



Ohio Administrative Code Rule 3745-1-32 Ohio river standards.

Effective: January 18, 2021

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-1-03 of the Administrative Code.]

(A) The Ohio river is designated warmwater habitat, public water supply, agricultural water supply, industrial water supply and bathing waters, and will meet the most stringent criteria set forth in, or derived in accordance with, this rule, rules 3745-1-01 to 3745-1-07 and 3745-1-33 to 3745-1-40 of the Administrative Code.

Table 32-1. Water quality criteria for the Ohio river.

| Chemical | Form ¹ | Units ² | IMZM ³ | OMZM ³ | OMZA ³ |
|--|-------------------|--------------------|-------------------|-------------------|-------------------|
| Bacteria (E. coli) ^a | T | cfu/100 mL | 126 | 126 | 126 |
| Bacteria (E. coli) ^b | T | cfu/100 mL | 410 | 410 | 410 |
| Bacteria (fecal coliform) ^c | T | cfu/ 100 mL | 2,000 | 2,000 | 2,000 |
| Cyanide | free | µg/l | 44 | 22 | 5.2 |
| Dissolved oxygen ⁴ | T | mg/l | -- | 4.0 ^d | 5.0 |
| Radionuclides | T | | -- | e | e |
| Temperature | -- | °F | -- | Table 32-3 | Table 32-3 |

¹ T = total. ² mg/l = milligrams per liter (parts per million); µg/l = micrograms per liter (parts per billion); °F = degrees Fahrenheit; cfu/100 mL = colony forming units per one hundred milliliters. ³ IMZM = inside mixing zone maximum; OMZM = outside mixing zone maximum; OMZA = outside mixing zone average. ⁴ For dissolved oxygen, OMZM means outside mixing zone minimum at any time and OMZA means outside mixing zone minimum daily average. ^a Criterion applies for contact recreation during the months of May through October and is expressed as a ninety-day geometric mean. ^b Criterion applies for contact recreation during the months of May through October and is not



to be exceeded in more than ten per cent of samples taken during any ninety-day period.^c Criterion applies at all times and is expressed as a monthly geometric mean based on not less than five samples per month. For the months of May through October, measurements of E. coli bacteria may be substituted for fecal coliform.^d A minimum of 5.0 mg/l at any time shall be maintained during the April fifteen to June fifteen spawning season.^e Gross total alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed fifteen picocuries per liter (pci/l) and combined radium-226 and radium-228 shall not exceed four pci/l. The concentration of total gross beta particle activity shall not exceed fifty pci/l. The concentration of total strontium-90 shall not exceed eight pci/l.

Table 32-2. Ohio river water quality criteria for the protection of human health.

| | | | OMZA ³ | Chemical |
|-------------------|--------------------|----------------------|----------------------|-----------------------------------|
| Form ¹ | Units ² | Intakes | Elsewhere | |
| T | µg/l | 70 | 70 | Acenaphthene |
| T | µg/l | 3.0 | 3.0 | Acrylonitrile ⁵ |
| T | µg/l | 0.51 | 0.51 | Alachlor |
| T | µg/l | 2.0 ^a | -- | Aldrin ⁵ |
| T | µg/l | 7.7*10 ⁻⁶ | 7.7*10 ⁻⁶ | Anthracene |
| T | µg/l | 300 | 300 | Antimony |
| TR | µg/l | 5.6 | 5.6 | Arsenic |
| TR | µg/l | 10 ^a | 50 | Asbestos |
| T | Mf/l | 7.0 ^a | -- | Atrazine |
| T | µg/l | 3.0 ^a | -- | Barium |
| TR | µg/l | 1,000 | 1,000 | Benzene ⁵ |
| T | µg/l | 5.0 ^a | 12 | Benzidine ⁵ |
| T | µg/l | 0.00086 | 0.00086 | Benzo(a)anthracene ⁵ |
| T | µg/l | 0.012 | 0.012 | Benzo(a)pyrene ⁵ |
| T | µg/l | 0.0012 | 0.0012 | Benzo(b)fluoranthene ⁵ |
| T | µg/l | 0.012 | 0.012 | Benzo(k)fluoranthene ⁵ |
| T | µg/l | 0.038 | 0.038 | Beryllium |
| TR | µg/l | 4.0 ^a | 16 | Bromate |



| | | | | |
|------|------|--------------------|--------|---|
| T | µg/l | 10 ^a | -- | Bromoform (Tribromomethane) ⁵ |
| T | µg/l | 43 | 43 | Butylbenzyl phthalate |
| T | µg/l | 1.0 | 1.0 | Cadmium |
| TR | µg/l | 5.0 ^a | -- | Carbofuran |
| T | µg/l | 40 ^a | -- | Carbon tetrachloride ⁵ |
| T | µg/l | 2.3 | 2.3 | Chloramine |
| T | µg/l | 4,000 ^a | -- | Chlordane ⁵ |
| T | µg/l | 0.0031 | 0.0031 | Chlorides |
| T | mg/l | 250 ^a | 250 | Chlorine |
| T | µg/l | 4,000 ^a | -- | Chlorine dioxide |
| T | µg/l | 800 ^a | -- | Chlorite |
| T | µg/l | 1,000 ^a | -- | Chloroacetic acid ⁶ |
| T | µg/l | 60 ^a | -- | Chlorobenzene |
| T | µg/l | 100 ^a | 100 | Chlorodibromomethane ⁵ |
| T | µg/l | 4.0 | 4.0 | Bis(2-Chloro-1- methylethyl) ether |
| T | µg/l | 200 | 200 | Bis(2-Chloroethyl) ether ⁵ |
| T | µg/l | 0.30 | 0.30 | Chloroform ⁵ |
| T | µg/l | 57 | 57 | bis(2- Chloroisopropyl) ether |
| T | µg/l | 1,400 | 1,400 | bis(2-Chloromethyl) ether ⁵ |
| T | µg/l | 0.0015 | 0.0015 | 2-Chloronaphthalene |
| T | µg/l | 800 | 800 | 2-Chlorophenol |
| T | µg/l | 30 | 30 | Chromium |
| TR | µg/l | 100 ^a | -- | Chrysene ⁵ |
| T | µg/l | 0.038 | 0.038 | Cyanide |
| free | µg/l | 4.0 | 4.0 | 2,4-D (2,4- Dichlorophenoxy- acetic acid) |
| T | µg/l | 70 ^a | 1,300 | Dalapon |
| T | µg/l | 200 ^a | -- | 4,4'-DDD ⁵ |



| | | | | |
|---|------|----------------------|----------------------|--|
| T | µg/l | 0.0012 | 0.0012 | 4,4'-DDE ⁵ |
| T | µg/l | 0.00018 | 0.00018 | 4,4'-DDT ⁵ |
| T | µg/l | 0.0003 | 0.0003 | Dibenzo (a,h) anthracene ⁵ |
| T | µg/l | 0.0012 | 0.0012 | Dibromochloropropane |
| T | µg/l | 0.2 ^a | -- | Di-n-butyl phthalate |
| T | µg/l | 20 | 20 | Dichloroacetic acid ⁶ |
| T | µg/l | 60 ^a | -- | 1,2-Dichlorobenzene |
| T | µg/l | 420 | 420 | 1,3-Dichlorobenzene |
| T | µg/l | 7.0 | 7.0 | 1,4-Dichlorobenzene |
| T | µg/l | 63 | 63 | 3,3'-Dichlorobenzidine ⁵ |
| T | µg/l | 0.21 | 0.21 | Dichlorobromomethane ⁵ |
| T | µg/l | 5.5 | 5.5 | 1,2-Dichloroethane ⁵ |
| T | µg/l | 3.8 | 3.8 | 1,1-Dichloroethylene ⁵ |
| T | µg/l | 7.0 ^a | 300 | cis-1,2-Dichloroethylene |
| T | µg/l | 70 ^a | -- | trans-1,2-Dichloroethylene |
| T | µg/l | 100 ^a | 100 | 2,4-Dichlorophenol |
| T | µg/l | 10 | 10 | 1,2-Dichloropropane ⁵ |
| T | µg/l | 5.0 ^a | 5.0 | 1,3-Dichloropropene ⁵ |
| T | µg/l | 2.7 | 2.7 | Dieldrin ⁵ |
| T | µg/l | 1.2*10 ⁻⁵ | 1.2*10 ⁻⁵ | Di (2-ethylhexyl) adipate |
| T | µg/l | 400 ^a | -- | Diethyl phthalate |
| T | µg/l | 600 | 600 | 2,4-Dimethylphenol |
| T | µg/l | 100 | 100 | Dimethyl phthalate |
| T | µg/l | 2,000 | 2,000 | 4,6-Dinitro-o-cresol (4,6- Dinitro-2-methylphenol) |
| T | µg/l | 2.0 | 2.0 | Dinitrophenols ⁴ |
| T | µg/l | 10 | 10 | 2,4-Dinitrotoluene ⁵ |
| T | µg/l | 0.49 | 0.49 | 2,4-Dinitrophenol |



| | | | | |
|---|------|------------------------|----------------------|--|
| T | µg/l | 10 | 10 | Dinoseb |
| T | µg/l | 7.0 ^a | -- | 1,2-Diphenylhydrazine |
| T | µg/l | 0.30 | 0.30 | Diquat |
| T | µg/l | 20 ^a | -- | Dissolved solids |
| T | mg/l | 750/500 ^{a,b} | -- | alpha-Endosulfan ⁷ |
| T | µg/l | 20 | 20 | beta-Endosulfan ⁷ |
| T | µg/l | 20 | 20 | Endosulfan sulfate ⁷ |
| T | µg/l | 20 | 20 | Endothall |
| T | µg/l | 100 ^a | -- | Endrin ⁸ |
| T | µg/l | 0.03 | 0.03 | Endrin aldehyde ⁸ |
| T | µg/l | 0.29 | 0.29 | Ethylbenzene |
| T | µg/l | 68 | 68 | Ethylene dibromide (EDB) |
| T | µg/l | 0.050 ^a | -- | bis (2-Ethylhexyl) phthalate |
| T | µg/l | 3.2 | 3.2 | Fluoranthene |
| T | µg/l | 20 | 20 | Fluorene |
| T | µg/l | 50 | 50 | Fluoride |
| T | µg/l | 1,000 | 1,000 | Glyphosate |
| T | µg/l | 700 ^a | -- | Heptachlor ⁵ |
| T | µg/l | 5.9*10 ⁻⁵ | 5.9*10 ⁻⁵ | Heptachlor epoxide ⁵ |
| T | µg/l | 0.00032 | 0.00032 | Hexachlorobenzene ⁵ |
| T | µg/l | 0.00079 | 0.00079 | Hexachlorobutadiene ⁵ |
| T | µg/l | 0.1 | 0.1 | alpha-Hexachlorocyclohexane ⁵ |
| T | µg/l | 0.0036 | 0.0036 | beta-Hexachlorocyclohexane ⁵ |
| T | µg/l | 0.08 | 0.08 | gamma-Hexachlorocyclohexane (Lindane) |
| T | µg/l | 0.20 ^a | 0.98 | Hexachlorocyclohexane - technical grade ⁵ |
| T | µg/l | 0.066 | 0.066 | Hexachlorocyclopentadiene |
| T | µg/l | 4.0 | 4.0 | Hexachloroethane ⁵ |



| | | | | |
|----|------|---------------------|---------|--|
| T | µg/l | 1.0 | 1.0 | Indeno ₅ (1,2,3-c,d) pyrene |
| T | µg/l | 0.012 | 0.012 | Iron |
| S | µg/l | 300 ^a | -- | Isophorone ⁵ |
| T | µg/l | 340 | 340 | Mercury |
| TR | µg/l | 0.012 | 0.012 | Methoxychlor |
| T | µg/l | 0.02 | 0.02 | Methyl bromide |
| T | µg/l | 47 | 47 | 3-Methyl-4-chlorophenol |
| T | µg/l | 500 | 500 | Methylene chloride ⁵ |
| T | µg/l | 5.0 ^a | 46 | Nickel |
| TR | µg/l | 610 | 610 | Nitrate-N + Nitrite-N |
| T | µg/l | 10,000 ^a | 10,000 | Nitrite-N |
| T | µg/l | 1,000 ^a | 1,000 | Nitrobenzene |
| T | µg/l | 10 | 10 | Nitrosoamines ⁵ |
| T | µg/l | 0.0080 | 0.0080 | N-Nitrosodibutylamine ⁵ |
| T | µg/l | 0.063 | 0.063 | N-Nitrosodiethylamine ⁵ |
| T | µg/l | 0.0080 | 0.0080 | N-Nitrosodimethylamine ⁵ |
| T | µg/l | 0.0069 | 0.0069 | N-Nitrosodi-p-propylamine ⁵ |
| T | µg/l | 0.050 | 0.050 | N-Nitrosodiphenylamine ⁵ |
| T | µg/l | 33 | 33 | N-Nitrosodipyrrolidine ⁵ |
| T | µg/l | 0.16 | 0.16 | Oxamyl (Vydate) |
| T | µg/l | 200 ^a | -- | Pentachlorobenzene |
| T | µg/l | 0.1 | 0.1 | Pentachlorophenol ⁵ |
| T | µg/l | 0.3 | 0.3 | Phenol |
| T | µg/l | 4,000 | 4,000 | Phenolics |
| T | µg/l | 5.0 | -- | Picloram |
| T | µg/l | 500 ^a | -- | Polychlorinated biphenyls ⁵ |
| T | µg/l | 0.00064 | 0.00064 | Pyrene |



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| | | | | |
|----|------|----------------------|----------------------|---|
| T | µg/l | 20 | 20 | Selenium |
| TR | µg/l | 50 ^a | 170 | Silver |
| T | µg/l | 50 | 50 | Silvex (2, 4, 5-TP, 2-[2, 4, 5-Trichlorophenoxy] propionic acid |
| T | µg/l | 50 ^a | 100 | Simazine |
| T | µg/l | 4.0 ^a | -- | Styrene |
| T | µg/l | 100 ^a | -- | Sulfates |
| T | mg/l | 250 ^a | -- | 1, 2, 4, 5-Tetrachlorobenzene |
| T | µg/l | 0.03 | 0.03 | 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin ⁵ |
| T | µg/l | 5.0*10 ⁻⁸ | 5.0*10 ⁻⁸ | 1, 1, 2, 2-Tetrachloroethane ⁵ |
| T | µg/l | 1.7 | 1.7 | Tetrachloroethylene ⁵ |
| T | µg/l | 5.0 ^a | 6.9 | Thallium |
| TR | µg/l | 1.7 | 1.7 | Toluene |
| T | µg/l | 57 | 57 | Toxaphene ⁵ |
| T | µg/l | 0.0028 | 0.0028 | Trichloroacetic acid ⁶ |
| T | µg/l | 60 ^a | -- | 1, 2, 4-Trichlorobenzene ⁵ |
| T | µg/l | 0.71 | 0.71 | 1, 1, 1-Trichloroethane |
| T | µg/l | 200 ^a | 10,000 | 1, 1, 2-Trichloroethane ⁵ |
| T | µg/l | 5.0 ^a | 5.5 | Trichloroethylene ⁵ |
| T | µg/l | 5.0 ^a | 6.0 | 2, 4, 5-Trichlorophenol |
| T | µg/l | 300 | 300 | 2, 4, 6-Trichlorophenol ⁵ |
| T | µg/l | 14 | 14 | Vinyl chloride ⁵ |
| T | µg/l | 0.22 | 0.22 | Xylenes |
| T | µg/l | 10,000 ^a | -- | Zinc |
| T | µg/l | 7,400 | 7,400 | |



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| | | | | |
|---|---|---|---|---|
| ¹ S = soluble; T = total; TR = total recoverable. | ² mg/l = milligrams per liter (parts per million); µg/l = micrograms per liter (parts per billion); Mf/l = million fibers per liter. | ³ OMZA = outside mixing zone average. Criteria in the "Intakes" column apply within five hundred yards of drinking water intakes. Criteria in the "Elsewhere" column apply at all other locations. | ⁴ The criteria for this chemical apply to the sum of all dinitrophenols. | ⁵ Criteria for this chemical are based on a carcinogenic endpoint. |
| ⁶ The criterion for this chemical applies to the sum of chloroacetic acid, dichloroacetic acid and trichloroacetic acid. | ⁷ The criteria for this chemical apply to the sum of alpha-endosulfan, beta-endosulfan and endosulfan sulfate. | ⁸ The criteria for this chemical apply to the sum of endrin and endrin aldehyde. | ^a This criterion is the maximum contaminant level (MCL) developed under the "Safe Drinking Water Act". | ^b Equivalent 25°C specific conductance values are 1200 micromhos/cm as a maximum and 800 micromhos/cm as a thirty-day average. |

| | PA state line to Greenup Lock and Dam (RM 341.1) | PA state line to Greenup Lock and Dam (RM 341.1) | Greenup Lock and Dam (RM 341.1) to IN state line | Greenup Lock and Dam (RM 341.1) to IN state line |
|-------------------|--|--|--|--|
| Month/date | Period Average (°F) | Instantaneous Maximum (°F) | Period Average (°F) | Instantaneous Maximum (°F) |
| January 1 - 31 | 45.7 | 47.0 | 46.8 | 47.2 |
| February 1 - 29 | 43.9 | 46.3 | 47.9 | 52.8 |
| March 1 - 31 | 51.2 | 56.4 | 57.4 | 62.4 |
| April 1 -30 | 61.2 | 66.3 | 66.9 | 71.1 |
| May 1 -31 | 71.2 | 76.5 | 76.4 | 81.4 |
| June 1 - 14 | 78.8 | 81.0 | 83.5 | 85.7 |
| June 15 - 30 | 87.0 | 87.0 | 87.0 | 87.0 |
| July 1 -31 | 89.0 | 89.0 | 89.0 | 89.0 |
| August 1- 31 | 89.0 | 89.0 | 89.0 | 89.0 |
| September 1 - 15 | 87.0 | 87.0 | 87.0 | 87.0 |
| September 16 - 30 | 81.0 | 83.1 | 84.7 | 87.0 |
| October 1 - 31 | 74.1 | 78.3 | 76.7 | 81.6 |
| November 1 - 30 | 65.0 | 69.0 | 66.2 | 70.8 |
| December 1 -31 | 55.8 | 60.0 | 55.6 | 60.4 |