

This chapter includes references to certain matter or material. The text of the incorporated materials is not included in the rules in this chapter. The materials are hereby made part of these rules in this chapter. For materials subject to change, only the specific version specified in this rule is incorporated. Any amendment or revision to a referenced document is not incorporated unless and until this rule is amended to specify the new dates.

(A) Code of Federal Regulations (CFR) reference, 40 CFR 122.26. This regulation can generally be found in most Ohio public libraries, the state library of Ohio, and electronically at <http://www.ecfr.gov>. This regulation may be purchased from "U.S. Government Printing, Superintendent of Documents, Mail Stop SSOP, Washington DC" 20402-9328. As published in the July 1, 2018 CFR.

(B) Federal statute references. These laws may generally be found in most Ohio public libraries, or electronically at <http://www.gpo.gov/fdsys>. Information and copies may be obtained by writing to "U.S. Government Bookstore, 732 N. Capitol Street NW, Washington, DC" 20401. The federal laws listed in this rule are those versions of the laws amended through July 1, 2018.

(1) Atomic Energy Act of 1954, 42 U.S.C. 2011.

(2) Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601.

(3) Occupational Health and Safety Act, 84 stat. 1590, 29 U.S.C. 651.

(4) Resource Conservation and Recovery Act of 1976 (RCRA) or Solid Waste Disposal Act, 42 U.S.C. 6901.

(5) Safe Drinking Water Act, 42 U.S.C. 300f.

(6) Water Pollution Control Act, 33 U.S.C. 1251.

(C) Government literature. The availability of these documents is provided with each paragraph. The documents listed in this paragraph are those versions amended through July 1, 2018 unless otherwise specified.

(1) Ohio governmental literature from sources other than Ohio EPA.

(a) Ohio department of commerce, division of state fire marshal, bureau of underground storage tanks documents.

- (i) Bureau of underground storage tank regulations. <https://www.com.ohio.gov/fire/BUSTRAdministrativeRules.aspx>.
- (ii) Leaking underground storage tank list. <https://com.ohio.gov/fire/BUSTRResources.aspx>.
- (iii) Registered underground storage tank list. August 2018. <https://apps.com.ohio.gov/fire/OTTER/>.
- (iv) "Technical Guidance Manual for the 2017 Closure, Corrective Action, and Petroleum Contaminated Soil Rules." 2017. https://www.com.ohio.gov/documents/fire_2017_Technical_Guidance_Manual.p

(b) Ohio department of natural resources documents.

- (i) Ohio department of natural resources, including ground water resources maps. <http://www2.ohiodnr.gov/>.
- (ii) Ohio department of natural resources "search file well logs." <http://water.ohiodnr.gov/search-file-well-logs>.

(2) Ohio EPA technical documents. These documents are generally available in most Ohio public libraries and the state library of Ohio. Information and copies may be obtained by writing to "Voluntary Action Program, Lazarus Government Center, P.O. Box 1049, Columbus, OH" 43216-1049.

(a) Ohio EPA. "Biological Criteria for the Protection of Aquatic Life: Volume II: User's Manual for Biological Field Assessment of Ohio Surface Waters." Electronic pdfs are as follows:

- (i) October 1987, updated January 1988 version at <http://www.epa.ohio.gov/Portals/35/documents/Vol2.pdf>.
- (ii) November 2006 version at <http://epa.ohio.gov/Portals/35/documents/BioCrit88Vol2Updates2006.pdf>.

(b) Ohio EPA. "Biological Criteria for the Protection of Aquatic Life: Volume III: Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities.

Division of Surface Water." October 1989, as amended through June 2015.

https://www.epa.ohio.gov/portals/35/documents/BioCrit15_Vol3.pdf.

- (c) Ohio EPA. "Biocriteria manual" means collectively, unless specified otherwise, "Biological Criteria for the Protection of Aquatic Life: Volume II" and "Biological Criteria for the Protection of Aquatic Life: Volume III."
- (d) Ohio EPA. Division of environmental response and revitalization database. <http://epa.ohio.gov/derr/Database-Request>.
- (e) Ohio EPA. "Ecological Risk Assessment Guidance Document." Division of Environmental Response and Revitalization. February 2003, as amended through August 2018. <https://epa.ohio.gov/portals/30/rules/RR-031.pdf>
- (f) Ohio EPA. "Evaluation of Background Metal Soil Concentrations" 2013 through July 2019 updates. Electronic pdf: [https://epa.ohio.gov/portals/30/vap/docs/Evaluation%20of%20Background%20Metal%](https://epa.ohio.gov/portals/30/vap/docs/Evaluation%20of%20Background%20Metal%20Concentrations.pdf)
- (g) Ohio EPA. "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices. Division of Surface Water." 2006, amended in 2012. Electronic pdf: http://www.epa.ohio.gov/portals/35/documents/Field_Manual_4_13_12_revision.pdf.
- (h) Ohio EPA. "Sample Collection and Evaluation of Vapor Intrusion to Indoor Air for the Remedial Response and Voluntary Action Programs." May 2010. Electronic pdf: <https://epa.ohio.gov/portals/30/rules/Vapor%20Intrusion%20to%20Indoor%20Air.pdf>.
- (i) Ohio EPA. "Sediment Sampling Guide and Methodologies, 2nd edition. Division of Surface Water." November 2001. <https://www.epa.ohio.gov/portals/35/guidance/sedman2001.pdf>.
- (j) Ohio EPA Spill Database. June 2018. [http://ohioepa.custhelp.com/app/answers/detail/a_id/281/~/getting-a-copy-of-ohio-epas](http://ohioepa.custhelp.com/app/answers/detail/a_id/281/~/getting-a-copy-of-ohio-epas-spill-database)
- (k) Ohio EPA. State emergency response commission (SERC). <https://epa.ohio.gov/dapc/serc>.

- (l) Ohio EPA. "Support Document for the Development of Generic Numerical Standards and Risk Assessment Procedures. Division of Environmental Response and Revitalization." July 2019. Electronic pdf: <https://epa.ohio.gov/Portals/30/rules/2014/Risk%20Support%20Document.pdf>.
 - (m) Ohio EPA. "Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring." February 1995 and as amended through February 2018. http://www.epa.ohio.gov/ddagw/gw_support.
 - (n) Ohio EPA. Voluntary action program web site. <https://www.epa.ohio.gov/derr/volunt/volunt>.
 - (o) Ohio EPA. "Voluntary Action Program Memorandum of Agreement Between the United States Environmental Protection Agency and the Ohio Environmental Protection Agency." http://epa.ohio.gov/portals/30/vap/docs/OH_MOA.pdf.
- (3) U.S. environmental protection agency (U.S. EPA) technical documents. These documents are generally available in Ohio public libraries and the state library of Ohio. Documents listed without an address may be ordered by calling 800/490-9198. These documents may also be obtained by writing to "U.S. EPA/NSCEP, P.O. Box 42419, Cincinnati, OH" 45242-0419. Documents listed with an address may also be obtained at that address. Many of these documents may be obtained via online ordering at www.epa.gov/nscep. Some documents may be available for purchase, not free of charge.
- (a) U.S. EPA. "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites." December 2002. <https://www.epa.gov/sites/production/files/2016-03/documents/upper-conf-limits.pdf>.
 - (b) U.S. EPA. "Comprehensive Environmental Response, Compensation, and Liability Information System" list. http://www.epa.gov/enviro/html/cerclis/cerclis_query.html.
 - (c) U.S. EPA. "Exposure Factors Handbook. Office of Research and Development, National Center for Environmental Assessment." Washington, DC. EPA/600/P-95/002F. 2011 edition. <http://cfpub.epa.gov/ncea/efp/recordisplay.cfm?deid=236252>
 - (d) U.S. EPA. "Exposure Factors Handbook. 2017 Chapter 5 Update. <http://cfpub.epa.gov/ncea/efp/recordisplay.cfm?deid=337521>.

- (e) U.S. EPA. "Federal Emergency Release Notification System List."
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=910165XB.txt>.
- (f) U.S. EPA. Federal Resource Conservation and Recovery Act corrective action facilities list.
<https://www.epa.gov/hw/lists-facilities-resource-conservation-and-recovery-act-rcra-20>
- (g) U.S. EPA. Federal Resource and Conservation Recovery Act generators list. August 2018.
<https://www3.epa.gov/enviro/facts/rcrainfo/search.html>.
- (h) U.S. EPA. Federal Resource Conservation and Recovery Act information database. August 2018.
<https://www3.epa.gov/enviro/facts/rcrainfo/search.html>.
- (i) U.S. EPA. Federal Resource Conservation and Recovery Act treatment, storage, and disposal facility list.
<https://yosemite.epa.gov/osw/rcra.nsf/how+to+use?OpenForm>.
- (j) U.S. EPA. "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites." September 2002. Electronic pdf:
<https://www.epa.gov/sites/production/files/2015-11/documents/background.pdf>.
- (k) U.S. EPA. Gerlach, R. W., and J. M. Nocerino. "Guidance for Obtaining Representative Analytical Laboratory Subsamples from Particulate Laboratory Samples." U.S. EPA, Washington, DC, EPA/600/R-03/027. November 2003.
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000GTWM.txt>.
- (l) U.S. EPA. "Guidance on Systematic Planning Using the Data Quality Objectives Process" Date: February 2006. Electronic pdf:
<https://www.epa.gov/sites/production/files/2015-06/documents/g4-final.pdf>.
- (m) U.S. EPA. "Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Remedial Response. Office of Solid Waste and Emergency Response Directive." 9285.6 -03. 1991. <http://Rais.ornl.gov/documents/OSWERdirective9285.6-03.pdf>.
- (n) U.S. EPA. "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates,

March 2000, Second Edition. Office of Science and Technology, Office of Water, Washington, DC." EPA 600R-99/064. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30003SBA.txt>.

This is also referred to as the "U.S. EPA sediment toxicity test."

- (o) U.S. EPA. National Emission Standards for Hazardous Air Pollutants, or "NESHAPs." January 2018. <https://www.epa.gov/compliance/national-emission-standards-hazardous-air-pollutants>.
- (p) U.S. EPA. Mason, B. "Preparation of Soil Sampling Protocols: Sampling Techniques and Strategies." U.S. EPA, Washington, DC. July 1992. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=20008O5T.txt>.
- (q) U.S. EPA. "National Priorities List." June 2018. <http://www.epa.gov/superfund/sites/index.htm>.
- (r) U.S. EPA. "Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation manual (Part A)." December 1989. Electronic pdf: https://www.epa.gov/sites/production/files/2015-09/documents/rag_s_a.pdf. Web site: <https://www.epa.gov/risk/risk-assessment-guidance-superfund-rags-part>.
- (s) U.S. EPA. "Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation manual (Part E, Supplemental Guidance for Dermal Risk Assessment)." 1989, updates 1994. Electronic pdf: https://www.epa.gov/sites/production/files/2015-09/documents/rag_s_a.pdf.
- (t) U.S. EPA. "Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)." 2009. Electronic pdf: https://www.epa.gov/sites/production/files/2015-09/documents/rag_s_a.pdf.
- (u) U.S. EPA. "Risk Assessment Guidance for Superfund (RAGS), Volume III: Process For Conducting Probabilistic Risk Assessment (Part A)." EPA/540/R-02/002. 2001. <https://www.epa.gov/risk/risk-assessment-guidance-superfund-rags-part>.
- (v) U.S. EPA. "Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities. Unified Guidance. EPA/R-09-007. Office of Resource Conservation and Recovery Program Implementation and Information

Division. U.S. Environmental Protection Agency." 2009.
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P10055GQ.txt>.

- (w) U.S. EPA. "Statistical Methods for Evaluating the Attainment of Cleanup Standards. Volume 3: Reference-Based Standards for Soil and Solid Media. Office of Policy, Planning and Evaluation." 1994.
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=200082GP.txt>.
- (x) U.S. EPA. "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response." Washington, DC. OSWER 9355.4 -24. December 2002.
<https://semspub.epa.gov/work/HQ/175878.pdf>.
- (y) U.S. EPA. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA publication SW 846 [third edition (November 1986), as amended by "Update I" in 1993, "Update II" in 1995, "Update IIA" in 1994, "Updated IIB" in 1995, "Update III" in 1997, "Update IIIA" in 1999, "Updated IIIB" in 2005, "Update IV" in 2008, "Updated V" in 2015, and "Updated V" in 2018], is available from the "National Technical Information Service, U.S. Department of Commerce, 5301 Shawnee Road, Alexandria, VA," 22312 or at
<http://www.epa.gov/waste/hazard/testmethods/sw846/index.htm>.

The following updates and methods as published in the test methods compendium known as "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA publication SW 846, and are available for purchase from the "National Technical Information Service, 5285 Port Royal Road, Springfield, VA" 22161. A suffix of "A" in the method number indicates revision one (the method has been revised once); a suffix of "B" in the method number indicates revision two (the method has been revised twice); and so on:

- (i) Method 5035. December 1996. Electronic pdf:
<https://www.epa.gov/sites/production/files/2015-12/documents/5035.pdf>.
 Web site: <https://www.epa.gov/hw-sw846/sw-846-test-method-5035-closed-system-purge-and-trap-and-extraction-volatile-organics-soil>.
- (ii) Method 5035A. July 2002. Electronic pdf:
<https://www.epa.gov/sites/production/files/2015-07/documents/epa-5035a.pdf>.
- (z) U.S. EPA. Underground injection control program.

<https://www.epa.gov/uic>.

(D) Private publications. These publications are generally available at Ohio public libraries and the state library of Ohio. The documents listed in this paragraph are those versions amended through July 1, 2018 unless otherwise specified.

- (1) "American Industrial Hygiene Association, Asbestos Analysts Registry, 3141 Fairview Park Drive, Suite 777, Falls Church, VA" 22042. September 2018. <http://www.aiha.org>.
- (2) "American Land Title Association/American Congress on Surveying and Mapping" (ALTA/ACSM). August 2018. <https://www.alta.org/>.
- (3) "ASTM International" ASTM international documents are generally available at Ohio public libraries and the state library of Ohio. Information and copies may be obtained by writing to "ASTM International, 100 Bar Harbor Drive, P.O. Box C700, West Conshohocken, PA" 19428-2959. These documents are available for purchase at <http://www.astm.org>. The following method may be available for purchase at the ASTM web site. Some of the methods may be no longer available on the web site and may be found in libraries: "ASTM E1527-13. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process ASTM International / 2013."
- (4) MacDonald, D.D., Ingersoll, C.G. and Berger, T.A. "Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. Archives of Environmental Contamination and Toxicology 39, 20-3." 2000. Electronic pdf: <https://semsub.epa.gov/work/07/40168746.pdf>.
- (5) Interstate Technology Regulatory Council, "Incremental Sampling Methodology." February 2012. Electronic pdf: https://www.itrcweb.org/ISM-1/pdfs/ISM-1_021512_Final.pdf. Web site: <https://www.itrcweb.org/ISM-1/>.
- (6) "National Institute of Standards Technology. National Voluntary Laboratory Accreditation Program for Asbestos Fiber Analysis, 100 Bureau Drive, M/S 2140, Gaithersburg, MD" 20899-2140. <https://www.nist.gov/nvlap>.
- (7) "National Library of Medicine's" document. "Integrated Risk Information System (IRIS). Toxicology data file on the National Library of Medicine's Toxicology Data Network." <https://www.epa.gov/iris>.

- (8) "The NELAC Institute National Environmental Laboratory Accreditation Program, P.O. Box 2439, Weatherford, TX" 76086. September 2018. <http://www.nelac-institute.org>.

Replaces: 3745-300-01 (B)
Effective: 10/17/2019
Five Year Review (FYR) Dates: 10/17/2024

CERTIFIED ELECTRONICALLY

Certification

10/07/2019

Date

Promulgated Under: 119.03
Statutory Authority: 3746.04
Rule Amplifies: 3746.04
Prior Effective Dates: 12/29/1995, 12/16/1996, 03/04/2002, 04/19/2006,
03/01/2009, 04/23/2012, 08/01/2014