POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
PART 309
PERMITS

SUBPART A: NPDES PERMITS

Section

SUBPART B: OTHER PERMITS

AUTHORITY: Implementing Sections 13 and 13.3 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/13, 13.3 and 27].

SOURCE: Adopted in R71-14, at 4 PCB 3, March 7, 1972; amended in R73-11, 12, at 14 PCB 661, December 5, 1974, at 16 PCB 511, April 24, 1975, and at 28 PCB 509, December 20, 1977; amended in R73-11, 12, at 29 PCB 477, at 2 Ill. Reg. 16, p. 20, effective April 20, 1978; amended in R79-13, at 39 PCB 263, at 4 Ill. Reg. 34, p. 159, effective August 7, 1980; amended in R77-12B, at 41 PCB 369, at 5 Ill. Reg. 6384, effective May 28, 1981; amended in R76-21, at 44 PCB 203, at 6 Ill. Reg. 563, effective December 24, 1981; codified at 6 Ill. Reg. 7818; amended in R82-5, 10, at 54 PCB 411, at 8 Ill. Reg. 1612, effective January 18, 1984; amended in R86-44 at 12 Ill. Reg. 2495 effective January 13, 1988; amended in R88-1 at 13 Ill. Reg. 5993, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2892, effective February 13, 1990; amended in R91-5 at 16 Ill. Reg. 7339, effective April 27, 1992; amended in R95-22 at 20 Ill. Reg. 5526, effective April 1, 1996; amended in R99-8 at 23 Ill. Reg. 11287, effective August 26, 1999, amended in _____ at _____ Ill. Reg. _____, effective _____, 2002)

SUBPART A: NPDES PERMITS

Section 309.141 Terms and Conditions of NPDES Permits

In establishing the terms and conditions of each issued NPDES Permit, the Agency shall apply and ensure compliance with all of the following, whenever applicable:

a) Effluent limitations under Sections 301 and 302 of the CWA;

b) Standards of performance for new sources under Section 306 of the CWA;

c) Effluent standards, effluent prohibitions, and pretreatment standards under Section 307 of the CWA;

d) Any more stringent limitation, including those:

1) necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any Illinois statute or regulation (under authority preserved by Section 510 of the CWA),

2) necessary to meet any other federal law or regulation, or

3) required to implement any applicable water quality standards; such limitations to include any legally applicable requirements necessary to implement total maximum daily loads established pursuant to Section 303(d) of the CWA and incorporated in the continuing planning process approved under Section 303(e) of the CWA and any regulations or guidelines issued pursuant thereto;

e) Any more stringent legally applicable requirements necessary to comply with a plan approved pursuant to Section 208(b) of the CWA;

f) Prior to promulgation by the Administrator of the U.S. Environmental Protection Agency of applicable effluent standards and limitations pursuant to Sections 301, 302, 306 and 307 of the CWA, such conditions as the Agency determines are necessary to carry out the provisions of the CWA;

g) If the NPDES Permit is for the discharge of pollutants into navigable waters from a vessel or other floating craft (except that no NPDES Permit shall be issued for the discharge of pollutants from a vessel or other floating craft into Lake Michigan) any applicable regulations promulgated by the Secretary of the Department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage and stowage of pollutants; and

h) If the NPDES Permit is for the discharge of pollutants from other than wet weather point sources into the Lake Michigan Basin as defined at 35 Ill. Adm. Code 303.443:

1) Total Maximum Daily Loads (TMDLs) and Waste Load Allocation (WLA) will be established through either the LaMP or a RAP for an Area of Concern. If a LaMP or RAP has not been completed and adopted, effluent limits shall be established consistent with the other provisions of this Section, including, but not limited to, Additivity, Intake Pollutants, Loading Limits, Level of Detection/Level of Quantification and Compliance Schedules. When calculation of TMDLs or a Waste Load Allocation is incomplete and it is expected that limits established through other provisions will be superseded upon completion of the TMDL or Waste Load Allocation process, those limits shall be identified as interim and the permit shall include a reopener clause triggered by completion of a TMDL or WLA determination. Any new limits brought about through exercise of the reopener clause shall be eligible for delayed compliance dates and compliance schedules consistent with Section 39(b) of the Act [415 ILCS 5/39(b)], 35 Ill. Adm. Code 309.148, and 35 Ill. Adm. Code 352.Subpart H.

2) 35 Ill. Adm. Code 302.590 establishes an acceptable additive risk level of one in 100,000 (10(-5)) for establishing Tier I criteria and Tier II values for combinations of substances exhibiting a carcinogenic or other nonthreshold toxic mechanism. For those discharges containing multiple nonthreshold substances application of this additive standard shall be consistent with this subsection.

   A) For discharges in the Lake Michigan basin containing one or more 2,3,7,8-substituted chlorinated dibenzo-p-dioxins or 2,3,7,8-substituted dibenzofurans, the tetrachloro dibenzo-p-dioxin 2,3,7,8-(TCDD) toxicity equivalence concentration (TEC_{TCDD}) shall be determined as outlined in subsection (h)(2)(B).

   B) The values listed in the following Table shall be used to determine the 2,3,7,8-TCDD toxicity equivalence concentrations using the following equation:

$$(TEC)_{TCDD} = Sigma(C)_x\ (TEF)_x\ (BEF)_x$$

WHERE:

$(TEC)_{TCDD}$ = 2,3,7,8-TCDD toxicity equivalence concentration in effluent
$(C)_x$ = Concentration of total chemical x in effluent
$(TEF)_x$ = TCDD toxicity equivalency factor for x
$(BEF)_x$ - TCDD bioaccumulation equivalency factor for x

TABLE

Congener	TEF	BEF
2,3,7,8-TCDD	1.0	1.0
1,2,3,7,8-PeCdd	0.5	0.9
1,2,3,4,7,8-HxCDD	0.1	0.3
1,2,3,6,7,8-HxCDD	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.0
OCDD	0.001	0.0
2,3,7,8-TCDF	0.1	0.8
1,2,3,7,8-PeCDF	0.05	0.2
2,3,4,7,8-PeCDF	0.5	1.6
1,2,3,4,7,8-HxCDF	0.1	0.0
1,2,3,6,7,8-HxCDF	0.1	0.2
2,3,4,6,7,8-HxCDF	0.1	0.7
1,2,3,7,8,9-HxCDF	0.1	0.6
1,2,3,4,6,7,8-HpCDF	0.01	0.0
1,2,3,4,7,8,9-HpCDF	0.01	0.4
OCDF	0.001	0.0

C) Any combination of carcinogenic or otherwise nonthreshold toxic substances shall be assessed on a case-by-case basis. The Agency shall only consider such additivity for chemicals that exhibit the same type of effect and the same mechanism of toxicity, based on available scientific information that supports a reasonable assumption of additive effects.

~~3) Conversion factors for determining the dissolved concentration of metals from the total recoverable concentration.~~

~~A) The numeric standards for certain metal parameters in 35 Ill. Adm. Code 302.504 are established as dissolved forms of the substance since the dissolved form more closely relates to the toxicology literature utilized in deriving the standard. However, most discharge monitoring data used in deriving a PEQ will be from a total recoverable analytical method and permit limits if and when established will be set at total recoverable to accommodate the total recoverable analytical method. The Agency will use a conversion factor to determine the amount of total metal corresponding to dissolved metal for each metal with a water quality standard set at dissolved concentration. In the absence of facility specific data the following default conversion factors will be used for both PEQ derivation and establishing WQBELs. The conversion factor represents the portion of the total recoverable metal presumed to be in dissolved form. The conversion values given in the following table are multiplied by the appropriate total recoverable metal concentration to obtain a corresponding dissolved concentration that then may be compared to the acute or chronic standard. A dissolved metal concentration may be divided by the conversion factor to obtain a corresponding total metal value that will generally be the metal form regulated in NPDES permits.~~

~~Metal~~	~~Conversion Factor~~	
	~~Acute Standard~~	~~Chronic Standard~~
~~Arsenic~~	~~1.000~~	~~1.000~~
~~Cadmium~~	~~0.850~~	~~0.850~~
~~Chromium (Trivalent)~~	~~0.316~~	~~0.860~~
~~Chromium (Hexavalent)~~	~~0.982~~	~~0.962~~
~~Copper~~	~~0.960~~	~~0.960~~
~~Mercury~~	~~0.850~~	~~0.850~~
~~Nickel~~	~~0.998~~	~~0.997~~

~~Selenium~~	~~0.922~~	~~0.922~~
~~Zinc~~	~~0.978~~	~~0.986~~

~~B) A permittee may propose an alternate conversion factor for any particular site specific application. The request must contain sufficient site specific data, or other data that is representative of the site, to identify a representative ratio of the dissolved fraction to the total recoverable fraction of the metal in the receiving water body at the edge of the mixing zone. If a site specific conversion factor is approved, that factor will be used for PEQ derivation and establishment of a WQBEL in lieu of its default counterpart in subsection (h)(3)(A).~~

3~~-4~~) Reasonable potential to exceed.

A) The first step in determining if a reasonable potential to exceed the water quality standard exists for any particular pollutant parameter is the estimation of the maximum expected effluent concentration for that substance. That estimation will be completed for both acute and chronic exposure periods and is termed the PEQ. The PEQ shall be derived from representative facility specific data to reflect a 95 percent confidence level for the 95th percentile value. These data will be presumed to adhere to a lognormal distribution pattern unless the actual effluent data demonstrates a different distribution pattern. If facility specific data in excess of 10 data values is available, a coefficient of variation that is the ratio of the standard deviation to the arithmetic average shall be calculated by the Agency. The PEQ is derived as the upper bound of a 95 percent confidence bracket around the 95th percentile value through a multiplier from the following table applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410 as appropriate for acute and chronic data sets.

PEQ = (maximum data point)(statistical multiplier)

Coefficient of Variation

No. Samples	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
1	1.4	1.9	2.6	3.6	4.7	6.2	8.0	10.1	12.6	15.5	18.7	22.3	26.4
2	1.3	1.6	2.0	2.5	3.1	3.8	4.6	5.4	6.4	7.4	8.5	9.7	10.9
3	1.2	1.5	1.8	2.1	2.5	3.0	3.5	4.0	4.6	5.2	5.8	6.5	7.2
4	1.2	1.4	1.7	1.9	2.2	2.6	2.9	3.3	3.7	4.2	4.6	5.0	5.5
5	1.2	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.2	3.6	3.9	4.2	4.5
6	1.1	1.3	1.5	1.7	1.9	2.1	2.4	2.6	2.9	3.1	3.4	3.7	3.9
7	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.1	3.3	3.5
8	1.1	1.3	1.4	1.6	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.2
9	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.8	2.9
10	1.1	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.2	2.3	2.4	2.6	2.7
11	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5
12	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.4
13	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
14	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
15	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1
16	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0
17	1.1	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.9	1.9
18	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.6	1.6	1.7	1.7	1.8	1.9
19	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8
20	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7
30	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4
40	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1
60 or greater	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.

ii) If the PEQ is more than the water quality standard, the Agency will proceed to consideration of dilution and mixing pursuant to subsection (h)(5).

B) If facility-specific data of 10 or less data values is available, an alternative PEQ shall be derived using the table in subsection (h)(4)(A) assuming a coefficient of variation of 0.6, applied to the maximum value in the data set that has its quality assured consistent with 35 Ill. Adm. Code 352.410.

i) If the PEQ is less than or equal to the water quality standard, there is no reasonable potential and no limit will be established in the permit.

ii) If the PEQ exceeds the water quality standard, an alternative PEQ will be calculated using the maximum value in the data set and a multiplier of 1.4. If the alternative PEQ also exceeds the water quality standard, the Agency will proceed to consider dilution and mixing pursuant to subsection (h)(5).

iii) If the PEQ exceeds the water quality standard but the alternative PEQ is less than or equal to the standard, the Agency will either proceed to consider dilution and mixing pursuant to subsection (h)(5), or will incorporate a monitoring requirement and reopener clause to reassess the potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency shall consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.

C) The Agency shall compare monthly average effluent data values, when available, with chronic aquatic life, human health and wildlife standards to evaluate the need for monthly average WQBELs. The Agency shall use daily

effluent data values to determine whether a potential exists to exceed acute aquatic life water quality standards.

D) The Agency may apply other scientifically defensible statistical methods for calculating PEQ for use in the reasonable potential analysis as provided for in Procedure 5.b.2 of Appendix F to 40 CFR 132, incorporated by reference at 35 Ill. Adm. Code 301.106.

E) Regardless of the statistical procedure used, if the PEQ for the parameter is less than or equal to the water quality standard for that parameter, the Agency shall deem the discharge not to have a reasonable potential to exceed, and a water quality based effluent limit (WQBEL) shall not be required unless otherwise required under 35 Ill. Adm. Code 352.430.

4 ~~5~~) If the PEQ for a parameter is greater than the particular water quality standard, criteria or value for that parameter, the Agency will assess the level of treatment being provided by the discharger. If the discharger is providing (or will be providing) a level of treatment consistent with the best degree of treatment required by 35 Ill. Adm. Code 304.102(a), the PEQ derived under subsection (h)(4) shall be compared to a preliminary effluent limitation (PEL) determined by applying an appropriate mixing zone or a default mixing zone to the discharge. Mixing opportunity and dilution credit will be considered as follows:

A) Discharges to tributaries of the Lake Michigan Basin shall be considered to have no available dilution for either acute or chronic exposures, and the PEL will be set equivalent to the water quality standard unless dilution is documented through a mixing zone study.

B) Bioaccumulative chemicals of concern (BCCs):

i) No mixing shall be allowed for new discharges of BCCs commencing on or after

December 24, 1997. The PEL will be set equivalent to the water quality standard.

ii) Mixing shall be allowed for discharges of BCCs which existed as of December 24, 1997 in accordance with the requirements of 35 Ill. Adm. Code 302.530.

C) Direct discharges to the Open Waters of Lake Michigan shall have a default mixing allowance of 2:1 for acute standards, criteria or values and 10:1 for chronic standards, criteria or values if the discharge configuration indicates that the effluent readily and rapidly mixes with the receiving waters. If ready and rapid mixing is in doubt the Agency shall deny any default dilution or mixing allowance and require a mixing or dispersion study to determine the proper dilution allowance. If the discharger applies for more than the default dilution or mixing allowance, it must submit a mixing or dispersion study to justify its request. Whenever a mixing or dispersion study is available, it shall be used to determine dilution or mixing allowance in lieu of the default allowance.

5 ~~6~~) Preliminary effluent limitations calculations.

(A) The preliminary effluent limitation (PEL) is calculated in a simple mass balance approach reflecting the dilution allowance established in subsection (h)(5):

WQS = [(Qe)(PEL) + (Qd)(Cd)] / [Qe + Qd] or
PEL = [WQS(Qe + Qd) - (Qd)(Cd)] / Qe

WHERE:

WQS = applicable water quality standard, criteria or value

Qe = effluent flowrate

Qd = allowable dilution flowrate
Cd = background pollutant concentration in dilution water

B) The representative background concentration of pollutants to develop TMDLs and WLAs calculated in the absence of a TMDL shall be established as follows:

i) "Background" represents all pollutant loadings, specifically loadings that flow from upstream waters into the specified watershed, water body, or water body segment for which a TMDL or WLA in the absence of a TMDL is being developed and enter the specified watershed, water body, or water body segment through atmospheric deposition, chemical reaction, or sediment release or resuspension.

(ii) When determining what available data are acceptable for use in calculating background, the Agency shall use its best professional judgment, including consideration of the sampling location and the reliability of the data through comparison, in part, to detection and quantification levels. When data in more than 1 of the data sets or categories described in subsection (h)(6)(B)(iii) exists, best professional judgment shall be used to select the data that most accurately reflects or estimates background concentrations. Pollutant degradation and transport information may be considered when using pollutant loading data to estimate a water column concentration.

(iii) The representative background concentration for a pollutant in the specified watershed, water body, or water body segment shall be established on a case-by-case basis as the geometric mean of: acceptable water column data; water column concentrations estimated through use of acceptable caged or resident fish tissue data; or water column

concentrations estimated through the use of acceptable or projected pollutant loading data. When determining the geometric mean of the data for a pollutant that includes values both above and below the detection level, commonly accepted statistical techniques shall be used to evaluate the data. If all of the acceptable data in a data set are below the detection level for a pollutant, then all the data for the pollutant in that data set shall be assumed to be zero.

6 ~~7~~) Water quality based effluent limitations.

A) If the PEQ is less than or equal to the PEL, it will be concluded that there is no reasonable potential to exceed. Under such circumstances a permit limit for that contaminant will not be set unless otherwise justified under one or more provisions of 35 Ill. Adm. Code 352.430.

B) If the PEQ is equal to or greater than the PEL, and the PEQ was calculated using a data set of more than 10 values, a water quality based effluent limitation (WQBEL) will be included in the permit. If the PEQ was calculated using a data set of less than or equal to 10 values, and the alternative PEQ calculated under subsection (h)(4)(B) also exceeds the PEL, a WQBEL will be included in the permit.

C) If the PEQ was calculated using a data set of less than or equal to 10 values, and the PEQ is greater than the PEL but the alternative PEQ is less than the PEL, the Agency will either establish a WQBEL in the permit or incorporate a monitoring requirement and reopener clause to reassess potential to exceed within a specified time schedule, not to exceed one year. In determining which of these options to use in any individual application, the Agency shall consider the operational and economic impacts on the permittee and the effect, if any, deferral of a final decision would have on an ultimate compliance schedule if a permit limit were subsequently determined to be necessary.

D) The WQBEL will be set at the PEL, unless the PEL is appropriately modified to reflect credit for intake pollutants when the discharged water originates in the same water body to which it is being discharged. Consideration of intake credit will be limited to the provisions of 35 Ill. Adm. Code 352.425.

E) The reasonable potential analysis shall be completed separately for acute and chronic aquatic life effects. When WQBELs are based on acute impacts, the limit will be expressed as a daily maximum. When the WQBEL is based on chronic effects, the limit will be expressed as a monthly average. Human health and wildlife based WQBELs will be expressed as monthly averages. If circumstances warrant, the Agency shall consider alternatives to daily and monthly limits.

(Source: Amended at 23 Ill. Reg. 11287, effective August 26, 1999, amended in _____ at _____ Ill. Reg. _____, effective _____, 2002)

Section 309.157 Permit Limits for Total Metals

The NPDES permit limits for metals must be expressed in total metal form even though the water quality standards for metals specified in Sections 302.208(e), 302.504(a), and 304.105 are in their dissolved form. In the absence of any site-specific information concerning the ratio of total to dissolved metal in a particular effluent or receiving water downstream of a mixing zone, the reciprocal of the conversion factor becomes the metals translator and the resulting total metal value becomes the NPDES permit limit. The permittee may provide the Agency with information demonstrating that an effluent or receiving water-specific metals translator is more appropriate for the conversion of the dissolved metal water quality standard into a total metal permit limit. Upon review and approval of the submitted information, the Agency will calculate a total metal permit limit that is protective of the dissolved metal water quality standard.

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

(Source: Adopted in _____, at _____ Ill. Reg. _____, effective _____, 2002)