

State of Wisconsin

CR 87-19

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

File Ref:

STATE OF WISCONSIN)
)
DEPARTMENT OF NATURAL RESOURCES)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Bruce B. Braun, Deputy 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. WW-6-87 was duly approved and adopted by this Department on May 28, 1987. 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 here-
unto set my hand and affixed the
official seal of the Department at
the Natural Resources Building in
the City of Madison, this 31st
day of August, 1987


Bruce B. Braun, Deputy Secretary

(SEAL)

RECEIVED

SEP 3 1987
4:00 PM
Revisor of Statutes
Bureau

12-1-87

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
CREATING RULES

IN THE MATTER of creating ch. NR 255
of the Wisconsin Administrative Code
pertaining to the effluent limitations WW-6-87
and pretreatment standards for the
battery manufacturing industry.
.

Analysis Prepared by Department of Natural Resources

The rules are promulgated under the authority of ss. 147.035, 147.04, 147.06, 147.07(2) and 227.11(2)(a), Stats., and interpret ss. 147.01, 147.035, 147.04, 147.06 and 147.07(2), Stats.

The federal water pollution control act amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical and biological integrity of the Nation's waters" (section 101(a)). To implement the act, the U.S. environmental protection agency issued effluent limitations, pretreatment standards, and new source performance standards for industrial wastewater discharge. The clean water act of 1977 expanded on the federal program of pollution control by setting different types of effluent limitations, "best practicable technology" (BPT), "best available technology" (BAT), "best conventional technology" (BCT), "new source performance standards" (NSPS), "pretreatment standards for existing sources" (PSES), and "pretreatment standards for new sources" (PSNS). The clean water act stressed control of toxic pollutants, including 65 "priority" pollutants and classes of pollutants in 21 major industries.

The Wisconsin department of natural resources instituted the Wisconsin pollutant discharge elimination system in 1976. This system included regulation of effluent discharges in various industries. The Wisconsin department of natural resources is promulgating ch. NR 255, Wis. Adm. Code, to regulate the battery manufacturing industry. The provisions of this chapter are based on the U.S. environmental protection agency regulations in 40 C.F.R. Part 461.

The purpose of this rule is to specify effluent limitations for BPT, BAT, BCT and NSPS for the direct discharge of waste to waters of the state and to establish pretreatment standards for the introduction of pollutants to publicly owned treatment works. The effect of the creation of ch. NR 255, Wis. Adm. Code, will be to adopt standards and limitations for industrial wastewater discharge in the battery manufacturing industry. The code provisions will reflect changes made by the U S. environmental protection agency under the authority of ss. 301, 304, 306, 307, 308 and 501 of the clean water act.

Battery manufacturing encompasses the production of modular electric power sources where part or all of the fuel is contained within the unit and

electric power is generated directly from a chemical reaction rather than indirectly through a heat cycle engine. There are 3 major components of a cell - anode, cathode, and electrolyte - plus mechanical and conducting parts such as case, separator, or contacts. In the strictest sense, a cell contains only one anode-cathode pair whereas a battery is an assemblage of cells connected to combine their electrical output. For the purpose of this rule, the term battery includes both single cells and an assemblage of cells. Production includes electrode manufacture of anodes and cathodes, and associated ancillary operations necessary to produce a battery.

Water is used throughout battery manufacturing to clean battery components and to transport wastes. Water is used in the chemical systems to make most electrodes and special electrode chemicals; water is also a major component of most electrolytes and formation baths.

The most important pollutants or pollutant parameters generated in battery manufacturing wastewater are: (1) toxic metals - arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc; (2) nonconventional pollutants - aluminum, cobalt, iron, manganese, and COD; and (3) conventional pollutants - oil and grease, TSS, and pH. Toxic organic pollutants generally are not found in large quantities although some cyanide is found in a few subcategories.

The subcategories within battery manufacturing are primarily based on anode material. Eight subcategories are addressed in this rule: cadmium, calcium, lead, Leclanche (zinc anode with an acid electrolyte), lithium, magnesium, zinc (with alkaline electrolyte), and nuclear. Manufacturing operations differ widely, both within and among subcategories. Subcategory manufacturing process elements are selected so that manufacturing operations within a subcategory are similar and are amenable to common regulation.

Several unit processes that are associated with other industrial categories are frequently found at battery manufacturing plants and are subject to this rule. Grid casting, continuous (direct chill) casting of lead, and melting furnaces as they apply to battery manufacturing are subject to this rule. The wastestreams associated with these unit processes are mold release preparation, direct chill casting, contact cooling water, and wet air pollution control.

There are no limitations and standards proposed or promulgated for lead rolling performed at lead battery manufacturing plants because there is no discharge of wastewater from the lead rolling processes at these plants. Currently these plants contract haul the small amounts of wastewater generated. If a plant discharges from this unit process, a discharge allowance may be established on a case-by-case basis.

Two federal documents form the basis for 40 C.F.R. Part 461 and this rule: (1) economic impact analysis of proposed effluent limitations and standards for the battery manufacturing industry (EPA 440/2-82/012, October 1982); and (2) development document for effluent limitations guidelines and standards for the battery manufacturing point source category (EPA 440/1-84/067, August 1984). Copies of these two documents are available for inspection at the central office of the Wisconsin department of natural resources, 101 south Webster street, Madison, and may be obtained for personal use from the national technical information service (NTIS), Springfield, Virginia 22161, (703) 487-4600.

Two additional federal sources relevant to 40 C.F.R. Part 461 and this rule may be obtained from the U.S. environmental protection agency: (1) sampling and analysis procedures for screening of industrial effluents for priority pollutants; and (2) responses to public comments, proposed battery manufacturing effluent limitations guidelines and standards, contained in the public record for 40 C.F.R. Part 461.

This rule uses the format and text of 40 C.F.R. Part 461 and is identical to the federal regulation for purposes of s. 227.14(1m)(a), Stats. Several changes have been made in the text of the federal regulation to make the rule useful to Wisconsin citizens, industry and regulating authorities. These changes are consistent with the current state regulatory framework and reflect as much as possible the conventions of state rule drafting.

As required by the administrative rules procedures manual, a purpose section has been added and revisions have been made to the numbering system, citation formats and definition formats. Where possible, Wisconsin administrative code references were substituted in the text for references to the code of federal regulations. Citations in the text to either the Wisconsin administrative code or the code of federal regulations may be cross-referenced in the table which has been added at the end of the rule. The authority section and subpart divisions in the federal regulation have been deleted, and headings for the reserved sections have been added.

The abbreviations "NSPS", "PSES", and "PSNS", and definitions for "existing source", "Leclanche type batteries", and "new source" have been added to the general definitions section in the state rule. Duplicative tables within ss. NR 255.12, 255.13, 255.14 and 255.15 have been combined to avoid unnecessary repetition. To eliminate inconsistencies in the federal regulation tables, the English units formula has been abbreviated to "lb/million lbs" in the state code tables.

SECTION 1. Chapter NR 255 is created to read:

Chapter NR 255.
BATTERY MANUFACTURING

NR 255.01	Purpose
NR 255.015	Applicability
NR 255.02	General definitions
NR 255.03	Monitoring and reporting requirements
NR 255.04	Compliance date for PSES
NR 255.10	Applicability; description of the cadmium subcategory
NR 255.20	Applicability; description of the calcium subcategory
NR 255.30	Applicability; description of the lead subcategory
NR 255.40	Applicability; description of the Leclanche subcategory
NR 255.50	Applicability; description of the lithium subcategory
NR 255.60	Applicability; description of the magnesium subcategory
NR 255.70	Applicability; description of the zinc subcategory
NR 255.80	Cross-references

SUBCHAPTER I
GENERAL PROVISIONS

NR 255.01 PURPOSE. The purpose of this chapter is to establish effluent limitations, standards of performance, and pretreatment standards for discharges of process wastes from the battery manufacturing category of point sources and its subcategories.

NR 255.015 APPLICABILITY. This chapter applies to any battery manufacturing plant that discharges or may discharge a pollutant to waters of the state or that introduces pollutants into a publicly owned treatment works. Battery manufacturing operations subject to regulation under this chapter are not subject to regulation under chs. NR 260 and 261.

NR 255.02 GENERAL DEFINITIONS. In addition to the definitions set forth in ch. NR 205 and s. NR 211.03, the following definitions apply to this chapter:

(1) "Ancillary operations" means all of the operations specific to battery manufacturing and not included specifically within anode or cathode manufacture. Ancillary operations are primarily associated with battery assembly and chemical production of anode or cathode active materials.

(2) "Battery" means a modular electric power source where part or all of the fuel is contained within the unit and electric power is generated directly from a chemical reaction rather than indirectly through a heat cycle engine. In this chapter, there is no differentiation between a single cell and a battery.

(3) "Battery manufacturing operations" means all of the specific processes used to produce a battery including the manufacture of anodes and cathodes and associated ancillary operations. These manufacturing operations are excluded from regulation under any other point source category.

(4) "Discharge allowance" means the amount of pollutant that a plant will be permitted to discharge measured by mg. per kg. of production unit. For purposes of this chapter, the allowances are specific to battery manufacturing operations.

(5) "Existing source" means any point source, except a new source as defined in sub. (9), from which pollutants may be discharged either into the waters of the state or into a POTW.

(6) "Leclanche type batteries" means zinc anode batteries with acid electrolyte.

(7) "Miscellaneous wastewater streams" means the combined wastewater streams from the process operations within each of 4 subcategories: cadmium, lead, lithium, and zinc. If a plant has one of these wastewater streams, then the plant receives the entire miscellaneous wastewater stream allowance. The process operations for the cadmium subcategory are cell wash, electrolyte preparation, floor and equipment wash, and employe wash. The process operations for the lead subcategory are floor wash, wet air pollution control, battery repair, laboratory, hand wash, and respirator wash. The process operations for the lithium subcategory are floor and equipment wash, cell testing, and lithium scrap disposal. The process operations for the zinc subcategory are cell wash, electrolyte preparation, employe wash, reject cell handling, and floor and equipment wash.

(8) "NSPS" means new source performance standards.

(9) "New source," as defined for NSPS and PSNS, means any point source from which pollutants may be discharged directly into the waters of the state or into a POTW, the construction of which commenced after November 10, 1982.

(10) "PSES" means pretreatment standards for existing sources.

(11) "PSNS" means pretreatment standards for new sources.

(12) "Plate soak" means the process operation of soaking or reacting lead subcategory battery plates, that are more than 2.5 mm. or 0.100 in. thick, in sulfuric acid.

(13) "Trucked batteries" means batteries moved into or out of the plant by truck when the truck is actually washed in the plant to remove residues left in the truck from the batteries.

NR 255.03 MONITORING AND REPORTING REQUIREMENTS. Compliance with the maximum monthly average effluent limitations and pretreatment standards listed in the tables for each regulated process is required regardless of the number of samples analyzed and averaged. The maximum monthly average effluent limitations and pretreatment standards listed in the tables for each regulated process shall be the basis for monthly average discharge limits in direct discharge permits and for pretreatment standards.

NR 255.04 COMPLIANCE DATE FOR PSES. The compliance date for pretreatment standards for existing sources is March 9, 1987.

SUBCHAPTER II CADMIUM SUBCATEGORY

NR 255.10 APPLICABILITY; DESCRIPTION OF THE CADMIUM SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing cadmium anode batteries.

NR 255.11 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BPT:

Table 1
Pasted and Pressed Powder Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	0.92	0.41
Nickel	5.18	3.43
Zinc	3.94	1.65
Cobalt	0.57	0.24
Oil and grease	54.00	32.40
TSS	111.00	52.65
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 2
Electrodeposited Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	237.0	104.6
Nickel	1,338.2	885.2
Zinc	1,017.6	425.2
Cobalt	146.4	62.7
Oil and grease	13,940.0	8,364.0
TSS	28,577.0	13,592.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 3
Impregnated Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	339.3	149.7
Nickel	1,916.2	1,267.5
Zinc	1,457.1	608.8
Cobalt	209.6	89.8
Oil and grease	19,960.0	11,976.0
TSS	40,918.0	19,461.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 4
Nickel Electrodeposited Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	193.5	85.4
Nickel	1,092.5	722.6
Zinc	830.7	347.1
Cobalt	119.5	51.2
Oil and grease	11,380.0	6,828.0
TSS	23,329.0	11,095.5
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 5
Nickel Impregnated Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	557.6	246.0
Nickel	3,148.8	2,082.8
Zinc	2,394.4	1,000.4
Cobalt	344.4	147.6
Oil and grease	32,800.0	19,680.0
TSS	67,240.0	31,980.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 6
Miscellaneous Wastewater Streams
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Cadmium	6.29	2.77
Nickel	35.54	23.50
Zinc	27.02	11.29
Cobalt	3.89	1.66
Oil and grease	370.20	222.12
TSS	758.91	360.94
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 7
Cadmium Powder Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium powder produced	
	English units -- lb/million lbs of cadmium powder produced	
Cadmium	22.34	9.86
Nickel	126.14	83.44
Zinc	95.92	40.08
Cobalt	13.80	5.91
Oil and grease	1,314.00	788.40
TSS	2,693.00	1,281.20
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 8
Silver Powder Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Cadmium	7.21	3.18
Nickel	40.70	26.92
Silver	8.69	3.61
Zinc	30.95	12.93
Cobalt	4.45	1.91
Oil and grease	424.00	254.40
TSS	869.20	413.40
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 9
Cadmium Hydroxide Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium used	
	English units -- lb/million lbs of cadmium used	
Cadmium	0.31	0.14
Nickel	1.73	1.14
Zinc	1.31	0.55
Cobalt	0.19	0.08
Oil and grease	18.00	10.80
TSS	86.90	17.60
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 10
Nickel Hydroxide Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel used	
	English units -- lb/million lbs of nickel used	
Cadmium	37.4	16.5
Nickel	211.2	139.7
Zinc	160.6	67.1
Cobalt	23.1	9.9
Oil and grease	2,200.0	1,320.0
TSS	4,510.0	2,145.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 1 to 10.

NR 255.12 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BAT:

Table 11
Electrodeposited Anodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	11.95	5.27
Nickel	67.49	44.64
Zinc	51.32	21.44
Cobalt	7.38	3.16

Table 12
 Impregnated Anodes or Nickel Impregnated Cathodes
 BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium or nickel applied	
	English units -- lb/million lbs of cadmium or nickel applied	
Cadmium	68.0	30.0
Nickel	384.0	254.0
Zinc	292.0	122.0
Cobalt	42.0	18.0

Table 13
 Nickel Electrodeposited Cathodes
 BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	11.22	4.95
Nickel	63.36	41.91
Zinc	48.18	20.13
Cobalt	6.93	2.97

Table 14
Miscellaneous Wastewater Streams
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Cadmium	0.79	0.35
Nickel	4.47	2.96
Zinc	3.40	1.42
Cobalt	0.49	0.21

Table 15
Cadmium Powder Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium powder produced	
	English units -- lb/million lbs of cadmium powder produced	
Cadmium	2.23	0.99
Nickel	12.61	8.34
Zinc	9.59	4.01
Cobalt	1.38	0.59

Table 16
Silver Powder Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Cadmium	1.09	0.48
Nickel	6.16	4.08
Silver	1.32	0.55
Zinc	4.69	1.96
Cobalt	0.67	0.29

Table 17
Cadmium Hydroxide Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium used	
	English units -- lb/million lbs of cadmium used	
Cadmium	0.05	0.02
Nickel	0.27	0.18
Zinc	0.20	0.09
Cobalt	0.03	0.01

Table 18
Nickel Hydroxide Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel used	
	English units -- lb/million lbs of nickel used	
Cadmium	5.61	2.48
Nickel	31.68	20.96
Zinc	24.09	10.07
Cobalt	3.47	1.49

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 11 to 18.

NR 255.13 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 19
Electrodeposited Anodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of cadmium		
English units -- lb/million lbs of cadmium		
Cadmium	7.03	2.81
Nickel	19.33	13.01
Zinc	35.85	14.76
Cobalt	4.92	2.46
Oil and grease	351.5	351.5
TSS	527.3	421.8
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 20
Impregnated Anodes or Nickel Impregnated Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of cadmium or nickel applied		
English units -- lb/million lbs of cadmium or nickel applied		
Cadmium	40.0	16.0
Nickel	110.0	74.0
Zinc	204.0	84.0
Cobalt	28.0	14.0
Oil and grease	2,000.0	2,000.0
TSS	3,000.0	2,400.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 21
Nickel Electrodeposited Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	6.60	2.64
Nickel	18.15	12.21
Zinc	33.66	13.86
Cobalt	4.62	2.31
Oil and grease	330.0	330.0
TSS	495.0	396.0
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 22
Miscellaneous Wastewater Streams
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Cadmium	0.47	0.19
Nickel	1.28	0.86
Zinc	2.38	0.98
Cobalt	0.33	0.16
Oil and grease	23.3	23.3
TSS	35.0	28.0
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 23
Cadmium Powder Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium powder produced	
	English units -- lb/million lbs of cadmium powder produced	
Cadmium	1.31	0.53
Nickel	3.61	2.43
Zinc	6.70	2.76
Cobalt	0.92	0.46
Oil and grease	65.70	65.70
TSS	98.55	78.84
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 24
Silver Powder Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Cadmium	0.64	0.26
Nickel	1.77	1.19
Silver	0.93	0.39
Zinc	3.27	1.35
Cobalt	0.45	0.22
Oil and grease	32.10	32.10
TSS	48.15	38.52
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 25
Cadmium Hydroxide Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium used	
	English units -- lb/million lbs of cadmium used	
Cadmium	0.028	0.011
Nickel	0.077	0.051
Zinc	0.142	0.058
Cobalt	0.019	0.009
Oil and grease	1.40	1.40
TSS	2.10	1.68
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 26
Nickel Hydroxide Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel used	
	English units -- lb/million lbs of nickel used	
Cadmium	3.30	1.32
Nickel	9.08	6.11
Zinc	16.83	6.93
Cobalt	2.31	1.16
Oil and grease	165.0	165.0
TSS	247.5	198.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 19 to 26.

NR 255.14 PRETREATMENT STANDARDS FOR EXISTING SOURCES. (1) Except as provided in 40 C.F.R. ss. 403.7 and 403.13, any existing source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for existing sources:

Table 27
Electrodeposited Anodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	11.95	5.27
Nickel	67.49	44.54
Zinc	51.32	21.44
Cobalt	7.38	3.16

Table 28
 Impregnated Anodes or Nickel Impregnated Cathodes
 PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium or nickel applied	
	English units -- lb/million lbs of cadmium or nickel applied	
Cadmium	68.0	30.0
Nickel	384.0	254.0
Zinc	292.0	122.0
Cobalt	42.0	18.0

Table 29
 Nickel Electrodeposited Cathodes
 PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	11.22	4.95
Nickel	63.36	41.91
Zinc	48.18	20.13
Cobalt	6.93	2.97

Table 30
Miscellaneous Wastewater Streams
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Cadmium	0.79	0.35
Nickel	4.47	2.96
Zinc	3.40	1.42
Cobalt	0.49	0.21

Table 31
Cadmium Powder Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium powder produced	
	English units -- lb/million lbs of cadmium powder produced	
Cadmium	2.23	0.99
Nickel	12.61	8.34
Zinc	9.59	4.01
Cobalt	1.38	0.59

Table 32
Silver Powder Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Cadmium	1.09	0.48
Nickel	6.16	4.08
Silver	1.32	0.55
Zinc	4.69	1.96
Cobalt	0.67	0.29

Table 33
Cadmium Hydroxide Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium used	
	English units -- lb/million lbs of cadmium used	
Cadmium	0.05	0.02
Nickel	0.27	0.18
Zinc	0.20	0.09
Cobalt	0.03	0.012

Table 34
Nickel Hydroxide Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel used	
	English units -- lb/million lbs of nickel used	
Cadmium	5.61	2.48
Nickel	31.68	20.96
Zinc	24.09	10.07
Cobalt	3.47	1.49

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 27 to 34.

NR 255.15 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 35
Electrodeposited Anodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium	
	English units -- lb/million lbs of cadmium	
Cadmium	7.03	2.81
Nickel	19.33	13.01
Zinc	35.85	14.76
Cobalt	4.92	2.46

Table 36
Impregnated Anodes or Nickel Impregnated Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium or nickel applied	
	English units -- lb/million lbs of cadmium or nickel applied	
Cadmium	40.0	16.0
Nickel	110.0	74.0
Zinc	204.0	84.0
Cobalt	28.0	14.0

Table 37
Nickel Electrodeposited Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Cadmium	6.60	2.64
Nickel	18.15	12.21
Zinc	33.66	13.86
Cobalt	4.62	2.31

Table 38
Miscellaneous Wastewater Streams
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Cadmium	0.47	0.19
Nickel	1.28	0.86
Zinc	2.38	0.96
Cobalt	0.33	0.16

Table 39
Cadmium Powder Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium powder produced	
	English units -- lb/million lbs of cadmium powder produced	
Cadmium	1.31	0.53
Nickel	3.61	2.43
Zinc	6.70	2.76
Cobalt	0.92	0.46

Table 40
Silver Powder Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Cadmium	0.64	0.26
Nickel	1.77	1.19
Silver	0.93	0.39
Zinc	3.27	1.35
Cobalt	0.45	0.22

Table 41
Cadmium Hydroxide Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cadmium used	
	English units -- lb/million lbs of cadmium used	
Cadmium	0.028	0.011
Nickel	0.077	0.051
Zinc	0.142	0.058
Cobalt	0.019	0.009

Table 42
Nickel Hydroxide Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel used	
	English units -- lb/million lbs of nickel used	
Cadmium	3.30	1.32
Nickel	9.08	6.11
Zinc	16.83	6.93
Cobalt	2.31	1.16

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 35 to 42.

SUBCHAPTER III

CALCIUM SUBCATEGORY

NR 255.20 APPLICABILITY; DESCRIPTION OF THE CALCIUM SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing calcium anode batteries.

NR 255.23 NEW SOURCE PERFORMANCE STANDARDS. There may be no discharge allowance for process wastewater pollutants from any battery manufacturing new source subject to this subchapter.

NR 255.25 PRETREATMENT STANDARDS FOR NEW SOURCES. There may be no discharge allowance for process wastewater pollutants into a POTW from any battery manufacturing new source subject to this subchapter.

SUBCHAPTER IV

LEAD SUBCATEGORY

NR 255.30 APPLICABILITY; DESCRIPTION OF THE LEAD SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing lead anode batteries.

NR 255.31 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BPT:

Table 43
Closed Formation -- Double Fill, or Fill and Dump
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.86	0.45
Lead	0.19	0.090
Iron	0.54	0.27
Oil and grease	9.00	5.40
TSS	18.45	8.78
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 44
Open Formation -- Dehydrated
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	20.99	11.06
Lead	4.64	2.21
Iron	16.13	6.74
Oil and grease	221.00	132.60
TSS	453.05	215.47
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 45
Open Formation -- Wet
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	0.10	0.05
Lead	0.02	0.01
Iron	0.06	0.03
Oil and grease	1.06	0.64
TSS	2.17	1.03
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 46
Plate Soak
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	0.040	0.020
Lead	0.009	0.004
Iron	0.030	0.010
Oil and grease	0.420	0.250
TSS	0.860	0.410
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 47
Battery Wash with Detergent
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	1.71	0.90
Lead	0.38	0.18
Iron	1.08	0.55
Oil and grease	18.00	10.80
TSS	36.90	17.55
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 48
Battery Wash -- Water Only
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	1.12	0.59
Lead	0.25	0.12
Iron	0.71	0.36
Oil and grease	11.80	7.08
TSS	24.19	11.51
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 49
Direct Chill Lead Casting
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	0.00040	0.00020
Lead	0.00008	0.00004
Iron	0.00020	0.00010
Oil and grease	0.00400	0.00200
TSS	0.00800	0.00300
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 50
Mold Release Formulation
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.011	0.006
Lead	0.002	0.001
Iron	0.007	0.004
Oil and grease	0.120	0.072
TSS	0.246	0.117
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 51
Truck Wash
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead in trucked batteries	
	English units -- lb/million lbs of lead in trucked batteries	
Copper	0.026	0.014
Lead	0.005	0.002
Iron	0.016	0.006
Oil and grease	0.280	0.168
TSS	0.574	0.273
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 52
Laundry
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	0.21	0.11
Lead	0.05	0.02
Iron	0.13	0.07
Oil and grease	2.18	1.31
TSS	4.47	2.13
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 53
Miscellaneous Wastewater Streams
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of lead used		
English units -- lb/million lbs of lead used		
Copper	0.81	0.43
Lead	0.18	0.09
Iron	0.51	0.26
Oil and grease	8.54	5.12
TSS	17.51	8.33
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 43 to 53.

NR 255.32 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BAT:

Table 54
Open Formation -- Dehydrated
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	3.19	1.68
Lead	0.71	0.34
Iron	2.02	1.02

Table 55
Open Formation -- Wet
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.100	0.053
Lead	0.022	0.010
Iron	0.06	0.03

Table 56
Plate Soak
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.039	0.021
Lead	0.008	0.004
Iron	0.030	0.010

Table 57
Battery Wash with Detergent
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	1.71	0.90
Lead	0.38	0.18
Iron	1.08	0.55

Table 58
Direct Chill Lead Casting
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.0004	0.0002
Lead	0.00008	0.00004
Iron	0.0002	0.0001

Table 59
Mold Release Formulation
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.011	0.006
Lead	0.002	0.001
Iron	0.007	0.003

Table 60
Truck Wash
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead in trucked batteries	
	English units -- lb/million lbs of lead in trucked batteries	
Copper	0.026	0.014
Lead	0.005	0.002
Iron	0.016	0.008

Table 61
Laundry
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.21	0.11
Lead	0.05	0.02
Iron	0.13	0.07

Table 62
Miscellaneous Wastewater Streams
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.58	0.31
Lead	0.13	0.06
Iron	0.37	0.19

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 54 to 62.

NR 255.33 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 63
Open Formation -- Dehydrated
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	2.15	1.02
Lead	0.47	0.21
Iron	2.01	1.02
Oil and grease	16.80	16.80
TSS	25.20	20.16
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 64
Open Formation -- Wet
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.067	0.032
Lead	0.014	0.006
Iron	0.063	0.032
Oil and grease	0.53	0.53
TSS	0.80	0.64
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 65
Plate Soak
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.026	0.012
Lead	0.005	0.002
Iron	0.025	0.012
Oil and grease	0.21	0.21
TSS	0.32	0.25
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 66
Battery Wash with Detergent
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	1.152	0.549
Lead	0.252	0.117
Iron	1.08	0.55
Oil and grease	9.0	9.0
TSS	13.5	10.8
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 67
Direct Chill Lead Casting
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.000256	0.000122
Lead	0.000056	0.000026
Iron	0.000240	0.000122
Oil and grease	0.0020	0.0020
TSS	0.0030	0.0024
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 68
Mold Release Formulation
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.0077	0.0037
Lead	0.0017	0.0008
Iron	0.0072	0.0037
Oil and grease	0.060	0.060
TSS	0.090	0.072
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 69
Truck Wash
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead in trucked batteries	
	English units -- lb/million lbs of lead in trucked batteries	
Copper	0.006	0.003
Lead	0.001	0.0007
Iron	0.006	0.003
Oil and grease	0.050	0.050
TSS	0.075	0.060
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 70
Laundry
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.14	0.07
Lead	0.03	0.01
Iron	0.13	0.07
Oil and grease	1.09	1.09
TSS	1.64	1.31
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 71
Miscellaneous Wastewater Streams
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.39	0.19
Lead	0.085	0.039
Iron	0.37	0.19
Oil and grease	3.07	3.07
TSS	4.61	3.69
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 63 to 71.

NR 255.34 PRETREATMENT STANDARDS FOR EXISTING SOURCES. (1) Except as provided in 40 C.F.R. ss. 403.7 and 403.13, any existing source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for existing sources:

Table 72
Open Formation -- Dehydrated
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	3.19	1.68
Lead	0.71	0.34

Table 73
Open Formation -- Wet
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.100	0.053
Lead	0.022	0.010

Table 74
Plate Soak
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.039	0.021
Lead	0.008	0.004

Table 75
Battery Wash with Detergent
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	1.71	0.90
Lead	0.38	0.18

Table 76
Direct Chill Lead Casting
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.0004	0.0002
Lead	0.00008	0.00004

Table 77
Mold Release Formulation
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.011	0.006
Lead	0.002	0.001

Table 78
Truck Wash
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead in trucked batteries	
	English units -- lb/million lbs of lead in trucked batteries	
Copper	0.026	0.014
Lead	0.005	0.002

Table 79
Laundry
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.21	0.11
Lead	0.05	0.02

Table 80
Miscellaneous Wastewater Streams
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.58	0.31
Lead	0.13	0.06

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 72 to 80.

(3) In cases where battery employe shower wastewater containing concentrations of lead exceeding 0.20 mg/l is combined with process wastewaters prior to treatment, the control authority may, under and notwithstanding the provisions of s. NR 211.12, exercise its discretion and classify battery employe shower wastewater as an unregulated rather than a dilute (F_D) wastestream, for the purpose of applying the combined wastestream formula. Before the control authority may exercise its discretion to classify such a stream as an unregulated stream, the battery manufacturer must provide engineering, production, and sampling and analysis information sufficient to allow a determination by the control authority on how the stream should be classified.

NR 255.35 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 81
Open Formation -- Dehydrated
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	2.15	1.02
Lead	0.47	0.21

Table 82
Open Formation -- Wet
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.067	0.032
Lead	0.014	0.006

Table 83
Plate Soak
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.026	0.012
Lead	0.005	0.002

Table 84
Battery Wash with Detergent
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	1.152	0.549
Lead	0.252	0.117

Table 85
Direct Chill Lead Casting
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.000256	0.000122
Lead	0.000056	0.000026

Table 86
Mold Release Formulation
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.007	0.0037
Lead	0.0017	0.0008

Table 87
Truck Wash
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead in trucked batteries	
	English units -- lb/million lbs of lead in trucked batteries	
Copper	0.006	0.003
Lead	0.001	0.0007

Table 88
Laundry
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.14	0.07
Lead	0.03	0.01

Table 89
Miscellaneous Wastewater Streams
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead used	
	English units -- lb/million lbs of lead used	
Copper	0.39	0.19
Lead	0.085	0.039

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 81 to 89.

SUBCHAPTER V
LECLANCHE SUBCATEGORY

NR 255.40 APPLICABILITY; DESCRIPTION OF THE LECLANCHE SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing Leclanche type batteries.

NR 255.43 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 90
Foliar Battery Miscellaneous Wash
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Mercury	0.010	0.004
Zinc	0.067	0.030
Manganese	0.019	0.015
Oil and grease	0.66	0.66
TSS	0.99	0.79
pH	(1)	(1)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than the battery manufacturing operation listed in table 90.

NR 255.44 PRETREATMENT STANDARDS FOR EXISTING SOURCES. (1) Except as provided in 40 C.F.R. ss. 403.7 and 403.13, any existing source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for existing sources:

Table 91
Foliar Battery Miscellaneous Wash
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Mercury	0.010	0.004
Zinc	0.067	0.030
Manganese	0.019	0.015

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than the battery manufacturing operation listed in table 91.

NR 255.45 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 92
Foliar Battery Miscellaneous Wash
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Mercury	0.010	0.004
Zinc	0.067	0.030
Manganese	0.019	0.015

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than the battery manufacturing operation listed in table 92.

SUBCHAPTER VI
LITHIUM SUBCATEGORY

NR 255.50 APPLICABILITY; DESCRIPTION OF THE LITHIUM SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing lithium anode batteries.

NR 255.53 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 93
Lead Iodide Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead	
	English units -- lb/million lbs of lead	
Chromium	23.34	9.46
Lead	17.66	8.20
Iron	75.70	38.48
TSS	946.2	756.96
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 94
Iron Disulfide Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of iron disulfide	
	English units -- lb/million lbs of iron disulfide	
Chromium	2.79	1.13
Lead	2.11	0.96
Iron	9.05	4.60
TSS	113.1	90.5
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 95
Miscellaneous Wastewater Streams
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.039	0.016
Lead	0.030	0.014
Iron	0.129	0.066
TSS	1.62	1.30
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 96
Air Scrubbers
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
TSS	434.0	207.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 93 to 96.

NR 255.55 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 97
Lead Iodide Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of lead	
	English units -- lb/million lbs of lead	
Chromium	23.34	9.46
Lead	17.66	8.20

Table 98
Iron Disulfide Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of iron disulfide	
	English units -- lb/million lbs of iron disulfide	
Chromium	2.79	1.13
Lead	2.11	0.96

Table 99
Miscellaneous Wastewater Streams
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.039	0.016
Lead	0.030	0.014

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 97 to 99.

SUBCHAPTER VII

MAGNESIUM SUBCATEGORY

NR 255.60 APPLICABILITY; DESCRIPTION OF THE MAGNESIUM SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing magnesium anode batteries.

NR 255.63 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 100
Silver Chloride Cathodes -- Chemically Reduced
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	22.93	10.65
Silver	23.75	9.83
Iron	98.28	49.96
TSS	1,228.5	982.8
COD	4,095.0	1,999.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 101
Silver Chloride Cathodes -- Electrolytic
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	40.6	18.9
Silver	42.1	17.4
Iron	174.0	86.5
TSS	2,175.0	1,740.0
COD	7,250.0	3,540.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 102
Cell Testing
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	19.5	7.89
Silver	15.3	6.31
Iron	63.1	32.1
TSS	789.0	631.2
COD	2,630.0	1,290.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 103
Floor and Equipment Wash
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	0.026	0.012
Silver	0.027	0.011
Iron	0.112	0.057
COD	1.41	1.13
TSS	4.70	2.30
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 104
Air Scrubber
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
TSS pH	8,467.0 (¹)	4,030.0 (¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 100 to 104.

NR 255.64 PRETREATMENT STANDARDS FOR EXISTING SOURCES. (1) Except as provided in 40 C.F.R. ss. 403.7 and 403.13, any existing source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for existing sources:

Table 105
Silver Chloride Cathodes -- Chemically Reduced
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	1,032.36	491.60
Silver	1,007.78	417.86

Table 106
Silver Chloride Cathodes -- Electrolytic
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	60.9	29.0
Silver	59.5	24.7

Table 107
Cell Testing
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	22.1	10.5
Silver	21.6	8.9

Table 108
Floor and Equipment Wash
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	0.039	0.018
Silver	0.038	0.015

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 105 to 108.

NR 255.65 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 109
Silver Chloride Cathodes -- Chemically Reduced
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	22.93	10.65
Silver	23.75	9.83

Table 110
Silver Chloride Cathodes -- Electrolytic
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Lead	40.6	18.9
Silver	42.1	17.4

Table 111
Cell Testing
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	19.5	7.89
Silver	15.3	6.31

Table 112
Floor and Equipment Wash
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Lead	0.026	0.012
Silver	0.027	0.001

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 109 to 112.

SUBCHAPTER VIII
ZINC SUBCATEGORY

NR 255.70 APPLICABILITY; DESCRIPTION OF THE ZINC SUBCATEGORY. This subchapter applies to the discharge of pollutants to waters of the state and the introduction of pollutants into POTWs from manufacturing zinc anode batteries.

NR 255.71 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BPT:

Table 113
Wet Amalgamated Powder Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg zinc	
	English units -- lb/million lbs of zinc	
Chromium	1.67	0.68
Mercury	0.95	0.38
Silver	1.56	0.65
Zinc	5.55	2.32
Manganese	2.58	1.10
Oil and grease	76.0	45.6
TSS	155.8	74.1
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 114
Gelled Amalgam Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of zinc		
English units -- lb/million lbs of zinc		
Chromium	0.30	0.12
Mercury	0.17	0.07
Silver	0.28	0.12
Zinc	0.99	0.42
Manganese	0.46	0.20
Oil and grease	13.6	8.16
TSS	27.9	13.26
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 115
Zinc Oxide, Formed Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Metric units -- mg/kg of zinc		
English units -- lb/million lbs of zinc		
Chromium	62.9	25.7
Mercury	35.8	14.3
Silver	58.7	24.3
Zinc	208.8	87.2
Manganese	97.2	41.5
Oil and grease	2,860.0	1,716.0
TSS	5,863.0	2,789.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 116
Electrodeposited Anodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc deposited	
	English units -- lb/million lbs of zinc deposited	
Chromium	1,404.0	574.0
Mercury	798.0	319.0
Silver	1,308.0	543.0
Zinc	4,657.0	1,948.0
Manganese	2,169.0	925.0
Oil and grease	63,800.0	38,280.0
TSS	130,700.0	62,210.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 117
Silver Powder, Formed Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	86.2	35.3
Mercury	49.0	19.6
Silver	80.4	33.3
Zinc	286.2	119.6
Manganese	133.3	56.8
Oil and grease	3,920.0	2,350.0
TSS	8,036.0	3,822.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 118
Silver Oxide Powder, Formed Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	57.7	23.6
Mercury	32.8	13.1
Silver	53.7	22.3
Zinc	191.3	79.9
Manganese	89.1	38.0
Oil and grease	2,620.0	1,570.0
TSS	5,370.0	2,554.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 119
Silver Peroxide Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	13.8	5.65
Mercury	7.85	3.14
Silver	12.9	5.34
Zinc	45.8	19.2
Manganese	21.4	9.11
Oil and grease	628.0	377.0
TSS	1,287.0	612.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 120
Nickel Impregnated Cathodes
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Chromium	721.6	295.2
Mercury	410.0	164.0
Nickel	3,149.0	2,081.0
Silver	672.4	279.0
Zinc	2,394.4	1,000.4
Manganese	1,115.2	475.6
Oil and grease	32,800.0	19,680.0
TSS	67,240.0	31,980.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 121
Miscellaneous Wastewater Streams
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	3.85	1.58
Cyanide	2.54	1.05
Mercury	2.19	0.68
Nickel	16.82	11.12
Silver	3.59	1.49
Zinc	12.79	5.34
Manganese	5.96	2.54
Oil and grease	175.20	105.12
TSS	359.16	170.82
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 122
Silver Etch
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Chromium	21.6	8.84
Mercury	12.3	4.91
Silver	20.2	8.35
Zinc	71.7	30.0
Manganese	33.4	14.3
Oil and grease	982.0	589.2
TSS	2,013.1	957.5
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 123
Silver Peroxide Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver in silver peroxide produced	
	English units -- lb/million lbs of silver in silver peroxide produced	
Chromium	23.0	9.40
Mercury	13.1	5.22
Silver	21.4	8.88
Zinc	76.2	31.80
Manganese	35.5	15.10
Oil and grease	1,044.0	627.00
TSS	2,140.0	1,018.00
pH	(')	(')

¹ Within the range of 7.5 to 10.0 at all times.

Table 124
Silver Powder Production
BPT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Chromium	9.33	3.82
Mercury	5.30	2.12
Silver	8.69	3.61
Zinc	30.95	12.93
Manganese	14.42	6.15
Oil and grease	424.0	254.40
TSS	869.0	413.40
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 113 to 124.

NR 255.72 EFFLUENT LIMITATIONS REPRESENTING THE DEGREE OF EFFLUENT REDUCTION ATTAINABLE BY THE APPLICATION OF THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE. (1) Except as provided in 40 C.F.R. ss. 125.30 to 125.32, any existing source subject to this subchapter shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BAT:

Table 125
Wet Amalgamated Powder Anodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	0.24	0.099
Mercury	0.14	0.056
Silver	0.23	0.093
Zinc	0.80	0.34
Manganese	0.37	0.16

Table 126
Gelled Amalgam Anodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	0.030	0.012
Mercury	0.017	0.007
Silver	0.028	0.012
Zinc	0.099	0.042
Manganese	0.046	0.020

Table 127
Zinc Oxide Formed Anodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	9.53	3.90
Mercury	5.42	2.17
Silver	8.89	3.68
Zinc	31.64	13.22
Manganese	14.74	6.28

Table 128
Electrodeposited Anodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc deposited	
	English units -- lb/million lbs of zinc deposited	
Chromium	94.47	38.65
Mercury	53.68	21.47
Silver	88.03	36.50
Zinc	313.46	130.97
Manganese	146.00	62.26

Table 129
Silver Powder Formed Cathodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	13.07	5.35
Mercury	7.43	2.97
Silver	12.18	5.05
Zinc	43.36	18.12
Manganese	20.20	8.61

Table 130
Silver Oxide Powder Formed Cathodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	8.73	3.57
Mercury	4.96	1.99
Silver	8.14	3.37
Zinc	28.96	12.11
Manganese	13.50	5.76

Table 131
Silver Peroxide Cathodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	2.09	0.87
Mercury	1.19	9.48
Silver	1.95	0.81
Zinc	6.95	2.90
Manganese	3.24	1.38

Table 132
Nickel Impregnated Cathodes
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Chromium	88.0	36.0
Mercury	50.0	20.0
Nickel	384.0	254.0
Silver	82.0	34.0
Zinc	292.0	122.0
Manganese	136.0	58.0

Table 133
Miscellaneous Wastewater Streams
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.57	0.23
Cyanide	0.38	0.16
Mercury	0.32	0.13
Nickel	2.48	1.64
Silver	0.53	0.22
Zinc	1.88	0.79
Manganese	0.88	0.37

Table 134
Silver Etch
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Chromium	3.27	1.34
Mercury	1.86	0.74
Silver	3.05	1.26
Zinc	10.86	4.54
Manganese	5.06	2.16

Table 135
Silver Peroxide Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver in silver peroxide produced	
	English units -- lb/million lbs of silver in silver peroxide produced	
Chromium	3.48	1.42
Mercury	1.96	0.79
Silver	3.24	1.34
Zinc	11.56	4.83
Manganese	5.36	2.29

Table 136
Silver Powder Production
BAT

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Chromium	1.41	0.58
Mercury	0.80	0.32
Silver	1.32	0.55
Zinc	4.69	1.96
Manganese	2.18	0.93

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 125 to 136.

NR 255.73 NEW SOURCE PERFORMANCE STANDARDS. (1) The discharge of wastewater pollutants from any new source subject to this subchapter may not exceed the following standards:

Table 137
Zinc Oxide Formed Anodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	4.55	1.97
Mercury	2.82	1.19
Silver	4.55	1.97
Zinc	0.87	0.39
Manganese	6.50	4.98
Oil and grease	216.7	216.7
TSS	325.0	260.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 138
Electrodeposited Anodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc deposited	
	English units -- lb/million lbs of zinc deposited	
Chromium	45.09	19.54
Mercury	27.91	11.81
Silver	45.09	19.54
Zinc	8.59	3.86
Manganese	64.41	49.38
Oil and grease	2,147.00	2,147.00
TSS	3,220.50	2,576.40
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 139
Silver Powder Formed Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	6.24	2.70
Mercury	3.86	1.63
Silver	6.24	2.70
Zinc	1.19	0.53
Manganese	8.91	6.83
Oil and grease	297.00	297.00
TSS	445.5	356.40
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 140
Silver Oxide Powder Formed Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	4.17	1.81
Mercury	2.58	1.09
Silver	4.17	1.81
Zinc	0.79	0.36
Manganese	5.96	4.57
Oil and grease	198.5	198.5
TSS	297.8	238.2
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 141
Silver Peroxide Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	1.00	0.43
Mercury	0.62	0.26
Silver	1.00	0.43
Zinc	0.19	0.09
Manganese	1.43	1.09
Oil and grease	47.6	47.6
TSS	71.4	57.1
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 142
Nickel Impregnated Cathodes
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Chromium	42.0	18.2
Mercury	26.0	11.0
Nickel	42.0	18.2
Silver	42.0	18.2
Zinc	8.0	3.6
Manganese	60.0	46.0
Oil and grease	2,000.0	2,000.0
TSS	3,000.0	2,400.0
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 143
Miscellaneous Wastewater Streams
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.27	0.12
Cyanide	0.039	0.016
Mercury	0.17	0.07
Nickel	0.27	0.12
Silver	0.27	0.12
Zinc	0.05	0.02
Manganese	0.39	0.30
Oil and grease	12.90	12.90
TSS	19.35	15.48
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 144
Silver Etch
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Chromium	1.56	0.68
Mercury	0.97	0.41
Silver	1.56	0.68
Zinc	0.30	0.13
Manganese	2.23	1.71
Oil and grease	74.40	74.40
TSS	111.60	89.28
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 145
Silver Peroxide Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver in silver peroxide produced	
	English units -- lb/million lbs of silver in silver peroxide produced	
Chromium	1.66	0.72
Mercury	1.03	0.44
Silver	1.66	0.72
Zinc	0.32	0.14
Manganese	2.37	1.82
Oil and grease	79.10	79.10
TSS	118.65	94.92
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

Table 146
Silver Powder Production
NSPS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Chromium	0.67	0.29
Mercury	0.42	0.18
Silver	0.67	0.29
Zinc	0.13	0.06
Manganese	0.96	0.74
Oil and grease	32.10	32.10
TSS	48.15	38.52
pH	(¹)	(¹)

¹ Within the range of 7.5 to 10.0 at all times.

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 137 to 146.

NR 255.74 PRETREATMENT STANDARDS FOR EXISTING SOURCES. (1) Except as provided in 40 C.F.R. ss. 403.7 and 403.13, any existing source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for existing sources:

Table 147
Wet Amalgamated Powder Anode
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	0.24	0.099
Mercury	0.14	0.055
Silver	0.23	0.093
Zinc	0.80	0.34
Manganese	0.37	0.16

Table 148
Gelled Amalgam Anodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	0.030	0.12
Mercury	0.017	0.006
Silver	0.028	0.012
Zinc	0.099	0.042
Manganese	0.046	0.020

Table 149
Zinc Oxide Formed Anodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	9.53	3.90
Mercury	5.42	2.17
Silver	8.89	3.68
Zinc	31.64	13.22
Manganese	14.74	6.28

Table 150
Electrodeposited Anodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc deposited	
	English units -- lb/million lbs of zinc deposited	
Chromium	94.47	38.65
Mercury	53.68	21.47
Silver	88.03	36.50
Zinc	313.46	130.97
Manganese	146.00	62.26

Table 151
Silver Powder Formed Cathodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	13.07	5.35
Mercury	7.43	2.97
Silver	12.18	5.05
Zinc	43.36	18.12
Manganese	20.20	8.61

Table 152
Silver Oxide Powder Formed Cathodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	8.73	3.57
Mercury	4.96	1.99
Silver	8.14	3.37
Zinc	28.98	12.11
Manganese	13.50	5.76

Table 153
Silver Peroxide Cathodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	2.09	0.87
Mercury	1.19	0.48
Silver	1.95	0.81
Zinc	6.95	2.90
Manganese	3.24	1.38

Table 154
Nickel Impregnated Cathodes
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Chromium	88.0	36.0
Mercury	50.0	20.0
Nickel	384.0	254.0
Silver	82.0	34.0
Zinc	292.0	122.0
Manganese	136.0	58.0

Table 155
Miscellaneous Wastewater Streams
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.57	0.23
Cyanide	0.38	0.16
Mercury	0.32	0.13
Nickel	2.48	1.64
Silver	0.53	0.22
Zinc	1.88	0.79
Manganese	0.88	0.37

Table 156
Silver Etch
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Chromium	3.27	1.34
Mercury	1.86	0.74
Silver	3.05	1.26
Zinc	10.86	4.54
Manganese	5.06	2.16

Table 157
Silver Peroxide Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver in silver peroxide produced	
	English units -- lb/million lbs of silver in silver peroxide produced	
Chromium	3.48	1.42
Mercury	1.98	0.79
Silver	3.24	1.34
Zinc	11.55	4.83
Manganese	5.38	2.29

Table 158
Silver Powder Production
PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Chromium	1.41	0.58
Mercury	0.80	0.32
Silver	1.32	0.55
Zinc	4.69	1.96
Manganese	2.18	0.93

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 147 to 158.

NR 255.75 PRETREATMENT STANDARDS FOR NEW SOURCES. (1) Except as provided in 40 C.F.R. s. 403.7, any new source subject to this subchapter that introduces pollutants into a POTW shall comply with 40 C.F.R. Part 403 and achieve the following pretreatment standards for new sources:

Table 159
Zinc Oxide Formed Anodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc	
	English units -- lb/million lbs of zinc	
Chromium	4.55	1.97
Mercury	2.82	1.19
Silver	4.55	1.97
Zinc	0.87	0.39
Manganese	6.50	4.98

Table 160
Electrodeposited Anodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of zinc deposited	
	English units -- lb/million lbs of zinc deposited	
Chromium	45.09	19.54
Mercury	27.91	11.81
Silver	45.09	19.54
Zinc	8.59	3.86
Manganese	64.41	49.38

Table 161
Silver Powder Formed Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	6.24	2.70
Mercury	3.86	1.63
Silver	6.24	2.70
Zinc	1.19	0.53
Manganese	8.91	6.83

Table 162
Silver Oxide Powder Formed Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	4.17	1.81
Mercury	2.58	1.09
Silver	4.17	1.81
Zinc	0.79	0.36
Manganese	5.96	4.57

Table 163
Silver Peroxide Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver applied	
	English units -- lb/million lbs of silver applied	
Chromium	1.00	0.43
Mercury	0.62	0.26
Silver	1.00	0.43
Zinc	0.19	0.09
Manganese	1.43	1.09

Table 164
Nickel Impregnated Cathodes
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of nickel applied	
	English units -- lb/million lbs of nickel applied	
Chromium	42.0	18.2
Mercury	26.0	11.0
Nickel	42.0	18.2
Silver	42.0	18.2
Zinc	8.0	3.6
Manganese	60.0	46.0

Table 165
Miscellaneous Wastewater Streams
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of cells produced	
	English units -- lb/million lbs of cells produced	
Chromium	0.27	0.12
Cyanide	0.039	0.016
Mercury	0.17	0.07
Nickel	0.27	0.12
Silver	0.27	0.12
Zinc	0.05	0.02
Manganese	0.39	0.30

Table 166
Silver Etch
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver processed	
	English units -- lb/million lbs of silver processed	
Chromium	1.56	0.68
Mercury	0.97	0.41
Silver	1.56	0.68
Zinc	0.30	0.13
Manganese	2.23	1.71

Table 167
Silver Peroxide Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver in silver peroxide produced	
	English units -- lb/million lbs of silver in silver peroxide produced	
Chromium	1.66	0.72
Mercury	1.03	0.44
Silver	1.66	0.72
Zinc	0.32	0.14
Manganese	2.37	1.82

Table 168
Silver Powder Production
PSNS

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units -- mg/kg of silver powder produced	
	English units -- lb/million lbs of silver powder produced	
Chromium	0.67	0.29
Mercury	0.42	0.18
Silver	0.67	0.29
Zinc	0.13	0.06
Manganese	0.96	0.74

(2) There may be no discharge allowance for process wastewater pollutants from any battery manufacturing operation other than those battery manufacturing operations listed in tables 159 to 168.

NR 255.80 CROSS-REFERENCES. The federal citations in this chapter correspond to provisions of the Wisconsin administrative code and Wisconsin statutes. The federal citations may be cross-referenced in the following table:

<u>Code of Federal Regulations</u>	<u>Corresponding state code section</u>
40 C.F.R. Part 401	ch. NR 205
40 C.F.R. s. 403.6(e)	ch. NR 211.12
40 C.F.R. ss. 125.30 to 125.32	s. NR 147.04(3), Stats.

The foregoing rules were approved and adopted by the State of Wisconsin Natural Resources Board on May 28, 1987.

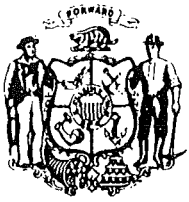
The rules shall take effect as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin August 31, 1987

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

By Carroll D. Besadny
Carroll D. Besadny, Secretary

(SEAL)
5346I



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

1020

File Ref:

August 31, 1987

Mr. Orlan L. Prestegard
Revisor of Statutes
Suite 702
30 W. Mifflin Street

Dear Mr. Prestegard:

Enclosed are two copies, including one certified copy, of State of Wisconsin Natural Resources Board Order No. WW-6-87. These rules were reviewed by the Assembly Committee on Environmental Resources and Utilities and the Senate Committee on Urban Affairs, Energy, Environmental Resources and Elections pursuant to s. 227.19, Stats. A summary of the final regulatory flexibility analysis and comments of the legislative review committees is also enclosed.

You will note that this order takes effect following publication. Kindly publish it in the Administrative Code accordingly.

Sincerely,

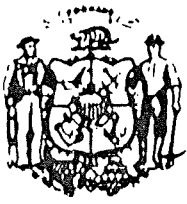
C. D. Besadny
Secretary

Enc.

RECEIVED

SEP 3 1987

Revisor of Statutes
Bureau



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

December 1, 1986

In Reply Refer To: 8300

The Honorable Bronson C. LaFollette
Attorney General
Room 114 East
State Capitol

Mr. Orlan L. Prestegard
Revisor of Statutes
411 West
State Capitol

Gentlemen:

Pursuant to section 227.21, Wisconsin Statutes, your consent is hereby requested for incorporation by reference into administrative rules of various standards and procedures established by technical societies and organizations of recognized national standing, including an agency of the federal government (U.S. Environmental Protection Agency). The materials for which incorporation by reference is requested involve rules which are of limited public interest and the materials are readily available in published form. If this request is not approved, the cost of reproducing these materials in the administrative rules would be great and would constitute an unwarranted expense.

The rules affected by this request are contained in Natural Resources Board Order A-28-86 (copy enclosed) and consist of revisions to Chapter NR 439, Wisconsin Administrative Code, which establish specific acceptable methods and procedures which air contaminant sources may use to demonstrate compliance with applicable emission limits.

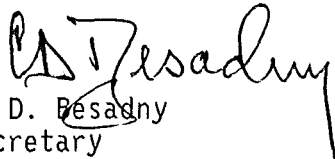
The material for which incorporation by reference is being sought includes standard methods and procedures which professional engineers and technicians must use to demonstrate whether air contaminant sources are in compliance with applicable emission limits.

Section NR 484.04 of the proposed rule, at pages 43-49, incorporates the methods and procedures referenced in sections NR 439.06 and 439.07 of the rule, states how the incorporated materials may be obtained and states that the material is on file at the offices of this Department, the secretary of state and the revisor of statutes in Madison.

Some of the materials for which incorporation by reference is being requested herein have been incorporated by reference in existing provisions of section NR 440.17 and chapter NR 484, Wisconsin Administrative Code.

If the proposed incorporation by reference meets with your approval, please so note at the end of this letter and return it along with the enclosures to this Department. Your cooperation in this matter is appreciated. Any questions should be directed to Tom Steidl of our Bureau of Legal Services at 266-0235 or Jon Heinrich, the air management coordinator of our Southern District office at 275-3291.

Sincerely,

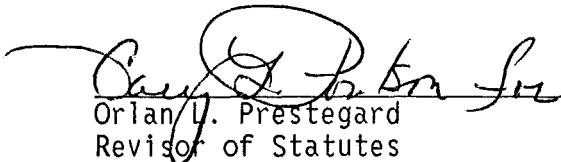

C. D. Pesadny
Secretary

Enclosures

cc: Tom Steidl - LC/5
Jon Heinrich - SD

Approved:


Bronson C. LaFollette 12/23/86
Attorney General Date


Orlan L. Prestegard 12-30-86
Revisor of Statutes Date

50770