Ohio Environmental Protection Agency

December 2011

Proposed Rules – Surface Water Quality
Water Quality Standards (OAC Chapter 3745-1)

Note: Draft revisions to the water quality standards rules in OAC Chapter 3745-1 were available for interested party review from August 15, 2008 (the antidegradation rule was released on October 15, 2008) through June 6, 2011. This proposed rulemaking consists of a subset of the draft revisions released for review. At this time, the Agency is not moving forward with proposed rules for lake nutrient criteria, updated human health chemical criteria in the Ohio River Basin, updated special high quality waters listing, drainage and navigation beneficial use designations, and the stream mitigation protocol rule. See below for more information. A separate proposed rule package, also being released in December 2011, contains the proposed 401 water quality certification rules.

What are water quality standards?

Water quality standards are state regulations or rules that protect lakes, rivers, streams and other surface water bodies from pollution. The rules are in Chapter 3745-1 of the Ohio Administrative Code (OAC). These rules contain: beneficial use designations such as warmwater aquatic life habitat, public water supply and primary contact recreation; numeric levels and narrative statements (water quality criteria) protective of the use designations; and an antidegradation rule. The antidegradation rule establishes a procedure to determine that a discharge is necessary before authorizing it. It contains provisions that must be followed before authorizing any increased activity on a water body that may result in a lowering of water quality, including an increase in the discharge of a regulated pollutant, or activities that may significantly alter the physical habitat.

Water quality standards serve as: the water quality goals for water uses and cleanliness; the benchmarks to measure and report on meeting Clean Water Act goals; the water quality targets to meet when setting wastewater permit limits and total maximum daily loads.

Which water quality standards rules are under review at this time?

This rule package addresses existing rules 3745-1-01, 02, 03, 04, 05, 07 and 31-39, and new rules 40-43. These rules define beneficial use designations and establish water quality criteria protective of the use designations.

This package represents the largest set of revisions to the system of beneficial use designations since 1985. The rule package does not address mixing zones, drainage basin-specific use designation rules or water quality standards for wetlands.

Why are these rules under review?

Section 119.032 of the Ohio Revised Code (ORC) requires Ohio EPA to review its rules every five years to determine whether they should be changed. In addition, section 303(c) of the Clean Water Act requires states to periodically review and update their water quality standards. The Agency has reviewed these rules and has identified necessary changes. Proposed revisions incorporate new scientific information, providing tools necessary for proper protection of and permitting related to small streams, and to provide clarifications to existing the rules. Several rules are being reorganized, without revision to requirements.

What changes are being proposed?

At this time, the Agency is moving forward with a subset of revisions released in the draft rules interested party review. The following summarizes the main revisions proposed in this rule package:

Beneficial use designations

Rule changes include new beneficial use designations: primary headwater habitat, lake habitat, sport fishing recreation use and base aquatic life use.

Water quality criteria

Rule changes include: extension of human health criteria based on drinking water maximum contaminant levels applicable within 500 yards of a public water supply intake statewide, inclusion of updated Ohio River Valley Water Sanitation Commission (ORSANCO) Pollution

Ohio EPA, Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
(614) 644-2001

Control Standards for the Ohio River mainstem and new and revised aquatic life criteria for six chemicals.

Antidegradation

Rule changes include the transfer of requirements for dredge and fill projects to another rule and inclusion of nutrient design effluent limits for new and expanding sanitary wastewater dischargers.

Attachments to this fact sheet have more information about the proposed rule changes.

Are there changes from the draft rule versions?

Yes. Changes were made to the draft rules in response to comments received from interested parties and in response to updated information upon which the rules are based. These revisions are noted in the response to comments and attachments to this fact sheet.

Rule 3745-1-32 has been revised to incorporate ORSANCO human health criteria that are more stringent than current requirements. ORSANCO updated their Pollution Control Standards for the Ohio River that Ohio EPA is obligated to implement under the Compact.

Who will be regulated by these rules?

Local governments and businesses that operate wastewater treatment facilities could see changes in discharge permit limits as a result of these rules.

Specific water quality criteria are associated with each beneficial use designation. The criteria are specific target conditions to be maintained in the water bodies. Together the uses and criteria may be the basis for permit limits in wastewater discharge permits.

These rules will also interact with rules that regulate construction projects that place fill material in surface waters.

What additional information is the Agency seeking?

The Agency is seeking comments from interested stakeholders (public, local officials, and National Pollutant Discharge Elimination System [NPDES] permit holders) who may be impacted by these rule revisions. General comments and specific factual information are welcome.

How are the amendments formatted in the proposed rules?

Text that is proposed for deletion is identified in strikeout font; new text is underlined. Rules being rescinded have "To Be Rescinded" at the top of the first page of the rule.

What is the rulemaking schedule?

A public hearing on these proposed rules will be held to consider public comments in accordance with Section 119.03 of the Ohio Revised Code. This hearing will be held at the **Ohio EPA Conference Center, Room A, 50 West Town Street, Suite 700, in Columbus, Ohio at 3:00 p.m. on February 1, 2012.** The purpose of the public hearing is to give interested persons the opportunity to present oral or written comments on the proposed rules.

At the close of the public comment period, the Agency will review the comments, make any necessary changes to the rules, and then adopt the rules. This is roughly a two-month process from the close of the comment period. A responsiveness summary will be prepared and sent to everyone who comments on the proposed rules. Final rules could be adopted in spring 2012.

How can I comment on the proposed rules?

Please submit your comments in one of the following ways:

By email: *dsw_rulecomments@epa.state.oh.us*
By fax: (614) 644-2745
By postal mail:

Rule Coordinator
Ohio EPA, Division of Surface Water
P.O. Box 1049
Columbus, OH 43216-1049

Comments on the draft rules must be received no later than 5:00 p.m. on February 24, 2012.

How can I get more information?

Copies of this fact sheet and the proposed rules are on the Division of Surface Water website at *www.epa.ohio.gov/dsw/Home.aspx*.

For more information about these proposed rules, please contact:

Dan Dudley
(614) 644-2876
dan.dudley@epa.state.oh.us

Attachment 1 – Summary of Proposed Rule Changes

This attachment identifies the rules under review and summarizes the proposed changes. Topics that have been updated from the draft rules version as the result of consideration of interested party comments and/or new information have been highlighted.

Attachment 2 – Summary of Beneficial Use Designations

This attachment lists the existing and new beneficial use designations in the proposed rules. It also presents key attributes and practical impacts of each use designation.

Attachment 3 – Revisions to Human Health Criteria

This attachment contains two tables comparing existing and proposed human health criteria. The first lists the existing Ohio River mainstem human health criteria in rule OAC 3745-1-32 and the proposed updated criteria, which is based on Ohio River Valley Sanitation Commission's 2011 Pollution Controls Standards. The second table lists the existing human health criteria based on drinking water maximum contaminant levels for the Ohio River, Ohio River basin and Lake Erie basin in rules OAC 3745-1-32, 3745-1-33, 3745-1-34 and the proposed criteria in new rule OAC 3745-1-40. In this rulemaking, the Agency is moving the human health criteria based on drinking water maximum contaminant levels into one table and extending the application to within 500 yards of a public drinking water intake in the Lake Erie basin.

Attachment 4 – Statewide Revisions to Aquatic Life Criteria

This attachment compares the proposed revisions to the existing statewide aquatic life criteria.

This rulemaking covers all of OAC 3745-1 except for mixing zones (rule 06), basin-specific use designation rules (rules 08 to 30) and wetland rules (rules 50 to 54).

Key points of this proposed rule package are identified below. **Text highlighted in yellow has been revised/updated from the draft version released for interested party review.**

Rule 01: Purpose and applicability.

Because more than 50% of the rule is being revised, existing rule 01 will be rescinded and new rule 01 will be adopted. Changes to the current rule include the following.

- Purpose, objectives and goals of the water quality standards (WQS) rules are clarified.
- An overview of Chapter 3745-1 is added.
- Added an exemption from certain water quality criteria for open pit mining activities regulated through the Ohio Department of Natural Resources.
- Changes to pesticide language reflect issuance of the general National Pollutant Discharge Elimination System (NPDES) permit for pesticide application discharges, effective October 31, 2011.

Rule 02: Definitions.

Updates to acronyms and abbreviations

Addition of new definitions including:

- cold water fauna
- drought
- existing use
- lake
- qualitative habitat evaluation index
- stream

Rule 03: Analytical methods and availability of documents.

- Additional documents referenced throughout OAC 3745-1 are cited. Citations for existing documents are updated.

Rule 04: Criteria applicable to all waters.

- A condition to prevent nuisances from manure is added as paragraph (F)(2).

- Insertion of existing chemical water quality criteria associated with general narrative conditions/protection against adverse aesthetic conditions from rule 3745-1-07.

Rule 05: Antidegradation.

- Review procedures applicable to stream and/or wetland dredge and fill projects have been removed. A new rule (3745-32-04) in the 401 water quality certificate rules package contains the antidegradation requirements for these types of projects.
- Definitions for "designated uses," "existing uses" and "threatened species" are being removed. These definitions were moved to rule 3745-1-02.
- Definitions for "preferred alternative" and "40 C.F.R." are being added.
- The types of alternatives to be considered under the definitions for "minimal degradation alternative" and "non-degradation alternative" are being clarified.
- The definition of "regulated pollutant" is being revised to make the rule clear that parameters include narrative and numeric water quality criteria in OAC Chapter 3745-1.
- Nutrient design effluent limits are being added to table 5-1 for new sources of sanitary wastewater.
- Table 5-3, listing Ohio threatened species, is being removed. The Ohio Department of Natural Resources, Division of Wildlife maintains and updates the list of Ohio threatened species. Removing the threatened species table from the rule will eliminate an unnecessary redundancy. Threatened species will continue to be a consideration when determining special high quality water candidates for listing.
- The tables of special high quality waters are being updated with only minor clarifications and typographical corrections. New segments and/or new waters are not being included at this time.

Rule 07: Water use designations and statewide criteria.

This rule is being split into 5 separate rules. Existing rule 07 will be rescinded and new rules 07, 40, 41, 42 and 43 will be adopted. The broad subject areas are described below.

New Rule 07: Beneficial use designations.

This new rule will continue to contain definitions of the beneficial use designations. Water quality criteria for the protection of the use designations are moved to rules 4, 40, 41, 42 and 43.

- An opening paragraph is added and cross-referenced to the language of the enabling State law; i.e., WQS are intended to "enable the present and planned use of water."

- Water supply use designations are retained basically "as is".

- Recognizes sport fishing as a specific type of recreation use.

    - Administrative updates and corrections to the table of class A Primary Contact Recreation streams.

- Aquatic life use designations are revised.

  - A new Base Aquatic Life use designation is added as paragraph (E). This use is a new way to express that, as in the existing rules, the "baseline" chemical water quality criteria associated with the Warmwater Habitat designation apply to all "unlisted" waters of the State. "Unlisted waters" refers to the many miles of streams, creeks and ditches that are not named on maps and, therefore, are not listed in the WQS rules along with their applicable tiered use designations. The Base Aquatic Life designation and associated chemical criteria will apply to all waters not assigned a tiered aquatic life use in rules 3745-1-08 to 3745-1-32. Ohio will now be like other states in that our "unlisted" waters will have a formal aquatic life use designation. This addition clarifies current rule implementation and mainly comes into play in the issuance of NPDES permits to point source dischargers. Ohio EPA permits use Warmwater Habitat chemical criteria in the determination of NPDES permit effluent limitations for unlisted waters. Typically, unlisted waters having permitted NPDES dischargers are included in subsequent stream surveys, which results in a designated use assignment in the next watershed use designation rule review. In regard to the 401 water quality certification program, a use attainment analysis is required as part of the permit application to determine the appropriate classification for the unlisted water so that avoidance/impacts of a project are properly determined.

  - Common meaning definitions for the uses are added.

  - The Coldwater Habitat use designation in paragraph (F)(4) is revised. A list of cold water fauna native to Ohio waters is added as table 7-2.

  - A new use designation "Lake Habitat" is created in paragraph (F)(8) for lakes (including reservoirs). The exceptional warmwater habitat use will no longer apply to lakes. Chemical criteria currently applicable to lakes are unchanged.

  - A new use designation "Primary Headwater Habitat" (PHWH) is created in paragraph (F)(9) for small headwater streams. This new use includes:
    - a "single" sub-category of aquatic life use (PHWH) with emphasis on the cumulative importance of headwaters in water quality;
    - several PHWH classes are defined and cross-referenced to the Primary Headwater field methodology document;
    - Class III PHWH generally equated to Coldwater Habitat - native fauna; antidegradation loss of use would apply as if it were a Coldwater Habitat sub-category of aquatic life use;
    - Class III PHWH has been further divided into Class IIIA and Class IIIB to recognize differences in biological community related to relative influence and strength of groundwater contribution. Antidegradation review still encourages impact avoidance to both Class III stream sub-types but provides some flexibility on a case-by-case basis with appropriate mitigation for Class IIIA streams.
    - Class I and Class II PHWHs – Antidegradation loss of use is viewed from the hydrology and functional processes as opposed to resident aquatic life; and

- Modified PHWH – These are Class I and Class II PHWHs that are ditches or that have other human induced channel and habitat modifications.

Rule 31: Lake Erie standards.

- Minor administrative changes only.

Rule 32: Ohio river standards.

- Existing rule 32 includes tables of water quality criteria that are combinations of Ohio and ORSANCO (Ohio River Valley Water Sanitation Commission) water quality criteria. The existing rule is being rescinded and replaced with new rule 32 that identifies applicable use designations and incorporates the criteria from the ORSANCO 2011 "Pollution Control Standards for discharges to the Ohio River" that are more stringent than the criteria for those use designations as required by the Compact rules.

Rule 33: Water quality criteria for the lake Erie drainage basin.
Rule 34: Water quality criteria for the Ohio river drainage basin.

- These two rules are being rescinded and the human health criteria are being moved to new rules 40 and 41. The wildlife criteria are being moved to rule 42.

Rule 35: Site-specific modifications to criteria and values.

- Minor administrative changes only.

Rule 36: Methodologies for development of aquatic life criteria and values.

- Minor administrative changes only.

Rule 37: Methodology for deriving bioaccumulation factors.

- Minor administrative changes only.

Rule 38: Methodologies for development of human health criteria and values.

- Minor administrative changes only.

Rule 39: Methodology for the development of wildlife criteria for the lake Erie drainage basin.

- This rule incorporates the GLI methodologies applicable to the Lake Erie basin; there is no national methodology. Only minor administrative changes are made to this rule.

New Rule 40: Water quality criteria for water supply use designations.

This new rule contains the water quality criteria for the water supply designations.

- The human health "drinking" criteria, currently in OAC Chapter 3745-1 Rules 33 and 34, are included in this new rule with the changes identified below. “Drinking” criteria apply within 500 yards of a public water supply intake and are intended to protect human health from chemical exposure in both drinking water and fish consumption.
    - Maximum contaminant levels (MCLs) developed under the Safe Drinking Water Act are updated in table 40-1 and applied statewide (current rules apply these criteria only within the Ohio River basin).
    - Ambient water quality criteria (AWQC) developed under the Clean Water Act are included as table 40-2. For the Lake Erie basin, only those chemicals required under 40 CFR 132 to be in rule are listed in table 40-2. For all other chemicals, the procedures in rule OAC 3745-1-38 will be used to calculate and update criteria on an as-needed basis. Those criteria will be made available on the Ohio EPA web page www.epa.ohio.gov/dsw/wqs/criteria.aspx. By not adopting the criteria in rule, Ohio EPA is able to consider the most recent scientific information when regulating discharges of those chemicals. Existing criteria for the Ohio River basin have been moved to this rule.
- The agricultural water supply criteria that were removed from rule 07 are now included in table 40-3 of this new rule.

New Rule 41: Water quality criteria for recreation use designations.

This new rule contains the water quality criteria for the recreation use designations.

- Human health "nondrinking" criteria, removed from rules 33 and 34, are in table 41-1 for the protection of human health when consuming sport caught fish from Ohio’s rivers, streams and lakes. For the Lake Erie basin, only those chemicals required under 40 CFR 132 to be in rule are listed in table 41-1. For all other chemicals, the procedures in rule 38 will be used to calculate and update criteria on an as-needed basis. Those criteria will be made available on the Ohio EPA web page www.epa.ohio.gov/dsw/wqs/criteria.aspx. By not adopting the criteria in rule, Ohio EPA is able to consider the most recent scientific information when regulating discharges of those chemicals.
- The bacteria criteria that were adopted in rule 07 on December 15, 2009 are moved to table 41-3.

New Rule 42: Water quality criteria for the base aquatic life use designation.

This new rule contains the wildlife criteria from rules 33 and 34 and the Warmwater Habitat chemical criteria previously contained in rule 07, with updated or new criteria for the following six chemicals:

- cadmium
- diazinon
- tributyltin
- lead
- chlorpyrifos
- nonylphenol

New Rule 43: Water quality criteria for the tiered aquatic life use designations.

This new rule contains the biological criteria and the chemical criteria that apply to the ten tiered aquatic life use designations (Warmwater Habitat, Exceptional Warmwater Habitat, Modified Warmwater Habitat, etc.) over and above the base aquatic life use criteria found in rule 42. Changes to the criteria, from content moved from rule 07, include the following.

- Changes to the biological criteria.
    - In paragraph (B)(3)(b), the new rule limits application of the biological criteria in periods of stream desiccation.
        - In paragraph (B)(3)(c), the new rule limits application of the biological criteria to a point where the watershed area falls below 1.0 square mile.
    - The watershed area limit does not apply if:
        - there are biological data that can be used in a use attainability analysis; and
        - an aquatic life use sub-category is designated in rule (protection of existing use also applies based on the biology).
    - The biological criteria are presented in a new format in tables 43-1, 43-2 and 43-5. (Existing rule 07 includes the biological criteria in one table).
- Water quality criteria for lakes are in table 43-11 and are the same as the criteria currently applicable to lakes. Nutrient criteria for lakes contained in the draft rules were dropped from this rulemaking and will be addressed at the same time as nutrient criteria for streams in a future rulemaking.
- Water quality criteria applicable to primary headwater habitats are specified in paragraph (D)(9).
    - Base aquatic life use criteria in rule 3745-1-42 apply to Class I, Class II and modified Classes I and II streams.
    - Coldwater habitat chemical criteria in this rule apply to Class III streams.

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Fact Sheet **Attachment 2: Summary of Beneficial Use Designations**
(See proposed rule 3745-1-07)

Ohio EPA
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New use designations are in blue font.

Beneficial Use Designation	Key Attributes, or why a water would be designated the beneficial use	Practical Impacts (comparisons to Warmwater Habitat baseline)
Aquatic Life - All surface waters of the state will be assigned one or more aquatic life use designations.		
Coldwater Habitat	native cold water species; put-and-take trout stocking	more stringent ammonia, cyanide, dissolved oxygen, phenol, pH, silver, and temperature criteria; no use-specific biological criteria; may result in additional wastewater treatment requirements
Exceptional Warmwater Habitat	unique and diverse assemblage of fish and invertebrates	more stringent ammonia, dissolved oxygen, pH, temperature, and biological criteria; may result in additional wastewater treatment requirements
Lake Habitat	natural or constructed pooled or impounded waters, excluding Lake Erie	more stringent ammonia, dissolved oxygen, pH, and temperature criteria; no biological criteria; may result in additional wastewater treatment requirements
Seasonal Salmonid Habitat	supports lake run steelhead trout fisheries; applies only from October 1 to May 31; these waters are also designated WWH, EWH or CWH	more stringent ammonia, phenol, and silver criteria; no biological criteria; slightly more restrictive chlorine disinfection practices
Warmwater Habitat	typical assemblages of fish and invertebrates, similar to least impacted reference conditions	baseline regulatory requirements in line with Clean Water Act "fishable goal" expectations
Base Aquatic Life	all waters not designated a tiered aquatic life use	baseline regulatory requirements in line with Clean Water Act "fishable goal" expectations; no biological criteria
Wetland	3 categories (1, 2 and 3); areas saturated by water; includes swamps, marshes, bogs and other saturated areas	additional narrative criteria; no biological criteria
Primary Headwater Habitat	3 classes (I, II and III); springs, seeps and streams too small to attain WWH biological criteria	criteria for class I and class II are the same as the Base Aquatic Life use; chemical criteria for class III are the same as the Coldwater Habitat use
Limited Warmwater Habitat	temporary designations based on 1978 WQS and not subjected to use attainability analysis; being phased out	exempt from TDS criteria and may also be exempt from pH, iron and zinc criteria as well
Modified Warmwater Habitat	tolerant assemblages of fish and macro-invertebrates, but otherwise similar to WWH; irretrievable condition precludes complete recovery to reference condition	less stringent ammonia, dissolved oxygen, and biological criteria; may result in less restrictive wastewater treatment requirements
Limited Resource Waters	fish and macroinvertebrates severely limited by physical habitat or other irretrievable condition	less restrictive aquatic life criteria for majority of pollutants; may result in less restrictive wastewater treatment requirements

Fact Sheet Attachment 2: Summary of Beneficial Use Designations

Beneficial Use Designation	Key Attributes, or why a water would be designated the beneficial use	Practical Impacts
Recreation		
Sport fishing	all waters for the protection against risks associated with eating sport caught fish	human health "nondrinking" criteria
Bathing Waters	bathing beach with lifeguards/bath house; greatest potential exposure to bacteria	lowest risk of swimmer's illness after exposure; greater disinfection of wastewater
Primary Contact Recreation	3 classes (A, B and C) determined by amount of usage; class A for highly used waters; class C for small channelized waters; class B for all other waters; intermediate potential exposure to bacteria	intermediate risk of swimmer's illness after exposure; baseline level of disinfection
Secondary Contact Recreation	waters with limited access; lowest potential exposure to bacteria	greatest risk of swimmer's illness after exposure; slightly less disinfection of wastewater
Water Supply		
Public Water Supply	all waters within 500 yards of a surface water intake for a public water system, all publicly owned lakes and reservoirs, all privately owned lakes and reservoirs used as a drinking water source, all emergency water supplies	maintain or improve potable water supplies, reduce water treatment costs; upstream dischargers may face more stringent limits in order to meet PWS criteria near point of water withdrawal; includes statewide application of MCLs in waters near drinking water intakes
Agricultural Water Supply	all waters unless removed through a use attainability analysis - to protect for livestock watering and/or irrigation	limited impact; as a practical matter other standards are generally protective of this use, except for a limited number of heavy metals in unique situations
Industrial Water Supply	all waters unless removed through a use attainability analysis - to protect for industrial purposes	no impact; no water quality criteria in rule; criteria may be established on case-specific basis but as a practical matter this has never been needed because other standards are protective of this use.

December 2011 Draft Water Quality Standards Rules (OAC 3745-1)
Fact Sheet **Attachment 3: Revisions to Human Health Criteria** (See proposed rules 3745-1-32, 40 and 41)

Ohio EPA
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The following table identifies the revisions to the Ohio River human health "elsewhere" criteria. Parameters based on maximum contaminant levels (MCLs) have been removed from rule OAC 3745-1-32. All human health parameters based on MCLs have been placed in one table in OAC 3745-1-40. Parameters for which the Ohio River Valley Water Sanitation Commission (ORSANCO)'s 2011 Pollution Control Standards were more stringent than current criteria have been included in the proposed rule. These parameters are identified in the table below.

Chemical	Form	Units	Current Elsewhere Criteria	Proposed Criteria	Justification for Criteria Revision
Acenaphthene	T	ug/l	1,200	670	ORSANCO PCS
Acrolein	T	ug/l	320	190	ORSANCO PCS
Acrylonitrile	T	ug/l	0.59	0.51	ORSANCO PCS
Aldrin	T	ug/l	0.0013	0.00049	ORSANCO PCS
Anthracene	T	ug/l	9,600	8,300	ORSANCO PCS
Antimony	TR	ug/l	14	5.6	ORSANCO PCS
Arsenic	TR/T	ug/l	50	10	ORSANCO PCS
Asbestos	T	MF/l	-	7	ORSANCO PCS
Barium	T	ug/l	-	1,000	ORSANCO PCS
Benzene	T	ug/l	12	12	No change
Benzidine	T	ug/l	0.0012	0.00086	ORSANCO PCS
Benzo(a)anthracene	T	ug/l	0.044	0.038	ORSANCO PCS
Benzo(a)pyrene (PAHs)	T	ug/l	0.044	0.038	ORSANCO PCS
Benzo(b)fluoranthene	T	ug/l	0.044	0.038	ORSANCO PCS
Benzo(k)fluoranthene	T	ug/l	0.044	0.038	ORSANCO PCS
Beryllium	TR	ug/l	16	16	No change
Bromoform	T	ug/l	43	43	No change
Butylbenzyl phthalate	T	ug/l	3,000	1,500	ORSANCO PCS
Carbon tetrachloride	T	ug/l	2.5	2.3	ORSANCO PCS
Chlordane	T	ug/l	0.021	0.008	ORSANCO PCS
Chlorides	T	mg/l	250	250	No change
Chlorobenzene	T	ug/l	680	130	ORSANCO PCS
Chlorodibromomethane	T	ug/l	4.1	4	ORSANCO PCS
Bis(2-Chloroethyl)ether	T	ug/l	0.31	0.3	ORSANCO PCS
Chloroform	T	ug/l	57	-	Moved to Table 40-2
bis(2-Chloroisopropyl)ether	T	ug/l	1,400	-	Moved to Table 40-2
bis(2-Chloromethyl)ether	T	ug/l	0.0013	-	Moved to Table 40-2
2-Chloronaphthalene	T	ug/l	1,700	1,000	ORSANCO PCS
2-Chlorophenol	T	ug/l	120	81	ORSANCO PCS
Chrysene	T	ug/l	0.044	0.038	ORSANCO PCS
Copper	TR	ug/l	-	1,300	ORSANCO PCS

Fact Sheet Attachment 3: Revisions to Human Health Criteria

Chemical	Form	Units	Current Elsewhere Criteria	Proposed Criteria	Justification for Criteria Revision
Cyanide	T	ug/l	700	140	ORSANCO PCS
2,4-D	T	ug/l	100	100	No change
4,4-DDD	T	ug/l	0.0083	0.0031	ORSANCO PCS
4,4-DDE	T	ug/l	0.0059	0.0022	ORSANCO PCS
4,4-DDT	T	ug/l	0.0059	0.0022	ORSANCO PCS
Dibenzo(a,h)anthracene	T	ug/l	0.044	0.038	ORSANCO PCS
Di-n-butyl phthalate	T	ug/l	2,700	2,000	ORSANCO PCS
1,2-Dichlorobenzene	T	ug/l	2,700	420	ORSANCO PCS
1,3-Dichlorobenzene	T	ug/l	400	320	ORSANCO PCS
1,4-Dichlorobenzene	T	ug/l	400	63	ORSANCO PCS
3,3'-Dichlorobenzidine	T	ug/l	0.4	0.21	ORSANCO PCS
Dichlorobromomethane	T	ug/l	5.6	5.5	ORSANCO PCS
1,2-Dichloroethane	T	ug/l	3.8	-	Moved to Table 40-2
1,1-Dichloroethylene	T	ug/l	0.57	-	Moved to Table 40-2
trans-1,2-Dichloroethylene	T	ug/l	700	140	ORSANCO PCS
2,4-Dichlorophenol	T	ug/l	93	77	ORSANCO PCS
1,2-Dichloropropane	T	ug/l	5.2	5	ORSANCO PCS
1,3-Dichloropropene	T	ug/l	10	3.4	ORSANCO PCS
Dieldrin	T	ug/l	0.0014	0.00052	ORSANCO PCS
Diethyl phthalate	T	ug/l	23,000	17,000	ORSANCO PCS
2,4-Dimethylphenol	T	ug/l	540	380	ORSANCO PCS
Dimethyl phthalate	T	ug/l	310,000	270,000	ORSANCO PCS
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	T	ug/l	13	-	Moved to Table 40-2
Dinitrophenols (2,4-Dinitrophenol)	T	ug/l	70	69	ORSANCO PCS
2,4-Dinitrotoluene	T	ug/l	1.1	1.1	No change
1,2-Diphenylhydrazine	T	ug/l	0.4	0.36	ORSANCO PCS
alpha-Endosulfan	T	ug/l	110	62	ORSANCO PCS
beta-Endosulfan	T	ug/l	110	62	ORSANCO PCS
Endosulfan sulfate	T	ug/l	110	62	ORSANCO PCS
Endrin	T	ug/l	0.76	0.059	ORSANCO PCS
Endrin aldehyde	T	ug/l	0.76	0.29	ORSANCO PCS
Ethylbenzene	T	ug/l	3,100	530	ORSANCO PCS
bis(2-Ethylhexyl)phthalate	T	ug/l	18	12	ORSANCO PCS
Fluoranthene	T	ug/l	300	130	ORSANCO PCS
Fluorene	T	ug/l	1,300	1,100	ORSANCO PCS
Fluoride	T	ug/l	1,000	1,000	No change
Heptachlor	T	ug/l	0.0021	0.00079	ORSANCO PCS
Heptachlor epoxide	T	ug/l	0.001	0.00039	ORSANCO PCS
Hexachlorobenzene	T	ug/l	0.0075	0.0028	ORSANCO PCS
Hexachlorobutadiene	T	ug/l	4.4	-	Moved to Table 40-2
alpha-Hexachlorocyclohexane	T	ug/l	0.039	0.026	ORSANCO PCS

Fact Sheet Attachment 3: Revisions to Human Health Criteria

Chemical	Form	Units	Current Elsewhere Criteria	Proposed Criteria	Justification for Criteria Revision
beta-Hexachlorocyclohexane	T	ug/l	0.14	0.091	ORSANCO PCS
gamma-Hexachlorocyclohexane (Lindane)	T	ug/l	0.19	-	Moved to Table 40-2
Hexachlorocyclohexane-technical grade	T	ug/l	0.12	-	Moved to Table 40-2
Hexachlorocyclopentadiene	T	ug/l	240	40	ORSANCO PCS
Hexachloroethane	T	ug/l	19	14	ORSANCO PCS
Indeno(1,2,3-c,d)pyrene	T	ug/l	0.044	0.038	ORSANCO PCS
Isophorone	T	ug/l	360	350	ORSANCO PCS
Mercury (inorganic)	TR	ug/l	0.012	0.012	No change
Methoxychlor	T	ug/l	100	100	No change
Methyl bromide	T	ug/l	48	47	ORSANCO PCS
Methylene chloride	T	ug/l	47	46	ORSANCO PCS
Nickel	TR	ug/l	610	-	Moved to Table 40-2
Nitrate-N+Nitrite-N	T	ug/l	10,000	10,000	No change
Nitrite-N	T	ug/l	1,000	1,000	No change
Nitrobenzene	T	ug/l	17	-	Moved to Table 40-2
Nitrosoamines	T	ug/l	0.008	-	Moved to Table 40-2
N-Nitrosodibutylamine	T	ug/l	0.064	-	Moved to Table 40-2
N-Nitrosodiethylamine	T	ug/l	0.008	-	Moved to Table 40-2
N-Nitrosodimethylamine	T	ug/l	0.0069	-	Moved to Table 40-2
N-Nitrosodi-n-propylamine	T	ug/l	0.05	-	Moved to Table 40-2
N-Nitrosodiphenylamine	T	ug/l	50	33	ORSANCO PCS
N-Nitrosodipyrrolidine	T	ug/l	0.16	-	Moved to Table 40-2
Pentachlorobenzene	T	ug/l	3.5	-	Moved to Table 40-2
Pentachlorophenol	T	ug/l	82	2.7	ORSANCO PCS
Phenol	T	ug/l	21,000	21,000	No change
Phenolics	T	ug/l	5	5	No change
Polychlorinated biphenyls (PCBs)	T	ug/l	0.0017	0.00064	ORSANCO PCS
Pyrene	T	ug/l	960	830	ORSANCO PCS
Selenium	TR	ug/l	170	170	No change
Silver	TR	ug/l	50	-	Moved to Table 40-2
Sulfates	T	ug/l	250,000	250,000	No change
1,2,4,5-Tetrachlorobenzene	T	ug/l	2.3	-	Moved to Table 40-2
2,3,7,8-Tetrachlorodibenzo-p-dioxin	T	ug/l	$1.3*10^{-7}$	$5.0*10^{-8}$	ORSANCO PCS
1,1,2,2-Tetrachloroethane	T	ug/l	1.7	-	Moved to Table 40-2
Tetrachloroethylene	T	ug/l	8	6.9	ORSANCO PCS
Thallium	TR	ug/l	1.7	0.24	ORSANCO PCS
Toluene	T	ug/l	6,800	1,300	ORSANCO PCS
Toxaphene	T	ug/l	0.0073	0.0028	ORSANCO PCS
2,4,5-TP (Silvex)	T	ug/l	10	-	Moved to Table 40-2
1,2,4-Trichlorobenzene	T	ug/l	260	35	ORSANCO PCS
1,1,2-Trichloroethane	T	ug/l	6	5.9	ORSANCO PCS
Trichloroethylene	T	ug/l	27	25	ORSANCO PCS

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Chemical	Form	Units	Current Elsewhere Criteria	Proposed Criteria	Justification for Criteria Revision
2,4,5-Trichlorophenol	T	ug/l	2,600	-	Moved to Table 40-2
2,4,6-Trichlorophenol	T	ug/l	21	14	ORSANCO PCS
Vinyl chloride	T	ug/l	20	0.25	ORSANCO PCS
Zinc	T	ug/l	9,100	7,400	ORSANCO PCS

The following table compares the human health water quality criteria based on drinking water maximum contaminant levels (MCLs) in existing rules OAC 3745-1-32, 3745-1-33 and 3745-1-34 with the listing in proposed new rule OAC 3745-1-40.

Chemical	Form	Units	Current Rule 3745-1-32 Ohio River Intake Criteria	Current Rule 3745-1-33 Criteria and Criteria listed on OEPA Website Lake Erie Basin Drink Criteria	Current Rule 3745-1-34 Criteria Ohio River Basin Drink Criteria	Proposed Rule 3745-1-40 MCL List Table 40-1
Alachlor	T	ug/l	2		2	2
Aldicarb	T	ug/l	7		7	-
Aldicarb sulfone	T	ug/l	7		7	-
Aldicarb sulfoxide	T	ug/l	7		7	-
Antimony	TR	ug/l	6	9.7	6	6
Arsenic	TR	ug/l	10	10	10	10
Asbestos	T	Mf/l	7		7	7
Atrazine	T	ug/l	3		3	3
Barium	TR	ug/l	2,000	2,000	2,000	2,000
Benzene	T	ug/l	5	12	5	5
Benzo(a)pyrene (PAHs)	T	ug/l		0.00002		0.2
Beryllium	TR	ug/l	4	17	4	4
Bromate	T	ug/l	10		10	10
Cadmium	TR	ug/l	5	14	5	5
Carbofuran	T	ug/l	40		40	40
Carbon tetrachloride	T	ug/l		2.4		5
Chloramine	T	ug/l	4,000		4,000	4,000
Chlordane	T	ug/l		0.00025		2
Chlorides	T	ug/l	250,000	250,000	250,000	250,000
Chlorine	T	ug/l	4,000		4,000	4,000
Chlorine dioxide	T	ug/l	800		800	800
Chlorite	T	ug/l	1,000		1,000	1,000
Chloroacetic acid	T	ug/l	60		60	-
Chlorobenzene	T	ug/l	100	470	100	100
Chromium	TR	ug/l	100	140	100	100
Copper	TR	ug/l		790		1,300
Cyanide	free	ug/l	200	600	200	200
2,4-D	T	ug/l	70		70	70
Dalapon	T	ug/l	200		200	200

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Chemical	Form	Units	Current Rule 3745-1-32 Ohio River Intake Criteria	Current Rule 3745-1-33 Criteria and Criteria listed on OEPA Website Lake Erie Basin Drink Criteria	Current Rule 3745-1-34 Criteria Ohio River Basin Drink Criteria	Proposed Rule 3745-1-40 MCL List Table 40-1
Dibromochloropropane	T	ug/l	0.2		0.2	0.2
o-Dichlorobenzene	T	ug/l	600	2,000	600	600
p-Dichlorobenzene	T	ug/l	75	24	75	75
1,2-Dichloroethane	T	ug/l		3.8		5
1,1-Dichloroethylene	T	ug/l		0.56		7
cis-1,2-Dichloroethylene	T	ug/l	70	880	70	70
trans-1,2-Dichlorethylene	T	ug/l	100	470	100	100
Dichloromethane	T	ug/l				5
1,2-Dichloropropane	T	ug/l	5	9.1	5	5
Di(2-ethylhexyl)adipate	T	ug/l	400		400	400
Di(2-Ethylhexyl)phthalate	T	ug/l	6		6	6
Dinoseb	T	ug/l	7		7	7
Dioxin (2,3,7,8-TCDD)	T	ug/l		$8.6*10^{-9}$		0.00003
Diquat	T	ug/l	20		20	20
Dissolved solids	T	ug/l	750,000/500,000	750,000/500,000	750,000/500,000	750,000/500,000
Endothall	T	ug/l	100		100	100
Endrin	T	ug/l				2
Ethylbenzene	T	ug/l	700	2,100	700	700
Ethylene dibromide	T	ug/l	0.05		0.05	0.05
Fluoride	T	ug/l			4,000	4,000
Glyphosate	T	ug/l	700		700	700
Heptachlor	T	ug/l				0.4
Heptachlor epoxide	T	ug/l				0.2
Hexachlorobenzene	T	ug/l		0.00045		1
Hexachlorocyclopentadiene	T	ug/l	50		50	50
Iron	S	ug/l	300	300	300	300
Lead	TR	ug/l				15
Lindane	T	ug/l		0.47		0.2
Mercury (inorganic)	TR	ug/l		0.0031		2
Methoxychlor	T	ug/l	40		40	40
Nitrate-N	T	ug/l				10,000
Nitrite-N	T	ug/l	1,000	1,000	1,000	1,000
Oxamyl (Vydate)	T	ug/l	200		200	200
Pentachlorophenol	T	ug/l	1,000	1	1,000	1
Picloram	T	ug/l	500		500	500
Polychlorinated biphenyls (PCBs)	T	ug/l		0.000026		0.5
Selenium	TR	ug/l	50	130	50	50
Silver	TR	ug/l		130		100

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Chemical	Form	Units	Current Rule 3745-1-32 Ohio River Intake Criteria	Current Rule 3745-1-33 Criteria and Criteria listed on OEPA Website Lake Erie Basin Drink Criteria	Current Rule 3745-1-34 Criteria Ohio River Basin Drink Criteria	Proposed Rule 3745-1-40 MCL List Table 40-1
Simazine	T	ug/l	4		4	4
Styrene	T	ug/l	100		100	100
Sulfates	T	ug/l	250,000	250,000	250,000	250,000
Tetrachloroethylene	T	ug/l	5	320	5	5
Thallium	TR	ug/l				2
Toluene	T	ug/l	1,000	5,600	1,000	1,000
Toxaphene	T	ug/l		0.000068		3.0
2,5,4-TP (Silvex)	T	ug/l				50
1,2,4-Trichlorobenzene	T	ug/l	70		70	70
1,1,1-Trichloroethane	T	ug/l	200	73,000	200	200
1,1,2-Trichloroethane	T	ug/l	5	6	5	5
Trichloroethylene	T	ug/l	5	29	5	5
Uranium	TR	ug/l				30
Vinyl chloride	T	ug/l	2	0.48	2	2
Xylenes	T	ug/l	10,000	31,000	10,000	10,000
Zinc	T	ug/l		5,000		5,000

			Proposed Aquatic Life			Current Aquatic Life		
Chemical	Form[1]	Units[2]	IMZM[3]	OMZM[3]	OMZA[3]	IMZM[3]	OMZM[3]	OMZA[3]
Cadmium[4]	D	µg/l	4.8	2.4	0.82	19	9.3	3.9
Cadmium[4]	TR	µg/l	5.2	2.6	0.93	20	9.9	4.2
Chlorpyrifos	T	µg/l	0.17	0.083	0.041	--	--	--
Diazinon	T	µg/l	0.34	0.17	0.17	--	--	--
Lead[4]	D	µg/l	410	200	11	470	230	12
Lead[4]	TR	µg/l	590	300	16	590	300	16
Nonylphenol	T	µg/l	55	28	6.6	--	--	--
Tributyltin	T	µg/l	0.92	0.46	0.072	--	--	--

Footnotes:

1 D = dissolved; TR = total recoverable.

2 µg/l = micrograms per liter (parts per billion).

3 IMZM = inside mixing zone maximum; OMZM = outside mixing zone maximum; OMZA = outside mixing zone average.

4 Criteria for this chemical are dependent on water hardness. Criteria listed are at a water hardness of 200 mg/l $CaCO_3$.