



NR 230

Filed June 25, 1976
10:35 am O.L. Parker

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Anthony S. Earl
Secretary

BOX 450
MADISON, WISCONSIN 53701


IN REPLY REFER TO: _____

STATE OF WISCONSIN)
)
DEPARTMENT OF NATURAL RESOURCES) SS

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Anthony S. Earl, Secretary of the Department of Natural Resources and custodian of the official records of said Department, do hereby certify that the annexed copy of Natural Resources Board Order No. EL-33-76 was duly approved and adopted by this Department on March 18, 1976. I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at Pyare Square Building in the Village of Shorewood Hills, this 22ND day of June, 1976.


Anthony S. Earl, Secretary

(SEAL)

STATE OF WISCONSIN NATURAL RESOURCES BOARD

.....
IN THE MATTER of creating Chapter NR 230 .
of the Wisconsin Administrative Code .
pertaining to effluent limitations and .
standards for inorganic chemical manu- .
facturing .
.....

EL-33-76

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD

CREATING RULES

Pursuant to the authority vested in the State of Wisconsin Natural Resources Board by sections 147.04, 147.06 and 147.07 and chapter 227, Wisconsin Statutes, the Natural Resources Board hereby creates rules as follows:

SECTION 1 - Chapter NR 230 is created to read:

CHAPTER NR 230

EFFLUENT LIMITATIONS AND STANDARDS
INORGANIC CHEMICAL MANUFACTURING

NR 230.01 Purpose. The purpose of this chapter is to establish effluent limitations, standards of performance, and pretreatment standards for discharges of process wastes from the inorganic chemical manufacturing category of point sources and subcategories thereof.

NOTE: The authority for promulgation of this chapter is set forth in Wis. Adm. Code chapter NR 205.

NR 230.02 Applicability. The effluent limitations, standards of performance, pretreatment standards, and other provisions in this chapter are applicable to pollutants or pollutant properties in discharges of process waste resulting from manufacture of the inorganic chemicals listed in table 1.

NR 230.03 Definitions. The following definitions are applicable to terms used in this chapter. Definitions of other terms and meanings of abbreviations are set forth in Wis. Adm. Code chapter NR 205.

(1) "CN,A" means those cyanides amenable to chlorination, as determined by the analytical methods specified in Wis. Adm. Code chapter NR 219.

(2) "Cr +6" means hexavalent chromium.

(3) "Cr T" means total chromium.

(4) "iron" means the total iron present in process waste effluent.

(5) "lead" means the total lead present in process waste effluent.

(6) "mercury" means the total mercury present in process waste effluent.

(7) "product" means the inorganic chemical identified in table 1 except that for hydrogen peroxide it means the 100 percent solution.

(8) "chrome pigments" means chrome yellow, chrome orange, chrome green, zinc yellow, and iron blue.

(9) "zinc A" means that limitations for this parameter are applicable only to discharges from facilities producing zinc yellow.

(10) "contaminated non-process wastewater" means any water which, during manufacturing or processing, comes into incidental contact with any raw material, intermediate product, finished product, by-product or waste product by means of (1) rainfall runoff; (2) accidental spills; (3) accidental leaks caused by the failure of process equipment, which are repaired within the shortest reasonable time not to exceed 24 hours after discovery; and (4) discharges from safety showers and related personal safety equipment: Provided, that all reasonable measures have been taken (i) to prevent, reduce and control such contact to the maximum extent feasible; and (ii) to mitigate the effects of such contact once it has occurred.

(11) Entries in the columns of table 1 of this chapter have the following meanings.

(a) "I" means the limitations for incompatible pollutants set forth in accordance with column I shall apply.

(b) "III" means the limitations for incompatible pollutants set forth in accordance with column III shall apply.

(c) "N" means there shall be no discharge to surface waters.

(d) "NB" means there shall be no discharge to surface waters except that residual brine and depleted liquor may be returned to the body of water from which the brine solution was originally withdrawn.

(e) "NL" means there are no limitations for incompatible pollutants.

(f) "Nx" means there shall be no discharge to surface waters resulting from the manufacture of this product other than that allowed for other products or processes in the same facility.

(g) "Nx1" means there shall be no discharge to surface waters except in accordance with sections NR 230.07(1) and (3).

(h) "Nx2" means there shall be no discharge to surface waters except in accordance with section NR 230.07(2).

(i) "T2" means that applicable limitations are set forth in table 2.

(j) "T3" means that applicable limitations are set forth in table 3.

(k) "T4" means that applicable limitations are set forth in table 4.

(l) "T5" means that applicable limitations are set forth in table 5.

(m) "T6" means that applicable limitations are set forth in table 6.

(n) "T7" means that applicable limitations are set forth in table 7.

(o) "T8" means that applicable limitations are set forth in table 8.

(p) "T9" means that applicable limitations are set forth in table 9.

NR 230.04 Compliance with effluent limitations and standards. Discharge of pollutants from facilities subject to the provisions of this chapter shall not exceed, as appropriate:

(1) by July 1, 1977 effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available;

(2) by July 1, 1977 pretreatment standards for existing discharges to publicly owned treatment works;

(3) by July 1, 1983 effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable;

(4) standards of performance for new sources; or

(5) pretreatment standards for new sources discharging to publicly owned treatment works.

NR 230.05 Modification of effluent limitations. (1) Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available may be modified in accordance with this section.

(2) An individual discharger or other interested person may submit evidence to the department that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the effluent limitations. On the basis of such evidence or other available information the department will make a written determination that such factors are or are not fundamentally different for that facility compared to those specified in the applicable sections of the EPA development documents identified in subsection (3) below. If such fundamentally different factors are found to exist, the department shall establish for the discharge effluent limitations in the WPDES permit either more or less stringent than the limitations in this chapter, to the extent dictated by such fundamentally different factors. Such limitations must be approved by EPA which may approve, disapprove, or specify other limitations.

(3) The EPA development documents for effluent limitations guidelines and new source performance standards, identified by segment title, by EPA document number, and by publication date, applicable in accordance with subsection (2) above are:

Major Inorganic Products, EPA 440/1-74-007a, March 1974
Significant Inorganic Products, EPA 440/1-75-037, May 1975

(4) Copies of the development documents identified in subsection (3) above are available for inspection at the office of the department of natural resources, the secretary of state's office, and the office of the revisor of statutes, and may be obtained for personal use from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20460.

NR 230.06 Application of effluent limitations and standards. (1) The effluent limitations and standards set forth in this chapter shall be used in accordance with this section to establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this chapter, except as;

(a) they may be modified in accordance with section NR 230.05,

(b) they may be superseded by more stringent limitations and standards necessary to achieve water quality standards or meet other legal requirements, or

(c) they may be supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality.

(2) The production basis for application of the limitations and standards set forth in this chapter shall be the daily average for a maximum month for the facility in each subcategory subject to the provisions of this chapter.

(3) The provisions of this chapter are not applicable to discharges from plants manufacturing sulfuric acid by burning sulfides or recovering sulfuric acid from waste streams of other processes such as oil refining or metallurgical operations.

(4) The provisions of this chapter are not applicable to discharges from plants producing titanium dioxide using processes in which beneficiation of raw ilmenite ore and chlorination are inseparably combined in the same process step.

NR 230.07 Discharges from impoundments. (1) A process wastewater impoundment which is designed, constructed and operated so as to contain the precipitation from the 10 year, 24 hour rainfall event for the area in which such impoundment is located may discharge that volume of process wastewater which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to such rainfall event when it occurs.

(2) A process wastewater impoundment which is designed, constructed and operated so as to contain the precipitation from the 25 year, 24 hour rainfall event for the area in which such impoundment is located may discharge that volume of process wastewater which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to such rainfall event when it occurs.

(3) During any calendar month, there may be discharged from a process wastewater impoundment either a volume of process wastewater equal to the difference between the precipitation for that month which falls within the impoundment and the evaporation for that month. Such process wastewater discharges shall have a pH within the range of 6.0 to 9.0, concentrations of suspended solids not exceeding a 30 day average of 25 mg/l or a daily maximum of 50 mg/l, and, in the case of process wastewaters from the manufacture of hydrofluoric acid, fluoride concentrations not exceeding 15 mg/l and 30 mg/l respectively.

(4) The 10 year and 25 year, 24 hour rainfall events for the impoundment location shall be as set forth in Wis. Adm. Code section NR 205.05.

NR 230.10 Effluent limitations, best practicable treatment. (1) The effluent limitations for specific subcategories set forth in column I of table 1 establish, except as provided in sections NR 230.05 and NR 230.06, the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best practicable control technology currently available.

(2) The entries in column I of table 1 shall have the meanings set forth in section NR 230.03(11).

NR 230.11 Effluent limitations, best available treatment. (1) The effluent limitations for specific subcategories set forth in column II of table 1 establish, except in accordance with section NR 230.06, the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best available technology economically achievable.

(2) The entries in column II of table 1 shall have the meanings set forth in section NR 230.03(11).

NR 230.12 Standards of performance. (1) The effluent limitations set forth in column III of table 1 establish, except in accordance with section NR 230.06, the quantity or quality of pollutants or pollutant properties which may be discharged by a facility which is a new source subject to the provisions of this chapter.

(2) The entries in column III of table 1 shall have the meanings set forth in section NR 230.03(11).

NR 230.13 Pretreatment standards for new sources. (1) The pretreatment standards for discharges to publicly owned treatment works from new sources subject to the provisions of this chapter shall be as set forth in Wis. Adm. Code chapter NR 211. In addition the limitations for incompatible pollutants for specific subcategories shall be those set forth in column IV of table 1. Wastewaters from such new sources may not be discharged to publicly owned treatment works except in compliance with this section.

(2) The entries in column IV of table 1 shall have the meanings set forth in section NR 230.03(11).

NR 230.14 Pretreatment standards for existing sources. (1) The pretreatment standards for discharges to publicly owned treatment works from existing sources subject to the provisions of this chapter shall be as set forth in Wis. Adm. Code chapter NR 211. In addition the limitations for incompatible pollutants for specific subcategories shall be those set forth in column V of table 1. Wastewaters from such new sources may not be discharged to publicly owned treatment works except in compliance with this section.

(2) The entries in column V of table 1 shall have the meanings set forth in section NR 230.03(11).

Table 1

Effluent Limitations and Standards

| <u>Product Subcategory</u> | <u>I</u> | <u>II</u> | <u>Columns</u> <u>III</u> | <u>IV</u> | <u>V</u> |
|--|----------|-----------|------------------------------|-----------|----------|
| Aluminum chloride | N | N | N | III | I |
| Aluminum fluoride | T2 | T4 | T6 | T8 | T8 |
| Aluminum sulfate | Nx1 | Nx2 | Nx2 | III | I |
| Ammonium chloride, from NH ₃ = Cl gas | N | N | N | T8 | T8 |
| " " , recovery (1) | T2 | N | N | T8 | T8 |
| Ammonium hydroxide (reserved) | | | | | |
| Barium carbonate (reserved) | | | | | |
| Borax, by ore mining and by Trona process | NB | NB | NB | T9 | T9 |
| Boric acid, from ore mined borax | T2 | T4 | T6 | T8 | T8 |
| " " , from Trona process borax | NB | NB | NB | T9 | T9 |
| Bromine, brine mining and Trona process | NB | NB | NB | T9 | T9 |
| Calcium carbide, in uncovered furnaces | N | N | N | III | I |
| Calcium carbonate, milk of lime process | T2 | T4 | T6 | NL | NL |
| " " , recovery (1) | T2 | T4 | T6 | NL | NL |
| Calcium chloride, brine extraction process | T2 | N | N | III | I |
| Calcium hydroxide, lime slaking process | N | N | N | NL | NL |
| Calcium oxide and hydroxide | Nx1 | Nx2 | Nx2 | III | I |
| Carbon dioxide (reserved) | | | | | |
| Carbon monoxide (2), by reforming process | T2 | T4 | T6 | T8 | T8 |
| Chlorine (3), diaphragm cell | T2 | Nx2 | T6 | III | I |
| " " , Mercury cell | T2 | Nx2 | T6 | III | I |
| Chrome pigments | T3 | T5 | T7 | T8 | T8 |
| Chromic acid (4) | Nx | Nx | Nx | T9 | T9 |
| Copper sulfate, from pure materials | T2 | T4 | T6 | T8 | T8 |
| " " , from impure materials | T3 | T5 | T7 | T8 | T8 |
| Cuprous oxide (reserved) | | | | | |
| Ferric chloride, from pickle liquor | N | N | N | T9 | T9 |
| Ferrous sulfate (reserved) | | | | | |
| Fluorine, by liquid HF electrolysis | N | N | N | T9 | T9 |
| Hydrochloric acid, by direct reaction | N | N | N | III | I |
| Hydrofluoric acid | Nx1 | Nx2 | Nx2 | III | I |
| Hydrogen, as refinery by-product | Nx | Nx | Nx | T9 | T9 |
| Hydrogen cyanide, by-product (5) | Nx | Nx | Nx | T9 | T9 |
| " " , by Andrussow process | T3 | T5 | T7 | T8 | T8 |
| Hydrogen peroxide, electrolytic | T2 | Nx2 | Nx2 | III | I |
| " " , by oxidation (6) | T2 | N | N | III | I |
| Iodine | N | N | N | NL | NL |
| Lead monoxide | N | N | N | T8 | T8 |
| Lithium carbonate, Trona process | NB | NB | NB | NL | NL |
| " " , from spudomeme ore | T2 | T4 | T6 | NL | NL |
| Manganese sulfate (reserved) | | | | | |
| Nickel sulfate, from pure raw materials | N | N | N | T9 | T9 |
| " " , from impure raw materials | T2 | T4 | T6 | T8 | T8 |
| Nitric acid, up to 68 percent | N | N | N | III | I |
| " " , strong (reserved) | | | | | |

Table 1 continued.

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| | | | | | |
|---|-----|-----|-----|-----|----|
| Oxygen and nitrogen, by air liquification | T2 | T4 | T6 | T9 | T9 |
| Potassium, metal | N | N | N | III | I |
| Potassium chloride, by Trona and mining | NB | NB | NB | NL | NL |
| Potassium dichromate | N | N | N | III | I |
| Potassium iodide | T3 | T5 | T7 | T8 | T8 |
| Potassium permanganate (reserved) | | | | | |
| Potassium sulfate | Nx1 | Nx2 | Nx2 | III | I |
| Silver nitrate | T2 | T4 | T6 | T8 | T8 |
| Sodium, metal, Downs cell | T2 | Nx2 | Nx2 | III | I |
| Sodium bicarbonate | N | N | N | III | I |
| Sodium bisulfite (reserved) | | | | | |
| Sodium carbonate | T2 | T4 | N | III | I |
| Sodium chloride, brine mining process | T2 | N | N | III | I |
| " " , solar evaporation | NB | NB | NB | III | I |
| Sodium dichromate and by-product sulfate | T2 | Nx2 | T6 | III | I |
| Sodium fluoride (7) | N | N | N | T9 | T9 |
| Sodium hydrosulfide (reserved) | | | | | |
| Sodium hydrosulfite (reserved) | | | | | |
| Sodium silicate | T2 | Nx2 | Nx2 | III | I |
| Sodium silicofluoride | T2 | T4 | T6 | T8 | T8 |
| Sodium sulfite (8) | T2 | Nx2 | N | III | I |
| Sodium thiosulfate (reserved) | | | | | |
| Stannic oxide (9) | N | N | N | NL | NL |
| Sulfur dioxide (reserved) | | | | | |
| Sulfuric acid (10) | N | N | N | III | I |
| Titanium dioxide, sulfate process | T2 | T4 | T6 | III | I |
| " " , chloride process | T2 | T4 | T6 | III | I |
| Zinc oxide (reserved) | | | | | |
| Zinc sulfate | N | N | N | T9 | T9 |

- Footnotes: (1) from Solvay process wastes
 (2) and by-product hydrogen
 (3) and sodium or potassium hydroxide
 (4) in facilities manufacturing sodium dichromate
 (5) of acrylonitrile manufacture
 (6) of alkyl hydroanthroquinone
 (7) by the anhydrous neutralization process and the silicofluoride process
 (8) by reacting sulfur dioxide with sodium carbonate
 (9) by the reaction of tin with air or oxygen
 (10) in single or double absorption plants

Table 2

BPT Effluent Limitations

| <u>Product Subcategory</u> | <u>SS</u> | | <u>Other Parameters</u> | | |
|----------------------------|------------|------------|-------------------------|------------|----------------|
| | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | |
| Aluminum fluoride | 0.34 | 0.68 | 0.17 | 0.34 | Aluminum |
| | | | 0.34 | 0.68 | Fluoride |
| Ammonium chloride | | | 4.4 | 8.8 | Ammonia (as N) |
| Boric acid | 0.07 | 0.14 | 0.0014 | 0.0028 | Arsenic |
| Calcium carbonate (a) | 0.28 | 0.56 | | | |
| (b) | 0.58 | 1.16 | | | |
| Calcium chloride | 0.0082 | 0.016 | | | |
| Carbon monoxide | 0.06 | 0.12 | 0.25 | 0.50 | COD |
| Chlorine, diaphragm cell | 0.32 | 0.64 | 0.0025 | 0.05 | Lead |
| Mercury cell | 0.32 | 0.64 | 0.00014 | 0.00028 | Mercury |
| Copper sulfate (pure m) | | | 0.0002 | 0.0006 | Copper |
| Hydrogen peroxide | | | | | |
| electrolytic | 0.0025 | 0.005 | 0.0002 | 0.0004 | CN, A |
| oxidation | 0.4 | 0.8 | 0.22 | 0.44 | TOC |
| Lithium carbonate | 0.9 | 2.7 | | | |
| Nickel sulfate | 0.032 | 0.096 | 0.002 | 0.004 | Nickel |
| Oxygen and nitrogen | | | 0.001 | 0.002 | Oil & grease |
| Silver nitrate | 0.02 | 0.06 | 0.003 | 0.009 | Silver |
| Sodium, metal | 0.23 | 0.46 | | | |
| Sodium carbonate | 0.17 | 0.34 | | | |
| Sodium chloride (brine) | 0.17 | 0.34 | | | |
| Sodium dichromate | 0.22 | 0.44 | 0.0005 | 0.001 | Cr +6 |
| | | | 0.0044 | 0.0088 | Cr T |
| Sodium silicate | 0.005 | 0.01 | | | |
| Sodium silicofluoride | 0.3 | 0.6 | 0.25 | 0.50 | Fluoride |
| Sodium sulfite | 0.016 | 0.032 | 1.7 | 3.4 | COD |
| Titanium dioxide | | | | | |
| chloride process | 2.3 | 4.6 | 0.36 | 0.72 | Iron |
| sulfate process | 10.5 | 21.0 | 0.84 | 1.7 | Iron |

NOTE: For the above subcategories, the pH of all discharges shall be within the range of 6.0-9.0.

Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 3

BPT Effluent Limitations

| <u>Parameter</u> | <u>Chrome Pigments</u> | | <u>Copper Sulfate (by recovery)</u> | | <u>Hydrogen Cyanide Andrussov</u> | | <u>Potassium Iodide</u> | |
|------------------|------------------------|------------|-------------------------------------|------------|-----------------------------------|------------|-------------------------|------------|
| | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> |
| Suspended solids | 1.7 | 5.1 | 0.23 | 0.69 | 1.2 | 2.4 | 0.03 | 0.09 |
| Ammonia (as N) | | | | | 0.18 | 0.36 | | |
| Barium | | | | | | | 0.003 | 0.009 |
| BOD ₅ | | | | | 1.8 | 3.6 | | |
| Chromium, +6 | 0.0034 | 0.010 | | | | | | |
| Chromium T | 0.034 | 0.010 | | | | | | |
| Copper | | | 0.001 | 0.003 | | | | |
| Cyanide, A | 0.0034 | 0.010 | | | 0.0025 | 0.005 | | |
| Cyanide T | 0.034 | 0.10 | | | 0.025 | 0.05 | | |
| Iron | 0.27 | 0.72 | | | | | 0.005 | 0.015 |
| Lead | 0.14 | 0.42 | | | | | | |
| Nickel | | | 0.002 | 0.006 | | | | |
| Selenium | | | 0.0005 | 0.0015 | | | | |
| Sulfide | | | | | | | 0.005 | 0.015 |
| Zinc A | 0.27 | 0.72 | | | | | | |

NOTE: For the above subcategories the pH of all discharges shall be within the range of 6.0-9.0.

Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 4

BAT Effluent Limitations

| <u>Product Subcategory</u> | <u>Suspended Solids</u> | | <u>Other Parameters</u> | | |
|----------------------------|-------------------------|------------|-------------------------|------------|--------------|
| | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | |
| Aluminum fluoride | 0.026 | 0.052 | 0.017 | 0.034 | Aluminum |
| Boric acid | 0.028 | 0.056 | 0.034 | 0.068 | Fluoride |
| Calcium carbonate (a) | 0.11 | 0.22 | 0.0014 | 0.0028 | Arsenic |
| (b) | 0.23 | 0.46 | | | |
| Carbon monoxide | 0.017 | 0.034 | 0.065 | 0.13 | COD |
| Copper sulfate (pure m) | | | 0.0002 | 0.0006 | Copper |
| Lithium carbonate | 0.36 | 1.1 | | | |
| Nickel sulfate | 0.012 | 0.036 | 0.002 | 0.006 | Nickel |
| Oxygen and nitrogen | | | 0.001 | 0.002 | Oil & grease |
| Silver nitrate | 0.023 | 0.069 | 0.0015 | 0.0045 | Silver |
| Sodium carbonate | 0.10 | 0.20 | | | |
| Sodium silicofluoride | 0.19 | 0.38 | 0.25 | 0.50 | Fluoride |
| Titanium dioxide | | | | | |
| chloride process | 1.3 | 2.6 | 0.18 | 0.36 | Iron |
| sulfate process | 5.3 | 10.6 | 0.42 | 0.84 | Iron |

NOTE: For the above subcategories the pH of all discharges shall be within the range of 6.0-9.0.
 Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 5

BAT Effluent Limitations

| Parameter | Chrome Pigments | | Copper Sulfate (by recovery) | | Hydrogen Cyanide Andrussow | | Potassium Iodide | |
|------------------|-----------------|--------|------------------------------|--------|----------------------------|---------|------------------|--------|
| | Ave | Max | Ave | Max | Ave | Max | Ave | Max |
| Suspended solids | 0.33 | 0.99 | 0.0046 | 0.034 | 0.045 | 0.09 | 0.014 | 0.042 |
| Ammonia (as N) | | | | | 0.016 | 0.032 | | |
| Barium | | | | | | | 0.0023 | 0.0069 |
| BOD ₅ | | | | | 0.096 | 0.19 | | |
| Chromium, +6 | 0.0017 | 0.0051 | | | | | | |
| Chromium, T | .017 | 0.051 | | | | | | |
| Copper | | | 0.00046 | 0.0014 | | | | |
| Cyanide, A | 0.0017 | 0.0051 | | | 0.00023 | 0.00046 | | |
| Cyanide T | 0.017 | 0.051 | | | 0.0023 | 0.0046 | | |
| Iron | 0.067 | 0.20 | | | | | 0.0036 | 0.011 |
| Lead | 0.033 | 0.099 | | | | | | |
| Nickel | | | 0.00046 | 0.0014 | | | | |
| Selenium | | | 0.0005 | 0.0015 | | | | |
| Sulfide | | | | | | | 0.0036 | 0.011 |
| Zinc A | 0.067 | 0.20 | | | | | | |

NOTE: For the above subcategories the pH of all discharges shall be within the range of 6.0-9.0.

Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 6

Standards of Performance Effluent Limitations

| <u>Product Subcategory</u> | <u>Suspended Solids</u> | | <u>Other Parameters</u> | | |
|----------------------------|-------------------------|------------|-------------------------|------------|--------------|
| | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | |
| Aluminum fluoride | 0.26 | 0.052 | 0.017 | 0.034 | Aluminum |
| | | | 0.034 | 0.068 | Fluoride |
| Boric acid | 0.028 | 0.056 | 0.0014 | 0.0028 | Arsenic |
| Calcium carbonate (a) | 0.11 | 0.22 | | | |
| (b) | 0.23 | 0.46 | | | |
| Carbon monoxide | 0.017 | 0.034 | 0.065 | 0.13 | COD |
| Chlorine, diaphragm cell | 0.32 | 0.64 | 0.00007 | 0.00014 | Mercury |
| Mercury cell | 0.32 | 0.64 | 0.00004 | 0.00008 | Lead |
| Copper sulfate (pure m) | | | 0.0002 | 0.0006 | Copper |
| Lithium carbonate | 0.36 | 1.1 | | | |
| Nickel sulfate | 0.012 | 0.036 | 0.002 | 0.006 | Nickel |
| Oxygen and nitrogen | | | 0.001 | 0.002 | Oil & grease |
| Silver nitrate | 0.023 | 0.069 | 0.0015 | 0.0045 | Silver |
| Sodium Dichromate | 0.15 | 0.30 | 0.0005 | 0.001 | Cr +6 |
| | | | 0.0044 | 0.088 | Cr T |
| Sodium silicofluoride | 0.19 | 0.38 | 0.25 | 0.50 | Fluoride |
| Titanium dioxide | | | | | |
| chloride process | 1.3 | 2.6 | 0.18 | 0.36 | Iron |
| sulfate process | 5.3 | 10.6 | 0.42 | 0.84 | Iron |

NOTE: For the above subcategories the pH of all discharges shall be within the range of 6.0-9.0.

Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 7

Standards of Performance Effluent Limitations

| <u>Parameter</u> | <u>Chrome Pigments</u> | | <u>Copper Sulfate (by recovery)</u> | | <u>Hydrogen Cyanide Andrussov</u> | | <u>Potassium Iodide</u> | |
|------------------|------------------------|------------|-------------------------------------|------------|-----------------------------------|------------|-------------------------|------------|
| | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> | <u>Ave</u> | <u>Max</u> |
| Suspended solids | 0.33 | 0.99 | 0.0046 | 0.034 | 0.045 | 0.09 | 0.014 | 0.042 |
| Ammonia (as N) | | | | | 0.016 | 0.032 | | |
| Barium | | | | | | | 0.0023 | 0.0069 |
| BOD ₅ | | | | | 0.096 | 0.19 | | |
| Chromium, +6 | 0.0017 | 0.0051 | | | | | | |
| Chromium, T | .017 | 0.051 | | | | | | |
| Copper | | | 0.00046 | 0.0014 | | | | |
| Cyanide, A | 0.0017 | 0.0051 | | | 0.00023 | 0.00046 | | |
| Cyanide T | 0.017 | 0.051 | | | 0.0023 | 0.0046 | | |
| Iron | 0.067 | 0.20 | | | | | 0.0036 | 0.0069 |
| Lead | 0.033 | 0.099 | | | | | | |
| Nickel | | | 0.00046 | 0.0014 | | | | |
| Selenium | | | 0.00023 | 0.00069 | | | | |
| Sulfide | | | | | | | 0.0036 | 0.0069 |
| Zinc A | 0.067 | 0.20 | | | | | | |

NOTE: For the above subcategories the pH of all discharges shall be within the range of 6.0-9.0.

Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 8

Pretreatment Standards For
Discharges to Publicly Owned Treatment Works

| <u>Subcategory</u> | <u>Parameter</u> | <u>For New Sources</u> | | <u>For Existing Sources</u> | |
|--|------------------|------------------------|----------------|-----------------------------|----------------|
| | | <u>Average</u> | <u>Maximum</u> | <u>Average</u> | <u>Maximum</u> |
| Aluminum fluoride | Aluminum | 0.017 | 0.034 | 0.17 | 0.34 |
| | Fluoride | 0.034 | 0.068 | 0.34 | 0.68 |
| Ammonium chloride gas process recovery process | Ammonia (as N) | 0.5 | 1.0 | 0.5 | 1.0 |
| | " | | | 4.4 | 8.8 |
| Boric acid, ore | Arsenic | 0.0014 | 0.0028 | 0.0014 | 0.0028 |
| Carbon monoxide | COD | 0.125 | 0.25 | 0.25 | 0.5 |
| Copper sulfate (pure materials) (impure ") | Copper | 0.0002 | 0.0006 | 0.0002 | 0.0006 |
| | Copper | 0.00046 | 0.0014 | 0.00046 | 0.0014 |
| | Nickel | 0.000461 | 0.0014 | 0.00046 | 0.0014 |
| | Selenium | 0.00023 | 0.00069 | 0.00023 | 0.00069 |
| | Susp. Solids | | | 0.0046 | 0.014 |
| Hydrogen Cyanide (Andrussow) | Cyanide A | 0.00023 | 0.00046 | 0.0025 | 0.005 |
| | Cyanide T | 0.0023 | 0.0046 | 0.025 | 0.05 |
| | Ammonia (as N) | 0.016 | 0.032 | 0.18 | 0.36 |
| Chrome Pigments | Chromium +6 | 0.0017 | 0.0051 | 0.0034 | 0.01 |
| | Chromium T | 0.017 | 0.051 | 0.034 | 0.1 |
| | Cyanide A | 0.0017 | 0.0051 | 0.0034 | 0.01 |
| | Cyanide T | 0.017 | 0.051 | 0.034 | 0.1 |
| | Iron | 0.067 | 0.2 | 0.27 | 0.72 |
| | Lead | 0.033 | 0.099 | 0.14 | 0.42 |
| | Zinc A | 0.067 | 0.2 | 0.27 | 0.72 |
| Lead monoxide | Lead | 0.015 | 0.03 | 0.015 | 0.03 |
| Nickel sulfate (impure) | Nickel | 0.002 | 0.006 | 0.002 | 0.006 |
| Potassium iodide | Barium | 0.0023 | 0.011 | 0.003 | 0.009 |
| | Iron | 0.0036 | 0.0069 | 0.005 | 0.015 |
| | Sulfide | 0.0036 | 0.0069 | 0.005 | 0.015 |
| Silver nitrate | Silver | 0.0015 | 0.0045 | 0.003 | 0.009 |
| Sodium silicofluoride | Fluoride | 0.25 | 0.5 | 0.25 | 0.5 |

NOTE: Limitations of this table are in lbs/1,000 lbs or kg/1,000 kg of product.

Table 9

Pretreatment Standards For
Discharges to Publicly Owned Treatment Works

| <u>Subcategory</u> | <u>Parameter</u> | <u>For New Sources</u> <u>Max. mg/l</u> | <u>For Existing Sources</u> <u>Max. mg/l</u> |
|----------------------------------|------------------|--|---|
| Borax | Boron | 1 | 1 |
| | Arsenic | 1 | 1 |
| Boric acid, Trona | Boron | 1 | 1 |
| | Arsenic | 0.5 | 0.5 |
| Bromine | Bromine | 0.1 | 0.1 |
| Chromic acid | Chromium T | 0.5 | 0.5 |
| Ferric chloride | Iron | 4 | 4 |
| Fluorine | Fluoride | 20 | 20 |
| Hydrogen | Oil & grease | 100 | 100 |
| Hydrogen Cyanide (by-product) | Cyanide A | 0.05 | 0.05 |
| | Cyanide T | 0.5 | 0.5 |
| | Ammonia (as N) | 30 | |
| Nickel sulfate (pure) | Nickel | 2 | 2 |
| Oxygen and Nitrogen | Oil & grease | 100 | 100 |
| Sodium fluoride | Fluoride | 20 | 20 |
| Zinc sulfate | Cadmium | 1 | 1 |
| | Lead | 1 | 1 |
| | Zinc | 1 | 1 |

The foregoing rules were approved and adopted by the State of Wisconsin Natural Resources Board on March 18, 1976.

The rules contained herein shall take effect upon publication.

Dated at Madison, Wisconsin 22 June 1976

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

By Anthony S. Earl
Anthony S. Earl, Secretary

(SEAL)