ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
REPEALING, AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order **to repeal** NR 104.02(3)(a)2. b., 106.12 and 210.05(2)(c); **to renumber** NR 106.16 and 106.17 and Subchapter IV; **to amend** NR 104 Table 1, 104.02(3)(b)2.c., 105.05(3)(L) and (m), NR 105 Tables 2, 4 (title), 6, 8 and 9, 106.05(5)(a), 106.07(5), 106.09(2)(b)(intro.) and 106.10(1)intro.; and **to create** NR 105 Tables 2C and 4B, Subchapter titles I through III, and subch. IV of NR 106 relating to the regulation of discharges of ammonia to surface waters of the state and relating to other minor corrections to errors in chs. NR 105 and 106.

WT-27-03

Analysis Prepared by the Department of Natural Resources

Statutory authority: ss. 227.11(2), 281.15, 283.001, 283.13, 283.15, 283.31, 283.37 and 283.55, Stats.
Statutes interpreted: ss. 281.15, 283.13 and 283.15, Stats.

This proposal includes changes to chs. NR 105, 106, 104, and 210 of the Wisconsin Administrative Code as follows:

Chapter NR 105 contains Tables 1 through 6 that list the criteria for toxic substances established for the protection of fish and aquatic life. The criteria are used in conjunction with the procedures specified in ch. NR 106 to develop WPDES permit limits for surface water discharges. Acute and chronic ammonia criteria are proposed to be placed in newly created Table 2C and Table 4B, respectively. The proposed ammonia criteria were developed based on the U.S. EPA 1999 Update of Ambient Water Quality Criteria for Ammonia. Adjustments were made to the EPA criteria to reflect species present and the water body use classifications in Wisconsin.

Chapter NR 106 contains procedures for the calculation of water quality based effluent limits for toxic and organoleptic substances. The procedures for calculating ammonia limits are significantly different than those for other substances. A separate subchapter of NR 106 containing requirements for ammonia limit calculations and implementation is, therefore, being proposed.

Chapter NR 104, which establishes uses and designated standards for water bodies, establishes an ammonia effluent limit for discharges to limited forage fish (intermediate) streams. This limit is inconsistent with the proposed NR 105 criteria and NR 106 limit calculation procedure. It is proposed to remove the reference to the ammonia limit contained in NR 104.02(3)(a)2.b. and Table 1.

NR 210.05(2)(c), SEWAGE TREATMENT WORKS, establishes an ammonia effluent limit for discharges to intermediate streams, as done in NR 104. To eliminate the inconsistency with proposed NR 105 and 106, it is proposed to delete NR 210.05(2)(c).

Corrections for typographical or grammatical errors in chs. NR 104, 105, and 106 are also being proposed.

SECTION 1. NR 104.02(3)(a)2.b. is repealed.

SECTION 2. NR 104 Table 1 is amended to read:

TABLE 1

Parameter	Monthly Average (mg/L)	Daily Maximum (mg/L)	Weekly Average (mg/L)	Other (mg/L)
BOD_5	15	30	-	-
Total Suspended Solids	20	30	-	-
~~NH3\N (May-October)~~	~~-~~	~~-~~	~~3~~	~~-~~
~~NH3\N (November-April)~~	~~-~~	~~-~~	~~6~~	~~-~~
Dissolved Oxygen	-	-	-	4 (minimum)

SECTION 3. NR 104.02(3)(b)2.c. is amended to read:

NR 104.02(3)(b)2.c. All other substances ~~may~~ shall meet the acute and chronic toxicity criteria for the limited aquatic life subcategory specified in or developed pursuant to ss. NR 105.05 and 105.06.

SECTION 4. NR 105.05(3)(L) and (m) are amended to read:

NR 105.05(3)(L) The acute toxicity equation (ATE) is written as:

$$ACT = e(V \ln(\text{water quality parameter}) + \ln ACI).$$

The ATE shall be applicable only over the range of water quality parameters equivalent to the mean plus or minus 2 standard deviations using the entire fresh water acute toxicity data base and the water quality parameter transformation employed in par. (a). If the value at a specific location is outside of that range, the endpoint of the range nearest to that value shall be used to determine the criterion. Additional information may be used to modify those ranges. The final acute value (FAV) equals 2 times the ATC (acute toxicity criterion) calculated using the formula in this paragraph.

(m) If, for a commercially, recreationally or ecologically important species, the SMAI is lower than the calculated ~~[~~ACI~~]~~, then that SMAI is used as the ~~[~~ACI~~]~~ instead of the calculated one.

SECTION 5. NR 105 Table 2 is amended to read:

Table 2
Acute Toxicity Criteria for Substances With Toxicity Related to Water Quality
(all in ug/L)

Water Quality Parameter: Hardness (in ppm as $CaCO_3$)

$ATC = e^{(V \ln(\text{hardness}) + \ln ACI)}$ ATC at Various Hardness (~~ppm~~ ppm) Levels

Substance	V	ln ACI	50	100	200
Total Recoverable Cadmium:					
Cold Water	1.147	-3.8104	1.97	4.36	9.65
Warm Water Sportfish, Warm Water Forage and Limited Forage Fish	1.147	-2.9493	4.65	10.31	22.83
Limited Aquatic Life	1.147	-1.9195	13.03	28.87	63.92

Total Recoverable Chromium (+3):					
All Surface Waters	0.819	3.7256	1022	1803	3181
Total Recoverable Copper:					
All Surface Waters	0.8561	-1.1199	9.29	16.82	30.45
Total Recoverable Lead:					
All Surface Waters	0.9662	0.2226	54.73	106.92	208.90
Total Recoverable Nickel:					
All Surface Waters	1.083	2.2289	642.7	1361	~~2434~~ 2219
Total Recoverable Zinc:					
All Surface Waters	0.8745	0.7634	65.66	120.4	220.7

Water Quality Parameter: pH ATC = $e^{(V(pH) + \ln ACI)}$					
Substance	V	ln ACI	~~506.5~~ 6.5	7.8	8.8
Pentachlorophenol:					
All Surface Waters	1.0054	-4.877	5.25	19.40	53.01

SECTION 6. NR 105 Table 2C is created to read:

Table 2C
Acute Toxicity Criteria for Ammonia With Toxicity Related to Water Quality
(all in mg/L)

Cold Water (CW) Categories 1-5 are applicable only to ammonia criteria.[1]

Water Quality Parameter: pH

ATC (in mg/L) = $[A / (1 + 10^{(7.204 - pH)})] + [B /(1 + 10^{(pH - 7.204)})]$

Substance	**A**	**B**	**7.5**	**8.0**	**8.5**
Ammonia (as N) in mg/L:					
CW Category 1 & 4	0.275	39.0	13.28	5.62	2.14
CW Category 2 & 3	0.343	48.7	16.59	7.01	2.67
CW Category 5, Warm Water Sport Fish, Warm Water Forage, and Limited Forage Fish	0.411	58.4	19.89	8.41	3.20
Limited Aquatic Life	0.633	90.0	30.64	12.95	4.93

[1] For ammonia, along with data on all warm water fish species and invertebrates, the cold water criteria are calculated using data on all cold water fish species with the following exceptions:

CW Category 1 = Default category of cold water classification. This category includes all fish. [Note: CW Category 1 is always applicable in Lake Superior, Lake Michigan, and Green Bay north of 44° 32' 30" north latitude.]
CW Category 2 = Inland lakes with populations of cisco, lake trout, brook trout or brown trout, but no other trout or salmonid species. This category excludes data on genus *Onchorhynchus*.
CW Category 3 = Inland lakes with populations of cisco, but no trout or salmonid species. This category excludes data on genera *Onchorhynchus, Salmo*, and *Salvelinus*.
CW Category 4 = Inland trout waters with brook, brown, or rainbow trout, but no whitefish or cisco. This category excludes data on genus *Prosopium*.
CW Category 5 = Inland trout waters with brook and brown trout, but no whitefish, cisco, or other trout or salmonid species. This category excludes data on genera *Prosopium* and *Onchorhynchus*.

[Drafter's note: The text at the bottom of Table 2C is a footnote.]

SECTION 7. NR 105 Table 4 (title) is amended to read:

Table 4
Chronic Toxicity Criteria for Substances With Toxicity ~~Unrelated~~ Related to Water Quality (all in ug/L)

SECTION 8. NR 105 Table 4B is created to read:

Table 4B
Chronic Toxicity Criteria
for Ammonia With Toxicity Related to Water Quality
(all in mg/L)

Substance: Ammonia (as N)
Water Quality Parameters: Temperature in degrees Celsius, pH

30-Day CTC:
CTC = E X $((0.0676/(1 + 10^{(7.688 - pH)})) + (2.912/(1 + 10^{(pH - 7.688)}))) X C$

4-Day CTC = 30-Day CTC X 2.5

Cold Water (all periods), Warm Water Sport Fish and Warm Water Forage Fish (periods with Early Life Stages Present):
C = minimum of (2.85) or $(1.45 X 10^{(0.028 X (25 - T))})$
T = Temperature in degrees Celsius
E = 0.854

Warm Water Sport Fish and Warm Water Forage Fish (periods with Early Life Stages Absent):
C = $(1.45 X 10^{(0.028 X (25 - T))})$
T = Maximum of (actual temperature in degrees Celsius) and (7)
E = 0.854

Limited Forage Fish (periods with Early Life Stages Present):
C = minimum of (3.09) or $(3.73 X 10^{(0.028 X (25 - T))})$
T = temperature in degrees Celsius
E = 1

Limited Forage Fish (periods with Early Life Stages Absent):
C = $(3.73 X 10^{(0.028 X (25 - T))})$
T = Maximum of (actual temperature in degrees Celsius) and (7)
E = 1

Limited Aquatic Life (all periods):

$C = (8.09 \times 10^{(0.028 \times (25 - T))})$

T = temperature in degrees Celsius

E = 1

	30-day CTC in mg/L @ pH of: 7.5	8.0	8.5
Cold Water, Warm Water Sport Fish (Early Life Stages Present), and Warm Water Forage Fish (Early Life Stages Present):			
@ 25 degrees Celsius	2.22	1.24	0.55
@ 14.5 degrees Celsius or less	4.36	2.43	1.09
Warm Water Sport Fish (Early Life Stages Present), and Warm Water Forage Fish (Early Life Stages Absent):			
@ 25 degrees Celsius	2.22	1.24	0.55
@ 7 degrees Celsius or less	7.09	3.95	1.77
Limited Forage Fish (Early Life Stages Present):			
@ 27 degrees Celsius or less	5.54	3.09	1.38
Limited Forage Fish (Early Life Stages Absent):			
@ 25 degrees Celsius	6.69	3.73	1.67
@ 7 degrees Celsius or less	21.34	11.90	5.33
Limited Aquatic Life:			
@ 25 degrees Celsius	14.50	8.09	3.62
@ 7 degrees Celsius or less	46.29	25.82	11.56

Note: The terms “early life stage present” and “early life stage absent” are defined in subch. III of ch. NR 106.

SECTION 10: Table 6 in NR 105 is amended to read:

Table 6
Chronic Toxicity Criteria Using Acute-Chronic Ratios for Substances With Toxicity Related to Water Quality
(all in ug/L)

Water Quality Parameter: Hardness (in ppm as $CaCO_3$)

$CTC = e^{(V \ln(\text{hardness}) + \ln CCI)}$

Substance	V	ln CCI	CTC at Various Hardness (ppm) Levels 50	100	200
Total Recoverable Chromium (+3):					
Cold Water	0.819	0.6851	48.86	86.21	152.1
Warm Water Sport fish	0.819	1.112	74.88	132.1	233.1
All others	0.819	1.112	74.88	132.1	233.1
Total Recoverable Copper:					
All Surface Waters	0.8561	-1.4647	6.58	11.91	21.57
Total Recoverable Lead:					
All Surface Waters	0.9662	-1.1171	14.33	28.01	54.71
Total Recoverable Nickel:					
All Surface Waters	1.083	0.033	71.50	151.5	~~270.8~~ 246.9

Total Recoverable Zinc:					
All Surface Waters	0.8745	0.7634	65.66	120.4	220.7
Water Quality Parameter: pH					
CTC=e $^{(V(pH) + \ln CCl)}$			CTC at Various pH (s.u.) Levels		
Substance	V	ln CCl	6.5	7.8	8.8
Pentachlorophenol:					
Cold Water	1.0054	-5.1468	4.43	14.81	40.48
All Other Surface Waters	1.0054	-4.9617	5.33	~~12.82~~ 17.82	48.70

SECTION 10. NR 105 Table 8 is amended to read:

Table 8
Human Threshold Criteria
(ug/L unless specified otherwise)

Public Water Supply			Non-public Water Supply		
Substance	Warm Water Sport Fish Communities	Cold Water[4] Communities	Warm Water Forage, Limited Forage, and Warm Water Sport Fish Communities	Cold Water Communities	Limited Aquatic Life
Acrolein	7.2	3.4	15	4.4	2800
Antimony[2]	10	10	2200	2200	2200
Benzene[2]	5	5	610	260	4000
Bis(2-chloroisopropyl) ether	1100	1100	55000	34000	220000
Cadmium[2]	10	10	1200	1200	2800
*Chlordane (ng/L)	2.4	0.70	2.4	0.70	310000
Chlorobenzene[2]	100	100	4900	1600	110000
Chromium (+3)	28000	28000	2500000	2500000	5600000
Chromium (+6)	140	140	13000	13000	28000
Cyanide, Total[2]	200	200	40000	40000	120000
*4.4'-DDT (ng/L)	3.0	0.88	3.0	0.88	2800000
1,2-Dichlorobenzene[2]	600	600	6400	1900	500000
1,3-Dichlorobenzene	1400	710	3300	1000	500000
cis-1,2-Dichloroethene[2]	70	70	14000	9000	56000
trans-1,2-Dichloroethene[2]	100	100	24000	13000	110000
Dichloromethane[2] (methylene chloride)	5	5	95000	72000	328000
2,4-Dichlorophenol	74	58	580	180	17000
Dichloropropenes[3] (1,3-Dichloropropene)	8.3	8.2	420	260	1700
*Dieldrin (ng/L)	0.59	0.17	0.59	0.17	280000
2,4-Dimethylphenol	450	430	11000	4500	94000
Diethyl phthalate[2]	5000	5000	68000	21000	4500000
Dimethyl phthalate (mg/L)	241	184	1680	530	56000
4,6-Dinitro-o-cresol	100	96	1800	640	22000
Dinitrophenols[3] (2,4-Dinitrophenol)	55	55	2800	1800	11000
2,4-Dinitrotoluene	0.51	0.48	13	5.3	110
Endosulfan	87	41	181	54	33600
Ethylbenzene[2]	700	700	12000	3700	560000
Fluoranthene	890	610	4300	1300	220000
*Hexachlorobenzene	0.075	0.022	0.075	0.022	4500
Hexachlorocyclopentadiene[2]	50	50	980	310	39000
Hexachloroethane	8.7	3.3	13	3.7	5600
*gamma-BHC (lindane)[2]	0.20	0.20	0.84	0.25	1900

Isophorone	5500	5300	180000	80000	1100000
Lead	10	10	140	140	2240
*Mercury[5]	0.0015	0.0015	0.0015	0.0015	336
Nickel[2]	100	100	43000	43000	110000
*Pentachlorobenzene	0.46	0.14	0.47	0.14	4500
Selenium[2]	50	50	2600	2600	28000
Silver	140	140	28000	28000	28000
*2,3,7,8-TCDD (pg/L)	0.11	0.032	0.11	0.032	7300
*1,2,4,5-Tetrachlorobenzene	0.54	0.17	0.58	0.17	1700
~~Tetrachloroethene~~	~~5.8~~	~~4.6~~	~~46~~	~~15~~	~~1300~~
Toluene[2]	1000	1000	~~760100~~ 76000	26000	1200000
1,1,1-Trichloroethane[2]	200	200	270000	110000	2000000
2,4,5-Trichlorophenol	1600	830	3900	1200	560000

* Indicates substances that are BCCs.

[1] A human threshold criterion expressed in micrograms per liter (ug/L) can be converted to milligrams per liter (mg/L) by dividing the criterion by 1000.

[2] For this substance the human threshold criteria for public water supply receiving water classifications equal the maximum contaminant level pursuant to s. NR 105.08 ~~(3)~~ (4)(b).

[3] The human threshold criteria for this chemical class are applicable to each isomer.

[4] For BCCs, these criteria apply to all water of the Great Lakes system.

[5] The mercury criteria were calculated using 20 g/day fish consumption and the human non-cancer criteria derivation procedure in 40 CFR Part 132, Appendix C. For these criteria, 40 CFR Part 132, Appendix C as stated on September 1, 1997 is incorporated by reference.

SECTION 11. NR 105 Table 9 is amended to read:

Table 9
Human Cancer Criteria
(ug/L unless specified otherwise[1])

	Public Water Supply		Non-public Water Supply		
Substance	Warm Water Sport Fish Communities	Cold Water[4] Communities	Warm Water Forage, Limited Forage, and Warm Water Sport Fish Communities	Cold Water Communities	Limited Aquatic Life
Acrylonitrile	0.57	0.45	4.6	1.5	130
Arsenic[2]	0.185	0.185	50	50	50
*alpha-BHC	0.012	0.0037	0.013	0.0039	11
*gamma-BHC (lindane)	0.052	0.018	0.064	0.019	54
*BHC, technical grade	0.038	0.013	0.047	0.014	39
Benzene[2]	5	5	140	45	1300
Benzidine (ng/L)	1.5	1.5	81	55	300
Beryllium	0.054	0.054	0.33	0.33	16
Bis(2-chloroethyl) ether	0.31	0.29	7.6	3.0	64
Bis(chloromethyl) ether (ng/L)	1.6	1.6	96	79	320
Carbon tetrachloride	2.5	2.1	29	9.5	540
*Chlordane (ng/L)	0.41	0.12	0.41	0.12	54000
Chloroethene (vinyl chloride)	0.18	0.18	10	6.8	37
Chloroform (trichloromethane)	55	53	1960	922	11200
*4,4~~'~~'-DDT (ng/L)	0.22	0.065	0.22	0.065	206000
1,4-Dichlorobenzene	14	12	163	54	2940
3,3~~'~~'-Dichlorobenzidine	0.51	0.29	1.5	0.46	154
1,2-Dichloroethane	3.8	3.8	217	159	770
Dichloromethane[2] (methylene chloride)	5	5	2700	2100	9600
*Dieldrin (ng/L)	0.0091	0.0027	0.0091	0.0027	4400
2,4-Dinitrotoluene	0.51	0.48	13	5.3	110

1,2-Diphenylhydrazine	0.38	0.31	3.3	1.04	88
Halomethanes[3]	55	53	1960	922	11200
*Hexachlorobenzene (ng/L)	0.73	0.22	0.73	0.22	44000
*Hexachlorobutadiene	0.59	0.19	0.69	0.2	910
Hexachloroethane	7.7	2.9	11	3.3	5000
N-Nitrosodiethylamine (ng/L)	2.3	2.3	150	140	460
N-Nitrosodimethylamine	0.0068	0.0068	0.46	0.46	1.4
N-Nitrosodi-n-butylamine	0.063	0.062	2.5	1.3	13
N-Nitrosodiphenylamine	44	23	116	34	~~13~~ 13000
N-Nitrosopyrrolidine	0.17	0.17	11	11	34
*Polychlorinated biphenyls (ng/L)	0.01	0.003	0.01	0.003	9100
*2,3,7,8-Tetrachlorodibenzo-p-dioxin (pg/L)	0.014	0.0041	0.014	0.0041	930
1,1,2,2-Tetrachloroethane	1.7	1.6	52	22	350
Tetrachloroethene	5.8	4.6	46	15	1300
*Toxaphene (ng/L)	0.11	0.034	0.14	0.034	63600
1,1,2-Trichloroethane[2]	6.0	6.0	195	87	1200
Trichloroethene[2]	5	5	539	194	6400
2,4,6-Trichlorophenol	29	24	~~30~~ 300	97	6400

* Indicates substances that are BCCs.

1 A human cancer criterion expressed in micrograms per liter (ug/L), nanograms per liter (ng/L) or picograms per liter (pg/L) can be converted to milligrams per liter (mg/L) by dividing the criterion by 1000, 1,000,000 or 1,000,000,000, respectively.

2 For this substance the human cancer criteria for public water supply receiving water classifications equal the maximum contaminant level pursuant to s. NR 105.09 (4) (b).

3 Human cancer criteria for halomethanes are applicable to any combination of the following chemicals: bromomethane (methyl bromide), chloromethane (methyl chloride), tribromomethane (bromoform), bromodichloromethane (dichloromethyl bromide), dichlorodifluoromethane (fluorocarbon 12) and trichlorofluoromethane (fluorocarbon 11).

4 For BCCs, these criteria apply to all waters of the Great Lakes system.

SECTION 11m. Create NR 106 Subchapter I title:

Subchapter I - Applicability

[*Drafters Note: Subchapter I includes ss. NR 106.01 through 106.03]*

SECTION 11s. Create NR 106 Subchapter II title:

Subchapter II – General Procedures for Effluent Limitations

[*Drafters Note: Subchapter II should be placed immediately above s. NR 106.04. Subchapter II includes ss. NR 106.04 through 106.14]*

SECTION 12. The mu_{dn} formula in NR 106.05(5)(a) is amended to read:

$Mu_{dn} = mu_d + [(sigma_d)^2 - (sigma_{dn})^2]/2 + \ln[(1-d)/(1-d^n)]$~~0~~ = estimated log mean of n-day average discharge concentrations greater than the limit of detection.

[Drafter's Note: In the interest of clarity, only the portion of the formula being amended is shown. The entire text of par. (1) will be shown in the rule making order when it is signed by the Secretary.]

SECTION 13. NR 106.07(5) is amended to read:

NR 106.07(5) If application of sub. (4) results in multiple daily maximum limitations for a substance, the most stringent of the daily maximum~~,~~ limitations for that substance shall be established in the permit as the limitation.

SECTION 14. NR 106.09(2)(b)(intro.) is amended to read:

NR 106.09(2)(b)(intro.) To assure compliance with par. (a), a whole effluent toxicity test~~,~~ may not ~~produce~~ result in a statistically valid LC_{50} less than 100% with the following taxa-specific exposure periods:

SECTION 15. NR 106.10(1)(intro.) is amended to read:

NR 106.10(1)(intro.) NONCONTACT COOLING WATER. Except as provided in sub. (2), the department may not impose water quality based effluent limitations for toxic and organoleptic substances for discharges of uncontaminated stormwater runoff not defined as point sources by s. 283.01(12), Stats., noncontact cooling waters which do not contain additives or combined discharges consisting solely of uncontaminated stormwater runoff and noncontact cooling water without additives. Only the additives to noncontact cooling waters shall be examined under this ~~chapter~~ subsection for the establishment of water quality based effluent limitations. For purposes of this exclusion, the term "additives" are those compounds intentionally introduced by the discharger, but do not include the addition of compounds at a rate and quantity necessary to provide a safe drinking water supply, or the addition of substances in similar type and amount to those substances typically added to a public drinking water supply. The following may be used to establish water quality based effluent limitations for noncontact cooling waters:

SECTION 15s. Renumber NR 106.16 and 106.17 to NR 106.115 and 106.117.

SECTION 16. NR 106.12 is repealed.

SECTION 16m. Create NR 106 Subchapter III title:

Subchapter III – Effluent Limitations for Mercury Discharges

[*Drafter's Note: Subchapter III title to be inserted above s. NR 106.145. Subchapter III includes ss. NR 106.145 and 106.15*]

SECTION 17. Subch. IV of ch. NR 106 is created to read:

Subchapter IV – Effluent Limitations for Ammonia Discharges

NR 106.30 Applicability. The provisions of this subchapter are applicable to point sources that discharge wastewater containing ammonia to surface waters of the state. This subchapter first applies to permits issued or reissued after the effective date of this rule … [revisor insert date].

Note: Any discharges of ammonia from a concentrated animal feeding operation (CAFO) are regulated under ch. NR 243.

NR 106.31 Definitions. In this subchapter:

(1) "Acute criterion" or "ATC" has the meaning in s. NR 105.03(2)

(2) "Chronic criterion" or "CTC" has the meaning in s. NR 105.03(15)

(3) **"**Early life stages" or "ELS" means the life stages of fish that include the pre-hatch embryonic period, post-hatch free embryo or yolk-sac fry, and the larval period, during which the fish feeds. Juvenile

fish, which are anatomically similar to adults, are not considered an early life stage. The duration of the early life stage extends from the beginning of spawning through the end of the larval period.

(4) "Early life stages absent" means the early life stages of fish are not present in a water body affected by a permittee's discharge.

(5) "Early life stages present" means the early life stages of fish are present in a water body affected by a permittee's discharge.

(6) "Lagoon system" means a wastewater treatment system where the method of treatment consists of intermediate-depth basins with typical detention times of 30 to 60 days and generally a continuous discharge. Sufficient aeration is provided to help satisfy oxygen demand, but not provide for complete mixing.

(7) "Real-time" means an event that is occurring during a present point in time.

(8) "Stabilization pond" means a wastewater treatment system consisting of large shallow earthen basins that use algae and aerobic, facultative, and anaerobic organisms for wastewater treatment. Stabilization ponds include, but are not limited to, those sized for a minimum of 150 days storage and have discharges in the spring and fall.

(9) "WPDES" or "WPDES permit" means Wisconsin pollutant discharge elimination system permit under ch. 283, Stats.

NR 106.32 Calculation of water quality-based effluent limitations for ammonia. (1) BASIS FOR LIMITATIONS. (a) The department shall establish water quality based effluent limitations for point source dischargers of ammonia whenever the limitations are necessary, as determined by any method in this section, to meet the applicable water quality standards and criteria in chs. NR 102 to 105.

(b) Water quality based effluent limitations for ammonia shall be determined to attain and maintain water quality standards and criteria specified in or determined according to procedures in ch. NR 105, at the point of discharge. Effluent limitations shall be established to protect downstream waters whenever the department has information to make the determinations.

(2) LIMITATIONS BASED ON ACUTE TOXICITY. (a) The department shall establish daily maximum water quality based effluent limitations to ensure that ammonia is not present in amounts that are acutely harmful to aquatic life in all surface waters, including those portions of the mixing zone normally habitable by aquatic life as required by s. NR 102.04(1).

(b) To assure compliance with par. (a) and except as provided in par. (c), water quality based effluent limitations for ammonia shall equal the final acute value as determined in s. NR 105.05 for the respective fish and aquatic life subcategory for which the receiving water is classified. The water quality based limitations based on acute toxicity shall be established as follows:

1. Effluent limitations for ammonia for discharges to water bodies classified as cold water communities shall be established using the ammonia criteria for the CW Category 1, shown in ch. NR 105, Table 2C, except as provided in subd. 2.

2. If the permittee can demonstrate to the department through site specific information that the fish present in the receiving water are limited to those included in CW Category 2, CW Category 3 or CW Category 5, as described in ch. NR 105, Table 2C, then effluent limitations shall be established based on the criteria shown in ch. NR 105 Table 2C for the respective CW Category. If the permittee intends to make a site-specific demonstration, the permittee shall notify the department prior to the end of the public comment period for permit reissuance. An additional period of time, not to exceed 6 months, shall be provided in the schedule of compliance under s. NR 106.37 to perform the demonstration. If the

department grants approval for an alternative limitation based on CW Category 2, 3 or 5, the department shall propose a modification to the permit that includes the alternative limit.

3. In all cases, effluent limitations for ammonia for discharges directly to Lake Superior, Lake Michigan and Green Bay north of 44° 32' 30" north latitude shall be established using the ammonia criteria for the CW Category 1 shown in ch. NR 105, Table 2C.

(c) Water quality based effluent limitations for ammonia may exceed the final acute value within a zone of initial dilution that meets all of the conditions in s. NR 106.06(3)(c).

(d) Effluent limitations for ammonia shall be calculated using the pH value of the effluent as determined in sub. (4)(b) and this paragraph. The department may also establish effluent limitations or other requirements for pH according to the following procedure:

1. Whenever the department establishes an effluent limitation based on the acute ammonia criteria in ch. NR 105, the department may also establish a maximum effluent limitation for pH equal to the pH value that was used to calculate the ammonia effluent limitation.

2. The department may allow a permittee to chemically adjust effluent pH to a lower value for the purpose of obtaining a higher ammonia effluent limitation. The adjusted pH shall be used to calculate the ammonia effluent limitation. The pH value of an effluent may not be adjusted to less than 6.0. Whenever the effluent pH is adjusted, the department may require continuous monitoring of the pH of the effluent.

3. The department may establish an alternative pH for calculating the limitation under this section to protect downstream uses whenever the receiving water pH is significantly different from the effluent, or if a zone of initial dilution is applicable based on par. (c).

(3) LIMITATIONS BASED ON CHRONIC TOXICITY OR LONG-TERM IMPACTS. (a) *Water quality criteria.* The department shall calculate water quality based effluent limitations for ammonia to ensure that the chronic toxicity criteria applicable to the receiving water as specified in chs. NR 102 to 105 will be met after taking into account dilution with an appropriate quantity of receiving water flow allowed in this subsection. The available dilution shall be determined according to par. (c) unless the conditions specified in s. NR 102.05 (3) require less dilution or no dilution be allowed. The chronic toxicity criteria to be used in the calculation of ammonia effluent limitations shall apply as follows:

1. The applicable early life stages present ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for all times of the year for all discharges to Class I and Class II trout waters, as identified by the department's Wisconsin Trout Streams publication referenced in s. NR 102.04(3)(a), and any additional Class I and Class II trout waters identified in ss. NR 102.10(1)(d) and (e), and 102.11(1)(b) and (c).

2. The applicable early life stages present ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for all discharges to all waters supporting warm water sport fish and warm water forage fish during the month of April or whenever the receiving water temperature, as determined in s. NR 106.32(4), is greater than or equal to 14.6 degrees Celsius.

Note: Effluent limitations are determined based on monthly average water temperatures determined from historical records. For many waters supporting warmwater fish species, the monthly average water temperature is 14.6 degrees Celsius or greater during the months of May through September.

3. Except as provided in subd. 4., the applicable early life stage absent ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for all discharges to all waters supporting warm water sport fish and warm water forage fish whenever the receiving water temperature, as determined in s. NR 106.32(4), is less than 14.6 degrees Celsius, but not including the month of April.

4. The applicable early life stages present ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations applicable for the months of January, February, and March for all discharges to waters where the department determines that early life stages of burbot are present.

Note: Burbot are not present in limited aquatic life streams, limited forage fish streams and small or shallow headwater streams and rivers.

a. Whenever the department determines that early life stage present ammonia criteria are applicable under this subdivision, the permittee may make a demonstration that the early life stages of burbot are not present at the discharge location and will not be affected by the discharge during the months of January and February. If the permittee intends to perform the demonstration, the permittee shall notify the department prior to the end of the public comment period for permit reissuance. The department shall allow an extended compliance schedule in the permit not to exceed one year for the permittee to provide the demonstration.

Note: Permittees that choose to undertake a demonstration under this paragraph should consult with the department during the development of the plan of study.

b. If the permittee can demonstrate to the satisfaction of the department that the early life stages of burbot are not present at the discharge location and will not be affected by the discharge, the early life stage absent ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations that apply to the permittee and the department shall propose a permit modification to incorporate the limitations. If the permittee does not make a sufficient demonstration, the early life present ammonia criteria in s. NR 105 Table 4B shall apply.

5. The applicable early life stages present ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for the months of May through September for all discharges to waters designated in ch. NR 104 as limited forage fish waters. The early life stages absent ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for the months of October through April for all discharges to waters designated in ch. NR 104 as limited forage fish waters.

6. The applicable ammonia criteria in s. NR 105.05 Table 4B shall be used to calculate effluent limitations for all discharges to waters designated in ch. NR 104 as limited aquatic life waters.

(b) *Calculation of limits*. Water quality based effluent limitations to meet the requirements of this subsection shall be calculated using the procedure specified in subd. 1. or 2., except as provided in s. NR 106.06(6).

1. For discharges of ammonia to flowing receiving waters, the water quality based effluent limitation shall be calculated using the following conservation of mass equation whenever the background concentration is less than the water quality criterion:

$$\text{Limitation} = \frac{(CTC)\,(Q_s + (1-f)Q_e) - (Q_s - fQ_e)\,(C_s)}{Q_e}$$

Where:

Limitation = Water quality based effluent limitation (in units of mass per unit of volume)

CTC = The chronic toxicity criterion (concentration in units of mass per unit volume) as referenced in par. (a)

Q_s = Receiving water design flow (in units of volume per unit time) as specified in par. (c)

Q_e = Effluent flow (in units of volume per unit time) as specified in par. (d)

f = Fraction of the effluent flow that is withdrawn from the receiving water

C_s = Background concentration of ammonia (in units of mass per unit volume) as specified in par. (e)

Note: In applying this equation, all units for the flow and concentration parameters respectively shall be consistent.

2. For discharges of ammonia to receiving waters which do not exhibit a unidirectional flow at the point of discharge, such as lakes or impoundments, the department may calculate, in the absence of specific data, water quality based effluent limitations using the following equation whenever the background concentration is less than the water quality criterion:

Limitation = $11 (CTC) - 10C_s$

Where:

Limitation = Water quality based effluent limitation (in units of mass per unit of volume)

CTC = The chronic toxicity criterion (concentration in units of mass per unit volume) as referenced in par. (a)

C_s = Background concentration of ammonia (in units of mass per unit volume) as specified in par. (e)

3. On a case-by-case basis other dilutional factors may be used, but in no case may the dilution allowed exceed an area greater than the area where discharge induced mixing occurs. The discharge is also subject to the conditions specified in s. NR 102.05(3). The permittee may be required to determine the size of the mixing zone using models or dye studies that are determined to be acceptable by the department.

(c) *Receiving water design flow (Q_s).* Subject to the application of the zone of passage factors in subd. 3. or 4., the value of Q_s to be used in calculating the effluent limitation for discharges to flowing waters shall be determined using one of the approaches in subd. 1. or 2.

1. To calculate limits based on 4-day chronic ammonia criteria, Q_s shall equal the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}) or, if sufficient information is available to calculate a biologically based receiving water design flow, the flow which prevents an excursion from the criterion using a duration of 4 days and a frequency of less than once every 3 years (4-day, 3-year biological flow). To calculate limits based on 30-day chronic ammonia criteria, Q_s shall equal the average minimum 30-day flow which occurs once in 5 years (30-day Q_5) or 85% of the average minimum 7-day flow which occurs once in 2 years (7-day Q_2).

2. If approved by the department, the value of Q_s of the receiving water for calculating effluent limitations based upon the chronic toxicity criteria specified in s. NR 105.06 may be determined on a case-by-case basis, using historical flow data or real time data. Q_s may be based on real-time streamflow data if the permittee demonstrates that modifications to effluent quality or quantity can be achieved in response to changing stream conditions. Appropriate modifications to effluent quality or quantity may include, but are not limited to, land application, storage, shutdown or reduction in ammonia feed rates.

3. To provide for an adequate zone of passage, the value of Q_s to be used in the equation in par. (b)1. shall be determined by multiplying the applicable value from subd. 1. or 2. by the following zone of passage factors:

a. 0.25 when the receiving water temperature is less than 11 degrees Celsius.

b. 0.50 when the receiving water temperature is equal to or greater than 11 degrees Celsius and equal to or less than 16 degrees Celsius.

c. 1.00 when the receiving water temperature is greater than 16 degrees Celsius.

4. Based on the zone of passage or rapid dilution demonstration in this subdivision, the department may determine that alternative zone of passage factors to those provided in subd. 3 apply. The permittee may demonstrate, through appropriate and reasonable methods approved by the department, and by using information on the mixing and dilution characteristics of the discharge, that an adequate zone of free passage exists in the cross-section of the receiving water or that dilution is accomplished rapidly such that the extent of the mixing zone is minimized. In complex situations, the department may require that the demonstration under this subdivision include water quality modeling or field dispersion studies.

5. The department may adjust Q_s from the values in subd. 1. where natural receiving water flow is significantly altered by flow regulation.

(d) *Effluent flows (Q_e).* Effluent flows used in the calculation of ammonia limits shall be determined using the procedures in s. NR 106.06(4)(d).

(e) *Background concentrations of ammonia (C_s)*. Background ammonia concentrations used in the calculation of ammonia limits shall be determined using the procedures in s. NR 106.06(4)(e).

(4) VALUES FOR PARAMETERS WHICH AFFECT THE LIMIT. Effluent limitations for ammonia shall be based upon the effects of pH and temperature on the toxicity of ammonia. The department shall determine the value of the pH and temperature on a case-by-case basis as follows:

(a) *Receiving water.* 1. The geometric mean of temperature and the arithmetic mean for pH in the receiving water shall be used to establish the chronic toxicity criteria for purposes of determining the effluent limitation for ammonia. Representative seasonal values of pH and temperature may be used. The pH and temperature determined under this subdivision may be modified to account for the mixture of the receiving and effluent flows when either of the following conditions occur:

a. Whenever the value of the pH and temperature of the effluent as determined in par. (b) is significantly greater than or less than the value in the receiving water.

b. Whenever, as a result of demonstrated or measured physical, chemical or biological reactions, the value of the pH and temperature, after mixing of the receiving water and the effluent, is significantly different than the respective background value of the pH and temperature in the receiving water.

2. If information on the pH and temperature of the receiving water is not available, information on the quality of similar water bodies in the area and best professional judgment of the department may be used.

(b) *Effluent.* 1. The daily maximum effluent pH shall be used to calculate the daily maximum ammonia limit based on acute toxicity criteria and in any calculations under par. (a).

2. If information on the effluent pH is not available, then values representative of similar effluents may be used.

(c) A permittee may conduct an investigation to demonstrate that alternate values for the pH and temperature determined under pars. (a) and (b) should be used. The investigation shall be based on site-

specific conditions and shall address all of the following: critical loading conditions; buffering capacity of the stream; whether pH changes persist long enough to allow decay of ammonia to non-toxic levels; the effect of seasonal variations; maintaining the pH at the edge of the chronic mixing zone within the range of 6.0 to 9.0; and separate analyses for chronic mixing zone and an acute zone of initial dilution.

Note: It is suggested that the permittee submit a plan of study to the department prior to undertaking a demonstration under this paragraph.

(d) *Real-time data.* Effluent limitations may be established based on real-time effluent and stream data provided the permittee demonstrates that the real-time data can be collected, and the discharge can be controlled to attain the effluent limitations. Adjustment of effluent pH may be an appropriate modification for compliance with real-time daily maximum limits. Real-time stream data may not be used to calculate ammonia limits if the department determines that the discharge may affect the existence of any endangered or threatened species listed under ch. NR 27.

(5) APPLICATION OF WATER QUALITY BASED AMMONIA LIMITATIONS IN PERMITS AND MONITORING. (a) *Limitations based on acute toxicity criteria.* Effluent limitations for ammonia that are established in permits based on the acute toxicity criteria in ch. NR 105 shall be expressed only as concentrations.

(b) *Limitations based on chronic toxicity criteria.* Effluent limitations for ammonia that are established in permits based on the chronic toxicity criteria in ch. NR 105 shall be expressed as concentrations, except mass limits may also be included in a permit if there is more than one discharger of ammonia at a location or where the discharge is to an exceptional resource water designated under s. NR 102.11 or outstanding resource water designated under s. NR 102.10. If mass limits are determined to be necessary by the department, they shall be calculated using the procedure in s. NR 106.07(2).

(c) *Maximum and average ammonia limitations.* Effluent limitations based on acute toxicity criteria shall be expressed in permits as daily maximum limitations. Effluent limitations based on 4-day chronic toxicity criteria shall be expressed in permits as weekly average limitations. Effluent limitations based on 30-day chronic toxicity criteria shall be expressed in permits as monthly average limitations.

(d) *Monitoring frequency.* The department shall determine on a case-by-case basis the monitoring frequency for ammonia to be required in a permit.

NR 106.33 Determination of the necessity for water quality based effluent limits for ammonia. (1) Except as provided in sub. (2) or (3), the procedures specified in s. NR 106.05 shall be used to determine if water quality based effluent limitations for ammonia are necessary in a permit. When application of the procedures in s. NR 106.05 results in a determination that ammonia effluent limits are not necessary in a permit, the wastewater treatment plant shall continue to be operated in a manner that optimizes the removal of ammonia within the design capabilities of the wastewater treatment plant. The department may require that the permitee monitor ammonia at a frequency established on a case-by-case basis in its discharge permit for the purpose of determining representative discharge levels.

(2) Whenever ammonia effluent limitations calculated under s. NR 106.32 for a sewage treatment works regulated under ch. NR 210 and treating primarily domestic wastewater are greater than or equal to 20 mg/L for the period of May through October or greater than or equal to 40 mg/L for the period of November through April, ammonia effluent limitations may not be included in the permit for the period or periods.

(3) If a permittee can satisfactorily demonstrate to the department that the ammonia effluent limitations calculated under s. NR 106.32 are greater than the influent total nitrogen loading and the wastewater treatment process will not cause periodic discharge levels greater than the proposed limits, ammonia effluent limitations may not be included in the permit that is up for reissuance. The department may require that the permitee monitor ammonia at a frequency established on a case-by-case basis in its discharge permit for the purpose of determining representative discharge levels.

NR 106.34 Compliance with antidegradation. (1) The determination of effluent limitations for ammonia for all discharges to outstanding resource waters and exceptional resource waters as defined in ss. NR 102.10 and 102.11 shall be subject to the water quality antidegradation provisions ch. NR 207.

(2) Except as provided in sub. (1) and pursuant to s. NR 207.03(1), if the department determines that a water quality based ammonia effluent limitation in effect in a permit as of the effective date of this rule … [revisor insert date] may be increased in the next reissuance of that permit based solely on the application of the procedures in this subchapter, then the inclusion of the increased ammonia effluent limitation in the reissued permit is not subject to the provisions of ch. NR 207.

NR 106.36 Alternative whole effluent toxicity monitoring for certain discharges of ammonia. (1) In addition to water quality based effluent limitations for ammonia, the department may establish whole effluent toxicity testing requirements and limitations pursuant to ss. NR 106.08 and 106.09.

(2) Chronic fathead minnow whole effluent toxicity test samples may be modified to remove ammonia prior to testing when all of the following conditions are met:

(a) The whole effluent toxicity test is being conducted during a period when ammonia effluent limitations based on early life stage absent criteria are in effect.

(b) The permittee has demonstrated compliance with applicable acute and chronic water quality based effluent limitations for ammonia during the testing period.

(c) Total ammonia measured in whole effluent toxicity test effluent samples is less than the applicable chronic water quality based effluent limitation contained in the WPDES permit, but greater than the "ammonia threshold number", determined as follows:

1. Measure the pH of the whole effluent toxicity test effluent sample after the sample has been warmed to the test temperature.

Note: Effluent samples should not be aerated to remove supersaturation of dissolved oxygen prior to use in the whole effluent toxicity test. The measured pH value shall be rounded to the nearest one-tenth of a unit.

2. Using the pH value of the sample as determined in subd. 1., determine the value of the ammonia multiplier in Table 1 for the pH range corresponding to the effluent pH.

3. Divide 100 by the appropriate in-stream waste concentration, as a percentage, contained in the WPDES permit; then multiply the resulting value by the ammonia multiplier determined in subd. 2. to obtain the ammonia threshold number.

(3) If all of the criteria in sub. (2) have been met, ammonia may be removed from the test sample.

[Note: If ammonia is proposed to be removed from the test pursuant to the requirements of this section, the Department recommends that the ammonia be removed in accordance with procedures specified in Chapter 1.10 of the WDNR Whole Effluent Toxicity (WET) Program Guidance Document. Copies of this document can be obtained from the DNR Bureau of Watershed Management, Attn. Biomonitoring Coordinator, 101 South Webster Street, Box 7921, Madison, Wisconsin 53707-7921, or at the following website [http://www.dnr.state.wi.us/org/water/wm/ww/biomon/biomon.htm]

TABLE 1

Effluent pH (s.u., after warming)	Ammonia Multiplier (mg/l total ammonia)
6.0 - 6.5	30
6.6 - 7.0	25
7.1 - 7.5	15
7.6 - 8.0	5
8.1 - 9.0	1

(4) Lagoon and stabilization pond systems that have been granted a variance pursuant to s. NR 106.38 may not be required to perform whole effluent toxicity testing during the months of November through May and whole effluent toxicity testing may be specified in a permit only for the period of June through October.

NR 106.37 Schedules of compliance. (1) The department shall determine and specify a reasonable compliance schedule in the WPDES permit if the permittee is unable to meet the ammonia effluent limits determined according to this subchapter at the time of permit reissuance. The department shall establish the term of the compliance schedule on a case-by-case basis and shall consider factors such as necessary planning, complexity of wastewater treatment issues, scope of construction, equipment delivery time, and construction seasons in establishing a schedule. In no circumstance may the date of compliance with the limits extend more than 5 years after the date of permit reissuance, unless a variance has been granted pursuant to s. NR 106.38.

Note: Under most circumstances, a reasonable compliance schedule is approximately 3 years in length.

(2) One additional year may be added to the compliance schedule, subject to the 5-year maximum, if either one of the following applies:

(a) The permittee is authorized in the permit to gather stream data in accordance with s. NR 106.32(4)(c) that will significantly add to the data base used for limit calculations.

(b) The permittee is authorized in the permit to conduct a study to demonstrate that early life stages of burbot are not affected by its discharge in accordance with s. NR 106.32(3)(a)4.a.

(3) Six additional months may be added to the compliance schedule, subject to the 5-year maximum, if the permittee is authorized in the permit to make a cold water category demonstration pursuant to s. NR 106.32(2)(b)2.

(4) Any point source discharge which was not authorized by a WPDES permit prior to the effective date of this rule …[revisor insert date] may not be provided with a schedule of compliance for achieving ammonia limits, but rather shall meet the limits upon initiation of discharge. A point source discharge previously authorized by a WPDES permit but relocated in the same receiving water body may be allowed a schedule of compliance.

NR 106.38 Variances for stabilization pond and lagoon systems. (1) GENERAL. (a) *Applicability*. The owner or operator of a permitted wastewater treatment system that consists primarily of a stabilization pond system or a lagoon system may apply for a variance to the ammonia effluent limitations using the procedures in this section. The department may only grant a variance under this section to ammonia effluent limitations for stabilization pond and lagoon systems regulated under ch. NR 210.

[Note: The variance procedures in this section are not applicable to industrial facilities.]

(b) *Findings*. As of the effective date of this rule … [revisor insert date], the department finds all of the following:

1. Stabilization pond and lagoon systems subject to ch. NR 210 are operated primarily by communities that serve a population of 2000 or less.

2. Most stabilization pond and lagoon systems cannot meet ammonia effluent limitations determined under s. NR 106.32 during the colder months in the year.

3. In many cases, it will be necessary for owners of the systems in subd. 1. to construct a new wastewater treatment plant to comply with ammonia effluent limitations. Construction of new wastewater treatment facilities for these permittees will result in substantial and widespread adverse social and economic impacts in the area served by the existing stabilization pond or lagoon system.

(c) *Initial variance.* The procedures in this section may be used when an ammonia limit will be required under s. NR 106.33 for the first time in a WPDES permit reissued after the effective date of this rule … [revisor insert date].

(d) *New dischargers.* A point source discharge that has not been authorized by a WPDES permit prior to the effective date of this rule … [revisor insert date] may not receive approval for a variance under this section or pursuant to any other variance procedure.

(e) *Other variance procedures*. 1. A permittee may seek a variance from an ammonia limit in a reissued WPDES permit based on the criteria in s. 283.15(4)(a)1.a. to e., Stats., and using the procedures and requirements in s. 283.15, Stats., and ch. NR 200.

2. A permittee with a lagoon or stabilization pond system that is denied a variance under the procedures of this section may not be granted a variance for ammonia based on the criteria in s. 283.15(4)(a)1.f., Stats., and using the procedures in ch. NR 200 and s. 283.15, Stats.

(2) APPLICATION FOR A VARIANCE. (a) The application for a variance under this section shall be submitted with the WPDES permit application for reissuance, or within 30 days after the permittee receives written notification of the proposed ammonia limits, if the notification occurs later. The application shall be submitted on the form available from the department.

Note: The application form for this variance is available at no cost from the Department of Natural Resources, Bureau of Watershed Management, 101 South Webster Street, P.O. Box 7921, Madison, Wisconsin 53707-7921

(b) The application shall, at a minimum, include the following information:

1. Information in s. NR 200.22 (1)(a), (b) and (d).

2. Any ammonia and pH monitoring data for the applicant's lagoon or pond system collected during the permit term in effect at the time the application is filed. The permittee shall specify the sample location, sample types and dates, analysis dates, lab name and certification number.

3. A statement that the permittee is seeking a variance pursuant to this section.

4. Information on the number of lagoon or pond treatment cells, discharge periods, retention times, population served, influent flow, and available capacity for holding wastewater.

5. Other information requested by the department that is relevant to the review conducted under sub. (3).

Note: It is recommended that the permittee ask for calculation of potential ammonia water quality based limits at least 12 months prior to permit expiration. This information will help the permittee complete their variance request portion of the permit application which is due 180 days prior to permit expiration.

(3) DEPARTMENT REVIEW. (a) The department shall review the submitted application for the variance and determine whether the permittee's lagoon or stabilization pond system can meet the ammonia effluent limitations calculated using the procedures in s. NR 106.32. To make this determination, the department shall compare the calculated ammonia effluent limitations to the ammonia effluent data submitted under sub. (2). If the applicant does not have ammonia discharge data for its system, the department shall use effluent data from a similar lagoon or pond system in the state to make the comparison. When comparing the limitations to effluent data, the department shall consider seasonal and annual temperature variations in the geographic area that occurred during the data gathering period. Any valid, representative effluent data which exceeds a calculated limitation shall be grounds for the Department to determine that the existing system cannot meet the calculated ammonia limitations. The Department may apply statistical methodology to make its determination on the ability of the system to meet ammonia limitations.

(b) The department's decision to approve or deny a variance under this section shall be made on or before the date of the s. 283.53(3)(d), Stats., public notice for the proposed permit reissuance and shall be made in accordance with the following:

1. If the department determines that the permittee's lagoon or pond system cannot meet an ammonia effluent limitation, the department shall approve the variance. If the variance is approved, the department shall specify in the permit that the variance has been granted for ammonia, and the requirements in sub. (4) shall also be included in the permit.

2. If the department determines that the applicant's existing lagoon or pond system can meet the ammonia effluent limitations or that effluent limitations are not necessary as determined by s. NR 106.33, the department shall deny the variance and notify the applicant of this determination in writing.

Note: Pursuant to ss. 283.15(4)(d) and (8), and 283.63(4), Stats., there is no right to a contested case hearing on the variance decision for ammonia.

(4) PERMIT TERMS IF VARIANCE IS APPROVED. (a) If the department approves a variance to the ammonia effluent limitations under this section, the following requirements shall be included in the reissued permit:

1. The permittee shall conduct weekly monitoring of ammonia during discharge periods.

2. The permittee shall, to the extent practicable, minimize the non-domestic sources of nitrogen to the system and operate the treatment system to minimize exceedances of the calculated limits.

3. The permittee shall perform WET testing in accordance with s. NR 106.36.

4. Within 36 months following permit reissuance, the permittee shall submit an operational evaluation report that evaluates the ability of the existing stabilization pond or lagoon system to meet the ammonia effluent limitations calculated under s. NR 106.32. The report shall evaluate holding capacity of

the stabilization pond or lagoon system and the results of operational changes and other minor system modifications that are designed to reduce ammonia discharges levels. The department's determination shall result in the following:

a. If, based on the operational evaluation required in this subdivision, the department determines the stabilization pond or lagoon system can consistently meet the ammonia effluent limitations calculated under s. NR 106.32 with operational adjustments, these ammonia effluent limitations shall become effective within 30 days of the department's determination, and the permittee is not required to submit a facilities plan under subd. 5. When making this determination the department shall consider weather conditions and wastewater loading during the operational evaluation period, relationship of current to design conditions and other pertinent site-specific factors.

b. If, based on the operational evaluation required in this subdivision, the department determines the stabilization pond or lagoon system cannot consistently meet the ammonia effluent limitations calculated under s. NR 106.32 with operational changes, the department shall renew the variance for the remaining term of the permit, and the permittee shall submit the facilities plan in accordance with subd. 5.

5. If required by subd. 4, the permittee shall, within 48 months of permit reissuance, submit a facilities plan that evaluates alternatives for meeting the ammonia effluent limitations calculated under s. NR 106.32. The facilities plan shall satisfy the requirements in ss. NR 110.08 and 110.09.

(b) Prior to the submittal of the operational evaluation and facilities plan in par. (a), the department shall provide, at the request of the permittee, alternative ammonia effluent limitations calculated using site-specific conditions, provided that such site-specific determinations were not already made by the department at the time of permit reissuance. A site specific study done in accordance with s. NR 106.32 (3)(a)4.a. or (4)(c) shall be submitted to the department as justification for requesting the calculation of alternative effluent limitations. Any approved alternative ammonia effluent limitations shall be used by the permittee in conducting the operational evaluation and facilities plan submittal in par. (a)4. and 5. Failure to obtain approval of ammonia effluent limitations based on site-specific conditions under s. NR 106.32 does not relieve the permittee from meeting the operational evaluation or facilities plan submittal requirements in par. (a)4. and 5.

(5) CONTINUED VARIANCES. (a) If a permittee received approval for a variance to the ammonia standard under this section in a reissued permit, the permittee may request a continued variance from the ammonia standard in a subsequent reissued permit pursuant to the procedures in ch. NR 200 and s. 283.15(4), Stats.

(b) If a permittee requests a continued variance in a subsequent reissuance because attaining the water quality based ammonia effluent limitations is not feasible because it will cause substantial and widespread adverse social and economic impacts in the area where the permittee is located as provided under s. 283.15 (4)(f), Stats., information in s. NR 200.22(1) and the following information, where applicable, shall be submitted and considered by the department in its decision on this variance request:

1. The date the major components of the stabilization pond or lagoon system were constructed, or most recently substantially modified.

2. The projected design life of the stabilization pond or lagoon system as stated in the approved facilities plan at the time the system was constructed.

3. In addition to the information in s. NR 200.22(1)(p), information on the remaining debt service associated with the construction of the existing stabilization pond or lagoon system and household income in the service area.

4. An assessment of the current system as reflected by the information submitted to the department under the compliance maintenance annual reporting requirements of ch. NR 208.

5. Any other water quality standards variances previously granted to the permittee.

SECTION 17m. Renumber NR 106 Subchapter IV to Subchapter VII

SECTION 18. NR 210.05(2)(c) is repealed.

SECTION 19. EFFECTIVE DATE. This rule shall take effect the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro.), Stats.

SECTION 20. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on October 22, 2003.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
Scott Hassett, Secretary

(SEAL)