

**EPA's Review of Revisions to
Ohio's Water Quality Rules
Rules 3745-1-03, 38 and 39 Water Quality Standards
Submitted to USEPA for Review
WQSTS #OH2007-191**

Date: FEB 20 2009

Summary of Changes:

EPA received Ohio's water quality standards rules initially on July 7, 2007. These rules became effective on October 5, 2007. EPA then received the letter of certification from the Ohio Office of the Attorney General on January 6, 2009. These rule revisions amend Ohio EPA rules at OAC 3745-1-03, OAC 3745-1-38, OAC 3745-1-39, OAC 3745-2-04, and OAC 3745-2-12.

Section 303(c)(2)(A) of the Clean Water Act states, "Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator. Such revised or new standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses." Additionally, 40 CFR 131.13 provides that "States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval.

EPA reviewed Ohio's revised rules to OAC 3745-1-03, OAC 3745-1-38 and OAC 3745-1-39 to determine whether or not the revisions made by Ohio to the rules containing Ohio's water quality standards constituted new or revised uses, new or revised criteria, new or revised antidegradation policies or implementation procedures, or new or revised policies generally affecting implementation of Ohio's water quality standards. As described in detail below, the changes to Ohio's rules are not revisions to uses, criteria, antidegradation, or policies affecting implementation of Ohio's water quality standards. Consequently, for the reasons described below, EPA determined that the changes to OAC 3745-1-03, OAC 3745-1-38, and OAC 3745-1-39 do not require EPA approval under section 303(c)(2)(A) of the Clean Water Act. EPA has updated its docket of Ohio's water quality standards rules to reflect these revisions and the revised rules are effective pursuant to Ohio law.

Ohio also submitted revisions to Ohio's water rules at OAC 3745-2-04, and OAC 3745-2-12. EPA reviewed the revised rules at OAC 3745-2-04, and OAC 3745-2-12 and determined that the revisions are not changes to designated uses, water quality criteria, antidegradation, or policies affecting implementation of Ohio's water quality standards. Since these revisions may be covered by other EPA authorities, the revisions were forwarded to the NPDES and Wetlands and Watersheds Branches for their consideration and possible action.

<i>Cite</i>	<i>Change</i>	<i>CWA 303(c) Determination</i>
3745-1-03	Rescind 3745-1-03 and replace with new language as broken out below.	Not uses, criteria, antidegradation, or implementation policies. No CWA 303(c) action required.
New 3745-1-03 (A)	<p>Editorial. Insert "(A) Analytical methods</p> <p>(1) All methods of analysis used in applying any of the chemical-specific and bacteriological criteria in this chapter shall be in accordance with those prescribed in 40 CFR. 136, "Manual of Ohio EPA Laboratory Standard Operating Procedures, Volumes I, II and III," and "Standard Methods for the Examination of Water and Wastewater," as cited in paragraph (B) of this rule.</p> <p>(2) All methods of sample collection and preservation used in applying any of the chemical-specific and bacteriological criteria in this chapter shall be in accordance with "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices" as cited in paragraph (B) of this rule.</p> <p>(3) Methods for conducting whole-effluent toxicity tests shall be in accordance with those prescribed in 40 C.F.R. 136 and "Manual of Ohio EPA Laboratory Standard Operating Procedures, Volume IV," as cited in paragraph (B) of this rule.</p> <p>(4) Mixing zones for thermal discharges will be determined in accordance with "Guidelines for the Submittal of Demonstrations Pursuant to Sections 316(a) and 316(b) of the Clean Water Act and Chapter 3745-1 of the Administrative Code," as cited in paragraph (B) of this rule.</p> <p>(5) Methods, data collection and data analysis requirements for applying the biological criteria in rule 3745-1-07 of the Administrative Code shall be in accordance with "Biological Criteria for the Protection of Aquatic Life," and "Manual of Ohio EPA Laboratory Standard Operating Procedures, Volumes I, II, III and IV," as cited in paragraph (B) of this rule.</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update references and add clarifying language.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update references and add clarifying language.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. No changes were made to this provision.</p> <p>This is an unchanged, existing, previously approved policy generally affecting implementation of Ohio's water quality standards. Because there were no changes made to this provision, no action is required.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. No changes were made to this provision.</p>

<i>Cite</i>	<i>Change</i>	<i>CWA 303(c) Determination</i>
3745-1-03 (B)	<p>Editorial. Insert, “(B) Availability of documents. The following documents are cited in this chapter</p> <p>(1) Code of Federal Regulations (CFR) references. The Code of Federal Regulations can generally be found in public libraries, and can be viewed electronically online at http://www.gpoaccess.gov/cfr/index.html and purchased by writing to: "Superintendent of Documents. Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." The regulations listed in this paragraph are those effective June 1, 2007.</p> <p>(a) 40 C.F.R. 124.8, "Procedures for Decision making, Subpart A General Program Requirements - Fact Sheet."(b) 40 C.F.R. 124.56, "Procedures for Decision making, Subpart D - Specific Procedures Applicable to NPDES Permits - Fact Sheets."(c) 40 C.F.R. 131, "Water Quality Standards."(d) 40 C.F.R. 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants."(e) 40 C.F.R. 230.10, "Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material - Restrictions on discharge."(f) 40 C.F.R. 400 to 471, "Subchapter N - Effluent Guidelines and Standards."(g) 50 C.F.R. 17, "Endangered and Threatened Wildlife and Plants."</p> <p>(2) Federal statute references. These laws can generally be found in public libraries, and can be viewed electronically online at http://www.gpoaccess.gov/uscode/index.html and purchased by writing to: "Superintendent of Documents. Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." The laws listed in this paragraph are those as amended through June 1, 2007.</p> <p>(a) "Federal Water Pollution Control Act (commonly referred to as the Clean Water Act)," 33 U.S.C. 1251 et seq.(b) "Endangered Species Act," 16 U.S.C. 1531 et seq. (c) "Federal Insecticide, Fungicide and Rodenticide Act," 7 U.S.C. 136 et seq (d) "Safe Drinking Water Act," 42 U.S.C. 300f et seq. (3) Other references. The availability of these documents is provided with each paragraph.</p> <p>a) "Biological Criteria for the Protection of Aquatic Life." These documents are available on the internet at http://www.epa.state.oh.us/dsw/bioassess/BioCriteriaProtAqLife.html.</p> <p><u>para_first</u>(i) "Biological Criteria for the Protection of Aquatic Life: Volume I: The Role of Biological Data in Water Quality Assessment, Ohio EPA, Ecological Assessment Section, Division of Water Quality Planning & Assessment, July 24, 1987, updated February 15, 1988."</p> <p>(ii) "Biological Criteria for the Protection of Aquatic Life: Volume II: Users Manual for Biological Field Assessment of Ohio Surface Waters, Ohio EPA, Ecological Assessment Section, Division of Water Quality Planning & Assessment, October 30, 1987, updated January 1, 1988, amended September 30, 1989, updated November 8, 2006."</p> <p>(iii) "Biological Criteria for the Protection of Aquatic Life: Volume III: Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities, Ohio EPA, Ecological Assessment Section, Division of Water Quality Planning & Assessment, September 30, 1989, updated November 8, 2006."</p> <p>(iv) "The Qualitative Habitat Evaluation Index [QHEI]: Rationale, Methods, and Application, Ohio EPA, Ecological Assessment Section, Division of Water Quality Planning & Assessment, November 6, 1989."</p> <p>(v) Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI), Ohio EPA Technical Bulletin EAS/2006-06-1, Ohio EPA, Division of Surface Water, June</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. List is expanded to incorporate by reference and with descriptions of how to obtain documents.</p>

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	<p>2006." (b) "Corps of Engineers Wetlands Delineation Manual, U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, January 1987." This document is available on the internet at http://www.lrh.usace.army.mil/permits/wetlands/.</p> <p>(c) "Guidance for Water Quality-based Decisions and the TMDL Process, U.S. EPA Office of Water, EPA 440/4-91-001, April 1991." This document is available on the internet at http://www.epa.gov/waterscience/pc/watqual.html.</p> <p>(d) "Guidelines for Carcinogen Risk Assessment, Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC, EPA/630/P-03/001F, March 2005." This document is available on the internet at http://www.epa.gov/iris/backgr-d.htm.</p> <p>(e) "Guidelines for the Submittal of Demonstrations Pursuant to Sections 316(a) and 316(b) of the Clean Water Act and Chapter 3745-1 of the Administrative Code, Ohio Environmental Protection Agency, Division of Industrial Wastewater, September 30, 1978." This document is available on the internet at http://www.epa.state.oh.us/dsw/guidance/guidance.html.</p> <p>(f) "Manual of Ohio EPA Laboratory Standard Operating Procedures, Volumes I, II, III and IV, 2002." These documents are available from "Ohio EPA, Division of Environmental Services, 8995 East Main Street, Building #22, Reynoldsburg, Ohio 43068."</p> <p>(g) "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices 2006, Ohio EPA, Division of Surface Water, Division of Environmental Services." This document is available on the internet at http://www.epa.state.oh.us/dsw/document_index/docindx.html.</p> <p>(h) "Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000), Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency, Washington, DC, EPA-822-B-00-004, October 2000." This document is available on the internet at http://www.epa.gov/waterscience/criteria/humanhealth/method/index.htm.</p> <p>(i) "Recommendations for and Documentation of Biological Values for Use in Risk Assessment (U.S. EPA, 1988), EPA/600/6-87/008." This document is available on the internet at http://www.epa.gov/iris/backgr-d.htm.</p> <p>(j) "Registry of Toxic Effects of Chemical Substances (National Institute for Occupational Safety and Health, Cincinnati, Ohio, July 1997)." This document is available on the internet at http://www.cdc.gov/niosh/97-119.html.</p> <p>(k) "Standard Methods for the Examination of Water and Wastewater, 21st Edition, American Public Health Association, American Water Works Association and Water Environment Federation, 2005." This document is available on the internet at http://www.standardmethods.org/.</p> <p>(l) "Standard Practice for Conducting Bioconcentration Tests with Fishes and Saltwater Bivalve Molluscs. Standard E 1022. Molluscs. Designation E 1022 - 84. Pages 606-622. American Society for Testing and Materials, Philadelphia, PA. (1990)." This document is available on the internet at www.astm.org.</p> <p>(m) "Water Quality Standards Handbook, U.S. EPA Office of Water, EPA-823-B-94-005, August 1994." This document is available on the internet at http://www.epa.gov/waterscience/standards/policy.htm.</p> <p>(n) "The Wildlife Exposure Factors Handbook (U.S. EPA, 1993), EPA/600/R-93/187." This document is available on the internet at http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2799</p>	

<i>Cite</i>	<i>Change</i>	<i>CWA 303(c) Determination</i>
3745-1-38 (B)(1)(a)	<p>Editorial. Remove “the 1986 “U.S. EPA Guidelines for Carcinogenic Risk Assessment”, or future modifications thereto,” and insert “Guidelines for Carcinogenic Risk Assessment , Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC, EPA/630/P-03/001F, March 2005.”</p> <p>Editorial. Remove, “either human carcinogens, probable human carcinogens, or possible human carcinogens” and insert “carcinogenic to humans, likely to be carcinogenic to humans, or having suggestive evidence of carcinogenic potential.”</p> <p>Remove, “one of two” and replace with, “any of the following”. Remove “there are few pertinent data; or the available studies, while showing evidence of association, do not exclude chance, bias, or confounding and therefore a causal interpretation is not credible. The animal evidence shall be considered inadequate, and therefore the chemical cannot be classified as a probable or possible human carcinogen, when, because of major qualitative or quantitative limitations, the evidence cannot be interpreted as showing either the presence or absence of a carcinogenic effect.” Replace with, “ (i) There is little or no pertinent information; (ii) Some studies provide evidence of carcinogenicity but other studies of equal quality with animals of the same sex and strain are negative; (iii) There are negative results that are not sufficiently robust for the descriptor "not likely to be carcinogenic to humans;" (iv) There is animal evidence that demonstrates lack of carcinogenic effect in both sexes in well-designed and well-conducted studies in at least two appropriate animal species (in the absence of other animal or human data suggesting a potential for cancer effects); (v) There is convincing and extensive experimental evidence showing that the only carcinogenic effects observed in animals are not relevant to humans; (vi) There is convincing evidence that carcinogenic effects are not likely by a particular exposure route; or (vii) There is convincing evidence that carcinogenic effects are not likely below a defined dose range. ”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update references.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the language to reflect EPA’s Guidelines for Carcinogen Risk Assessment.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update and clarify language.</p>
3745-1-38 (B)(1)(b-c)	<p>Remove, “(b) Chemicals are described as "human carcinogens" when there is sufficient evidence from epidemiological studies to support a causal association between exposure to the chemicals and cancer. Chemicals described as "probable human carcinogens" include chemicals for which the weight of evidence of human carcinogenicity based on epidemiological studies is limited. "Limited human evidence" is that which indicates that a causal interpretation is credible, but that alternative explanations, such as chance, bias, or confounding, cannot adequately be excluded. "Probable human carcinogens" are also agents for which there is sufficient evidence from animal studies and for which there is inadequate evidence or no data from epidemiologic studies. "Sufficient animal evidence" is data which indicates that there is an increased incidence of malignant tumors or combined malignant and benign</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update and clarify language.</p>

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	<p>tumors: in multiple species or strains; in multiple experiments (e.g., with different routes of administration or using different dose levels); or to an unusual degree in a single experiment with regard to high incidence, unusual site or type of tumor, or early age at onset. Additional evidence may be provided by data on dose-response effects, as well as information from short-term tests (such as mutagenicity/genotoxicity tests which help determine whether the chemical interacts directly with DNA) or on chemical structure, metabolism or mode of action.”</p> <p>Replace with, “b) Chemicals are described as "carcinogenic to humans" when either: there is convincing epidemiological evidence of a causal association between human exposure and cancer; or when all of the following conditions are met: (i) There is strong evidence of an association between human exposure and either cancer or the key precursor events of a chemical's mode of action but not enough for a causal association; (ii) There is extensive evidence of carcinogenicity in animals; (iii) The mode or modes of carcinogenic action and associated precursor events have been identified in animals, and (iv) There is strong evidence that the key precursor events that precede the cancer response in animals are anticipated to occur in humans and progress to tumors, based on biological information.</p> <p>Insert, (c) Chemicals described as "likely to be carcinogenic to humans" include chemicals for which the weight of evidence is adequate to demonstrate carcinogenic potential to humans but does not reach the weight of evidence for the descriptor "carcinogenic to humans." Chemicals with weight of evidence demonstrating carcinogenic potential to humans can include, but are not limited to: (i) Chemicals for which a plausible association is demonstrated between human exposure and cancer, in most cases with some supporting biological, experimental evidence, though not necessarily carcinogenicity data from animal experiments; ii) Chemicals that tested positive for carcinogenicity in animal experiments in more than one species, sex, strain, site, or exposure route, with or without evidence of carcinogenicity in humans; iii) Chemicals for which positive tumor study results are demonstrated that raise additional biological concerns beyond that of a statistically significant result, for example, a high degree of malignancy or an early age of onset;(iv) Chemicals for which a rare animal tumor response in a single experiment is demonstrated that is assumed to be relevant to humans; or (v) Chemicals for which positive tumor study results are demonstrated that are strengthened by other lines of evidence, for example, either plausible association between human exposure and cancer or evidence that the chemical or an important metabolite causes events generally known to be associated with tumor formation likely to be related to tumor response in this case. ”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the language to reflect EPA's Guidelines for Carcinogen Risk Assessment.</p>
3745-1-38 (B)(1)(c-d)	<p>Remove, “(c) Possible human carcinogens" are chemicals with limited evidence of carcinogenicity in animals in the absence of human data. "Limited animal evidence" is defined as data which suggests a carcinogenic effect but are limited because: the studies involve a single species, strain, or experiment and do not meet criteria for sufficient evidence (see paragraph (B)(1)(b) of this rule); or the experiments are restricted by inadequate dosage levels, inadequate duration of exposure to the agent, inadequate period of follow-up, poor survival, too few animals, or inadequate reporting; or the studies indicate an increase in the incidence of benign tumors only. More specifically, this group can</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update and clarify language.</p>

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	<p>include a wide variety of evidence, e.g., a malignant tumor response in a single well-conducted experiment that does not meet conditions for sufficient evidence, tumor response of marginal statistical significance in studies having inadequate design or reporting, benign but not malignant tumors with an agent showing no response in a variety of short-term tests for mutagenicity, and response of marginal statistical significance in a tissue known to have a high or variable background rate.” Replace with, “(d) "Suggestive evidence of carcinogenic potential" is evidence used to describe chemicals where the weight of evidence is suggestive of carcinogenicity; a concern for potential carcinogenic effects in humans is raised, but the data are judged not sufficient for a stronger conclusion. Chemicals with weight of evidence suggestive of carcinogenicity can include, but are not limited to: (i) Chemicals with studies that show a small, and possibly not statistically significant, increase in tumor incidence observed in a single animal or human study that does not reach the weight of evidence for the descriptor "likely to be carcinogenic to humans;"(ii) Chemicals with studies that show a small increase in a tumor with a high background rate in that sex and strain, when there is some but insufficient evidence that the observed tumors may be due to intrinsic factors that cause background tumors and not to the chemical being assessed; (iii) Chemicals with evidence of a positive response in a study whose power, design, or conduct limits the ability to draw a confident conclusion, but where the carcinogenic potential is strengthened by other lines of evidence; or (iv) Chemicals with studies that show a statistically significant increase at one dose only, but no significant response at the other doses and no overall trend.”</p>	
3745-1-38 (e)	<p>Editorial. Remove, “human carcinogens and probable human carcinogens.” Replace with, “chemicals that are carcinogenic to humans and likely to be carcinogenic to humans”.</p> <p>Editorial. Remove, “possible human carcinogens”. Replace with, “chemicals with suggestive evidence of carcinogenic potential.”</p> <p>Editorial. Remove, “human and probably human carcinogens”, Replace with, “chemicals that are carcinogenic to humans or likely to be carcinogenic to humans.”</p> <p>Editorial. Remove, “a possible human carcinogen” and replace with, “a chemical with suggestive evidence of carcinogenic potential”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the language to reflect EPA's Guidelines for Carcinogen Risk Assessment.</p>
3745-1-38 (f)	<p>Editorial. Remove, “possible human carcinogenic effects” and replace with, “chemicals with effects suggestive of carcinogenic potential”.</p> <p>Editorial. Remove, “possible human carcinogens”, replace with “chemicals with suggestive evidence of carcinogenic potential”</p> <p>Editorial. Remove “possible human carcinogens” and replace with, “chemicals with suggestive evidence of carcinogenic potential”</p> <p>Editorial. Remove “possible human carcinogens” and replace with, “chemicals with suggestive evidence of carcinogenic potential”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the language to reflect EPA's Guidelines for Carcinogen Risk Assessment.</p>
3745-1-38 (C)(1)(d)	<p>Editorial. Remove, “the 1980 national guidelines (see 45 FR 79352, November 28, 1980) and insert, “Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000), Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency, Washington, DC. EPA-822-B-00-004, October 2000”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the reference.</p>

Cite	Change	CWA 303(c) Determination
3745-1-38 (C)(1)-(3)	<p>Editorial. Insert Graphics:</p> $RAD = \frac{0.00001}{q_1^*}$ $HCV = \frac{RAD \times BW}{WC + [(FC_{TL3} \times BAF_{TL3}^{RH}) + (FC_{TL4} \times BAF_{TL4}^{RH})]}$ $HNV = \frac{ADE \times BW \times RSC}{WC + [(FC_{TL3} \times BAF_{TL3}^{RH}) + (FC_{TL4} \times BAF_{TL4}^{RH})]}$	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The rule authoring software now allows for graphics that permit including the equations for deriving criteria in the rule. The equations themselves are not changed and the criteria based on the equations are not changed.</p>
3745-1-38 (C)(3)(b)	<p>Editorial. Remove, “by the 1980 U.S. EPA national guidelines (see 45 FR 79354, November 28, 1980);” replace with in "Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000), Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency, Washington, DC, EPA-822-B-00-004, October 2000”</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the reference.</p>
3745-1-39 (C)(5)(b)	<p>Editorial. Remove, “the latest edition” and replace with, “July 1997”.</p> <p>Editorial. Insert “EPA/6000/6-87/008 and EPA/600/R-93/187</p>	<p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the reference.</p> <p>Not uses, criteria, antidegradation or implementation policies. No CWA 303(c) action required. The changes update the reference.</p>