 E	20,000	2,300 E	20,000	2,300 E	NA
RONNEL	299-84-3	180	280 E	510	800 E	4,000	6,200 E	4,000	6,200 E	180	280 E	510	800 E	510	800 E	30
SIMAZINE	122-34-9	0.4	0.15 E	0.4	0.15 E	40	15 E	40	15 E	0.4	0.15 E	0.4	0.15 E	0.4	0.15 E	NA
STRYCHNINE	57-24-9	1.1	0.89 E	3.1	2.5 E	110	89 E	310	250 E	1.100	890 E	3.100	2,500 E	3.100	2,500 E	NA
STYRENE	100-42-5	10	24 E	10	24 E	1,000	2,400 E	1,000	2,400 E	1,000	2,400 E	1,000	2,400 E	1,000	2,400 E	30
TERTHURON	34014-18-1	50	83 E	50	83 E	5,000	8,300 E	5,000	8,300 E	50	83 E	50	83 E	50	83 E	30
TERRACIL	5902-51-2	9	2.2 E	9	2.2 E	900	220 E	900	220 E	9	2.2 E	9	2.2 E	9	2.2 E	NA
TERRUFOS	13071-79-9	0.04	0.055 E	0.04	0.055 E	4	5.5 E	4	5.5 E	0.04	0.055 E	0.04	0.055 E	0.04	0.055 E	30
TETRACHLOROBENZENE, 1,2,4,5-	95-94-3	1.1	5.1 E	3.1	14 E	58	270 E	58	270 E	58	270 E	58	270 E	58	270 E	20
TETRACHLORODIBENZO-P-DIOXIN, 2,3,7,8- (TCDD)	1746-01-6	0.00003	0.032 E	0.00003	0.032 E	0.0003	3.2 E	0.0003	3.2 E	0.0003	3.2 E	0.0019	20 E	0.0019	20 E	5
TETRACHLOROETHANE, 1,1,1,2-	630-20-6	7	18 E	7	18 E	700	1,800 E	700	1,800 E	700	1,800 E	700	1,800 E	700	1,800 E	30
TETRACHLOROETHANE, 1,1,2,2-	79-34-5	0.08	0.026 E	0.43	0.13 E	8	2.6 E	43	13 E	8	2.6 E	43	13 E	43	13 E	NA
TETRACHLOROETHYLENE (PCE)	127-18-4	0.5	0.43 E	0.5	0.43 E	50	43 E	50	43 E	50	43 E	50	43 E	50	43 E	NA

¹For other options see Section 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in Section 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
 B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential			Non-Residential			Residential			Non-Residential			
		100 X GW MSC	Generic Value	100 X GW MSC	100 X Generic Value	100 X GW MSC	100 X Generic Value	100 X GW MSC	100 X Generic Value	100 X GW MSC	100 X Generic Value	100 X GW MSC	100 X Generic Value	
TETRACHLOROPHENOL, 2,3,4,6-	58-90-2	110	1,700 E	310	4,800 E	11,000	170,000 E	18,000	190,000 C	18,000	190,000 C	18,000	190,000 E	15
TETRAETHYL LEAD	78-00-2	0.00037	0.0046 E	0.001	0.012 E	0.037	0.46 E	0.1	1.2 E	0.37	4.6 E	1	12 E	15
TETRAETHYLDITHIOPYROPHOSPHATE	3689-24-5	1.8	2.7 E	5.1	7.6 E	180	270 E	510	760 E	1.8	2.7 E	5.1	7.6 E	30
TETRAHYDROFURAN	109-99-9	2.5	0.55 E	1.3	2.8 E	250	55 E	1,300	280 E	2.5	0.55 E	1.3	2.8 E	NA
THIOFANOX	39196-18-4	1.1	0.12 E	3.1	0.34 E	110	12 E	310	34 E	1.1	0.12 E	3.1	0.34 E	NA
THIRAM	137-26-8	18	47 E	51	130 E	1,800	4,700 E	3,000	7,800 E	18	47 E	51	130 E	20
TOLUENE	108-88-3	100	44 E	100	44 E	10,000	4,400 E	10,000	4,400 E	10,000	4,400 E	10,000	4,400 E	NA
TOLUIDINE, M-	108-44-1	0.37	0.17 E	1.4	0.65 E	37	17 E	140	65 E	0.37	0.17 E	1.4	0.65 E	NA
TOLUIDINE, O-	95-53-4	0.37	0.42 E	1.4	1.6 E	37	42 E	140	160 E	0.37	0.42 E	1.4	1.6 E	NA
TOLUIDINE, P-	106-49-0	0.35	0.52 E	1.4	1.3 E	35	52 E	140	130 E	0.35	0.52 E	1.4	1.3 E	NA
TOXAPHENE	8001-35-2	0.3	1.2 E	0.3	1.2 E	30	120 E	30	120 E	0.3	1.2 E	0.3	1.2 E	20
TRIALATE	2303-17-5	47	240 E	130	660 E	400	2,000 E	400	2,000 E	47	240 E	130	660 E	15
TRIBROMOMETHANE (BROMOFORM)	75-25-2	8	3.5 E	8	3.5 E	800	350 E	800	350 E	800	350 E	800	350 E	NA
TRICHLORO-1,1,2-TRIFLUOROETHANE, 1,1,2-	76-13-1	6,300	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	20
TRICHLOROBENZENE, 1,2,4-	120-82-1	7	27 E	7	27 E	700	2,700 E	700	2,700 E	700	2,700 E	700	2,700 E	20
TRICHLOROBENZENE, 1,3,5-	108-70-3	4	31 E	4	31 E	400	3,100 E	400	3,100 E	400	3,100 E	400	3,100 E	15
TRICHLOROETHANE, 1,1,1-	71-55-6	20	7.2 E	20	7.2 E	2,000	720 E	2,000	720 E	200	72 E	200	72 E	NA
TRICHLOROETHANE, 1,1,2-	79-00-5	0.5	0.15 E	0.5	0.15 E	50	15 E	50	15 E	50	15 E	50	15 E	NA
TRICHLOROETHYLENE (TCE)	79-01-6	0.5	0.17 E	0.5	0.17 E	50	17 E	50	17 E	50	17 E	50	17 E	NA
TRICHLOROPHENOL, 2,4,5-	95-95-4	370	2,300 E	1,000	6,100 E	37,000	190,000 C	100,000	190,000 C	3,700	11,000 E	10,000	190,000 C	15
TRICHLOROPHENOL, 2,4,6-	88-06-2	3.7	11 E	10	29 E	370	1,100 E	1,000	2,900 E	3,700	11,000 E	10,000	29,000 E	20
TRICHLOROPHENOXACETIC ACID, 2,4,5-(2,4,5-T)	93-76-5	7	1.5 E	7	1.5 E	700	150 E	700	150 E	7,000	1,500 E	7,000	1,500 E	NA
TRICHLOROPHENOXYPROPIONIC ACID, 2,4,5-(2,4,5-TP)(SILVEX)	93-72-1	5	22 E	5	22 E	500	2,200 E	500	2,200 E	5	22 E	5	22 E	20
TRICHLOROPROPANE, 1,1,2-	598-77-6	18	3.1 E	51	8.7 E	1,800	310 E	5,100	870 E	18	3.1 E	51	8.7 E	NA
TRICHLOROPROPANE, 1,2,3-	96-18-4	4	3.2 E	4	3.2 E	400	320 E	400	320 E	400	320 E	400	320 E	NA

¹For other options see Section 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in Section 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

TABLE 3—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)
		TDS ≤ 2500						TDS > 2500						
		Residential			Non-Residential			Residential			Non-Residential			
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	
TRICHLOROPROPENE, 1,2,3-	96-19-5	0.21	0.12 E	0.88	0.52 E	21	12 E	88	52 E	0.21	0.12 E	0.88	0.52 E	NA
TRIETHYLAMINE	121-44-8	1.5	0.36 E	6.2	1.5 E	150	36 E	620	150 E	1.5	0.36 E	6.2	1.5 E	NA
TRIFLURALIN	1582-09-8	1	1.9 E	1	1.9 E	100	190 E	100	190 E	1	1.9 E	1	1.9 E	30
TRIMETHYLBENZENE, 1,3,4- (TRIMETHYLBENZENE, 1,2,4-)	95-63-6	1.5	8.4 E	6.2	35 E	150	840 E	620	3,200 E	150	840 E	620	3,500 E	15
TRIMETHYLBENZENE, 1,3,5-	108-67-8	1.3	2.3 E	5.3	9.3 E	130	230 E	530	930 E	1.3	2.3 E	5.3	9.3 E	30
TRINITROGLYCEROL (NITROGLYCERIN)	55-63-0	0.5	0.056 E	0.5	0.056 E	50	5.6 E	50	5.6 E	0.5	0.056 E	0.5	0.056 E	NA
TRINITROTOLUENE, 2,4,6-	118-96-7	0.2	0.023 E	0.2	0.023 E	20	2.3 E	20	2.3 E	0.2	0.023 E	0.2	0.023 E	NA
VINYL ACETATE	108-05-4	42	5 E	180	21 E	4,200	500 E	10,000	2,100 E	42	5 E	180	21 E	NA
VINYL BROMIDE (BROMOETHENE)	593-60-2	0.15	0.073 E	0.78	0.38 E	15	7.3 E	78	38 E	1.5	0.73 E	7.8	3.8 E	NA
VINYL CHLORIDE	75-01-4	0.2	0.027 E	0.2	0.027 E	20	2.7 E	20	2.7 E	2	0.27 E	2	0.27 E	NA
WARFARIN	81-81-2	1.1	2.6 E	3.1	7.4 E	110	260 E	310	740 E	1.100	2,600 E	1,700	4,100 E	30
XYLENES (TOTAL)	1330-20-7	1,000	990 E	1,000	990 E	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	10,000	10,000 C	NA
ZINEB	12122-67-7	180	29 E	510	81 E	1,000	160 E	1,000	160 E	180	29 E	510	81 E	NA

¹For other options see Section 250.308
 All concentrations in mg/kg
 E - Number calculated by the soil to groundwater equation in Section 250.308
 C - Cap
 NA - The soil buffer distance option is not available for this substance

APPENDIX A

TABLE 4—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN SOIL

A. Direct Contract Numeric Values

REGULATED SUBSTANCE	CASRN	Residential	Non-Residential MSCs	
		MSC 0-15 feet	Surface Soil 0-2 feet	Subsurface Soil 2-15 feet
ALUMINUM	7429-90-5	190,000 C	190,000 C	190,000 C
ANTIMONY	7440-36-0	88 G	1,100 G	190,000 C
ARSENIC	7440-38-2	12 G	53 G	190,000 C
BARIUM AND COMPOUNDS	7440-39-3	44,000 G	190,000 C	190,000 C
BERYLLIUM	7440-41-7	440 G	5,600 G	190,000 C
BORON AND COMPOUNDS	7440-42-8	44,000 G	190,000 C	190,000 C
CADMIUM	7440-43-9	110 G	1,400 G	190,000 C
CHROMIUM III	16065-83-1	190,000 C	190,000 C	190,000 C
CHROMIUM VI	18540-29-9	660 G	8,400 G	20,000 N
COBALT	7440-48-4	66 G	840 G	190,000 C
COPPER	7440-50-8	8,100 G	100,000 G	190,000 C
CYANIDE, FREE	57-12-5	4,400 G	56,000 G	190,000 C
FLUORIDE	16984-48-8	8,800 G	110,000 G	190,000 G
IRON	7439-89-6	150,000 G	190,000 C	190,000 C
LEAD	7439-92-1	500 U	1,000 S	190,000 C
LITHIUM	7439-93-0	440 G	5,600 G	190,000 C
MANGANESE	7439-96-5	10,000 G	130,000 G	190,000 C
MERCURY	7439-97-6	35 G	450 G	190,000 C
MOLYBDENUM	7439-98-7	1,100 G	14,000 G	190,000 C
NICKEL	7440-02-0	4,400 G	56,000 G	190,000 C
PERCHLORATE	7790-98-9	150 G	2,000 G	190,000 C
SELENIUM	7782-49-2	1,100 G	14,000 G	190,000 C

250-149

REGULATED SUBSTANCE	CASRN	Residential MSC 0-15 feet	Non-Residential MSCs	
			Surface Soil 0-2 feet	Subsurface Soil 2-15 feet
SILVER	7440-22-4	1,100 G	14,000 G	190,000 C
THALLIUM	7440-28-0	15 G	200 G	190,000 C
TIN	7440-31-5	130,000 G	190,000 C	190,000 C
VANADIUM	7440-62-2	1,500 G	20,000 G	190,000 C
ZINC	7440-66-6	66,000 G	190,000 C	190,000 C

All concentrations in mg/kg [except asbestos, which is in fibers/kg]

R - Residential

NR - Non-Residential

G - Ingestion

H - Inhalation

C - Cap

U - UBK Model

S - SEGH Model

NA - Not Applicable

APPENDIX
TABLE 4—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹

REGULATED SUBSTANCE	CASRN	Used Aquifers												Soil Buffer Distance (feet)	
		TDS ≤ 2500						TDS > 2500							
		R			N			R			N				
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value		
ALUMINUM	7429-90-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	7440-36-0	0.6	27	0.6	27	60	2,700	60	2,700	600	27,000	600	27,000	600	27,000
ARSENIC	7440-38-2	1	29	1	29	100	2,900	100	2,900	1,000	29,000	1,000	29,000	1,000	29,000
BARIUM AND COMPOUNDS	7440-39-3	200	8,200	200	8,200	20,000	190,000	20,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000
BERYLLIUM	7440-41-7	0.4	320	0.4	320	40	32,000	40	32,000	400	190,000	400	190,000	400	190,000
BORON AND COMPOUNDS	7440-42-8	600	1,900	600	1,900	60,000	190,000	60,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000
CADMIUM	7440-43-9	0.5	38	0.5	38	50	3,800	50	3,800	500	38,000	500	38,000	500	38,000
CHROMIUM III	16065-83-1	10	190,000	10	190,000	1,000	190,000	1,000	190,000	10,000	190,000	10,000	190,000	10,000	190,000
CHROMIUM VI	18540-29-9	10	190	10	190	1,000	19,000	1,000	19,000	10,000	190,000	10,000	190,000	10,000	190,000
COBALT	7440-48-4	1	50	3	140	110	5,000	310	14,000	1,100	50,000	3,100	140,000	3,100	140,000
COPPER	7440-50-8	100	43,000	100	43,000	10,000	190,000	10,000	190,000	100,000	190,000	100,000	190,000	100,000	190,000
CYANIDE, FREE	57-12-5	20	200	20	200	2,000	20,000	2,000	20,000	20,000	190,000	20,000	190,000	20,000	190,000
FLUORIDE	16984-48-8	400	44	400	44	40,000	4,400	44,000	4,400	44,000	44,000	44,000	44,000	44,000	44,000

¹For other options see Section 250.308
All concentrations in mg/kg
R - Residential
NR - Non-Residential
NA - Not Applicable

TABLE 4—MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR INORGANIC REGULATED SUBSTANCES IN SOIL
B. Soil to Groundwater Numeric Values¹—(Continued)

REGULATED SUBSTANCE	CASRN	Used Aquifers												Non-use Aquifers				Soil Buffer Distance (feet)	
		TDS ≤ 2500						TDS > 2500						R		N			
		R		N		R		N		R		N		R		N			
		100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value	100 X GW MSC	Generic Value		
IRON	7439-89-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	7439-92-1	0.5	450	0.5	450	50	45,000	50	45,000	50	45,000	500	190,000	500	190,000	500	190,000	10	10
LITHIUM	7439-93-2	7	2,200	20	6,000	730	190,000	2,000	190,000	2,000	190,000	7,300	190,000	20,000	190,000	20,000	190,000	10	10
MANGANESE	7439-96-5	30	2,000	30	2,000	3,000	190,000	3,000	190,000	3,000	190,000	30,000	190,000	30,000	190,000	30,000	190,000	15	15
MERCURY	7439-97-6	0.2	10	0.2	10	20	1,000	20	1,000	20	1,000	200	10,000	200	10,000	200	10,000	15	15
MOLYBDENUM	7439-98-7	4	650	4	650	400	65,000	400	65,000	400	65,000	4,000	190,000	4,000	190,000	4,000	190,000	15	15
NICKEL	7440-02-0	10	650	10	650	1,000	65,000	1,000	65,000	1,000	65,000	10,000	190,000	10,000	190,000	10,000	190,000	15	15
PERCHLORATE	7790-98-9	1.5	0.17	1.5	0.2	150	17	150	17	150	17	1,500	170	1,500	170	1,500	170	NA	NA
SELENIUM	7782-49-2	5	26	5	26	500	2,600	500	2,600	500	2,600	5,000	26,000	5,000	26,000	5,000	26,000	20	20
SILVER	7440-22-4	10	84	10	84	1,000	8,400	1,000	8,400	1,000	8,400	10,000	84,000	10,000	84,000	10,000	84,000	20	20
THALLIUM	7440-28-0	0.2	14	0.20	14	20	1,400	20	1,400	20	1,400	200	14,000	200	14,000	200	14,000	15	15
TIN	7440-31-5	2,200	190,000	6,100	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	10	10
VANADIUM	7440-62-2	26	26,000	72	72,000	2,600	190,000	2,600	190,000	2,600	190,000	26,000	190,000	26,000	190,000	26,000	190,000	5	5
ZINC	7440-66-6	200	12,000	200	12,000	20,000	190,000	20,000	190,000	20,000	190,000	200,000	190,000	200,000	190,000	200,000	190,000	15	15

¹For other options see Section 250.308
 All concentrations in mg/kg
 R - Residential
 NR - Non-Residential
 NA - Not Applicable

APPENDIX A
TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES
A. Organic Regulated Substances

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCi (mg/m ³)	IUR (µg/m ³) ¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
ACENAPHTHENE	83-32-9	0.06 I				4,900		3.8	1.5,6				279	1.24
ACENAPHTHYLENE	208-96-8	0.06 S				4,500		16.1	5,6,7				280	2.11
ACEPHATE	30560-19-1	0.004 I	0.0087 I			3		818,000	6				340	
ACETALDEHYDE	75-07-0			0.009 I	0.0000022 I	4.1	X	1,000,000	1	13,100	15,100	X	20	
ACETONE	67-64-1	0.9 I		31 D		0.31	X	1,000,000	1	13,100	15,000	X	56	18.07
ACETONITRILE	75-05-8			0.06 I		0.5	X	1,000,000	1	13,100	15,000	X	82	4.50
ACETOPHENONE	98-86-2	0.1 I				170		5,500	1			X	203	
ACETYLAMINO-FLUORENE, 2- (2AAF)	53-96-3		3.8 C		0.0013 C	1,600		10.13	7				303	0.69
ACROLEIN	107-02-8	0.0005 I		0.00002 I		0.56	X	208,000	1.2,4	13,100	15,100	X	53	4.50
ACRYLAMIDE	79-06-1	0.0002 I	4.5 I		0.0013 I	25	X	2,151,000	4	13,000	15,000		193	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
ACRYLIC ACID	79-10-7	0.5 I		0.001 I		29	X	1,000,000	2	13,000	14,900	X	141	1.39
ACRYLONITRILE	107-13-1	0.04 D	0.54 I	0.002 I	0.000068 I	11	X	73,500	1	13,100	15,100	X	77	5.50
ALACHLOR	15972-60-8	0.01 I	0.056 C			110		140	2				378	
ALDICARB	116-06-3	0.001 I				22		6,000	2				287	0.40
ALDICARB SULFONE	1646-88-4	0.001 I				10		8,000	5				317	
ALDICARB SULFOXIDE	1646-87-3	0.001 I				0.22		330,000	5				307	
ALDRIN	309-00-2	0.00003 I	17 I		0.0049 I	48,000		0.02	4,5,6				330	0.22
ALLYL ALCOHOL	107-18-6	0.005 I		0.0003 P		3.2	X	1,000,000	2	13,100	15,000	X	97	18.07
AMETRYN	834-12-8	0.009 I				389		185	5				345	
AMINOBIHENYL, 4-	92-67-1		21 C		0.006 C	110		1,200	5				302	18.07
AMITROLE	61-82-5		0.94 C		0.00027 C	120		280,000	4				258	0.69
AMMONIA	7664-41-7	0.97 H		0.1 I		3	X	310,000	2,5,7	13,100	15,000	X	-33	
AMMONIUM SULFAMATE	7773-06-0	0.2 I				3		2,160,000	10				603	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
ANILINE	62-53-3	0.007 P	0.0057 I	0.001 I	0.0000016 C	190	X	33,800	1	13,000	14,900	X	184	
ANTHRACENE	120-12-7	0.3 I				21,000		0.066	1,5,6,7,8,9				340	0.28
ATRAZINE	1912-24-9	0.035 I	0.23 C			130		70	2,4,5				313	
AZINPHOS-METHYL (GUTHION)	86-50-0	0.003 D		0.01 D		407.4		31.5	1,2				421	
BAYGON (PROPOXUR)	114-26-1	0.004 I				31		2,000	2,4,5				decomp.	4.50
BENOMYL	17804-35-2	0.05 I				1,900		2	5				520	
BENTAZON	25057-89-0	0.03 I				13		500	2				415	
BENZENE	71-43-2	0.004 I	0.055 I	0.03 I	0.0000078 I	58	X	1,780.5	1,2,3,4	13,100	15,000	X	81	0.35
BENZIDINE	92-87-5	0.003 I	230 I		0.067 I	530,000		520	1,2,4				400	15.81
BENZO(A)ANTHRACENE	56-55-3		0.73 N		0.00011 C	350,000		0.011	1,5,6				438	0.19
BENZO(A)PYRENE	50-32-8		7.3 I		0.0011 C	910,000		0.0038	1,5,6				495	0.24
BENZO(B)FLUORANTHENE	205-99-2		0.73 N		0.00011 C	550,000		0.0012	5,6,7				357	0.21

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor

D = ATSDR Minimal Risk Level

H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)

M = EPA Drinking Water Regulations and Health Advisories

N = EPA NCEA Provisional Values

P = EPA Provisional Peer-Reviewed

S = surrogate

T = TEF

TE = TERA

ITER Peer-Reviewed Value

Toxicity Value

S = surrogate

T = TEF

TE = TERA

ITER Peer-Reviewed Value

P = EPA Provisional Peer-Reviewed

S = surrogate

T = TEF

TE = TERA

ITER Peer-Reviewed Value

Value

Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
BENZO[GH]PERYLENE	191-24-2	0.06 S				2,800,000		0.00026	1,5,6				500	0.19
BENZO[K]FLUORANTHENE	207-08-9		0.073 N		0.00011 C	4,400,000		0.00055	5,6,7				480	0.06
BENZOIC ACID	65-85-0	4 I				32		2,700	2,3,4,5				249	
BENZOTRICHLORIDE	98-07-7			13.1		920		53	1,5,1,3			X	221	121,413,60
BENZYL ALCOHOL	100-51-6	0.5 P				100		40,000	1,2,3			X	205	
BENZYL CHLORIDE	100-44-7	0.002 P	0.171	0.001 P	0.000049 C	190	X	493	1	13,000	15,000	X	179	20,90
BETA PROIOLACTONE	57-57-8		14 C		0.004 C	4	X	370,000	2	13,100	15,000	X	162	0.01
BHC, ALPHA	319-84-6	0.008 D	6.31		0.0018 I	1,800		1.7	4,5,6,7				288	0.94
BHC, BETA-	319-85-7		1.8 I		0.00053 I	2,300		0.1	6				304	1.02
BHC, GAMMA (LINDANE)	58-89-9	0.0003 I	1.1 C		0.00031 C	1,400		7.3	4,5,6				323	1.05
BIPHENYL, 1,1-	92-52-4	0.05 I				1,700		7.2	1				255	18,07
BIS(2-CHLOROETHOXY) METHANE	111-91-1	0.003 P				61		100,500	4,6,7,9,10,11			X	218	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
BIS(2-CHLOROETHYL) ETHER	111-44-4		1.1 I		0.00033 I	76	X	10,200	1,4,5	13,000	14,900	X	179	0.69
BIS(2-CHLORO-ISO-PROPYL) ETHER	108-60-1	0.04 I	0.07 H		0.00001 H	62	X	1,700	5	13,000	14,900	X	189	0.69
BIS(CHLOROMETHYL) ETHER	542-88-1		220 I		0.062 I	16	X	22,000	6	13,100	15,100	X	105	57,270.57
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	0.02 I	0.014 I		0.0000024 C	87,000		0.285	4,5,6			X	384	0.65
BISPENOL A	80-05-7	0.05 I				1,500		120	4				220	0.69
BROMACIL	314-40-9	0.1 M				58		815	2				421	
BROMOCHLORO-METHANE	74-97-5	0.01 M				27	X	16700	4	13,100	15,000	X	68	
BROMODICHLORO-METHANE	75-27-4	0.02 I	0.062 I		0.000037 C	93	X	4,500	6	13,100	15,000	X	87	
BROMOMETHANE	74-83-9	0.0014 I		0.005 I		170	X	17,500	2	13,100	15,000	X	4	6.66
BROMOXYNIL	1689-84-5	0.02 I				300		130	2				329	
BROMOXYNIL OCTANOATE	1689-99-2	0.02 I				18,000		0.08	12				414	5.75

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: H = Health Effects Assessment Summary Table (HEAST) I = Integrated Risk Information System (IRIS) M = EPA Drinking Water Regulations and Health Advisories N = EPA NCEA Provisional Values P = EPA Provisional Peer-Reviewed Value
 Factor D = ATSDR Minimal Risk Level
 C = California EPA Cancer Potency Factor
 T = TEF
 S = surrogate
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
BUTADIENE, 1,3-	106-99-0		3.4 C	0.002 I	0.00003 I	120	X	735	1	13,200	15,000	X	-4.5	4.50
BUTYLALCOHOL, N-	71-36-3	0.1 I				3.2	X	74,000	1	13,000	14,900	X	118	4.68
BUTYLATE	2008-41-5	0.05 I				540	X	45	2	13,200	15,200	X	138	
BUTYLBENZENE, N-	104-51-8	0.04 N				2,500	X	15	1.6,7	13,100	15,100	X	183	
BUTYLBENZENE, SEC-	135-98-8	0.04 N				890	X	17	1.6,7	13,100	15,000	X	174	
BUTYLBENZENE, TERT-	98-06-6	0.04 N				680	X	30	1.6,7	13,100	15,000	X	169	
BUTYLBENZYL PHTHALATE	85-68-7	0.2 I	0.0019 P			34,000		2.69	4.5,6			X	370	1.39
CAPTAN	133-06-2	0.13 I	0.0023 C		0.0000066 C	200		0.5	4				259	589.39
CARBARYL	63-25-2	0.1 I				190		120	2.4,5				315	4.22
CARBAZOLE	86-74-8		0.02 H			2,500		1.2	1.5,6				355	
CARBOFURAN	1563-66-2	0.005 I				43		700	2				311	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
CARBON DISULFIDE	75-15-0	0.1 I		0.7 I		300	X	2,100	1,2,3	13,100	15,100	X	46	
CARBON TETRACHLORIDE	56-23-5	0.0007 I	0.13 I	0.19 D	0.000015 I	160	X	795	1,2,3	13,100	15,000	X	77	0.07
CARBOXIN	5234-68-4	0.1 I				260		170	5,6,8				407	
CHLORAMBEN	133-90-4	0.015 I				20		700	2				210	
CHLORDANE	57-74-9	0.0005 I	0.35 I	0.0007 I	0.0001 I	98,000		0.056	4,5,7				351	0.09
CHLORO-1,1-DIFLUORO-ETHANE, 1-	75-68-3			50 I		22	X	1,400	4	13,100	15,000	X	-9	
CHLORO-1-PROPENE, 3-(ALLYL CHLORIDE)	107-05-1		0.021 C	0.001 I	0.000006 C	48	X	3,300	1,3,5,7,10	13,100	15,000	X	45	18.07
CHLOROACETOPHENONE, 2-	532-27-4			0.00003 I		76		1,100	3				247	4.50
CHLOROANILINE, P-	106-47-8	0.004 I	0.2 P			460		3,900	1				232	
CHLOROBENZENE	108-90-7	0.02 I		0.05 P		200	X	490	3	13,100	15,000	X	132	0.84

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
CHLOROBENZILATE	510-15-6	0.02 I	0.11 C		0.000031 C	2,600		13	4				415	3.60
CHLOROBUTANE, 1-	109-69-3	0.4 P				580	X	680	1,2,3,4	13,200	15,000	X	79	
CHLORODIBROMOMETHANE	124-48-1	0.02 I	0.084 I		0.000027 C	83	X	4,200	4,6,7,9	13,100	15,100	X	116	1.39
CHLORODIFLUOROMETHANE	75-45-6			50 I		59	X	2,899	4	13,200	15,000	X	-41	
CHLOROETHANE	75-00-3	0.4 N	0.0029 N	10 I		42	X	5,700	1	13,100	15,000	X	12	4.50
CHLOROFORM	67-66-3	0.01 I		0.098 D	0.000023 I	56	X	8,000	1,2,3	13,100	15,000	X	61	0.01
CHLORONAPHTHALENE, 2-	91-58-7	0.08 I				8,500		11.7	1				256	
CHLORONITROBENZENE, P-	100-00-5	0.001 P	0.0063 P	0.0006 P		480		220	1				242	
CHLOROPHENOL, 2-	95-57-8	0.005 I				400	X	24,000	1,3,4	12,900	14,900	X	175	
CHLOROPRENE	126-99-8	0.02 H		0.007 H		50	X	1,736	9	13,100	15,000	X	59	0.69
CHLOROPROPANE, 2-	75-29-6			0.1 H		260	X	3,100	1,3,5	13,200	15,000	X	47	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
CHLOROTHALONIL	1897-45-6	0.015 I	0.0031 C		0.00000089 C	980		0.6	2				350	
CHLOROTOLUENE, O-	95-49-8	0.02 I				760	X	422	14,15	13,100	15,000	X	159	
CHLOROTOLUENE, P-	106-43-4	0.07 P				375	X	106	12	13,000	14,900	X	162	
CHLORPYRIFOS	2921-88-2	0.003 I				4,600		1.12	2,4,6,7				377	
CHLORSULFURON	64902-72-3	0.05 I				11		192	2,5,6,8,9				531	
CHLORHAL-DIMETHYL (DACTHAL) (DCPA)	1861-32-1	0.01 I				6,500		0.5	2,5,7				360	1.37
CHRYSENE	218-01-9		0.0073 N		0.000011 C	490,000		0.0019	1				448	0.13
CRESOL(S)	1319-77-3	0.005 S		0.06 C		25	X	20,000	2	13,000	14,900	X	139	5.16
CRESOL, 4,6-DINITRO-O-	534-52-1	0.0001 P				257		150	4				312	6.02
CRESOL, O- (METHYLPHENOL, 2-)	95-48-7	0.05 I				22	X	2,500	3,5,6	13,000	14,900		191	18.07
CRESOL, M (METHYLPHENOL, 3-)	108-39-4	0.05 I				35		2,500	2			X	202	5.16

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information Sys-

tem (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate

T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC ²	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
CRESOL, P (METHYLPHENOL, 4)	106-44-5	0.005 H				49		22,000	6				202	9.03
CRESOL, P-CHLORO-M-	59-50-7	0.005 S				780		3,846	2				235	
CROTONALDEHYDE	4170-30-3		1.9 S			5.6	X	180,000	3	13,000	14,900	X	104	18.07
CROTONALDEHYDE, TRANS-	123-73-9		1.9 H			6.1	X	156,000	1	13,100	15,100	X	104	18.07
CUMENE (ISOPROPYL BENZENE)	98-82-8	0.1 I		0.4 I		2,800	X	50	1,5,6	13,100	15,100	X	152	15.81
CYANAZINE	21725-46-2	0.002 M	0.84 H			199		171	2,5				369	
CYCLOHEXANE	110-82-7				6 I	479	X	55	1,2,4,5,6	13,100	15,100	X	81	
CYCLOHEXANONE	108-94-1	5 I				66	X	36,500	1,2,4,5	13,000	14,900	X	157	
CYFLUTHRIN	68359-37-5	0.025 I				130,000		0.001	2				448	
CYROMAZINE	66215-27-8	0.0075 I				1,200		11,000	12				222	
DDD, 4,4'-	72-54-8	0.002 P	0.24 I		0.000069 C	44,000		0.16	5,6,7				350	0.02
DDE, 4,4'-	72-55-9		0.34 I		0.000097 C	87,000		0.04	5				348	0.02

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Regulation System (RS)
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
DDT, 4,4'-	50-29-3	0.0005 I	0.34 I		0.000097 I	240,000		0.0055	5,6.7				260	0.02
D[2-ETHYLHEXYL)ADIPATE	103-23-1	0.6 I	0.0012 I			47,000,000		200	5			X	214	4.50
DIALATE	2303-16-4		0.061 H			190		40	2,4,6,8			X	328	1.39
DIAMINOTOLUENE, 2,4-	95-80-7		3.8 C		0.0011 C	36		7,470	4				292	0.69
DIAZINON	333-41-5	0.0007 D				500		50	2,4,6,8			X	306	
DIBENZO(A,H)ANTHRA-CENE	53-70-3		7.3 N		0.0012 C	1,800,000		0.0006	1,5.6				524	0.13
DIBENZOFURAN	132-64-9	0.001 P				10,233		4.48	1,6,7,9				287	7.23
DIBROMO,3-CHLORO-PROPANE, 1,2-	96-12-8	0.0002 P	0.8 P	0.0002 I	0.0006 P	140	X	1,000	4	13,000	15,000	X	196	0.69
DIBROMOBENZENE, 1,4-	106-37-6	0.01 I				1,600		20	1				220	
DIBROMOETHANE, 1,2-(ETHYLENE DIBROMIDE)	106-93-4	0.009 I	2.1	0.009 I	0.0006 I	54	X	4,150	1,2,3,5	13,100	15,100	X	131	2.11
DIBROMOMETHANE	74-95-3	0.01 H				110	X	11,400	1	13,100	15,100	X	96	4.50

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Regulation Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES
A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC? ²	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
DIBUTYL PHTHALATE, N-	84-74-2	0.1 I				1,600		400	1,2,3			X	340	11.00
DICAMBA	1918-00-9	0.03 I				0.27		5,600	4,5,6,8,10				329	
DICHLOROACETIC ACID	76-43-6	0.004 I				8.1	X	1,000,000	1	12,900	14,900	X	194	
DICHLORO-2-BUTENE, 1,4-	764-41-0				0.0042 P	180	X	850	9	13,100	15,000	X	156	
DICHLORO-2-BUTENE, TRANS-1,4-	110-57-6				0.0042 S	215	X	850	9	12,900	14,800	X	155	
DICHLOROBENZENE, 1,2-	95-50-1	0.09 I		0.2 H		350	X	147	1,4,5,6,7	13,100	15,100	X	180	0.69
DICHLOROBENZENE, 1,3-	541-73-1	0.003 N				360	X	106	1	13,100	15,100	X	173	0.69
DICHLOROBENZENE, P-	106-46-7	0.07 D	0.0054 C	0.8 I	0.000011 C	510	X	82.9	1	12,900	14,900		174	0.69
DICHLOROBENZENZINE, 3,3'-	91-94-1		0.45 I		0.000034 C	22,000		3.11	4,5,6				368	0.69
DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	0.2 I		0.2 H		360	X	280	1	13,200	15,000	X	-30	0.69

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
DICHLOROETHANE, 1,1-	75-34-3	0.2 P	0.0057 C	0.5 H	0.0000016 C	52	X	5,000	2	13,100	15,000	X	57	0.16
DICHLOROETHANE, 1,2-	107-06-2	0.02 P	0.091 I	2.4 D	0.000026 I	38	X	8,412	1,2,3,4	13,100	15,000	X	83	0.07
DICHLOROETHYLENE, 1,1-	75-35-4	0.05 I		0.2 I		65	X	2,500	1,4,5	13,100	15,000	X	32	0.19
DICHLOROETHYLENE, CIS-1,2-	156-59-2	0.01 P				49	X	3,500	1	13,100	15,000	X	60	0.01
DICHLOROETHYLENE, TRANS-1,2-	156-60-5	0.02 I		0.06 P		47	X	6,300	1	13,100	15,000	X	48	0.01
DICHLOROMETHANE (METHYLENE CHLORIDE)	75-09-2	0.06 I	0.0075 I	1 D	0.00000047 I	16	X	20,000	1,2,3	13,100	15,000	X	40	4.50
DICHLOROPHENOL, 2,4-	120-83-2	0.003 I				160		4,500	1				210	5.88
DICHLOROPHENOXYACETIC ACID, 2,4-(2,4-D)	94-75-7	0.01 I				59		677	4,5,6,7,10				215	1.39

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment
 Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
DICHLOROPROPANE, 1,2-	78-87-5	0.09 D	0.036 C	0.004 I	0.00001 C	47	X	2,700	1,3,4	13,100	15,000	X	96	0.10
DICHLOROPROPENE, 1,3-	542-75-6	0.03 I	0.11	0.02 I	0.000004 I	27	X	2,700	6	13,100	15,000	X	108	22.38
DICHLOROPROPIONIC ACID, 2,2- (DALAPON)	75-99-0	0.03 I				62	X	500,000	5	13,000	14,900	X	190	2.11
DICHLOROVOS	62-73-7	0.0005 I	0.29 I	0.0005 I	0.000083 C	50		10,000	2,4,5			X	234	
DICYCLOPENTADIENE	77-73-6	0.008 P		0.007 P		810	X	40	5	13,000	14,900		167	
DIELDRIN	60-57-1	0.00005 I	16 I		0.0046 I	11,000		0.17	4,5,6				385	0.12
DIETHANOLAMINE	111-42-2			0.003 C		4		1,000,000	2,3,9			X	269	
DIETHYL PHTHALATE	84-66-2	0.8 I				81		1,080	4,5,6			X	298	2.25
DIFLUBENZURON	35367-38-5	0.02 I				1,000		0.2	2				201	
DISOPROPYL METHYL PHOSPHONATE	1445-75-6	0.08 I				10	X	160,000	9	13,000	14,900	X	190	
DIMETHOATE	60-51-5	0.0002 I				110		25,000	4				361	2.26

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
DIMETHOXYBENZIDINE, 3,3-	119-90-4		0.014 H			1,300		60	9				331	0.69
DIMETHRIN	70-38-2	0.3 M				27,000		0.036	13				353	
DIMETHYLAMINOAZO-BENZENE, P-	60-11-7		4.6 C		0.0013 C	1,000		13.6	7				335	4.50
DIMETHYLANILINE,N,N-	121-69-7	0.002 I				180	X	1,200	5,6,7,9	13,000	14,900	X	192	0.69
DIMETHYLBENZIDINE, 3,3-	119-93-7		11 H			22,000		1,300	10				300	18.07
DIMETHYL METHYL PHOSPHONATE	756-79-6	0.06 P	0.0017 P			5	X	1,000,000	14	13,000	14,900	X	181	
DIMETHYLPHENOL,2,4-	105-67-9	0.02 I				130		7,869	1,4,6,7			X	211	18.07
DINITROBENZENE,1,3-	99-65-0	0.0001 I				150		523	3,5,6,7				291	0.69
DINITROPHENOL,2,4-	51-28-5	0.002 I				0.79		5,600	2,4,5,6,7				332	0.48
DINITROTOLUENE,2,4-	121-14-2	0.002 I	0.31 C		0.000089 C	51		270	4,5,6				300	0.69
DINITROTOLUENE,2,6-(2,6-DNT)	606-20-2	0.001 P				74		200	6				300	0.69
DINoseb	88-85-7	0.001 I				120		50	5				223	1.03

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: H = Health Effects Assessment Summary Table (HEAST) M = EPA Drinking Water Regulations and Health Advisories S = surrogate Toxicity Value
 Factor D = ATSDR Minimal Risk Level I = Integrated Risk Information System (IRIS) N = EPA NCEA Provisional Values P = EPA Provisional Peer-Reviewed Value
 T = TEF TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RIcI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC? ²	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
DIOXANE,1,4-	123-91-1	0.1 D	0.011 I	3.6 D	0.0000077 C	7.8	X	1,000,000	5	13,000	14,900	X	101	0.69
DIPHENAMID	957-51-7	0.03 I				200		260	5				210	
DIPHENYLAMINE	122-39-4	0.025 I				190		300	3				302	4.50
DIPHENYLHYDRAZINE, 1,2-	122-66-7		0.8 I		0.00022 I	660		0.252	6				309	0.69
DIQUAT	85-00-7	0.0022 I				2.6		700,000	5				355	
DISULFOTON	298-04-4	0.00004 I				1,000		25	4,5,6			X	332	6.02
DITHIANE, 1,4-	505-29-3	0.01 I				22.7	X	3,000	15	13,000	14,900		199	
DIURON	330-54-1	0.002 I				300		42	2,4,5				354	
ENDOSULFAN	115-29-7	0.006 I				2,000		0.48	4				401	2.78
ENDOSULFAN I (ALPHA)	959-98-8	0.006 S				2,000		0.5	6				401	
ENDOSULFAN II (BETA)	33213-65-9	0.006 S				2,300		0.45	6				390	
ENDOSULFAN SULFATE	1031-07-8	0.006 S				2,300		0.117	7,9				409	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
ENDOTHALL	145-73-3	0.02 I				120		100,000	2				350	
ENDRIN	72-20-8	0.0003 I				11,000		0.23	4,6,7,9				245	
EPICHLOROHYDRIN	106-89-8	0.006 P	0.0099 I	0.001 I	0.0000012 I	35	X	65,800	1,3,4	13,000	14,900	X	116	4.50
ETHEPHON	16672-87-0	0.005 I				2		1,240,000	12				201	
ETHION	563-12-2	0.0005 I				8,700		0.85	4,6,9,10			X	415	
ETHOXYETHANOL,2-(EGEE)	110-80-5	0.4 H		0.2 I		12	X	1,000,000	2	13,200	15,000	X	136	4.50
ETHYL ACETATE	141-78-6	0.9 I				59	X	80,800	1,2,3,4,5,6	13,100	15,000	X	77	18.07
ETHYL ACRYLATE	140-88-5		0.048 H			110	X	15,000	1,2,6	13,100	15,100	X	100	18.07
ETHYL BENZENE	100-41-4	0.1 I		1 I		220	X	161	1,3,4	13,100	15,000	X	136	1.11
ETHYL DIPHOPYLTHIOCARBAMATE, S-(EPTC)	759-94-4	0.025 I				240	X	365	2	12,900	14,900	X	127	
ETHYL ETHER	60-29-7	0.2 I				68	X	60,400	1	13,100	15,100	X	35	
ETHYL METHACRYLATE	97-63-2	0.09 H				22	X	4635.5	9,10	13,100	15,000	X	117	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
ETHYLENE GLYCOL	107-21-1	2 I		0.4 C		4.4	X	1,000,000	2	13,100	15,100	X	198	10.54
ETHYLENE THIOUREA (ETU)	96-45-7	0.00008 I	0.045 C		0.000013 C	0.23		20,000	2				347	4.50
ETHYL-P-NITROPHENYL PHENYLPHOSPHOROTHIOATE	2104-64-5	0.00001 I				1,200		3.1	4				215	
FENAMIPHOS	22224-92-6	0.00025 I				300		329	2				390	
FENVALERATE (PYDRIN)	51630-58-1	0.025 I				4,400		0.085	5			X	300	
FLUOMETURON	2164-17-2	0.013 I				68		97.5	2.5,6,8				318	
FLUORANTHENE	206-44-0	0.04 I				49,000		0.26	1,5,6				375	0.29
FLUORENE	86-73-7	0.04 I				7,900		1.9	1				298	2.11
FLUOROTRICHLORO-METHANE (FREON11)	75-69-4	0.3 I		0.7 H		130	X	1,090	1,4,5,6	13,100	15,000	X	24	0.35
FONOFOS	944-22-9	0.002 I				1,100		13	5,6,8			X	324	
FORMALDEHYDE	50-00-0	0.2 I		0.0098 D	0.000013 I	3.6	X	55,000	1	13,100	15,100	X	-21	18.07
FORMIC ACID	64-18-6	2 H		0.003 P		0.54	X	1,000,000	2	13,000	14,900	X	101	18.07

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: Summary Table (HEAST) N = EPA NCEA Provisional Values TE = TERA ITER Peer-Reviewed
 C = California EPA Cancer Potency I = Integrated Risk Information System P = EPA Provisional Peer-Reviewed Value
 Factor (IRIS) M = EPA Drinking Water Regulations and Health Advisories S = surrogate T = TEF

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
FOSETYL-AL	39148-24-8	3.1				310		120,000	2				464	
FURAN	110-00-9	0.001 I				130	X	10,000	1	13,100	15,000	X	31	2.25
FURFURAL	98-01-1	0.003 I		0.05 H		6.3	X	91,000	1,2,3	13,000	14,900	X	162	
GLYPHOSATE	1071-83-6	0.1 I				3,500		12,000	1,5,6				417	
HEPTACHLOR	76-44-8	0.0005 I	4.5 I		0.0013 I	6,800		0.18	4,6,7				310	46.84
HEPTACHLOR EPOXIDE	1024-57-3	0.000013 I	9.1 I		0.0026 I	21,000		0.311	4,6,7,9				341	0.23
HEXACHLOROBENZENE	118-74-1	0.0008 I	1.6 I		0.00046 I	3,800		0.006	1,4,5				319	0.06
HEXACHLOROBUTADIENE	87-68-3	0.001 P	0.078 I		0.000022 I	4,700		2.89	4,5,6,7			X	215	0.69
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.006 I		0.0002 I		7,200		1.8	5,6,7			X	239	4.50
HEXACHLOROETHANE	67-72-1	0.001 I	0.014 I		0.000004 I	2,200	X	50		13,000	15,000		187	0.69
HEXANE	110-54-3	0.06 H		0.7 I		3,600	X	9.5	1,5,6	13,100	15,000	X	69	
HEXAZINONE	51235-04-2	0.033 I				41		330,000	1,2				408	
HEXYTHIAZOX (SAVEY)	78587-05-0	0.025 I				6,500		0.5	2				539	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: H = Health Effects Assessment Summary Table (HEAST) I = Integrated Risk Information System (IRIS)
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC ²	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
HMX	2691-41-0	0.05 I				4		5	16				436	
HYDRAZINE/ HYDRAZINE SULFATE	302-01-2		3 I	0.0002 C	0.0049 I	0.0053	X	1,000,000	2	13,000	15,000	X	114	18.07
HYDROQUINONE	123-31-9	0.04 P	0.056 P			10		70,000	2,3,5				285	18.07
INDENO[1,2,3- CD]PYRENE	193-39-5		0.73 N		0.00011 C	31,000,000		0.062	5				536	0.17
IPRODIONE	36734-19-7	0.04 I				1,100		13	2				545	
ISOBUTYL ALCOHOL	78-83-1	0.3 I				60	X	81,000	1,2,3,4,5	13,000	14,900	X	108	17.57
ISOPHORONE	78-59-1	0.2 I	0.00095 I	2 C		31		12,000	2,4,5			X	215	4.50
ISOPROPYL METHYL PHOSPHONATE	1832-54-8	0.1 I				1.64		50,000	13			X	230	
KEPONE	143-50-0	0.0005 D	16 C		0.0046 C	55,000		7.6	4				350	0.17
MALATHION	121-75-5	0.02 I				1,300		143	4			X	351	2.46
MALEIC HYDRAZIDE	123-33-1	0.5 I				2.8		6,000	4				260	
MANEB	12427-38-2	0.005 I				1		23	9,13				351	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor

D = ATSDR Minimal Risk Level

H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)

M = EPA Drinking Water Regulations and Health Advisories

N = EPA NCEA Provisional Values

P = EPA Provisional Peer-Reviewed Value

S = surrogate

T = TEF

TE = TERA ITER Peer-Reviewed Value

TF = Toxicity Value

S = surrogate

T = TEF

TE = TERA ITER Peer-Reviewed Value

Value

Value

Value

Value

Value

Value

Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
MERPHOS OXIDE	78-48-8	0.00003 I				53,000		2.3	8,10,12			X	392	
METHACRYLONITRILE	126-98-7	0.0001 I		0.0007 H		21	X	25,700	1	13,100	15,100	X	90	
METHAMIDOPHOS	10265-92-6	0.00005 I				5		2,000,000	5				223	
METHANOL	67-56-1	0.5 I		4 C		2.8	X	1,000,000	2	13,100	15,100	X	65	36.14
METHOMYL	16752-77-5	0.025 I				20		58,000	2				228	
METHOXYCHLOR	72-43-5	0.005 I				63,000		0.045	4,5,6				346	0.69
METHOXYETHANOL, 2-	109-86-4	0.003 P		0.02 I			X	1,000,000	2	13,100	15,000	X	124	4.50
METHYL ACETATE	79-20-9	1 H				30	X	243,500	4,5,6	13,100	15,100	X	57	
METHYL ACRYLATE	96-33-3	0.03 H				55	X	52,000	1,2,5	13,100	15,100	X	70	18.07
METHYL CHLORIDE	74-87-3	0.004 M	0.013 H	0.09 I	0.0000018 H	6	X	6,180	1,2,3,4	13,200	15,000	X	-24	4.50
METHYL ETHYL KETONE	78-93-3	0.6 I		5 I		32	X	275,000	1,2,3,4,5	13,100	15,100	X	80	2.57
METHYL ISOBUTYL KETONE	108-10-1	0.08 H		3 I		17	X	19,550	1,2,4,5	13,100	15,100	X	117	18.07

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RIC _i (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
METHYL ISOCYANATE	624-83-9			0.001 C		10	X	100,000	7	13,000	15,000	X	40	
METHYL N-BUTYL KETONE (2-HEXANONE)	591-78-6	0.04 N		0.005 N		54	X	17,500	1	13,100	15,100	X	128	
METHYL METHACRYLATE	80-62-6	1.4 I		0.7 I		10	X	15,600	1	13,100	15,100	X	100	4.50
METHYL METHANESULFONATE	66-27-3		0.099 C		0.000028 C	5.2		200,000	2			X	203	
METHYL PARATHION	298-00-0	0.00025 I				790		25	4,5,6				348	3.61
METHYL STYRENE (MIXED ISOMERS)	25013-15-4	0.006 H		0.04 H		2,200	X	89	9	13,100	15,000	X	163	
METHYL TERT-BUTYL ETHER (MTBE)	1634-04-4		0.0018 C	3 I	0.00000026 C	12	X	45,000	1,2,4,6	13,100	15,100	X	55	0.69
METHYLCHLORO PHENOXYACETIC ACID (MCPA)	94-74-6	0.0005 I				112		1,000	5,6,8,9				287	1.39
METHYLENE BIS(2-CHLOROANILINE), 4,4'-	101-14-4	0.002 P	0.1 P		0.000043 C	3,000		13.9	10				379	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
METHYLNAPHTHALENE, 2-	91-57-6	0.004 I		0.003 S		16,000		25	1				241	
METHYLSTYRENE, ALPHA	98-83-9	0.07 H				660	X	560	9	13,100	15,100	X	165	
METOLACHLOR	51218-45-2	0.15 I				182	X	530	1.5	13,000	15,000	X	100	
METRIBUZIN	21087-64-9	0.025 I				95		1,200	1.5				367	
MONOCHLOROACETIC ACID	79-11-8	0.01 M				0.24	X	858,000	17	13,000	14,900		189	
NAPHTHALENE	91-20-3	0.02 I		0.003 I		950		30	3				218	0.98
NAPHTHYLAMINE,1-	134-32-7		1.8 S		0.00051 S	3,200		1,690	2				301	0.69
NAPHTHYLAMINE,2-	91-59-8		1.8 C		0.00051 C	87		6.4	6				306	0.69
NAPROPAMIDE	15299-99-7	0.1 I				880		70	2				399	
NITROANILINE,M-	99-09-2	0.003 P	0.021 P	0.001 P		18		100	3				306	
NITROANILINE,O-	88-74-4	0.003 P		0.0001 P		27		1,200	6				284	
NITROANILINE,P-	100-01-6	0.004 P	0.02 P	0.006 P		15		800	2				332	
NITROBENZENE	98-95-3	0.002 I		0.009 I	0.00004 I	130		2,000	2			X	211	0.64

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RIcI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
NITROGUANIDINE	556-88-7	0.1 I				0.13		4,400	9				231	
NITROPHENOL,2-	88-75-5	0.008 S				37		2,100	1,2,3,4,5,6				215	9.01
NITROPHENOL,4-	100-02-7	0.008 N				230		16,000	2				279	25.81
NITROPROPANE,2-	79-46-9			0.02 I	0.0027 H	20	X	16,700	1,3,4,5	13,000	14,900	X	120	0.69
NITROSODIETHYL AMINE, N-	55-18-5		150 I		0.043 I	26	X	93,000	10	13,000	14,900	X	176	0.69
NITROSODIMETHYL AMINE, N-	62-75-9	0.000008 P	51 I		0.014 I	8.5	X	1,000,000	2	13,000	14,900	X	154	0.69
NITROSO-DI-N-BUTYL AMINE, N-	924-16-3		5.4 I		0.016 I	450		1,200	0.13				235	0.69
NITROSODI-N-PROPYL AMINE, N-	621-64-7		7 I		0.002 C	11		9,900	6			X	206	0.69
NITROSODIPHENYL AMINE, N-	86-30-6	0.02 P	0.0049 I		0.0000026 C	580		35	1				269	3.72
NITROSO-N-ETHYLUREA, N-	759-73-9		27 C		0.0077 C	2		13,000	9				223	1,734.48
OCTYL PHTHALATE, DI-N-	117-84-0	0.04 P				980,000,000		3	5			X	234	0.69

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
OXAMYL (VYDATE)	23135-22-0	0.025 I				7.1		280,000	2				334	
PARAQUAT	1910-42-5	0.0045 I				16,200		660,000	6,8				352	
PARATHION	56-38-2	0.006 H				2,300		20	2,4,5,6,7			X	375	
PCB-1016 (AROCLOR)	12674-11-2	0.00007 I	0.07 I		0.00002 I	110,000		0.25	5			X	325	
PCB-1221 (AROCLOR)	11104-28-2		2 I		0.00057 I	1,900		0.59	5			X	275	
PCB-1232 (AROCLOR)	11141-16-5		2 I		0.00057 I	1,500		1.45	7			X	290	
PCB-1242 (AROCLOR)	53469-21-9		2 I		0.00057 I	48,000		0.1	5			X	325	
PCB-1248 (AROCLOR)	12672-29-6		2 I		0.00057 I	190,000		0.054	7,9,11			X	340	
PCB-1254 (AROCLOR)	11097-69-1	0.00002 I	2 I		0.00057 I	810,000		0.057	5			X	365	
PCB-1260 (AROCLOR)	11096-82-5		2 I		0.00057 I	1,800,000		0.08	5				385	
PEBULATE	1114-71-2	0.05 H				630		92	5			X	303	
PENTACHLOROBENZENE	608-93-5	0.0008 I				32,000		0.74	1,5,6,7				277	0.37
PENTACHLOROETHANE	76-01-7		0.09 P			1,905	X	480	1,3	13,100	15,100	X	160	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEf
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
PENTACHLORONITRO-BENZENE	82-68-8	0.003 I	0.26 H			7,900		0.44	4,6,8				328	0.36
PENTACHLOROPHENOL	87-86-5	0.03 I	0.12 I		0.0000046 C	20,000		14	1,2,4,5				310	0.17
PHENACETIN	62-44-2		0.0022 C		0.00000063 C	110		763	2,3,9				341	4.50
PHENANTHRENE	85-01-8	0.3 S				38,000		1.1	1,4,5				341	0.63
PHENOL	108-95-2	0.3 I		0.2 C		22	X	84,300	1,2,3,4	13,000	14,900		182	36.14
PHENYL MERCAPTAN	108-98-5	0.00001 H				562	X	653	5,9	13,000	15,000	X	170	
PHENYLENEDIAMINE,M-	108-45-2	0.006 I				12		351,000	3				286	4.50
PHENYLPHENOL,2-	90-43-7		0.0019 H			5,700		700	5				280	18.07
PHORATE	298-02-2	0.0002 H				810		50	2			X	319	
PHTHALIC ANHYDRIDE	85-44-9	2 I		0.02 C		79		6,170	2				285	13,490.40
PICLORAM	1918-02-1	0.07 I				15		430	2				373	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
POLYCHLORINATED BIPHENYLS (AROCLORES) (PCBS)	1336-36-3		2.1		0.00057.1			0.0505	10,13				360	
PROMETON	1610-18-0	0.015.1				346		750	2.5				347	
PRONAMIDE	23950-58-5	0.075.1				200		15	2				321	
PROPANIL	709-98-8	0.005.1				160		225	2				355	
PROPANOL, 2- (ISOPROPYL ALCOHOL)	67-63-0			7. C		25	X	1,000,000	2	13,000	14,900	X	82	
PROPAPAZINE	139-40-2	0.02.1				155		8.6	1.5			X	318	
PROPHAM	122-42-9	0.02.1				51		250	5				257	
PROPYLBENZENE,N-	103-65-1	0.04. N				720	X	52	6	13,100	15,100	X	159	
PROPYLENE OXIDE	75-56-9		0.24.1		0.03.1	25	X	405,000	1	13,100	15,000	X	34	
PYRENE	129-00-0	0.03.1				68,000		0.132	1				393	0.07
PYRIDINE	110-86-1	0.001.1				0.0066	X	1,000,000	2	13,100	15,000	X	115	18.07
QUINOLINE	91-22-5					1,300		60,000	1,3.5			X	238	12.65

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: Summary Table (HEAST) N = EPA NCEA Provisional Values TE = TERA ITER Peer-Reviewed
 C = California EPA Cancer Potency I = Integrated Risk Information System P = EPA Provisional Peer-Reviewed Value
 Factor (IRIS) M = EPA Drinking Water Regulations and Health Advisories
 D = ATSDR Minimal Risk Level H = Health Effects Assessment
 S = surrogate T = TEF

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
QUIZALOFOP (ASSURE)	76578-14-8	0.009 I				580		0.3	2				220	
RDX	121-82-4	0.003 I	0.11 I		0.0000031 I	70		59.9	1.9				353	
RESORCINOL	108-46-3	2 TE				2		717,000					280	
RONNEL	299-84-3	0.05 H				580		40	2				349	
SIMAZINE	122-34-9	0.005 I	0.12 H			110		5	5				225	
STRYCHNINE	57-24-9	0.0003 I				280		143	5				270	4.50
STYRENE	100-42-5	0.2 I		1 I		910	X	300	5	13,100	15,100	X	145	1.20
TEBUTHURON	34014-18-1	0.07 I				620		2,500	2				394	
TERBACIL	5902-51-2	0.013 I				53		710	2				396	
TERBUFOS	13071-79-9	0.000025 H				510		5	6			X	332	
TETRACHLOROBENZENE, 1,2,4,5-	95-94-3	0.0003 I				1,800		0.583	1,5,6,7				245	0.69
TETRACHLORODIBENZO-P-DIOXIN, 2,3,7,8- (TCDD)	1746-01-6	0.000000001 D	130,000 C	0.00000004 C	38 C	4,300,000		0.0000193	6				412	0.21

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:

C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed

Regulation System (RS)
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
TETRACHLOROETHANE, 1,1,1,2-	630-20-6	0.03 I	0.026 I		0.0000074 I	980	X	1,100	1	13,000	14,600	X	131	3.79
TETRACHLOROETHANE, 1,1,1,2-	79-34-5	0.004 P	0.2 I		0.000058 I	79	X	2,860	2	13,100	15,100	X	147	0.56
TETRACHLOROETHYLENE (PCE)	127-18-4	0.01 I	0.052 N	0.5 N	0.0000058 N	300	X	162	1,2,3,4,5	13,100	15,000	X	121	0.03
TETRACHLOROPHENOL, 2,3,4,6-	58-90-2	0.03 I				6,200		183	6				288	0.69
TETRAETHYL LEAD	78-00-2	0.0000001 I				4,900		0.8	5			X	202	4.50
TETRAETHYLDITHIOPHOSPHATE	3689-24-5	0.0005 I				550		25	2			X	349	
TETRAHYDROFURAN	109-99-9	0.2 N	0.0076 N	0.3 N	0.00000194 N	43	X	300,000	1,6,7	13,100	15,100	X	66	
THIOFANOX	39196-18-4	0.0003 H				0.022		5,200	9				280	
THIRAM	137-26-8	0.005 I				1,000		30	4				339	
TOLUENE	108-88-3	0.08 I		5 I		130	X	532.4	1,2,3,4	13,100	15,000	X	111	9.01
TOLUIDINE,M-	108-44-1		0.18 S		0.000051 S	140		15,030	6			X	203	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 Summary Table (HEAST)
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RIcI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
TOLUIDINE,O-	95-53-4		0.18 C		0.000051 C	410		15,000	1,3,5			X	200	18.07
TOLUIDINE,P-	106-49-0		0.19 H			320		7,410	1,2,3				200	
TOXAPHENE	8001-35-2		1.1 I		0.00032 I	1,500		3	2,4,5				432	
TRIALATE	2303-17-5	0.013 I				2,000		4	5			X	343	
TRIBROMOMETHANE (BROMOFORM)	75-25-2	0.02 I	0.0079 I		0.0000011 I	130	X	3,050	1,2,3,4	13,100	15,100	X	149	0.69
TRICHLORO-1,1,2,2-TRIFLUOROETHANE, 1,1,2-	76-13-1	30 I		30 H		1,200	X	170	1	13,100	15,000	X	48	0.35
TRICHLOROBENZENE, 1,2,4-	120-82-1	0.01 I	0.0036 C	0.004 P		1,500		44.4	1,4,6,7			X	213	0.69
TRICHLOROBENZENE, 1,3,5-	108-70-3	0.006 M		0.004 S		3,100		5.8	5				208	
TRICHLOROETHANE, 1,1,1-	71-55-6	2 I		5 I		100	X	1,495	1,4,5,6	13,100	15,000	X	74	0.05
TRICHLOROETHANE, 1,1,2-	79-00-5	0.004 I	0.057 I		0.000016 I	76	X	4,420	1	13,100	15,100	X	114	0.03

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment Summary Table (HEAST)
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RfCI (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K)(yr ⁻¹)
TRICHLOROETHYLENE (TCE)	79-01-6	0.006 N	0.011 N	0.5 D	0.0000017 N	93	X	1,100	1	13,100	15,000	X	87	0.02
TRICHLOROPHENOL, 2,4,5-	95-95-4	0.1 I				2,400		1,000	1.2,4				246	0.14
TRICHLOROPHENOL, 2,4,6-	88-06-2	0.001 P	0.011 I		0.0000031 I	1,100		850	1.2,4,5				246	0.14
TRICHLOROPHEN-OXYACETIC ACID,2,4,5-(2,4,5-T)	93-76-5	0.01 I				43		278	2,4,5				279	1.39
TRICHLOROPHEN-OXYPROPIONIC ACID,2,4,5-(2,4,5-TP)(SILVEX)	93-72-1	0.008 I				1,700		140	2				353	
TRICHLOROPROPANE, 1,1,2-	598-77-6	0.005 I				24	X	2,700	14	13,100	15,000	X	117	
TRICHLOROPROPANE, 1,2,3-	96-18-4	0.006 I	7 H	0.005 N		280	X	1,896	1,4,6	13,100	15,100	X	157	0.35
TRICHLOROPROPENE, 1,2,3-	96-19-5	0.01 P		0.001 P		190	X	2,700	14	13,100	15,000	X	142	
TRIETHYLAMINE	121-44-8			0.007 I		51	X	55,000	1,4	13,100	15,100	X	90	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources:
 C = California EPA Cancer Potency Factor
 D = ATSDR Minimal Risk Level
 H = Health Effects Assessment
 I = Integrated Risk Information System (IRIS)
 M = EPA Drinking Water Regulations and Health Advisories
 N = EPA NCEA Provisional Values
 P = EPA Provisional Peer-Reviewed Toxicity Value
 S = surrogate
 T = TEF
 Summary Table (HEAST)
 TE = TERA ITER Peer-Reviewed Value

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

A. Organic Regulated Substances—(Continued)

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ¹	RICi (mg/m ³)	IUR (µg/m ³) ⁻¹	Koc (L/KG)	VOC?	Aqueous Sol (mg/L)	Aqueous Sol Reference ¹	TF Vol from Surface Soil	TF Vol from SubSurface Soil	Organic Liquid	Boiling Point (degrees C)	Degradation Coefficient (K/yr ⁻¹)
TRIFLURALIN	1582-09-8	0.0075 I	0.0077 I			720		4	2,5,6,7				382	
TRIMETHYLBENZENE, 1,3,4- (TRIMETHYLBENZENE, 1,2,4-)	95-63-6	0.05 P		0.007 P		2,200	X	56	1	13,100	15,000	X	169	4.50
TRIMETHYLBENZENE, 1,3,5-	108-67-8	0.05 P		0.006 P		660	X	48.9	1	13,100	15,100	X	165	
TRINITROGLYCEROL (NITROGLYCERIN)	55-63-0	0.0001 P	0.017 P				X	1,800	2,3,5	13,000	15,000	X	190	18.07
TRINITROTOLUENE, 2,4,6-	118-96-7	0.0005 I	0.03 I			1		100	2				240	
VINYL ACETATE	108-05-4	1 H		0.2 I		2.8	X	20,000	1	13,200	15,000	X	73	
VINYL BROMIDE (BROMOETHENE)	593-60-2			0.003 I	0.000032 H	150	X	4,180	12	13,100	15,000	X	16	0.09
VINYL CHLORIDE	75-01-4	0.003 I	0.72 I	0.1 I	0.000044 I	10	X	2,700	1	13,200	15,000	X	-13	0.09
WARFARIN	81-81-2	0.0003 I				910		17	4				356	4.50
XYLENES (TOTAL)	1330-20-7	0.2 I		0.1 I		350	X	175	13	13,100	15,000	X	140	0.69
ZINEB	12122-67-7	0.05 I				19		10	4				474	

¹ Aqueous solubility references are keyed to the numbered list found at § 250.304(f). Where there are multiple sources cited, the table value is the median of the values in the individual references.

Toxicity Value Sources: H = Health Effects Assessment Summary Table (HEAST) I = Integrated Risk Information System (IRIS) M = EPA Drinking Water Regulations and Health Advisories N = EPA NCEA Provisional Values P = EPA Provisional Peer-Reviewed Value
 Factor D = ATSDR Minimal Risk Level
 C = California EPA Cancer Potency Factor
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value
 S = surrogate
 T = TEF
 TE = TERA
 ITER = Peer-Reviewed Value

APPENDIX A

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES

B. Inorganic Regulated Substances

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ⁻¹	RfCi (mg/m ³) ⁻¹	IUR (µg/m ³) ⁻¹	Kd
ALUMINUM	7429-90-5	1 P		0.005 P		9.9
ANTIMONY	7440-36-0	0.0004 I				45
ARSENIC	7440-38-2	0.0003 I	1.5 I	0.000015 C	0.0043 I	29
BARIUM AND COMPOUNDS	7440-39-3	0.2 I		0.0005 H		41
BERYLLIUM	7440-41-7	0.002 I		0.00002 I	0.0024 I	790
BORON AND COMPOUNDS	7440-42-8	0.2 I		0.02 H		3
CADMIUM	7440-43-9	0.0005 I		0.00001 D	0.0018 I	75
CHROMIUM III	16065-83-1	1.5 I				1,800,000
CHROMIUM VI	18540-29-9	0.003 I		0.000008 I	0.084 I	19
COBALT	7440-48-4	0.0003 P		0.000006 P	0.009 P	45
COPPER	7440-50-8	0.037 H				430
CYANIDE, FREE	57-12-5	0.02 I				9.9
FLUORIDE	16984-48-8	0.04 C		0.013 C		
IRON	7439-89-6	0.7 P				25
LEAD	7439-92-1		0.0085 C		0.000012 C	900
LITHIUM	7439-93-2	0.002 P				300
MANGANESE	7439-96-5	0.047 I		0.00005 I		65
MERCURY	7439-97-6	0.00016 C		0.0003 I		52
MOLYBDENUM	7439-98-7	0.005 I				20
NICKEL	7440-02-0	0.02 I		0.00009 D	0.00024 Is	65
NITRATE NITROGEN	14797-55-8	1.6 I				
NITRITE NITROGEN	14797-65-0	0.1 I				

250-185

TABLE 5—PHYSICAL AND TOXICOLOGICAL PROPERTIES
B. Inorganic Regulated Substances—Continued

Regulated Substance	CAS	RfDo (mg/kg-d)	CSFo (mg/kg-d) ⁻¹	RfCi (mg/m ³) ⁻¹	IUR (µg/m ³) ⁻¹	Kd
PERCHLORATE	7790-98-9	0.0007 I				0
SELENIUM	7782-49-2	0.005 I		0.02 C		5
SILVER	7440-22-4	0.005 I				8.3
THALLIUM	7440-28-0	0.00007 I				71
TIN	7440-31-5	0.6 H				250
VANADIUM	7440-62-2	0.007 H				1,000
ZINC	7440-66-6	0.3 I				62

Toxicity Value Sources:

C = California EPA Cancer Potency Factor

D = ATSDR Minimal Risk Level

H = Health Effects Assessment Summary Table (HEAST)

I = Integrated Risk Information System (IRIS)

P = EPA Provisional Peer-Reviewed Toxicity Value

s = surrogate

APPENDIX A

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
ACETIC ACID	64-19-7	5	100	100	100	0.5
ACETIC ANHYDRIDE	108-24-7	5	100	100	100	0.5
AMYL ACETATE, N-	628-63-7	5	100	100	100	0.5
AMYL ACETATE, SEC-	626-38-0	5	100	100	100	0.5
ANTU (ALPHA-NAPHTHYLTHIOUREA)	86-88-4	5	100	100	100	0.5
AZINPHOS-METHYL (GUTHION)	86-50-0	5	100	100	100	0.5
BHC, DELTA	319-86-8	5	100	100	100	0.5
BIS(2-CHLOROETHOXY)METHANE	111-91-1	5	100	100	100	0.5
BROMOPHENYL PHENYL ETHER, 4-	101-55-3	5	100	100	100	0.5
BUTYL ACETATE, N-	123-86-4	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Surface Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
BUTYL ACETATE, SEC-	105-46-4	5	100	100	100	0.5
BUTYL ACETATE, TERT-	540-88-5	5	100	100	100	0.5
BUTYLAMINE, N-	109-73-9	5	100	100	100	0.5
CALCIUM CHROMATE	13765-19-0	5	100	100	100	0.5
CALCIUM CYANAMIDE	156-62-7	5	100	100	100	0.5
CARBONYL FLUORIDE	353-50-4	5	100	100	100	0.5
CATECHOL	120-80-9	5	100	100	100	0.5
CHLOROACETALDEHYDE	107-20-0	5	100	100	100	0.5
CHLOROETHYL VINYL ETHER, 2-	110-75-8	5	100	100	100	0.5
CHLOROPHENYL PHENYL ETHER, 4-	7005-72-3	5	100	100	100	0.5
DECABORANE	17702-41-9	5	100	100	100	0.5
DIETHANOLAMINE	111-42-2	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
DIETHYLAMINE	109-89-7	5	100	100	100	0.5
DIGLYCIDYL ETHER (DGE)	7/5/2238	5	100	100	100	0.5
DIMETHYL PHTHALATE	131-11-3	5	100	100	100	0.5
DIMETHYL SULFATE	77-78-1	5	100	100	100	0.5
DIMETHYLPHENETHYLAMINE, ALPHA, ALPHA-	122-09-8	5	100	100	100	0.5
DIOXATHION	78-34-2	5	100	100	100	0.5
ETHYL METHANESULFONATE	62-50-0	5	100	100	100	0.5
ETHYLAMINE	75-04-7	5	100	100	100	0.5
ETHYLENE CHLORHYDRIN	107-07-3	5	100	100	100	0.5
FAMPUR	52-85-7	5	100	100	100	0.5
FENSULFOTHION	115-90-2	5	100	100	100	0.5
HEXACHLOROPROPENE	1888-71-7	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg) -15 feet
				Surface Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
IODOMETHANE	74-88-4	5	100	100	100	0.5
ISOAMYL ACETATE	123-92-2	5	100	100	100	0.5
ISOBUTYL ACETATE	110-19-0	5	100	100	100	0.5
ISODRIN	465-73-6	5	100	100	100	0.5
ISOPHORONE DIISOCYANATE	4098-71-9	5	100	100	100	0.5
ISOSAFROLE	120-58-1	5	100	100	100	0.5
LITHIUM HYDRIDE	7580-67-8	5	100	100	100	0.5
MANGANESE CYCLOPENTADIENYL TRICARBONYL	12079-65-1	5	100	100	100	0.5
METHYL HYDRAZINE	60-34-4	5	100	100	100	0.5
METHYL ISOAMYL KETONE	110-12-3	5	100	100	100	0.5
METHYL ISOCYANATE	624-83-9	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
METHYL MERCAPTAN	74-93-1	5	100	100	100	0.5
METHYLAMINE	74-89-5	5	100	100	100	0.5
MEVINPHOS	7786-34-7	5	100	100	100	0.5
MONOCROTOPHOS	6923-22-4	5	100	100	100	0.5
NAPHTHOQUINONE, 1,4-	130-15-4	5	100	100	100	0.5
NITRIC ACID	7697-37-2	5	100	100	100	0.5
NITROQUINOLINE-1-OXIDE, 4-	56-57-5	5	100	100	100	0.5
OSMIUM TETROXIDE	20816-12-0	5	100	100	100	0.5
PENTABORANE	19624-22-7	5	100	100	100	0.5
PENTACHLOROETHANE	76-01-7	5	100	100	100	0.5
PERCHLOROMETHYL MERCAPTAN	594-42-3	5	100	100	100	0.5
PICOLINE, 2-	109-06-8	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Surface Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
PROPANOL, 1-	71-23-8	5	100	100	100	0.5
PROPANOL, 2- (ISOPROPYL ALCOHOL)	67-63-0	5	100	100	100	0.5
PROPIONIC ACID	79-09-4	5	100	100	100	0.5
PROPIONITRILE (ETHYL CYANIDE)	107-12-0	5	100	100	100	0.5
PROPYLENE IMINE	75-55-8	5	100	100	100	0.5
PYRETHRUM	8003-34-7	5	100	100	100	0.5
QUINONE (p-BENZOQUINONE)	106-51-4	5	100	100	100	0.5
SELENIUM HEXAFLUORIDE	7783-79-1	5	100	100	100	0.5
SODIUM BISULFITE	7631-90-5	5	100	100	100	0.5
SULFIDE	18496-25-8	5	100	100	100	0.5
SULFUR MONOCHLORIDE	10025-67-9	5	100	100	100	0.5
SULFURIC ACID	7664-93-9	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

TABLE 6—THRESHOLD OF REGULATION COMPOUNDS—Continued

REGULATED SUBSTANCE	CASRN	ALL-AQUIFER GROUND-WATER MSC (µg/L)	Residential Soil MSC (mg/kg) 0-15 feet	Non-Residential Soil MSCs		Soil to Groundwater ¹ (mg/kg)
				Surface Soil (mg/kg) 0-2 feet	Surface Soil (mg/kg) 2-15 feet	
TELLURIUM	13494-80-9	5	100	100	100	0.5
TELLURIUM HEXAFLUORIDE	7783-80-4	5	100	100	100	0.5
TEPP (TETRAETHYL PYROPHOSPHATE)	107-49-3	5	100	100	100	0.5
TETRANITROMETHANE	509-14-8	5	100	100	100	0.5
THIONAZIN	297-97-2	5	100	100	100	0.5
TRIETHYLPHOSPHORO-THIOATE, O,O,O-	126-68-1	5	100	100	100	0.5

¹The value in the table is 100 times the groundwater MSC. The option to use the SPLP is also available to calculate the soil to groundwater numeric value (See § 250.310)

APPENDIX A

Table 7 DEFAULT VALUES FOR CALCULATING MEDIUM-SPECIFIC CONCENTRATIONS FOR LEAD			
<i>Input Values Used in UBK Model for Lead</i> <i>(for residential exposure scenario)</i>			
Geometric Standard Deviation (GSD)	1.42 (default)	Drinking water intake	Model default
Outdoor air lead concentration	0.2 µg/m ³ (default)	Soil lead level	495 µg/g
Indoor air lead concentration (% of outdoor)	30	Indoor dust lead level	495 µg/g
Time spent outdoors	Model default	Soil/dust ingestion weighting factor (%)	45
Ventilation rate	Model default	Paint lead intake	Model default
Lung absorption	Model default	Maternal contribution method	Infant model
Dietary lead intake	Model default	Mother's blood lead at birth	7.5 µg/dL blood (model default)
GI method/bioavailability	Non-linear	Target blood lead level	10 µg/dL blood
Lead concentration in drinking water	4.00 µg/L (default)		
<i>Input Values Used in SEGH Equation</i> <i>(for nonresidential exposure scenario)</i>			
Concentration of lead in soil (S)		987 µg/g	
Target blood lead level in adults (T)		20 µg/dL blood	

Table 7 DEFAULT VALUES FOR CALCULATING MEDIUM-SPECIFIC CONCENTRATIONS FOR LEAD—Continued	
<i>Input Values Used in SEGH Equation (for nonresidential exposure scenario)</i>	
Geometric standard deviation of blood lead distribution (G)	1.4
Baseline blood lead level in target population (B)	4 µg/dL blood
Number of standard deviations corresponding to degree of protection required for the target population (n)	1.645 (for 95% of population)
Slope of blood lead to soil lead relationship (δ)	7.5 µg/dL blood per µg/g soil

REFERENCE

WIXSON, B.G. (1991). The Society for Environmental Geochemistry and Health (SEGH) Task Force Approach to the Assessment of Lead in Soil. *Trace Substances in Environmental Health*. 11-20.

TABLE 8
CONSTITUENTS OF POTENTIAL ECOLOGICAL CONCERN

<i>METALS</i>	<i>ORGANICS</i>
Arsenic III	Dichlorobenzene,1,3-
Arsenic V	Dichlorobenzene,1,4-
Barium	Dieldrin
Beryllium	Diethyl phthalate
Cadmium	Di-n-butyl phthalate
Chromium III	Endosulfan (mixed isomers)
Chromium VI	Endosulfan, alpha
Cobalt	Endosulfan, beta
Copper	Endrin
Iron	Ethylbenzene
Lead	Fluoranthene
Manganese	Fluorene
Mercury, inorganic	Heptachlor
Mercury, methyl	Hexachloroethane
Molybdenum	Hexachlorocyclohexane (Lindane)
Nickel	Kepone *
Selenium	Malathion
Vanadium	Methoxychlor
Zinc	Mirex *
Cyanide	Naphthalene
	Pentachlorobenzene
<i>ORGANICS</i>	Pentachlorophenol
Acenaphthene	Polynuclear aromatic hydrocarbons
Aldrin *	Polychlorinated biphenyls (PCB)
Benzene	Phenanthrene
Benzo(a)pyrene	Pyrene
Biphenyl	Tetrachloroethane,1,1,2,2-
Bis(2-ethylhexyl)phthalate	Tetrachloroethylene
Bromophenyl phenyl ether,4-	Tetrachloromethane
Butylbenzyl phthalate	Toluene
Chlordane *	Toxaphene
Chlorobenzene	Tribromomethane
DDT (and metabolites)	Trichlorobenzene,1,2,4-
Diazinon	Trichloroethane,1,1,1-
Dibenzofuran	Trichloroethylene
Dichlorobenzene,1,1-	Xylenes
Dichlorobenzene,1,2-	

Source

The provisions of this Appendix A amended November 23, 2001, effective November 24, 2001, 31 Pa.B. 6395; amended January 7, 2011, effective January 8, 2011, 41 Pa.B. 230; corrected February 11, 2011, effective January 8, 2011, 41 Pa.B. 840; corrected March 19, 2011, effective March 5, 2011, 41 Pa.B. 1458; corrected May 16, 2014, effective March 5, 2011, 44 Pa.B. 2975; corrected May 30, 2014, effective February 2, 2002, 44 Pa.B. 3235. Immediately preceding text appears at serial pages (355324) to (355326), (356289) to (356290), (355329) to (355330), (356291) to (356296), (355337) to (355342), (356297) to (356300), (355589) to (355590), (356301) to (356302), (355351) to (355352), (356303) to (356304), (355591) to (355594), (356305) to (356306), (355595) to (355600), (356307) to (356314), (355375) to (355382), (356315) to (356326), (355601) to (355606), (356327) to (356328), (355607) to (355608), (356329) to (356362), (355439) to (355444) and (356363) to (356364).

[Next page is 252-1.]

250-196