Presented below are water quality standards that are in effect for Clean Water Act purposes.

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

3745-2-05 Calculating wasteload allocations.

(A) For discharges of toxic and carcinogenic pollutants to flowing receiving waters, a wasteload allocation (WLA) for a pollutant shall be calculated for each water quality criterion applicable in accordance with rule 3745-2-04 of the Administrative Code using the following mass balance equation:

$$\frac{WQC\left(Q_{eff} + Q_{up}\right) - Q_{up}\left(WQ_{up}\right)}{Q_{eff}}$$

Where:

WQC = water quality criterion as established in rule 3745-2-04 of the Administrative Code;

Q_{eff} = effluent flow as established in paragraph (A)(4) of this rule;

Q_{up} = per cent of the stream design flow as established in paragraphs (A)(1) and (A)(2) of this rule; and

WQ_{up} = background water quality as established in paragraph (A)(3) of this rule.

Alternative modeling methods (including, but not limited to, continuous simulation or probabilistic analyses) may be used at the discretion of the director if they are demonstrated to be appropriate and protective of applicable water quality criteria.

(1) The following stream design flows shall be used to determine WLAs for discharges to flowing receiving waters, unless otherwise specified in this rule.

(a) 7Q10 for chronic aquatic life criteria (except for ammonia-nitrogen).

(b) 1Q10 for acute aquatic life criteria (except for ammonia-nitrogen).

(c) HMQ for agricultural water supply, human health, and aesthetic criteria.

(d) 90Q10 for wildlife criteria.

(e) The per cent of stream design flow contained in paragraph (A)(2) of this rule shall be used in all WLAs, except as specifically provided by paragraph (A)(2)(f) of this rule. The per cent of stream design flow used for conducting WLAs to achieve maximum and average water quality criteria shall be the same, except as provided in paragraphs (A)(2)(d) and (A)(2)(e) of this rule.

(f) Stream design flows for streams that are impacted by reservoirs or other physical alterations which impact stream flow shall be determined on a case-by-case basis,

taking into account relevant site-specific factors. Stream design flows for such impacted stream segments shall be established at levels to ensure protection of designated uses.

(g) Alternative flows may be used at the director's discretion if the flow is as protective as those listed in this paragraph.

(2) The stream/discharge flow ratio (SDR) is the ratio of annual 7Q10 to effluent design flow.

(a) If the annual 7Q10 is less than or equal to 1.0 cubic feet per second, or if the SDR is equal to or less than 10.0, one hundred per cent of the applicable stream design flow shall be used in the WLA.

(b) If the SDR is equal to or greater than 252.0, the WLA shall be calculated using twenty-five per cent of the applicable stream design flow.

(c) If the SDR is greater than 10.0 but less than 252.0, the WLA shall be calculated using the per cent of the applicable stream design flow determined by the following equation:

Per cent = 103.1 - 0.31(SDR)

(d) Exceptions for discharges to flowing streams in the lake Erie basin:

(i) WLAs to maintain average criteria shall be calculated using twenty-five per cent of the applicable stream design flow; and

(ii) WLAs to maintain maximum criteria shall be calculated using the SDR to determine the applicable percentage of the stream design flow, as established in paragraphs (A)(2)(a) to (A)(2)(c) of this rule.

(iii) No new discharges of biaccumulative chemicals of concern (BCCs) shall be allowed a mixing zone after the effective date of this rule; and

(iv) For existing discharges of BCCs, mixing zones shall be phased out. No mixing zone shall be available after November 15, 2010, unless the discharger demonstrates to the satisfaction of the director, that a mixing zone is necessary for technical, economic, or water conservation reasons.

(e) Exceptions for discharges to flowing streams in the Ohio River basin:

(i) No new discharges of biaccumulative chemicals of concern (BCCs) shall be allowed a mixing zone after the effective date of this rule; and

(ii) For existing discharges of BCCs, mixing zones shall be phased out. No mixing zone shall be available after November 15, 2010, unless the discharger demonstrates to the satisfaction of the director, that a mixing zone is necessary for technical, economic, or water conservation reasons.

(f) Exceptions for direct discharges to the Ohio river. The following stream design flows and percentages of stream design flows shall be used for WLAs for direct discharges to the Ohio river:

(i) WLAs to maintain average criteria shall use ten per cent of the 7Q10;

(ii) WLAs to maintain maximum criteria shall use one per cent of the 7Q10; and

(iii) WLAs for human health, agricultural water supply, and aesthetic criteria shall use ten per cent of the HMQ.

(g) A mixing demonstration may be conducted to justify the use of alternate percentages of stream design flow, in accordance with rule 3745-2-08 of the Administrative Code.

(3) Background water quality shall be determined using the following methods.

(a) If representative ambient data are available:

(i) The arithmetic mean shall be used if the number of observations is less than ten;

(ii) The median shall be used if the number of observations is greater than or equal to ten; and

(iii) Values reported as less than the reported analytical detection level shall be replaced with one-half of the applied detection level in the calculation of the mean or median. If the analytical detection level for a pollutant is not reported and is not available, the analytical detection level for the most sensitive analytical method currently approved under 40 C.F.R. 136, or other analytical method detection level deemed acceptable by the director, shall be used.

(b) If all representative ambient data are below detection:

(i) Zero shall be used as the background water quality if default mixing assumptions are being applied and if the pollutant is not reasonably suspected of causing or contributing to the impairment or threatening of the designated use in the receiving water. Background water quality may be determined as

part of any study designed to increase the default mixing levels established in paragraph (A)(2) of this rule; and

(ii) One-half of the reported analytical detection level for the pollutant or one-half of the lowest water quality criteria, whichever is lower, shall be used as the background water quality if the pollutant is reasonably suspected of causing or contributing to the impairment or threatening of the designated use in the receiving water. Studies such as those listed in paragraph (A)(3)(b)(ii)(*a*) or (A)(3)(b)(ii)(*b*) of this rule may be substituted for the values of background water quality in this paragraph if Ohio EPA determines that the study is scientifically defensible.

(*a*) The pollutant shall be quantified through additional monitoring of background water quality with more sensitive analytical methods.

(*b*) The pollutant shall be quantified by another method, such as caged fish or native fish data.

(c) If no representative ambient data are available, data considered by the director to be representative of the natural background conditions for that receiving water shall be used. Such data shall be evaluated in accordance with paragraphs (A)(3)(a) and (A)(3)(b) of this rule.

(d) If no representative ambient data are available and there is no other representative information available, background water quality shall be determined using the procedures in paragraphs (A)(3)(b)(i) and (A)(3)(b)(ii) of this rule. Any study designed to increase the effluent mixing levels established in paragraph (A)(2) of this rule shall include determination of background water quality.

(4) Effluent design flow. The effluent design flow used in the WLAs shall be:

(a) The average design flow for publicly owned treatment works (POTW), unless the director reasonably believes that the actual effluent flow will differ significantly from the design flow during the life of the permit. In such a case, the effluent flow shall represent a reasonable estimate of the projected flow for the POTW during the applicable permit period;

(b) A reasonable measure of average wastewater flow for dischargers other than publicly owned treatment works. This flow shall represent a reasonable measure of actual production, projected to occur during the next NPDES permit period;

(c) The projected average design flow for proposed sources; or

(d) If no effluent flow is available, the WLA will be calculated using not more than

twenty-five per cent of the stream design flow.

(5) WLA results shall not exceed the inside mixing zone maximum (IMZM) unless a mixing demonstration is completed in accordance with rule 3745-2-08 of the Administrative Code which justifies an alternate value.

(6) Except as provided in paragraph (C)(2) of rule 3745-2-06 of the Administrative Code, if the background water quality exceeds an applicable average criterion, the WLA for that criterion shall equal the applicable average criterion.

(7) Except as provided in paragraph (C)(2) of rule 3745-2-06 of the Administrative Code, if the background water quality exceeds the maximum criterion, the WLA for that criterion shall equal the maximum criterion.

(8) Multiple discharges. When it is necessary to consider multiple discharges in a WLA, the loading capacity may be distributed among discharges using a method considered appropriate by the director, based on site-specific considerations.

(9) When determining a WLA for multiple discharges, the stream/discharge flow ratio shall be calculated as the total flow at the end of the modeled segment under 7Q10 design conditions minus all effluent flow, divided by the total effluent flow to the segment. This SDR shall then be used to calculate the applicable percentage of stream design flow, using the equation listed in paragraph (A)(2) of this rule. The same percentage of stream design flow shall be used for each discharge in the segment.

(B) WLAs for direct discharges to lakes.

(1) WLAs to maintain average criteria for direct discharges to non-flowing receiving waters shall be determined using the following equation:

11(WQC) - 10(BACK)

Where:

WQC = water quality criterion as established in rule 3745-2-04 of the Administrative Code; and

BACK = background water quality as established in paragraph (A)(3) of this rule.

(2) Exceptions for bioaccumulative chemicals of concern (BCCs).

(a) No new discharges of BCCs shall be allowed a mixing zone after the effective date of this rule.

(b) For existing discharges of BCCs, mixing zones shall be phased out. No mixing zone shall be available after November 15, 2010, unless the discharger demonstrates to the satisfaction of the director, that a mixing zone is necessary for technical, economic, or water conservation reasons.

(3) WLAs for the maximum criteria shall be set equal to the IMZM. WLA results shall not exceed the IMZM unless a mixing demonstration is completed in accordance with rule 3745-2-08 of the Administrative Code which justifies an alternate value.

(4) Except as provided in paragraph (C)(2) of rule 3745-2-06 of the Administrative Code, if the background water quality exceeds an applicable average criterion, the WLA for that criterion shall equal the applicable average criterion.

(5) A mixing demonstration may be conducted in accordance with rule 3745-2-08 of the Administrative Code to justify a different quantity of receiving water in the WLA for average criteria or limits that exceed the IMZM.

(6) At the director's discretion, alternate modeling methods may be used if they are demonstrated to be appropriate and protective of water quality criteria.

Effective: 12/30/2002

R.C. Section 119.032 review dates: 3/25/2002 and 12/30/2007

Promulgated under: R.C. Section 119.03
Rule authorized by: R.C. Sections 6111.03 and 6111.12
Rule amplifies: R.C. Section 6111.12
Prior effective date: 10/31/1997