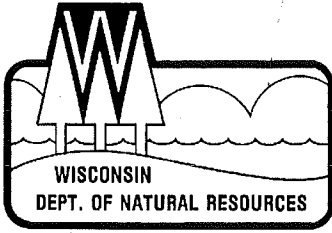


CR 94-76, part I



George E. Meyer  
Secretary

**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

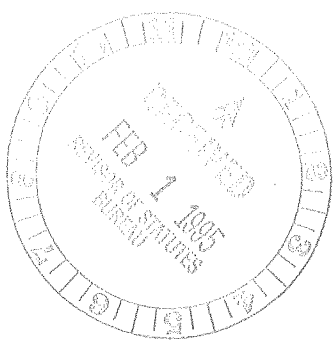
101 South Webster Street  
Box 7921  
Madison, Wisconsin 53707  
TELEPHONE 608-266-2621  
TELEFAX 608-267-3579  
TDD 608-267-6897

STATE OF WISCONSIN )  
 )  
DEPARTMENT OF NATURAL RESOURCES )      SS

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, George E. Meyer, 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. SW-13-94a was duly approved and adopted by this Department on September 29, 1994. 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 the Natural Resources Building in the City of Madison, this 25<sup>th</sup> day of January, 1995



*George E. Meyer*  
George E. Meyer, Secretary

(SEAL)

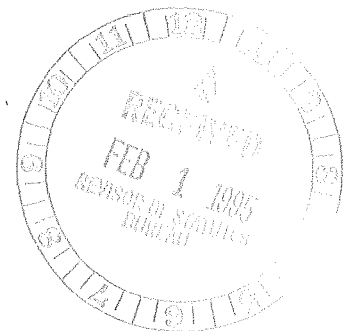
6-1-95



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

IN THE MATTER OF repealing ch. NR 183, ss. NR 600.02(3), 600.03(237m), 600.10(1)(b) and (d) and 605.05(1)(f), ch. NR 605 Appendix V, ss. NR 610.02(3), 615.02(3), 615.05(5) and (6)(b), 615.11(1)(a)7., 615.12(1t)(e)1. and 2., 620.02(3), 625.02(3), 625.07(7)(a), 630.02(3), 630.04(12), 630.40(1)(h), 635.12(11) and (14), 640.02(3), 655.02(3), 655.07(2)(a), (b) and (c), 660.02(3), 660.18(095)(f), 665.02(3), 670.02(3), 675.02(3), 675.15(7), 675.16(6), 675.21(1) Table CCWE Entry K061 (Low Zinc Category), 685.02(3), 685.06(8) and (9), 685.09(1)(a) and (b), and 685.09(6)(c); renumbering ss. NR 600.03(9) through (69), (71) through (80), (82) through (108), (108m), (109) through (175), (175m) and (176) through (244), 600.10(1)(c) and (2)(c), 605.04(1)(b)6., 605.05(1)(g) through (s), (2) and (3), 610.08(1)(e) through (g) and (k) through (v), 615.05(4)(a)4. through (4)(a)9., (6) and (7), 625.07(7)(b), 625.02(4) and (14), 630.40(1)(i), 635.12(5), (7) through (9) and (12), 655.07(6), 660.08(2)(cg), (cm), (ct), (cw), (d), and (f), 660.093, 660.095, 660.10, 660.105, 660.107, 660.12, 660.14, 660.18 and 660.20, 660.18(11)(g), as renumbered, 660.18(9) through (19), (21) through (26), (28), (29), (33), (35) and (36) as renumbered, 660.18(11)(g)1. and 2., as renumbered, 675.07(1)(c)1.d., (1)(h) through (k), 675.10(10), 675.15(8) and (10), 675.16(7) and (8), ch. NR 675 Table 1 of Appendix VI, and ss. 685.06(10) and (11) and 685.09(2)(c); renumbering and amending ss. 600.02(4), 600.03(17), (21), (51), (57), (57), (59), (60)(b), (64)(note), (70)(intro.), (81), (112), (115), (133), (136), (142), (148m), (200), (210), (222), (226), (238)(c), 600.10(1)(e) and (f) and (2)(d), 605.05(1)(e), (h)(intro.), (j), (l), (n), (o) and (p), (1h)(intro.), (1m)(intro.), (1r), (4), (4h) and (4p), (5)(j), 610.02(4), 610.08(1)(h), (i), (j) and (n)11.b., 615.02(4), 615.05(6)(c), (d) and (e), 615.09, 620.02(4), 625.02(4), 625.07(7)(c), 630.02(4), 630.04(15), 635.12(6), (10) and (13), 640.02(4), 655.02(4), 660.02(4), 660.08(2)(e), (em) and (er), 660.103, 660.11, 660.13, 660.15, 660.16, 660.17, 660.19, 665.02(4), 670.02(4), 675.02(4), 675.07(1)(e)1.e.(note), 675.07(1)(f), 675.07(1)(f), 675.15(9), 685.02(4), 685.08(10)(d) and 685.09(2)(b); amending ss. NR 157.06(3)(a), 600.02(2), 600.10(1)(intro), (1)(a), (2)(a)(intro), (2)(a)33., (2)(b)(intro) and (2)(b)1., 605.02, 605.04(1)(b)3., 4. and 7., 605.05(1)(c) and (e), 605.07(2)(a)3.(intro), 605.08(3)(a)1. and 2. and (5)(a), 605.09(1)(b), 605.09(2)(a) Table II Entries F019, F024 and F500, 605.09(2)(b) Table III Entry K069 and NR 605.13, ch. NR 605 Appendix I, ss. NR 610.02(2), 610.08(2)(a)7., 615.02(2), 615.05(4)(c)(intro.) and 6., 615.08(8)(f) and (k) and (12)(intro), 615.12(1)(a)1.a., 615.12(1t)(e), 620.02(2), 620.10(1)(b) and (c), 620.11(2), (3) and (4), 625.02(2), 625.06(2), 625.07(1), 625.08(2)(b), and (j)3., 630.02(2), 630.04(4), 630.05(2), 630.13(1)(g)1. and 2., 630.15(2)(d), 630.20(8), 630.22(2)(b), 630.30(1) and (4)(f) and 630.31(1)(h) and (j), ch. NR 635 (title), ss. 635.02 and 635.05(1)(a) through (c), ch. 635.09(1)(d) Table I, ss. NR 635.12(intro.) and (1), 635.12(1)(b) and (15)(c) and (d), 635.13(2), (3)(b) and (c), (4), (7)(intro.) and (a) and (8)(c)2. and 3., 635.14(3)(a), (c)2. and 3., (4), (6), (7) and (8)(a), 635.16(2)(a), 635.17, 640.02(2) and 645.09(1) and (3)(c) and (d), ch. NR 655(title), ss. 655.02(intro) and 655.02(2), 655.05, 655.06(intro.), (1), (2)(intro.), and (2)(d), 655.07(1), (2)(intro.), (3), (4) and (5), 655.08(1)(intro.) and (2)(intro.), 655.09(intro.) and (1)(intro.), 655.10(1)(intro.), (1)(b), and (2), 655.11(1) and (2)(intro.), 660.02(2), 660.09(7)(intro.), (7)(b) and (8)(intro.), 660.21(2) and (3), 665.02(2), 665.06(1)(d)1.d. and 2., (e)1.c. and d., 670.02(2), 670.10(2), 675.02(2), 675.03, 675.05(1)(a), (b) and (c), (c)1., and 2., (d) and (d)2., (2)(a), (b), and (c), (c)1. and 2., (d) and (d)2., (2)(a), (b) and (c), (c)1. and 2., (d) and (d)2., and (3)(c)(note), 675.06(2), 675.07(1)(a), (b), (c)2.(note), (d)3.(note), (e), (2)(a), (d)1.b.(note), (2)(e)(note), (2)(e)2. and (3)(a) and (b), 675.10(1)(d) and (9), 675.13(4), 675.14(2) and (5), 675.16(3), 675.20(1), 675.21(1), 675.21(1) Table CCWE Entries D007, F006, F007, F008, F009, F011, F012, F019, F024, F039, K002, K003, K004, K005, K006 (anhydrous and hydrated), K007, K008, K015, K022, K028, K048, K049, K050, K051, K052, K061 (High Zinc Subcategory), K062, K086, K100, U032, 675.21(1) and (2), 675.22(1)(b) Table 2, (1)(c) and (2)(c), 675.24(1)(a), (b) and (c) (c)1. and 2., (d), (d)2., and (e)(note), 675.30(1)(note), (4)(note) and (5)(note), 680.02, 680.04(1) and (3), 680.05(1)(c)3., 680.08(2) and 680.22(28), s. NR 680.45 Tables XII and XIII, ss. 685.02(2), 685.05(2)(intro.), 685.06(1) and (5), 685.07(b)1. and 2., 685.08(2) and (10)(c) and 685.09(1)(intro.), (2)(title), (2)(a), (3)(title), (3)(intro.) and (6)(a) and (b), repealing and recreating s. NR 605.08(5)(b) Table I, s. NR 605.09(3)(b) Table IV, s. NR 605.09(3)(c) Table V, s. NR 605 Appendices II, III and IV, ss. NR 615.11(1)(a)6. and 630.40(1)(g), ch. NR 635 Appendix I, ss. NR 640.04(8), 655.07(7), as renumbered, and 675.16(4) and (5), s. NR 675.23(1) Table CCW, and ss. NR 680.07, 685.08(3)(g)1. and 2., creating ss. 600.03(9), (21), (31), (42),

SW-13-94a



(43), (48), (50), (51), (52), (54), (68), (69), (72), (73), (81), (85)(a) and (b),  
 (91), (92), (94), (98), (113), (116), (121) through (123), (125), (126), (159),  
 (181), (195), (197), (198), (210), (211), (221), (222), (230), (231), (234), (236),  
 (244), (252), (280), (281) and (284), 600.10(1)(b), (c), (d), and (e), (2)(a)45,  
 through 51., (2)(b)3. and (2)(c), 605.04(1)(b)6., 605.04(1)(b)8., 605.04(1)(b)9.,  
 605.04(4), 605.05(1)(s), (t), (u), (v), (w) and (x), 605.05(6), NR 605.09(2)(a) Table  
 II Entries F025, F032, F034, F035, F037 and F038, 605.09(2)(b) Table III Entries  
 K064, K065, K088, K090, K091, K107, K108, K109, K110, K131, K132, K149, K150 and  
 K151, NR 605.09(2)(b) Table III Entries K141, K142, K143, K144, K145, K147 and K148,  
 605.14, 610.07(2), (3), (4), (5), (6) and (7), 610.08(1)(e) and (f), (6) and (7),  
 615.05(4)(a)4. and 11., 615.08(15), 615.09, 615.11(4), 625.04(7), 630.04(15),  
 630.13(1)(g)3., 630.32, chs. NR 631 and 632, 635.12(1)(c), (5) and (6), (13),  
 (15)(b)4. and (e), (16), 635.13(12), 635.15(10) and 635.18, ch. NR 636, ss. NR  
 645.02(5), 645.04(7), 655.07(6) and 655.08(3), ch. NR 656, ss. 660.13(5) through  
 (8), 660.18(8), (11)(b)3., 4., and 5., (f) through (i), (31)(c)1., 2., and 3.,  
 675.03(1) through (10), 675.07(1)(c)1.d., (e)2., (f), (f)1., (f)2. and (f)3.,  
 675.10(10) and 675.16(8), ch. 675 Appendix VI Table 2, ss. 680.22(33), (34) and (35),  
 ch. NR 680 Appendix I, ss. NR 685.05(10)(c) through (e), 685.08(3)(g)3., (10)(d),  
 (e) and (g) and 685.09(2)(b) of the Wisconsin Administrative Code pertaining to  
 PCBs and solid and hazardous waste management.

Analysis Prepared by the Department of Natural Resources

Statutory authority: ss. 144.431(1) (a), 144.435(1), 144.44(3), (7), (7)(g) and (9), 144.50, 144.60(2), 144.62, 159.07 and 159.15 and 227.11(2) (a), Stats.

Statutes interpreted: ss. 144.44, 144.441, 144.443, 144.444, 144.50 and 144.60 to 144.79, 159.07 and 159.15 Stats.

Consent for incorporation by reference of federal and technical standards has been requested from the Revisor of Statutes and the Attorney General pursuant to s. 227.21(2) (a), Stats.

This order amends the hazardous waste rules in chs. NR 600 to 685, Wis. Adm. Code. The order assimilates recent revisions in U.S. Environmental Protection Agency (EPA) regulations, includes several State-initiated actions and corrects errors in chs. NR 600 to 685 Wis. Adm. Code:

1. Land Disposal Restrictions

Land Disposal Restrictions (LDR's or "land ban") reflect the policy that the land disposal of hazardous wastes is prohibited unless certain specific treatment standards have been met. The adoption of new Federally mandated LDRs is a major revision to the existing rules.

2. Wood Preservation

This rule is a Wisconsin adaptation of a Federal rule which establishes three new hazardous waste listings for wood preserving facilities, including facilities that use or have previously used chlorophenolic formulations, facilities that use

creosote formulations, and facilities that use inorganic preservatives containing arsenic or chromium. These new waste listings apply to wastewaters, process residuals, preservative drippage, and spent preservatives from wood preserving processes. The rule includes licensing and interim license standards for drip pads used to assist in the collection of treated wood drippage.

### 3. Corrective Action Management Units (CAMU)

EPA has established the use of Corrective Action Management Units (CAMUs) and Temporary Units for remediation wastes to provide facilities with a wide range of remediation alternatives, while assuring reliable, protective, and cost-effective remedies. Proposed Chapter NR 636, will address the difficulties associated with management of remediation wastes during corrective actions, allowing flexibility which will help to promote more expeditious clean-ups at many sites.

### 4. Groundwater Management

Two Federal groundwater management rules are being adopted - one which adopts statistical methods that can be used to determine if groundwater contamination exists, and a second which allows facilities to install groundwater monitoring wells beyond the waste boundary in those circumstances where it is necessary to avoid existing physical obstacles. In addition, a new section, "Soils and Groundwater Investigations," will upgrade the groundwater monitoring standards for hazardous waste treatment, storage and disposal facilities to parallel the investigative requirements for solid waste disposal facilities found in chs. NR 500 through 520.

### 5. Air Emissions for Process Vents and Equipment Leaks

This rule will establish standards that limit organic air emissions as a class at hazardous waste treatment, storage and disposal facilities (TSDF) requiring a hazardous waste permit. The final standards limit organic emissions from (1) process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that manage hazardous wastes with 10 parts per million by weight (ppmw) or greater total organics concentration, and (2) leaks from equipment that contains or contacts hazardous waste streams with 10 percent by weight or greater total organics.

### 6. Land Disposal Facility Requirements

Two Federal rules are being adopted - one which establishes liner and leak detection systems and a second which affects liquids in landfills. The liner and leak detection systems rule modifies the

existing double liner and leachate collection and removal system for new and replacement surface impoundments, landfills and waste piles as well as for lateral expansion of these units. The rule also requires a double-liner system with a leachate collection system above the bottom liner, which must also function as a leak detection system. The liquids in landfills rule prohibits liquids that have been sorbed into materials that biodegrade or that release liquids when compressed, from disposal in hazardous waste landfills.

#### 7. Waste Listings

As drafted in this proposed rules package, a number of revisions to the Federal hazardous waste listings will be adopted as written by EPA. These revisions involve listings and delistings, changes to test methods, revisions to toxicity characteristics, reportable quantity adjustments for different substances, and revisions to the toxicity characteristic rule.

#### 8. License and Plan Approval Modification

These proposed revisions would mirror EPA's system, by categorizing modifications into three classes. These changes are intended to provide owners and operators with more flexibility to change specified license and plan approval conditions, and to allow for expedited approval if no public concern exists for a plan or license modification.

#### 9. Financial Assurance Mechanisms

These revisions will allow the use of the corporate guarantee in addition to other financial mechanisms to demonstrate compliance with liability coverage requirements, and will promulgate several amendments to the financial responsibility requirements for closure and post-closure care and third party liability coverage.

#### 10. Fee for Manifest Shipments

This proposed rule would impose a fee for the processing of manifests submitted to WDNR to assist in implementing a more effective system for processing manifest data. It will allow the Hazardous Waste program to recover costs for processing the data from these manifests, which are now charged directly back to the Hazardous Waste program budget.

#### 11. Generator and Recycling Chapters

Several minor changes to language in chs. NR 610, NR 615, and NR 625 which are necessary to clarify and improve these provisions are being proposed.

12. Increase ch. NR 680 Plan Review and License Fees

A 20% increase in all plan review and license fees is being proposed, based on inflation through calendar year 1996, a period of six years of inflation since the previous increase in these fees.

13. Housekeeping Changes

Various cross-referencing errors have been corrected, interim numbering eliminated, and other revisions to numbering and language have been made throughout existing provisions of chs. NR 600 through 685 to improve clarity.

14. Waste Minimization

Minor changes are being proposed to clarify Wisconsin's existing waste requirement that hazardous waste generators and facilities certify that they have a waste minimization program in place, and to highlight the existence of this requirement.

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SECTION 1. NR 157.06(3)(a) is amended to read:

NR 157.06(3)(a) The service facility shall make provisions with a disposal facility to accept PCBs or products containing PCBs before permitting shipment for disposal. Shipment to a disposal facility in the state of Wisconsin shall be limited to those facilities which meet the requirements of s. NR ~~147.07~~ 157.07. If, for any reason, delivery of the shipment is rejected by the disposal facility, the service facility shall make provisions for immediate return of the shipment or delivery to another disposal facility.

SECTION 2. Chapter NR 183 is repealed.

SECTION 9. NR 600.02(2) is amended to read:

NR 600.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 10. NR 600.02(3) is repealed.

SECTION 11. NR 600.02(4) is renumbered (3) and amended to read:

NR 600.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 12. NR 600.03(148m) and (237m) are repealed.

SECTION 13. NR 600.03(23) is renumbered (26); (26) to (27) are renumbered (28) to (29), respectively; (29) to (42) are renumbered (31) to (44), respectively; (43) is renumbered (46); (44) is renumbered (48); (69) is renumbered (76); (68) is renumbered (77); (76) is renumbered (85); (77) to (79) are renumbered (87) to (89), respectively; (99) is renumbered (111); (101) to (108) are renumbered (114) to (121), respectively; (108m) is renumbered (122); (163) is renumbered (174); (160) is renumbered (175); (164) is renumbered (176); (161) to (162) are renumbered (177) to (178), respectively; (165) to (175) are renumbered (180) to (190), respectively; (175m) is renumbered (191); (176) to (191) are renumbered (195) to (208), respectively; (202) to (208) are renumbered (223) to (229), respectively; and (239) to (244) are renumbered (262) to (267), respectively.

SECTION 14. NR 600.03(9) to (22) are renumbered (10) to (23), respectively; (45) to (57) are renumbered (50) to (62), respectively; (58) to (59) are renumbered (64) to (65), respectively; (60) to (67) are renumbered (68) to (75), respectively; (70) to (75) are renumbered (78) to (83), respectively; (80) to (98) are renumbered (91) to (109), respectively; (109) to (159) are renumbered (123) to (173), respectively; (192) to (194) are renumbered (211) to (213), respectively; (195) to (201) are renumbered (215) to (221), respectively; (209) to (235) are renumbered (231) to (257), respectively, and (18)(Note), (22), (56), (62), (65), (68)(a) and (b), (72), (78), (92), (126), (129), (147)(Note), (150), (156)(Note), (211), (220), (232)(Note), (239)(b), (244)(Note), (248) and (261)(c), as renumbered, are amended to read:

NR 600.03(18)Note: The publication containing Title 42 of the United States Code may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(22) "Burner" means an owner or operator of an ~~industrial furnace or a boiler or industrial furnace~~ as defined in ~~subs. (19) and (105)~~ this section that burns hazardous waste fuel.

(56) "Designated facility" means a hazardous waste facility or recycling facility that ~~has received a license under chs. NR 600 to 685, which has been permitted by EPA or which has been permitted by a state authorized by EPA under 42 USC 6926 and which has been designated on a manifest by the generator pursuant to s. NR 615.08 as the facility where the hazardous waste shall be taken unless an emergency prevents delivery to that facility~~ (a) is located in Wisconsin and has received a license under ch. NR 680, (b) is located in another state authorized in accordance with 40 CFR Part 271, July 1, 1993, and has received a permit or interim status from that state, (c) is located in an unauthorized state and has received a permit or interim status from EPA in accordance with the requirements of 40 CFR 124 and 270, July 1, 1993 or (d) is located in an unauthorized state and is regulated under 40 CFR 261.6(c)(2), July 1, 1993, or 40 CFR 266, Subpart F, July 1, 1993 and (e) has been designated on the manifest by the generator pursuant to s. NR 615.08. If a waste is destined to a facility in an authorized state that has not yet obtained authorization to regulate that particular waste as hazardous, then the designated facility shall be a facility allowed by the receiving state to accept such waste.

(62) "Disposal facility" means a facility or part thereof ~~where hazardous waste disposal occurs and where the waste will remain after closure of a facility at which hazardous waste is intentionally placed into or on the land or water, and at which hazardous waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed.~~

(65) "DOT identification number" means the hazardous materials identification number assigned by the DOT, in 49 CFR 172.101 and 172.102, October 1, ~~1990~~ 1993.

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(68)(a) Is used for neutralizing wastes that are hazardous wastes only because they exhibit the corrosivity characteristic



~~U. S. that meet the criteria defined in s. NR 605.08(3) or they are listed in s. NR 605.09 only for this reason; and~~

(b) Meets the definition of tank ~~in sub. (204)~~, tank system ~~in sub. (205)~~, container ~~in sub. (42)~~, transport vehicle ~~in sub. (214)~~, or vessel ~~in sub. (236)~~ this section.

(72) "EPA hazardous waste number" means the number assigned by EPA to each hazardous waste listed in 40 CFR Part 261, Subpart D, July 1, ~~1990~~ 1993, and to each characteristic identified in 40 CFR Part 261, Subpart C, July 1, ~~1990~~ 1993.

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(78) "Facility" ~~means all contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing or disposing of hazardous waste. A facility may consist of several treatment, storage or disposal operating units~~ means:

(a) All contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste. A facility may consist of several treatment, storage or disposal operational units, including one or more landfills, surface impoundments, or combinations of them.

(b) For the purpose of implementing corrective action under s. NR 635.17 all contiguous property under the control of the owner or operator seeking a license under chs. NR 630 to 685. This definition also applies to facilities implementing corrective action under s. 144.735, Stats.

(92) "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure. To demonstrate the absence or presence of free liquids, the EPA ~~test~~ method 9095, the paint filter liquids test, described in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", ~~second~~ third edition, ~~1982 September, 1986~~, as amended by update I in ~~April, 1984~~ and update II in ~~April, 1985~~ July, 1993, shall be used.

Note: ~~This publication~~ Publication SW-846 may be obtained from:

~~National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

This publication is available for inspection at the offices of the department, the secretary of state, and the revisor of statutes.

(126) "Land disposal" means placement in or on the land, except in a corrective action management unit, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

(129) "Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a waste pile, a land treatment facility, a surface impoundment, ~~a land treatment facility~~, an underground injection well, a salt dome formation, a salt bed formation, an underground mine ~~or a cave~~, a cave or a corrective action management unit.

(147) Note: See also s. NR 600.03-~~(186)~~ (203) for the definition of "significant manifest discrepancy".

(150) "Miscellaneous unit" means a hazardous waste management unit where hazardous waste is treated, stored or disposed of and that is not a ~~unit eligible for a research, development and demonstration license under ch. NR 680, a container, tank, surface impoundment, waste pile, landfill, incinerator, boiler or industrial furnace~~ container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well, containment building, corrective action management unit or unit eligible for research, development and demonstration license under ch. NR 680.

(156) Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954

(202) 783-3238

(211) "Speculative accumulation" means materials that are accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that during the calendar year, commencing on January 1, the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75% by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75% requirement is to be applied to each material of the same type, such as slags from a single smelting process, that is recycled in the same way, such as from which the same material is recovered or that is used in the same way. Materials accumulating in units that would be exempt from regulation under s. NR 605.05(2) are not to be included in making the calculation. Materials that are already defined as solid wastes also are not to be included in making the calculation. Materials are no longer in this category once they are removed from accumulation for recycling, however.

(220) "Sump" means any pit or reservoir that meets the definition of tank ~~at sub. (204)~~ in this section and those troughs or trenches connected to it that serve to collect hazardous waste for transportation to hazardous waste treatment, storage or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.

(232) Note: Examples of totally enclosed treatment facilities are pipelines, tanks, ~~stills, distillation columns~~ and pressure vessels which are completely contained on all sides. Another example is a pipe in which acid is neutralized.

(239) (b) Also included in this definition for the purpose of the s. NR 605.05(4), ~~(4h), (4p)~~ (8), (9), (10) and ~~(5)~~ (11) exemptions are liner compatibility, corrosion and other material compatibility studies and toxicological and health effects studies. A treatability study is not a means to commercially treat or dispose of hazardous waste.

(244) Note: See also the definition of "injection" in ~~sub. (107)~~ this section.

(248) "Unit" means either a hazardous waste management unit ~~as defined in sub. (93)~~ or a solid waste management unit as defined in ~~sub. (191)~~ this section.

(261)(c) Meets the definition of tank ~~in sub. (204)~~ or tank system in sub. ~~(205)~~ this section.

SECTION 15. NR 600.03(9), (30), (45), (47), (49), (63), (66), (67), (84), (86), (90), (112), (113), (179), (192), (209), (210), (214), (222), (230), and (260) are created to read:

NR 600.03(9) "Air stripping operation" means a desorption operation employed to transfer one or more volatile components from a liquid mixture into a gas (air) either with or without the application of heat to the liquid. Packed towers, spray towers, and bubble-cap, sieve or valve-type plate towers are among the process configurations used for contacting the air and a liquid.

(30) "Closed-vent system" means a system that is not open to the atmosphere and that is composed of piping, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

(45) "Containment building" means a hazardous waste management unit that is used to store or treat hazardous waste in accordance with ch. NR 655 and is not a waste pile.

(47) "Continuous recorder" means a data-recording device recording an instantaneous data value at least once every 15 minutes.

(49) "Corrective action management unit" or "CAMU" means an area within a facility that is designated by the department under ch. NR 636 for the purpose of implementing corrective action requirements under s. NR 635.17 and s. 144.735, Stats. A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

(63) "Distillation operation" means an operation, either batch or continuous, separating one or more feed streams into 2 or more exit streams, each exit stream having component concentrations different from those in the feed streams. The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.

(66) "Double block and bleed system" means 2 block valves connected in series with a bleed valve or line that can vent the line between the 2 block valves.

(67) "Drip pad" means an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or

dripping from treated wood, precipitation, and surface water runoff to an associated collection system at wood preserving plants.

(84) "Flame zone" means the portion of the combustion chamber in a boiler occupied by the flame envelope.

(86) "Flow indicator" means a device that indicates whether gas flow is present in a vent stream.

(90) "Fractionation operation" means a distillation operation or method used to separate a mixture of several volatile components of different boiling points in successive stages, each stage removing from the mixture some proportion of one of the components.

(112) "In situ sampling systems" means nonextractive samplers or in-line samplers.

(113) "In vacuum service" means that equipment is operating at an internal pressure that is at least 5 kPa below ambient pressure.

(179) "Pressure release" means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

(192) "Replacement unit" means a landfill, surface impoundment, or waste pile unit (a) from which all or substantially all of the waste is removed, and (b) that is subsequently reused to treat, store, or dispose of hazardous waste. "Replacement unit" does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or EPA or State approved corrective action.

(209) "Solvent extraction operation" means an operation or method of separation in which a solid or solution is contacted with a liquid solvent (the two being mutually insoluble) to preferentially dissolve and transfer one or more components into the solvent.

(210) "Sorbent" means a material that is used to soak up free liquids by either adsorption or absorption, or both. Sorb means to either adsorb or absorb, or both.

(214) "Steam stripping operation" means a distillation operation in which vaporization of the volatile constituents of a liquid mixture takes place by the introduction of steam directly into the charge.

(222) "Surge control tank" means a large-sized pipe or storage reservoir sufficient to contain the surging liquid discharge of the process tank to which it is connected.

(230) "Thin-film evaporation operation" means a distillation operation that employs a heating surface consisting of a large diameter tube that may be either straight or tapered, horizontal or vertical. Liquid is spread on the tube wall by a rotating assembly of blades that maintain a close clearance from the wall or actually ride on the film of liquid on the wall.

(260) "Waste minimization" means pollution prevention, beneficial use or reuse of a hazardous waste, and legitimate recovery or reclamation of a hazardous waste.

SECTION 16. NR 600.09(2) is amended to read:

NR 600.09(2) May Except for the activities under sub. (3), may not exceed 90 days in duration.

SECTION 17. NR 600.10(1)(intro) and (1)(a) are amended to read:

NR 600.10(1) CODE OF FEDERAL REGULATIONS. The federal regulations or appendix materials listed in this subsection are incorporated by reference in the corresponding paragraphs of this subsection. Copies of these materials are available for inspection in the offices of the department of natural resources, secretary of state and revisor of statutes, Madison, Wisconsin or may be purchased for personal use from:

~~The Superintendent of Documents~~  
~~U.S. Government Printing Office~~  
~~Washington, D.C. 20402.~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(a) 40 CFR 60, Appendix A, July 1, ~~1994~~ 1993, Reference Methods 1 to 5 and 10, U.S. environmental protection agency regulations on reference methods for the analysis of stack gases from stationary sources, for ss. NR 665.07 (2) (a) 10., 665.09 (15) (f), 631.07(3)(a)1. and 631.06(2)(e)3.

SECTION 18. NR 600.10(1)(b) and (d) are repealed.

SECTION 19. NR 600.10(1)(c), (e) and (f) are renumbered NR 600.10(1)(f), (g), and (h) and (1)(g) and (h), as renumbered, are amended to read:

NR 600.10(1)(g) 49 CFR 173.51, October 1, ~~1990~~ 1993, definition of "forbidden explosives", 49 CFR 173.53, October 1, ~~1990~~ 1993, definition of "Class A explosives" and 49 CFR 173.88, October 1, ~~1990~~ 1993, definition of "Class B explosives", for s. NR 605.08 (4) (a) 8.

(h) 49 CFR 173.300, October 1, ~~1990~~ 1993, definition of "compressed gas", for s. NR 605.08 (2) (a) 3.

SECTION 20. NR 600.10(1)(b) to (e) are created to read:

NR 600.10(1)(b) 40 CFR 60, Method 18, for ss. NR 631.06(2)(e)2. and 631.07(3)(a)2.

(c) 40 CFR 60, Method 21, for ss. NR 631.07(2)(a) and 632.08(2)(a).

(d) 40 CFR 60, Method 22, for s. NR 631.06(2)(e)1.

(e) 40 CFR 60, Section V and VV, for s. NR 632.09(13).

SECTION 21. NR 600.10(2)(a)(intro), 10., 33., (b)(intro) and 1. are amended to read:

NR 600.10(2)(a) American Society for Testing and Materials  
(ASTM)  
1916 Race Street  
Philadelphia, ~~Pennsylvania~~ PA 19103-1187  
(215) 299-5400

10. ASTM standard D-2487-69 (reapproved 1975), "Standard Test Method for Classification of Soils for Engineering Purposes", for ss. NR 600.03 ~~(26)~~ (28), 660.06 (1) (g) 2., ~~660.13~~ ~~(10)~~ 660.18(11) (c) 3. and (d) 5. and ~~660.16~~ 660.21 (1) (c) 5.

33. ~~ASTM standard D-240-76 (reapproved 1980), "Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter"~~ D-808-91, "Standard Test Method for Chlorine in New and Used Petroleum Products (Bomb Method)", for s. NR 605.09 (2) (a) F500.

(2)(b) U.S Environmental Protection Agency  
Office of Solid Waste

Available from:

National Technical Information Service  
~~U.S. Department of Commerce~~  
5285 Port Royal Road  
Springfield, Virginia VA 22161  
(703) 487-4600

1. SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", second edition, 1982, as amended by update I in April, 1984 and update II in April, 1985, NTIS document number PB87-120-291, for ss. NR 600.03 ~~(81)~~ (99), 605.08(3)(a)1. and 2., 605.09(2)(a) F500, 605 Appendix I (6) and (7), Appendix II and Appendix V, 645.09(1), ~~660.13~~ 660.18 (7), 665.06(1)(d)1.d., (d)2., (e)1.c. and d. and 675.12(4).

SECTION 22. NR 600.10(2)(a)45. to 51., (b)3. and (c) are created to read:

NR 600.10(2)(a)45. ASTM standard D-1946-82, "Standard Method for Analysis reformed Gas by Gas Chromatography," for s. NR 631.06(2)(e)2.

46. ASTM standard D-2382-83, "Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter," for s. NR 631.06(2)(e)2.

47. ASTM standard D-2267-88, "Standard Test Method for Aromatics in Light Napthas and Aviation Gasolines by Gas Chromatography," for s. NR 632.08(4)(a).

48. ASTM standard E-169-87, "Standard Practices for General techniques of Ultra-Violet-Visible Quantitative Analysis," for s. NR 632.08(4)(a).

49. ASTM standard E-168-88, "Standard Practices for General Techniques of Infrared Quantitative Analysis," for s. NR 632.08(4)(a).

50. ASTM standard E-260-85, "Standard Practice for Packed Column Gas Chromatography," for s. NR 632.08(4)(a).

51. ASTM standard D-2879-86, "Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteriscope," for s. NR 632.08(8).

(b)3. EPA-450/2-81-005, APTI Course 415: Control of Gaseous Emissions, December 1981, for ss. NR 631.08(2)(d)3., 632.11(2)(d)3. and 632.11(3)(e)3.

(c) U.S Environmental Protection Agency  
Office of Solid Waste



## Available from:

Superintendent of Documents  
U.S. Government Printing Office  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

The following 47 analytical testing methods are contained in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, November, 1986, and its revision I in December, 1987, GPO document number 955-001-00000-1, for ss. NR 600.03(81), 605.08(3)(a)1. and 2., 605.09(2)(a) F500, 605 Appendix I (6) and (7), Appendix II and Appendix V, 645.09(1), 660.13(7), 665.06(1)(d)1.d., (d)2., (e)1.c. and d. and 675.12(4):<sup>1</sup>

0010 Modified Method 5 Sampling Train  
0020 Source Assessment Sampling System (SASS)  
0030 Volatile Organic Sampling Train  
1320 Multiple Extraction Procedure  
1330 Extraction Procedure for Oily Wastes  
3611 Alumina Column Cleanup and Separation of Petroleum Wastes  
5040 Protocol for Analysis of Sorbent Cartridges from Volatile Organic Sampling Train  
6010 Inductively Coupled Plasma Atomic Emission Spectroscopy  
7090 Beryllium (AA, Direct Aspiration)  
7091 Beryllium (AA, Furnace Technique)  
7198 Chromium, Hexavalent (Differential Pulse Polarography)  
7210 Copper (AA, Direct Aspiration)  
7211 Copper (AA, Furnace Technique)  
7380 Iron (AA, Direct Aspiration)  
7381 Iron (AA, Furnace Technique)  
7460 Manganese (AA, Direct Aspiration)

7461 Manganese (AA, Furnace Technique)  
7550 Osmium (AA, Direct Aspiration)  
7770 Sodium (AA, Direct Aspiration)  
7840 Thallium (AA, Direct Aspiration)  
7841 Thallium (AA, Furnace Technique)  
7910 Vanadium (AA, Direct Aspiration)  
7911 Vanadium (AA, Furnace Technique)  
7950 Zinc (AA, Direct Aspiration)  
7951 Zinc (AA, Furnace Technique)  
9022 Total Organic Halides (TOX) by Neutron Activation Analysis  
9035 Sulfate (Colorimetric, Automated, Chloranilate)  
9036 Sulfate (Colorimetric, Automated, Methylthymol Blue, AA II)  
9038 Sulfate (Turbidimetric)  
9060 Total Organic Carbon  
9065 Phenolics (Spectrophotometric, Manual 4-AAP with Distillation)  
9066\* Phenolics (Colorimetric, Automated 4-AAP with Distillation)  
9067 Phenolics (Spectrophotometric, MBTH with Distillation)  
9070 Total Recoverable Oil and Grease (Gravimetric, Separatory Funnel Extraction)  
9071 Oil and Grease Extraction Method for Sludge Samples  
9080 Cation-Exchange Capacity of Soils (Ammonium Acetate)  
9081 Cation-Exchange Capacity of Soils (Sodium Acetate)  
9100 Saturated Hydraulic Conductivity, Saturated Leachate Conductivity, and Intrinsic Permeability  
9131 Total Coliform: Multiple Tube Fermentation Technique  
9132 Total Coliform: Membrane Filter Technique

9200 Nitrate

9250 Chloride (Colorimetric, Automated Ferricyanide AAI)

9251 Chloride (Colorimetric, Automated Ferricyanide AAI)

9252 Chloride (Titrimetric, Mercuric Nitrate)

9310 Gross Alpha and Gross Beta

9315 Alpha-Emitting Radium Isotopes

9320 Radium-228

<sup>1</sup> The department notes that, for guidance purposes, the Third Edition and its revision I supersede the Second Edition and its updates I and II. However, for regulatory purposes, the Second Edition and updates I and II remain in effect together with the 47 methods of the Third Edition and its revision I cited above. See 54 FR 40260-40269, September 29, 1989.

\* When Method 9066 is used it shall be preceded by the manual distillation specified in procedure 7.1 of Method 9065. Just prior to distillation in Method 9065, adjust the sulfuric acid-preserved sample to pH 4 with 1 + 9 NaOH. After the manual distillation is completed, the autoanalyzer manifold is simplified by connecting the re-sample line directly to the sampler.

SECTION 23. NR 600.10(2)(c) and (d) are renumbered (2)(d) and (e), and (2)(e), as renumbered, is amended to read:

NR 600.10(2)(e) Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

The Standard Industrial Classification (SIC) Manual, 1972, as amended by the 1977 Supplement, U.S. Government Printing Office Stock Numbers 4101-0066 and 003-005-00176-0, respectively, for s. NR 605.09(2)(b) Table III, K062.

SECTION 24. NR 605.02 is amended to read:

NR 605.02 APPLICABILITY. This chapter identifies those solid wastes which are subject to regulation as hazardous waste under

chs. NR 600 to 685. This chapter does not apply to metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., ~~or polychlorinated biphenyls (PCBs) except where portions of this chapter are referenced in ch. NR 157.~~

SECTION 25. NR 605.04(1)(b)3. is amended to read:

NR 605.04(1)(b)3. It exhibits any of the characteristics of hazardous waste identified in s. NR 605.08 ~~except that any mixture of a waste from the extraction, beneficiation and processing of ores and minerals excluded under s. NR 605.05(1)(1) and any other solid waste exhibiting a characteristic of hazardous waste under s. NR 605.08 only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the toxicity characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table I to s. NR 605.08(5) that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.~~

SECTION 26. NR 605.04(1)(b)4. is amended to read:

NR 605.04(1)(b)4. Except as provided in ~~subd.~~ subds. 5 and 6, it is generated from the treatment, storage or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust or leachate, and it is a waste which is listed under s. NR 605.09, contains a waste listed under s. NR 605.09, or is derived from a waste listed under s. NR 605.09, and it has not been excluded under s. NR 605.10.

SECTION 27. NR 605.04(1)(b)6. is renumbered 7 and amended to read:

NR 605.04(1)(b)7. It is a mixture of nonhazardous solid waste and a hazardous waste that is listed in s. NR 605.09 solely because it exhibits one or more of the characteristics of hazardous waste identified in s. NR 605.08, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in s. NR 605.08, or unless the solid waste is excluded from regulation under s. NR 605.05(1)(1) and the resultant mixture no longer exhibits any characteristic of hazardous waste identified in s. NR 605.08 for which the hazardous waste listed in s. NR 605.09 was listed.

Note: Nonwastewater mixtures are still subject to the requirements of ch. NR 675, even if they no longer exhibit a characteristic at the point of land disposal.

Note: The process of mixing a nonhazardous solid waste and a hazardous waste may require a license under ch. NR 680 for hazardous waste treatment.

SECTION 28. NR 605.04(1)(b)6., 8. and 9. are created to read:

NR 605.04(1)(b)6.a. Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace or electric furnace combinations or industrial furnaces, as defined in s. NR 600.03, that are disposed in units subject to chs. NR 500 to 520, provided that these residues meet the generic exclusion levels identified in the tables in this subdivision for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements shall be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues shall be collected and analyzed quarterly or when the process or operation generating the waste changes.

Constituent	Maximum for any single composite sample-TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony . . . . .	0.10
Arsenic . . . . .	0.50
Barium . . . . .	7.6
Beryllium . . . . .	0.010
Cadmium . . . . .	0.050
Chromium (total) . . . . .	0.33
Lead . . . . .	0.15
Mercury . . . . .	0.009
Nickel . . . . .	1.0
Selenium . . . . .	0.16
Silver . . . . .	0.30
Thallium . . . . .	0.020
Zinc . . . . .	70
Generic exclusion levels for F006 nonwastewater HTMR residues	
Antimony . . . . .	0.10
Arsenic . . . . .	0.50
Barium . . . . .	7.6
Beryllium . . . . .	0.010
Cadmium . . . . .	0.050
Chromium (total) . . . . .	0.33
Cyanide (total) (mg/kg) . . . . .	1.8
Lead . . . . .	0.15
Mercury . . . . .	0.009

Nickel . . . . .	1.0
Selenium . . . . .	0.16
Silver . . . . .	0.30
Thallium . . . . .	0.020
Zinc . . . . .	70

b. A one-time notification and certification shall be placed in the facility's files and sent to the department for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to units subject to chs. NR 500 to 520. The notification and certification that is placed in the generator's or treater's files shall be updated if the process or operation generating the waste changes or if the unit receiving the waste changes. However, the generator or treater need only notify the department on an annual basis if such changes occur. Such notification and certification shall be sent to the department by the end of the calendar year, no later than December 31. The notification shall include the following information: The name and address of the unit receiving the waste shipments; the hazardous waste numbers and treatability groups at the initial point of generation; and the treatment standards applicable to the waste at the initial point of generation. The certification shall be signed by an authorized representative and shall state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

8. It is a nonwastewater residue, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces, as defined in s. NR 600.03, that are disposed in a licensed solid waste disposal facility, provided that these residues meet the exclusion levels identified below for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements shall be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan. At a minimum, composite samples of residues shall be collected and analyzed quarterly and/or when the process or operation generating the waste changes. The exclusion levels are:

Constituent	Maximum for any single composite sample (mg/l)
Antimony	0.063
Arsenic	0.055

Barium	6.3
Beryllium	0.0063
Cadmium	0.032
Chromium (total)	0.33
Lead	0.095
Mercury	0.009
Nickel	0.63
Selenium	0.16
Silver	0.30
Thallium	0.013
Vanadium	1.26

For each shipment of K061 HTMR residues sent to a licensed solid waste disposal facility that meets the exclusion levels for all constituents, and does not exhibit any characteristic, a notification and certification shall be sent to the department. The notification shall include the following information:

a. The name and address of the licensed solid waste facility receiving the waste shipment;

b. The EPA hazardous waste number and treatability group at the initial point of generation;

c. The treatment standards applicable to the waste at the initial point of generation. The certification shall be signed by an authorized representative and shall state as follows:

"I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

9. It is used oil containing greater than or equal to 1000 ppm total halogens. Used oil containing greater than or equal to 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in s. NR 605.09. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste, for example, by using an analytical method from SW-846, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix IV.

a. The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling agreement, to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils

or fluids if such oils or fluids are recycled in any other manner or disposed.

b. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.

Note: Publication SW-846 may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 29. NR 605.04(4) is created to read:

NR 605.04(4) Notwithstanding subs. (1) to (3) and provided the debris as defined in s. NR 675.03 does not exhibit a characteristic identified at s. NR 605.08, the following materials are not subject to regulation under chs. NR 600 to 685:

(a) Hazardous debris as defined in s. NR 675.03 that has been treated using one of the required extraction or destruction technologies specified in Table 1 of s. NR 675.22; or

(b) Debris as defined in s. NR 675.03 that the department, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

SECTION 30. NR 605.05(1)(c) and (e) are amended to read:

NR 605.05(1)(c) Cement kiln dust waste, except as provided by 40 CFR Part 266 Subpart H for facilities that burn or process hazardous waste.

(e) Solid waste which consists of discarded arsenical-treated wood or wood products which fail the test for the toxicity characteristic solely for arsenic for hazardous waste codes D004 to D017 and which is not a hazardous waste for any other reason, if the waste is generated by persons who utilize



the arsenical-treated wood and wood products for the intended end use of these materials.

SECTION 31. NR 605.05(1)(f) is repealed.

SECTION 32. NR 605.05(1)(g) to (s) are renumbered NR 605.05(1)(f) to (r) and 605.05(1)(f), (i)(intro.), (k), (m), (o), (p) and (q), as renumbered, are amended to read:

NR 605.05(1)(f) Fly ash waste, bottom ash waste, slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels, except as provided by 40 CFR Part 266 Subpart H for facilities that burn or process hazardous waste.

(i)(intro.) Specific wastes which meet the standard in par. ~~(i)~~ (h)1. to 3., as long as they do not fail the test for the toxicity characteristic for any other constituent, and do not ~~fail the test for exhibit~~ any other characteristic are:

(k) Solid waste from the extraction, beneficiation and processing of ores and minerals, including coal, phosphate rock and the overburden from the mining of uranium ore, except as provided by 40 CFR 266 Subpart H for facilities that burn or process hazardous waste. For purposes of this paragraph, beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water or carbon dioxide; roasting, autoclaving, or chlorination in preparation for leaching, except where the roasting, autoclaving or chlorination or leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing; gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching. For the purposes of this paragraph, solid waste from the processing of ores and minerals includes only the following wastes:

1. Slag from primary copper processing;
2. Slag from primary lead processing;
3. Red and brown muds from bauxite refining;
4. Phosphogypsum from phosphoric acid production;
5. Slag from elemental phosphorus production;

6. Gasifier ash from coal gasification;
7. Process wastewater from coal gasification;
8. Calcium sulfate wastewater treatment plant sludge from primary copper processing;
9. Slag tailings from primary copper processing;
10. Fluorogypsum from hydrofluoric acid production;
11. Process wastewater from hydrofluoric acid production;
12. Air pollution control dust or sludge from iron blast furnaces;
13. Iron blast furnace slag;
14. Treated residue from roasting or leaching of chrome ore;
15. Process wastewater from primary magnesium processing by the anhydrous process;
16. Process wastewater from phosphoric acid production;
17. Basic oxygen furnace and open hearth furnace air pollution control dust or sludge from carbon steel production;
18. Basic oxygen furnace and open hearth furnace slag from carbon steel production;
19. Chloride process waste solids from titanium tetrachloride production;
20. Slag from primary zinc processing.

(m) By-products exhibiting a characteristic of hazardous waste that are reclaimed and complies with subs. ~~(1m)~~ (3) and ~~(1r)~~ (4).

Note: This exclusion does not apply to listed by-products included in s. NR 605.09.

(o) Any mixture of domestic sewage and other wastes that passes through a sewer system to a ~~publicly owned treatment works~~ POTW for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

Note: A hazardous waste discharge report may be required under s. NR 211.17 for discharging waste that would otherwise be

regulated as hazardous waste if it was not subject to this exemption.

(p) Petroleum contaminated media and debris that fail the test for the toxicity characteristic of s. NR 605.08 (5) for any ~~one or more~~ of the hazardous waste codes D018 to D043, are not a hazardous waste for any other reason, and are subject to the corrective action regulations under 40 CFR 280, July 1, ~~1990~~ 1992.

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(q) ~~Used oil that exhibits one or more of the characteristics of hazardous waste but is recycled in some other manner than being burned for energy recovery~~ is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic or meets the F500 hazardous waste listing is not subject to the requirements of chs. NR 600 to 685, but is regulated under ch. NR 590. Used oil that is recycled includes any used oil which is reused, following its original use, for any purpose, including the purpose for which the oil was originally used. Such term includes, but is not limited to, oil which is re-refined, reclaimed, burned for energy recovery, or reprocessed.

SECTION 33. NR 605.05(1)(s), (t), (u), (v), (w) and (x) are created to read:

NR 605.05(1)(s)1. Spent wood preserving solutions that have been reclaimed and are reused for their original intended purpose; and

2. Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood.

(t) Hazardous Waste Nos. K060, K087, K141, K142, K143, K144, K145, K147 and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the toxicity characteristic specified in s. NR 605.08(5) when, subsequent to generation, these materials are recycled to coke ovens, to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exemption is conditioned on there being no land disposal of

the wastes from the point they are generated to the point they are recycled to coke ovens or tar recovery or refining processes, or mixed with coal tar.

(u) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, provided it is shipped in drums, if shipped, and not land disposed before recovery.

(v) Non-terne plated used oil filters that are not mixed with wastes listed in s. NR 605.09 if these oil filters have been gravity hot-drained using any one of the following methods:

1. Puncturing the filter anti-drain back valve or the filter dome end and hot-draining.
2. Hot-draining and crushing.
3. Dismantling and hot-draining.
4. Any other equivalent hot-draining method that will remove used oil.

(w) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.

(x) Used batteries or used battery cells returned to a battery manufacturer for regeneration.

SECTION 34. NR 605.05(1h)(intro.) is renumbered NR 605.05(2)(intro.) and is amended to read:

NR 605.05(2)(intro.) The following hazardous wastes are not subject to the requirements of chs. NR 610 to 685 when they are recycled and if the generator complies with subs. ~~(1m)~~ (3) and ~~(1r)~~ (4):

SECTION 35. NR 605.05(1m)(intro.) is renumbered NR 605.05(3)(intro.) and is amended to read:

NR 605.05(3)(intro.) Generators of wastes that are excluded under subs. ~~(1)-(1)~~ (1)(m) and ~~(1h)~~ (2) shall demonstrate, at the department's request, compliance with the terms of the exclusions by providing the following information:

SECTION 36. NR 605.05(1r) is renumbered NR 605.05(4) and is amended to read:

NR 605.05(4) The exclusions included in subs. ~~(1)-(1)~~ (1)(m) and ~~(1h)~~ (2) do not apply to wastes that are used in a manner constituting disposal or speculatively accumulated. Wastes that are used in a manner constituting disposal or speculatively accumulated are hazardous waste and shall be managed in accordance with all the requirements of chs. NR 600 to 685.

SECTION 37. NR 605.05(2) is renumbered NR 605.05(5).

SECTION 38. NR 605.05(6) is created to read:

NR 605.05(6) DELETION OF CERTAIN HAZARDOUS WASTES CODES FOLLOWING EQUIPMENT CLEANING AND REPLACEMENT. Wastes from wood preserving processes at plants that do not resume or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 once the generator has met all of the requirements of pars. (a) and (b). These wastes may, however, continue to meet another hazardous waste listing description or may exhibit one or more of the hazardous waste characteristics.

(a) General requirements. Generators shall either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts and trams, in a manner which minimizes or eliminates the escape of hazardous waste or waste constituents, leachate, contaminated drippage or hazardous waste decomposition products to the ground water, surface water or atmosphere.

(b) Cleaning requirements. 1. Generators shall prepare, sign and follow a written equipment cleaning plan that describes all of the following:

- a. The equipment to be cleaned.
  - b. How the equipment will be cleaned.
  - c. The solvent to be used in the cleaning.
  - d. How solvent rinses will be tested.
  - e. How cleaning residues will be disposed.
2. Equipment shall be cleaned as follows:
- a. Remove all visible residues from process equipment.

b. Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.

3. Generators shall comply with the following analytical requirements: a. Rinses shall be tested in accordance with SW-846, Method 8920.

b. "Not detected" means at or below the lower method calibration limit (MCL) in Method 8920, Table 1.

4. The generator shall manage all residues from the cleaning process as F032 waste.

(c) Replacement requirements. 1. Generators shall prepare, sign and follow an equipment replacement plan that describes all of the following:

- a. The equipment to be replaced.
- b. How the equipment will be replaced.
- c. How the equipment will be disposed.

2. The generator shall manage the discarded equipment as F032 waste.

(d) Documentation requirements. Generators shall document that equipment cleaning or replacement, or both, was performed in accordance with this subsection, and carried out after termination of use of chlorophenolic preservations. The generator shall maintain all of the following records documenting the cleaning and replacement as part of the facility's operating record:

1. The name and address of the facility.
2. Formulations previously used and the date on which their use ceased in each process at the plant.
3. Formulations currently used in each process at the plant.
4. The equipment cleaning or replacement plan.
5. The name and address of any persons who conducted the cleaning and replacement.
6. The dates on which cleaning and replacement were accomplished.
7. The dates of sampling and testing.

8. A description of the sample handling and preparation techniques, including techniques used for extraction, containerization, preservation and chain-of-custody of the samples.

9. A description of the tests performed, the date the tests were performed and the results of the tests.

10. The name and model numbers of the instruments used in performing the tests.

11. QA/QC documentation.

12. The following statement signed by the generator or his or her authorized representative:

I certify under penalty of law that all process equipment required to be cleaned or replaced under NR 656.05 was cleaned or replaced as represented in the equipment cleaning and replacement plan and accompanying documentation. I am aware that there are significant penalties for providing false information, including the possibility of fine or imprisonment.

SECTION 39. NR 605.05(3) and (4) are renumbered NR 605.05(7) and (8) and (8)(intro.), as renumbered, is amended to read:

NR 605.05(8) TREATABILITY STUDIES SAMPLES. Except as provided in sub. ~~(4h)~~ (9), persons who generate or collect samples for the purpose of conducting treatability studies are not subject to any requirement of chs. NR 610 to 699 when:

SECTION 40. NR 605.05(4h) is renumbered NR 605.05(9) and (9)(intro.) and (9)(d)1., as renumbered, are amended to read:

NR 605.05(9)(intro.) The exemption in sub. ~~(4)~~ (8) is applicable to samples of hazardous waste being collected and shipped for the purpose of conducting treatability studies if:

(d)1. Is exempt under sub. ~~(5)~~ (11);

SECTION 41. NR 605.05(4p) is renumbered NR 605.05(10) and (10)(a)(intro.) and (b), as renumbered, are amended to read:

NR 605.05(10)(a)(intro.) The department may grant requests, on a case-by-case basis, for quantity limits in excess of those specified in sub. ~~(4h)~~ (9) (a), for up to an additional 500 kg of non-acute hazardous waste, 1 kg of acute hazardous waste and 250

kg of soils, water and debris contaminated with acute hazardous waste, to conduct further treatability study evaluation when:

(b) The additional quantities allowed are subject to all the provisions in sub. ~~(4)~~ (8) and ~~(4h)~~ (9) (b) to (f).

SECTION 42. NR 605.05(5) is renumbered NR 605.05(11), and NR 605.05(11)(j), as renumbered, is amended to read:

NR 605.05(11)(j) The facility determines whether any unused sample or residues generated by the treatability study are hazardous waste under s. NR 605.07 and, if so, are subject to chs. NR 600 to 685, unless the residues and unused samples are returned to the sample originator under the sub. ~~(4)~~ (8), ~~(4h)~~ (9) or ~~(4p)~~ (10) exemption.

SECTION 43. NR 605.07(2)(a)3.(intro) is amended to read:

NR 605.07(2)(a)3.(intro.) It contains any of the hazardous toxic constituents listed in Appendix IV ~~unless and~~, after considering ~~any of~~ the following factors, the department concludes that the waste is ~~not~~ capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed:

SECTION 44. NR 605.08(3)(a)1. and 2. are amended to read:

NR 605.08(3)(a)1. It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using ~~either~~ EPA ~~test~~ method 9040 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", ~~2nd Ed. third edition, 1982 September, 1986~~, as amended by update I in April, 1984 and update II in April, 1985 or an equivalent ~~test method approved by EPA~~ July 1992.

2. It is a liquid and corrodes plain carbon steel with a carbon content of 0.20% at a rate greater than 6.35 mm ~~(0.250 inch)~~ (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) standard TM-01-69 as standardized in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", ~~second third edition, 1982 September, 1986~~, as amended by update I in April, 1984 and update II in April, 1985, or an equivalent ~~test method approved by EPA~~.

Note: Publication SW-846 may be obtained from:



~~National Technical Information Service~~  
~~U.S. Department of Commerce~~  
~~Springfield, Virginia 22161~~  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 45. NR 605.08(5)(b) Table I is repealed and recreated to read:

Table I  
Maximum Concentration of Contaminants for the Toxicity Characteristic

HW No. <sup>1</sup>	Contaminant	CAS No. <sup>2</sup>	Regulatory Level (mg/L)
D004	Arsenic . . . . .	7440-38-2	5.0
D005	Barium . . . . .	7440-39-3	100.0
D018	Benzene . . . . .	0071-43-2	0.5
D006	Cadmium . . . . .	7440-43-9	1.0
D019	Carbon tetrachloride . . . . .	0056-23-5	0.5
D020	Chlordane . . . . .	0057-74-9	0.03
D021	Chlorobenzene . . . . .	0108-90-7	100.0
D022	Chloroform . . . . .	0067-66-3	6.0
D007	Chromium . . . . .	7440-47-3	5.0
D023	o-Cresol . . . . .	0095-48-7	<sup>4</sup> 200.0
D024	m-Cresol . . . . .	0108-39-4	<sup>4</sup> 200.0
D025	p-Cresol . . . . .	0106-44-5	<sup>4</sup> 200.0
D026	Cresol . . . . .		<sup>4</sup> 200.0
D016	2,4-D . . . . .	0094-75-7	10.0
D027	1,4-Dichlorobenzene . . . . .	0106-46-7	7.5
D028	1,2-Dichloroethane . . . . .	0107-06-2	0.5
D029	1,1-Dichloroethylene . . . . .	0075-35-4	0.7
D030	2,4-Dinitrotoluene . . . . .	0121-14-2	<sup>3</sup> 0.13
D012	Endrin . . . . .	0072-20-8	0.02
D031	Heptachlor (and its epoxide) . . . . .	0076-44-8	0.008
D032	Hexachlorobenzene . . . . .	0118-74-1	<sup>3</sup> 0.13
D033	Hexachlorobutadiene . . . . .	0087-68-3	0.5
D034	Hexachloroethane . . . . .	0067-72-1	3.0
D008	Lead . . . . .	7439-92-1	5.0
D013	Lindane . . . . .	0058-89-9	0.4
D009	Mercury . . . . .	7439-97-6	0.2
D014	Methoxychlor . . . . .	0072-43-5	10.0
D035	Methyl ethyl ketone . . . . .	0078-93-3	200.0
D036	Nitrobenzene . . . . .	0098-95-3	2.0
D037	Pentachlorophenol . . . . .	0087-86-5	100.0
D038	Pyridine . . . . .	0110-86-1	<sup>3</sup> 5.0
D010	Selenium . . . . .	7782-49-2	1.0
D011	Silver . . . . .	7440-22-4	5.0
D039	Tetrachloroethylene . . . . .	0127-18-4	0.7
D015	Toxaphene . . . . .	8001-35-2	0.5
D040	Trichloroethylene . . . . .	0079-01-6	0.5
D041	2,4,5-Trichlorophenol . . . . .	0095-95-4	400.0
D042	2,4,6-Trichlorophenol . . . . .	0088-06-2	2.0
D017	2,4,5-TP (Silvex) . . . . .	0093-72-1	1.0
D043	Vinyl chloride . . . . .	0075-01-4	0.2

<sup>1</sup> Hazardous waste number.

<sup>2</sup> Chemical abstracts service number.

<sup>3</sup> Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

<sup>4</sup> If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/L.

## SECTION 46. NR 605.09(1)(b) is amended to read:

NR 605.09(1)(b) The department has indicated the basis for listing the classes or types of wastes listed in this section by employing one or more of the following hazard codes:

1. Ignitable waste (I)
2. Corrosive waste (C)
3. Reactive waste (R)
4. Toxicity characteristic waste (E)
5. Acute hazardous waste (H)
6. Toxic waste (T)

~~Note: Appendix III identifies the constituent which caused the department to list the waste as a toxicity characteristic waste (E) or toxic waste (T) in sub. (2) (a) and (b).~~

Appendix III identifies the constituent which caused the department to list the waste as a toxicity characteristic waste (E) or toxic waste (T) in sub. (2) (a) and (b).

SECTION 47. NR 605.09(2)(a) Table II is revised by amending Entries F003, F019, F024, F026 and F500 to read as follows; and by creating Entries F025, F032, F034, F035, F037 and F038 to read as follows:

- |      |  |      |
|------|--|------|
| F003 | The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone and methanol; all mixtures and blends of spent solvents containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents and a total of 10% or more, by volume, of one or more of those solvents listed in F001, F002, F004 and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.   | (I)* |
| F019 | <u>Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.</u>   | (T)  |
| F024 | <u>Wastes Process wastes, including but not limited to, distillation residues, heavy ends, tars and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon content chain lengths ranging from one to 5, utilizing free radical catalyzed processes with varying amounts and positions of chlorine substitution.</u> This listing does not include light ends, spent filters and filter aids, spent desiccants, wastewater wastewaters, wastewater treatment sludges, spent catalysts and waste wastes listed in table III of s. NR 605.09 (2) (b) sub. (2) (a) or (b). | (T)  |

- F025 Condensed light ends, spent filters and filter aids and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (T)
- F026 Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the manufacturing use, as a reactant, chemical intermediate or component in a formulating process, of tetra-, ~~penta~~ penta- or hexachlorobenzene under alkaline conditions. (T)
- F032 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with s. NR 605.14 or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote or pentachlorophenol. (H)
- F034 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote or pentachlorophenol. (T)
- F035 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote or pentachlorophenol. (T)
- F037 Petroleum refinery primary oil or water or solids separation sludge-Any sludge generated from the gravitational separation of oil or water or solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil or water or solids separators; tanks and impoundments; ditches and other conveyances; sumps and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in s. NR 605.15 (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. (T)
- F038 Petroleum refinery secondary (emulsified) oil or water or solids separation sludge-Any sludge or float generated from the physical or chemical separation of oil or water or solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in s. NR 605.15 (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048 and K051 wastes are not included in this listing. (T)

F500 Waste ~~contaminated with~~ containing the halogenated compounds (T)  
 tetrachloroethylene, trichloroethylene, methylene chloride,  
 1,1,1-trichloroethane, carbon tetrachloride, chloroform,  
 ortho-dichlorobenzene, dichlorodifluoromethane,  
 1,1,2-trichloro-1,2,2-trifluoroethane, trichlorofluoromethane,  
 1,1-dichloroethylene, and 1,2-dichloroethylene at greater than 1% (10,000  
 ppm) ~~solvent concentration, except used chlorofluorocarbon refrigerants  
 that are recycled and that are handled according to s. NR 605.05 (1m) and  
 (1r).~~ This listing includes any combination of the above named  
 halogenated compounds where the total chloride concentration ~~of or~~ the  
 sum of the concentrations of the individual compounds exceeds 1% or  
 10,000 ppm on a weight to weight basis. Halogenated solvent compounds  
 concentration shall be determined using EPA methods ~~8010 8010A, 8021, or  
 8240 8240A or 8260~~ for halogenated volatile organics ~~as specified in  
 SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical  
 Methods", third edition, September, 1986, as amended by update I in July,  
 1992,~~ or total chloride analysis of bomb washings from ASTM ~~D-240-76 D  
 240-92,~~ "Standard Test Method for Heat of Combustion of Liquid  
 Hydrocarbon Fuels by Bomb Calorimeter".

Note: \* (I,T) should be used to specify mixtures containing ignitable and toxic constituents.

Note: Used oil that is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic or meets this hazardous waste listing is exempt from hazardous waste regulation under s. NR 605.05(1)(q). Such used oil is instead regulated under ch. NR 590.

Note: Used chlorofluorocarbon refrigerants that are reclaimed for further use are exempt from hazardous waste regulation under s. NR 605.05(1)(r).

Note: ~~The publication "Publication SW-846, "Test Methods for Evaluating Solid Waste",~~ may be obtained from:

~~National Technical Information Services  
 U.S. Department of Commerce  
 Springfield, Virginia 22161  
 Superintendent of Documents  
 U.S. Government Printing Office  
 P.O. Box 371954  
 Pittsburgh, PA 15250-7954  
 (202) 783-3238~~

The publication containing the ASTM method may be obtained from:

American Society for Testing and Materials  
 1916 Race Street  
 Philadelphia, PA 19103-1187  
 (215) 299-5400

The These publications are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 48. NR 605.09(2)(b) Table III Organic Chemicals Group Entries K107, K108, K109, K110, K149, K150 and K151 are created to read:

K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides and compounds with mixtures of these functional groups. This waste does not include still bottoms from the distillation of benzyl chloride.	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides and compounds with mixtures of these functional groups.	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides and compounds with mixtures of these functional groups.	(T)

SECTION 49. NR 605.09(2)(b) Table III Pesticides Group Entries for K131 and K132 are created to read:

K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C,T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)

SECTION 50. NR 605.09(2)(b) Table III Primary Copper Group with Entry for K064, Primary Lead Group with Entry for K065, Primary Zinc Group with Entry for K066, Primary Aluminum Group with Entry for K088, and Ferroalloys Group with Entries for K090 and K091 are created to read (insert after Iron and Steel Group):

## Primary Copper

K064 Acid plant blowdown slurry or sludge resulting from the thickening of blowdown slurry from primary copper production. (T)

## Primary Lead

K065 Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities. (T)

## Primary Zinc

K066 Sludge from treatment of process wastewater or acid plant blowdown from primary zinc production. (T)

## Primary Aluminum

K088 Spent potliners from primary aluminum reduction. (T)

## Ferroalloys

K090 Emission control dust or sludge from ferrochromiumsilicon production. (T)

K091 Emission control dust or sludge from ferrochromium production. (T)

SECTION 51. NR 605.09(2)(b) Table III Secondary Lead Group Entry K069 is amended to read:

K069 Emission control dust or sludge from secondary lead smelting. This listing does not include sludge generated from secondary acid scrubber systems. (T)

SECTION 52. NR 605.09(2)(b) Table III Ink Formulation Group Entry K086 is amended to read:

K086 Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps and stabilizers containing chromium and lead. (T)

SECTION 53. NR 605.09(2)(b) Table III Coking Group Entries K141, K142, K143, K144, K145, K147 and K148 are created to read:

K141 Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations). (T)

K142 Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal. (T)

K143 Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters and wash oil recovery units from the recovery of coke by-products produced from coal. (T)

K144 Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal. (T)

K145 Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal. (T)

K147 Tar storage tank residues from coal tar refining. (T)

K148 Residues from coal tar distillation, including but not limited to, still bottoms. (T)

SECTION 54. NR 605.09(3)(b) Table IV is repealed and recreated to read:



Table IV  
Acute Hazardous Commercial Chemical  
Products and Manufacturing Chemical Intermediates

Hazardous waste No.	Chemical abstracts No.	Substance
P023	00107-20-0	Acetaldehyde, chloro-
P002	00591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	00640-19-7	Acetamide, 2-fluoro-
P058	00062-74-8	Acetic acid, fluoro-, sodium salt
P002	00591-08-2	1-Acetyl-2-thiourea
P003	00107-02-8	Acrolein
P070	00116-06-3	Aldicarb
P004	00309-00-2	Aldrin
P005	00107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	02763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	00504-24-5	4-Aminopyridine
P009	00131-74-8	Ammonium picrate (R)
P119	07803-55-6	Ammonium vanadate
P099	00506-61-6	Argentate(1-), bis(cyano-C)-, potassium
P010	07778-39-4	Arsenic acid H <sub>3</sub> AsO <sub>4</sub>
P012	01327-53-3	Arsenic oxide As <sub>2</sub> O <sub>3</sub>
P011	01303-28-2	Arsenic oxide As <sub>2</sub> O <sub>3</sub>
P011	01303-28-2	Arsenic pentoxide
P012	01327-53-3	Arsenic trioxide
P038	00692-42-2	Arsine, diethyl-
P036	00696-28-6	Arsonous dichloride, phenyl-
P054	00151-56-4	Aziridine
P067	00075-55-8	Aziridine, 2-methyl-
P013	00542-62-1	Barium cyanide
P024	00106-47-8	Benzenamine, 4-chloro-
P077	00100-01-6	Benzenamine, 4-nitro-
P028	00100-44-7	Benzene, (chloromethyl)-
P042	00051-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	00122-09-8	Benzenesethanamine, alpha,alpha-dimethyl-
P014	00108-98-5	Benzenethiol
P001	00081-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	00100-44-7	Benzyl chloride
P015	07440-41-7	Beryllium
P017	00598-31-2	Bromoacetone
P018	00357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-(methylamino)carbonyl] oxime
P021	00592-01-8	Calcium cyanide
P021	00592-01-8	Calcium cyanide Ca(CN) <sub>2</sub>
P022	00075-15-0	Carbon disulfide
P095	00075-44-5	Carbonic dichloride
P023	00107-20-0	Chloroacetaldehyde
P024	00106-47-8	p-Chloroaniline
P026	05344-82-1	1-(o-Chlorophenyl)thiourea
P027	00542-76-7	3-Chloropropionitrile
P029	00544-92-3	Copper cyanide
P029	00544-92-3	Copper cyanide Cu(CN)
P030	.....	Cyanides (soluble cyanide salts), not otherwise specified
P031	00460-19-5	Cyanogen
P033	00506-77-4	Cyanogen chloride
P033	00506-77-4	Cyanogen chloride (CN)Cl

P034	00131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	00542-88-1	Dichloromethyl ether
P036	00696-28-6	Dichlorophenylarsine
P037	00060-57-1	Dieldrin
P038	00692-42-2	Diethylarsine
P041	00311-45-5	Diethyl-p-nitrophenyl phosphate
P040	00297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	00055-91-4	Diisopropylfluorophosphate (DFP)
P004	00309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4beta,5alpha,8alpha,8beta)-
P060	00465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4beta,5beta,8beta,8beta)-
P037	00060-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-
P051	00072-20-8	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2beta,3alpha,6alpha,6beta,7beta,7aalpha)-, & metabolites
P044	00060-51-5	Dimethoate
P046	00122-09-8	alpha, alpha-Dimethylphenethylamine
P047	00534-52-1	4,6-Dinitro-o-cresol, & salts
P048	00051-28-5	2,4-Dinitrophenol
P020	00088-85-7	Dinoseb
P085	00152-16-9	Diphosphoramidate, octamethyl-
P111	00107-49-3	Diphosphoric acid, tetraethyl ester
P039	00298-04-4	Disulfoton
P049	00541-53-7	Dithiobiuret
P050	00115-29-7	Endosulfan
P088	00145-73-3	Endothall
P051	00072-20-8	Endrin
P051	00072-20-8	Endrin, & metabolites
P042	00051-43-4	Epinephrine
P031	00460-19-5	Ethanedinitrile
P066	16752-77-5	Ethanimidothioic acid, N-[[[(methylamino)carbonyl]oxy]-, methyl ester
P101	00107-12-0	Ethyl cyanide
P054	00151-56-4	Ethyleneimine
P097	00052-85-7	Famphur
P056	07782-41-4	Fluorine
P057	00640-19-7	Fluoroacetamide
P058	00062-74-8	Fluoroacetic acid, sodium salt
P065	00628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	00076-44-8	Heptachlor
P062	00757-58-4	Hexaethyl tetraphosphate
P116	00079-19-6	Hydrazinecarbothioamide
P068	00060-34-4	Hydrazine, methyl-
P063	00074-90-8	Hydrocyanic acid
P063	00074-90-8	Hydrogen cyanide
P096	07803-51-2	Hydrogen phosphide
P060	00465-73-6	Isodrin
P007	02763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	00062-38-4	Mercury, (acetato-O)phenyl-
P065	00628-86-4	Mercury fulminate (R,T)
P082	00062-75-9	Methanamine, N-methyl-N-nitroso-
P064	00624-83-9	Methane, isocyanato-
P016	00542-88-1	Methane, oxybis[chloro-
P112	00509-14-8	Methane, tetranitro- (R)
P118	00075-70-7	Methanethiol, trichloro-

P050	00115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	00076-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-
P066	16752-77-5	Methomyl
P068	00060-34-4	Methyl hydrazine
P064	00624-83-9	Methyl isocyanate
P069	00075-86-5	2-Methylactonitrile
P071	00298-00-0	Methyl parathion
P072	00086-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl Ni(CO) <sub>4</sub> , (T-4)-
P074	00557-19-7	Nickel cyanide
P074	00557-19-7	Nickel cynaide Ni(CN) <sub>2</sub>
P075	00054-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	00100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO <sub>2</sub>
P081	00055-63-0	Nitroglycerine (R)
P082	00062-75-9	N-Nitrosodimethylamine
P084	04549-40-0	N-Nitrosomethylvinylamine
P085	00152-16-9	Octamethylpyrophosphoramidate
P087	20816-12-0	Osmium oxide OsO <sub>4</sub> , (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	00145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	00056-38-2	Parathion
P034	00131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	00051-28-5	Phenol, 2,4-dinitro-
P047	00534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	00088-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	00131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P092	00062-38-4	Phenylmercury acetate
P093	00103-85-5	Phenylthiourea
P094	00298-02-2	Phorate
P095	00075-44-5	Phosgene
P096	07803-51-2	Phosphine
P041	00311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	00298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	00298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	00060-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	00055-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	00056-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	00297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	00052-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	00298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P110	00078-00-2	Plumbane, tetraethyl-
P098	00151-50-8	Potassium cyanide
P098	00151-50-8	Potassium cyanide K(CN)
P099	00506-61-6	Potassium silver cyanide
P070	00116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	00107-12-0	Propanenitrile
P027	00542-76-7	Propanenitrile, 3-chloro-
P069	00075-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	00055-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	00598-31-2	2-Propanone, 1-bromo-
P102	00107-19-7	Propargyl alcohol

P003	00107-02-8	2-Propenal
P005	00107-18-6	2-Propen-1-ol
P067	00075-55-8	1,2-Propylenimine
P102	00107-19-7	2-Propyn-1-ol
P008	00504-24-5	4-Pyridinamine
P075	<sup>1</sup> 00054-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	00630-10-4	Selenourea
P104	00506-64-9	Silver cyanide
P104	00506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	00143-33-9	Sodium cyanide
P106	00143-33-9	Sodium cyanide Na(CN)
P108	<sup>1</sup> 00057-24-9	Strychnidin-10-one, & salts
P018	00357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	<sup>1</sup> 00057-24-9	Strychnine, & salts
P115	07446-18-6	Sulfuric acid, dithallium(1+) salt
P109	03689-24-5	Tetraethyldithiopyrophosphate
P110	00078-00-2	Tetraethyl lead
P111	00107-49-3	Tetraethyl pyrophosphate
P112	00509-14-8	Tetranitromethane (R)
P062	00757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	01314-32-5	Thallic oxide
P113	01314-32-5	Thallium oxide Tl <sub>2</sub> O,
P114	12039-52-0	Thallium(I) selenite
P115	07446-18-6	Thallium(I) sulfate
P109	03689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	00541-53-7	Thioimidodicarbonic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> NH
P014	00108-98-5	Thiophenol
P116	00079-19-6	Thiosemicarbazide
P026	05344-82-1	Thiourea, (2-chlorophenyl)-
P072	00086-88-4	Thiourea, 1-naphthalenyl-
P093	00103-85-5	Thiourea, phenyl-
P123	08001-35-2	Toxaphene
P118	00075-70-7	Trichloromethanethiol
P119	07803-55-6	Vanadic acid, ammonium salt
P120	01314-62-1	Vanadium oxide V <sub>2</sub> O <sub>5</sub> ,
P120	01314-62-1	Vanadium pentoxide
P084	04549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	<sup>1</sup> 00081-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P121	00557-21-1	Zinc cyanide
P121	00557-21-1	Zinc cyanide Zn(CN) <sub>2</sub> ,
P122	01314-84-7	Zinc phosphide Zn <sub>3</sub> P <sub>2</sub> , when present at concentrations greater than 10% (R,T)

<sup>1</sup> CAS Number given for parent compound only.

SECTION 55. NR 605.09(3)(c) Table V is repealed and recreated to read:

Table V  
Toxic Commercial Chemical Products and Manufacturing Chemical Intermediates

Hazardous waste No.	Chemical abstracts No.	Substance
U001	00075-07-0	Acetaldehyde (I)
U034	00075-87-6	Acetaldehyde, trichloro-
U187	00062-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	00053-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	00094-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	00141-78-6	Acetic acid ethyl ester (I)
U144	00301-04-2	Acetic acid, lead(2+) salt
U214	00563-68-8	Acetic acid, thallium(1+) salt
See F027	00093-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	00067-64-1	Acetone (I)
U003	00075-05-8	Acetonitrile (I,T)
U004	00098-86-2	Acetophenone
U005	00053-96-3	2-Acetylaminofluorene
U006	00075-36-5	Acetyl chloride (C,R,T)
U007	00079-06-1	Acrylamide
U008	00079-10-7	Acrylic acid (I)
U009	00107-13-1	Acrylonitrile
U011	00061-82-5	Amitrole
U012	00062-53-3	Aniline (I,T)
U136	00075-60-5	Arsinic acid, dimethyl-
U014	00492-80-8	Auramine
U015	00115-02-6	Azaserine
U010	00050-07-7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[[aminocarbonyloxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalphabet,8balphabet)]-
U157	00056-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	00225-51-4	Benz[c]acridine
U017	00098-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	00056-55-3	Benz[a]anthracene
U094	00057-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	00062-53-3	Benzenamine (I,T)
U014	00492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	03165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	00060-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	00095-53-4	Benzenamine, 2-methyl-
U353	00106-49-0	Benzenamine, 4-methyl-
U158	00101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	00636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	00099-55-8	Benzenamine, 2-methyl-5-nitro-
U019	00071-43-2	Benzene (I,T)
U038	00510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	00101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	00305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	00108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	00117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	00084-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	00084-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	00131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	00117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester

U070	00095-50-1	Benzene, 1,2-dichloro-
U071	00541-73-1	Benzene, 1,3-dichloro-
U072	00106-46-7	Benzene, 1,4-dichloro-
U060	00072-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
U017	00098-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	01330-20-7	Benzene, dimethyl- (I,T)
U201	00108-46-3	1,3-Benzenediol
U127	00118-74-1	Benzene, hexachloro-
U056	00110-82-7	Benzene, hexahydro- (I)
U220	00108-88-3	Benzene, methyl-
U105	00121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	00606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	00098-82-8	Benzene, (1-methylethyl)- (I)
U169	00098-95-3	Benzene, nitro-
U183	00608-93-5	Benzene, pentachloro-
U185	00082-68-8	Benzene, pentachloronitro-
U020	00098-09-9	Benzenesulfonic acid chloride (C,R)
U020	00098-09-9	Benzenesulfonyl chloride (C,R)
U207	00095-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	00050-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	00072-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-
U023	00098-07-7	Benzene, (trichloromethyl)-
U234	00099-35-4	Benzene, 1,3,5-trinitro-
U021	00092-87-5	Benzidine
U202	00081-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U203	00094-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	00120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	00094-58-6	1,3-Benzodioxole, 5-propyl-
U064	00189-55-9	Benzo[rs]pentaphene
U248	00081-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
U022	00050-32-8	Benzo[a]pyrene
U197	00106-51-4	p-Benzoquinone
U023	00098-07-7	Benzotrichloride (C,R,T)
U085	01464-53-5	2,2'-Bioxirane
U021	00092-87-5	[1,1'-Biphenyl]-4,4'-diamine
U073	00091-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	00119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	00119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U225	00075-25-2	Bromoform
U030	00101-55-3	4-Bromophenyl phenyl ether
U128	00087-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	00924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	00071-36-3	1-Butanol (I)
U159	00078-93-3	2-Butanone (I,T)
U160	01338-23-4	2-Butanone, peroxide (R,T)
U053	04170-30-3	2-Butenal
U074	00764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	00303-34-4	2-Butenoic acid, 2-methyl-, 7-[[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	00071-36-3	n-Butyl alcohol (I)
U136	00075-60-5	Cacodylic acid
U032	13765-19-0	Calcium chromate
U238	00051-79-6	Carbamic acid, ethyl ester
U178	00615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U097	00079-44-7	Carbamic chloride, dimethyl-

U114	00111-54-6	Carbamodithioic acid, 1,2-ethanediyldis-, salts & esters
U062	02303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U215	06533-73-9	Carbonic acid, dithallium(1+) salt
U033	00353-50-4	Carbonic difluoride
U156	00079-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	00353-50-4	Carbon oxyfluoride (R,T)
U211	00056-23-5	Carbon tetrachloride
U034	00075-87-6	Chloral
U035	00305-03-3	Chlorambucil
U036	00057-74-9	Chlordane, alpha & gamma isomers
U026	00494-03-1	Chlornaphazin
U037	00108-90-7	Chlorobenzene
U038	00510-15-6	Chlorobenzilate
U039	00059-50-7	p-Chloro-m-cresol
U042	00110-75-8	2-Chloroethyl vinyl ether
U044	00067-66-3	Chloroform
U046	00107-30-2	Chloromethyl methyl ether
U047	00091-58-7	beta-Chloronaphthalene
U048	00095-57-8	o-Chlorophenol
U049	03165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H <sub>2</sub> CrO <sub>4</sub> , calcium salt
U050	00218-01-9	Chrysene
U051	. . . . .	Creosote
U052	01319-77-3	Cresol (Cresylic acid)
U053	04170-30-3	Crotonaldehyde
U055	00098-82-8	Cumene (I)
U246	00506-68-3	Cyanogen bromide (CN)Br
U197	00106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	00110-82-7	Cyclohexane (I)
U129	00058-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	00108-94-1	Cyclohexanone (I)
U130	00077-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	00050-18-0	Cyclophosphamide
U240	00094-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	00072-54-8	DDD
U061	00050-29-3	DDT
U062	02303-16-4	Diallate
U063	00053-70-3	Dibenz[a,h]anthracene
U064	00189-55-9	Dibenzo[a,i]pyrene
U066	00096-12-8	1,2-Dibromo-3-chloropropane
U069	00084-74-2	Dibutyl phthalate
U070	00095-50-1	o-Dichlorobenzene
U071	00541-73-1	m-Dichlorobenzene
U072	00106-46-7	p-Dichlorobenzene
U073	00091-94-1	3,3'-Dichlorobenzidine
U074	00764-41-0	1,4-Dichloro-2-butene (I,T)
U075	00075-71-8	Dichlorodifluoromethane
U078	00075-35-4	1,1-Dichloroethylene
U079	00156-60-5	1,2-Dichloroethylene
U025	00111-44-4	Dichloroethyl ether
U027	00108-60-1	Dichloroisopropyl ether
U024	00111-91-1	Dichloromethoxy ethane
U081	00120-83-2	2,4-Dichlorophenol
U082	00087-65-0	2,6-Dichlorophenol
U084	00542-75-6	1,3-Dichloropropene
U085	01464-53-5	1,2:3,4-Diepoxybutane (I,T)

U108	00123-91-1	1,4-Diethyleneoxide
U028	00117-81-7	Diethylhexyl phthalate
U086	01615-80-1	N,N'-Diethylhydrazine
U087	03288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	00084-66-2	Diethyl phthalate
U089	00056-53-1	Diethylstilbesterol
U090	00094-58-6	Dihydrosafrole
U091	00119-90-4	3,3'-Dimethoxybenzidine
U092	00124-40-3	Dimethylamine (I)
U093	00060-11-7	p-Dimethylaminoazobenzene
U094	00057-97-6	7,12-Dimethylbenz[a]anthracene
U095	00119-93-7	3,3'-Dimethylbenzidine
U096	00080-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	00079-44-7	Dimethylcarbamoyl chloride
U098	00057-14-7	1,1-Dimethylhydrazine
U099	00540-73-8	1,2-Dimethylhydrazine
U101	00105-67-9	2,4-Dimethylphenol
U102	00131-11-3	Dimethyl phthalate
U103	00077-78-1	Dimethyl sulfate
U105	00121-14-2	2,4-Dinitrotoluene
U106	00606-20-2	2,6-Dinitrotoluene
U107	00117-84-0	Di-n-octyl phthalate
U108	00123-91-1	1,4-Dioxane
U109	00122-66-7	1,2-Diphenylhydrazine
U110	00142-84-7	Dipropylamine (I)
U111	00621-64-7	Di-n-propylnitrosamine
U041	00106-89-8	Epichlorohydrin
U001	00075-07-0	Ethanal (I)
U174	00055-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	00091-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U067	00106-93-4	Ethane, 1,2-dibromo-
U076	00075-34-3	Ethane, 1,1-dichloro-
U077	00107-06-2	Ethane, 1,2-dichloro-
U131	00067-72-1	Ethane, hexachloro-
U024	00111-91-1	Ethane, 1,1'-(methylenebis(oxy))bis[2-chloro-
U117	00060-29-7	Ethane, 1,1'-oxybis-(I)
U025	00111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	00076-01-7	Ethane, pentachloro-
U208	00630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	00079-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	00062-55-5	Ethanethioamide
U226	00071-55-6	Ethane, 1,1,1-trichloro-
U227	00079-00-5	Ethane, 1,1,2-trichloro-
U359	00110-80-5	Ethanol, 2-ethoxy-
U173	01116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U004	00098-86-2	Ethanone, 1-phenyl-
U043	00075-01-4	Ethene, chloro-
U042	00110-75-8	Ethene, (2-chloroethoxy)-
U078	00075-35-4	Ethene, 1,1-dichloro-
U079	00156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	00127-18-4	Ethene, tetrachloro-
U228	00079-01-6	Ethene, trichloro-
U112	00141-78-6	Ethyl acetate (I)
U113	00140-88-5	Ethyl acrylate (I)
U238	00051-79-6	Ethyl carbamate (urethane)
U117	00060-29-7	Ethyl ether (I)
U114	00111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	00106-93-4	Ethylene dibromide



U077	00107-06-2	Ethylene dichloride
U359	00110-80-5	Ethylene glycol monoethyl ether
U115	00075-21-8	Ethylene oxide (I,T)
U116	00096-45-7	Ethylenethiourea
U076	00075-34-3	Ethylidene dichloride
U118	00097-63-2	Ethyl methacrylate
U119	00062-50-0	Ethyl methanesulfonate
U120	00206-44-0	Fluoranthene
U122	00050-00-0	Formaldehyde
U123	00064-18-6	Formic acid (C,T)
U124	00110-00-9	Furan (I)
U125	00098-01-1	2-Furancarboxaldehyde (I)
U147	00108-31-6	2,5-Furandione
U213	00109-99-9	Furan, tetrahydro-(I)
U125	00098-01-1	Furfural (I)
U124	00110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[(methylnitrosoamino)- carbonylamino]-
U126	00765-34-4	Glycidylaldehyde
U163	00070-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	00118-74-1	Hexachlorobenzene
U128	00087-68-3	Hexachlorobutadiene
U130	00077-47-4	Hexachlorocyclopentadiene
U131	00067-72-1	Hexachloroethane
U132	00070-30-4	Hexachlorophene
U243	01888-71-7	Hexachloropropene
U133	00302-01-2	Hydrazine (R,T)
U086	01615-80-1	Hydrazine, 1,2-diethyl-
U098	00057-14-7	Hydrazine, 1,1-dimethyl-
U099	00540-73-8	Hydrazine, 1,2-dimethyl-
U109	00122-66-7	Hydrazine, 1,2-diphenyl-
U134	07664-39-3	Hydrofluoric acid (C,T)
U134	07664-39-3	Hydrogen fluoride (C,T)
U135	07783-06-4	Hydrogen sulfide
U135	07783-06-4	Hydrogen sulfide H <sub>2</sub> S
U096	00080-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	00096-45-7	2-Imidazolidinethione
U137	00193-39-5	Indeno[1,2,3-cd]pyrene
U190	00085-44-9	1,3-Isobenzofurandione
U140	00078-83-1	Isobutyl alcohol (I,T)
U141	00120-58-1	Isosafrole
U142	00143-50-0	Kepone
U143	00303-34-4	Lasiocarpine
U144	00301-04-2	Lead acetate
U146	01335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	07446-27-7	Lead phosphate
U146	01335-32-6	Lead subacetate
U129	00058-89-9	Lindane
U163	00070-25-7	MNNG
U147	00108-31-6	Maleic anhydride
U148	00123-33-1	Maleic hydrazide
U149	00109-77-3	Malononitrile
U150	00148-82-3	Melphalan
U151	07439-97-6	Mercury
U152	00126-98-7	Methacrylonitrile (I, T)
U092	00124-40-3	Methanamine, N-methyl- (I)
U029	00074-83-9	Methane, bromo-
U045	00074-87-3	Methane, chloro- (I, T)

U046	00107-30-2	Methane, chloromethoxy-
U068	00074-95-3	Methane, dibromo-
U080	00075-09-2	Methane, dichloro-
U075	00075-71-8	Methane, dichlorodifluoro-
U138	00074-88-4	Methane, iodo-
U119	00062-50-0	Methanesulfonic acid, ethyl ester
U211	00056-23-5	Methane, tetrachloro-
U153	00074-93-1	Methanethiol (I, T)
U225	00075-25-2	Methane, tribromo-
U044	00067-66-3	Methane, trichloro-
U121	00075-69-4	Methane, trichlorofluoro-
U036	00057-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	00067-56-1	Methanol (I)
U155	00091-80-5	Methapyrilene
U142	00143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-
U247	00072-43-5	Methoxychlor
U154	00067-56-1	Methyl alcohol (I)
U029	00074-83-9	Methyl bromide
U186	00504-60-9	1-Methylbutadiene (I)
U045	00074-87-3	Methyl chloride (I,T)
U156	00079-22-1	Methyl chlorocarbonate (I,T)
U226	00071-55-6	Methyl chloroform
U157	00056-49-5	3-Methylcholanthrene
U158	00101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	00074-95-3	Methylene bromide
U080	00075-09-2	Methylene chloride
U159	00078-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	01338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	00074-88-4	Methyl iodide
U161	00108-10-1	Methyl isobutyl ketone (I)
U162	00080-62-6	Methyl methacrylate (I,T)
U161	00108-10-1	4-Methyl-2-pentanone (I)
U164	00056-04-2	Methylthiouracil
U010	00050-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	00134-32-7	1-Naphthalenamine
U168	00091-59-8	2-Naphthalenamine
U026	00494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	00091-20-3	Naphthalene
U047	00091-58-7	Naphthalene, 2-chloro-
U166	00130-15-4	1,4-Naphthalenedione
U236	00072-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'- dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U166	00130-15-4	1,4-Naphthoquinone
U167	00134-32-7	alpha-Naphthylamine
U168	00091-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	00098-95-3	Nitrobenzene (I,T)
U170	00100-02-7	p-Nitrophenol
U171	00079-46-9	2-Nitropropane (I,T)
U172	00924-16-3	N-Nitrosodi-n-butylamine
U173	01116-54-7	N-Nitrosodiethanolamine
U174	00055-18-5	N-Nitrosodiethylamine
U176	00759-73-9	N-Nitroso-N-ethylurea
U177	00684-93-5	N-Nitroso-N-methylurea

U178	00615-53-2	N-Nitroso-N-methylurethane
U179	00100-75-4	N-Nitrosopiperidine
U180	00930-55-2	N-Nitrosopyrrolidine
U181	00099-55-8	5-Nitro-o-toluidine
U193	01120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	00050-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	00075-21-8	Oxirane (I,T)
U126	00765-34-4	Oxiranecarboxyaldehyde
U041	00106-89-8	Oxirane, (chloromethyl)-
U182	00123-63-7	Paraldehyde
U183	00608-93-5	Pentachlorobenzene
U184	00076-01-7	Pentachloroethane
U185	00082-68-8	Pentachloronitrobenzene (PCNB)
See F027	00087-86-5	Pentachlorophenol
U161	00108-10-1	Pentanol, 4-methyl-
U186	00504-60-9	1,3-Pentadiene (I)
U187	00062-44-2	Phenacetin
U188	00108-95-2	Phenol
U048	00095-57-8	Phenol, 2-chloro-
U039	00059-50-7	Phenol, 4-chloro-3-methyl-
U081	00120-83-2	Phenol, 2,4-dichloro-
U082	00087-65-0	Phenol, 2,6-dichloro-
U089	00056-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	00105-67-9	Phenol, 2,4-dimethyl-
U052	01319-77-3	Phenol, methyl-
U132	00070-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U170	00100-02-7	Phenol, 4-nitro-
See F027	00087-86-5	Phenol, pentachloro-
See F027	00058-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	00095-95-4	Phenol, 2,4,5-trichloro-
See F027	00088-06-2	Phenol, 2,4,6-trichloro-
U150	00148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	07446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	03288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	01314-80-3	Phosphorus sulfide (R)
U190	00085-44-9	Phthalic anhydride
U191	00109-06-8	2-Picoline
U179	00100-75-4	Piperidine, 1-nitroso-
U192	23950-58-5	Pronamide
U194	00107-10-8	1-Propanamine (I,T)
U111	00621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	00142-84-7	1-Propanamine, N-propyl- (I)
U066	00096-12-8	Propane, 1,2-dibromo-3-chloro-
U083	00078-87-5	Propane, 1,2-dichloro-
U149	00109-77-3	Propanedinitrile
U171	00079-46-9	Propane, 2-nitro- (I,T)
U027	00108-60-1	Propane, 2,2'-oxybis[2-chloro-
U193	01120-71-4	1,3-Propane sultone
See F027	00093-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	00126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	00078-83-1	1-Propanol, 2-methyl- (I,T)
U002	00067-64-1	2-Propanone (I)
U007	00079-06-1	2-Propanamide
U084	00542-75-6	1-Propene, 1,3-dichloro-
U243	01888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	00107-13-1	2-Propenenitrile
U152	00126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	00079-10-7	2-Propenoic acid (I)

U113	00140-88-5	2-Propenoic acid, ethyl ester (I)
U118	00097-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	00080-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U194	00107-10-8	n-Propylamine (I,T)
U083	00078-87-5	Propylene dichloride
U148	00123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	00110-86-1	Pyridine
U191	00109-06-8	Pyridine, 2-methyl-
U237	00066-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-
U164	00056-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	00930-55-2	Pyrrolidine, 1-nitroso-
U200	00050-55-5	Reserpine
U201	00108-46-3	Resorcinol
U202	00081-07-2	Saccharin, & salts
U203	00094-59-7	Safrole
U204	07783-00-8	Selenious acid
U204	07783-00-8	Selenium dioxide
U205	07488-56-4	Selenium sulfide
U205	07488-56-4	Selenium sulfide SeS <sub>2</sub> (R,T)
U015	00115-02-6	L-Serine, diazoacetate (ester)
See F027	00093-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	00077-78-1	Sulfuric acid, dimethyl ester
U189	01314-80-3	Sulfur phosphide (R)
See F027	00093-76-5	2,4,5-T
U207	00095-94-3	1,2,4,5-Tetrachlorobenzene
U208	00630-20-6	1,1,1,2-Tetrachloroethane
U209	00079-34-5	1,1,2,2-Tetrachloroethane
U210	00127-18-4	Tetrachloroethylene
See F027	00058-90-2	2,3,4,6-Tetrachlorophenol
U213	00109-99-9	Tetrahydrofuran (I)
U214	00563-68-8	Thallium(I) acetate
U215	06533-73-9	Thallium(I) carbonate
U216	07791-12-0	Thallium(I) chloride
U216	07791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	00062-55-5	Thioacetamide
U153	00074-93-1	Thiomethanol (I,T)
U244	00137-26-8	Thioperoxydicarbonic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> S <sub>2</sub> , tetramethyl-
U219	00062-56-6	Thiourea
U244	00137-26-8	Thiram
U220	00108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	00095-53-4	o-Toluidine
U353	00106-49-0	p-Toluidine
U222	00636-21-5	o-Toluidine hydrochloride
U011	00061-82-5	1H-1,2,4-Triazol-3-amine
U227	00079-00-5	1,1,2-Trichloroethane
U228	00079-01-6	Trichloroethylene
U121	00075-69-4	Trichloromonofluoromethane
See F027	00095-95-4	2,4,5-Trichlorophenol
See F027	00088-06-2	2,4,6-Trichlorophenol
U234	00099-35-4	1,3,5-Trinitrobenzene (R,T)
U182	00123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	00126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	00072-57-1	Trypan blue
U237	00066-75-1	Uracil mustard

U176	00759-73-9	Urea, N-ethyl-N-nitroso-
U177	00684-93-5	Urea, N-methyl-N-nitroso-
U043	00075-01-4	Vinyl chloride
U248	<sup>1</sup> 00081-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	01330-20-7	Xylene (I)
U200	00050-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	01314-84-7	Zinc phosphide Zn <sub>3</sub> P <sub>2</sub> , when present at concentrations of 10% or less

<sup>1</sup> CAS Number given for parent compound only.

SECTION 56. NR 605.13 is amended to read:

NR 605.13 PCB WASTES REGULATED UNDER TOXIC SUBSTANCES CONTROL ACT. The disposal of PCB containing dielectric fluid and electric equipment containing such fluid authorized for use and regulated under 40 CFR 761, July 1, ~~1990~~ 1992, and that are hazardous only because they fail the test for the toxicity characteristic, hazardous waste codes D018 to D043 only, are exempt from regulation under chs. NR 600 to 685 and ~~the notification requirements of section 3010 of RCRA.~~

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

Note: The management of PCBs and products containing PCBs is regulated under ch. NR 157.

SECTION 57. NR 605.14 is created to read:

NR 605.14 LISTING SPECIFIC DEFINITIONS. (1)(a) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following 4 treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity and the units employ a minimum of 6 hp per million gallons of treatment volume; and either:

1. the hydraulic retention time of the unit is no longer than 5 days, or

2. the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the toxicity characteristic.

(b) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities shall maintain, in their operating or other onsite records, documents and data sufficient to prove that:

1. the unit is an aggressive biological treatment unit as defined in this section; and

2. the sludges sought to be exempted from the definitions of F037 or F038 were actually generated in the aggressive biological treatment unit.

(2)(a) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(b) For the purposes of the F038 listing,

1. Sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement; and

2. Floats are considered to be generated at the moment they are formed in the top of the unit.

SECTION 58. NR 605 Appendix I is amended to read:

#### APPENDIX I

##### REPRESENTATIVE SAMPLING METHODS

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the following sampling protocols, for sampling waste with properties similar to the indicated materials, will be considered by the department to be representative of the waste:

- (1) For extremely viscous liquid - ASTM Standard D140-70

(2) For crushed or powdered material - ASTM Standard  
D346-78

(3) For soil or rock-like material - ASTM Standard D420-69

(4) For soil-like material - ASTM Standard D1452-80

(5) For fly ash-like material - ASTM Standard D2234-76

Note: The publications containing these standards may be obtained from the:

American Society for Testing and Materials (ASTM)  
1916 Race Street  
Philadelphia, PA 19103-1187  
(215) 299-5400

These publications are available for inspection at the offices of the department, the secretary of state, and the revisor of statutes.

(6) For containerized liquid wastes - "COLIWASA" described in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), third edition, September, 1986, as amended by update I in July, 1992.

(7) For liquid waste in pits, ponds, lagoons and similar reservoirs - "Pond Sampler" described in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), third edition, September, 1986, as amended by update I in July, 1992.

Note: Publication SW-846 may be obtained from:

~~National Technical Information Service~~  
~~U.S. Department of Commerce~~  
~~Springfield, Virginia 22161~~  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 59. NR 605 Appendix II is repealed and recreated to read:

## APPENDIX II

## CHEMICAL ANALYSIS TEST METHODS

Note: Appropriate analytical procedures to determine whether a sample contains a given toxic constituent are specified in chapter two, "Choosing the Correct Procedure" found in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992. Prior to final sampling and analysis method selection, the individual should consult the specific section or method described in SW-846 for additional guidance on which of the approved methods should be employed for a specific sample analysis situation.

Note: Publication SW-846 may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 60. NR 605 Appendix III is repealed and recreated to read:

## Appendix III

## Basis for Listing Hazardous Wastes

Hazardous waste No.	Hazardous constituents for which listed
F001 . . . .	Tetrachloroethylene, methylene chloride trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons.
F002 . . . .	Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trichloroethane, ortho-dichlorobenzene, trichlorofluoromethane.
F003 . . . .	N.A.
F004 . . . .	Cresols and cresylic acid, nitrobenzene.
F005 . . . .	Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, 2-ethoxyethanol, benzene, 2-nitropropane.
F006 . . . .	Cadmium, hexavalent chromium, nickel, cyanide (complexed).
F007 . . . .	Cyanide (salts).
F008 . . . .	Cyanide (salts).
F009 . . . .	Cyanide (salts).
F010 . . . .	Cyanide (salts).
F011 . . . .	Cyanide (salts).
F012 . . . .	Cyanide (complexed).
F019 . . . .	Hexavalent chromium, cyanide (complexed).
F020 . . . .	Tetra- and pentachlorodibenzo-p-dioxins; tetra and pentachlorodi-benzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F021 . . . .	Penta- and hexachlorodibenzo-p-dioxins; penta- and hexachlorodibenzofurans; pentachlorophenol and its derivatives.
F022 . . . .	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F023 . . . .	Tetra-, and pentachlorodibenzo-p-dioxins; tetra- and pentachlorodibenzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.



F024 . . . . .	Chloromethane, dichloromethane, trichloromethane, carbon tetrachloride, chloroethylene, 1,1-dichloroethane, 1,2-dichloroethane, trans-1,2-dichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1,1,1,2-tetra-chloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, pentachloroethane, hexachloroethane, allyl chloride (3-chloropropene), dichloropropane, dichloropropene, 2-chloro-1,3-butadiene, hexachloro-1,3-butadiene, hexachlorocyclopentadiene, hexachlorocyclohexane, benzene, chlorobenzene, dichlorobenzenes, 1,2,4-trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, toluene, naphthalene.
F025 . . . . .	Chloromethane; Dichloromethane; Trichloromethane; Carbon tetrachloride; Chloroethylene; 1,1-Dichloroethane; 1,2-Dichloroethane; trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethylene; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethylene; Pentachloroethane; Hexachloroethane; Allyl chloride (3-Chloropropene); Dichloropropane; Dichloropropene; 2-Chloro-1,3-butadiene; Hexachloro-1,3-butadiene; Hexachlorocyclopentadiene; Benzene; Chlorobenzene; Dichlorobenzene; 1,2,4-Trichlorobenzene; Tetrachlorobenzene; Pentachlorobenzene; Hexachlorobenzene; Toluene; Naphthalene.
F026 . . . . .	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F027 . . . . .	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F028 . . . . .	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F032 . . . . .	Benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, pentachlorophenol, arsenic, chromium, tetra-, penta-, hexa-, heptachlorodibenzo-p-dioxins, tetra-, penta-, hexa-, heptachlorodibenzofurans.
F034 . . . . .	Benz(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, arsenic, chromium.
F035 . . . . .	Arsenic, chromium, lead.
F037 . . . . .	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F038 . . . . .	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F039 . . . . .	All constituents for which treatment standards are specified for multi-source leachate wastewaters and nonwastewaters under s. NR 675.23(1), table CCW.
F500 . . . . .	Same as F001 and F002.
K001 . . . . .	Pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, 2,4-dinitrophenol, cresosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene.
K002 . . . . .	Hexavalent chromium, lead.
K003 . . . . .	Hexavalent chromium, lead.
K004 . . . . .	Hexavalent chromium.
K005 . . . . .	Hexavalent chromium, lead.
K006 . . . . .	Hexavalent chromium.
K007 . . . . .	Cyanide (complexed), hexavalent chromium.
K008 . . . . .	Hexavalent chromium.
K009 . . . . .	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid.
K010 . . . . .	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde.
K011 . . . . .	Acrylonitrile, acetonitrile, hydrocyanic acid.
K013 . . . . .	Hydrocyanic acid, acrylonitrile, acetonitrile.
K014 . . . . .	Acetonitrile, acrylamide.
K015 . . . . .	Benzyl chloride, chlorobenzene, toluene, benzotrachloride.
K016 . . . . .	Hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene.
K017 . . . . .	Epichlorohydrin, chloroethers [bis(chloromethyl) ether and bis (2-chloroethyl) ethers], trichloropropane, dichloropropanols.
K018 . . . . .	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene.
K019 . . . . .	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.

K020 . . . .	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K021 . . . .	Antimony, carbon tetrachloride, chloroform.
K022 . . . .	Phenol, tars (polycyclic aromatic hydrocarbons).
K023 . . . .	Phthalic anhydride, maleic anhydride.
K024 . . . .	Phthalic anhydride, 1,4-naphthoquinone.
K025 . . . .	Meta-dinitrobenzene, 2,4-dinitrotoluene.
K026 . . . .	Paraldehyde, pyridines, 2-picoline.
K027 . . . .	Toluene diisocyanate, toluene-2, 4-diamine.
K028 . . . .	1,1,1-trichloroethane, vinyl chloride.
K029 . . . .	1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform.
K030 . . . .	Hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride.
K031 . . . .	Arsenic.
K032 . . . .	Hexachlorocyclopentadiene.
K033 . . . .	Hexachlorocyclopentadiene.
K034 . . . .	Hexachlorocyclopentadiene.
K035 . . . .	Creosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd) pyrene, benzo(a)anthracene, dibenzo(a)anthracene, acenaphthalene.
K036 . . . .	Toluene, phosphorodithioic and phosphorothioic acid esters.
K037 . . . .	Toluene, phosphorodithioic and phosphorothioic acid esters.
K038 . . . .	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K039 . . . .	Phosphorodithioic and phosphorothioic acid esters.
K040 . . . .	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K041 . . . .	Toxaphene.
K042 . . . .	Hexachlorobenzene, ortho-dichlorobenzene.
K043 . . . .	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol.
K044 . . . .	N.A.
K045 . . . .	N.A.
K046 . . . .	Lead.
K047 . . . .	N.A.
K048 . . . .	Hexavalent chromium, lead.
K049 . . . .	Hexavalent chromium, lead.
K050 . . . .	Hexavalent chromium.
K051 . . . .	Hexavalent chromium, lead.
K052 . . . .	Lead.
K060 . . . .	Cyanide, naphthalene, phenolic compounds, arsenic.
K061 . . . .	Hexavalent chromium, lead, cadmium.
K062 . . . .	Hexavalent chromium, lead.
K064 . . . .	Lead, cadmium.
K065 . . . .	Do.
K066 . . . .	Do.
K069 . . . .	Hexavalent chromium, lead, cadmium.
K071 . . . .	Mercury.
K073 . . . .	Chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane.
K083 . . . .	Aniline, diphenylamine, nitrobenzene, phenylenediamine.
K084 . . . .	Arsenic.
K085 . . . .	Benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorobenzene, hexachlorobenzene, benzyl chloride.
K086 . . . .	Lead, hexavalent chromium.
K087 . . . .	Phenol, naphthalene.
K088 . . . .	Cyanide (complexes).
K090 . . . .	Chromium.
K091 . . . .	Do.
K093 . . . .	Phthalic anhydride, maleic anhydride.
K094 . . . .	Phthalic anhydride.
K095 . . . .	1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane.
K096 . . . .	1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane.

K097 . . . .	Chlordane, heptachlor.
K098 . . . .	Toxaphene.
K099 . . . .	2,4-dichlorophenol, 2,4,6-trichlorophenol.
K100 . . . .	Hexavalent chromium, lead, cadmium.
K101 . . . .	Arsenic.
K102 . . . .	Arsenic.
K103 . . . .	Aniline, nitrobenzene, phenylenediamine.
K104 . . . .	Aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine.
K105 . . . .	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol.
K106 . . . .	Mercury.
K107 . . . .	1,1-Dimethylhydrazine (UDMH).
K108 . . . .	1,1-Dimethylhydrazine (UDMH).
K109 . . . .	1,1-Dimethylhydrazine (UDMH).
K110 . . . .	1,1-Dimethylhydrazine (UDMH).
K111 . . . .	2,4-Dinitrotoluene.
K112 . . . .	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K113 . . . .	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K114 . . . .	2,4-Toluenediamine, o-toluidine, p-toluidine.
K115 . . . .	2,4-Toluenediamine.
K116 . . . .	Carbon tetrachloride, tetrachloroethylene, chloroform, phosgene.
K117 . . . .	Ethylene dibromide.
K118 . . . .	Ethylene dibromide.
K123 . . . .	Ethylene thiourea.
K124 . . . .	Ethylene thiourea.
K125 . . . .	Ethylene thiourea.
K126 . . . .	Ethylene thiourea.
K131 . . . .	Dimethyl sulfate, methyl bromide.
K132 . . . .	Methyl bromide.
K136 . . . .	Ethylene dibromide.
K141 . . . .	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K142 . . . .	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K143 . . . .	Benzene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene.
K144 . . . .	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene.
K145 . . . .	Benzene, benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, naphthalene.
K147 . . . .	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K148 . . . .	Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K149 . . . .	Benzotrichloride, benzyl chloride, chloroform, chloromethane, chlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, toluene.
K150 . . . .	Carbon tetrachloride, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,2,4-trichlorobenzene.
K151 . . . .	Benzene, carbon tetrachloride, chloroform, hexachlorobenzene, pentachlorobenzene, toluene, 1,2,4,5-tetrachlorobenzene, tetrachloroethylene.

N.A. - Waste is hazardous because it meets either the ignitability, corrosivity or reactivity characteristics.

SECTION 61. NR 605 Appendix IV is repealed and recreated to read:

## APPENDIX IV

## HAZARDOUS CONSTITUENTS

A solid waste which contains any of the hazardous constituents listed in this appendix shall be listed in s. NR 605.09 as a hazardous waste unless the department concludes, after considering the factors in s. NR 605.07(2)(a)3., that the waste is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed.

Note: Section NR 605.07(2)(a) identifies criteria for listing hazardous waste. A waste containing any of the constituents in this appendix is examined by the department using these criteria. If the department determines the waste should be listed, it will be included under: Table II, Hazardous Waste from Nonspecific Sources; Table III, Hazardous Waste from Specific Sources; Table IV, Acute Hazardous Commercial Chemical Products and Manufacturing Chemical Intermediates; or Table V, Toxic Commercial Chemical Products and Manufacturing Chemical Intermediates. One shall not assume that a waste containing one or more of the constituents in this appendix will automatically be a hazardous waste. In this appendix, the abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name.

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Acetonitrile . . . . .	Same . . . . .	00075-05-8	U003
Acetophenone . . . . .	Ethanone, 1-phenyl- . . . . .	00098-86-2	U004
2-Acetylaminefluorone . . . . .	Acetamide, N-9H-fluoren-2-yl- . . . . .	00053-96-3	U005
Acetyl chloride . . . . .	Same . . . . .	00075-36-5	U006
1-Acetyl-2-thiourea . . . . .	Acetamide, N-(aminothioxomethyl)- . . . . .	00591-08-2	P002
Acrolein . . . . .	2-Propenal . . . . .	00107-02-8	P003
Acrylamide . . . . .	2-Propenamamide . . . . .	00079-06-1	U007
Acrylonitrile . . . . .	2-Propenenitrile . . . . .	00107-13-1	U009
Aflatoxins . . . . .	Same . . . . .	01402-68-2	. . . . .
Aldicarb . . . . .	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	00116-06-3	P070
Aldrin . . . . .	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a- hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha, 8abeta)-	00309-00-2	P004
Allyl alcohol . . . . .	2-Propen-1-ol . . . . .	00107-18-6	P005
Allyl chloride . . . . .	1-Propane, 3-chloro . . . . .	00107-18-6	. . . . .
Aluminum phosphide . . . . .	Same . . . . .	20859-73-8	P006
4-Aminobiphenyl . . . . .	[1,1'-Biphenyl]-4-amine . . . . .	00092-67-1	. . . . .
5-(Aminomethyl)-3-isoxazolol . . . . .	3(2H)-Isoxazolone, 5-(aminomethyl)- . . . . .	02763-96-4	P007
4-Aminopyridine . . . . .	4-Pyridinamine . . . . .	00504-24-5	P008
Amitrole . . . . .	1H-1,2,4-Triazol-3-amine . . . . .	00061-82-5	U011
Ammonium vanadate . . . . .	Vanadic acid, ammonium salt . . . . .	07803-55-6	P119
Aniline . . . . .	Benzenamine . . . . .	00062-53-3	U012
Antimony . . . . .	Same . . . . .	07440-36-0	. . . . .
Antimony compounds, N.O.S. <sup>1</sup>			
Aramite . . . . .	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	00140-57-8	. . . . .
Arsenic . . . . .	Same . . . . .	07440-38-2	. . . . .
Arsenic compounds, N.O.S. <sup>1</sup>			
Arsenic acid . . . . .	Arsenic acid H <sub>3</sub> AsO <sub>4</sub> . . . . .	07778-39-4	P010

Arsenic pentoxide . . . . .	Arsenic oxide As <sub>2</sub> O <sub>3</sub> . . . . .	01303-28-2	P011
Arsenic trioxide . . . . .	Arsenic oxide As <sub>2</sub> O <sub>3</sub> . . . . .	01327-53-3	P012
Auramine . . . . .	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl	00492-80-8	U014
Azaserine . . . . .	L-Serine, diazoacetate (ester) . . . . .	00115-02-6	U015
Barium . . . . .	Same . . . . .	07440-39-3	
Barium compounds, N.O.S. <sup>1</sup>			
Barium cyanide . . . . .	Same . . . . .	00542-62-1	P013
Benz[c]acridine . . . . .	Same . . . . .	00225-51-4	U016
Benz[a]anthracene . . . . .	Same . . . . .	00056-55-3	U018
Benzal chloride . . . . .	Benzene, (dichloromethyl)- . . . . .	00098-87-3	U017
Benzene . . . . .	Same . . . . .	00071-43-2	U019
Benzenearsonic acid . . . . .	Arsonic acid, phenyl- . . . . .	00098-05-5	
Benzidine . . . . .	[1,1'-Biphenyl]-4,4'-diamine . . . . .	00092-87-5	U021
Benzo[b]fluoranthene . . . . .	Benz[e]acephenanthrylene . . . . .	00205-99-2	
Benzo[j]fluoranthene . . . . .	Same . . . . .	00205-82-3	
Benzo[k]fluoranthene . . . . .	Same . . . . .	00207-08-9	
Benzo[a]pyrene . . . . .	Same . . . . .	00050-32-8	U022
p-Benzoquinone . . . . .	2,5-Cyclohexadiene-1,4-dione . . . . .	00106-51-4	U197
Benzotrichloride . . . . .	Benzene, (trichloromethyl)- . . . . .	00098-07-7	U023
Benzyl chloride . . . . .	Benzene, (chloromethyl)- . . . . .	00100-44-7	P028
Beryllium . . . . .	Same . . . . .	07440-41-7	P015
Beryllium compounds, N.O.S. <sup>1</sup>			
Bromoacetone . . . . .	2-Propanone, 1-bromo- . . . . .	00598-31-2	P017
Bromoform . . . . .	Methane, tribromo- . . . . .	00075-25-2	U225
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy- . . . . .	00101-55-3	U030
Brucine . . . . .	Strychnidin-10-one, 2,3-dimethoxy- . . . . .	00357-57-3	P018
Butyl benzyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester . . . . .	00085-68-7	
Cacodylic acid . . . . .	Arsinic acid, dimethyl- . . . . .	00075-60-5	U136
Cadmium . . . . .	Same . . . . .	07440-43-9	
Cadmium compounds, N.O.S. <sup>1</sup>			
Calcium chromate . . . . .	Chromic acid H <sub>2</sub> CrO <sub>4</sub> , calcium salt . . . . .	13765-19-0	U032
Calcium cyanide . . . . .	Calcium cyanide Ca(CN) <sub>2</sub> . . . . .	00592-01-8	P021
Carbon disulfide . . . . .	Same . . . . .	00075-15-0	P022
Carbon oxyfluoride . . . . .	Carbonic difluoride . . . . .	00353-50-4	U033
Carbon tetrachloride . . . . .	Methane, tetrachloro- . . . . .	00056-23-5	U211
Chloral . . . . .	Acetaldehyde, trichloro- . . . . .	00075-87-6	U034
Chlorambucil . . . . .	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]- . . . . .	00305-03-3	U035
Chlordane . . . . .	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexa- hydro- . . . . .	00057-74-9	U036
Chlordane (alpha and gamma isomers)			U036
Chlorinated benzenes, N.O.S. <sup>1</sup>			
Chlorinated ethane, N.O.S. <sup>1</sup>			
Chlorinated fluorocarbons, N.O.S. <sup>1</sup>			
Chlorinated naphthalene, N.O.S. <sup>1</sup>			
Chlorinated phenol, N.O.S. <sup>1</sup>			
Chlornaphazin . . . . .	Naphthalenamine, N,N'-bis(2-chloroethyl)- . . . . .	00494-03-1	U026
Chloroacetaldehyde . . . . .	Acetaldehyde, chloro- . . . . .	00107-20-0	P023
Chloroalkyl ethers, N.O.S. <sup>1</sup>			
p-Chloroaniline . . . . .	Benzenamine, 4-chloro- . . . . .	00106-47-8	P024

Chlorobenzene . . . . .	Benzene, chloro- . . . . .	00108-90-7	U037
Chlorobenzilate . . . . .	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	00510-15-6	U038
p-Chloro-m-cresol . . . . .	Phenol, 4-chloro-3-methyl- . . . . .	00059-50-7	U039
2-Chloroethyl vinyl ether	Ethene, (2-chloroethoxy)- . . . . .	00110-75-8	U042
Chloroform . . . . .	Methane, trichloro- . . . . .	00067-66-3	U044
Chloromethyl methyl ether	Methane, chloromethoxy- . . . . .	00107-30-2	U046
beta-Chloronaphthalene . . . . .	Naphthalene, 2-chloro- . . . . .	00091-58-7	U047
o-Chlorophenol . . . . .	Phenol, 2-chloro- . . . . .	00095-57-8	U048
1-(o-Chlorophenyl)thiourea	Thiourea, (2-chlorophenyl)- . . . . .	05344-82-1	P026
Chloroprene . . . . .	1,3-Butadiene, 2-chloro- . . . . .	00126-99-8	.. . . .
3-Chloropropionitrile . . . . .	Propanenitrile, 3-chloro- . . . . .	00542-76-7	P027
Chromium . . . . .	Same . . . . .	07440-47-3	.. . . .
Chromium compounds, N.O.S. <sup>1</sup>	.. . . .	.. . . .	.. . . .
Chrysene . . . . .	Same . . . . .	00218-01-9	U050
Citrus red No. 2 . . . . .	2-Naphthalenol, 1-[(2,5-dimethoxyphenyl)azo]- . . . . .	06358-53-8	.. . . .
Coal tar creosote . . . . .	Same . . . . .	08007-45-2	.. . . .
Copper cyanide . . . . .	Copper cyanide CuCN . . . . .	00544-92-3	P029
Creosote . . . . .	Same . . . . .	.. . . .	U051
Cresol (Cresylic acid) . . . . .	Phenol, methyl- . . . . .	01319-77-3	U052
Crotonaldehyde . . . . .	2-Butenal . . . . .	04170-30-3	U053
Cyanides (soluble salts and complexes) N.O.S. <sup>1</sup>	.. . . .	.. . . .	P030
Cyanogen . . . . .	Ethanedinitrile . . . . .	00460-19-5	P031
Cyanogen bromide . . . . .	Cyanogen bromide (CN)Br . . . . .	00506-68-3	U246
Cyanogen chloride . . . . .	Cyanogen chloride (CN)Cl . . . . .	00506-77-4	P033
Cycasin . . . . .	beta-D-Glucopyranoside, (methyl-ONN-azoxy)methyl	14901-08-7	.. . . .
2-Cyclohexyl-4,6- dinitrophenol	Phenol, 2-cyclohexyl-4,6-dinitro- . . . . .	00131-89-5	P034
Cyclophosphamide . . . . .	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	00050-18-0	U058
2,4-D . . . . .	Acetic acid, (2,4-dichlorophenoxy)- . . . . .	00094-75-7	U240
2,4-D, salts, esters . . . . .	.. . . .	.. . . .	U240
Daunomycin . . . . .	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L- lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro- 6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830-81-3	U059
DDD . . . . .	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	00072-54-8	U060
DDE . . . . .	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-	00072-55-9	.. . . .
DDT . . . . .	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	00050-29-3	U061
Diallate . . . . .	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	02303-16-4	U062
Dibenz[a,h]acridine . . . . .	Same . . . . .	00226-36-8	.. . . .
Dibenz[a,j]acridine . . . . .	Same . . . . .	00224-42-0	.. . . .
Dibenz[a,h]anthracene . . . . .	Same . . . . .	00053-70-3	U063
7H-Dibenzo[c,g]carbazole	Same . . . . .	00194-59-2	.. . . .
Dibenzo[a,e]pyrene . . . . .	Naphtho[1,2,3,4-def]chrysene . . . . .	00192-65-4	.. . . .
Dibenzo[a,h]pyrene . . . . .	Dibenzo[b,def]chrysene . . . . .	00189-64-0	.. . . .
Dibenzo[a,i]pyrene . . . . .	Benzo[rst]pentaphene . . . . .	00189-55-9	U064
1,2-Dibromo-3- chloropropane	Propane, 1,2-dibromo-3-chloro- . . . . .	00096-12-8	U066
Dibutyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, dibutyl ester . . . . .	00084-74-2	U069
o-Dichlorobenzene . . . . .	Benzene, 1,2-dichloro- . . . . .	00095-50-1	U070
m-Dichlorobenzene . . . . .	Benzene, 1,3-dichloro- . . . . .	00541-73-1	U071

p-Dichlorobenzene . . . . .	Benzene, 1,4-dichloro- . . . . .	00106-46-7	U072
Dichlorobenzene, N.O.S. <sup>1</sup>	Benzene, dichloro- . . . . .	25321-22-6	
3,3'-Dichlorobenzidine . . . . .	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro- . . . . .	00091-94-1	U073
1,4-Dichloro-2-butene . . . . .	2-Butene, 1,4-dichloro- . . . . .	00764-41-0	U074
Dichlorodifluoromethane . . . . .	Methane, dichlorodifluoro- . . . . .	00075-71-8	U075
Dichloroethylene, N.O.S. <sup>1</sup>	Dichloroethylene . . . . .	25323-30-2	
1,1-Dichloroethylene . . . . .	Ethene, 1,1-dichloro- . . . . .	00075-35-4	U078
1,2-Dichloroethylene . . . . .	Ethene, 1,2-dichloro-, (E)- . . . . .	00156-60-5	U079
Dichloroethyl ether . . . . .	Ethane, 1,1'-oxybis[2-chloro- . . . . .	00111-44-4	U025
Dichloroisopropyl ether . . . . .	Propane, 2,2'-oxybis[2-chloro- . . . . .	00108-60-1	U027
Dichloromethoxy ethane . . . . .	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro- . . . . .	00111-91-1	U024
Dichloromethyl ether . . . . .	Methane, oxybis[chloro- . . . . .	00542-88-1	P016
2,4-Dichlorophenol . . . . .	Phenol, 2,4-dichloro- . . . . .	00120-83-2	U081
2,6-Dichlorophenol . . . . .	Phenol, 2,6-dichloro- . . . . .	00087-65-0	U082
Dichlorophenylarsine . . . . .	Arsonous dichloride, phenyl- . . . . .	00696-28-6	P036
Dichloropropane, N.O.S. <sup>1</sup>	Propane, dichloro- . . . . .	26638-19-7	
Dichloropropanol, N.O.S. <sup>1</sup>	Propanol, dichloro- . . . . .	26545-73-3	
Dichloropropene, N.O.S. <sup>1</sup>	1-Propene, dichloro- . . . . .	26952-23-8	
1,3-Dichloropropene . . . . .	1-Propene, 1,3-dichloro- . . . . .	00542-75-6	U084
Dieldrin . . . . .	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a- octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta, 6aalpha,7beta,7aalpha)- . . . . .	00060-57-1	P037
1,2:3,4-Diepoxybutane . . . . .	2,2'-Bioxirane . . . . .	01464-53-5	U085
Diethylarsine . . . . .	Arsine, diethyl- . . . . .	00692-42-2	P038
1,4-Diethyleneoxide . . . . .	1,4-Dioxane . . . . .	00123-91-1	U108
Diethylhexyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester . . . . .	00117-81-7	U028
N,N'-Diethylhydrazine . . . . .	Hydrazine, 1,2-diethyl- . . . . .	01615-80-1	U086
O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester . . . . .	03288-58-2	U087
Diethyl-p-nitrophenyl phosphate	Phosphoric acid, diethyl 4-nitrophenyl ester . . . . .	00311-45-5	P041
Diethyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, diethyl ester . . . . .	00084-66-2	U088
O,O-Diethyl O-pyrazinyl phosphoro- thioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester . . . . .	00297-97-2	P040
Diethylstilbesterol . . . . .	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)- . . . . .	00056-53-1	U089
Dihydrosafrole . . . . .	1,3-Benzodioxole, 5-propyl- . . . . .	00094-58-6	U090
Diisopropylfluorophosphate (DFP)	Phosphorofluoridic acid, bis(1-methylethyl) ester . . . . .	00055-91-4	P043
Dimethoate . . . . .	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester . . . . .	00060-51-5	P044
3,3'-Dimethoxybenzidine . . . . .	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy- . . . . .	00119-90-4	U091
p-Dimethylaminoazobenzene	Benzenamine, N,N-dimethyl-4-(phenylazo)- . . . . .	00060-11-7	U093
7,12-Dimethylbenz[a]- anthracene	Benz[a]anthracene, 7,12-dimethyl- . . . . .	00057-97-6	U094
3,3'-Dimethylbenzidine . . . . .	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl- . . . . .	00119-93-7	U095
Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl- . . . . .	00079-44-7	U097
1,1-Dimethylhydrazine . . . . .	Hydrazine, 1,1-dimethyl- . . . . .	00057-14-7	U098
1,2-Dimethylhydrazine . . . . .	Hydrazine, 1,2-dimethyl- . . . . .	00540-73-8	U099
alpha, alpha- Dimethylphenethylamine	Benzeneethanamine, alpha, alpha-dimethyl- . . . . .	00122-09-8	P046
2,4-Dimethylphenol . . . . .	Phenol, 2,4-dimethyl- . . . . .	00105-67-9	U101
Dimethyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, dimethyl ester . . . . .	00131-11-3	U102
Dimethyl sulfate . . . . .	Sulfuric acid, dimethyl ester . . . . .	00077-78-1	U103
Dinitrobenzene, N.O.S. <sup>1</sup>	Benzene, dinitro- . . . . .	25154-54-5	
4,6-Dinitro-o-cresol . . . . .	Phenol, 2-methyl-4,6-dinitro- . . . . .	00534-52-1	P047
4,6-Dinitro-o-cresol salts			P047
2,4-Dinitrophenol . . . . .	Phenol, 2,4-dinitro- . . . . .	00051-28-5	P048

2,4-Dinitrotoluene . . . . .	Benzene, 1-methyl-2,4-dinitro- . . . . .	00121-14-2	U105
2,6-Dinitrotoluene . . . . .	Benzene, 2-methyl-1,3-dinitro- . . . . .	00606-20-2	U106
Dinoseb . . . . .	Phenol, 2-(1-methylpropyl)-4,6-dinitro- . . . . .	00088-85-7	P020
Di-n-octyl phthalate . . . . .	1,2-Benzenedicarboxylic acid, dioctyl ester . . . . .	00117-84-0	U017
Diphenylamine . . . . .	Benzenamine, N-phenyl- . . . . .	00122-39-4	U109
1,2-Diphenylhydrazine . . . . .	Hydrazine, 1,2-diphenyl- . . . . .	00122-66-7	U109
Di-n-propylnitrosamine . . . . .	1-Propanamine, N-nitroso-N-propyl- . . . . .	00621-64-7	U111
Disulfoton . . . . .	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester . . . . .	00298-04-4	P039
Dithiobiuret . . . . .	Thioimidodicarbonic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> NH . . . . .	00541-53-7	P049
Endosulfan . . . . .	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide . . . . .	00115-29-7	P050
Endothall . . . . .	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid . . . . .	00145-73-3	P088
Endrin . . . . .	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)- . . . . .	00072-20-8	P051
Endrin metabolites . . . . .	. . . . .	. . . . .	P051
Epichlorohydrin . . . . .	Oxirane, (chloromethyl)- . . . . .	00106-89-8	U041
Epinephrine . . . . .	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)- . . . . .	00051-43-4	P042
Ethyl carbamate (urethane) . . . . .	Carbamic acid, ethyl ester . . . . .	00051-79-6	U238
Ethyl cyanide . . . . .	Propanenitrile . . . . .	00107-12-0	F101
Ethylenebisdithiocarbamic acid . . . . .	Carbamodithioic acid, 1,2-ethanediybis- . . . . .	00111-54-6	U114
Ethylenebisdithiocarbamic acid, salts and esters . . . . .	. . . . .	. . . . .	U114
Ethylene dibromide . . . . .	Ethane, 1,2-dibromo- . . . . .	00106-93-4	U067
Ethylene dichloride . . . . .	Ethane, 1,2-dichloro- . . . . .	00107-06-2	U077
Ethylene glycol monoethyl ether . . . . .	Ethanol, 2-ethoxy- . . . . .	00110-80-5	U359
Ethyleneimine . . . . .	Aziridine . . . . .	00151-56-4	P054
Ethylene oxide . . . . .	Oxirane . . . . .	00075-21-8	U115
Ethylenethiourea . . . . .	2-Imidazolidinethione . . . . .	00096-45-7	U116
Ethylidene dichloride . . . . .	Ethane, 1,1-dichloro- . . . . .	00075-34-3	U076
Ethyl methacrylate . . . . .	2-Propenoic acid, 2-methyl-, ethyl ester . . . . .	00097-63-2	U118
Ethyl methanesulfonate . . . . .	Methanesulfonic acid, ethyl ester . . . . .	00062-50-0	U119
Famphur . . . . .	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester . . . . .	00052-85-7	P097
Fluoranthene . . . . .	Same . . . . .	00206-44-0	U120
Fluorine . . . . .	Same . . . . .	07782-41-4	P056
Fluoroacetamide . . . . .	Acetamide, 2-fluoro- . . . . .	00640-19-7	P057
Fluoroacetic acid, sodium salt . . . . .	Acetic acid, fluoro-, sodium salt . . . . .	00062-74-8	P058
Formaldehyde . . . . .	Same . . . . .	00050-00-0	U122
Formic acid . . . . .	Same . . . . .	00064-18-6	U123
Glycidylaldehyde . . . . .	Oxiranecarboxyaldehyde . . . . .	00765-34-4	U126
Halomethanes, N.O.S. . . . .	. . . . .	. . . . .	. . . . .
Heptachlor . . . . .	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- . . . . .	00076-44-8	P059
Heptachlor epoxide . . . . .	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro-, (1aalpha,1bbeta,2alpha,5alpha,5abeta,6beta,6aalpha)- . . . . .	01024-57-3	. . . . .
Heptachlor epoxide (alpha, beta, and gamma isomers) . . . . .	. . . . .	. . . . .	. . . . .
Heptachlorodibenzofurans . . . . .	. . . . .	. . . . .	. . . . .



Heptachlorodibenzo-p-dioxins			
Hexachlorobenzene	Benzene, hexachloro-	00118-74-1	U127
Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	00087-68-3	U128
Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	00077-47-4	U130
Hexachlorodibenzo-p-dioxins			
Hexachlorodibenzofurans			
Hexachloroethane	Ethane, hexachloro-	00067-72-1	U131
Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	00070-30-4	U132
Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-	01888-71-7	U243
Hexaethyl tetraphosphate	Tetraphosphoric acid, hexaethyl ester	00757-58-4	P062
Hydrazine	Same	00302-01-2	U133
Hydrogen cyanide	Hydrocyanic acid	00074-90-8	P063
Hydrogen fluoride	Hydrofluoric acid	07664-39-3	U134
Hydrogen sulfide	Hydrogen sulfide H <sub>2</sub> S	07783-06-4	U135
Indeno[1,2,3-cd]pyrene	Same	00193-39-5	U137
Isobutyl alcohol	1-Propanol, 2-methyl-	00078-83-1	U140
Isodrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexa- hydro, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)	00465-73-6	P060
Isosafrole	1,3-Benzodioxole, 5-(1-propenyl)-	00120-58-1	U141
Kepon	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	00143-50-0	U142
Lasiocarpine	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1- -oxobutoxylmethyl]-2,3,5,7a- tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7alpha]]-	00303-34-1	4143
Lead	Same	07439-92-1	
Lead compounds, N.O.S. <sup>1</sup>			
Lead acetate	Acetic acid, lead(2+) salt	00301-04-2	U144
Lead phosphate	Phosphoric acid, lead(2+) salt (2:3)	07446-27-7	U145
Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri-	01335-32-6	U146
Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-	00058-89-9	U129
Maleic anhydride	2,5-Furandione	00108-31-6	U147
Maleic hydrazide	3,6-Pyridazinedione, 1,2-dihydro-	00123-33-1	U148
Malononitrile	Propanedinitrile	00109-77-3	U149
Melphalan	L-Phenylalanine, 4-[bis(2-chloroethyl)aminol]-	00148-82-3	U150
Mercury	Same	07439-97-6	U151
Mercury compounds, N.O.S. <sup>1</sup>			
Mercury fulminate	Fulminic acid, mercury(2+) salt	00628-86-4	P065
Methacrylonitrile	2-Propenenitrile, 2-methyl-	00126-98-7	U152
Methapyrilene	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienyl- methyl)-	00091-80-5	U155
Methomyl	Ethanimidothioic acid, N-[(methylamino)carbonyloxy]-, methyl ester	16752-77-5	P066
Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-	00072-43-5	U247
Methyl bromide	Methane, bromo-	00074-83-9	U029
Methyl chloride	Methane, chloro-	00074-87-3	U045
Methyl chlorocarbonate	Carbonochloridic acid, methyl ester	00079-22-1	U156
Methyl chloroform	Ethane, 1,1,1-trichloro-	00071-55-6	U226
3-Methylcholanthrene	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	00056-49-5	U157
4,4'-Methylenebis(2-chloroaniline)	Benzenamine, 4,4'-methylenebis[2-chloro-	00101-14-4	U158
Methylene bromide	Methane, dibromo-	00074-95-3	U068

Methylene chloride . . . . .	Methane, dichloro- . . . . .	00075-09-2	U080
Methyl ethyl ketone (MEK)	2-Butanone . . . . .	00078-93-3	U159
Methyl ethyl ketone peroxide	2-Butanone, peroxide . . . . .	01338-23-4	U160
Methyl hydrazine . . . . .	Hydrazine, methyl- . . . . .	00060-34-4	P068
Methyl iodide . . . . .	Methane, iodo- . . . . .	00074-88-4	U138
Methyl isocyanate . . . . .	Methane, isocyanato- . . . . .	00624-83-9	P064
2-Methylactonitrile . . . . .	Propanenitrile, 2-hydroxy-2-methyl- . . . . .	00075-86-5	P069
Methyl methacrylate . . . . .	2-Propenoic acid, 2-methyl-, methyl ester . . . . .	00080-62-6	U162
Methyl methanesulfonate . . . . .	Methanesulfonic acid, methyl ester . . . . .	00066-27-3	U162
Methyl parathion . . . . .	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester . . . . .	00298-00-0	P071
Methylthiouracil . . . . .	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo- . . . . .	00056-04-2	U164
Mitomycin C . . . . .	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha,8beta,8aalpha,8balph)]- . . . . .	00050-07-7	U010
MNNG . . . . .	Guanidine, N-methyl-N'-nitro-N-nitroso- . . . . .	00070-25-7	U163
Mustard gas . . . . .	Ethane, 1,1'-thiobis[2-chloro- . . . . .	00505-60-2	U165
Naphthalene . . . . .	Same . . . . .	00091-20-3	U165
1,4-Naphthoquinone . . . . .	1,4-Naphthalenedione . . . . .	00130-15-4	U166
alpha-Naphthylamine . . . . .	1-Naphthalenamine . . . . .	00134-32-7	U167
beta-Naphthylamine . . . . .	2-Naphthalenamine . . . . .	00091-59-8	U168
alpha-Naphthylthiourea . . . . .	Thiourea, 1-naphthalenyl- . . . . .	00086-88-4	P072
Nickel . . . . .	Same . . . . .	07440-02-0	U168
Nickel compounds, N.O.S. <sup>1</sup>	. . . . .	. . . . .	. . . . .
Nickel carbonyl . . . . .	Nickel carbonyl Ni(CO) <sub>4</sub> , (T-4)- . . . . .	13463-39-3	P073
Nickel cyanide . . . . .	Nickel cyanide Ni(CN) <sub>2</sub> . . . . .	00557-19-7	P074
Nicotine . . . . .	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- . . . . .	00054-11-5	P075
Nicotine salts . . . . .	. . . . .	. . . . .	P075
Nitric oxide . . . . .	Nitrogen oxide NO . . . . .	10102-43-9	P076
p-Nitroaniline . . . . .	Benzenamine, 4-nitro- . . . . .	00100-01-6	P077
Nitrobenzene . . . . .	Benzene, nitro- . . . . .	00098-95-3	U169
Nitrogen dioxide . . . . .	Nitrogen oxide NO <sub>2</sub> . . . . .	10102-44-0	P078
Nitrogen mustard . . . . .	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl- . . . . .	00051-75-2	U169
Nitrogen mustard, hydrochloride salt	. . . . .	. . . . .	. . . . .
Nitrogen mustard N-oxide	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-, N-oxide . . . . .	00126-85-2	U170
Nitrogen mustard, N-oxide, hydrochloride salt	. . . . .	. . . . .	. . . . .
Nitroglycerin . . . . .	1,2,3-Propanetriol, trinitrate . . . . .	00055-63-0	P081
p-Nitrophenol . . . . .	Phenol, 4-nitro- . . . . .	00100-02-7	U170
2-Nitropropane . . . . .	Propane, 2-nitro- . . . . .	00079-46-9	U171
Nitrosamines, N.O.S. <sup>1</sup>	. . . . .	35576-91-1	U171
N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso- . . . . .	00924-16-3	U172
N-Nitrosodiethanolamine . . . . .	Ethanol, 2,2'-(nitrosoimino)bis- . . . . .	01116-54-7	U173
N-Nitrosodiethylamine . . . . .	Ethanamine, N-ethyl-N-nitroso- . . . . .	00055-18-5	U174
N-Nitrosodimethylamine . . . . .	Methanamine, N-methyl-N-nitroso- . . . . .	00062-75-9	P082
N-Nitroso-N-ethylurea . . . . .	Urea, N-ethyl-N-nitroso- . . . . .	00759-73-9	U176
N-Nitrosomethylethylamine . . . . .	Ethanamine, N-methyl-N-nitroso- . . . . .	10595-95-6	U176
N-Nitroso-N-methylurea . . . . .	Urea, N-methyl-N-nitroso- . . . . .	00684-93-5	U177
N-Nitroso-N-methylurethane . . . . .	Carbamic acid, methylnitroso-, ethyl ester . . . . .	00615-53-2	U178
N-Nitrosomethylvinylamine . . . . .	Vinylamine, N-methyl-N-nitroso- . . . . .	04549-40-0	P084
N-Nitrosomorpholine . . . . .	Morpholine, 4-nitroso- . . . . .	00059-89-2	U178
N-Nitrosornicotine . . . . .	Pyridine, 3-(1-nitroso-2-pyrrolidinyl)-, (S)- . . . . .	16543-55-8	U179
N-Nitrosopiperidine . . . . .	Piperidine, 1-nitroso- . . . . .	00100-75-4	U179
N-Nitrosopyrrolidine . . . . .	Pyrrolidine, 1-nitroso- . . . . .	00930-55-2	U180

N-Nitrososarcosine . . . . .	Glycine, N-methyl-N-nitroso- . . . . .	13256-22-9	. . . . .
5-Nitro-o-toluidine . . . . .	Benzenamine, 2-methyl-5-nitro- . . . . .	00099-55-8	U181
Octamethylpyrophosphoramidate . . . . .	Diphosphoramidate, octamethyl- . . . . .	00152-16-9	P085
Osmium tetroxide . . . . .	Osmium oxide OsO <sub>4</sub> , (T-4)- . . . . .	20816-12-0	P087
Paraldehyde . . . . .	1,3,5-Trioxane, 2,4,6-trimethyl- . . . . .	00123-63-7	U182
Parathion . . . . .	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester . . . . .	00056-38-2	P089
Pentachlorobenzene . . . . .	Benzene, pentachloro- . . . . .	00608-93-5	U183
Pentachlorodibenzo-p-dioxins . . . . .	. . . . .	. . . . .	. . . . .
Pentachlorodibenzofurans . . . . .	. . . . .	. . . . .	. . . . .
Pentachloroethane . . . . .	Ethane, pentachloro- . . . . .	00076-01-7	U184
Pentachloronitrobenzene (PCNB) . . . . .	Benzene, pentachloronitro- . . . . .	00082-68-8	U185
Pentachlorophenol . . . . .	Phenol, pentachloro- . . . . .	00087-86-5	See F027
Phenacetin . . . . .	Acetamide, N-(4-ethoxyphenyl)- . . . . .	00062-44-2	U187
Phenol . . . . .	Same . . . . .	00108-95-2	U188
Phenylenediamine . . . . .	Benzenediamine . . . . .	25265-76-3	. . . . .
Phenylmercury acetate . . . . .	Mercury, (acetato-O)phenyl- . . . . .	00062-38-4	P092
Phenylthiourea . . . . .	Thiourea, phenyl- . . . . .	00103-85-5	P093
Phosgene . . . . .	Carbonic dichloride . . . . .	00075-44-5	P095
Phosphine . . . . .	Same . . . . .	07803-51-2	P096
Phorate . . . . .	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester . . . . .	00298-02-2	P094
Phthalic acid esters, N.O.S. <sup>1</sup> . . . . .	. . . . .	. . . . .	. . . . .
Phthalic anhydride . . . . .	1,3-Isobenzofurandione . . . . .	00085-44-9	U190
2-Picoline . . . . .	Pyridine, 2-methyl- . . . . .	00109-06-8	U191
Polychlorinated biphenyls, N.O.S. <sup>1</sup> . . . . .	. . . . .	. . . . .	. . . . .
Potassium cyanide . . . . .	Potassium cyanide K(CN) . . . . .	00151-50-8	P098
Potassium silver cyanide . . . . .	Argentate(1-), bis(cyano-C)-, potassium . . . . .	00506-61-6	P099
Pronamide . . . . .	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)- . . . . .	23950-58-5	U192
1,3-Propane sultone . . . . .	1,2-Oxathiolane, 2,2-dioxide . . . . .	01120-71-4	U193
n-Propylamine . . . . .	1-Propanamine . . . . .	00107-10-8	U194
Propargyl alcohol . . . . .	2-Propyn-1-ol . . . . .	00107-19-7	P102
Propylene dichloride . . . . .	Propane, 1,2-dichloro- . . . . .	00078-87-5	U083
1,2-Propylenimine . . . . .	Aziridine, 2-methyl- . . . . .	00075-55-8	P067
Propylthiouracil . . . . .	4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo- . . . . .	00051-52-5	. . . . .
Pyridine . . . . .	Same . . . . .	00110-86-1	U196
Reserpine . . . . .	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-smethyl ester, (3beta,16beta,17alpha,18beta,20alpha)- . . . . .	00050-55-5	U200
Resorcinol . . . . .	1,3-Benzenediol . . . . .	00108-46-3	U201
Saccharin . . . . .	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide . . . . .	00081-07-2	U202
Saccharin salts . . . . .	. . . . .	. . . . .	U202
Safrole . . . . .	1,3-Benzodioxole, 5-(2-propenyl)- . . . . .	00094-59-7	U203
Selenium . . . . .	Same . . . . .	07782-49-2	. . . . .
Selenium compounds, N.O.S. <sup>1</sup> . . . . .	. . . . .	. . . . .	. . . . .
Selenium dioxide . . . . .	Selenious acid . . . . .	07783-00-8	U204
Selenium sulfide . . . . .	Selenium sulfide SeS <sub>2</sub> . . . . .	07488-56-4	U205
Selenourea . . . . .	Same . . . . .	00630-10-4	P103
Silver . . . . .	Same . . . . .	07440-22-4	. . . . .
Silver compounds, N.O.S. <sup>1</sup> . . . . .	. . . . .	. . . . .	. . . . .
Silver cyanide . . . . .	Silver cyanide Ag(CN) . . . . .	00506-64-9	P104

Silvex (2,4,5-TP) . . . . .	Propanoic acid, 2-(2,4,5-trichlorophenoxy)- . . . . .	00093-72-1	See F027
Sodium cyanide . . . . .	Sodium cyanide Na(CN) . . . . .	00143-33-9	F106
Streptozotocin . . . . .	D-Glucose, 2-deoxy-2-[(methylnitrosoamino)carbonylamino]- . . . . .	18883-66-4	U206
Strychnine . . . . .	Strychnidin-10-one . . . . .	00057-24-9	F108
Strychnine salts . . . . .	. . . . .	. . . . .	F108
TCDD . . . . .	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro- . . . . .	01746-01-6	. . . . .
1,2,4,5-Tetrachlorobenzene	Benzene, 1,2,4,5-tetrachloro- . . . . .	00095-94-3	U207
Tetrachlorodibenzo-p-dioxins	. . . . .	. . . . .	. . . . .
Tetrachlorodibenzofurans	. . . . .	. . . . .	. . . . .
Tetrachloroethane, N.O.S. <sup>1</sup>	Ethane, tetrachloro-, N.O.S. . . . .	25322-20-7	. . . . .
1,1,1,2-Tetrachloroethane	Ethane, 1,1,1,2-tetrachloro- . . . . .	00630-20-6	U208
1,1,2,2-Tetrachloroethane	Ethane, 1,1,2,2-tetrachloro- . . . . .	00079-34-5	U209
Tetrachloroethylene . . . . .	Ethene, tetrachloro- . . . . .	00127-18-4	U210
2,3,4,6-Tetrachlorophenol	Phenol, 2,3,4,6-tetrachloro- . . . . .	00058-90-2	See F027
Tetraethylthiopyrophosphate	Thiodiphosphoric acid, tetraethyl ester . . . . .	03689-24-5	F109
Tetraethyl lead . . . . .	Plumbane, tetraethyl- . . . . .	00078-00-2	F110
Tetraethyl pyrophosphate	Diphosphoric acid, tetraethyl ester . . . . .	00107-49-3	F111
Tetranitromethane . . . . .	Methane, tetranitro- . . . . .	00509-14-8	F112
Thallium . . . . .	Same . . . . .	07440-28-0	. . . . .
Thallium compounds, N.O.S. <sup>1</sup>	. . . . .	. . . . .	. . . . .
Thallic oxide . . . . .	Thallium oxide Tl <sub>2</sub> O <sub>3</sub> . . . . .	01314-32-5	F113
Thallium(I) acetate . . . . .	Acetic acid, thallium(1+) salt . . . . .	00563-68-8	U214
Thallium(I) carbonate . . . . .	Carbonic acid, dithallium(1+) salt . . . . .	06593-73-9	U215
Thallium(I) chloride . . . . .	Thallium chloride TlCl . . . . .	07791-12-0	U216
Thallium(I) nitrate . . . . .	Nitric acid, thallium(1+) salt . . . . .	10102-45-1	U217
Thallium selenite . . . . .	Selenious acid, dithallium(1+) salt . . . . .	12039-52-0	F114
Thallium(I) sulfate . . . . .	Sulfuric acid, dithallium(1+) salt . . . . .	07446-18-6	F115
Thioacetamide . . . . .	Ethanethioamide . . . . .	00062-55-5	U218
Thiofanox . . . . .	2-Butanone, 3,3-dimethyl-1-(methylthio)-, 0-[(methylamino)carbonyl] oxime . . . . .	39196-18-4	P045
Thiomethanol . . . . .	Methanethiol . . . . .	00074-93-1	U153
Thiophenol . . . . .	Benzenethiol . . . . .	00108-98-5	P014
Thiosemicarbazide . . . . .	Hydrazinecarbothioamide . . . . .	00079-19-6	F116
Thiourea . . . . .	Same . . . . .	00062-56-6	U219
Thiram . . . . .	Thioperoxydicarbonic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> S <sub>2</sub> , tetramethyl- . . . . .	00137-26-8	U244
Toluene . . . . .	Benzene, methyl- . . . . .	00108-88-3	U220
Toluenediamine . . . . .	Benzenediamine, ar-methyl- . . . . .	25376-45-8	U221
Toluene-2,4-diamine . . . . .	1,3-Benzenediamine, 4-methyl- . . . . .	00095-80-7	. . . . .
Toluene-2,6-diamine . . . . .	1,3-Benzenediamine, 2-methyl- . . . . .	00823-40-5	. . . . .
Toluene-3,4-diamine . . . . .	1,2-Benzenediamine, 4-methyl- . . . . .	00496-72-0	. . . . .
Toluene diisocyanate . . . . .	Benzene, 1,3-diisocyanatomethyl- . . . . .	26471-62-5	U223
o-Toluidine . . . . .	Benzenamine, 2-methyl- . . . . .	00095-53-4	U328
o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride . . . . .	00636-21-5	U222
p-Toluidine . . . . .	Benzenamine, 4-methyl- . . . . .	00106-49-0	U353
Toxaphene . . . . .	Same . . . . .	08001-35-2	F123
1,2,4-Trichlorobenzene . . . . .	Benzene, 1,2,4-trichloro- . . . . .	00120-82-1	. . . . .
1,1,2-Trichloroethane . . . . .	Ethane, 1,1,2-trichloro- . . . . .	00079-00-5	U227
Trichloroethylene . . . . .	Ethene, trichloro- . . . . .	00079-01-6	U228
Trichloromethanethiol . . . . .	Methanethiol, trichloro- . . . . .	00075-70-7	F118
Trichloromonofluoromethane	Methane, trichlorofluoro- . . . . .	00075-69-4	U121
2,4,5-Trichlorophenol . . . . .	Phenol, 2,4,5-trichloro- . . . . .	00095-95-4	See F027
2,4,6-Trichlorophenol . . . . .	Phenol, 2,4,6-trichloro- . . . . .	00088-06-2	See F027
2,4,5-T . . . . .	Acetic acid, (2,4,5-trichlorophenoxy)- . . . . .	00093-76-5	See F027
Trichloropropane, N.O.S. <sup>1</sup>	. . . . .	25735-29-9	. . . . .

1,2,3-Trichloropropane . . . . .	Propane, 1,2,3-trichloro- . . . . .	00096-18-4 . . . . .	
O,O,O-Triethyl phosphorothioate . . . . .	Phosphorothioic acid, O,O,O-triethyl ester . . . . .	00126-68-1 . . . . .	
1,3,5-Trinitrobenzene . . . . .	Benzene, 1,3,5-trinitro- . . . . .	00099-35-4 . . . . .	U234
Tris(1-aziridinyl)phosphine sulfide . . . . .	Aziridine, 1,1',1''-phosphinothioylidynetris- . . . . .	00052-24-4 . . . . .	
Tris(2,3-dibromopropyl) phosphate . . . . .	1-Propanol, 2,3-dibromo-, phosphate (3:1) . . . . .	00126-72-7 . . . . .	U235
Trypan blue . . . . .	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]- bis[5-amino-4-hydroxy-, tetrasodium salt. . . . .	00072-57-1 . . . . .	U236
Uracil mustard . . . . .	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]- . . . . .	00066-75-1 . . . . .	U237
Vanadium pentoxide . . . . .	Vanadium oxide V <sub>2</sub> O <sub>5</sub> . . . . .	01314-62-1 . . . . .	F120
Vinyl chloride . . . . .	Ethene, chloro- . . . . .	00075-01-4 . . . . .	U043
Warfarin . . . . .	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations less than 0.3% . . . . .	00081-81-2 . . . . .	U248
Warfarin . . . . .	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations greater than 0.3% . . . . .	00081-81-2 . . . . .	P001
Warfarin salts, when present at concentrations less than 0.3% . . . . .	. . . . .	. . . . .	U248
Warfarin salts, when present at concentrations greater than 0.3% . . . . .	. . . . .	. . . . .	P001
Zinc cyanide . . . . .	Zinc cyanide Zn(CN) <sub>2</sub> . . . . .	00557-21-1 . . . . .	F121
Zinc phosphide . . . . .	Zinc phosphide Zn <sub>3</sub> P <sub>2</sub> , when present at concentrations greater than 10% . . . . .	01314-84-7 . . . . .	F122
Zinc phosphide . . . . .	Zinc phosphide Zn <sub>3</sub> P <sub>2</sub> , when present at concentrations of 10% or less . . . . .	01314-84-7 . . . . .	U249

<sup>1</sup> The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

SECTION 62. NR 605 Appendix V is repealed.

SECTION 63. NR 610.02(2) is amended to read:

NR 610.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 64. NR 610.02(3) is repealed.

SECTION 65. NR 610.02(4) is renumbered (3) and amended to read:

NR 610.02(3) A combination of wastes described in subs. (1) ~~to (3) and (2)~~.

SECTION 66. NR 610.06(2) is amended to read:

NR 610.06(2) Hazardous waste produced by on-site treatment including reclamation, if ~~that~~ the hazardous waste receiving treatment was counted initially.

SECTION 67. NR 610.07(3) to (7) are created to read:

NR 610.07(3) STORAGE IN CONTAINERS OR TANKS. If the waste is placed in containers or tanks, the very small quantity generator shall meet all of the following requirements:

- (a) All containers and tanks shall be leak proof and in good overall condition.
- (b) If the container or tank begins to leak, the contents shall be removed and placed in a leak proof container or tank immediately. All spilled material shall be cleaned up and properly managed.
- (c) Containers holding hazardous waste shall be kept closed except when it is necessary to add or remove waste.
- (d) The container or tank shall be made or lined with materials which will not react with or be incompatible with the hazardous waste to be stored.
- (e) Incompatible wastes or incompatible wastes and materials may not be placed in the same container or tank.
- (f) The very small quantity generator shall mark each container or tank with the words "HAZARDOUS WASTE" or other words that identify the contents of the containers as hazardous waste.

(4) MIXTURES OF HAZARDOUS WASTE AND USED OIL. If a very small quantity generator mixes hazardous waste which is hazardous waste solely because it exhibits the characteristic of ignitability, or is listed hazardous waste solely because of the ignitability characteristic, with used oil, the resultant mixture is subject to ch. NR 590 if the mixture is burned for energy recovery pursuant to s. NR 590.14(2).

(5) STABILIZATION WITH ABSORBENT MATERIAL. A very small quantity generator who combines absorbent material with hazardous waste generated on-site in a container for the purpose of eliminating free liquids without a license for hazardous waste treatment shall comply with the requirements of this subsection.

(a) The absorbent material shall be added when the waste is first placed in the container.

(b) All containers shall be leak proof and in good overall condition.

(c) If the container begins to leak, the contents shall be removed and placed in a leak proof container immediately. All spill material shall be cleaned up and properly managed.

(d) The container shall be made or lined with materials which will not react with or be incompatible with the hazardous waste to be accumulated.

(e) The addition of absorbent material shall be performed to prevent the waste from spilling. If spills occur, the spilled waste shall be contained, collected and properly managed.

(f) Incompatible wastes may not be stabilized in this manner.

(g) Stabilization of ignitable or reactive waste shall be conducted so that the mixture does not:

1. Generate extreme heat or pressure, fire or explosion, or violent reaction,

2. Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment,

3. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions,

4. Damage the structural integrity of the device or facility containing the waste, or

5. Through other like means threaten human health or the environment.

(h) The very small quantity generator shall manage any treated hazardous waste in accordance with the requirements of chs. NR 600 to 685.

(6) INFORMATION ON HAZARDOUS CHARACTERISTICS. A generator shall inform the owner or operator of a storage, treatment or disposal facility of the known hazardous characteristics of the waste prior to offering the hazardous waste to a transporter for delivery to the storage, treatment or disposal facility to enable the owner or operator of the storage, treatment or disposal facility to comply with the requirements of chs. NR 600 to 685 or

with the conditions of the license issued under the provisions of ch. NR 680.

(7) TRANSPORTATION REQUIREMENTS. Except as provided in s. NR 620.04, very small quantity generators may offer hazardous waste for transportation only to a person who has obtained a transportation service license from the department in accordance with ch. NR 620.

SECTION 69. NR 610.08(1)(e) to (v) are renumbered (1)(g) to (x) and NR 610.08(intro.) and (1)(j), (k)(intro.), (l), (p)11.b. and (w)3.d., as renumbered, are amended to read:

NR 610.08(intro.) SMALL QUANTITY GENERATORS. Any person who generates in a calendar month a total of 100 kilograms (220 pounds) but less than 1,000 kilograms (2,205 pounds) of hazardous waste and does not accumulate at any time quantities of hazardous waste greater than 6000 kilograms (13,230 pounds) and who accumulates hazardous waste on-site in containers, in or tanks or on drip pads without a storage license shall comply with all the requirements contained in sub. (1). Additional requirements applicable to small quantity generators are also contained in subs. (2) to (5).

(1)(j) Packaging. Before transporting or offering hazardous waste for transportation off-site, small quantity generators shall package the hazardous waste to be shipped in accordance with DOT regulations on packaging in 49 CFR Parts 173, 178 and 179, October 1, ~~1990~~ 1993.

(k)(intro.) Labeling and marking. Before transporting hazardous waste or offering hazardous waste for transportation off-site, small quantity generators shall mark and label each package in accordance with applicable DOT regulations on hazardous materials in 49 CFR Part 172, October 1, ~~1990~~ 1993.

(l) Placarding. Before transporting hazardous waste or offering hazardous waste for transportation offsite, a small quantity generator shall placard or offer the initial transporter the appropriate placards required by DOT regulations for hazardous materials in 49 CFR Part 172, Subpart F, October 1, ~~1990~~ 1993.

Note: The publications containing the CFR references may be obtained from:

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(202) 783-3238

(p)11.b. Produce uncontrolled toxic mists, fumes, dusts or ~~gasses~~ gases in sufficient quantities to threaten human health or the environment;

(w)3.d. Telephone the division of emergency government and comply with the requirements of s. 144.76, Stats., ch. NR 158 and the emergency planning and community right-to-know act of 1986, 42 USC ss. 11001 et seq., and if the discharge of hazardous waste is from an underground storage tank system, the reporting requirements of ch. NR 705+ ;

Note: The division of emergency government's 24-hour toll-free number is ~~(608) 266-3232~~. ~~Collect calls are accepted~~ 1-800-943-0003. In addition, 40 CFR 302, July 1, ~~1990~~ 1993 may require the small quantity generator to notify the national response center of certain releases.

Note: The publications containing the CFR references may be obtained from:

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~~Washington, D.C. 20402~~  
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SECTION 70. NR 610.08(1)(e), (f) and (x) are created to read:

NR 610.08(1)(e) Waste minimization certification. Small quantity generators in signing their hazardous waste manifest required by par. (d) shall certify that they have made a good faith effort to minimize their waste generation and select the best waste management method that is available to them and that they can afford.

(f) Environmental repair fee. Small quantity generators shall pay an environmental repair fee as specified in s. NR 685.09(2)(b).

(x) Drip pads. If the waste is allowed to accumulate on a drip pad, the small quantity generator shall comply with the drip pad standards in s. NR 656.07 and maintain the following records:

1. A description of procedures that will be followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days; and

2. Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal.

SECTION 71. NR 610.08(2)(a)7. is amended to read:

NR 610.08(2)(a)7. The generator shall mark all containers with the words "HAZARDOUS WASTE" ~~and~~ or other words that identify the contents of the containers.

SECTION 72. NR 610.08(2)(a)8. is repealed and recreated to read:

NR 610.08(2)(a)8. A generator who accumulates either hazardous waste or acutely hazardous wastes listed in s. NR 605.09 (2) (a), table II or (b), table IV in excess of the amounts allowed under this paragraph at or near the point of generation shall immediately mark each container holding this excess accumulation with the date the excess amount began accumulating, and with respect to that amount of excess waste, comply within 3 days with all other provisions of sub. (1)(n) or other applicable provisions of chs. NR 600 to 685. During the 3-day period, the generator shall continue to comply with subs. 1. to 7.

SECTION 73. NR 610.08(6) and (7) are created to read:

NR 610.08(6) INFORMATION ON HAZARDOUS CHARACTERISTICS. A generator shall inform the owner or operator of a storage, treatment or disposal facility of the known hazardous characteristics of the waste prior to offering the hazardous waste to a transporter for delivery to the storage, treatment or disposal facility to enable the owner or operator of the storage, treatment or disposal facility to comply with the requirements of chs. NR 600 to 685 or with the conditions of the license issued under the provisions of ch. NR 680.

(7) Except as provided in s. NR 620.04, small quantity generators may offer hazardous waste for transportation only to a person who has obtained a transportation service license from the department in accordance with ch. NR 620.

SECTION 74. NR 615.02(2) is amended to read:

NR 615.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats.; or

SECTION 75. NR 615.02(3) is repealed.

SECTION 76. NR 615.02(4) is renumbered (3) and amended to read:

NR 615.02(3) A combination of wastes described in subs. (1) ~~to (3) and (2).~~

SECTION 77. NR 615.05(4)(a)4. to (4)(a)9. are renumbered NR 615.05(4)(a)5. to (4)(a)10.

SECTION 78. NR 615.05(4)(a)4. and 11. are created to read:

NR 615.05(4)(a)4. On drip pads and the generator complies with ch. NR 656 and maintains the following records at the facility:

a. A description of procedures that will be followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days; and

b. Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal.

11. The generator complies with the requirements for owners or operators in ch. NR 630 and ss. NR 675.07(1)(d) and 680.22.

SECTION 79. NR 615.05(4)(c)(intro.) and 6. are amended to read:

NR 615.05(4)(c) Satellite accumulation. (intro.) A generator without a storage license may accumulate ~~in containers up to 55 gallons of hazardous waste or up to one quart of acutely hazardous waste listed in s. NR 605.09 (2) (a), table II, or s. NR 605.09 (3) (b), table IV, as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste listed in s. NR 605.09 (2) (a), table II or (b), table III, or identified in s. NR 605.09 (3) (b), table IV in containers at or near any point of generation under the control of the generator of the waste without complying with par. (a) if all of the following conditions are met where wastes initially accumulate if:~~

6. A generator who accumulates either hazardous waste or acutely hazardous wastes listed in s. NR 605.09(2)(a), table II or (b), table IV in excess of the amounts allowed under this paragraph at or near the point of generation shall immediately mark each container holding this excess accumulation with the date the excess amount began accumulating, and with respect to

that amount of excess waste, comply within 3 days with all other provisions of par. (a) or other applicable provisions of chs. NR 600 to 685. During the 3-day period, the generator shall continue to comply with subds. 1. to 5. ~~The generator shall also mark each container holding this excess accumulation with the date the excess amount began accumulating.~~

SECTION 80. NR 615.05(5) and (7)(b) are repealed.

SECTION 81. NR 615.05(6) and (7) are renumbered (5) and (6) and (6)(b), (c) and (d), as renumbered, are amended to read:

NR 615.05(6)(b) A generator who accumulates hazardous waste on-site in containers or tanks for 90 days or less without a storage license and who does not meet the requirements of sub. (4) ~~or (5)~~ is an operator of a hazardous waste storage facility and is subject to the storage facility requirements in ch. NR 630 and the licensing requirements for storage facilities in ch. NR 680.

(c) A generator may combine absorbent material with a waste generated on-site without a treatment license if the generator meets the requirements of sub. ~~(6)~~ (5).

(d) A generator who combines absorbent material with a waste generated on site without a treatment license and who does not meet the requirements of sub. ~~(6)~~ (5) is an operator of a hazardous waste treatment facility and is subject to the treatment facility requirements in ch. NR 630 and the licensing requirements for treatment facilities in ch. NR 680.

SECTION 82. NR 615.08(1)(Note), (8)(f) and (k) and (12)(intro) are amended to read:

NR 615.08(1)(Note) ~~The Wisconsin uniform manifest form may be obtained from the department of natural resources district offices at no charge. The department shall not provide the Wisconsin uniform manifest form for use by generators for shipments of only non-hazardous solid waste, except for the shipment of PCBs. The uniform manifest form should not be used for shipments of only non-hazardous solid waste, except for PCBs.~~

(8)(f) The U.S. DOT description of the waste including the proper shipping name, hazard class and identification number required by 49 CFR 172.101, 172.102, 172.202 and 172.203, October 1, ~~1990~~ 1993.

Note: The publication containing the CFR references may be obtained from:

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(k) Certification that the uniform manifest form is accurately filled out, that the material is properly described, packaged, marked, labeled and in proper condition to be transported or has been received and accepted in accordance with chs. NR 600 to 685 and the generator has complied with the waste minimization certification requirements of ~~42 USC 6922 (b)~~ s. NR 615.09(1).

(12) (intro.) For ~~small~~ rail shipments of hazardous waste within the United States that originate at the site of generation, the generator shall send at least 3 copies of the manifest dated and signed in accordance with this section to:

SECTION 83. NR 615.08(15) is created to read:

NR 615.08(15) For shipments of hazardous waste to a designated facility in an authorized state which has not yet obtained authorization to regulate that particular waste as hazardous, the generator shall assure that the designated facility agrees to sign and return the manifest to the generator, and that any out-of-state transporter signs and forwards the manifest to the designated facility.

Note: See s. NR 620.07(8) and (9) for special provisions for rail or water (bulk shipment) transporters.

SECTION 84. NR 615.09 is created to read:

NR 615.09 WASTE MINIMIZATION. (1) HAZARDOUS WASTE MINIMIZATION CERTIFICATION. In signing a manifest in accordance with s. NR 615.08(8)(k) the generator, unless exempted under s. NR 610.07, shall certify that:

(a) The generator of the hazardous waste has a program in place to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(b) The proposed method of treatment, storage or disposal is that practicable method currently available to the generator which minimizes the present and future threat to human health and the environment.

Note: EPA Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program 58 FR 31114, May 28, 1993, states that a generator or TSD should document its program (in writing) and that the program should be signed by the corporate officer who is responsible for ensuring RCRA compliance. While each element may be implemented in different ways depending on the needs and preferences of individual organizations or facilities the general elements that each waste minimization program should include are: A) Top management support; B) Characterization of waste generation and waste management costs; C) Periodic waste minimization assessments; D) A cost allocation system; E) Encourage technology transfer; and F) Program implementation and evaluation.

(2) HAZARDOUS WASTE MINIMIZATION REPORTING. A generator as part of the annual activity report required under s. NR 615.12 or a primary exporter under the reporting requirements of s. NR 615.12 shall provide:

(a) A description of the effort undertaken during the calendar year to reduce the volume and toxicity of hazardous waste generated; and

(b) A description of the changes in volume and toxicity of hazardous waste actually achieved during the calendar year in comparison to previous years to the extent information is available for the years prior to 1984.

SECTION 85. NR 615.09 is renumbered NR 615.10 and (1), (2)(intro.), and (3), as renumbered, are amended to read:

NR 615.10(1) PACKAGING. Before transporting hazardous waste or offering hazardous waste for transportation, every generator shall package the hazardous waste to be shipped in accordance with U. S. DOT regulations on packaging in 49 CFR Parts 173, 178 and 179, October 1, ~~1990~~ 1993.

(2) LABELING AND MARKING. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator shall label and mark each package in accordance with applicable U. S. DOT regulations on hazardous materials in 49 CFR Part 172, October 1, ~~1990~~ 1993.

(3) PLACARDING. Before transporting hazardous waste, or offering hazardous waste for transportation off-site, a generator

shall offer the initial transporter the appropriate placards required by U. S. DOT regulations for hazardous materials in 49 CFR Part 172, Subpart F, October 1, ~~1990~~ 1993.

Note: The publications containing the CFR references may be obtained from:

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Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 86. NR 615.11(1)(a)6. is repealed and recreated to read:

NR 615.11(1)(a)6. A waste minimization report as specified in s. NR 615.09(2).

SECTION 87. NR 615.11(1)(a)7. is repealed.

SECTION 88. NR 615.11(1)(a)8. is renumbered 7.

SECTION 89. NR 615.11(4) is created to read:

NR 615.11(4) ENVIRONMENTAL REPAIR FEE. Generators shall pay an environmental repair fee as specified in s. NR 685.09(2)(b).

SECTION 90. NR 615.12(1)(a)1.a. is amended to read:

NR 615.12(1)(a)1.a. A description of the hazardous waste and the hazardous waste number from ss. NR 605.08 and 605.09, U.S. DOT proper shipping name, hazard class and ID number for each hazardous waste as identified in 49 CFR Parts 171 to 177, October 1, ~~1990~~ 1993;

SECTION 91. NR 615.12(1t)(e)(intro.) is amended to read:

NR 615.12(1t)(e)(intro.) Except for hazardous waste produced by exporters of greater than 100 kg but less than 1000 kg in a calendar month, unless provided pursuant to s. NR ~~615.11~~ 615.12 (1) and (2)+, a waste minimization report as specified in s. NR 615.09(2).

SECTION 92. NR 615.12(1t)(e)1. and 2. are repealed.

SECTION 93. NR 620.02(2) is amended to read:

NR 620.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 94. NR 620.02(3) is repealed.

SECTION 95. NR 620.02(4) is renumbered (3) and amended to read:

NR 620.02(3) A combination of wastes described in subs. (1) ~~to (3) and (2).~~

SECTION 96. NR 620.07(8)(Note) is amended to read:

NR 620.07(8)Note: Bulk shipment by water vessel is defined in s. NR 600.03~~(20)~~.

SECTION 97. NR 620.10(1)(a)(Note), (b) and (c) are amended to read:

NR 620.10(1)(a)Note: The division of emergency government's ~~24-hour 24-hour toll-free~~ number is ~~(608) 266-3232, collect calls accepted~~ 1-800-943-0003.

(b) Give notice as required by 49 CFR 171.15, October 1, ~~1990~~ 1993, to the national response center at (800) 424-8802.

(c) Report in writing as required by 49 CFR 171.16, October 1, ~~1990~~ 1993, to the director, office of hazardous materials regulations, materials transportation bureau, U. S. DOT, Washington, D.C. 20590.

SECTION 98. NR 620.11(2), (3) and (4) are amended to read:

NR 620.11(2) A transporter may not move a transport vehicle containing hazardous waste unless the hazardous waste is packaged in accordance with the applicable requirements of 49 CFR Part 173, October 1, ~~1990~~ 1993.

(3) A transporter may not transport hazardous waste unless the hazardous waste packages are labeled and marked in accordance with the applicable requirements of 49 CFR Part 172, October 1, ~~1990~~ 1993.



(4) A transporter may not move a transport vehicle containing hazardous waste unless it is placarded in accordance with the applicable requirements of 49 CFR Part 172, October 1, ~~1990~~ 1993.

Note: The publications containing the CFR references may be obtained from:

~~The~~ Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
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Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 99. NR 625.02(2) is amended to read:

NR 625.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 100. NR 625.02(3) is repealed.

SECTION 101. NR 625.02(4) is renumbered (3) and amended to read:

NR 625.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 102. NR 625.04(7) is created to read:

NR 625.04(7) Owners or operators of facilities subject to ch. NR 680 licensing requirements with hazardous waste management units that recycle hazardous waste are subject to the requirements of chs. NR 631 and 632.

SECTION 103. NR 625.06(2) is amended to read:

NR 625.06(2) The preparedness and prevention requirements in s. NR 630.21 and the contingency plan and emergency procedures requirements in ss. ~~NR 630.21~~ and s. NR 630.22. These requirements do not apply to any generator who recycles only waste generated on-site and who generates and accumulates hazardous waste in quantities less than those specified in ch. NR 610.

SECTION 104. NR 625.07(1) is amended to read:

NR 625.07(1) GENERAL. The requirements of this section apply to owners and operators of facilities that burn hazardous waste in boilers or industrial furnaces not regulated under ch. NR 665 and that are regulated under 40 CFR Part 266 Subpart H, except as provided in sub. (2), for energy recovery; and to those who produce, process, blend or distribute hazardous waste fuel for burning. This section does not apply to gas recovered from hazardous waste management activities when the gas is burned for energy recovery.

SECTION 105. NR 625.07(2)(a) is repealed.

SECTION 106. NR 625.07(2)(b) and (c) are renumbered (2)(a) and (b).

SECTION 107. NR 625.07(7)(c)2. and 11.b. are amended to read:

NR 625.07(7)(b)2. The preparedness and prevention requirements in s. NR 630.21 and the contingency plan and emergency procedures requirements in ss. NR 630.21 and s. NR 630.22.

11.b. The fuel will be burned only in a boiler or industrial furnace identified in s. NR 600.03~~(19)~~ and ~~(105)~~, and in sub. (3)(b).

SECTION 108. NR 625.08(2)(b) and (j)3. are amended to read:

NR 625.08(2)(b) The preparedness and prevention requirements in s. NR 630.21 and the contingency plan and emergency procedures requirements in ss. NR 630.21 and s. NR 630.22.

(j)3. The applicable storage requirements in ~~ch.~~ chs. NR ~~680~~ 640, 645 and 655.

SECTION 109. NR 630.02(2) is amended to read:

NR 630.02(2) ~~metallie~~ Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 110. NR 630.02(3) is repealed.

SECTION 111. NR 630.02(4) is renumbered (3) and is amended to read:

NR 630.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 112. NR 630.04(2)(intro.) and (g) and (4) are amended to read:

NR 630.04(2)(intro.) The owner or operator of a POTW which accepts hazardous waste for treatment or recycling, if the owner or operator complies with par. (a) to ~~(f)~~ (g). This exemption does not apply to the treatment, storage or disposal of sludges, residues or other hazardous waste produced during the treatment process when the material is removed from the POTW treatment units or when the treatment process ceases. To be exempt under this subsection, the owner or operator shall:

(g) If the WPDES permit was issued after November 8, 1984, the POTW shall comply with the corrective action requirements of s. NR ~~635.15~~ 635.17.

(4) A generator accumulating waste on-site in containers, in or above ground tanks, or on drip pads in compliance with s. NR 615.05(4), except to the extent that the requirements of s. NR 600.04 and chs. NR 630 to 685 are made applicable in s. NR 615.05 (4).

SECTION 113. NR 630.04(12) is repealed.

SECTION 114. NR 630.04(13) to (15) are renumbered (12) to (14) and (14), as renumbered, is amended to read:

NR 630.04(14) The owner or operator of a solid waste disposal facility licensed under chs. NR 500 to 522, if the only hazardous waste the facility stores is excluded from regulation under s. NR 600.04 and chs. NR 630 to 685 by s. NR 610.05 (1) and the facility has been approved under s. NR ~~506.15~~ 506.15(2) to accept small quantities of hazardous waste.

SECTION 115. NR 630.04(15) is created to read:

NR 630.04(15) A person who treats used oil filters generated on-site, or received from household do-it-yourself used oil filter generators, to meet the exemption from hazardous waste regulation in s. NR 605.05(1)(v).

SECTION 116. NR 630.05(2) is amended to read:

NR 630.05(2) SURFACE WATER, HUMAN HEALTH AND ENVIRONMENTAL STANDARD. A hazardous waste facility may not be located, designed, constructed or operated in a manner allowing any surface or subsurface discharge from the facility into navigable waters to cause a violation of water quality standards established in chs. NR 102 to ~~104~~ 105, or a violation of s. 144.76, Stats., nor in a manner that the department after investigation or review finds that there is a reasonable probability that the management of hazardous waste within the ~~an~~ area will have a detrimental effect on surface water quality.

SECTION 117. NR 630.13(1)(g)1. and 2. are amended to read:

NR 630.13(1)(g)1. The procedures which will be used to determine the identity of each shipment of waste managed at the facility;~~and~~

2. The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling; ~~and~~

SECTION 118. NR 630.13(1)(g)3. is created to read:

NR 630.13(1)(g)3. The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

SECTION 119. NR 630.15(2)(d) is amended to read:

NR 630.15(2)(d) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, shall be inspected daily when in use. At a minimum, the inspection schedule shall include the items and frequencies called for in chs. NR 630, 640, 645 ~~and 655~~ and ss. NR 660.13, 665.09 and 670.11(2)(d), 655, 660, 665 and 670, where inspection requirements are specified.

SECTION 120. NR 630.17(2)(e)(Note) is repealed.

SECTION 121. NR 630.20(8) is amended to read:

NR 630.20(8) POTENTIAL FOR DISCHARGE. Under s. NR 600.07, an owner or operator of a storage or treatment facility may be required by the department to comply with all or part of the requirements of s. NR 600.04 and chs. NR 630 to 685, including the groundwater and leachate monitoring requirements of ch. NR 635, if the department determines that there is a potential for discharge of the hazardous waste or hazardous constituents to the environment.

SECTION 122. NR 630.22(2)(a)2. and (b) are amended to read:

NR 630.22(2)(a)2. Telephone the division of emergency government and comply with the requirements of s. 144.76, Stats., and ch. NR 158, and if the discharge of hazardous waste is from an underground storage tank system, the reporting requirements of ch. NR 705.

Note: The division of emergency government's 24-hour toll-free number is ~~(608) 266-3232, collect calls accepted~~ 1-800-943-0003.

(b) The owner or operator shall notify the department, ~~the Regional Administrator~~ and the appropriate local authorities that the facility is in compliance with par. (a) 9. before operations are resumed in the affected areas of the facility.

SECTION 123. NR 630.30(1) and (4)(f) are amended to read:

NR 630.30(1) The operator of a hazardous waste facility ~~accepting out-of-state wastes~~ is responsible for all the requirements of this chapter, including requiring the generator to initiate a Wisconsin manifest.

(4)(f) Send a copy of each manifest, which contains all the information required in s. NR 615.08 (8) or (9), as appropriate, to the department within 5 working days. A fee of \$2 shall be charged for each manifest submitted. The department will bill each facility for accumulated manifest review fees.

SECTION 124. NR 630.31(1)(h) and (j) are amended to read:

NR 630.31(1)(h) Monitoring, testing or analytical data, and corrective action where required by ss. NR 640.06, 640.13(3), 655.08, 660.14, and 665.09(10), ~~640.06 and 640.13(3)~~ and chs. NR 635 and 645.

~~(j) A waste minimization certification statement signed by the owner or operator no less often than annually that a program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the owner or operator to be economically practicable; and the proposed method of treatment, storage or disposal is the practicable method currently available to the owner or operator which minimizes the present and future threat to human health and the environment in accordance with s. NR 630.32(1);~~

SECTION 125. NR 630.32 is created to read:

NR 630.32 WASTE MINIMIZATION. (1) WASTE MINIMIZATION CERTIFICATION. A waste minimization certification signed by the owner or operator no less often than annually shall be maintained in the operating record of the facility in accordance with s. NR 630.31. This certification shall state that a program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the owner or operator to be economically practicable. This certification shall further state that the proposed method of treatment, storage or disposal is the practicable method currently available to the owner or operator which minimizes the present and future threat to human health and the environment.

Note: EPA Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program, 58 FR 31114, May 28, 1993, states that a generator or TSD should document its program, in writing, and that the program should be signed by the corporate officer who is responsible for ensuring RCRA compliance. While each element may be implemented in different ways depending on the needs and preferences of individual organization or facilities the general elements that each waste minimization program should include are: A) Top management support; B) Characterization of waste generation and waste management costs; C) Periodic waste minimization assessments; D) A cost allocation system; E) Encourage technology transfer; and F) Program implementation and evaluation.

(2) WASTE MINIMIZATION REPORTING. Generators who treat, store or dispose of hazardous waste on-site shall include, as part of their annual activity report required under s. NR 630.40(1):

(a) A description of the effort undertaken during the calendar year to reduce the volume and toxicity of hazardous waste generated.

(b) A description of the changes in volume and toxicity of hazardous waste actually achieved during the calendar year in comparison to previous years to the extent information is available for the years prior to 1984.

SECTION 126. NR 630.40(1)(g) is repealed and recreated to read:

NR 630.40(1)(g) A waste minimization report as specified in s. NR 630.32(2);

SECTION 127. NR 630.40(1)(h) is repealed.

SECTION 128. NR 630.40(1)(i) is renumbered NR 630.41(1)(h).

SECTION 129. Chapter NR 631 is created to read:

#### CHAPTER NR 631

##### AIR EMISSION STANDARDS FOR PROCESS VENTS

NR 631.01 Purpose  
NR 631.02 Applicability  
NR 631.03 Definitions  
NR 631.05 General  
NR 631.06 Standards  
NR 631.07 Test Methods and Procedures  
NR 631.08 Recordkeeping Requirements  
NR 631.09 Reporting Requirements

NR 631.01 PURPOSE. The purpose of this chapter is to specify general requirements for process vents for distillation, fractionation, thin-film evaporation, solvent extraction, air or stream stripping operations that manage hazardous wastes with organic concentrations of at least 10-ppmw.

NR 631.02 APPLICABILITY. (1) This chapter applies to owners and operators of facilities that treat, store, or dispose of hazardous wastes.

(2) Except for s. NR 631.07(4) and (5), this chapter applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10-ppmw, if these operations are conducted in:

(a) Units that are subject to the licensing requirements of ch. NR 680, or

(b) Hazardous waste recycling units that are located on hazardous waste management facilities otherwise subject to the licensing requirements of ch. NR 680.

(3) If the owner or operator of process vents subject to the requirements of ss. NR 631.06 to 631.09 has received a license from the department under chs. NR 600 to 685 prior to December 21, 1990, the requirements of ss. NR 631.06 to 631.09 shall be incorporated into the license when it is reviewed under s. NR 680.45(6) to (8).

Note: The requirements of ss. NR 631.06 to 631.09 apply to process vents on hazardous waste recycling units which were exempt under s. NR 625.04(4) prior to the adoption of this chapter. Other exemptions under ss. NR 605.05, 610.07(1), 610.08(1), 615.05(4) and 630.04 are not affected by these requirements.

NR 631.03 DEFINITIONS. As used in this chapter, all terms shall have the meaning given them in s. NR 600.03. In addition, the following definitions apply to this chapter and to ch. NR 632:

(1) "Bottoms receiver" means a container or tank used to receive and collect the heavier bottoms fractions of the distillation feed stream that remain in the liquid phase.

(2) "Condenser" means a heat-transfer device that reduces a thermodynamic fluid from its vapor phase to its liquid phase.

(3) "Connector" means flanged, screwed, welded or other joined fittings used to connect 2 pipelines or a pipeline and a piece of equipment. For the purposes of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

(4) "Control device" means an enclosed combustion device, vapor recovery system or flare. Any device the primary function of which is the recovery or capture of solvents or other organics for use, reuse or sale, such as a primary condenser on a solvent recovery unit, is not a control device.

(5) "Control device shutdown" means the cessation of operation of a control device for any purpose.

(6) "Distillate receiver" means a container or tank used to receive and collect liquid material condensed from the overhead



condenser of a distillation unit and from which the condensed liquid is pumped to larger storage tanks or other process units.

(7) "Equipment" means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange, and any control devices or systems required by chs. NR 631 and 632.

(8) "First attempt at repair" means to take rapid action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

(9) "Hazardous waste management unit shutdown" means a work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit. An unscheduled work practice or operational procedure that stops operation of a hazardous waste management unit or part of a hazardous waste management unit for less than 24 hours is not a hazardous waste management unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping operation are not hazardous waste management unit shutdowns.

(10) "Hot well" means a container for collecting condensate as in a steam condenser serving a vacuum-jet or steam-jet ejector.

(11) "In gas/vapor service" means that the piece of equipment contains or contacts a hazardous waste stream that is in the gaseous state at operating conditions.

(12) "In heavy liquid service" means that the piece of equipment is not in gas/vapor service or in light liquid service.

(13) "In light liquid service" means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the components in the stream is greater than 0.3 kilopascals (kPa) at 20°C, the total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20°C is equal to or greater than 20 % by weight, and the fluid is a liquid at operating conditions.

(14) "Malfunction" means any sudden failure of a control device or a hazardous waste management unit or failure of a hazardous waste management unit to operate in a normal or usual manner, so that organic emissions are increased.

(15) "Open-ended valve or line" means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

(16) "PPMV" means parts per million by volume.

(17) "PPMW" means parts per million by weight.

(18) "Process heater" means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

(19) "Process vent" means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank, such as a distillate receiver, condenser, bottoms receiver, surge control tank, separator tank or hot well, associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.

(20) "Repaired" means that equipment is adjusted, or otherwise altered, to eliminate a leak.

(21) "Sensor" means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH or liquid level.

(22) "Separator tank" means a device used for separation of 2 immiscible liquids.

(23) "Startup" means the setting in operation of a hazardous waste management unit or control device for any purpose.

(24) "Vapor incinerator" means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

(25) "Vented" means discharged through an opening, typically an open-ended pipe or stack, allowing the passage of a stream of liquids, gases or fumes into the atmosphere. The passage of liquids, gases or fumes is caused by mechanical means such as compressors or vacuum-producing systems or by process-related means such as evaporation produced by heating and not caused by working losses, such as tank loading and unloading, or by natural means such as diurnal temperature changes.

(26) "Zero air" means a hydrocarbon concentration of less than 10 ppm.

NR 631.05 GENERAL. Except as otherwise provided in s. NR 631.02, no person may operate a distillation, fractionation, thin-film evaporation, solvent extraction, or air or stream stripping operation managing hazardous wastes with organic concentrations of at least 10 ppmw, unless the person has obtained an operating license, interim license, variance or

waiver from the department, in accordance with the requirements of s. NR 680.09 or ch. NR 680 or operates a legitimate recovery and reclamation unit in compliance with ss. NR 625.04 and 625.06.

NR 631.06 STANDARDS. (1) PROCESS VENTS. (a) The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw shall either:

1. Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or

2. Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

(b) If the owner or operator installs a closed-vent system and control device to comply with the provisions of par. (a), the closed-vent system and control device shall meet the requirements of sub. (2).

(c) Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests shall conform with the requirements of s. NR 631.07(3).

(d) When an owner or operator and the department do not agree on determinations of vent emissions, emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the procedures in s. NR 631.07(3) shall be used to resolve the disagreement.

(2) CLOSED VENT SYSTEMS AND CONTROL DEVICES. (a)1. Owners or operators of closed-vent systems and control devices used to comply with provisions of this chapter shall comply with the provisions of this subsection.

2. The owner or operator of a facility in existence on or before December 21, 1990, who cannot install a closed-vent system and control device to comply with the provisions of this chapter on the date that the facility becomes subject to this chapter shall prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls shall be installed as soon as

possible, but the implementation schedule may allow up to 18 months after the date that the facility becomes subject to this chapter for installation and startup.

3. All units that begin operation after December 21, 1990, shall comply with the rules immediately by having control devices installed and operating on startup of the affected unit.

(b) A control device involving vapor recovery, such as a condenser or adsorber, shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of sub. (1)(a)1. for all affected process vents can be attained at an efficiency less than 95 weight percent.

(c) An enclosed combustion device, such as a vapor incinerator, boiler or process heater, shall be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual concentration of compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(d)1. A flare shall be designed for and operated with no visible emissions as determined by the methods specified in par. (e)1., except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

2. A flare shall be operated with a flame present at all times, as determined by the methods specified in subd. 4.c.

3. A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in par. (e)2.

4.a. A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in par. (e)3., less than 18.3 m/s (60 ft/s), except as provided in subpars. b. and c.

b. A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in par. (e)3., equal to or greater than 18.3

m/s (60 ft/s) but less than 122 m/s (400 ft/s) if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

c. A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in par. (e)3., less than the velocity,  $V_{\max}$ , as determined by the method specified in par. (e)4. and less than 122 m/s (400 ft/s).

5. An air-assisted flare shall be designed and operated with an exit velocity less than the velocity,  $V_{\max}$ , as determined by the method specified in par. (e)5.

6. A flare used to comply with this section shall be steam-assisted, air-assisted or nonassisted.

(e)1. Reference Method 22 in 40 CFR part 60 shall be used to determine the compliance of a flare with the visible emission provisions of this section. The observation period is 2 hours and shall be used according to Method 22.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

The publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

2. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left[ \sum_{i=1}^n C_i H_i \right]$$

where:

$H_T$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at

25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 °C;

$K$  = Constant,  $1.74 \times 10^{-7}$  (1/ppm) (g mol/scm) (MJ/kcal)  
where standard temperature for (g mol/scm) is 20 °C;

$C_i$  = Concentration of sample component  $i$  in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR part 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82; and

Note: The publication containing the CFR reference and the ASTM standard may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

$H_i$  = Net heat of combustion of sample component  $i$ , kcal/9 mol at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 if published values are not available or cannot be calculated.

Note: The publication containing this standard may be obtained from:

American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

3. The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate, in units of standard temperature and pressure, as determined by Reference Methods 2,

2A, 2C, or 2D in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

4. The maximum allowed velocity in m/s,  $V_{\max}$ , for a flare complying with par. (d)4.c. shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max}) = (H_T + 28.8) / 31.7$$

where:

28.8 = Constant,

31.7 = Constant,

$H_T$  = The net heating value as determined in paragraph (e) (2).

5. The maximum allowed velocity in m/s,  $V_{\max}$ , for an air-assisted flare shall be determined by the following equation:

$$V_{\max} = 8.706 + 0.7084 (H_T)$$

where:

8.706 = Constant,

0.7084 = Constant,

$H_T$  = The net heating value as determined in par. (e)2.

(f) The owner or operator shall monitor and inspect each control device required to comply with this section to ensure proper operation and maintenance of the control device by implementing the following requirements:

1. Install, calibrate, maintain and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet but before the point at which the vent streams are combined.

2. Install, calibrate, maintain and operate according to the manufacturer's specifications a device to continuously monitor control device operation as follows:

a. For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.

b. For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at 2 locations and have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

c. For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

d. For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , whichever is greater. The temperature sensor shall be



installed at a location in the furnace downstream of the combustion zone.

e. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameters that indicates good combustion operating practices are being used.

f. For a condenser, either a monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser, or a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at 2 locations and have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , whichever is greater. One temperature sensor shall be installed at a location in the exhaust vent stream from the condenser, and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser.

g. For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either a monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, or a monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

3. Inspect the readings from each monitoring device required by par. (f)1. and 2. at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this section.

(g) An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of s. NR 631.08(2)(d)3.f.

(h) An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:

1. Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a

regular schedule, and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20% of the time required to consume the total carbon working capacity established as a requirement of s. NR 631.08(2)(d)3.g., whichever is longer.

2. Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of s. NR 631.08(2)(d)3.g.

(i) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

(j) An owner or operator of an affected facility seeking to comply with the provisions of this chapter by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

(k)1. Closed-vent systems shall be designed for and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background and by visual inspections, as determined by the methods specified as s. NR 631.07(2).

2. Closed-vent systems shall be monitored to determine compliance with this section during the initial leak detection monitoring, which shall be conducted by the date that the facility becomes subject to this section, annually, and at other times as requested by the department.

3. Detectable emissions, as indicated by an instrument reading greater than or equal to 500 ppm and visual inspections, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected.

4. A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(l) Closed-vent systems and control devices used to comply with this section shall be operated at all times when emissions may be vented to them.

NR 631.07 TEST METHODS AND PROCEDURES. (1) Each owner or operator subject to this chapter shall comply with the requirements of this section.

(2) When a closed-vent system is tested for compliance with no detectable emissions, as required in s. NR 631.06(2)(k)1., the test shall comply with the following requirements:

(a) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) The detection instrument shall meet the performance criteria of Reference Method 21.

(c) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(d) Calibration gases shall be:

1. Zero air.

2. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(e) The background level shall be determined as set forth in Reference Method 21.

(f) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(g) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 ppm for determining compliance.

(3) Performance tests to determine compliance with s. NR 631.06(1)(a) and with the total organic compound concentration limit of s. NR 631.06(2)(c) shall comply with the following:

(a) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:

1. Method 2 in 40 CFR part 60 for velocity and volumetric flow rate.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

2. Method 18 in 40 CFR part 60 for organic content.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

3. Each performance test shall consist of 3 separate runs; each run conducted for at least 1 hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.

4. Total organic mass flow rates shall be determined by the following equation:

$$E_h = Q_{sd} \left\{ \sum_{i=1}^n C_i MW_i \right\} [0.0416] [10^{-6}]$$

where:

- $E_h$  = Total organic mass flow rate, kg/h;
- $Q_{sd}$  = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;
- $n$  = Number of organic compounds in the vent gas;
- $C_i$  = Organic concentration in ppm, dry basis, of compound  $i$  in the vent gas, as determined by Method 18;
- $MW_i$  = Molecular weight of organic compound  $i$  in the vent gas, kg/kg-mol;
- 0.0416 = Conversion factor for molar volume, kg-mol/m<sup>3</sup> (@ 293 K and 760 mm Hg);
- $10^{-6}$  = Conversion from ppm, ppm<sup>-1</sup>.

5. The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h) (H)$$

where:

$$E_A = \text{Total organic mass emission rate, kg/y;}$$

$E_h$  = Total organic mass flow rate for the process vent, kg/h;

$H$  = Total annual hours of operations for the affected unit, h.

6. Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates,  $E_h$  as determined in subd. 4. and by summing the annual total organic mass emission rates  $E_A$ , as determined in subd. 5., for all affected process vents at the facility.

(b) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown and malfunction do not constitute representative conditions for the purpose of a performance test.

(c) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for the test methods specified in par. (a).
2. Safe sampling platforms.
3. Safe access to sampling platforms.
4. Utilities for sampling and testing equipment.

(d) For the purpose of making compliance determinations, the time-weighted average of the results of the 3 runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the 3 runs shall be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the department's approval, be determined using the average of the results of the 2 other runs.

(4) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this section, the owner or operator shall

make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following 2 methods:

(a) Direct measurement of the organic concentration of the waste using the following procedures:

1. The owner or operator shall take a minimum of 4 grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

2. For waste generated onsite, the grab samples shall be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples shall be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

3. Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8240 of SW-846.

Note: The publication SW-846 may be obtained from:

National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

4. The arithmetic mean of the results of the analyses of the 4 samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

(b) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. The waste determination shall be documented. Examples of documentation that shall be used to support a determination under this paragraph

include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(5) The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted, annual average total organic concentrations less than 10 ppmw shall be made as follows:

(a) An initial determination shall be made by the later of:

1. The effective date of this chapter [Revisor inserts date], or

2. The date when the waste is first managed in a waste management unit.

(b) Subsequent to the initial determination, a determination shall be made as follows:

1. For continuously generated waste, annually, and

2. Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

(6) When an owner or operator and the department do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the procedures in Method 8240 may be used to resolve the dispute.

NR 631.08 RECORDKEEPING REQUIREMENTS. (1)(a) Each owner or operator subject to the provisions of this chapter shall comply with the recordkeeping requirements of this section.

(b) An owner or operator of more than one hazardous waste management unit subject to the provisions of this section may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(2) Owners and operators shall record the following information in the facility operating record:



(a) For facilities that comply with the provisions of s. NR 631.06(2)(a)2., an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule shall also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule shall be in the facility operating record by the effective date that the facility becomes subject to the provisions of this chapter.

(b) Up-to-date documentation of compliance with the process vent standards in s. NR 631.06(1), including:

1. Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility and the approximate location within the facility of each affected unit, by identifying the hazardous waste management units on a facility plot plan.

2. Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions shall be made using operating parameter values, including temperatures, flow rates or vent stream organic compounds and concentrations, that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. A new waste determination shall be made if the owner or operator takes any action, such as managing a waste of different composition or increasing operating hours of affected waste management units, that would result in an increase in total organic emissions from affected process vents at the facility.

(c) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan shall be prepared. The test plan shall include:

1. A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

2. A detailed engineering description of the closed-vent system and control device including:

- a. Manufacturer's name and model number of control device.
  - b. Type of control device.
  - c. Dimensions of the control device.
  - d. Capacity.
  - e. Construction materials.
3. A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(d) Documentation of compliance with s. NR 631.06(2) shall include the following information:

1. A list of all information references and sources used in preparing the documentation.

2. Records, including the dates, of each compliance test required by s. NR 631.06(2)(k)1.

3. If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" or other engineering texts acceptable to the department that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with subpars. a. to g. may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as follows:

Note: The publication APTI Course 415: Control of Gaseous Emissions, EPA Publication EPA-450/2-81-005, December 1981, may be obtained from:

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

a. For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also

establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

b. For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

c. For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.

d. For a flare, the design analysis shall consider the vent stream composition, constituent concentrations and flow rate. The design analysis shall also consider the requirements specified in s. NR 631.06(2)(d).

e. For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream and design average temperatures of the coolant fluid at the condenser inlet and outlet.

f. For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time and design service life of carbon.

g. For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed and design carbon replacement interval based on

the total carbon working capacity of the control device and source operating schedule.

4. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

5. A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95% or greater unless the total organic concentration limit of s. NR 631.06(1)(a) is achieved at an efficiency less than 95 weight percent or the total organic emission limits of s. NR 631.06(1)(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

6. If performance tests are used to demonstrate compliance, all test results.

(3) Design documentation and monitoring, operating and inspection information for each closed-vent system and control device required to comply with the provisions of this chapter shall be recorded and kept up-to-date in the facility operating record. The information shall include:

(a) Description and date of each modification that is made to the closed-vent system or control device design.

(b) Identification of operating parameter, description of monitoring device and diagram of monitoring sensor location or locations used to comply with s. NR 631.06(2)(f) 1. and 2.

(c) Monitoring, operating and inspection information required by s. NR 631.06(2)(f) to (k).

(d) The date, time and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as follows:

1. For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 second at a minimum temperature of 760°C, period when the combustion temperature is below 760°C.

2. For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 weight percent or

greater, period when the combustion zone temperature is more than 28 °C below the design average combustion zone temperature established as a requirement of sub. (2)(d)3.a.

3. For a catalytic vapor incinerator, the period when:

a. The temperature of the vent stream at the catalyst bed inlet is more than 28 °C below the average temperature of the inlet vent stream established as a requirement of sub. (2)(d)3.b., or

b. The temperature difference across the catalyst bed is less than 80% of the design average temperature difference established as a requirement of sub. (2)(d)3.b.

4. For a boiler or process heater, the period when:

a. The flame zone temperature is more than 28°C below the design average flame zone temperature established as a requirement of sub. (2)(d)3.c., or

b. Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of sub. (2)(d)3.c.

5. For a flare, the period when the pilot flame is not ignited.

6. For a condenser that complies with s. NR 631.06(2)(f)2.f. by measuring concentration levels, the period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20% greater than the design outlet organic compound concentration level established as a requirement of sub. (2)(d)3.e.

7. For a condenser that complies with s. NR 631.06(2)(f)2.f. by monitoring temperature, the period when:

a. The temperature of the exhaust vent stream from the condenser is more than 6 °C above the design average exhaust vent stream temperature established as a requirement of sub. (2)(d)3.e.; or

b. The temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet established as a requirement of sub. (2)(d)3.e.

8. For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with s. NR 631.06(2)(f)2.g. by

measuring concentration levels, the period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20% greater than the design exhaust vent stream organic compound concentration level established as a requirement of sub. (2)(d)3.f.

9. For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with s. NR 631.06(2)(f)2.g. by parameter measurement, the period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of sub. (2)(d)3.e.

(e) An explanation for each period recorded under par. (d) of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

(f) For a carbon adsorption system operated subject to requirements specified in s. NR 631.06(2)(g) or (h)2., the date when existing carbon in the control device is replaced with fresh carbon.

(g) For a carbon adsorption system operated subject to s. NR 631.06(2)(h)1., a log that records:

1. The date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

2. The date when existing carbon in the control device is replaced with fresh carbon.

(h) The date of each control device startup and shutdown.

(4) Records of the monitoring, operating and inspection information required by sub. (3)(c) to (h) need be kept only 3 years.

(5) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system, the department shall specify the appropriate recordkeeping requirements.

(6) Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in s. NR 631.06(1) including supporting documentation as required by s. NR 631.07(4)(b) when application of the knowledge of the nature of the hazardous waste stream or the process by which it

was produced is used, shall be recorded in a log that is kept in the facility operating record.

NR 631.09 REPORTING REQUIREMENTS. (1) A person who is subject to this chapter shall submit a semiannual report to the department by dates specified by the department. The report shall include the following information:

(a) The EPA identification number, name and address of the facility.

(b) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in s. NR 631.08(3)(d) and as indicated by the control device monitoring required by s. NR 631.06(2)(f) and such exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in s. NR 631.06(2)(d)1. and as determined by Method 22 monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.

(2) If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in s. NR 631.08(3)(d) for more than 24 hours or a flare does not operate with visible emissions as defined in s. NR 631.06(2)(d)1., a report to the department is not required.

SECTION 130. Chapter NR 632 is created to read:

Chapter NR 632

AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS

- NR 632.01 Purpose
- NR 632.02 Applicability
- NR 632.03 Definitions
- NR 632.05 General
- NR 632.06 Standards
- NR 632.07 Alternative Standards
- NR 632.08 Test Methods and Procedures
- NR 632.09 Recordkeeping Requirements
- NR 632.10 Reporting Requirements
- NR 632.11 Feasibility and Plan of Operation Report Requirements

NR 632.01 PURPOSE. The purpose of this chapter is to specify general requirements for equipment leaks for distillation, fractionation, thin-film evaporation, solvent extraction, air or steam stripping at facilities that manage hazardous wastes with organic concentrations of at least 10-ppmw.

NR 632.02 APPLICABILITY. (1) This chapter applies to owners and operators of facilities that treat, store or dispose of hazardous wastes.

(2) Except as provided in s. NR 632.09(11), this chapter applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10% by weight that are managed in:

(a) Units that are subject to the licensing requirements of chs. NR 680 and 685, or

(b) Hazardous waste recycling units that are located on hazardous waste management facilities otherwise subject to the licensing requirements of chs. NR 680 and 685.

(3) If the owner or operator of equipment subject to the requirements of ss. NR 632.06(1) to 632.10 has received a license from the department under chs. NR 600 to 685 prior to December 21, 1990, the requirements of ss. NR 632.06(1) to 632.10 shall be incorporated when the license is reviewed under s. NR 680.45(6) to (8).

(4) Each piece of equipment to which this chapter applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

(5) Equipment that is in vacuum service is excluded from the requirements of s. NR 632.06 if it is identified as required in s. NR 632.09(7)(e).

Note: The requirements of ss. NR 632.06 to 632.10 apply to equipment associated with hazardous waste recycling units that were exempt under s. NR 625.04(4) prior to the adoption of this chapter. Other exemptions under ss. NR 605.05, 610.07(1), 610.08(1), 615.05(4) and 630.04 are not affected by these requirements.

NR 632.03 DEFINITIONS. As used in this chapter, all terms shall have the meaning given them in ss. NR 600.03 and 631.03.

NR 632.05 GENERAL. Except as otherwise provided in s. NR 632.02, no person may operate a distillation, fractionation, thin-film evaporation, solvent extraction, or air or stream stripping operation managing hazardous wastes with organic concentrations of at least 10-ppmw, unless the person has obtained an operating license, interim license, variance or waiver from the department, in accordance with s. NR 600.09 or ch. NR 680 or operates a legitimate recovery and reclamation unit in compliance with ss. NR 625.04 and 625.06.



NR 632.06 STANDARDS. (1) PUMPS IN LIGHT LIQUID SERVICE.

(a)1. Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in s. NR 632.08(2), except as provided in pars. (d) to (f).

2. Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)1. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

2. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)1. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in sub. (8).

2. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

Note: An example of a first attempt at repair would include tightening the packing gland.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of par. (a), provided the following requirements are met:

1. Each dual mechanical seal system shall be:

a. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or

b. Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of sub. (9), or

c. Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

2. The barrier fluid system may not be a hazardous waste with organic concentrations 10% or greater by weight.

3. Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

4. Each pump shall be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

5.a. Each sensor as described in subd. 3. shall be checked daily or be equipped with an audible alarm that shall be checked monthly to ensure that it is functioning properly.

b. The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

6.a. If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in subd. 5.b., a leak is detected.

b. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in sub. (8).

c. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

Note: An example of a first attempt at repair would include relapping the seal.

(e) Any pump that is designated, as described in s. NR 632.09(7)(b)1., for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of pars. (a), (c) and (d) if the pump meets the following requirements:

1. The pump shall have no externally actuated shaft penetrating the pump housing.

2. The pump shall operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in s. NR 632.08(3).

3. The pump shall be tested for compliance with subd. 2. initially upon designation, annually, and at other times as requested by the department.

(f) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of sub. (9), it is exempt from the requirements of pars. (a) to (e).

(2) COMPRESSORS. (a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in pars. (h) and (i).

(b) Each compressor seal system as required in par. (a) shall be:

1. Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or

2. Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of sub. (9), or

3. Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

(c) The barrier fluid may not be a hazardous waste with organic concentrations 10% or greater by weight.

(d) Each barrier fluid system as described in pars. (a) to (c) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system or both.

(e)1. Each sensor as required in par. (d) shall be checked daily or shall be equipped with an audible alarm that shall be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor shall be checked daily.

2. The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system or both based on the criterion determined under par. (e)2., a leak is detected.

(g)1. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in sub. (8).

2. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

Note: An example of a first attempt at repair would include tightening the packing gland.

(h) A compressor is exempt from the requirements of par. (a) and (b) if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of sub. (9), except as provided in par. (i).

(i) Any compressor that is designated, as described in s. NR 632.09(7)(b)1., for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of pars. (a) to (h) if the compressor:

1. Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in s. NR 632.08(3).

2. Is tested for compliance with subd. 1. initially upon designation, annually and at other times as requested by the department.

(3) PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE. (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in s. NR 632.08(3).

(b)1. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in sub. (8).

2. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in s. NR 632.08(3).

(c) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in sub. (9) is exempt from the requirements of par. (a) and (b).

(4) SAMPLING CONNECTING SYSTEMS. (a) Each sampling connection system shall be equipped with a closed purge system or closed-vent system.

(b) Each closed-purge system or closed-vent system required in par. (a) shall:

1. Return the purged hazardous waste stream directly to the hazardous waste management process line with no detectable emissions to atmosphere, or

2. Collect and recycle the purged hazardous waste stream with no detectable emissions to atmosphere, or

3. Be designed and operated to capture and transport all the purged hazardous waste stream to a control device that complies with the requirements of sub. (9).

(c) In situ sampling systems are exempt from the requirements of par. (a) and (b).

(5) OPEN-ENDED VALVES OR LINES. (a)1. Each open-ended valve or line shall be equipped with a cap, blind flange, plug or a second valve.

2. The cap, blind flange, plug or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with par. (a) at all other times.

(6) VALVES IN GAS SERVICE, VAPOR SERVICE OR IN LIGHT LIQUID SERVICE. (a) Each valve in gas service, vapor service or light liquid service shall be monitored monthly to detect leaks by the methods specified in s. NR 632.08(2) and shall comply with pars. (b) to (e), except as provided in pars. (f) to (h) and s. NR 632.07(1) and (2).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)1. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

2. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)1. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in sub. (8).

2. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

1. Tightening of bonnet bolts.
2. Replacement of bonnet bolts.
3. Tightening of packing gland nuts.
4. Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in s. NR 632.09(7)(b)1., for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of par. (a) if the valve:

1. Has no external actuating mechanism in contact with the hazardous waste stream.

2. Is operated with emissions less than 500 ppm above background as determined by the method specified in s. NR 632.08(3).

3. Is tested for compliance with subd. 2. initially upon designation, annually, and at other times as requested by the department.

(g) Any valve that is designated, as described in s. NR 632.09(8)(a), as an unsafe-to-monitor valve is exempt from the requirements of par. (a) if:

1. The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with par. (a).

2. The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in s. NR 632.09(8)(b), as a difficult-to-monitor valve is exempt from the requirements of par. (a) if:

1. The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

2. The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.

3. The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(7) PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS. (a) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in s. NR 632.08(2) if evidence of a potential leak is found by visual, audible, olfactory or any other detection method.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c) 1. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in sub. (8).

2. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under sub. (6)(e).

(8) DELAY OF REPAIR. (a) Delay of repair of equipment for which leaks have been detected may be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10% by weight.

(c) Delay of repair for valves may be allowed if:

1. The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

2. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with sub. (9).

(d) Delay of repair for pumps may be allowed if:

1. Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

2. Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a hazardous waste management unit shutdown may be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.

(9) CLOSED VENT SYSTEMS AND CONTROL DEVICES. Owners or operators of closed-vent systems and control devices shall comply with s. NR 631.06(2).

NR 632.07 ALTERNATIVE STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE. (1) PERCENTAGE OF VALVES ALLOWED TO LEAK. (a) An owner or operator subject to the requirements of s. NR 632.06(6) may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than 2% of the valves to leak.

(b) The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing 2% of valves to leak:

1. An owner or operator shall notify the department that the owner or operator has elected to comply with the requirements of this section.

2. A performance test as specified in par. (c) shall be conducted initially upon designation, annually, and at other times requested by the department.



3. If a valve leak is detected, it shall be repaired in accordance with s. NR 632.06(6)(d) and (e).

(c) Performance tests shall be conducted in the following manner:

1. All valves subject to the requirements in s. NR 632.06(6) within the hazardous waste management unit shall be monitored within 1 week by the methods specified in s. NR 632.08(2).

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3. The leak percentage shall be determined by dividing the number of valves subject to the requirements in s. NR 632.06(6) for which leaks are detected by the total number of valves subject to the requirements in s. NR 632.06(6) within the hazardous waste management unit.

(d) If an owner or operator decides to no longer comply with this section, the owner or operator shall notify the department in writing that the work practice standard described in s. NR 632.06(6)(a) to (e) will be followed.

(2) SKIP PERIOD LEAK DETECTION AND REPAIR. (a)1. An owner or operator subject to the requirements of s. NR 632.06(6) may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in par. (b)2. and 3.

2. An owner or operator shall notify the department before implementing one of the alternative work practices.

(b)1. An owner or operator shall comply with the requirements for valves, as described in s. NR 632.06(6), except as described in subds. 2. and 3.

2. After 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2%, an owner or operator may begin to skip one of the quarterly leak detection periods for the valves subject to s. NR 632.06(6).

3. After 5 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2%, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves subject to s. NR 632.06(6).

4. If the percentage of valves leaking is greater than 2%, the owner or operator shall monitor monthly in compliance with s. NR 632.06(6), but may again elect to use this section after meeting the requirements of s. NR 632.06(6)(c)1.

NR 632.08 TEST METHODS AND PROCEDURES. (1) Each owner or operator subject to the provisions of this chapter shall comply with the test methods and procedures requirements provided in this section.

(2) Leak detection monitoring, as required in ss. NR 632.06(1) to 632.07(2), shall comply with the following requirements:

(a) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

Note: The publication containing the CFR reference may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

The publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) The detection instrument shall meet the performance criteria of Reference Method 21.

(c) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(d) Calibration gases shall be:

1. Zero air.

2. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(e) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(3) When equipment is tested for compliance with no detectable emissions, as required in s. NR 632.06(1)(e), (2)(i), (3) and (6)(f), the test shall comply with the following requirements:

(a) The requirements of sub. (2)(a) to (d) shall apply.

(b) The background level shall be determined as set forth in Reference Method 21.

(c) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(d) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(4) In accordance with the waste analysis plan required by s. NR 630.13(1), an owner or operator of a facility shall determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10% by weight using the following:

(a) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85;

Note: The publication containing this standard may be obtained from:

American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103

These publications are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) Method 9060 or 8240 of SW-846; or

Note: The publication SW-846 may be obtained from:

National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(c) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this paragraph include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has

previously been demonstrated by direct measurement to have a total organic content less than 10%, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(5) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, this determination may be revised only after following the procedures in sub. (4)(a) or (b).

(6) When an owner or operator and the department do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in sub. (4)(a) or (b) may be used to resolve the dispute.

(7) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

(8) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86.

Note: The publication containing this standard may be obtained from:

American Society for Testing and Materials  
1916 Race Street  
Philadelphia, PA 19103

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(9) Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of s. NR 631.07(3)(a) to (d).

NR 632.09 RECORDKEEPING REQUIREMENTS. Each person subject to the requirements of this chapter shall comply with the recordkeeping requirements of this section.

(1) An owner or operator of more than one hazardous waste management unit subject to this chapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

(2) Each person subject to this chapter shall record the following information in the facility operating record:

(a) For each piece of equipment to which ch. NR 632 applies:

1. Equipment identification number and hazardous waste management unit identification.

2. Approximate locations within the facility. The facility operating record shall identify the hazardous waste management unit on a facility plot plan.

3. Type of equipment.

Note: Examples of types of equipment include pump or pipeline valve.

4. Percent-by-weight total organics in the hazardous waste stream at the equipment.

5. Hazardous waste state at the equipment.

Note: Examples of hazardous waste state include gas, vapor or liquid.

6. Method of compliance with the standard.

Note: Examples of method of compliance with the standard include "monthly leak detection and repair" or "equipped with dual mechanical seals".

(b) For facilities that comply with the provisions of s. NR 631.06(2)(a)2., an implementation schedule as specified in s. NR 631.06(2)(a)2.

(c) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in s. NR 631.08(2)(c).

(d) Documentation of compliance with s. NR 632.06(9), including the detailed design documentation or performance test results specified in s. NR 631.08(2)(d).

(3) When each leak is detected as specified in s. NR 632.06(1), (2), (6) and (7), the following requirements apply:

(a) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with s. NR

632.06(7)(a) and the date the leak was detected, shall be attached to the leaking equipment.

(b) The identification on equipment, except on a valve, may be removed after it has been repaired.

(c) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in s. NR 632.06(6)(c) and no leak has been detected during those 2 months.

(4) When each leak is detected as specified in s. NR 632.06(1), (2), (6) and (7), the following information shall be recorded in an inspection log and shall be kept in the facility operating record:

(a) The instrument and operator identification numbers and the equipment identification number.

(b) The date evidence of a potential leak was found in accordance with s. NR 632.06(7)(a).

(c) The date the leak was detected and the dates of each attempt to repair the leak.

(d) Repair methods applied in each attempt to repair the leak.

(e) "Above 10,000" if the maximum instrument reading measured by the methods specified in s. NR 632.08(2) after each repair attempt is equal to or greater than 10,000 ppm.

(f) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(g) Documentation supporting the delay of repair of a valve in compliance with s. NR 632.06(8)(c).

(h) The signature of the owner or operator, or the designate of the owner or operator whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

(i) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(j) The date of successful repair of the leak.

(5) Design documentation and monitoring, operating and inspection information for each closed-vent system and control device required to comply with the provisions of s. NR 632.06(9)

shall be recorded and kept up-to-date in the facility operating record as specified in s. NR 631.08(3). Design documentation is specified in s. NR 631.08(3)(a) and (b) and monitoring, operating and inspection information in s. NR 631.08(3)(c) to (h).

(6) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system, the department shall specify the appropriate recordkeeping requirements.

(7) The following information pertaining to all equipment subject to the requirements in s. NR 632.06(1) to (9) shall be recorded in a log that is kept in the facility operating record:

(a) A list of identification numbers for equipment subject to the requirements of this section. Welded fittings are not equipment for purposes of this requirement.

(b)1. A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of s. NR 632.06(1)(e), (2)(i) and (6)(f).

2. The designation of this equipment as subject to the requirements of s. NR 632.06(1)(e), (2)(i) or (6)(f) shall be signed by the owner or operator.

(c) A list of equipment identification numbers for pressure relief devices required to comply with s. NR 632.06(3)(a).

(d)1. The dates of each compliance test required in s. NR 632.06(1)(e), (2)(i), (3) and (6)(f).

2. The background level measured during each compliance test.

3. The maximum instrument reading measured at the equipment during each compliance test.

(e) A list of identification numbers for equipment in vacuum service.

(8) The following information pertaining to all valves subject to the requirements of s. NR 632.06(6)(g) and (h) shall be recorded in a log that is kept in the facility operating record:

(a) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve

stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

(b) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

(9) The following information shall be recorded in the facility operating record for valves complying with s. NR 632.07(2):

(a) A schedule of monitoring.

(b) The percent of valves found leaking during each monitoring period.

(10) The following information shall be recorded in a log that is kept in the facility operating record:

(a) Criteria required in s. NR 632.06(1)(d)5.b. and (2)(e)2. and an explanation of the design criteria.

(b) Any changes to these criteria and the reasons for the changes.

(11) The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in s. NR 632.02 and other specific sections:

(a) An analysis determining the design capacity of the hazardous waste management unit.

(b) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in s. NR 632.06(1) to (9) and an analysis determining whether these hazardous wastes are heavy liquids.

(c) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in s. NR 632.06(1) to (9). The record shall include supporting documentation as required by s. NR 632.08(4)(c) when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action, such as changing the process that produced the waste, that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in s. NR 632.06(1) to (9), then a new determination is required.



(12) Records of the equipment leak information required by subs. (4) and (5) and the operating information required by sub. (5) need be kept only 3 years.

(13) The owner or operator of any facility that is subject to this chapter and to 40 CFR part 60, section VV, or 40 CFR part 61, section V, may elect to determine compliance with this chapter by documentation either pursuant to this section, or pursuant to those provisions of 40 CFR part 60 or 61, to the extent that the documentation under the regulation at 40 CFR part 60 or part 61 duplicates the documentation required under this section. The documentation under the regulation at 40 CFR part 60 or part 61 shall be kept with or made readily available with the facility operating record.

Note: The publication containing the CFR references may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

The publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

NR 632.10 REPORTING REQUIREMENTS. (1) SEMIANNUAL REPORT. A person subject to this chapter shall submit a semiannual report to the department by dates specified by the department. The report shall include the following information:

(a) The EPA identification number, name and address of the facility.

(b) For each month during the semiannual reporting period:

1. The equipment identification number of each valve for which a leak was not repaired as required in s. NR 632.06(6)(d).

2. The equipment identification number of each pump for which a leak was not repaired as required in s. NR 632.06(1)(c) and (d)6.

3. The equipment identification number of each compressor for which a leak was not repaired as required in s. NR 632.06(2)(g).

(c) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

(d) For each month during the semiannual reporting period, dates when the control device installed as required by s. NR 632.06(1), (2), (3) or (4) exceeded or operated outside of the design specifications as defined in s. NR 632.09(5) and as indicated by the control device monitoring required by s. NR 632.06(9) and was not corrected within 24 hours, the duration and cause of each exceedance and any corrective measures taken.

(2) If, during the semiannual reporting period, leaks from valves, pumps and compressors are repaired as required in s. NR 632.06(1)(c), (d)6, (2)(g) and (6)(d), and the control device does not exceed or operate outside of the design specifications as defined in s. NR 632.09(5) for more than 24 hours, a report to the department is not required.

NR 632.11 FEASIBILITY AND PLAN OF OPERATION REPORT REQUIREMENTS. A person subject to this chapter is required to submit the additional information described in this section when complying with s. NR 680.06.

(1) GENERAL REQUIREMENTS. The following requirements are in addition to the general feasibility and plan of operation report requirements in s. NR 680.06:

(a) A copy of the general inspection schedule required by s. NR 630.15. Include, where applicable, as part of the inspection schedule, specific requirements in ss. NR 631.06(2), 632.06(1), (2) and (7), 640.12(1), 645.09, 645.11, 655.08(1), 660.13 and 670.09.

(b) A description on how the following will be accomplished:

1. Mitigate effects of equipment failure and power outages;
  2. Prevent undue exposure of personnel to hazardous waste;
- and
3. Prevent releases to atmosphere.

(2) PROCESS VENT INFORMATION REQUIREMENTS. Except as otherwise provided in ch. NR 630, owners and operators of facilities that have process vents to which ch. NR 631 applies shall provide the following additional information:

(a) For facilities that cannot install a closed-vent system and control device to comply with ch. NR 631 on the effective date that the facility becomes subject to the provisions of ch. NR 631, an implementation schedule as specified in s. NR 631.06(2)(a)2.

(b) Documentation of compliance with the process vent standards in s. NR 631.06(1), including:

1. Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility, and the approximate location within the facility of each affected unit.

2. Information and data supporting estimates of vent emissions and emission reduction achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, estimates of vent emissions and emission reductions shall be made using operating parameter values, including temperatures, flow rates or concentrations, that represent the conditions that exist when the waste management unit is operating at the highest load or capacity level reasonably expected to occur.

3. Information and data used to determine whether or not a process vent is subject to the requirements of s. NR 631.06(1).

(c) Where an owner or operator applies for permission to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system to comply with the requirements of s. NR 631.06(1), and chooses to use test data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, a performance test plan as specified in s. NR 631.08(2)(c).

(d) Documentation of compliance with s. NR 631.06(2), including:

1. A list of all information references and sources used in preparing the documentation.

2. Records, including the dates, of each compliance test required by s. NR 631.06(2)(k)1.

3. A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" or other engineering texts acceptable to the department that present basic control device design information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in s. NR 631.08(2)(d)3.

Note: The publication APTI Course 415: Control of Gaseous Emissions, EPA Publication EPA-450/2-81-005, December 1981, may be obtained from:

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161

The publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

4. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

5. A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 weight percent or greater unless the total organic emission limits of s. NR 631.06(1)(a) for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.

(3) EQUIPMENT LEAK INFORMATION REQUIREMENTS. Except as otherwise provided in ch. NR 630, owners and operators of facilities that have equipment to which ch. NR 632 applies shall provide the following additional information:

(a) For each piece of equipment to which ch. NR 632 applies:

1. Equipment identification number and hazardous waste management unit identification.
2. Approximate locations within the facility.
3. Type of equipment.
4. Percent by weight total organics in the hazardous waste stream at the equipment.
5. Hazardous waste state at the equipment.
6. Method of compliance with the standard.

(b) For facilities that cannot install a closed-vent system and control device to comply with this chapter on the date that the facility becomes subject to this chapter, an implementation schedule as specified in s. NR 631.06(2)(a)2.

(c) Where an owner or operator applies for permission to use a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser or carbon adsorption system and chooses to use test

data to determine the organic removal efficiency or the total organic compound concentration achieved by the control device, a performance test plan as specified in s. NR 631.08(2)(c).

(d) Documentation that demonstrates compliance with the equipment standards in s. NR 632.06(1) to (8). This documentation shall contain the records required under s. NR 632.09. The department may request further documentation before deciding if compliance has been demonstrated.

(e) Documentation to demonstrate compliance with s. NR 632.06(9) shall include the following information:

1. A list of all information references and sources used in preparing the documentation.

2. Records, including the dates, of each compliance test required by s. NR 631.06(2)(j).

3. A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" or other engineering texts acceptable to the department that present basic control device design information. The design analysis shall address the vent stream characteristics and control device operation parameters as specified in s. NR 631.08(2)(d)3.

Note: The publication APTI Course 415: Control of Gaseous Emissions, EPA Publication EPA-450/2-81-005, may be obtained from:

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161

4. A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur.

5. A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 weight percent or greater.

SECTION 131. The title of Chapter NR 635 is amended to read:

GROUNDWATER AND LEACHATE MONITORING STANDARDS AND, CORRECTIVE ACTION REQUIREMENTS, AND SOILS AND GROUNDWATER INVESTIGATIONS

SECTION 132. NR 635.02 is amended to read:

NR 635.02 APPLICABILITY. (1) Except as provided in s. NR 635.04, the requirements of ~~s. ss.~~ NR 635.16 and 635.18 apply to all hazardous waste landfills and surface impoundments that accepted hazardous waste after November 19, 1980 but not after July 26, 1982 and the requirements of ss. NR 635.05 to 635.15 and 635.18 apply to all hazardous waste landfills, surface impoundments and waste piles that accepted hazardous waste after July 26, 1982. In addition, ~~s. ss.~~ NR 635.17 and 635.18 applies apply to any hazardous waste treatment, storage or disposal facility that had or should have had an interim license.

(2) This chapter does not apply to solid waste facilities that manage only non-hazardous solid waste, or metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., ~~or polychlorinated biphenyls (PCBs), except where portions of this chapter are referenced in ch. NR 157.~~

SECTION 133. NR 635.05(1)(a) to (c) are amended to read:

NR 635.05(1)(a) All solid waste management units shall comply with the requirements in ~~s. ss.~~ NR 635.17 and 635.18;

(b) A surface impoundment, waste pile or landfill that receives hazardous waste after July 26, 1982 or proposes to accept hazardous waste is a regulated unit and shall comply with the requirements of ss. NR 635.05 to 635.15 and 635.18 in lieu of s. NR 635.16 for purposes of detecting, characterizing and responding to releases to any underlying aquifer. The financial responsibility requirements of s. NR 635.17 apply to regulated units;

(c) A surface impoundment or landfill which accepted hazardous waste after November 19, 1980 but not after July 26, 1982 is an existing unit and shall comply with the requirements of ~~s. ss.~~ NR 635.16 and 635.18 and the financial responsibility requirements of s. NR 635.17; and

SECTION 134. NR 635.09(1)(d) Table I is amended to read:

Table I

## MAXIMUM CONCENTRATION OF CONSTITUENTS FOR GROUNDWATER PROTECTION

Arsenic	0.05 mg/l
Barium	<del>1.0</del> <u>2.0</u> mg/l
Benzene	0.005 mg/l
Cadmium	<del>0.01</del> <u>0.005</u> mg/l
Carbon Tetrachloride	0.005 mg/l
Chromium	0.05 mg/l
1,2 Dichloroethane	0.005 mg/l
1,1 Dichloroethylene	0.007 mg/l
para-Dichlorobenzene	0.075 mg/l
Lead	<del>0.05</del> <u>0.015</u> mg/l
Mercury	0.002 mg/l
Selenium	<del>0.01</del> <u>0.05</u> mg/l
Silver	0.05 mg/l
1,1,1 Trichloroethane	0.20 mg/l
Trichlorethylene	0.005 mg/l
Vinyl Chloride	<del>0.002</del> <u>0.0002</u> mg/l
Endrin	0.0002 mg/l
(1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4 a,5,6,7,8,9a-octahydro-1,4-endo, endo-5,8,-dimethano naphthalene)	
Lindane	<del>0.004</del> <u>0.0002</u> mg/l
(1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	
Methoxychlor	<del>0.1</del> <u>0.04</u> mg/l
(1,1,1-Trichloro-2,2-bis(p-methoxyphenyl ethane)	
Toxaphene (C <sub>10</sub> H <sub>10</sub> Cl <sub>6</sub> , Technical chlorinated camphene, 67-69 percent chlorine)	<del>0.005</del> <u>0.003</u> mg/l
2,4-D (2,4-Dichlorophenoxyacetic acid)	<del>0.1</del> <u>0.07</u> mg/l
2,4,5-TP Silvex (2,4,5-Trichlorophenoxy propionic acid)	<del>0.01</del> <u>0.05</u> mg/l

SECTION 135. NR 635.12(intro.) and (1)(intro.) are amended to read:

NR 635.12 GENERAL GROUNDWATER MONITORING REQUIREMENTS. The following monitoring requirements apply to all hazardous waste landfills, surface impoundments, waste piles that accepted hazardous waste after July 26, 1982 and to other facilities where required under ~~s.~~ ss. NR 600.07, 635.13 to 635.15, 635.18, 640.14, 645.12, 655.11 or 670.09.

(1)(intro.) The number and construction specifications of required wells and other sampling devices shall be approved by the department based on the site size, waste type, site design

and the hydrogeologic and geologic setting of the site and shall be capable of yielding groundwater samples for analysis. At a minimum, the system shall consist of:

SECTION 136. NR 635.12(1)(b) is amended to read:

~~NR 635.12(1)(b) Four or more downgradient monitoring points at locations and depths to ensure immediate detection of any statistically significant amounts of hazardous wastes or leached constituents from the facility in the uppermost aquifer. Unless otherwise specified in writing by the department, the owner or operator shall install 2 downgradient well nests, each consisting of at least a water table observation well and a piezometer. In addition, a single monitoring well shall be installed at each of 2 additional downgradient locations for a total of 6 downgradient monitoring wells. These monitoring points~~  
NR 635.12(1)(b) Four or more downgradient monitoring points at locations and depths to ensure immediate detection of any statistically significant amounts of hazardous wastes or leached constituents from the facility in the uppermost aquifer. Unless otherwise specified in writing by the department, the owner or operator shall install 2 downgradient well nests, each consisting of at least a water table observation well and a piezometer. In addition, a single monitoring well shall be installed at each of 2 additional downgradient locations for a total of 6 downgradient monitoring wells. These monitoring points  
wells shall be located between the hazardous waste boundary and the property boundary as close as practical to the design management zone and shall include 2 monitoring points in a well nest configuration.

SECTION 137. NR 635.12(1)(c) is created to read:

NR 635.12(1)(c) Except for lateral expansions of a facility, new facilities or replacement units, the facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location can be utilized if such demonstration is certified in writing by a hydrogeologist meeting the definition contained in s. NR 600.03(119), if the written demonstration is approved by the department, if the written demonstration is kept at the facility and if the demonstration establishes all of the following:

1. An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the design management zone; and
2. The selected alternate downgradient location is as close to the limit of the waste management area as practical; and
3. The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

SECTION 138. NR 635.12(5) to (10) are renumbered (7) to (12), respectively, and (8)(d) and (12), as renumbered, are amended to read:



NR 635.12(8)(d) Have a minimum 2-inch inside diameter;

(12) The owner or operator shall obtain and analyze samples from the installed groundwater monitoring system. The owner or operator shall develop and follow a groundwater sampling and analysis plan and shall keep this plan at the facility. The groundwater sampling and analysis plan shall include measurement, sampling and analytical methods that are appropriate for groundwater sampling and that accurately assess groundwater quality and provide early detection of hazardous constituents entering the groundwater. The groundwater sampling and analysis plan shall be approved by the department. The groundwater sampling and analysis plan shall be a single document but shall be kept with and made a part of the facility operating record. The facility shall notify the department at least annually of any updated information that is added to or replaced in the groundwater sampling and analysis plan. At a minimum, the groundwater sampling and analysis plan shall include procedures and techniques for all of the following:

(a) Sample collection including a list of the chemical parameters to be analyzed and the respective analytical procedure to be used in the analysis for each parameter, field information for purging, water level measurements, depth of well measurements, purge volume calculations, well evacuation procedures and associated documentation forms, lists of wells sampled with bailers, lists of wells using dedicated sampling equipment, types of bailers used, types of dedicated sampling equipment used, cleaning procedures for sampling equipment, field measurement procedures, sample bottle filling procedures, preservative requirements, field filtering equipment used and cleaning procedures, field measurements and associated equipment lists;

(b) Sample preservation and shipment including sampling container cleaning, sample dispatch, sample packing, shipping containers, temperature control, sample transport, sample custody, field custody, chain of custody control, laboratory custody, sample log-in and sample transport;

(c) Analytical procedures in accordance with standard methods for the examination of water and wastewater or other methods approved in writing by the department and, analytical methods, analytical method modifications, glassware handling procedures, organics and inorganics glassware cleaning, reagent and chemical storage;

(d) Chain of custody control, Laboratory calibration procedures and frequency, standard sources and preparation, standard sources and preparation by instrument group, instrument calibration and preventive maintenance;

(e) Laboratory quality control information including checks and routines to assess precision, accuracy and method detection limits, quality control checks, routine quality control checks, specific laboratory criteria for organics and inorganics, routine methods used to assess precision and accuracy, procedures used to obtain precision and accuracy targets, formulas used to calculate less than precision and accuracy, method detection limits and practical quantitation limits and reporting limits;

(f) Field quality control information including the number of field blanks taken, trip blanks, duplicate sample frequency, field duplicates, split sample procedures and sequential sample procedures including identification of the alternate laboratory and that laboratory methods and procedures used in pars. (a) to (e);

(g) A description of the statistical analysis selected by the facility and all statistical calculations performed for the facility during the existing calendar year; and

(h) Other information as deemed necessary by the department on a case-by-case basis.

SECTION 139. NR 635.12(5) and (6) are created to read:

NR 635.12(5) Unless otherwise specified by the department, required routine monitoring at any hazardous waste facility shall be conducted quarterly, within 15 days of March 15, June 15, September 15 and December 15 of each year. Alternative dates to those specified may be utilized if approved by the department in writing.

(6) Unless otherwise specified by the department, required annual monitoring at any hazardous waste facility shall be conducted within 15 days of June 15 of each year. Alternative dates to that specified may be utilized if approved by the department in writing.

SECTION 140. NR 635.12(11) is repealed.

SECTION 141. NR 635.12(12) and (13) are renumbered (14) and (15) (15)(intro.), (c) and (d), as renumbered, are amended to read:

NR 635.12(15) Where appropriate, the groundwater monitoring program shall establish background groundwater quality for each of the hazardous constituents or monitoring parameters or constituents specified in the plan approval or license. The number and kinds of samples collected to establish background

shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to groundwater from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility license or plan approval which shall be specified in the unit license or plan approval upon approval by the department.

(c) Background quality may be based on sampling of wells that are not hydraulically upgradient from the waste boundary where:

1. Hydrogeologic conditions do not allow the owner or operator to determine what wells are upgradient; ~~or~~

2. Sampling at other wells shall provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; ~~or~~

3. Sampling at other wells will allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the design management zone to the uppermost aquifer.

(d) In developing the data base used to determine a background value for each parameter or constituent, the owner or operator shall take a minimum of ~~one sample from each well and a minimum of 4 samples from the entire system used to determine background groundwater quality, each time the system is sampled.~~ at least 4 samples from each monitoring well or device specified in the plan approval or license, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants, or

SECTION 142. NR 635.12(13) is created to read:

NR 635.12(13) The owner or operator shall develop and follow a groundwater monitoring plan and shall keep this plan at the facility. The groundwater monitoring plan shall be a single document but shall be kept with and made a part of the facility operating record. The facility shall notify the department at least annually of any updated information that is added to or replaced in the groundwater monitoring plan or sooner if required by statute or rule. The groundwater monitoring plan shall be

approved by the department. At a minimum, the groundwater monitoring plan shall include all of the following:

(a) An annually updated topographic map of the facility illustrating any physical changes to the facility that may affect the stability of or viability of any monitoring well required by this chapter and the locations of all monitoring wells and other monitoring devices located on or off of the facility. If no physical changes have been made to the facility, the owner or operator may use an existing topographic map that includes a notation that no physical changes have been made at the facility;

(b) A groundwater contour map using 2 foot contour intervals that shows the direction of groundwater flow and a discussion of the rate and direction of groundwater flow as required by s. NR 635.13(5). In addition, unless otherwise specified by the department, the groundwater contour map shall be constructed by using the most recent water levels recorded in each monitoring well located on or off the facility. The water level elevation for each monitoring well shall be superimposed on the groundwater contour map;

(c) A copy of the boring log for each groundwater monitoring well installed at the facility and completed DNR form 4400-122;

(d) A copy of the well construction report for each well required at the facility and completed DNR form 4400-113A;

(e) All hard data and descriptions of the well development procedures used to develop each monitoring well at the facility in accordance with s. NR 660.09(3)(j) and completed DNR form 4400-113B for each well at the facility;

(f) A completed DNR groundwater monitoring well information form (WIF) 4400-89 for each monitoring well at the facility;

(g) A discussion that includes specific instructions on field measurements to be taken, sampling procedures and the sampling sequence required for the facility;

(h) A list of the chemical parameters that the facility is monitoring for as required by the department or the U.S. EPA;

(i) A historical tabulation of water levels measured in each monitoring well at the facility as referenced to mean sea level; and

(j) Other information as deemed necessary by the department on a case by case basis.

SECTION 143. NR 635.12(14) is repealed.

SECTION 144. NR 635.12(15)(b)4., (e) and (16) are created to read:

NR 635.12(15)(b)4. Provide the proper number of samples collected to establish background that is appropriate for the form of statistical test employed. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to groundwater from a facility will be detected.

(e) The owner or operator may propose an alternative background sampling procedure for department approval.

(16)(a) The owner or operator shall specify one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent which, upon approval by the department, will be specified in the unit plan approval. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. Where practical quantification limits (pql's) are used in any of the following statistical procedures, the pql shall be proposed by the owner or operator and approved by the department. Use of any of the following statistical methods shall be protective of human health and the environment and shall comply with the performance standards outlined in par. (b).

1. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

2. An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

3. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

4. A control chart approach that gives control limits for each constituent.

5. The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The department shall specify a procedure if it finds that the alternative procedure reasonably balances the probability of falsely identifying a noncontaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in par. (b)1.

(b) Any statistical method chosen under this subsection for specification in the unit plan approval shall comply with the following performance standards, as appropriate:

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be proposed by the owner or operator and approved by the department if the department finds it to be protective of human health and the environment.

4. If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be proposed by the owner or operator and approved by the department if he or she finds these parameters to be protective of human health and the environment. These parameters will be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit (pql) approved by the department under s. NR 635.12(16) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(c) Groundwater monitoring data collected in accordance with this subsection including actual levels of constituents shall be maintained in the facility operating record. The department shall specify in the plan approval or license when the data is to be submitted for review.

(d) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator shall use a statistical procedure providing reasonable confidence that the migration of hazardous constituents from a regulated unit into and through the aquifer shall be indicated. The department shall specify a statistical procedure that it finds:

1. Is appropriate for the distribution of the data used to establish background values or concentrations limits; and

2. Provides a reasonable balance between the probability of falsely identifying a noncontaminating regulated unit and the probability of failing to identify a contaminating regulated unit.

SECTION 145. NR 635.13(2) is amended to read:

NR 635.13(2) The owner or operator shall install a groundwater monitoring system at the design management zone as specified under s. NR 635.10. The groundwater monitoring system shall comply with s. NR 635.12 ~~(1) to (11)~~.

SECTION 146. NR 635.13(3)(b) and (c) are amended to read:

NR 635.13(3)(b) The owner or operator shall tabulate background values for the determination of statistically significant increases under s. NR 635.12 ~~(14)~~ (16).

(c) In taking samples used in the determination of background values, the owner or operator shall use a groundwater monitoring system that complies with s. NR 635.12~~(1)~~ ~~to~~ ~~(11)~~.

SECTION 147. NR 635.13(4) is amended to read:

NR 635.13(4) The owner or operator shall determine groundwater quality at each monitoring well required by s. NR 635.12 at least quarterly according to the schedule contained in s. NR 635.12(5) during the active life of a regulated unit, including the closure period and the long-term care period. The owner or operator shall tabulate the groundwater quality at each monitoring well for the determination of statistically significant increases under s. NR 635.12 ~~(14)~~ (16).

SECTION 148. NR 635.13(7)(intro.) and (a) are amended to read:

NR 635.13(7)(intro.) The owner or operator shall determine whether there is a statistically significant change in pH or increase over background values for any parameter or constituent specified in the license or plan of operation approval each time the owner or operator determines groundwater quality under sub. (4).

(a) In determining whether a statistically significant change in pH or increase over background values has occurred, the owner or operator shall compare the groundwater quality at each monitoring well for each parameter or constituent to the background value for that parameter or constituent, according to the statistical procedure specified under s. NR 635.12 ~~(14)~~ (16).

SECTION 149. NR 635.13(8)(c)2. and 3. are amended to read:

NR 635.13(8)(c)2. The owner or operator shall tabulate background values for the determination of statistically significant increases under s. NR 635.12 ~~(14)~~ (16); and

3. The owner or operator shall use a groundwater monitoring system that complies with s. NR 635.12 ~~(1)~~ ~~to~~ ~~(11)~~ in taking samples used in the determination of background values;

SECTION 150. NR 635.13(12) is created to read:

NR 635.13(12) The owner or operator shall comply with all requirements contained in s. NR 635.18.



SECTION 151. NR 635.14(3)(a) is amended to read:

NR 635.14(3)(a) If there is a high temporal correlation between upgradient and downgradient concentrations of the hazardous constituents, the owner or operator may establish the concentration limit for each chemical parameter or hazardous constituent through sampling at upgradient wells each time groundwater is sampled. The department shall specify the procedures used for determining the concentration limit in this manner. In all other cases, the concentration of the hazardous constituents shall be the mean of the pooled data on the concentration of the hazardous constituent.

SECTION 152. NR 635.14(3)(c)2. and 3. are amended to read:

NR 635.14(3)(c)2. Tabulate background values for the determination of statistically significant increases under s. NR 635.12 ~~(14)~~ (16); and

3. Use a groundwater monitoring system that complies with s. NR 635.12 ~~(1) to (11)~~ .

SECTION 153. NR 635.14(4), (6), (7) and (8)(a) are amended to read:

NR 635.14(4) The owner or operator shall determine the concentration of hazardous constituents in groundwater at each monitoring well required by s. NR 635.12 at least quarterly during the compliance period. The owner or operator shall tabulate the concentration at each monitoring well for the determination of statistically significant increases under s. NR 635.12 ~~(14)~~ (16).

(a) In determining whether statistically significant evidence of increased contamination exists, the owner or operator shall use the methods specified by the department under s. NR 635.12(16). The methods shall compare data collected at the compliance points to a concentration limit developed in accordance with s. NR 635.09.

(b) The owner or operator shall determine whether there is statistically significant evidence of increased contamination at each monitoring well at the point of standards application within a reasonable time period after completion of sampling. The department shall specify that time period in the facility license, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of groundwater samples.

(6) The owner or operator shall analyze samples from all monitoring wells for all constituents contained in appendix I of ch. NR 635 as specified by the department at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer and, if so, at what concentrations. If the owner or operator finds appendix I constituents in the groundwater that are not identified in the plan approval or license as hazardous constituents, the owner or operator shall report the concentrations of these additional constituents to the department within 7 days after completion of the analysis.

(7) The owner or operator shall use procedures and methods for sampling and analysis that meet the requirements of s. NR ~~635.12(10)~~ 635.12(12).

(8) (a) In determining whether a statistically significant increase has occurred, the owner or operator shall compare the groundwater quality at each monitoring well for each hazardous constituent to the concentration limit for that constituent according to the statistical procedures specified in the plan approval or license under s. NR 635.12 ~~(14)~~ (16).

SECTION 154. NR 635.15(10) is created to read:

NR 635.15(10) The owner or operator shall comply with all requirements of s. NR 635.18.

SECTION 155. NR 635.16(2) (a) is amended to read:

NR 635.16(2) (a) Parameters characterizing the suitability of the groundwater as a drinking water supply, as specified ~~in table II~~ in ch. NR 809.

~~Table II~~

~~EPA Interim Primary Drinking Water Standards~~

<del>Arsenic</del>	<del>0.05 mg/l</del>
<del>Barium</del>	<del>1.0 mg/l</del>
<del>Benzene</del>	<del>0.005 mg/l</del>
<del>Cadmium</del>	<del>0.01 mg/l</del>
<del>Carbon Tetrachloride</del>	<del>0.005 mg/l</del>
<del>Chromium</del>	<del>0.05 mg/l</del>
<del>1,2 Dichloroethane</del>	<del>0.005 mg/l</del>
<del>1,1 Dichloroethylene</del>	<del>0.007 mg/l</del>
<del>para-Dichlorobenzene</del>	<del>0.075 mg/l</del>
<del>Endrin</del>	<del>0.0002 mg/l</del>
<del>Fluoride</del>	<del>1.4-2.4 mg/l</del>
<del>Lead</del>	<del>0.05 mg/l</del>

Lindane	0.004 mg/l
Mercury	0.002 mg/l
Methoxychlor	0.1 mg/l
Nitrate (as N)	10.0 mg/l
Selenium	0.01 mg/l
Silver	0.05 mg/l
Toxaphene	0.005 mg/l
1,1,1 Trichloroethane	0.20 mg/l
Trichloroethylene	0.005 mg/l
Vinyl Chloride	0.002 mg/l
2,4-D	0.1 mg/l
2,4,5-TP Silvex	0.01 mg/l
Radium	5 pCi/l
Gross Alpha	15 pCi/l
Gross Beta	4 millirem/yr
Coliform Bacteria	1/100 ml

SECTION 156. NR 635.17 is amended to read:

NR 635.17 CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS. (1) The owner or operator of a facility seeking a license for the treatment, storage or disposal of hazardous waste or seeking to close a hazardous waste treatment, storage or disposal facility shall institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous waste constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in a unit. Corrective action under this section shall, at a minimum, restore contaminated groundwater in compliance with the requirements of ch. NR 140.

(2) Corrective action shall be specified in the license or plan approval in accordance with chs. NR 600 to 685. The license or plan approval shall contain schedules of compliance for corrective action where corrective action cannot be completed prior to issuance of the license and assurances of financial responsibility for completing corrective action.

(3) The owner or operator shall implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the department that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake actions. The owner or operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where offsite access is denied. On-site measures to address releases shall be determined by the department on a ~~case-by-case~~ case-by-case basis. The owner or operator shall establish proof of financial responsibility for corrective action in accordance

with a department issued order or plan approval and the requirements of ch. NR 685 and s. 144.443, Stats.

SECTION 157. NR 635.18 is created to read:

NR 635.18 SOILS AND GROUNDWATER INVESTIGATIONS. The department may require that owners or operators of waste piles, surface impoundments, landfills and solid waste management units subject to the requirements of s. NR 635.17 investigate whether a release of hazardous waste or hazardous waste constituents has occurred, submit a report that details the findings of the investigation for department approval and implement appropriate corrective actions as necessary to bring the facility into compliance with chs. NR 600 to 685. If such a soil and groundwater investigation is required, the owner or operator shall meet the following minimum requirements unless otherwise required by the department.

(1) GROUNDWATER AND UNSATURATED ZONE MONITORING. The department may require the installation of groundwater and leachate monitoring wells, suction lysimeters, moisture probes, collection basin lysimeters and similar monitoring devices, and the implementation of a water quality sampling and analysis program.

(a) All groundwater sampling devices shall be designed, located, installed and maintained so as to obtain reliable and representative information regarding aquifer characteristics, groundwater flow directions and chemical and physical characteristics of groundwater.

(b) All devices shall be constructed to minimize the potential for contaminants to enter the groundwater or to move from one major soil unit or bedrock formation to another.

(c) The locations of all borings and monitoring devices shall be approved by the department in writing prior to installation. The location and construction of any monitoring device may be submitted to the department for review and concurrence prior to installation.

(2) GAS AND VAPOR PHASE MONITORING. The department may require the installation of gas and vapor phase monitoring devices and sampling and analysis programs to monitor for gas and vapor phase migration. The gas and vapor phase monitoring program shall be implemented in accordance with plans approved by the department. If gas or vapor phase monitoring is required, the temperature, ground condition, barometric pressure and information as to whether the barometric pressure is rising or falling shall be recorded each time sampling is performed. Sample

collection and analytical techniques shall be in accordance with standard methods.

(a) All gas and vapor phase monitoring probes shall be designed, located, installed and maintained so as to obtain reliable and representative information regarding soil conditions and gas and vapor phase concentrations.

(b) All gas and vapor phase monitoring probes shall be constructed with a shut-off valve to prevent the escape of gas from the sampling device and minimize the amount of inflow of air from the atmosphere.

(3) SURFACE WATER MONITORING. The department may require the monitoring of surface water runoff, leachate seeps, sumps, sedimentation ponds, any surface water bodies and other surface water discharges resulting from facility operation. The department shall specify sampling times and parameters and all sampling shall be implemented in accordance with plans or reports approved by the department. All surface water sampling locations shall be surveyed in and permanently and clearly marked.

(4) AIR QUALITY MONITORING. The department may require monitoring of air quality for particulates, toxics or other constituents in the ambient air, from point sources or in buildings at or associated with the facility. The department shall specify sampling times and locations and all sampling shall be implemented in accordance with plans or reports approved by the department.

(5) OTHER MONITORING. The department may require monitoring of any physical aspect of the facility operation including vegetative growth; drainage control structures; and gradient control systems. All required monitoring shall be implemented in accordance with plans or reports approved by the department. The department may require geophysical investigations to complement groundwater monitoring efforts.

(6) GEOTECHNICAL INFORMATION. The owner or operator shall perform field investigations to define the topography, subsurface soils, depth to bedrock, type of bedrock, depth to groundwater, groundwater flow direction and gradients at the facility. The results of this investigation shall be described in the narrative section of the investigation report. The owner or operator shall include all raw data such as boring logs, well construction diagrams, laboratory tests and field hydraulic conductivity test data and water level measurements in the report appendix. The following investigations at a minimum shall be performed unless an alternative geotechnical investigation program is approved by the department in writing.

(a) Borings. Borings sufficient to define sub-surface conditions shall be drilled as necessary to define the degree and extent of contamination at the facility.

1. At a minimum, a sufficient number of borings shall be drilled in all areas of known or suspected contamination so that the full degree and extent of the contamination can be determined. Borings shall also be drilled in uncontaminated areas at the facility for comparing clean versus contaminated soils. If at all possible, the borings shall be located on a grid pattern. The department may require more borings in complex hydrogeologic environments.

2. Borings shall extend a minimum of 10 feet below the lowest known contaminant source as measured in the field. Every attempt shall be made to locate this boring outside the proposed limits of waste filling. Boring logs shall identify the lithology of the bedrock when it is encountered.

3. Where conditions permit, samples shall be collected using undisturbed sampling techniques. Samples may not be composited for testing purposes. In fine-grained soil environments, continuous samples shall be collected. In uniform, coarse-grained soil environments or following the continuous sampling in fine-grained soil environments, samples shall be collected from each major soil unit encountered and at maximum 5-foot intervals. Each soil sample shall be described including its structure, mottling, voids, layering, lenses and geologic origin and visually classified according to the unified soil classification system and Muncell color chart. Continuous core samples of the bedrock shall be taken and the rock properties including fracture frequency, RQD and percent recovery shall be determined for the borings extended into bedrock.

4. Borings not converted to wells shall be abandoned in accordance with subs. (8) and (17).

5. A boring log shall be submitted for each boring. Each boring log shall include soil and rock descriptions, methods of sampling, sample depths and elevations, date of boring, land surface elevation, bottom of boring elevation, moisture content, and consolidation test results such as blow counts, vane shear or pocket penetrometer. All elevations shall be corrected to USGS datum. If the boring is converted to a well, include the water level at time of drilling, dates of water level measurements and a well construction diagram on the log.

(b) Wells. Groundwater monitoring wells sufficient to define the hydrogeologic and groundwater quality conditions shall be installed. At a minimum, this includes:

1. Water table observation wells shall be installed to adequately define the water table surface, horizontal gradients and lateral extent of contamination at the facility. If necessary to define the extent of contamination beyond the facility property, the owner or operator shall make every attempt to secure permission from adjacent land owners for this purpose. All water table observation wells shall be constructed so that the screens intersect the water table at all times during the year. If necessary to define the vertical extent of contamination, one or more piezometers shall be installed adjacent to water table observation wells to create well nests.

2. All wells shall be designed, installed, developed, sampled and documented in accordance with this chapter. Alternative methods of well design and installation shall be approved prior to well construction.

(7) WELL DESIGN AND INSTALLATION. All monitoring devices shall be designed and installed in accordance with ch. NR 141 and the following requirements unless an alternate method is approved in writing by the department.

(a) Protective devices. All groundwater monitoring wells, leachate head wells, suction lysimeters, moisture probes and other sampling devices shall have a cap to prevent contaminants from entering the monitoring device. All monitoring devices except leachate head wells in the active area of the facility shall have protective metal casings and locking lids. The lids shall be kept locked. The department may require additional protective devices such as rings of brightly colored posts around any monitoring device. All leachate head wells shall be protected to prevent damage during facility operation.

(b) Labelling. All monitoring devices shall be clearly and permanently labelled. At a minimum, the label shall include the well name and number.

(c) Drilling method. Drilling shall be performed in accordance with ss. NR 141.15, 141.17 and the requirements of this section. The drilling method shall allow the driller to obtain undisturbed soil samples and perform standard penetration tests while drilling. If a drilling method using continuous sampling does not allow for standard penetration tests, then the consolidation of the recovered samples shall be measured in the field with a vane shear or pocket penetrometer.

1. If the drilling method does not allow the required soil sampling to be performed, a separate boring shall be drilled adjacent to the monitoring well to provide the necessary information.

2. Drilling fluids and water may be used to drill monitoring wells only when there are no reasonable alternatives. If drilling fluids are used, the driller shall document the type of fluids, any additives used and the chemical constituents of the mixture. If water is used, the source of the water shall be identified.

3. When drilling equipment comes into contact with contaminants in the borehole or above ground, the driller shall clean the equipment thoroughly prior to any additional drilling.

(d) Borehole abandonment. If any borehole is deeper than the well to be placed in it, the portions of the borehole below the well screen shall be properly sealed according to subs. (8) and (17).

(e) Well development. All groundwater monitoring wells shall be properly developed following installation. The development process shall cause water to flow rapidly into and out of the well screen for the purpose of dislodging and removing fine soil particles, drill cuttings and drilling fluids. Well development shall be considered complete when the water extracted from the well is chemically stable, and as free of sediment as possible. Well development shall follow the procedures in s. NR 141.19 and the requirements of this section.

1. Sampling after development. Once the water being extracted from the well is stabilized, a sample shall be tested for total suspended solids. If drilling fluids were used during well construction, the sample shall also be tested for COD.

2. Water level measurements. After development, all wells shall be pumped and successive water level measurements shall be taken until stabilized readings are obtained.

3. Documentation. All well development techniques shall be documented in accordance with s. NR 141.21 and this section.

(8) BORING AND WELL ABANDONMENT. Proper abandonment of borings and monitoring devices shall seal the well or borehole completely in order to prevent future contamination of groundwater. The sealing materials used shall be continuous, physically and chemically stable, and have a hydraulic conductivity of less than  $1 \times 10^{-7}$  cm/sec. The exact location of abandoned wells and borings and the date and the method of abandonment shall be documented in writing. The abandonment method shall also be documented by photographs. All monitoring wells and boreholes shall be abandoned and documented in accordance with s. NR 141.25 and this section.



(a) Timeline. All boreholes not instrumented with a well shall be abandoned immediately after drilling and completion of soil testing.

(b) Abandonment of water supply wells. Water supply wells which are required to be abandoned shall be abandoned and documented according to s. NR 812.21.

(9) INSPECTIONS. The facility owner or operator shall inspect all monitoring devices at least annually. Sampling personnel shall inspect all monitoring devices each time the device is sampled or a water level elevation is measured. If for any reason a monitoring device is destroyed or otherwise fails to function properly, the facility operator shall notify the department in writing within 10 days after discovery. The device shall be repaired if possible. If the device cannot be repaired, it shall be properly abandoned and replaced within 60 days unless otherwise approved in writing by the department. Unless otherwise approved, if a device is replaced, the replacement well shall be given the same number as the well it replaced followed by the letter "R" to indicate it is a replacement well. An additional "R" shall be added each time the well is replaced.

(10) SOIL SAMPLING. All soil samples collected from borings installed on or off the facility property shall be collected and tested in accordance with this section unless otherwise approved in writing by the department.

(a) Sample collection. Where conditions permit, samples shall be collected using undisturbed soil sampling techniques. Samples may not be composited for testing purposes. In fine-grained soil environments, continuous samples shall be collected. In uniform, coarse-grained soil environments samples shall be collected from each major soil unit encountered and at maximum 5-foot intervals. At least one soil sample shall be collected at the depth of any subsequently placed monitoring well screen. If borings are extended into bedrock, continuous core samples of the bedrock shall be taken and the rock properties including fracture frequency, rock quality designation and percent recovery shall be determined.

(b) Laboratory and field testing. Laboratory and field analysis shall be conducted to identify the specific geologic and hydrogeologic conditions in the vicinity of the boring or monitoring well.

1. The soil sample collected at the depth of any subsequently placed monitoring well screen shall be analyzed for grain size distribution by mechanical and hydrometer test and Atterberg limits, as appropriate for the particular soil type. Each soil sample shall be described according to its physical

texture, color, geologic origin and visually classified according to the unified soil classification system.

2. An in-field test shall be conducted on monitoring each well to determine the in-situ hydraulic conductivity. The test shall be of long enough duration and include a sufficient amount of data to provide a representative estimate of the actual hydraulic conductivity.

3. Laboratory hydraulic conductivity tests shall be conducted on at least 2 representative samples from each major soil unit. Tests shall be run on undisturbed samples when conditions allow.

4. The department may require that other tests be conducted as appropriate for the particular type of material.

5. After each well has been properly developed, successive water level measurements shall be taken until stabilized readings are obtained. In addition, stabilized water level measurements shall be obtained on a quarterly basis from surface water bodies including streams, lakes, ponds, drainage ditches and wetlands located within 1,200 feet of the proposed facility. Where public or private wells are present, stabilized water level readings from these wells may be required if access can be obtained from the owner.

6. The department may require other work such as pump tests, geophysical investigations, isopach maps or a fence diagram to assess the hydrogeologic conditions at the proposed facility.

(11) FIELD DIRECTION. A hydrogeologist meeting the definition of s. NR 600.03(119) or other equally qualified person shall observe and direct the drilling of all borings, the installation and development of all wells and all in-field hydraulic conductivity tests. The hydrogeologist shall also visually describe and classify all of the geologic samples.

(12) SUBSURFACE DATA ANALYSIS. Data on subsurface investigations shall be presented in the narrative section of the report as follows:

(a) Soil and bedrock descriptions. Each major soil unit and bedrock formation shall be described using data from both subsurface investigations and regional information. The descriptions shall include:

1. Grain size distribution, geologic origin and classification of materials using the USCS system and Muncell color chart.

2. The lateral and vertical extent of each major soil unit including description of lenses or other heterogeneities and the strike and dip of rock formations.

3. The presence and frequency of joints, fractures, voids, solution openings, faults or other structural features.

4. Testing data shall be summarized by major soil unit in a table in all reports. The table shall contain the following information: geologic origin, sample ID number, percentages of gravel, sand, silt and clay-sized materials, P200 content, liquid limit, plasticity index, and lab and field hydraulic conductivity. If average values are calculated for any of these test results, a range and standard deviation shall also be presented.

(b) Hydrogeologic properties. The properties of each saturated soil unit or rock formation and its function in the groundwater flow system shall be described including the following:

1. Hydraulic conductivity.
2. Role as a confining unit.
3. Hydraulic connection to other units.
4. Actual or potential use as a water supply.
5. Depth to groundwater and seasonal variations in groundwater elevation.
6. Location and extent of any perched groundwater systems.
7. Local and regional flow directions including the location of groundwater divides.
8. Horizontal and vertical gradients, particularly between soil units of differing hydraulic conductivity and between unconsolidated deposits and bedrock.
9. The saturated thickness of the uppermost aquifer at the facility boundary which can be expected to attenuate contaminants which may enter the flow system and estimates of the quantity of flow passing under the facility boundaries.

(c) Appendix. All raw data including boring logs, well construction diagrams, soil tests and water level measurements shall be included in the appendices of all reports.

(13) DATA PRESENTATION. The results from the subsurface investigations shall be presented on 24 inch x 36 inch plan sheets, unless an alternative size is approved by the department in writing, as follows:

(a) Existing conditions. A detailed topographic survey of the facility and all areas within a distance of 1,500 feet from the facility boundaries. The minimum scale shall be one inch = 200 feet with a maximum 2 foot contour interval. The contour interval selected shall be sufficiently small to clearly show surface water flow patterns within and around the facility. This plan sheet shall show the following features:

1. 100-year floodplain area.
2. Surface waters, including intermittent and ephemeral streams and wetlands.
3. Homes, buildings, man-made features and utility lines.
4. Surrounding land uses, such as residential, commercial, agricultural and recreational.
5. Property boundaries, waste handling areas and product handling areas.
6. Access control, such as fences and gates.
7. Water supply wells including irrigation and stock wells, as well as public and private water supply wells.
8. Boring, test pit and well locations.
9. Other structures including runoff control systems, agricultural drain tile systems, access and internal roads, and storm and sanitary sewerage systems.

(b) Geologic cross-sections. Cross-sections shall be constructed through all borings, both perpendicular and parallel to the facility baseline, as well as along and across transects which include major geologic and geomorphic features such as ridges, valleys and buried bedrock valleys. At least one cross-section shall be constructed parallel to groundwater flow. Where more than one interpretation can be reasonably made, conservative assumptions shall be used when evaluating heterogeneities within the unconsolidated deposits. The following information shall be presented on the geologic cross-sections:

1. Inferred or questionable lithostatigraphic boundaries shall be shown with a dashed line or question mark.

2. For clarity, a number or symbol shall be used to label major soil units instead of extensive shading. A key shall be provided which contains a description of each major soil unit including geologic description and origin, USCS classification and color.

3. Boring logs showing the USCS classification of each major soil unit, the results of grain size analyses, Atterberg limits, and lab and field hydraulic conductivity tests. The data shall be correlated to the sample location.

4. Well construction details shown to scale including the well screen and filter pack length, the location of the upper and lower seals and stabilized water level elevations measured on the same day. Where 2 or more water table observation wells are presented on a cross-section, a line representing the water table shall be drawn. The date the measurements were taken shall be specified in the key.

(c) Water table maps. At least 2 water table contour maps shall be presented. The maps shall be based on monthly water table elevations documenting the seasonal high and low water table. For each sampling round, all water level elevations shall be measured on the same day. The water table maps shall show all wells and the measured water level elevation at each well. If 3 or more bedrock wells are installed, a bedrock piezometric map shall be prepared.

(d) Bedrock map. Where at least 3 borings to bedrock are required, a bedrock contour map shall be prepared from specific and regional data.

(e) Flow net. A flow net shall be constructed parallel to the direction of groundwater flow to show the distribution of recharge and discharge.

(14) GROUNDWATER SAMPLING AND ANALYSIS. The owner or operator shall implement a monitoring program at the facility in accordance with this section unless otherwise approved in writing by the department.

(a) Number of required monitoring points. The number of required monitoring points and the monitoring program shall be approved in writing by the department based on the facility size, waste and product types handled by the facility, facility design and hydrogeologic and geologic setting of the facility. The monitoring program shall be adequate to determine the horizontal and vertical degree and extent of contamination, horizontal and vertical gradients and to detect any impacts from the facility on groundwater quality within and beyond the property boundaries.

(b) Sampling of water supply wells. The department may require the owner or operator to sample public or private water supply wells and to determine water level elevations in such wells as part of a routine groundwater monitoring program or to determine the extent of groundwater contamination unless permission cannot be obtained from the well owner.

(c) Sampling frequency. The minimum sampling frequency shall be according to this subsection unless otherwise specified in writing by the department. Routine monitoring at facilities shall be conducted quarterly, within 15 days of March 15, June 15, September 15 and December 15. Alternative dates to those specified may be utilized if approved by the department in writing.

(d) Sampling parameters. Unless otherwise specified in writing by the department, the following parameters shall be monitored:

1. Water level elevation shall be measured and recorded to the nearest 0.01 foot in each groundwater monitoring well or other monitoring device prior to sampling. The elevation shall be corrected to USGS datum. The measuring point shall be a specific point at the top of the well casing. The specific measurement point shall be identified on the well itself if the top of the casing is not level.

2. The physical appearance of the water sample, including color, odor and turbidity, shall be recorded at the time of sampling of each monitoring device.

3. Groundwater monitoring shall be conducted based on the characteristics of hazardous waste handled or managed at the facility, the raw process materials used or as required by the department. Both the uncorrected field conductivity and the field conductivity at 25°C shall be reported. Uncorrected field conductivity does not need to be reported if a meter which automatically corrects to 25° C is used for sampling. The department may require analysis of additional parameters.

(e) Sampling and analysis plan. A groundwater sampling and analysis plan for all monitoring devices at the facility shall be prepared and submitted to the department for approval. The sampling and analysis plan shall be consistent with s. NR 635.12(12).

(f) Groundwater monitoring plan. A groundwater monitoring plan for the facility shall be prepared and submitted to the department for approval. The groundwater monitoring plan shall be consistent with s. NR 635.12(13).

(g) Analytical methods. All required chemical and physical groundwater analyses shall be conducted by a laboratory certified or registered under s. 144.95, Stats., and ch. NR 149. The laboratory shall use the analytical methods referenced in ch. NR 149 unless alternative methods are approved by the department in writing. Detection limits for all chemical analyses shall be in accordance with s. NR 140.16(2). The following tests are excluded from the requirements of ch. NR 149 but shall be performed using standard methods or procedures, if they exist.

1. Physical tests of soil,
2. Physical tests of wastes,
3. Air quality tests,
4. Gas and vapor phase tests,
5. Field pH tests,
6. Field conductivity tests,
7. Nutrient testing of soils and waste,
8. Turbidity tests,
9. Water elevation,
10. Temperature,
11. Leachate-liner compatibility testing.

(15) WELL CONSTRUCTION DOCUMENTATION. The facility owner or operator shall document all well construction activities and report the information to the department as required in s. NR 141.21 and this section. Well construction shall be documented in all plan submittals, reports or in-field conditions reports. If no plan submittal or report is being prepared at the time of well installation, documentation shall be submitted to the department within 60 days of well installation. All elevations shall be corrected to USGS datum. Elevations shall be recorded to the nearest 0.01 foot. The documentation shall be submitted on forms provided by the department which are supplemented by written descriptions. Documentation of well construction shall include the following information:

(a) Well protection. The type of protective casing; the diameter, length and elevation of the top of the protective casing; the grout used between the well casing and the protective casing; the depth and width of surface plug below the land

surface; the height of the plug above the land surface; and the type of cap and lock.

(b) Well design. The well casing type, length, diameter and schedule; the type of joints used; the screen type, length, diameter and schedule; the screen slot type and size; the percent open area of the screen; the type of screen bottom; the distance the filter pack extends above the screen; elevations of the top of casing and land surface; depth from the land surface to and elevation of the bottom of the borehole, the bottom of the well screen, and top and bottom of all seals; and well locations identified by the landfill coordinate system to the nearest foot.

(c) Materials used. A description of the filter pack material, including grain size analysis, quantity used, and manufacturer and product name or number; the well seal including the physical characteristics of the material; the type and quantity of annular space sealant including percentages of each specific material used for each well; drilling fluid including additives; and water added including the source and the results of the water quality analysis for parameters in Table 1 of s. NR 635.09.

(d) Installation techniques. The drilling method used; type of drill rig; borehole diameter; inside diameter of the hollow stem auger, if used; cleaning procedures; sealing method; time between sealing the annular space and constructing well protection; and the date the well was drilled.

(e) Well development. The date the well was developed; the date, time and the water level in the well both before and after development; the development method; time spent developing the well; volume of water removed and added; source of water; clarity of water before and after development; presence of sediment at the bottom of the well before and after development; volume of water purged; all readings of field temperature, field specific conductance, field pH and the times at which they were measured; analysis of total suspended solids and analysis of COD if drilling fluids were used during well construction.

(f) Soils information. Boring logs, soil testing results and driller's observations including any problems encountered or conditions that may affect the performance of the monitoring device or that may help in planning future well installations. Each boring log shall include soil and rock descriptions, method of sampling, sample depths and elevations, date of boring, land surface elevation, water level elevations and depths, elevation and depth of the bottom of the boring, the location of the well screen and soil test data. Soil and rock descriptions shall include geologic origin and any heterogeneities, soil structure, soil color, mottling, moisture, blow counts, layering, jointing,



lenses, fractures, organic matter or voids. Each soil layer shall be classified according to the unified soil classification system. All elevations shall be corrected to USGS datum.

(g) Miscellaneous. The raw data and calculated results of in-situ hydraulic conductivity tests; water level measurements and dates; computations of well yield, if determined; any changes in well construction, casing elevation or other features subsequent to drilling.

(h) Map. An 8 1/2 by 11 inch map, drawn to scale, showing facility boundaries, the design management zone, the location of all monitoring devices and borings, facility coordinate system, scale, north arrow and key.

(i) Forms. Groundwater monitoring well information form 4400-89, groundwater monitoring well construction form, boring log information form and other forms as required by the department completed as instructed.

Note: Copies of these forms may be obtained from the Department of Natural Resources, Bureau of Solid Waste Management, P.O. Box 7921, Madison, WI 53707.

(16) SAMPLING AND ANALYSIS DOCUMENTATION. Field records of all monitoring activities shall be prepared in sufficient detail to document whether the sampling and analysis plan has been followed and should follow department guidelines for groundwater sampling. The facility owner or operator shall retain all field records until the end of the long-term care period for the facility. Field records shall be available for department inspection on request. The owner or operator shall submit sampling results and water elevation data on forms supplied by the department within 60 days from the end of the sampling period. Forms designed by the facility owner may be approved by the department for use in submitting sampling results. Explanation of any deviation from the approved sampling plan or analytical procedures shall be submitted at the same time.

(17) BORING AND WELL ABANDONMENT DOCUMENTATION. Boring and well abandonment activities shall be documented in accordance with s. NR 141.25(4) and this section on forms provided by the department in all plan submittals, reports and in-field conditions reports. If no plan submittal or report is being prepared at the time of boring or well abandonment, documentation shall be submitted by the facility owner or operator to the department within 60 days of boring or well abandonment. Documentation shall include the exact location of the well or boring by facility coordinate system, total depth of the well, date and method of abandonment, materials and volumes of backfill used, status of well casing removal and any special precautions

taken. The method used to abandon the wells shall be documented using photographs. If the well is a public or private well, any forms required under s. NR 112.21, such as well abandonment report form 3300-5, shall be submitted. In any case, other forms previously submitted to the department, such as the groundwater monitoring well information form 4400-89, shall be revised to reflect the current condition of the monitoring system.

Note: These forms may be obtained from the Department of Natural Resources, Bureau of Solid Waste Management, P.O. Box 7921, Madison, WI 53707.

(18) BACKGROUND GROUNDWATER QUALITY. The owner or operator shall establish background groundwater quality in accordance with s. NR 635.12(15).

(19) POINT OF STANDARDS APPLICATION. The points of standards application to determine if a preventive action limit or enforcement standard has been attained or exceeded are specified in s. NR 140.22(2) and (3).

(a) Design management zone. The design management zone and waste boundary are defined in s. NR 140.22 (5)(a). The design management zone extends horizontally zero feet beyond the waste boundary for hazardous waste facilities subject to the requirements of ss. NR 635.05 to 635.15 and 635.18. For all other solid waste disposal facilities the design management zone extends horizontally 300 feet beyond the waste boundary.

(b) Changes to the design management zone. Except for those facilities subject to the requirements of ss. NR 635.05 to 635.15, the department may consider an expansion or reduction of the design management zone in accordance with s. NR 140.22(5)(b). The factors which shall be considered by the department are listed in s. NR 140.22(5)(c) and (d). An owner or operator of a facility may submit a written request for approval of an expansion or reduction of the design management zone. The request shall include an evaluation of the factors listed in s. NR 140.22(5)(c) and (d).

(20) NOTIFICATION PROCEDURES FOR EXCEEDANCES OF ENFORCEMENT STANDARDS AND PREVENTIVE ACTION LIMITS. The owner or operator of a facility required to monitor under this section shall notify the department in writing if an enforcement standard, preventive action limit or alternative concentration limit has been attained or exceeded at the point of standards application. This notification shall be given within 60 days from the end of the sampling period and shall be attached to the sampling results as specified in ss. NR 140.24(1)(a) and 140.26(1)(a). The notification shall specify the parameters for which standards have been exceeded, the wells at which the exceedance occurred

and provide a preliminary analysis of the cause and significance of the concentration.

(21) RESPONSES WHEN A GROUNDWATER STANDARD IS EXCEEDED. Upon receipt of a notification that an enforcement standard or preventive action limit has been attained or exceeded, the department shall evaluate the information. If further information is necessary to assess the cause and significance of the concentration, the department may require the owner or operator to prepare and submit a report within 60 days unless an alternative deadline is specified in writing by the department. The report shall assess the cause and significance of the exceedance based on consideration of the factors listed in s. NR 140.24(1)(c) and shall propose a response to meet the objectives of s. NR 140.24(2) or 140.26(2). The department may also require that the report include any of the information contained in sub. (22). The department shall respond to the report within 65 business days of receipt. Based on the evaluation of the report, if one is required, and the factors listed in s. NR 140.24(1)(c), the department shall specify responses to be implemented by the owner or operator of the facility in accordance with s. NR 140.24(2) or 140.26(2).

Note: The range of responses for an exceedance of a preventive action limit is specified in Table 5 of s. NR 140.24(4). The range of responses for an exceedance of an enforcement standard is listed in Table 6 of s. NR 140.26(2). The criteria the department must use to determine which responses are appropriate are included in ss. NR 140.24(2) to (6) and 140.26(2), (4), (5) and (6).

(22) IN-FIELD CONDITIONS REPORT. The department, for good cause shown, may require pursuant to s. 144.73, Stats., or as a condition of a plan approval under ss. 144.60 to 144.74, Stats., the owner or operator of any facility that has improperly managed hazardous waste, or any person who permits the use of property for such purpose, to submit an in-field conditions report to the department to determine if the facility poses a potential hazard to public health, safety or welfare, or the environment. All in-field conditions reports shall contain the following minimum information unless otherwise approved by the department in writing. Additional information contained in ch. NR 635 may also be required by the department.

(a) General facility information. An in-field conditions report shall identify the project title; name, address and phone number of the primary contacts including the facility owner and any consultants; present property owner; a general description of the facility location; the facility location by quarter-quarter section, township, range, town and county; total acreage of the property; existing hazardous waste solid waste management units;

product management areas; all public and private wells within one-half mile of the facility and the owners of all public and private wells within 1,200 feet of the limits of the facility. Well logs for all wells within 1,200 feet shall be included in the appendix of the report.

(b) Facility history. An in-field conditions report shall identify the dates the facility began generating hazardous waste; the type and volume of hazardous waste known to have been released, spilled or stored; the potential for the hazardous waste to biologically decompose and generate gas; the area utilized and disturbed by hazardous waste handling and disposal; the overall operation of the facility; any facility engineering controls which were installed to prevent the generation of hazardous waste through releases, spills or discharges; the history of how the hazardous waste was generated; and any adjoining active or closed facilities or activities which may contribute to environmental contamination.

(c) Land use information. The in-field conditions report shall discuss the present and former land uses at the facility and the surrounding area. A thorough discussion of land uses which may have affected groundwater or surface water quality shall be included. The report shall address all areas that may affect or be affected by the facility. At a minimum, this will be the area within one mile of the facility. The discussions shall be supplemented with land use maps. At a minimum, the following items shall be addressed:

1. Identification and location of the adjacent land owners. This information may be presented on a plat map. However, current ownership conditions shall be verified and any changes noted.

2. A description of the present land uses in the area shall be included. Particular emphasis shall be placed on the discussion of known recreational, historical, archaeological or environmentally unique areas including natural or scientific areas, county forest lands and critical habitat. A letter from the department's bureau of endangered resources addressing the known presence of any endangered or threatened species, critical habitat and natural or scientific areas shall be included.

3. The present or proposed transportation routes and access roads including any weight restrictions shall be delineated.

(d) Regional geotechnical information. An in-field conditions report shall discuss the regional setting of the facility to provide a basis for comparison and interpretation of information obtained through field investigations. This discussion may be limited to information available from publications such as a hydrologic investigations atlas, water

supply papers, informational circulars and technical bulletins published by the Wisconsin state geologic and natural history survey, the United States geological survey, the Wisconsin department of natural resources, U.W.-extension, regional planning commissions and the soil conservation service. The regional setting to be described is the area which may affect or be affected by the facility. At a minimum, this will be the area within 5 miles of the limits of filling. The discussions shall be supplemented with available regional bedrock and glacial geology maps, USGS topographic maps, SCS soil maps and regional water table maps. The following items shall be specifically addressed:

1. The existing topography including predominant topographic features.

2. The surface water drainage patterns and significant hydrologic features such as surface waters, springs, surface water drainage basins, divides and wetlands.

3. The origin, texture, nature and distribution of bedrock; the origin, texture, thickness and distribution of the unconsolidated units; and the texture and classification of the surficial soils.

4. The depth to groundwater, groundwater flow directions and gradients, recharge and discharge areas, groundwater divides, aquifers and identification of the aquifers used by public and private wells in the region. An indication of which aquifer systems are most susceptible to contamination shall be made.

5. Information on groundwater and surface water quality which is available from the USGS, WSGNHS, DNR, UW-Extension and regional planning commissions.

(e) Specific facility investigations. An in-field conditions report shall contain the results of field inspections and investigations which define the topography, subsurface soils, depth to bedrock, type of bedrock, depth to groundwater, groundwater flow direction and gradients at the facility, the horizontal and vertical extent of contamination, background groundwater quality, surface water quality and the degree and extent of groundwater and surface water contamination. The results of this investigation shall be described in the narrative section of the in-field conditions report. All raw data such as boring logs, well construction diagrams, laboratory tests, field hydraulic conductivity test data, water quality information and water level measurements shall be included in the report appendix. At a minimum, the following investigations shall be performed unless an alternative geotechnical investigation program is approved by the department in writing:

1. Borings shall be drilled at a sufficient number of separate locations to define the site geology and to define the degree and extent of soil contamination within and beyond the facility boundaries. All borings shall be extended a minimum of 10 feet below the lowest elevation below ground surface where documented evidence of contamination has been found. If regional information suggests that bedrock is within 75 feet of the land surface, a minimum of one boring shall be extended to bedrock. The borings shall be distributed so that requirements of this section are met. Samples shall be collected and boring logs prepared in accordance with subs. (10) and (17). Borings not converted to wells shall be abandoned in accordance with subs. (8) and (17).

2. A sufficient number of water table observation wells shall be installed to adequately define the depth to groundwater, horizontal gradients and horizontal degree and extent of contamination at the facility. The wells shall be constructed such that the water table intersects the well screen at all times during the year. A sufficient number of piezometers shall be installed adjacent to water table observation well to create a well nest for the purpose of defining vertical gradients and vertical degree and extent of contamination. In addition, in fine-grained soil environments, a well nest consisting of at least 2 piezometers shall be installed adjacent to a water table observation well. All wells shall be constructed, developed and documented in accordance with subs. (7) and (15).

3. A hydrogeologist meeting the definition of s. NR 600.03(119) or other equally qualified person shall observe and direct the drilling of all borings; the installation, development and abandonment of all wells and all in-field hydraulic conductivity tests. The hydrogeologist or other equally qualified person shall also visually describe and classify all geologic samples. Any odor associated with the samples shall also be noted.

4. Laboratory and field analyses shall be conducted to identify the specific geologic and hydrogeologic conditions at the facility in accordance with subs. (10) to (16).

5. Once the groundwater monitoring wells have been installed and properly developed, at least 3 rounds of water quality sampling shall be performed with a minimum of one month between sampling rounds. At a minimum, the samples shall be analyzed for the parameters listed in Table I and any other parameters that are effective for monitoring the type of hazardous waste that was handled by the facility. Unless otherwise approved by the department, at the same time the first round of sampling is undertaken a sample from each well shall be analyzed for all volatile organic compounds listed in Table 1 of s. NR 140.10 and

any additional compounds specified by the department. The testing shall be done using a gas chromatograph/mass spectrophotometer in accordance with SW 846 method 8240 or EPA wastewater method 624. As an alternative the analysis may be performed using a gas chromatograph/photoionization detector/Hall detector in accordance with SW 846 methods 8010/8020 or EPA wastewater methods 601/602. Any wells which have concentrations of VOC's above the limits of quantification shall be resampled during the following 2 sampling rounds. Any private wells within 1,200 feet of the facility shall be sampled at the same time as the monitoring wells and for the same parameters.

Note: These publications may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

6. The hazardous waste types known to have been generated, discharged, released or spilled at the facility shall be evaluated for the potential for gas or vapor phase migration. Any facility which contains or is thought to contain hazardous wastes which can biologically decompose shall be instrumented with gas or vapor phase monitoring probes. The probes shall be installed to define the concentration and lateral degree and extent of gas or vapor phase migration. The probes shall be installed in the soil units most likely to allow gas or vapor phase migration. The probes shall be sampled a minimum of 3 times for methane and any other appropriate gases that are by-products or chemical breakdown products of the hazardous waste being evaluated by the facility. The department shall be notified immediately if any gas or vapor phase probe exceeds the lower explosive limit for the particular gas or vapor tested.

(f) Data presentation. The results of the subsurface investigations and water quality sampling shall be presented on 24 inch x 36 inch plan sheets unless an alternative size is approved by the department in writing, as follows:

1. A topographic map of the area showing where any product storage tanks are located, areas where hazardous waste generation, spills, releases or discharges occurred, property boundaries, fencing, major utility corridors, homes, buildings, man-made features, adjacent or nearby wetlands, public and private water supply wells, the location of soil borings and groundwater monitoring wells and the location of all other monitoring devices at the facility. The base map shall consist of a map having a minimum scale of one-inch equals 200 feet with a 2 foot contour interval sufficient to show relief and drainage

features. The map shall contain a local grid system with the location of the origin identified according to latitude and longitude or the state plane coordinate system.

2. Geologic cross-sections shall be constructed through all borings both perpendicular and parallel to the facility baseline as well as along transects which include major geologic and geomorphic features. At least one cross-section shall be constructed parallel to groundwater flow. Where more than one interpretation can be reasonably made, conservative assumptions shall be used when evaluating heterogeneities within the unconsolidated deposits. Information on the geologic cross-sections shall be presented in accordance with sub. (13).

3. At least one water table contour map shall be included. The maps shall be based on stabilized water levels recorded on a single day from all observation wells at the facility. All the wells and the measured water level at each well shall be shown on the water table maps. The topographic map shall be used as a base map. If more than one set of water levels has been taken, the water table map shall be based on the set of data which indicates the highest water table.

4. At least 3 iso-concentration maps shall be presented for the parameters which most accurately depict the degree and extent of contamination. The concentration of the particular parameter shall be presented for each well.

(g) Map. An 8 1/2 by 11 inch map shall be submitted. The map shall be drawn to scale and show the facility boundaries, the design management zone, the location of all monitoring devices and borings, the facility coordinate system, the scale, a north arrow and a key.

(h) Forms. The groundwater monitoring well information form 4400-89, the groundwater monitoring well construction form, the boring log information form and other forms as required by the department shall be completed as instructed.

(i) Data analysis. The results from the sub-surface investigations, water quality sampling, gas monitoring and regional geotechnical information shall be evaluated to determine:

1. Whether any groundwater standards have been attained or exceeded. If any preventive action limits or enforcement standards established under s. NR 140.10 or 140.12 have been exceeded, the cause and significance of the exceedances shall be addressed. If significant contamination appears to be present, the factors listed in s. NR 140.24(1)(c) shall be addressed.



2. Whether surface water quality has been impacted by the facility.

3. Whether gas or vapor phase migration is occurring. If it is determined that gas or vapor phase migration is occurring, any residences, businesses, industries or other structures which have or may be affected by gas migration shall be identified.

(j) Proposed remedial actions. Based on an evaluation of the data generated, the types of remedial actions necessary to return the facility to compliance with the requirements of chs. NR 600 to 685 shall be proposed. Sections NR 140.24(4) and 140.26(2) outline the required set of remedial actions depending on what parameters are affected and whether or not a preventive action limit or enforcement standard has been exceeded. A long-term environmental monitoring program shall be proposed so the performance of the facility and the effects of any remedial action can be evaluated.

SECTION 158. NR 635 Appendix I is repealed and recreated to read:

## APPENDIX I

GROUNDWATER MONITORING LIST <sup>1</sup>

Common name <sup>2</sup>	CAS RN <sup>3</sup>	Chemical abstracts service index name <sup>4</sup>	Sug- gested meth- ods <sup>5</sup>	PQL (µg/L) <sup>6</sup>
Acenaphthene . . . . .	00083-32-9	Acenaphthylene, 1,2-dihydro- . . . . .	8100	200
			8270	10
Acenaphthylene . . . . .	00208-96-8	Acenaphthylene . . . . .	8100	200
			8270	10
Acetone . . . . .	00067-64-1	2-Propanone . . . . .	8240	100
Acetophenone . . . . .	00098-86-2	Ethanone, 1-phenyl- . . . . .	8270	10
Acetonitrile; Methyl cyanide . . . . .	00075-05-8	Acetonitrile . . . . .	8015	100
2-Acetylaminofluorene; 2-AAF . . . . .	00053-96-3	Acetamide, N-9H-fluoren-2-yl- . . . . .	8270	10
Acrolein . . . . .	00107-02-8	2-Propenal . . . . .	8030	5
			8240	5
Acrylonitrile . . . . .	00107-13-1	2-Propenenitrile . . . . .	8030	5
			8240	5
Aldrin . . . . .	00309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a,5,8,8a-hexahydro- (1alpha,4alpha,4abeta,5alpha,8alpha, 8abeta)- . . . . .	8080	0.05
			8270	10
Allyl chloride . . . . .	00107-05-1	1-Propene, 3-chloro- . . . . .	8010	5
			8240	100
4-Aminobiphenyl . . . . .	00092-67-1	[1,1'-Biphenyl]-4-amine . . . . .	8270	10
Aniline . . . . .	00062-53-3	Benzenamine . . . . .	8270	10
Anthracene . . . . .	00120-12-7	Anthracene . . . . .	8100	200
			8270	10
Antimony . . . . .	(Total)	Antimony . . . . .	6010	300
			7040	2,000
			7041	30
Aramite . . . . .	00140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester . . . . .	8270	10
Arsenic . . . . .	(Total)	Arsenic . . . . .	6010	500
			7060	10
			7061	20
Barium . . . . .	(Total)	Barium . . . . .	6010	20
			7080	1,000
Benzene . . . . .	00071-43-2	Benzene . . . . .	8020	2
			8240	5
Benzo[a]anthracene; Benzanthracene . . . . .	00056-55-3	Benz[a]anthracene . . . . .	8100	200
			8270	10
Benzo[b]fluoranthene . . . . .	00205-99-2	Benz[e]acephenanthrylene . . . . .	8100	200
			8270	10
Benzo[k]fluoranthene . . . . .	00207-08-9	Benzo[k]fluoranthene . . . . .	8100	200
			8270	10
Benzo[ghi]perylene . . . . .	00191-24-2	Benzo[ghi]perylene . . . . .	8100	200
			8270	10
Benzo[a]pyrene . . . . .	00050-32-8	Benzo[a]pyrene . . . . .	8100	200
			8270	10
Benzyl alcohol . . . . .	00100-51-6	Benzenemethanol . . . . .	8270	20
Beryllium . . . . .	(Total)	Beryllium . . . . .	6010	3
			7090	50
			7091	2

alpha-BHC . . . . .	00319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5beta,6beta)-	8080 8250	0.05 10
beta-BHC . . . . .	00319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2beta,3alpha,4beta,5alpha,6beta)-	8080 8250	0.05 40
delta-BHC . . . . .	00319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3alpha,4beta,5alpha,6beta)-	8080 8250	0.1 30
gamma-BHC; Lindane . . . . .	00058-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-	8080 8250	0.05 10
Bis(2-chloroethoxy)methane . . . . .	00111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis-[2-chloro-	8270	10
Bis(2-chloroethyl)ether . . . . .	00111-44-4	Ethane, 1,1'-oxybis[2-chloro-	8270	10
Bis(2-chloro-1-methylethyl) ether; 2,2'-Dichlorodiisopropyl ether	00108-60-1	Propane, 2,2'-oxybis[1-chloro-	8010 8270	100 10
Bis(2-ethylhexyl) phthalate . . . . .	00117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester	8060 8270	20 10
Bromodichloromethane . . . . .	00075-27-4	Methane, bromodichloro-	8010 8240	1 5
Bromoform; Tribromomethane . . . . .	00075-25-2	Methane, tribromo-	8010 8240	2 5
4-Bromophenyl phenyl ether . . . . .	00101-55-3	Benzene, 1-bromo-4-phenoxy-	8270	10
Butyl benzyl phthalate;	00085-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060 8270	5 10
Benzyl butyl phthalate				
Cadmium . . . . .	(Total)	Cadmium . . . . .	6010 7130 7131	40 50 1
Carbon disulfide . . . . .	00075-15-0	Carbon disulfide . . . . .	8240	5
Carbon tetrachloride . . . . .	00056-23-5	Methane, tetrachloro-	8010 8240	1 5
Chlordane . . . . .	00057-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080 8250	0.1 10
p-Chloroaniline . . . . .	00106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene . . . . .	00108-90-7	Benzene, chloro-	8010 8020 8240	2 2 5
Chlorobenzilate . . . . .	00510-15-6	Benzenoacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	8270	10
p-Chloro-m-cresol . . . . .	00059-50-7	Phenol, 4-chloro-3-methyl-	8040 8270	5 20
Chloroethane; Ethyl chloride	00075-00-3	Ethane, chloro-	8010 8240	5 10
Chloroform . . . . .	00067-66-3	Methane, trichloro-	8010 8240	0.5 5
2-Chloronaphthalene . . . . .	00091-58-7	Naphthalene, 2-chloro-	8120 8270	10 10
2-Chlorophenol . . . . .	00095-57-8	Phenol, 2-chloro-	8040 8270	5 10
4-Chlorophenyl phenyl ether . . . . .	07005-72-3	Benzene, 1-chloro-4-phenoxy-	8270	10
Chloroprene . . . . .	00126-99-8	1,3-Butadiene, 2-chloro-	8010 8240	50 5
Chromium . . . . .	(Total)	Chromium . . . . .	6010 7190 7191	70 500 10
Chrysene . . . . .	00218-01-9	Chrysene . . . . .	8100 8270	200 10

Cobalt . . . . .	(Total)	Cobalt . . . . .	6010	70
			7200	500
			7201	10
Copper . . . . .	(Total)	Copper . . . . .	6010	60
			7210	200
m-Cresol . . . . .	00108-39-4	Phenol, 3-methyl- . . . . .	8270	10
o-Cresol . . . . .	00095-48-7	Phenol, 2-methyl- . . . . .	8270	10
p-Cresol . . . . .	00106-44-5	Phenol, 4-methyl- . . . . .	8270	10
Cyanide . . . . .	00057-12-5	Cyanide . . . . .	9010	40
2,4-D; 2,4-Dichlorophenoxy- acetic acid	00094-75-7	Acetic acid, (2,4-dichlorophenoxy)- .	8150	10
4,4'-DDD . . . . .	00072-54-8	Benzene 1,1'-(2,2- dichloroethylidene)bis[4-chloro- Benzene, 1,1'- (dichloroethenylidene)bis[4-chloro- Benzene, 1,1'-(2,2,2- trichloroethylidene)bis[4-chloro- Carbamothioic acid, bis(1- methylethyl)-, S- (2,3-dichloro-2- propenyl) ester Dibenz[a,h]anthracene . . . . .	8080 8270 8080 8270 8080 8270 8270	0.1 10 0.05 10 0.1 10 10
4,4'-DDE . . . . .	00072-55-9			
4,4'-DDT . . . . .	00050-29-3			
Diallate . . . . .	02303-16-4			
Dibenz[a,h]anthracene . . . . .	00053-70-3		8100	200
			8270	10
Dibenzofuran . . . . .	00132-64-9	Dibenzofuran . . . . .	8270	10
Dibromochloromethane; Chlorodibromomethane	00124-48-1	Methane, dibromochloro- . . . . .	8010	1
1,2-Dibromo-3-chloropropane; DBCP	00096-12-8	Propane, 1,2-dibromo-3-chloro- . . .	8240	5
			8010	100
			8240	5
			8270	10
1,2-Dibromoethane; Ethylene dibromide	00106-93-4	Ethane, 1,2-dibromo- . . . . .	8010	10
Di-n-butyl phthalate . . . . .	00084-74-2		8240	5
o-Dichlorobenzene . . . . .	00095-50-1	1,2-Benzenedicarboxylic acid, dibutyl ester Benzene, 1,2-dichloro- . . . . .	8060 8270 8010 8020 8120 8270	5 10 2 5 10 10
			8010	5
			8020	5
			8120	10
			8270	10
m-Dichlorobenzene . . . . .	00541-73-1	Benzene, 1,3-dichloro- . . . . .	8010 8020 8120 8270	5 5 10 10
			8010	5
			8020	5
			8120	10
			8270	10
p-Dichlorobenzene . . . . .	00106-46-7	Benzene, 1,4-dichloro- . . . . .	8010 8020 8120 8270	2 5 15 10
			8270	20
3,3'-Dichlorobenzidine . . . . .	00091-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'- dichloro- 2-Butene, 1,4-dichloro-, (E)- . . . . .	8270	5
trans-1,4-Dichloro-2-butene .	00110-57-6		8240	5
Dichlorodifluoromethane . . . . .	00075-71-8	Methane, dichlorodifluoro- . . . . .	8010	10
			8240	5
1,1-Dichloroethane . . . . .	00075-34-3	Ethane, 1,1-dichloro- . . . . .	8010	1
			8240	5
1,2-Dichloroethane; Ethylene dichloride	00107-06-2	Ethane, 1,2-dichloro- . . . . .	8010	0.5
1,1-Dichloroethylene; Vinylidene chloride	00075-35-4	Ethene, 1,1-dichloro- . . . . .	8240	5
trans-1,2-Dichloroethylene .	00156-60-5	Ethene, 1,2-dichloro-, (E)- . . . . .	8010	1
			8240	5
2,4-Dichlorophenol . . . . .	00120-83-2	Phenol, 2,4-dichloro- . . . . .	8010	1
			8240	5
2,6-Dichlorophenol . . . . .	00087-65-0	Phenol, 2,6-dichloro- . . . . .	8040	5
1,2-Dichloropropane . . . . .	00078-87-5	Propane, 1,2-dichloro- . . . . .	8270 8270	10 10
			8010	0.5
			8240	5

cis-1,3-Dichloropropene . . .	10061-01-5	1-Propene, 1,3-dichloro-, (Z)- . . .	8010	20
			8240	5
trans-1,3-Dichloropropene . . .	10061-02-6	1-Propene, 1,3-dichloro-, (E)- . . .	8010	5
			8240	5
Dieldrin . . . . .	00060-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,-7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-	8080	0.05
			8270	10
Diethyl phthalate . . . . .	00084-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060	5
			8270	10
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin Dimethoate . . . . .	00297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	8270	10
	00060-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	8270	10
p-(Dimethylamino)azobenzene . . . . .	00060-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	00057-97-6	Benz[a]anthracene, 7,12-dimethyl- . .	8270	10
3,3'-Dimethylbenzidine . . . . .	00119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	8270	10
alpha, alpha-Dimethylphenethylamine	00122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-	8270	10
2,4-Dimethylphenol . . . . .	00105-67-9	Phenol, 2,4-dimethyl- . . . . .	8040	5
			8270	10
Dimethyl phthalate . . . . .	00131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060	5
			8270	10
m-Dinitrobenzene . . . . .	00099-65-0	Benzene, 1,3-dinitro- . . . . .	8270	10
4,6-Dinitro-o-cresol . . . . .	00534-52-1	Phenol, 2-methyl-4,6-dinitro- . . . .	8040	150
			8270	50
2,4-Dinitrophenol . . . . .	00051-28-5	Phenol, 2,4-dinitro- . . . . .	8040	150
			8270	50
2,4-Dinitrotoluene . . . . .	00121-14-2	Benzene, 1-methyl-2,4-dinitro- . . . .	8090	0.2
			8270	10
2,6-Dinitrotoluene . . . . .	00606-20-2	Benzene, 2-methyl-1,3-dinitro- . . . .	8090	0.1
			8270	10
Dinoseb; DNEP; 2-sec-Butyl-4,6-dinitrophenol	00088-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150	1
			8270	10
Di-n-octyl phthalate . . . . .	00117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060	30
			8270	10
1,4-Dioxane . . . . .	00123-91-1	1,4-Dioxane . . . . .	8015	150
Diphenylamine . . . . .	00122-39-4	Benzenamine, N-phenyl- . . . . .	8270	10
Disulfoton . . . . .	00298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester	8140	2
			8270	10
Endosulfan I . . . . .	00959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3alpha,5abeta,6alpha,9alpha,9abeta)-	8080	0.1
			8250	10
Endosulfan II . . . . .	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3alpha,5aalpha,6beta,9beta,9aalpha)-	8080	0.05
			8270	10
Endosulfan sulfate . . . . .	01031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide	8080	0.5
			8270	10
Endrin . . . . .	00072-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,-7,7a-octahydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-	8080	0.1
			8250	10

Endrin aldehyde . . . . .	07421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1alpha,2beta,2abeta,4beta,4abeta,-5beta,6abeta,6bbeta,7R')-	8080 8270	0.2 10
Ethylbenzene . . . . .	00100-41-4	Benzene, ethyl-	8020 8240	2 5
Ethyl methacrylate . . . . .	00097-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8240 8270	10 5 10
Ethyl methanesulfonate . . . . .	00062-50-0	Methanesulfonic acid, ethyl ester . .	8270	10
Famphur . . . . .	00052-85-7	Phosphorothioic acid, O-[4-(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester	8270	10
Fluoranthene . . . . .	00206-44-0	Fluoranthene . . . . .	8100 8270	200 10
Fluorene . . . . .	00086-73-7	9H-Fluorene . . . . .	8100 8270	200 10
Heptachlor . . . . .	00076-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	8080 8270	0.05 10
Heptachlor epoxide . . . . .	01024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,-6,6a,-hexahydro-, (1alpha,1bbeta,2alpha,5alpha,5abeta,6beta,6aalpha)	8080 8270	1 10
Hexachlorobenzene . . . . .	00118-74-1	Benzene, hexachloro-	8120 8270	0.5 10
Hexachlorobutadiene . . . . .	00087-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8120 8270	5 10
Hexachlorocyclopentadiene . . . . .	00077-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 8270	5 10
Hexachloroethane . . . . .	00067-72-1	Ethane, hexachloro-	8120 8270	0.5 10
Hexachlorophene . . . . .	00070-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	8270	10
Hexachloropropene . . . . .	01888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone . . . . .	00591-78-6	2-Hexanone . . . . .	8240	50
Indeno(1,2,3-cd)pyrene . . . . .	00193-39-5	Indeno[1,2,3-cd]pyrene . . . . .	8100 8270	200 10
Isobutyl alcohol . . . . .	00078-83-1	1-Propanol, 2-methyl-	8015	50
Isodrin . . . . .	00465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1alpha,4alpha,4abeta,5beta,8beta,8abeta)-	8270	10
Isophorone . . . . .	00078-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090 8270	60 10
Isosafrole . . . . .	00120-58-1	1,3-Benzodioxole, 5-(1-propenyl)- . .	8270	10
Kepone . . . . .	00143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270	10
Lead . . . . .	(Total)	Lead . . . . .	6010 7420 7421	40 1,000 10
Mercury . . . . .	(Total)	Mercury . . . . .	7470	2
Methacrylonitrile . . . . .	00126-98-7	2-Propenenitrile, 2-methyl-	8015 8240	5 5
Methapyrilene . . . . .	00091-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	8270	10
Methoxychlor . . . . .	00072-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-	8080 8270	2 10

Methyl bromide; Bromomethane	00074-83-9	Methane, bromo- . . . . .	8010	20
			8240	10
Methyl chloride; Chloro- methane	00074-87-3	Methane, chloro- . . . . .	8010	1
			8240	10
3-Methylcholanthrene . . . . .	00056-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3- methyl-	8270	10
Methylene bromide; Dibromo- methane	00074-95-3	Methane, dibromo- . . . . .	8010	15
			8240	5
Methylene chloride; Dichloromethane	00075-09-2	Methane, dichloro- . . . . .	8010	5
			8240	5
Methyl ethyl ketone; MEK . . .	00078-93-3	2-Butanone . . . . .	8015	10
			8240	100
Methyl iodide; Iodomethane . .	00074-88-4	Methane, iodo- . . . . .	8010	40
			8240	5
Methyl methacrylate . . . . .	00080-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015	2
			8240	5
Methyl methanesulfonate . . . .	00066-27-3	Methanesulfonic acid, methyl ester .	8270	10
2-Methylnaphthalene . . . . .	00091-57-6	Naphthalene, 2-methyl- . . . . .	8270	10
Methyl parathion; Parathion methyl	00298-00-0	Phosphorothioic acid, O,O-dimethyl O- (4-nitrophenyl) ester	8140	0.5
			8270	10
4-Methyl-2-pentanone; Methyl isobutyl ketone	00108-10-1	2-Pentanone, 4-methyl- . . . . .	8015	5
			8240	50
Naphthalene . . . . .	00091-20-3	Naphthalene . . . . .	8100	200
			8270	10
1,4-Naphthoquinone . . . . .	00130-15-4	1,4-Naphthalenedione . . . . .	8270	10
1-Naphthylamine . . . . .	00134-32-7	1-Naphthalenamine . . . . .	8270	10
2-Naphthylamine . . . . .	00091-59-8	2-Naphthalenamine . . . . .	8270	10
Nickel . . . . .	(Total)	Nickel . . . . .	6010	50
			7520	400
o-Nitroaniline . . . . .	00088-74-4	Benzenamine, 2-nitro- . . . . .	8270	50
m-Nitroaniline . . . . .	00099-09-2	Benzenamine, 3-nitro- . . . . .	8270	50
p-Nitroaniline . . . . .	00100-01-6	Benzenamine, 4-nitro- . . . . .	8270	50
Nitrobenzene . . . . .	00098-95-3	Benzene, nitro- . . . . .	8090	40
			8270	10
o-Nitrophenol . . . . .	00088-75-5	Phenol, 2-nitro- . . . . .	8040	5
			8270	10
p-Nitrophenol . . . . .	00100-02-7	Phenol, 4-nitro- . . . . .	8040	10
			8270	50
4-Nitroquinoline 1-oxide . . . .	00056-57-5	Quinoline, 4-nitro-, 1-oxide . . . . .	8270	10
N-Nitrosodi-n-butylamine . . . .	00924-16-3	1-Butanamine, N-butyl-N-nitroso- . . .	8270	10
N-Nitrosodiethylamine . . . . .	00055-18-5	Ethanamine, N-ethyl-N-nitroso- . . . .	8270	10
N-Nitrosodimethylamine . . . . .	00062-75-9	Methanamine, N-methyl-N-nitroso- . . .	8270	10
N-Nitrosodiphenylamine . . . . .	00086-30-6	Benzenamine, N-nitroso-N-phenyl- . . .	8270	10
N-Nitrosodipropylamine; Di-n- propylnitrosamine	00621-64-7	1-Propanamine, N-nitroso-N-propyl- . .	8270	10
N-Nitrosomethylethylamine . . . .	10595-95-6	Ethanamine, N-methyl-N-nitroso- . . . .	8270	10
N-Nitrosomorpholine . . . . .	00059-89-2	Morpholine, 4-nitroso- . . . . .	8270	10
N-Nitrosopiperidine . . . . .	00100-75-4	Piperidine, 1-nitroso- . . . . .	8270	10
N-Nitrosopyrrolidine . . . . .	00930-55-2	Pyrrolidine, 1-nitroso- . . . . .	8270	10
5-Nitro-o-toluidine . . . . .	00099-55-8	Benzenamine, 2-methyl-5-nitro- . . . .	8270	10
Parathion . . . . .	00056-38-2	Phosphorothioic acid, O,O-diethyl-O- (4-nitrophenyl) ester	8270	10
Polychlorinated biphenyls; PCBs	See Note 7	1,1'-Biphenyl, chloro derivatives . . .	8080	50
			8250	100
Polychlorinated dibenzo-p- dioxins; PCDDs	See Note 8	Dibenzo[b,e][1,4]dioxin, chloro derivatives	8280	0.01
Polychlorinated dibenzofur- ans; PCDFs	See Note 9	Dibenzofuran, chloro derivatives . . .	8280	0.01
Pentachlorobenzene . . . . .	00608-93-5	Benzene, pentachloro- . . . . .	8270	10
Pentachloroethane . . . . .	00076-01-7	Ethane, pentachloro- . . . . .	8240	5
			8270	10

Pentachloronitrobenzene . . .	00082-68-8	Benzene, pentachloronitro- . . . . .	8270	10
Pentachlorophenol . . . . .	00087-86-5	Phenol, pentachloro- . . . . .	8040	5
			8270	50
Phenacetin . . . . .	00062-44-2	Acetamide, N-(4-ethoxyphenyl) . . . . .	8270	10
Phenanthrene . . . . .	00085-01-8	Phenanthrene . . . . .	8100	200
			8270	10
Phenol . . . . .	00108-95-2	Phenol . . . . .	8040	1
			8270	10
p-Phenylenediamine . . . . .	00106-50-3	1,4-Benzenediamine . . . . .	8270	10
Phorate . . . . .	00298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	8140	2
			8270	10
2-Picoline . . . . .	00109-06-8	Pyridine, 2-methyl- . . . . .	8240	5
			8270	10
Pronamide . . . . .	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1- dimethyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	00107-12-0	Propanenitrile . . . . .	8015	60
			8240	5
Pyrene . . . . .	00129-00-0	Pyrene . . . . .	8100	200
			8270	10
Pyridine . . . . .	00110-86-1	Pyridine . . . . .	8240	5
			8270	10
Safrole . . . . .	00094-59-7	1,3-Benzodioxole, 5-(2-propenyl)- . .	8270	10
Selenium . . . . .	(Total)	Selenium . . . . .	6010	750
			7740	20
			7741	20
Silver . . . . .	(Total)	Silver . . . . .	6010	70
			7760	100
Silvex; 2,4,5-TP . . . . .	00093-72-1	Propanoic acid, 2-(2,4,5- trichlorophenoxy)-	8150	2
Styrene . . . . .	00100-42-5	Benzene, ethenyl- . . . . .	8020	1
			8240	5
Sulfide . . . . .	18496-25-8	Sulfide . . . . .	9030	10,000
2,4,5-T; 2,4,5-Trichloro- phenoxyacetic acid	00093-76-5	Acetic acid, (2,4,5- trichlorophenoxy)-	8150	2
2,3,7,8-TCDD; 2,3,7,8- Tetrachlorodibenzo-p-dioxin	01746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8- tetrachloro-	8280	0.005
1,2,4,5-Tetrachlorobenzene . .	00095-94-3	Benzene, 1,2,4,5-tetrachloro- . . . . .	8270	10
1,1,1,2-Tetrachloroethane . .	00630-20-6	Ethane, 1,1,1,2-tetrachloro- . . . . .	8010	5
			8240	5
1,1,2,2-Tetrachloroethane . .	00079-34-5	Ethane, 1,1,2,2-tetrachloro- . . . . .	8010	0.5
			8240	5
Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	00127-18-4	Ethene, tetrachloro- . . . . .	8010	0.5
			8240	5
2,3,4,6-Tetrachlorophenol . .	00058-90-2	Phenol, 2,3,4,6-tetrachloro- . . . . .	8270	10
Tetraethyl dithiopyrophos- phate; Sulfotepp	03689-24-5	Thiodiphosphoric acid ((HO) <sub>2</sub> P(S)) <sub>2</sub> O, tetraethyl ester	8270	10
Thallium . . . . .	(Total)	Thallium . . . . .	6010	400
			7840	1,000
			7841	10
Tin . . . . .	(Total)	Tin . . . . .	7870	8,000
Toluene . . . . .	00108-88-3	Benzene, methyl- . . . . .	8020	2
			8240	5
o-Toluidine . . . . .	00095-53-4	Benzenamine, 2-methyl- . . . . .	8270	10
Toxaphene . . . . .	08001-35-2	Toxaphene . . . . .	8080	2
			8250	10
1,2,4-Trichlorobenzene . . . .	00120-82-1	Benzene, 1,2,4-trichloro- . . . . .	8270	10
1,1,1-Trichloroethane; Methylchloroform	00071-55-6	Ethane, 1,1,1-trichloro- . . . . .	8240	5
1,1,2-Trichloroethane . . . . .	00079-00-5	Ethane, 1,1,2-trichloro- . . . . .	8010	0.2
			8240	5



Trichloroethylene; Trichloro-ethene	00079-01-6	Ethene, trichloro-	8010	1
			8240	5
Trichlorofluoromethane	00075-69-4	Methane, trichlorofluoro-	8010	10
			8240	5
2,4,5-Trichlorophenol	00095-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	00088-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	00096-18-4	Propane, 1,2,3-trichloro-	8010	10
			8240	5
O,O,O-Triethyl phosphorothioate	00126-68-1	Phosphorothioic acid, O,O,O-triethyl ester	8270	10
sym-Trinitrobenzene	00099-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2,000
			7911	40
Vinyl acetate	00108-05-4	Acetic acid, ethenyl ester	8240	5
Vinyl chloride	00075-01-4	Ethene, chloro-	8010	2
			8240	10
Xylene (total)	01330-20-7	Benzene, dimethyl-	8020	5
			8240	5
Zinc	(Total)	Zinc	6010	20
			7950	50

<sup>1</sup> The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

<sup>2</sup> Common names are those widely used in government regulations, scientific publications and commerce; synonyms exist for many chemicals.

<sup>3</sup> Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.

<sup>4</sup> CAS index names are those used in the 9th Cumulative Index.

<sup>5</sup> Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986. Analytical details can be found in SW-846 and in documentation on file with EPA. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable methods for monitoring an analyte under the regulations. Note: The publication SW-846 may be obtained from:

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
(703) 487-4600

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

<sup>6</sup> Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in groundwaters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

<sup>7</sup> Polychlorinated biphenyls (CAS RN 01336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1) and Aroclor-1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

<sup>8</sup> This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

<sup>9</sup> This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.

SECTION 159. Chapter NR 636 is created to read:

Chapter NR 636

CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

NR 636.01 Purpose  
NR 636.02 Applicability  
NR 636.03 Definitions  
NR 636.04 Exemptions  
NR 636.40 Corrective action management units (CAMU)  
NR 636.41 Temporary Units (TU)

NR 636.01 PURPOSE. The purpose of this chapter is to specify provisions for corrective action management units (CAMUs) and temporary units (TUs) to function solely to manage remediation wastes generated at a hazardous waste facility.

NR 636.02 APPLICABILITY. This chapter applies to any hazardous waste treatment, storage or disposal facility that had or should have had an interim license. This chapter does not apply to solid waste facilities that manage only non-hazardous solid waste, metallic mining wastes resulting from a mining operation as defined in s. 144.81(5), Stats., or polychlorinated biphenyls (PCBs), except where portions of this chapter are referenced in ch. NR 157.

NR 636.03 DEFINITIONS. The definitions in s. NR 600.03 apply to this chapter.

NR 636.04 EXEMPTIONS. The requirements of this chapter do not apply to the following:

(1) Solid waste disposal facilities licensed under chs. NR 500 to 522 provided that:

(a) The solid waste disposal facility has been approved under s. NR 506.15 to accept hazardous waste only from very small quantity generators; and

(b) The solid waste disposal facility does not meet the definition of a solid waste management unit.

(2) Only non-hazardous solid waste facilities that do not meet the definition of solid waste management unit.

NR 636.40 CORRECTIVE ACTION MANAGEMENT UNITS (CAMU). (1) For the purpose of implementing remedies under s. NR 635.17 or s. 144.735, Stats., the department may designate an area at the facility as a corrective action management unit, as defined in s.

NR 600.03, in accordance with the requirements of this section. One or more CAMUs may be designated at a facility.

(a) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(b) Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(2)(a) The department may designate a regulated unit, as defined in s. NR 635.05(1), as a CAMU, or may incorporate a regulated unit into a CAMU, if:

1. The regulated unit is closed or closing, meaning it has begun the closure process under s. NR 685.05; and

2. Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(b) The requirements of chs. NR 630 to 685 that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(3) The department shall designate a CAMU in accordance with the following:

(a) The CAMU shall facilitate the implementation of reliable, effective, protective and cost-effective remedies;

(b) Waste management activities associated with the CAMU may not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

(c) The CAMU shall include uncontaminated areas of the facility, only if including these areas for the purpose of managing remediation waste is more protective than management of these wastes at contaminated areas of the facility;

(d) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

(e) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

(f) The CAMU shall enable the use, when appropriate, of treatment technologies, including innovative technologies, to enhance the long-term effectiveness of remedial actions by

reducing the toxicity, mobility or volume of wastes that will remain in place after closure of the CAMU; and

(g) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(4) The owner or operator shall provide sufficient information to enable the department to designate a CAMU in accordance with the criteria in s. NR 636.40.

(5) The department shall specify, in the license or order, requirements for CAMUs to include the following:

(a) The areal configuration of the CAMU.

(b) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.

(c) Requirements for groundwater monitoring that are sufficient to:

1. Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in groundwater from sources located within the CAMU; and

2. Detect and subsequently characterize releases of hazardous constituents to groundwater that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.

(d) Closure and post-closure requirements.

1. Closure of corrective action management units shall:

a. Minimize the need for further maintenance; and

b. Control, minimize or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff or hazardous waste decomposition products to the ground, to surface waters or to the atmosphere.

2. Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the department for a given CAMU:

a. Requirements for excavation, removal, treatment or containment of wastes;

b. For areas in which wastes will remain after closure of the CAMU, requirements for capping of such areas; and

c. Requirements for removal and decontamination of equipment, devices and structures used in remediation waste management activities within the CAMU.

3. In establishing specific closure requirements for CAMUs under s. NR 636.40(5), the department shall consider the following factors:

a. CAMU characteristics;

b. Volume of wastes which remain in place after closure;

c. Potential for releases from the CAMU;

d. Physical and chemical characteristics of the waste;

e. Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

f. Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

4. Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover or other containment system.

(6) The department shall document the rationale for designating CAMUs and shall make such documentation available to the public.

(7) Incorporation of a CAMU into an existing plan approval shall be approved by the department according to the procedures under s. NR 680.07.

(8) The designation of a CAMU does not change the department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

NR 636.41 TEMPORARY UNITS (TU). (1) For temporary tanks and container storage areas used for treatment or storage of

hazardous remediation wastes, during remedial activities required under s. NR 635.17 or s. 144.735, Stats., the department may determine that a design, operating or closure standard applicable to such units may be replaced by alternative requirements which are protective of human health and the environment.

(2) Any temporary unit to which alternative requirements are applied in accordance with sub. (1) shall be:

(a) Located within the facility boundary; and

(b) Used only for treatment or storage of remediation wastes.

(3) In establishing standards to be applied to a temporary unit, the department shall consider the following factors:

(a) Length of time such unit will be in operation;

(b) Type of unit;

(c) Volumes of wastes to be managed;

(d) Physical and chemical characteristics of the wastes to be managed in the unit;

(e) Potential for releases from the unit;

(f) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

(g) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

(4) The department shall specify in the license or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The department shall also specify the design, operating and closure requirements for the unit.

(5) The department may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the license or order, if the department determines that:

(a) Continued operation of the unit will not pose a threat to human health and the environment; and

(b) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

(6) Incorporation of a temporary unit or a time extension for a temporary unit into an existing plan approval shall be approved in accordance with the procedures under s. NR 680.07.

(7) The department shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make such documentation available to the public.

SECTION 160. NR 640.02(2) is amended to read:

NR 640.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 161. NR 640.02(3) is repealed.

SECTION 162. NR 640.02(4) is renumbered NR 640.02(3) and amended to read:

NR 640.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 163. NR 640.04(8) is repealed and recreated to read:

NR 640.04(8) A person who treats used oil filters generated on-site, or received from consumer used oil filter generators, to meet the exemption from hazardous waste regulation in s. NR 605.05(1)(v).

SECTION 164. NR 645.02(5) is created to read:

NR 645.02(5) Tanks, sumps and other such collection devices or systems used in conjunction with drip pads, as defined in s. NR 600.03, are regulated under the requirements of ch. NR 656.

SECTION 165. NR 645.04(7) is created to read:

NR 645.04(7) A person who treats used oil filters generated on-site, or received from consumer used oil filter generators, to meet the exemption from hazardous waste regulation in s. NR 605.05(1)(v).

SECTION 166. NR 645.09(1) is amended to read:

NR 645.09(1) Tank systems that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor that is designed and constructed to have a continuous base which is free of cracks or gaps and is impervious to the material to be stored or treated, are exempt from the requirements in this section. To demonstrate the absence or presence of free liquids in the stored or treated waste, the following test shall be used: EPA Method method 9095, Paint Filter Liquids Test paint filter liquids test, as described in SW-846, "Test Methods for Evaluating Solid Wastes Waste, Physical/Chemical Methods", EPA Publication No. SW-846, shall be used third edition, September, 1986, as amended by update I in July, 1992.

Note: ~~The publication~~ Publication SW-846 may be obtained from:

~~National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 167. NR 645.09(3)(c) and (d) are amended to read:

NR 645.09(3)(c) ~~For those existing tank systems that are owned or operated by small quantity generators or are underground and non-enterable for inspection, and that are of known and documented age, by March 1, 1991 or when the tank system has reached 15 years of age, whichever comes later. For all other existing tank systems that are of known and documented age, within 6 months of March 1, 1991~~ by September 1, 1993 or when the tank system has reached 15 years of age, whichever comes later.

(d) ~~For those existing tank systems that are owned or operated by small quantity generators or are underground and non-enterable for inspection, and for which the age cannot be documented, by January 12, 1995; but, if the age of the facility is greater than 7 years, secondary containment shall be provided within 15 years of commencement of construction of the facility or by March 1, 1991, whichever is later. For all other existing~~



~~tank systems~~ for which the age cannot be documented, by September 1, 1999; but, if the age of the facility is greater than 7 years, secondary containment shall be provided within by the time the facility reaches 15 years of commencement of construction of the facility age, or by September 1, 1993, whichever is later; and

SECTION 168. NR 645.17(1)(a)2. is amended to read:

NR 645.17(1)(a)2. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in subd. 1. of this paragraph, then the owner or operator shall close the tank system and perform long-term care in accordance with the closure and long-term care requirements that apply to landfills in ss. NR ~~660.13(10), 660.16 and 660.17~~ 660.18(1), 660.21 and 660.22. In addition, for the purposes of closure, ~~long-term~~ long-term care and financial responsibility, the tank system is then considered to be a landfill, and the owner or operator shall meet all of the requirements for landfills specified in ss. NR 600.03, 685.02, 685.05, 685.06, 685.07 and 685.08.

SECTION 169. The title of Chapter NR 655 is amended to read:

Chapter NR 655  
WASTE PILE AND CONTAINER BUILDINGS STANDARDS

SECTION 170. NR 655.02(intro) is amended to read:

NR 655.02 APPLICABILITY. Except as otherwise provided, this chapter applies to owners and operators of storage or treatment facilities that store or treat hazardous waste in waste piles and in containment buildings. This chapter does not apply to solid waste facilities that store or treat only:

SECTION 171. NR 655.02(2) is amended to read:

NR 655.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 172. NR 655.02(3) is repealed.

SECTION 173. NR 655.02(4) is renumbered (3) and amended to read:

NR 655.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 174. NR 655.05 is amended to read:

NR 655.05 GENERAL. (1) Except as otherwise provided in s. NR 630.04, no person may maintain or operate a hazardous waste facility that stores or treats hazardous waste in waste piles or in containment buildings unless the person has obtained an interim license, operating license, variance or waiver from the department, in accordance with the requirements of s. NR 600.09 or ch. NR 680.

(2) Unless specifically exempt under s. NR 630.04, the owner or operator of a waste pile or a containment building shall meet the design, construction and operational requirements in ss. NR 655.07 (4) and (5), 655.10, 660.11, 660.12 and 660.13 and the monitoring requirements in ch. NR 635. The department may, in accordance with s. NR 680.04, exempt the owner or operator of a waste pile or a containment building from the requirements of s. NR 660.13, except s. NR 660.13 (3) and ch. NR 635 if the owner or operator of the waste pile or the containment building proposes to design, construct, operate and monitor the waste pile or the containment building in accordance with the following minimum practices:

(a) The waste pile shall be located inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated. Containment buildings shall be completely enclosed, self supporting structures that are designed and constructed of manmade materials of sufficient strength and thickness to support the building, the waste contents and any personnel and heavy equipment that operate within the unit and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the waste to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of equipment and contact of equipment within the containment building walls.

(b) Liquids or materials containing free liquids are not placed in the pile or the containment building.

(c) The pile or the containment building is protected from surface water run-on by the structure or in some other manner.

(d) The pile or the containment building is designed and operated, by means other than wetting, to prevent dispersal of waste by wind.

(e) The pile or the containment building may not generate leachate through decomposition or other reactions.

(f) The pile or the containment building, including its underlying liner, shall be located entirely above the seasonal high groundwater table.

(g) The pile or the containment building shall be underlain by a liner that is designed, constructed and installed to prevent any migration of wastes out of the pile or the containment building into the liner or adjacent subsurface soil or groundwater or surface water at any time during the active life of the waste pile or the containment building, including the closure period. The liner shall be:

1. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients including static head and external hydrogeologic forces, physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation;

2. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement compression or uplift; and

3. Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

4. Constructed and operated to provide secondary containment for the waste pile or containment building. No waste pile or containment building may be constructed or operated without secondary containment for the entire unit. The only free liquids allowed in a waste pile or containment building unit are dust suppression liquids required to meet occupational health and safety requirements.

(h) The wastes in the pile or the containment building shall be removed periodically, and the liner shall be inspected for deterioration, cracks or other conditions that may result in leaks. The frequency of inspection shall be specified in the inspection plan required in s. NR 630.15 and shall be based on the potential for the liner to crack or otherwise deteriorate under the conditions of operation, such as waste type, rainfall, loading rates and subsurface stability.

(i) The liner shall be of sufficient strength and thickness to prevent failure due to puncture, cracking, tearing or other physical damage from equipment used to place waste in or on the pile or the containment building or to clean and expose the liner surface for inspection.

(j) If deterioration, a crack or other condition is identified that is causing or could cause a leak Throughout the active life of the waste pile or containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator shall repair the condition promptly in accordance with the following procedures:

1. Upon detection of a condition that has lead to a release of hazardous waste, the owner or operator shall:

a. Enter a record of the release into the facility operating record;

b. Immediately remove the portion of the waste pile or containment building affected by the release from the service;

c. Determine what steps are needed to repair the containment system, and establish a schedule for accomplishing the repairs; and

d. Notify the department of the condition in writing within 7 days after detecting the condition, and within fourteen days, provide a written notice to the department with a description of the steps taken to repair the unit and the schedule for accomplishing the work.

2. Repair or replace the liner and obtain a certification from a registered professional engineer that, to the best of the engineer's knowledge and opinion, the liner has been repaired and leakage will not occur; or The department shall review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying reasons in writing.

3. Upon completion of all repairs and cleanup, owner or operator shall notify the department on writing and provide a verification report signed by a qualified professional engineer that the repairs and cleanup have been completed according to the written plan submitted to the department in accordance with subd. 1.

4. Inspect and record in the facility's operating record, at least every 7 days, data gathered from monitoring or leak detection equipment as well as the waste pile or containment building and the area immediately surrounding the waste pile or containment building to detect signs of releases of hazardous waste. In addition, if a detection monitoring program pursuant to ch. NR 635 has already been established in the plan of operation approval to be complied with only if a leak occurs, the facility

shall begin to comply with that program and any other applicable requirements of ch. NR 635 within a period of time specified in the plan of operation approval.

(k) The containment building shall have sufficient controls to prevent fugitive dust emissions to meet the no visible emission standard in s. NR 655.07(5).

(l) The waste pile or containment building shall be designed and operated to ensure containment and to prevent tracking of materials from the unit by personnel or equipment.

(m) The department shall specify in the plan of operation approval all design and operating practices that are necessary to ensure that the requirements of this subsection are satisfied.

SECTION 175. NR 655.06(intro.), (1), (2)(intro.), and (2)(d) are amended to read:

NR 655.06 FEASIBILITY AND PLAN OF OPERATION REPORT. Unless specifically exempted in s. NR 630.04, no person may establish, construct or expand a hazardous waste pile or containment building or be issued an initial operating license under ch. NR 680 without first obtaining written approval of a feasibility and plan of operation report from the department. The purpose of the feasibility and plan of operation report is to determine whether the site has potential for use as a hazardous waste ~~storage~~ facility and to identify and address any operating conditions which are necessary for the proper operation of the facility. Favorable feasibility determination and plan approval under this section does not guarantee final licensure. The feasibility report and plan of operation report for a waste pile shall be submitted in accordance with the requirements of s. 144.44, Stats., and ss. NR 680.05(1) and 680.06(3) and shall contain the applicable material required by s. NR 660.09 (1) to (15). The applicant is encouraged to submit an initial site report as outlined in s. NR 660.08 (2). Feasibility and plan of operation report requirements for small storage facilities, that meet the criteria in s. NR 640.07(1), are specified in s. NR 640.07(3). The feasibility report shall also contain the following information:

(1) For waste ~~pile-storage piles~~ piles and containment buildings, detailed plans and an engineering report describing how the requirements of ss. NR 655.05, 655.06 (2), 655.07 and 655.08 shall be met, and if applicable, of how ss. NR 655.05 and 655.08 shall be met if an exemption from certain requirements of s. NR 660.13 and ch. NR 635 is sought.

(2)(intro.) The feasibility and plan of operation report shall also contain the following information:

(d) The details of the process carried out and equipment used if treatment occurs in or on the pile or the containment building, including the nature and quality of the residuals.

SECTION 176. NR 655.07(1) and (2)(intro.) are amended to read:

NR 655.07(1) In accordance with s. NR 630.31 (1) and (2), the identity and location of all stored or treated hazardous waste shall be known throughout the entire storage period when the waste is stored or treated on-site.

(2)(intro.) The pile shall be underlain by a double liner system that is designed, constructed and installed to prevent any migration of wastes out of the pile into the liner or adjacent subsurface soil or groundwater or surface water at any time during the active life of the waste pile including the closure period. The double liner system shall be+ meet all of the requirements for landfills contained in s. NR 660.18(18).

SECTION 177. NR 655.07(2)(a), (b) and (c) are repealed.

SECTION 178. NR 655.07(3), (4) and (5) are amended to read:

NR 655.07(3) ~~The~~ A waste pile shall have a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 24-hour, 25-year storm.

(4) If leachate or run-off from a pile or a containment building unit is a hazardous waste then:

(a) The pile or the unit shall be placed on an impermeable base that is compatible with the waste under the conditions of storage, run-on shall be diverted away from the pile or the unit, and any leachate and run-off from the pile shall be collected and managed as a hazardous waste; or

(b) The pile or unit shall be protected from precipitation by some other means and no liquids or wastes containing free liquids may be placed in the pile or the unit.

(5) If a pile containing hazardous waste may be subject to dispersal by wind, the owner or operator of the facility shall cover the pile so that wind dispersal does not occur. Containment buildings shall have measures to control fugitive dust emissions

from any openings and shall exhibit no visible emissions. In addition, all associated particulate collection devices shall be operated and maintained with sound air pollution control practices. The state of no visible emissions shall be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

SECTION 179. NR 655.07(6) is repealed and recreated to read:

NR 655.07(6) In addition to the above listed design and operating requirements, the following requirements shall be met for all containment buildings:

(a) The containment building shall be completely enclosed with a floor, walls and a roof to prevent exposure to the elements, and to assure containment of managed wastes.

(b) The floor and containment walls of the unit, including the secondary containment system if required under sub. (2), shall be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit shall be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes shall be chemically compatible with those wastes. In judging whether or not a unit has met the structural integrity requirements of this paragraph, the department shall apply standards established by professional organizations generally recognized by the industry, including the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM). If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

1. They provide an effective barrier against fugitive dust emissions under sub. (5); and

2. The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(c) Incompatible hazardous wastes or treatment reagents may not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode or otherwise fail.

(d) A containment building shall have a primary barrier designed to withstand the movement of personnel, waste and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

SECTION 180. NR 655.07(7) is created to read:

NR 655.07(7) The owner or operator shall develop a construction quality assurance program for each unit at the facility which meets the requirements contained in ss. NR 660.12(5) to (8). A construction documentation report meeting the requirements of s. NR 660.16 shall be submitted to and approved by the department before operations may commence.

SECTION 181. NR 655.08(1)(intro.) is amended to read:

NR 655.08 MONITORING AND INSPECTION. (1)(intro.) During construction or installation, ~~liners liner systems~~, except ~~existing portions of piles~~ exempt from s. NR 655.07 (2), and cover systems shall be inspected for uniformity, damage and imperfections. Immediately after construction or installation:

SECTION 182. NR 655.08(2)(intro.) is amended to read:

NR 655.08(2)(intro.) While a waste pile or containment building is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

SECTION 183. NR 655.08(3) is created to read:

NR 655.08(3) An owner or operator required to have a leak detection system under s. NR 655.07 shall record the amount of liquids removed from each leak detection system sump at least once a week during the active life and closure period.

SECTION 184. NR 655.09(intro.) and (1)(intro.) are amended to read:

NR 655.09 SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE. (intro.) Ignitable or reactive waste may not be placed in a



waste pile or a containment building unless the waste and waste pile or containment building satisfy all applicable requirements of ch. NR 675 and:

(1)(intro.) The waste is treated, rendered or mixed before or immediately after placement in the pile or containment building so that:

SECTION 185. NR 655.10(1)(intro.), (1)(b) and (2) are amended to read:

NR 655.10 SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES.

(1)(intro.) Incompatible wastes or materials may not be placed in the same waste pile or containment building unit unless s. NR 630.17(2) is complied with.

(b) Hazardous waste may not be piled or placed in a containment building on the same area where incompatible wastes or materials were previously piled managed, unless the area has been decontaminated sufficiently to ensure compliance with s. NR 630.17(2).

(2) In addition to the waste analysis required by s. NR 630.12, the owner or operator shall analyze a representative sample of waste from each incoming waste shipment before adding the waste to a existing pile or containment building unit if the compatibility of the incoming waste with the existing pile or unit is not known. Owners and operators of waste piles or containment buildings shall accept only wastes that are compatible with each other and to the pile or unit to which they are to be added. The analysis conducted shall be capable of differentiating between the types of hazardous waste the owner or operator places in piles or units, so that mixing of incompatible wastes does not inadvertently occur. The analysis shall include a visual comparison of color and texture.

SECTION 186. NR 655.11(1) and (2)(intro.) are amended to read:

NR 655.11 CLOSURE AND LONG TERM CARE. (1) Final disposal of hazardous waste in a waste pile or containment building may not be permitted at a hazardous waste storage facility, unless the facility has a separate license for disposal.

(2)(intro.) The owner or operator of a facility which treats or stores hazardous waste in waste piles or containment buildings shall comply with the following:

SECTION 187. Chapter NR 656 is created to read:

## Chapter NR 656

## Wood Preserving Listings and Standards

NR 656.01 Purpose

NR 656.02 Applicability

NR 656.03 Definitions

NR 656.04 Exemptions

NR 656.05 General

NR 656.06 Feasibility and plan of operation report requirements

NR 656.07 Drip pad standards

NR 656.08 Closure and long term care

NR 656.01 PURPOSE. The purpose of this chapter is to specify standards for drip pads used to collect treated wood drippage. These standards include requirements for drip pad design and operation, inspections, and closure.

NR 656.02 APPLICABILITY. This chapter applies to the owners and operators of facilities where drip pads are used to assist in the collection of treated wood drippage. These standards include requirements for drip pad design and operation, inspections and closure. Generators may be eligible for a 90-day generator exemption from licensing if their pads meet all of the technical standards for drip pads.

NR 656.03 DEFINITIONS. The definitions in s. NR 600.03 apply to this chapter.

(1) "Existing F032 Drip Pad" means a drip pad handling F032 waste constructed before December 6, 1990 and those for which the owner or operator entered into binding financial or other agreements for construction prior to December 6, 1990.

(2) "Existing F034 or F035 Drip Pad" means a drip pad handling either F034 or F035 waste constructed before the effective date of this rule [Revisor: insert date] and those for which the owner or operator entered into binding financial or other agreements for construction prior to the effective date of this rule [Revisor: insert date].

(3) "New F032 Drip Pad" means a drip pad handling F032 waste constructed after December 6, 1990 and those for which the owner

or operator did not enter into binding financial or other agreements for construction prior to December 6, 1990.

(4) "New F034 or F035 Drip Pad" means a drip pad handling either F034 or F035 waste constructed after the effective date of this rule [Revisor: insert date] and those for which the owner or operator did not enter into binding financial or other agreements for construction prior to the effective date of this rule [Revisor: insert date].

NR 656.04 EXEMPTIONS. (1) The following materials are excluded from regulation under this chapter:

(a) Spent wood preserving solutions that have been reclaimed and reused for their original intended purpose; and

(b) Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood.

(2) A generator who accumulates hazardous waste on-site for 90 days or less and is in compliance with ch. NR 615 is exempt from all the requirements in s. NR 656.06.

(3) Management of infrequent and incidental drippage in storage yards is exempt from regulation under this chapter provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan shall describe how the owner or operator will comply with all of the following:

(a) Clean up the drippage.

(b) Document the cleanup of the drippage.

(c) Retain documents regarding cleanup for three years.

(d) Manage the contaminated media in a manner consistent with state regulations.

NR 656.05 GENERAL. Except as otherwise provided in s. NR 656.04, no person may maintain or operate a drip pad, which manages hazardous wastes, unless the person has obtained an interim license, final operating license, variance or waiver from the department, in accordance with the requirements of s. NR 600.09 or ch. NR 680.

NR 656.06 FEASIBILITY AND PLAN OF OPERATION REPORT. Unless specifically exempted in s. NR 656.04, no person shall establish, construct or expand a drip pad used to convey treated wood

dripping, precipitation or surface water runoff or be issued an initial operating license under s. NR 680.34 without first obtaining written approval of a feasibility and plan of operation report from the department. The purpose of the feasibility and plan of operation report is to determine whether the site has potential for use as a hazardous waste drip pad and to identify and to address any operating conditions which are necessary for the proper operation of the facility. Favorable feasibility determination and plan approval under this section does not guarantee final licensure. The feasibility and plan of operation report shall be submitted in accordance with the requirements of s. 144.44, Stats., and ss. NR 680.05 to 680.09. The feasibility and plan of operation report shall also contain the following:

(1) A list of hazardous wastes placed or to be placed on each drip pad.

(2) If an exemption is sought to ch. NR 635, detailed plans and an engineering report describing how the requirements of ss. NR 635.05(1)(b), 635.07 and 635.12(3)(a) will be met.

(3) Detailed plans and an engineering report describing how the drip pad is or will be designed, constructed, operated and maintained to meet the requirements of s. NR 656.07(4), including the as-built drawings and specifications. This submission shall address the following items as specified in s. NR 656.07(4):

(a) The design characteristics of the drip pad.

(b) The liner system.

(c) The leakage detection system, including the leak detection system and how it is designed to detect the failure of the drip pad or the presence of any releases of hazardous waste or accumulated liquid at the earliest practicable time.

(d) Practices designed to maintain drip pads.

(e) The associated collection system.

(f) Control of run-on to the drip pad.

(g) Control of run-off from the drip pad.

(h) The interval at which dripping and other materials will be removed from the associated collection system and a statement demonstrating that the interval will be sufficient to prevent overflow onto the drip pad.

(i) Procedures for cleaning the drip pad at least once every 7 days to ensure the removal of any accumulated residues of waste

or other materials, including but not limited to rinsing, washing with detergents or other appropriate solvents, or steam cleaning and provisions for documenting the date, time and cleaning procedure used each time the pad is cleaned.

(j) Operating practices and procedures that will be followed to ensure that tracking of hazardous waste or waste constituents off the drip pad due to activities by personnel or equipment is minimized.

(k) Procedures for ensuring that, after removal from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased, including recordkeeping practices.

(l) Provisions for ensuring that collection and holding units associated with the run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) If treatment is carried out on the drip pad, details of the process equipment used, and the nature and quality of the residuals.

(n) A description of how each drip pad, including appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of s. NR 656.07(4)(d). This information shall be included in the inspection plan submitted under s. NR 680.06(3)(e).

(o) A certification signed by an independent qualified, professional engineer, registered in the State of Wisconsin, stating that the drip pad design meets the requirements of s. NR 656.07(4)(a) to (f).

(p) A description of how hazardous waste residues and contaminated materials will be removed from the drip pad at closure, as required under s. NR 656.08(1)(a). For any waste not to be removed from the drip pad upon closure, the owner or operator shall submit detailed plans and an engineering report describing how ss. NR 660.16(1)(a) and 660.17(2) will be complied with. This information shall be included in the closure plan and, where applicable, the long-term care plan submitted under ss. NR 680.21(1)(b) and (c), 685.05(2) and 685.06(5).

NR 656.07 DRIP PAD STANDARDS. (1) DRIP PADS. (a) The requirements of this section apply to the owners and operators of facilities that use drip pads to convey treated wood drippage, precipitation or surface water run-off to an associated collection system. Existing and new drip pads are defined in s. NR 656.03. The requirements of s. NR 645.07(4)(b)3. to install a

leak collection system apply to new drip pads constructed after December 24, 1992 and those F032 drip pads for which the owner or operator entered into binding financial or other agreements for construction prior to December 24, 1992.

(b) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under sub. (4)(e) or (f) as appropriate.

(c) The requirements of this section are not applicable to infrequent and incidental drippage managed in accordance with s. NR 656.04(3):

(2) ASSESSMENT OF EXISTING DRIP PAD INTEGRITY. (a) For each existing drip pad as defined in s. NR 656.03, the owner or operator shall evaluate the drip pad and determine that it meets all of the requirements of this section, except the requirements for liners and leak detection systems of sub. (4)(b). No later than the effective date of this rule [Revisor: insert date], the owner or operator shall obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified professional engineer registered in the state of Wisconsin that attests to the results of the evaluation. The assessment shall be reviewed, updated and re-certified annually until all upgrades, repairs or modifications necessary to achieve compliance with all of the standards of sub. (4)(b) are complete. The evaluation shall document the extent to which the drip pad meets each of the design and operating standards of sub. (4), except the standards for liners and leak detection systems, specified in sub. (4)(b).

(b) The owner or operator shall develop a written plan for upgrading, repairing and modifying the drip pad to meet the requirements of sub. (4)(b) and submit the plan to the department no later than 2 years before the date that all repairs, upgrades and modifications are complete. This written plan shall describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of sub. (4). The plan shall be reviewed and certified by an independent qualified professional engineer registered in the state of Wisconsin.

(c) Upon completion of all upgrades, repairs and modifications, the owner or operator shall submit to the department the as-built drawings for the drip pad together with a certification by an independent, qualified professional engineer registered in the state of Wisconsin attesting that the drip pad conforms to the drawings.

(d) If the drip pad is found to be leaking or unfit for use, the owner or operator shall comply with the provisions of sub. (4)(m) or close the drip pad in accordance with s. NR 656.08.

(3) DESIGN AND INSTALLATION OF NEW DRIP PADS. Owners and operators of new drip pads shall ensure that the pads are designed, installed and operated in accordance with one of the following:

(a) All of the requirements of subs. (4) and (5) and s. NR 656.08 except sub. (4)(b), or

(b) All of the requirements of subs. (4) and (5) and s. NR 656.08 except sub. (4)(a)4.

(4) DESIGN AND OPERATING REQUIREMENTS. (a) The owner or operator shall obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified professional engineer registered in the state of Wisconsin that attests to the results of the evaluation. The assessment shall be reviewed, updated and recertified annually. The evaluation shall document the extent to which drip pad meets the design and operating standards of this section, except for par. (b). Drip pads shall:

1. Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt.

2. Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system.

3. Have a curb or berm around the perimeter.

4. Have a hydraulic conductivity of less than or equal to  $1 \times 10^{-7}$  centimeter per second. Existing concrete drip pads shall be sealed, coated or covered with a surface material with a hydraulic conductivity of less than or equal to  $1 \times 10^{-7}$  centimeters per second such that the entire surface where the drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials or other wastes while being routed to an associated collection system. This surface material shall be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material shall be chemically compatible with the preservatives that contact the drip pad. The requirements of this subparagraph apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with sub. (3)(a) instead of sub. (3)(b).

5. Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation and the stress of daily operations, including variable and moving loads such as vehicle traffic or movement of wood.

Note: The department will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) or the American Society of Testing Materials (ASTM) in judging the structural integrity requirement of this paragraph.

(b) If an owner or operator elects to comply with sub. (3)(b) instead of sub. (3)(a), the drip pad shall have all of the following:

1. A synthetic liner installed below the drip pad that is designed, constructed and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life, including the closure period, of the drip pad. The liner shall be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner shall be:

a. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients, including static head and external hydrogeologic forces, physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation and the stress of daily operation, including stresses from vehicular traffic on the drip pad.

b. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift.

c. Installed to cover all surrounding earth that could come in contact with the waste or leakage.

2. A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system shall be:

a. Constructed of materials that are both chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and of sufficient strength and thickness



to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad.

b. Designed and operated to function without clogging through the scheduled closure of the drip pad.

c. Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

3. A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time and quantity of any leakage collected in the system and removed shall be documented in the operating log.

(c) Drip pads shall be maintained such that they remain free of cracks, gaps, corrosion or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See sub. (4)(m) for remedial action required if deterioration or leakage is detected.

(d) The drip pad and associated collection system shall be designed and operated to convey, drain and collect liquid resulting from drippage or precipitation in order to prevent run-off.

(e) Unless protected by a structure, as described in sub. (1)(b), the owner or operator shall design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm, unless the system has sufficient excess capacity to contain any run-on that might enter the system, or the drip pad is protected by a structure or cover, as described in sub. (1)(b).

(f) Unless protected by a structure or cover, as described in sub. (1)(b), the owner or operator shall design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(g) The drip pad shall be evaluated to determine that it meets the requirements of pars. (a) to (f) and the owner or operator shall obtain a statement from an independent, qualified professional engineer registered in the state of Wisconsin certifying that the drip pad design meets the requirements of this section.

(h) Dripping and accumulated precipitation shall be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(i) The drip pad surface shall be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous wastes or other materials are removed, with residues being properly managed as hazardous wastes, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous wastes on the drip pad. The owner or operator shall document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

(j) Drip pads shall be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(k) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes shall be held on the drip pad until dripping has ceased. The owner or operator shall maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this paragraph.

(l) Collection and holding units associated with run-on and run-off control systems shall be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) Throughout the active life of the drip pad and as specified in the license, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the condition shall be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

1. Upon detection of a condition that may have caused or has caused a release of hazardous waste, the owner or operator shall:

Note: Detection of a condition that may have caused or has caused a release of hazardous waste would include detection of leakage in the leak detection system.

a. Enter a record of the discovery in the facility operating log.

b. Immediately remove the portion of the drip pad affected by the condition from service.

c. Determine what steps shall be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs.

d. Within 24 hours after discovery of the condition, notify the department of the condition and, within 10 working days, provide written notice to the department with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.

2. The department shall review the information submitted, make a determination regarding whether the pad shall be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

3. Upon completing all repairs and clean up, the owner or operator shall notify the department in writing and provide a certification, signed by an independent, qualified professional engineer registered in the state of Wisconsin, that the repairs and clean up have been completed according to the written plan submitted in accordance with subd. 1.d.

(n) Should a license be necessary, the department shall specify in the license all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(o) The owner or operator shall maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This shall include identification of preservative formulations used in the past, a description of drippage management practices and a description of treated wood storage and handling practices.

(5) INSPECTIONS. (a) During construction or installation, liners and cover systems shall be inspected for uniformity, damage and imperfections. Immediately after construction or installation, liners shall be inspected and certified as meeting the requirements of this subsection by an independent qualified, professional engineer, registered in the state of Wisconsin. This certification shall be maintained at the facility as part of the facility operating record. After installation, liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures or blisters.

Note: Liners and cover systems include membranes, sheets and coatings. Nonuniformity, damage and imperfections include holes, cracks, thin spots or foreign materials.

(b) While a drip pad is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

1. Deterioration, malfunctions or improper operation of run-on and run-off control systems.

2. The presence of leakage in and proper functioning of leak detection system.

3. Deterioration or cracking of the drip pad surface.

Note: See sub. (4)(m) for remedial action required if deterioration or leakage is detected.

NR 656.08 CLOSURE AND LONG TERM CARE. (1) CLOSURE. Unless specifically exempted, the owner or operator of a drip pad unit that manages hazardous waste shall meet the requirements in ss. NR 685.05 and 685.06 and all of the following requirements for each drip pad:

(a) At closure, remove or decontaminate all waste and waste residues, contaminated secondary containment system components, such as liners and drip pads, contaminated soils, structures and equipment that are contaminated with hazardous waste, and manage them as hazardous waste. The department may require monitoring of groundwater or surface waters, if the operation or design of the facility in relation to the hazard of wastes handled at the facility warrants monitoring. The closure plan, closure activities, cost estimates for closure and financial responsibility for tank systems shall meet all of the requirements specified in ss. NR 600.03, 685.02, 685.05, 685.06, 685.07 and 685.08.

(b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in par. (a), then the owner or operator shall close the facility and perform long-term care in accordance with the closure and long-term care requirements that apply to landfills in ss. NR 660.18(10), 660.21 and 660.22. In addition, for the purposes of closure, long-term care and financial responsibility, the drip pad is then considered to be a landfill, and the owner or operator shall meet all of the requirements for landfills specified in ss. NR 600.03, 685.02, 685.05, 685.06, 685.07 and 685.08.

(c) The owner or operator of an existing drip pad, as defined in s. NR 656.03, that does not comply with the liner requirements of s. NR 656.07(4)(b)1. shall do all of the following:

1. Include both a plan for complying with par. (a) and a contingent plan for complying with par. (b).

2. Prepare and submit a contingent long-term care plan for complying with par. (b) as part of the feasibility and plan of operation report.

3. The cost estimates calculated for closure and long-term care shall reflect the costs of complying with the contingent closure plan and contingent long-term care plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under par. (a).

4. Financial assurance shall be based upon the cost estimates in subd. 3.

5. For the purposes of the contingent closure and long-term care plans, the drip pad is considered to be a landfill, and the contingent plans shall meet all of the closure, long-term care and financial responsibility requirements for landfills under ch. NR 660 and ss. NR 600.03, 685.05, 685.06, 685.07 and 685.08.

(2) FINAL DISPOSAL. Final disposal of hazardous waste may not be permitted at a hazardous waste storage or treatment facility, unless the facility has a separate license for disposal.

SECTION 188. NR 660.02(2) is amended to read:

NR 660.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 189. NR 660.02(3) is repealed.

SECTION 190. NR 660.02(4) is renumbered (3) and is amended to read:

NR 660.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 191. NR 660.08(2)(cg), (cm), (ct), (cw), (d), (e), (em), (er) and (f) are renumbered (2)(d), (e), (f), (g), (h), (i), (j), (k) and (l) and NR 660.08(2)(i), (j)(intro.) and (k)(intro.), as renumbered, are amended to read:

NR 660.08(2)(i) Preliminary liner assessment. One or more potential alternatives for ~~a primary liner~~ the geomembrane liners

meeting the requirements of s. NR 660.18(10)(a) shall be identified.

(j) Proposed testing, primary liner geomembrane liners.  
(intro.) A description of the proposed testing program for the primary liner geomembrane liners shall be submitted which outlines the proposed procedures for performing the tests required in s. NR 660.09(1)(g) and the number of samples necessary to obtain representative results. All proposed testing shall meet or exceed the requirements of the national sanitation foundation standard 54 for flexible membrane liners. The definitions of terms or words in section 2 of the national sanitation foundation standard 54 for flexible membrane liners shall apply to terms or words used in this subdivision where a dictionary definition does not exist or is not applicable. The description of the proposed testing program shall include:

(k) Proposed testing, secondary compacted clay liner.  
(intro.) A description of the proposed testing program for the secondary compacted clay liner shall be submitted which outlines the proposed procedures for performing the tests required in s. NR 660.09(8) and describes the number of samples necessary to obtain representative results. The description of the proposed testing program shall include:

SECTION 192. NR 660.09(7)(intro.) and (7)(b) are amended to read:

NR 660.09(7)(intro.) The items in pars. (a) to (k) shall be evaluated and discussed in accordance with procedures outlined in the national sanitation foundation standard 54 for flexible membrane liners or as otherwise approved in writing by the department to justify the type of primary geomembrane liner being proposed. The definitions of terms or words in section 2 of the national sanitation foundation standard 54 for flexible membrane liners applies to terms or words used in this paragraph where a dictionary definition does not exist or is not applicable. The items which shall be evaluated and discussed include but are not limited to the following:

(b)(intro.) An evaluation of the compatibility of the primary liner geomembrane liners with the existing and projected environment. This testing shall determine if the on-site soils, imported soils, waste and waste leachate are compatible with the proposed liner so that the liner does not fail before its estimated service life is reached. This testing shall include:

SECTION 193. NR 660.09(8)(intro.) is amended to read:

NR 660.09(8) The following tests shall be performed in accordance with procedures approved in writing by the department, to document that the secondary compacted clay liner is compatible with the expected or actual leachate:

SECTION 194. NR 660.093 is renumbered NR 660.10.

SECTION 195. NR 660.095 is renumbered NR 660.11.

SECTION 196. NR 660.10 is renumbered NR 660.12.

SECTION 197. NR 660.103 is renumbered 660.13 and NR 660.13(1)(e), as renumbered, is amended to read:

NR 660.13(1)(e) A fabrication plan sheet indicating how each panel of the primary liner geomembrane liners shall be located and installed. The panels shall be numbered in the order they shall be installed. All side slope seams shall run from top to bottom of the slope, the full length of the slope.

SECTION 198. NR 660.13(2)(b)3.(intro.), as renumbered, is amended to read:

NR 660.13(2)(b)3. A proposed testing schedule to document that the secondary compacted clay liner and the compacted clay portion of the final cover are constructed in accordance with the requirements of ss. NR ~~660.13~~ 660.18(10)(d) and ~~660.16~~ 660.21(1)(e) respectively. This program shall include testing to document the following:

SECTION 199. NR 660.13(2)(b)3.i., 4.(intro.), 5.(intro.), 9. and 10., as renumbered, are amended to read:

NR 660.13(2)(b)3.i. For the secondary compacted clay liner, particle size for material finer than 200 sieve, as specified in ASTM standard D-1140-54 (1971).

4. A proposed testing and inspection program to document that the primary liner has geomembrane liners have been constructed in accordance with the requirements of s. NR ~~660.13~~ 660.18(10) and the feasibility approval. All necessary testing shall meet or exceed the requirements of the national sanitation foundation standard 54 for flexible membrane liners. The definition of terms or words in section 2 of the national sanitation foundation standard 54 for flexible membrane liners

shall apply to terms or words used in this subdivision where a dictionary definition does not exist or is not applicable. A proposal for documenting the following items shall be included:

5. A proposed testing program for the drainage layers above the primary top and secondary bottom liners and in the final cap to document the following:

9. Site closing information consisting of a discussion of the anticipated sequence of events for site closing to meet the requirements of s. NR ~~660.15~~ 660.20 or ~~660.16~~ 660.21 and a discussion of those actions necessary to prepare the site for long-term care and final use including the type and amount of hazardous waste and hazardous waste constituents in the landfill or surface impoundment; the mobility and expected rate of migration of the hazardous waste and hazardous waste constituents; site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration, such as proximity to groundwater, surface water and drinking water sources; climate, including amount, frequency, and pH of precipitation; characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope and type of vegetation on the cover; and geological and soil profiles and surface and subsurface hydrology of the site.

10. Long-term care information including a discussion of the procedures to be utilized for the inspection and maintenance of run-off control structures, settlement, erosion damage, gas and leachate control feasibilities, monitoring for gas, leachate and groundwater, and other long-term care measures as required by s. NR ~~660.17~~ 660.22 and the factors specified in s. NR 660.08.

SECTION 200. NR 660.13(2)(c), as renumbered, is amended to read:

NR 660.13(2)(c) A description of how the requirements of s. NR ~~660.13~~ 660.18 shall be met.

SECTION 201. NR 660.13(3)(a) and (b), as renumbered, are amended to read:

NR 660.13(3)(a) A closure plan under ss. NR 685.05 and ~~660.15~~ 660.20 or ~~660.16~~ 660.21, whichever is appropriate.

(b) A long-term care plan as required by ss. NR 685.06 and ~~660.17~~ 660.22.

SECTION 202. NR 660.13(5) to (8) are created to read:



NR 660.13(5) A construction quality assurance program for each unit at the facility. The program shall ensure that the constructed unit meets or exceeds all design criteria and specifications in the plan of operation approval. The program shall be developed and implemented under the direction of a construction quality assurance officer who is a registered professional engineer. The construction quality assurance program shall address the following physical components where applicable:

- (a) Foundations;
- (b) Dikes;
- (c) Low-permeability soil liners;
- (d) Geomembranes;
- (e) Leachate collection and removal systems;
- (f) Leak detection systems; and
- (g) Final cover systems.

(6) A written construction quality assurance plan. The plan shall identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The plan shall include:

(a) Identification of applicable units, and a description of how they will be constructed.

(b) Identification of key personnel in the development and implementation of the plan, and construction quality assurance officer qualifications.

(c) A description of inspection and sampling activities for all unit components identified in s. NR 660.13(5), including observations and tests that will be used before, during and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description shall cover: sampling size and location; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under s. NR 630.31.

(7) A detailed construction quality assurance program which identifies the observations, inspections, tests and measurements sufficient to ensure:

(a) Structural stability and integrity of all components of the unit identified in s. NR 660.13(5);

(b) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to the plan of operation approval and good engineering practices;

(c) Proper installation of all components, such as piping, according to design specifications;

(d) Conformity of all materials used with design and other material specifications under s. NR 660.18(10); and

(e) Compliance with the requirements contained in ss. NR 660.13(2)(b)3. and 4.

(8) A construction quality assurance program that includes test fills for completed soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of ss. NR 660.18(10)(d) and 660.21(1)(e) in the field. Compliance with the hydraulic conductivity requirements shall be verified by using in-situ testing on the constructed test fill. The department may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of ss. NR 660.18(1)(d) and 660.21(1)(e) in the field.

SECTION 203. NR 660.105 is renumbered NR 660.14.

SECTION 204. NR 660.107 is renumbered NR 660.15.

SECTION 205. NR 660.11 is renumbered NR 660.16.

SECTION 206. NR 660.16(1)(a), as renumbered, is amended to read:

NR 660.16(1)(a) Plan sheets documenting: the location of the leachate collection trenches, all groundwater, gas, resistivity unsaturated zone and leachate monitoring devices, the sub-base and base grade elevations of the primary top liner, secondary liners bottom liner and drainage liners including spot elevations, the location and types of testing performed at a given location and the location of culverts, drainage ditches, manholes, dikes, stockpiles, access roads, and any other pertinent information. In addition, invert elevations shall be

provided on all leachate collection pipes, cleanouts, manholes and culverts.

SECTION 207. NR 660.13(10)(f) is repealed.

SECTION 208. NR 660.12 and 660.13 are renumbered NR 660.17 and 660.18, and 660.18(8) to (10) are renumbered (9) to (11), (11)(g) is renumbered (12), (11)(g)1. and 2. are renumbered (13)(a) and (b), (11)(h) is renumbered (13), (11) to (36) are renumbered (14) to (39) and NR 660.18(2)(b), (5), (6), (7), (9)(b)1.b. and (c)1., 2., 3. and 6.(note), (11)(a)(intro.) and (b)(intro.), (b)2., (c)(intro.) and (c)2., (d)(intro.), (e), (12), (13)(intro.), (23), (30), (33)(intro.), (34)(intro.), (35), (36)(a) and (37), as renumbered, are amended to read:

NR 660.18(2)(b) The owner or operator of each landfill or surface impoundment with an interim license shall notify the department at least 60 days prior to receiving waste into each new unit, replacement of an existing unit or lateral expansion of an existing unit. The owner or operator of each facility submitting notice shall submit a feasibility report and plan of operation under ss. NR 660.09 to ~~660.095~~ 660.11 and ~~660.10~~ 660.12 to ~~660.107~~ 660.15 within 6 months of submitting the notice to receive waste.

(5) Hazardous wastes F020, F021, F022, F023, F026 and F027 may not be placed in a landfill or surface impoundment unless the requirements of s. NR ~~660.20~~ 660.25 are complied with.

(6) The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids, whether or not ~~absorbents~~ sorbents have been added, in any landfill is prohibited.

(7) Before bulk or non-containerized liquid waste or waste containing free liquids that are not hazardous waste are placed in a landfill they shall be treated or stabilized, using a method that does not use absorbents or adsorbents, so that free liquids are no longer present. To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test shall be used: EPA test method 9095, the paint filter liquids test, as described in SW-846, "Physical/Chemical Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", second ~~third~~ edition, ~~1982~~ September, 1986, as amended by update I in ~~April, 1984~~ and update II in ~~April, 1985~~, shall be used July, 1992.

Note: Publication SW-846 may be obtained from:

~~National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

This publication is available for inspection at the offices of the department, the secretary of state, and the revisor of statutes.

Note: Methods that do not use absorbents or adsorbents to treat or stabilize liquid waste are described in statutory interpretative guidance documents available from EPA.

(9)(b)1.b. Mixed with ~~absorbent~~ sorbent or solidified so that free-standing liquid is no longer observed; or

(c)1. Hazardous waste shall be packaged in non-leaking inside containers. The inside containers shall be of a design and constructed of a material, that shall not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers shall be tightly and securely sealed. The inside containers shall be of the size and type specified in the DOT hazardous materials regulations specified in 49 CFR Parts 173, 178 and 179, ~~October 1, 1990~~ July 1, 1993, if those regulations specify a particular inside container for the waste.

2. The inside containers shall be overpacked in an open head DOT specification metal shipping container specified in 49 CFR Parts 173, 178 and 179, ~~October 1, 1990~~ July 1, 1993, of no more than 416 liter (110 gallon) capacity specified in and surrounded by a sufficient quantity of ~~absorbent~~ sorbent material, determined to be nonbiodegradable in accordance with s. NR 660.18(8), to completely ~~absorb~~ sorb all of the liquid contents of the inside containers. The metal outer container shall be full after packing with inside containers and ~~absorbent~~ sorbent material.

Note: The publications containing the CFR references may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

3. The ~~absorbent~~ sorbent material used may not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with s. NR 630.17.

6. Note: The publication containing the CFR reference may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(11)(a)(intro.) Have a double liner system that is designed, constructed and installed to prevent any migration of wastes out of the facility to the adjacent subsurface soil, groundwater or surface water at any time during the active life, including the entire long-term care period. The primary top liner shall be constructed of materials that prevent wastes from passing, such as a geomembrane, to prevent the migration of hazardous constituents into the primary top liner during the active life of the facility and long-term care period. The secondary bottom liner shall be a composite liner consisting of at least 2 components. The upper component shall be designed and constructed of materials, such as a geomembrane, to prevent the migration of hazardous constituents into this component during the active life and long-term care period. The lower component shall be constructed with recompacted clay meeting the specifications outlined in par. (d). Both liners liner systems shall be:

(b)(intro.) For landfills, have a leachate collection and removal system immediately above ~~both liners~~ the top liner that is designed, constructed, operated and maintained and operated to collect and remove leachate from the facility landfill during the active life and long-term care period. The applicant shall submit all the necessary calculations using the appropriate analytical models to justify that the proposed design shall limit the leachate head level over ~~both the primary and secondary top liner~~ to 30 cm (1 foot) or less. For the purposes of designing the backup leachate collection system, the applicant shall assume that the primary liner is not present and all recharge is moving directly downward to the secondary liner. The department shall specify design and operating conditions in the plan of operation approval to ensure this requirement is met. For surface impoundments and landfills, have a leachate collection and removal system between the ~~primary and secondary liners~~, and immediately above the bottom composite liner. In the case of multiple leachate collection and removal systems, this system is also a leak detection system. This leak detection system shall be

capable of detecting, collecting and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and long-term care period. The requirements for leachate collection and removal ~~system~~ systems and leak detection systems for both landfills and surface impoundments shall be:

2. Designed and operated to ~~function without minimize clogging through the scheduled closure of the facility during the active life and long-term care period.~~

(c) (intro.) Have a soil drainage layer above the primary top liner and between the ~~primary and secondary~~ liners which meets the following specifications:

2. A saturated variable or constant head permeability of greater than or equal to  $1 \times 10^{-3}$  cm/sec. for landfills and  $1 \times 10^{-1}$  cm/sec. for surface impoundments.

(d) (intro.) Have a recompacted clay secondary component of the bottom liner which meets the following minimum specifications:

(e) Have the primary top liner designed and constructed entirely above the seasonal high water table.

(12) Have Facilities shall have a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 24-hour, 25-year storm.

(13) (intro.) Be Facilities shall be inspected, during construction or installation of liners and cover systems, such as membrane sheets or coatings, for uniformity, damage and imperfections, such as holes, cracks, thin spots or foreign materials. Immediately after construction or installation:

(23) Facility closure shall be accomplished in accordance with the approved plan of operation and s. NR ~~660.16~~ 660.21 or, for those facilities with no approved plan of operation, in accordance with s. NR ~~660.15~~ 660.20.

(30) During construction, installation and testing of the primary top liner, the secondary bottom liner, the drainage layers, the leachate collection systems and all 3 phases of the final cover system, a registered professional engineer shall be present on the site at all times. The professional engineer shall ensure that all construction, documentation and testing are carried out in accordance with chs. NR 600 to 685 and the plan of operation approval.

(33)(intro.) A surface impoundment shall be removed from service in accordance with sub. ~~(31)~~ (34) when:

(34)(intro.) When a surface impoundment is removed from service as required by sub. ~~(30)~~ (33), the owner or operator shall:

(35) As part of the contingency plan, the owner or operator shall specify a procedure for complying with the requirements of sub. ~~(31)~~ (34).

(36)(a) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity shall be recertified in accordance with sub. ~~(29)~~ (32);

(37) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired shall be closed in accordance with the provisions of s. NR ~~660.15 or 660.16~~ 660.20 or 660.21, whichever is applicable.

SECTION 209. NR 660.18(8), (11)(b)3., 4., and 5. and (f) to (i) and (31)(c)1., 2., and 3. are created to read:

NR 660.18(8) Sorbents used to treat free liquids to be disposed of in landfills shall be nonbiodegradable. Nonbiodegradable sorbents include materials listed or described in par. (a); materials that pass one of the tests in par. (b); and materials that are determined by EPA to be nonbiodegradable through the 40 CFR Part 260 petition process.

(a) Nonbiodegradable sorbents. 1. Inorganic minerals, other inorganic materials, and elemental carbon; or

Note: Examples of nonbiodegradable sorbents are aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides and hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; and activated charcoal and carbon.

2. High molecular weight synthetic polymers. This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

Note: Examples of high molecular weight synthetic polymers are polyethylene, high density polyethylene (HDPE),

polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polysobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers.

3. Mixtures of these nonbiodegradable materials.

(b) Tests for nonbiodegradable sorbents. 1. The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a) - Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

2. The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b) - Standard Practice for Determining Resistance of Plastics to Bacteria.

(11)(b)3. Constructed with sumps and liquid control methods, such as pumps, of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sumps. The design of each sump and removal system shall provide a method for measuring and recording the volume of liquids present in the sump and liquids removed.

4. The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

5. The owner or operator of a leak detection system that is not located completely above the seasonal high water table shall demonstrate that the operation of the leak detection system will not be adversely affected by the presence of groundwater.

(11)(f) Prior to operation, obtain from the department an approved action leakage rate for each unit in the facility. The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 30 cm (1 foot). The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design such as slope, hydraulic conductivity and thickness of drainage material; construction, operation and location of leak detection system; waste and leachate characteristics; likelihood and amounts of other sources of liquids in the leak detection system; and proposed response actions. The action leakage rate shall consider decreases in the flow capacity of the system over time resulting from siltation and clogging. To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly or monthly flow rate from the monitoring data obtained under s. NR 660.18(10)(f), to an average daily flow rate in gallons per acre per day for each sump. Unless the department approves a different calculation, the average daily flow rate for each sump shall be calculated weekly during the



active life and closure period, and monthly during the long-term care period when monthly monitoring is required under s. NR 660.18(10)(f).

(g) Have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in par. (h).

(h) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall do all of the following:

1. Notify the department in writing of the exceedance within 7 days of the determination;

2. Submit a preliminary assessment to the department within 14 days of the determination, as to the amount of liquids; likely source of liquids; possible location, size and cause of any leaks; and short-term actions taken and planned.

3. Determine to the extent practicable the location, size and cause of any leak;

4. Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs or controls, and whether or not the unit should be closed;

5. Determine any other short-term and longer-term actions to be taken to investigate or stop any leaks; and

6. Within 30 days after the notification that the action leakage rate has been exceeded, submit to the department the results of the analyses specified in subds. 3., 4. and 5., the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator shall submit to the department a report summarizing the results of any remedial actions taken and actions planned.

(i) When required to make the leak assessment or remediation determinations in accordance with par. (h), the owner or operator shall all of the following:

1. Assess the source of liquids and amounts of liquids by source;

2. Conduct a fingerprint, hazardous constituent or other analyses of the liquids in the leak detection system to identify

the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

3. Assess the seriousness of any leaks in terms of potential for escaping into the environment.

(31)(c)1. The owner or operator of a landfill or surface impoundment shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

2. After the final cover is installed, the amount of liquids removed from each leak detection sump shall be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for 2 consecutive months, the amount of liquids in the sumps shall be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, the amount of liquids in the sumps shall be recorded at least semi-annually. If at any time during the long-term care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator shall return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for 2 consecutive months.

3. The pump operating level is a liquid level proposed by the owner or operator and approved by the department based on pump activation level, sump dimensions and level that avoids backing into the drainage layer and minimizes head in the sump.

SECTION 210. NR 660.14 is renumbered NR 660.19.

SECTION 211. NR 660.15 is renumbered NR 660.20.

SECTION 212. NR 660.20(1)(a)(intro.), as renumbered, is amended to read:

NR 660.20(1)(a) Within 60 days after ceasing to accept waste, weather permitting, closure shall be accomplished as required in subds. 1 to 4. Placement of a final cover in accordance with all or a portion of the requirements of s. NR ~~660.16(1)~~ 660.21(1) may be required if the department determines that an improved final cover system is necessary to prevent or abate the groundwater standards contained in ch. NR 140 from being attained or exceeded or to meet the requirements contained in s. NR 635.15 or 635.16(14).

SECTION 213. NR 660.20(1)(c), as renumbered, is amended to read:

NR 660.20(1)(c) Following final or partial closure, the facility shall be inspected and maintained by the owner or operator until it becomes stabilized or until the responsibility of the owner or operator terminates. The department may require installation of groundwater and leachate monitoring wells or other devices, groundwater and leachate quality sampling and analysis programs, gas monitoring and sampling and provisions for the protection against detrimental effects of leachate and gas migration from any landfill and surface impoundment in accordance with s. NR ~~660.14~~ 660.19 and ch. NR 635.

SECTION 214. NR 660.20(2)(a), as renumbered, is amended to read:

NR 660.20(2)(a) Closure plans may be required by the department for any hazardous waste facility without an approved closure plan, including facilities which are no longer in operation, but which were in existence on August 1, 1981. The department may require that the plan address any or all of the information outlined in sub. (1) and ss. NR 660.09 to ~~660.095~~ 660.11, ~~660.10~~ 660.12 to ~~660.107~~ 660.15, ~~660.13~~ 660.18 and ~~660.14~~ 660.19 and ch. NR 635.

SECTION 215. NR 660.16 is renumbered NR 660.21 and 660.21(1)(e)2., as renumbered, is amended to read:

NR 660.21(1)(e)2. Have a saturated undistributed hydraulic conductivity of not more than  ~~$1 \times 10^{-7}$  cm/sec.~~  $1 \times 10^{-7}$  cm/sec.

SECTION 216. NR 660.21(3), as renumbered, is amended to read:

NR 660.21(3) Following final or partial closure, the facility shall be inspected and maintained by the owner or operator until it becomes stabilized or until the responsibility of the owner or operator terminates. The department may require installation of groundwater and leachate monitoring wells or other devices, groundwater and leachate quality sampling and analysis programs, gas monitoring and sampling provisions for the protection against detrimental effects of leachate and gas migration from any landfill and surface impoundment in accordance with s. NR ~~660.14~~ 660.19 and ch. NR 635.

SECTION 217. NR 660.17 and 660.18 are renumbered NR 660.22 and 660.23, and NR 660.22(2)(b) and (f) and 660.23, as renumbered, are amended to read:

NR 660.22(2)(b) Maintain and monitor the ~~back-up leachate collection system in accordance with the approved plan of operation~~ leak detection system in accordance with s. NR 660.13(3)(c) and (10)(b)2., and comply with all other applicable leak detection system requirements of this chapter.

(f) Protect and maintain all surveyed benchmarks, including benchmarks used in complying with s. NR ~~660.13(11)~~ 660.18(11) for the entire period of long-term care.

~~NR 660.23 Waste management fund~~ ENVIRONMENTAL FEES. The owners and operators of landfills and surface impoundments utilized for disposal shall ~~contribute to the waste management fund~~ pay environmental fees as specified in s. NR 685.09, unless specifically exempted in s. NR 660.04.

SECTION 218. NR 660.19 is renumbered NR 660.24 and NR 660.24(7) and (8)(intro.) and (a), as renumbered, are amended to read:

NR 660.24(7) FEASIBILITY REPORT. Unless specifically exempted under sub. (2), any person wishing to establish a hazardous waste surface impoundment with discharges regulated under ch. 147, Stats., or expand an existing facility shall comply with s. NR 660.09 to ~~660.095~~ 660.11.

(8) Plan of operation. (intro.) Unless specifically exempted under sub. (2), any person wishing to establish a hazardous waste surface impoundment with discharges regulated under ch. 147, Stats., or expand an existing facility shall comply with ~~s. ss. NR 660.10~~ 660.12 to ~~660.107~~ 660.15, except as follows:

(a)(intro.) In lieu of compliance with s. NR ~~660.103~~ 660.13(1)(g), (j), (k) and (l) and (2), except (2)(b)9., 10. and 11., the following may be submitted:

SECTION 219. NR 660.24(8)(a)2., 3. and 5., as renumbered, are amended to read:

NR 660.24(8)(a)2. Description of how each surface impoundment, including the liner and cover systems and appurtenances for control of overtopping, shall be inspected in order to meet the requirements of s. NR ~~660.13(28)~~ 660.18(28). This information may be included in the inspection plan submitted under s. NR 680.06(3)(e).

3. A description of the procedure to be used in removing a surface impoundment from service, as required under s. NR ~~660.13~~ 660.18(30), (31), (32), (33) and (34). This information shall be

included in the contingency plan submitted under s. NR ~~660.103(4)~~ 660.13(4).

5. If incompatible wastes, or incompatible wastes and materials shall be placed in a surface impoundment, an explanation of how s. NR ~~660.13(4)~~ 660.18(4) shall be complied with.

SECTION 220. NR 660.24(9)(a), as renumbered, is amended to read:

NR 660.24(9)(a) For existing units, the certification which attests to the structural integrity of each dike, as required under s. NR ~~660.13(27)~~ 660.18(27), shall be submitted with the plan of operation under sub. (8).

SECTION 221. NR 660.24(10), (11)(intro.), (11)(a)(intro.), and (11)(b)(intro.), as renumbered, are amended to read:

NR 660.24(10) RECORDING OF NOTICE. Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall comply with s. NR ~~660.12~~ 660.17.

(11) MINIMUM DESIGN AND OPERATIONAL REQUIREMENTS. (intro.) Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall comply with s. NR ~~660.13~~ 660.18, except as follows:

(a) In lieu of compliance with s. NR ~~660.13(3)~~ 660.18(3), the owner or operator may comply with the following:

(b) In lieu of compliance with s. NR ~~660.13~~ 660.18(6), (8), (10) to (18) and (25) to (27), the owner or operator may comply with the following:

SECTION 222. NR 660.24(13), (14), (15), and (16), as renumbered, are amended to read:

NR 660.24(13) SPECIAL MONITORING. Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall comply with s. NR ~~660.14~~ 660.19, when required by the department.

(14) CLOSURE. Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall comply with s. NR ~~660.15~~ 660.20 or ~~660.16~~ 660.21, whichever is applicable.

(15) LONG-TERM CARE. Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall comply with s. NR ~~660.17~~ 660.22.

(16) ~~Waste management fund~~ ENVIRONMENTAL FEES. Unless specifically exempt under sub. (2), the owner or operator of a surface impoundment with discharges regulated under ch. 147, Stats., shall, if the surface impoundment is utilized for disposal of hazardous waste, ~~contribute to the waste management fund~~ pay environmental fees as specified in s. NR 685.09.

SECTION 223. NR 660.20 is renumbered NR 660.25.

SECTION 224. NR 665.02(2) is amended to read:

NR 665.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 225. NR 665.02(3) is repealed.

SECTION 226. NR 665.02(4) is renumbered (3) and is amended to read:

NR 665.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 227. NR 665.06(1)(d)1.d. and 2. are amended to read:

NR 665.06(1)(d)1.d. An identification of any hazardous organic constituents listed in ch. NR 605, Appendix IV, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in ch. NR 605, Appendix IV, which would reasonably not be expected to be found in the waste. The constituents excluded from analysis shall be identified, and the basis for the exclusion stated. The waste analysis ~~must~~ shall rely on analytical techniques specified in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods, SW-846" or "Sampling and Analysis Methods for Hazardous Waste Combustion, EPA-600/8-84-002.", third edition, September, 1986, as amended by update I in July, 1992, or other equivalent.

2. An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods, SW-846" or "Sampling and Analysis

Methods for Hazardous Waste Combustion, EPA-600/8-84-002" , third edition, September, 1986, as amended by update I in July, 1992, or their equivalent.

Note: ~~These publications are~~ Publication SW-846 is available from:

~~The National Technical Information Service  
U.S. Department of Commerce  
Springfield, VA 22161  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

~~These publications are~~ This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 228. NR 665.06(1)(e)1.c. and d. are amended to read:

NR 665.06(1)(e)1.c. An identification of any hazardous organic constituents listed in ch. NR 605 - Appendix IV, which are present in the waste to be burned, except that the applicant need not analyze for constituents listed in ch. NR 605 - Appendix IV which would reasonably not be expected to be found in the waste. The constituents excluded from analysis shall be identified and the basis for their exclusion stated. The waste analysis shall rely on analytical techniques specified in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods, SW-846" , third edition, September, 1986, as amended by update I in July, 1992, or "Sampling and Analysis Methods for Hazardous Waste Combustion, EPA-600/8-84-002" their equivalent.

d. An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in SW-846, "Test Methods for the Evaluation of Evaluating Solid Waste, Physical/Chemical Methods, SW-846", third edition, September, 1986, as amended by update I in July, 1992 or "Sampling and Analysis Methods for Hazardous Waste Combustion, EPA-600/8-84-002."

Note: ~~These publications~~ Publication SW-846 may be obtained from:

~~The National Technical Information Service  
U.S. Department of Commerce~~

~~Springfield, VA 22161~~  
~~Superintendent of Documents~~  
~~U.S. Government Printing Office~~  
~~P.O. Box 371954~~  
~~Pittsburgh, PA 15250-7954~~  
~~(202) 783-3238~~

~~These publications are~~ This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 229. NR 670.02(2) is amended to read:

NR 670.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 230. NR 670.02(3) is repealed.

SECTION 231. NR 670.02(4) is renumbered (3) and is amended to read:

NR 670.02(3) A combination of wastes described in subs. (1) ~~to (3) and (2).~~

SECTION 232. NR 670.10(2) is amended to read:

NR 670.10(2) A miscellaneous unit that is a disposal unit shall be maintained in a manner that complies with s. NR 670.06 during the long-term care period. If a treatment or storage unit has contaminated soils or groundwater that cannot be completely removed or decontaminated during closure, the unit shall also meet the requirements of s. NR 670.06 during the long-term care period. The long-term care plan under s. NR ~~685.05~~ 685.06 and the closure plan under s. NR ~~685.06~~ 685.05 shall specify the procedures that shall be used to satisfy this requirement.

SECTION 233. NR 675.02(2) is amended to read:

NR 675.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 234. NR 675.02(3) is repealed.

SECTION 235. NR 675.02(4) is renumbered (3) and amended to read:



NR 675.02(3) A combination of wastes described in subs. (1) ~~to (3)~~ and (2).

SECTION 236. NR 675.03 is repealed and recreated to read:

NR 675.03 DEFINITIONS. The definitions in s. NR 600.03 apply to this chapter. In addition, the following definitions also apply to this chapter:

(1) "Debris" means solid material exceeding a 60 mm particle size that is intended for disposal and that is one of the following:

- (a) A manufactured object.
- (b) Plant or animal matter.
- (c) Natural geologic material.

Note: The following materials are not debris:

(a) Any material for which a specific treatment standard is provided in ss. NR 675.21 to 675.23.

(b) Process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges or air emission residues.

(c) Intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume.

Note: A mixture of debris that has not been treated to the standards provided by s. NR 675.25 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

(2) "Halogenated organic compounds" means those compounds having a carbon-halogen bond which are listed under Appendix II to this chapter.

(3) "Hazardous constituent or constituents" means those constituents listed in ch. NR 605, Appendix IV.

(4) "Hazardous debris" means debris that contains a hazardous waste listed in s. NR 605.09, or that exhibits a characteristic of hazardous waste identified in s. NR 605.08.

(5) "Inorganic solid debris" means nonfriable inorganic solids contaminated with D004-D011 hazardous wastes that are incapable of passing through a 9.5 mm standard sieve; and that

require cutting, or crushing and grinding in mechanical sizing equipment prior to stabilization; and are limited to the following inorganic or metal materials:

- (a) Metal slags, whether dross or scoria;
- (b) Glassified slag;
- (c) Glass;
- (d) Concrete, excluding cementitious or pozzolanic stabilized hazardous wastes;
- (e) Masonry and refractory bricks;
- (f) Metal cans, containers, drums or tanks;
- (g) Metal nuts, bolts, pipes, pumps, valves, appliances or industrial equipment;
- (h) Scrap metal as defined in s. NR 600.03.

(6) "Land disposal" means placement in or on the land, except in a corrective action management unit, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

(7) "Nonwastewaters" means wastes that do not meet the criteria for wastewaters in sub. (8).

(8) "Wastewaters" means wastes that contain less than 1% by weight total organic carbon and less than 1% by weight total suspended solids, with the following exceptions:

(a) F001, F002, F003, F004, F005, wastewaters are solvent-water mixtures that contain less than 1% by weight total organic carbon or less than 1% by weight total F001, F002, F003, F004, F005 solvent constituents listed in s. NR 675.21, Table CCWE.

(b) K011, K013, K014 wastewaters contain less than 5% by weight total organic carbon and less than 1% by weight total suspended solids, as generated.

(c) K103 and K104 wastewaters containing less than 4% by weight total organic carbon and less than 1% by weight total suspended solids.

SECTION 237. NR 675.05(1)(a), (b) and (c) <sup>(insert)</sup> (c)1., and 2., (d) and (d)2., (2)(a), (b), and (c), (c)1. and 2., (d) and (d)2., (2)(a), (b) and (c), (c)1. and 2., (d) <sup>and</sup> (d)2., and (3)(c)(Note) are amended to read:

NR 675.05(1)(a) Any person who generates, treats, stores or disposes of a hazardous waste may seek an extension to the effective date of any applicable requirement under ss. NR 675.11 to 675.16 by submitting an application to EPA pursuant to 40 CFR 268.5, July 1, ~~1990~~ 1993.

(b) If EPA denies an application for an extension under 40 CFR 268.5, July 1, ~~1990~~ 1993, the department shall recognize that denial.

(c) Persons who have had their applications for an extension approved by EPA under 40 CFR 268.5, July 1, ~~1990~~ 1993, shall continue to manage their wastes in compliance with any applicable restrictions established under ss. NR 675.11 to 675.16 unless and until the department recognizes EPA's approval, except when the waste is being managed in another state and the person complies with that other state's requirements. A person may petition the department to recognize an EPA approval by submitting the following to the department:

1. Copies of all material and information received from EPA, including the extension under 40 CFR 268.5, July 1, ~~1990~~ 1993.

2. Copies of all material and information received from EPA, including the EPA notice of approval, concerning the extension under 40 CFR 258.5, July 1, ~~1990~~ and 1993.

(d) When determining whether to recognize an EPA-granted extension under 40 CFR 268.5, July 1, ~~1990~~ 1993, the department shall:

2. Apply the same criteria as applied by EPA under 40 CFR 268.5, July 1, ~~1990~~ 1993.

(2)(a) Any person who seeks an exemption from a prohibition under ss. NR 675.11 to 675.16 for the disposal of a restricted hazardous waste in a particular unit or units shall submit a petition to the EPA pursuant to 40 CFR 268.6, July 1, ~~1990~~ 1993.

(b) If EPA denies a petition for an exemption under 40 CFR 268.6, July 1, ~~1990~~ 1993, the department shall recognize that denial.

(c) Persons who have had their petitions for an exemption approved by EPA under 40 CFR 268.6, July 1, ~~1990~~ 1993, shall continue to manage their wastes in compliance with any applicable

restriction under ss. NR 675.11 to 675.16 ~~unless and~~ until the department recognizes EPA's approval, except when the waste is being managed in another state and the person complies with that other state's requirements. A person may petition the department to recognize an EPA approval by submitting the following to the department:

1. Copies of all materials and information submitted to EPA concerning the exemption under 40 CFR 268.6, July 1, ~~1990~~ 1993;

2. Copies of all material and information received from EPA including the EPA notice of approval concerning the exemption under 40 CFR 268.6, July 1, ~~1990~~ 1993; and

(d) When determining whether to recognize an EPA-granted exemption under 40 CFR 268.6, July 1, ~~1990~~ 1993, the department shall:

2. Apply the same criteria as applied by EPA under 40 CFR 268.6, July 1, ~~1990~~ 1993.

(3)(c)Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 238. NR 675.06(1) and (2) are amended to read:

NR 675.06 (1) Except as provided in sub. (2), no generator, transporter, handler or owner or operator of a treatment, storage or disposal facility may in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with ss. NR 675.20 to 675.24, to circumvent the effective date of or to otherwise avoid a prohibition in ss. NR 675.11 to 675.16, or to circumvent a land disposal prohibition imposed by 42 USC 6924.

NR 675.06(2) Dilution of wastes that are hazardous only because they exhibit a characteristic in a treatment system which treats wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the clean water act or which treats wastes for purposes of pretreatment requirements under section 307 of the clean water act is not impermissible dilution for purposes of this section unless a

method has been specified in s. NR 675.22, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

Note: The publication containing title 42 of the United States code and the clean water act may be obtained from:

~~The Superintendent of Documents~~  
~~U.S. Government Printing Office~~  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 239. NR 675.07(1)(a) and (b) are amended to read:

NR 675.07(1)(a) Except as specified in s. NR 675.13, if a generator's waste is listed in s. NR 605.09, the generator shall test its waste or test an extract using the ~~test method described in 40 CFR 261, Appendix II, July 1, 1990,~~ toxicity characteristic leaching procedure ~~(TCLP),~~ EPA method 1311 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this chapter.

Note: ~~The publication containing this test method~~  
Publication SW-846 may be obtained from:

~~The Superintendent of Documents~~  
~~U.S. Government Printing Office~~  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

~~The This~~ publication ~~containing this test method~~ is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

(b) Except as specified in s. NR 675.13, if a generator's waste exhibits one or more of the characteristics in s. NR 605.08, the generator shall test an extract using the ~~test method described in 40 CFR 268, Appendix IX, as of the federal register dated January 31, 1991~~ extraction procedure toxicity test, EPA method 1310A in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this chapter.

~~Note: The publication containing this regulation may be obtained from:~~

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402~~

SECTION 240. NR 675.07(1)(c)1.d. is renumbered NR 675.07(1)(c)1.e.

SECTION 241. NR 675.07(1)(c)1.d. is created to read:

NR 675.07(1)(c)1.d. For hazardous debris, the contaminants subject to treatment as provided by s. NR 675.25 and the following statement:

"This hazardous debris is subject to the alternative treatment standards of s. NR 675.25"; and

SECTION 242. NR 675.07(1)(c)2.(Note) is amended to read:

NR 675.07(1)(c)2.Note: The publication containing title 42 of the United States code may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

SECTION 243. NR 675.07(1)(c)2.(Note) is amended to read:

NR 675.07(1)(d)Note: The publication containing title 42 of the United States code may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

SECTION 244. NR 675.07(1)(d)3.(Note) is amended to read:

NR 675.07(1)(d)3.Note: The publication containing title 42 of the United States code may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 245. NR 675.07(1)(e) is amended to read:

NR 675.07(1)(e) If a generator's waste is subject to an exemption from a prohibition against the type of land disposal method utilized for the waste, such as, but not limited to, a case-by-case extension under s. NR 675.05(1) or an exemption under s. NR 675.05(2) or a nationwide capacity variance under 40 CFR 268, Subpart C, July 1, ~~1990~~ 1993, with each shipment of waste the generator shall submit a notice to the facility receiving the waste stating that the waste is not prohibited from land disposal.

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 246. NR 675.07(1)(e)2. is created to read:

675.07(1)(e)2. The generator shall keep a copy of this notice with the generator's copy of the manifest.

SECTION 247. NR 675.07(1)(e)1.e.(Note) is renumbered NR 675.07(1)(e)2.(Note) and amended to read:

NR 675.07(1)(e)2.Note: The publication containing title 42 of the United States code may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 248. NR 675.07(1)(f) is renumbered NR 675.07(1)(g) and is amended to read:

NR 675.07(1)(g) If a generator determines the waste is restricted based solely on the generator's knowledge of the waste, all supporting data used to make this determination shall be retained on-site in the generator's files. If a generator determines the waste is restricted ~~based~~ based on testing this waste or an extract developed using the ~~test method described in 40 CFR 261, Appendix II, July 1, 1990~~ extraction procedure toxicity test, EPA method 1310A in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, all waste analysis data shall be retained on-site in the generator's files.

Note: ~~The publication containing this regulation~~ Publication SW-846 may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 249. NR 675.07(1)(f) is created to read:

NR 675.07(1)(f) If a generator is managing a prohibited waste in tanks or containers regulated under s. NR 610.07(2), 610.08(4) or 615.05(6) and is treating such waste in tanks or containers to meet applicable treatment standards specified in ss. NR 675.20 to 675.24, the generator shall develop and follow a written waste analysis plan which describes the procedures that the generator will carry out to comply with the treatment standards. The plan shall be kept on-site in the generators operating record and the following requirements shall be met:

1. The waste analysis plan shall be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste being treated, and contain all information necessary to treat the waste in accordance with the requirements of this chapter, including the selected testing frequency.



2. This plan shall be submitted to the department a minimum of 30 days prior to the treatment activity, with delivery verified.

3. Wastes shipped off-site pursuant to this paragraph shall comply with the notification requirements of par. (d).

SECTION 250. NR 675.07(1)(g) to (k) are renumbered NR 675.07(1)(h) to (l).

SECTION 251. NR 675.07(1)(k) and (l), as renumbered, are amended to read:

NR 675.07(1)(k) If a generator is managing a lab pack that contains wastes identified in Appendix III and wishes to use the alternative treatment standards under s. NR 675.22, with each shipment of waste, the generator shall submit a notice to the treatment facility in accordance with par. ~~(a)~~ (c). The generator shall also comply with the requirements in pars. ~~(d)~~ (g) and ~~(e)~~ (h), and shall submit the following certification signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in ch. NR 675, Appendix III, Wis. Adm. Code, or solid wastes not subject to regulation under chs. NR 600 to 685, Wis. Adm. Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

NR 675.07(1)(l) If a generator is managing a lab pack that contains organic wastes identified in Appendix IV and wishes to use the alternative treatment standards under s. NR 675.22, with each shipment of waste the generator shall submit a notice to the treatment facility in accordance with ~~this subsection~~ par. (c). The generator shall also comply with the requirements in pars. ~~(d)~~ (g) and ~~(e)~~ (h), and shall submit the following certification signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing and that the lab pack contains only organic waste specified in ch. NR 675, Appendix IV, Wis. Adm. Code, or solid wastes not subject to regulation under chs. NR 600 to 685, Wis. Adm. Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

SECTION 252. NR 675.07(2)(a) is amended to read:

NR 675.07(2)(a) For wastes with treatment standards expressed as concentrations in the waste extract in s. NR 675.21, the owner or operator of the treatment facility shall test the treatment residues, or an extract of the residues developed using ~~the test method described in 40 CFR 261, Appendix II, July 1, 1990~~ toxicity characteristic leaching procedure, EPA method 1311 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, to ensure that the treatment residues or extract meet the applicable treatment standards.

Note: ~~The publication containing this test method~~  
Publication SW-846 may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

~~The publication containing this test method~~ This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 253. NR 675.07(2)(d)1.b.(Note) is amended to read:

NR 675.07(2)(d)1.b.Note: The publication containing title 42 of the United States code may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

SECTION 254. NR 675.07(2)(e)(Note) and (2)(e)2. are amended to read:

NR 675.07(2)(e)Note: The publication containing title 42 of the United States code may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954~~

Pittsburgh, PA 15250-7954  
(202) 783-3238

2. For wastes with treatment standards expressed as technologies ~~of ss.~~ specified in s. NR 675.20 to 675.24 675.22 the certification shall be signed by an authorized representative and shall state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of ~~ss. s. NR 675.20 to 675.24 675.22~~. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

SECTION 255. NR 675.07(3)(a) and (b) are amended to read:

NR 675.07(3)(a) Have copies of the notice and certifications specified in sub. (1) or (2) ~~and the certification specified in s. NR 675.08.~~

(b) Test the waste, or an extract of the waste or treatment residue developed using the ~~test method described in 40 CFR 261, Appendix II, July 1, 1990 toxicity characteristic leaching procedure, EPA method 1311 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992,~~ or using any methods required by generators under s. NR 675.13 to assure that the wastes or treatment residues are in compliance with the applicable treatment standards in ss. NR 675.20 to 675.24 and all applicable prohibitions in s. NR 675.13 or 42 USC 6924(d). Testing shall be performed according to the frequency specified in the facility's waste analysis plan as required by s. NR 630.13.

Note: ~~The publications containing the CFR reference~~ Publication SW-846 and title 42 of the United States code may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

These publications are available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 256. NR 675.10(1)(d) is amended to read:

NR 675.10(1)(d) s. NR 605.09 (3) (c) Wastes

- U007 - Acrylamide
- U009 - Acrylonitrile
- U010 - Mitomycin C
- U012 - Aniline
- U016 - Benz(c)acridine
- U018 - Benz(a)anthracene
- U019 - Benzene
- U022 - Benzo(a)pyrene
- U029 - Methyl bromide
- U031 - n-Butanol
- U036 - Chlordane, technical
- U037 - Chlorobenzene
- U041 - n-Chloro-2,3-epoxypropane
- U043 - Vinyl chloride
- U044 - Chloroform
- U046 - Chloromethyl methyl ether
- U050 - Chrysene
- U051 - Creosote
- U053 - Crotonaldehyde
- U061 - DDT
- U063 - Dibenz o (a, h) anthracene
- U064 - 1,2:7,8 Dibenzopyrene
- U066 - Dibromo-3-chloropropane 1,2
- U067 - Ethylene dibromide

U074 - 1,4-Dichloro-2-butene  
U077 - Ethane, 1,2-dichloro  
U078 - Dichloroethylene, 1,1  
U086 - N,N Diethylhydrazine  
U089 - Diethylstilbestrol  
U103 - Dimethyl sulfate  
U105 - 2,4-Dinitrotoluene  
U108 - Dioxane, 1,4  
U115 - Ethylene oxide  
U122 - Formaldehyde  
U124 - Furan  
U129 - Lindane  
U130 - Hexachlorocyclopentadiene  
U133 - Hydrazine  
U134 - Hydrofluoric acid  
U137 - Indeno(1,2,3-cd)pyrene  
U151 - ~~Meeury~~ Mercury  
U154 - Methanol  
U155 - Methapyrilene  
U157 - 3-Methylcholanthrene  
U158 - 4,4-Methylene-bis-(2-chloroaniline)  
U159 - Methyl ethyl ketone  
U171 - Nitropropane, 2  
U177 - N-Nitroso-N-methylurea  
U180 - N-Nitrosopyrrolidine  
U185 - Pentachloronitrobenzene

- U188 - Phenol
- U192 - Pronamide
- U200 - Reserpine
- U209 - Tetrachloroethane, 1,1,2,2
- U210 - Tetrachloroethylene
- U211 - Carbon tetrachloride
- U219 - Thiourea
- U220 - Toluene
- U221 - Toluenediamine
- U223 - Toluene diisocyanate
- U226 - Methylchloroform
- U227 - Trichloroethane, 1,1,2
- U228 - Trichloroethylene
- U237 - Uracil mustard
- U238 - Ethyl carbamate
- U248 - Warfarin, when present at concentrations of 0.3% or less
- U249 - Zinc phosphide, when present at concentrations of 10% or less

SECTION 257. NR 675.10(9) is amended to read:

NR 675.10(9) Nonwastewater forms of wastes listed in sub. (1) that were originally disposed of before August 17, 1988 and for which EPA has promulgated "no land disposal" as the treatment standard at s. NR 675.23, table CCW, no and land disposal subtable, ~~that are generated in the course of treating wastewater forms of the wastes.~~ This provision does not apply to waste codes K044, K045, K047 and K061, high zinc subcategory.

SECTION 258. NR 675.10(10) is renumbered NR 675.10(11).

SECTION 259. NR 675.10(10) is created to read:

NR 675.10(10) Nonwastewater forms of wastes listed in sub. (1) for which EPA has promulgated "no land disposal" as the treatment standard at s. NR 675.23, table CCW, no land disposal subtable, that are generated in the course of treating wastewater forms of the wastes. This provision does not apply to waste codes K044, K045, K047 and K061, high zinc subcategory.

SECTION 260. NR 675.13(1)(e)(Note) and (4) are amended to read:

NR 675.13(1)(e)(Note) The term halogenated organic compound is defined in s. NR 600.03 ~~(85)~~ (104) and includes compounds listed in Appendix II to this chapter.

(4) To determine whether or not a waste is a liquid under this section, the following test shall be used: ~~Method~~ EPA method 9095, Paint Filter Liquids Test ~~paint filter liquids test~~, as described in SW-846, "Test Methods for Evaluating Solid Wastes Waste, Physical/Chemical Methods," ", ~~EPA Publication No. SW-846~~ third edition, September, 1986, as amended by update I in July, 1992.

Note: ~~The publication containing this test~~ Publication SW-846 may be obtained from:

~~National Technical Information Service  
U.S. Department of Commerce  
Springfield, Virginia 22161  
Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

~~The publications containing these regulations are~~ This publication is available for inspection at the offices of the department, the secretary of state and revisor of statutes.

SECTION 261. NR 675.14(2) and (5) are amended to read:

NR 675.14(2) Effective March 1, 1991, wastes specified as hazardous by EPA hazardous waste nos. ~~K048, K049, K050, K051, K052,~~ K061, ~~(containing 15% zinc or greater,~~) and K071 are prohibited from land disposal.

(5) To determine whether a hazardous waste listed in s. NR 675.10(1) exceeds the applicable treatment standards specified in ss. ~~NR 675.20 to 675.24~~ 675.21 and 675.23, the initial generator

shall test a representative sample of the waste extract or the entire waste depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable ss. NR 675.20 to 675.24 levels, the waste is prohibited from land disposal and all requirements of this chapter are applicable, except as otherwise specified.

SECTION 262. NR 675.15(7) is repealed.

SECTION 263. NR 675.15(8) to (10) are renumbered NR 675.15(7) to (9) and NR 675.15(8) as renumbered, is amended to read:

NR 675.15(8) The requirements of subs. (1) to (5) do not apply if persons have been granted an extension to the effective date of a prohibition pursuant to the requirements under 40 CFR 268.5, July 1, ~~1990~~ 1993, with respect to those wastes covered by the extension.

Note: The publication containing the CFR references may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 264. NR 675.16(3) is amended to read:

NR 675.16(3) Effective May 8, 1992, the following waste specified in s. NR 605.09 (2) (a) as EPA hazardous waste numbers F039 (nonwastewaters); the wastes specified in s. NR 605.09 (2) (b) as EPA hazardous waste numbers K031 (nonwastewaters); K084 (nonwastewaters); K101 (nonwastewaters); K102 (nonwastewaters); K106 (nonwastewaters); the wastes specified in s. NR 605.09 (3) (b) as EPA hazardous waste numbers P010 (nonwastewaters); P011 (nonwastewaters); P012 (nonwastewaters); P036 (nonwastewaters); P038 (nonwastewaters); P065 (nonwastewaters); P087; and P092 (nonwastewaters); the wastes specified in s. NR 605.09 (3) (c) as EPA hazardous waste numbers U136 (nonwastewaters); and U151 (nonwastewaters); and the following wastes identified as hazardous based on a characteristic alone: D004 (nonwastewaters); ~~D008 (lead materials stored before secondary smelting); and D009 (nonwastewaters); inorganic solids debris as defined in s. NR 600.03 (109) (which also applies to chromium refractory bricks~~



~~carrying the EPA hazardous waste numbers K048-K052); and RCRA hazardous wastes that contain naturally occurring radioactive materials are prohibited from land disposal.~~

SECTION 265. NR 675.16(4) is repealed and recreated to read:

NR 675.16(4) Effective May 8, 1992, hazardous wastes listed in ss. NR 675.10 to 675.13 that are mixed radioactive and hazardous wastes are prohibited from land disposal, except as provided in sub. (5).

SECTION 266. NR 675.16(5) is repealed and recreated to read:

NR 675.16(5) Subject to applicable prohibitions in ss. NR 675.11 to 675.13, contaminated soil and debris are prohibited from land disposal as follows:

(a) Effective May 8, 1993, debris that is contaminated with wastes listed in ss. NR 675.11 to 675.13, including such wastes that are mixed radioactive hazardous wastes, and debris that is contaminated with any characteristic waste for which treatment standards are established in ss. NR 675.21 to 675.23, including such wastes that are mixed radioactive hazardous wastes, are prohibited from land disposal.

(b) Effective May 8, 1993, hazardous soil having treatment standards in ss. NR 675.21 to 675.23 based on incineration, mercury retorting or vitrification, and soils contaminated with hazardous wastes listed in ss. NR 675.11 to 675.13 that are mixed radioactive hazardous wastes, are prohibited from land disposal.

SECTION 267. NR 675.16(6) is repealed.

SECTION 268. NR 675.16(7) and (8) are renumbered NR 675.16(6) and (7).

SECTION 269. NR 675.16(8) is created to read:

NR 675.16(8) Effective [effective date of rule] [Revisor: insert date], D008 lead materials stored before secondary smelting are prohibited from land disposal.

(a) On or before [effective date of rule] [Revisor: insert date], the owner or operator of each secondary lead smelting facility shall submit to the department the following:

1. A binding contractual commitment to construct or otherwise provide capacity for storing such D008 wastes prior to smelting which complies with all applicable storage standards;
2. Documentation that the capacity to be provided will be sufficient to manage the entire quantity of such D008 wastes; and
3. A detailed schedule for providing such capacity.

(b) Failure by a facility to submit such documentation shall render such D008 managed by that facility prohibited from land disposal effective [effective date of rule] [Revisor: insert date]. In addition, no later than [effective date of rule] [Revisor: insert date], the owner or operator of each facility shall place in the facility record documentation of the manner and location in which such wastes will be managed pending completion of such capacity, demonstrating that such management capacity will be adequate and complies with all applicable requirements of chs. NR 600 to 685.

SECTION 270. NR 675.20(1) is amended to read:

NR 675.20(1) A restricted waste identified in s. NR 675.21 may be disposed on land only if an extract of the waste or of the treatment residue of the waste developed using the ~~test method of 40 CFR 261, Appendix II, July 1, 1990~~ toxicity characteristic leaching procedure, EPA method 1311, does not exceed the value shown in Table CCWE of s. NR 675.21 for any hazardous constituent listed in Table CCWE for that waste, with the following exceptions: D004, D008, K031, K084, K101, K102, P010, P011, P012, P036, P038 and U136. Wastes D004, D008, K031, K084, K101, K102, P010, P011, P012, P036, P038 and U136 may be land disposed only if an extract of the waste or of the treatment residue of the waste developed using either the ~~test method in 40 CFR 261, Appendix II, July 1, 1990~~ extraction procedure toxicity test, EPA method 1310A, or the ~~test method in 40 CFR 268, Appendix IX, as of the federal register dated January 31, 1991~~ toxicity characteristic leaching procedure, EPA method 1311, does not exceed the concentrations shown in table CCWE of s. NR 675.21 for any hazardous constituent listed in table CCWE for that waste. Methods 1310A and 1311 are both found in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992.

Note: ~~The publication containing the test method~~ Publication SW-846 may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
P.O. Box 371954

Pittsburgh, PA 15250-7954

(202) 783-3238

~~The publication containing this test method~~ This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 271. NR 675.21(1) is amended to read:

NR 675.21 TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT. (1) Table CCWE identifies the restricted wastes and the concentrations of their associated hazardous constituents which may not be exceeded by in the extract of a waste or waste treatment residual developed ~~extracted~~ using the ~~test method in 40 CFR 261, Appendix II, July 1, 1990, for the allowable land disposal of the waste, with the exception of wastes D004, D008, K031, K084, K101, K102, P010, P011, P012, P036, P038 and U136 and the concentrations of their associated constituents which may not be exceeded by the extract of a waste or waste treatment residual developed using the test method in 40 CFR 261, Appendix II, July 1, 1990~~ toxicity characteristic leaching procedure, EPA method 1311 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992, for the allowable land disposal of such wastes. Compliance with these concentrations is required based on grab samples.

Note: ~~The publication containing this test method~~ Publication SW-846 may be obtained from:

~~The Superintendent of Documents~~  
 U.S. Government Printing Office  
 Washington, D.C. 20402  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

~~The~~ This publication containing ~~this regulation test method~~ is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

Note: Appendix I of this chapter provides guidance on treatment methods that have been shown to achieve the Table CCWE levels for the respective wastes. Appendix I is not a regulatory requirement but is provided to assist generators, owners and operators in their selection of appropriate treatment methods.

SECTION 272. NR 675.21(1) Table CCWE is amended by revising the following entries to read, and by deleting Low Zinc Subcategory - less than 15% Total Zinc:

(The remainder of Table CCWE was not changed and is not included in this document.)

Table CCWE - Constituent Concentration in Waste Extract

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS No. for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/l)	Notes
D007	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.0	
F006	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	
F007	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	
F008	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	
F009	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	
F011	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	
F012	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Nickel	7440-02-0	NA		0.32	
			Silver	7440-22-4	NA		0.072	

Table CCWE - Constituent Concentrations in Waste Extract

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	C.A.S. No. for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/L)	Notes
F019	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
F024	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.073	
			Lead	7439-92-1	NA		[Reserved]	
			Nickel	7440-02-0	NA		0.088	
F039	NA	Table CCW in s. NR 675.23	Antimony	7440-36-0	NA		0.23	
			Arsenic	7440-38-2	NA		5.0	
			Barium	7440-43-9	NA		52	
			Cadmium	7440-43-9	NA		0.666	
			Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	
			Lead	7439-92-1	NA		0.51	
			Mercury	7439-97-6	NA		0.025	
			Nickel	7440-02-0	NA		0.32	
			Selenium	7782-49-2	NA		5.7	
			Silver	7440-22-4	NA		0.072	
K002	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.094	
			Lead	7439-92-1	NA		0.37	
K003	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.094	
			Lead	7439-92-1	NA		0.37	
K004	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.094	
			Lead	7439-92-1	NA		0.37	
K005	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.094	
			Lead	7439-92-1	NA		0.37	
K006 (anhydrous)	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		0.094	
			Lead	7439-92-1	NA		0.37	
K006 (hydrated)	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del> 7440-47-3	NA		5.2	

Table CCWE - Constituent Concentrations in Waste Extract

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	C.A.S. No. for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/L)	Notes
K007	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	0.094		
			Lead	<del>7440-47-3</del> <del>7439-92-1</del>	NA	0.37		
K008	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	0.094		
			Lead	<del>7440-47-3</del> <del>7439-92-1</del>	NA	0.37		
K015	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.2		
K022	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	5.2		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.32		
K028	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	0.073		
			Lead	<del>7440-47-3</del> <del>7439-92-1</del>	NA	0.021		
			Nickel	<del>7440-02-0</del>	NA	0.088		
K048	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.20		
K049	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.20		
K050	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.20		
K051	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.20		
K052	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA	1.7		
			Nickel	<del>7440-47-3</del> <del>7440-02-0</del>	NA	0.20		

Table CCWE - Constituent Concentrations in Waste Extract

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	C.A.S. No. for regulated hazardous constituent	Wastewaters		Nonwastewaters		
					Concentration (mg/L)	Notes	Concentration (mg/L)	Notes	
K061 Low Zinc Sub-category (less than 15% Total Zinc)	NA	Table CCW in s. NR 675.23	Cadmium	<del>7440-43-9</del>	NA		0.14		
			Chromium (Total)	<del>7440-47-32</del>	NA		5.2		
				<del>7440-47-3</del>					
			Lead	<del>7439-92-1</del>	NA		0.024		
			Nickel	<del>7440-02-0</del>	NA		0.32		
K061 High Zinc Sub-category (greater than 15% Total Zinc)	NA	Table CCW in s. NR 675.23	Antimony	7440-36-0	NA		2.1		
			Arsenic	7440-38-2	NA		0.055		
			Barium	7440-39-3	NA		7.6		
			Beryllium	7440-41-7	NA		0.014		
			Cadmium	7440-43-9	NA		0.19		
			Chromium (Total)	<del>7440-47-32</del>	NA		0.33		
				<del>7440-47-3</del>					
			Lead	<del>7439-92-1</del>	NA		0.37		
			Mercury	7439-97-6	NA		<del>0.0009</del>		
							<u>0.009</u>		
							5		
			Nickel	7440-02-0	NA				
			Selenium	7782-49-2	NA			0.16	
			Silver	7440-22-4	NA			0.3	
Thallium	7440-28-0	NA			0.078				
Vanadium	7440-62-2	NA			Reserved				
Zinc	7440-66-6	NA			5.3				
K062	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA		0.094		
				<del>7440-47-3</del>					
			Lead	<del>7439-92-1</del>	NA		0.37		
K086	NA	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA		0.094		
				<del>7440-47-3</del>					
			Lead	<del>7439-92-1</del>	NA		0.37		
K100	NA	Table CCW in s. NR 675.23	Cadmium	7440-43-9	NA		0.066		
			Chromium (Total)	<del>7440-47-32</del>	NA		5.2		
				<del>7440-47-3</del>					
			Lead	<del>7439-92-1</del>	NA		0.51		
U032	Calcium chromate	Table CCW in s. NR 675.23	Chromium (Total)	<del>7440-47-32</del>	NA		0.094		
				<u>7440-47-3</u>					

<sup>1</sup> These treatment standards have been based on EP Leachate analysis but this does not preclude the use of TCLP analysis.

<sup>2</sup> These waste codes are not subcategorized into wastewaters and nonwastewaters.

Note: NA means Not Applicable.

SECTION 273. NR 675.21(2) is amended to read:

NR 675.21(2) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue shall meet the lowest treatment standard for the constituent of concern, except that mixtures of high and low zinc nonwastewater K061 are subject to the treatment standard for high zinc K061.

SECTION 274. NR 675.21(3) is created to read:

NR 675.21(3) The treatment standards for the constituents in F001 to F005 which are listed in Table CCWE only apply to wastes which contain one, two or all three of these constituents. If the waste contains any of these three constituents along with any of the other 26 constituents found in F001 to F005, then only the treatment standards in s. NR 675.23 Table CCW are required.

SECTION 275. NR 675.22(1)(c) is amended to read, and is relocated to appear before Table 1:

NR 675.22(1)(c) A mixture consisting of wastewater, the discharge of which is subject to regulation under either section 402 or section 307 (b) of the clean water act, and de minimis losses of materials from manufacturing operations in which these materials are used as raw materials or are produced as products in the manufacturing process, and that meet the criteria of the D001 ignitable liquids containing greater than 10% total organic constituents (TOC) subcategory, is subject to the DEACT treatment standard described in table 1. For purposes of this paragraph, de minimis losses include those from normal material handling operations such as spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials; minor leaks from process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; and relief device discharges.

SECTION 276. NR 675.22(1)(b) Table 1 Entry RTHRM is amended to read:

RTHRM: Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to s. NR 600.03 ~~(105)(a), (e), (f) and (h).~~

SECTION 277. NR 675.22(1)(b) Table 2 is amended to read:



Table 2.-Technology-Based Standards by RCRA Waste Code

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
D001	NA	Ignitable Liquids based on s. NR 605.08(2)(a)1 - Wastewaters	NA	DEACT	NA
D001	NA	Ignitable Liquids based on s. NR 605.08(2)(a)1- Low TOC Ignitable Liquids Subcategory - Less than 10% total organic carbon.	NA	NA	DEACT
D001	NA	Ignitable Liquids based on s. NR 605.08(2)(a)1 - High TOC Ignitable Subcategory - Greater than or equal to 10% total organic carbon	NA	NA	FSUBS;RORGS; or INCIN
D001	NA	Ignitable compressed gases based on s. NR 605.08(2)(a)3.	NA	NA	DEACT
D001	NA	Ignitable reactives based on s. NR 605.08(2)(a)2.	NA	NA	DEACT
D001	NA	Oxidizers based on s. NR 605.08(2)(a)4.	NA	DEACT	DEACT
D002	NA	Acid subcategory based on s. NR 605.08(3)(a)1.	NA	DEACT	DEACT
D002	NA	Alkaline subcategory based on s. NR 605.08(3)(a)1.	NA	DEACT	DEACT
D002	NA	Other corrosives based on s. NR 605.08(3)(a)2.	NA	DEACT	DEACT

Table 2.-Technology-Based Standards by RCRA Waste Code

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
D003	NA	Reactive sulfides based on s. NR 605.08(4)(a)5. <del>DEACT (may not be diluted)</del>		NA	DEACT
<u>D003</u>	<u>NA</u>	<u>Reactive Sulfides</u>	<u>NA</u>	<u>DEACT but not including dilution as a substitute for adequate treatment.</u>	<u>DEACT but not including dilution as a substitute for adequate treatment.</u>
D003	NA	Explosives based on s. NR 605.08(4)(a)6., 7. and 8.	NA	DEACT	DEACT
D003	NA	Water reactives based on s. NR 605.08(4)(a) 2., 3. and 4.	NA	NA	DEACT
D003	NA	Other reactives based on s. NR 605.08(4)(a)1.	NA	DEACT	DEACT
D006	NA	Cadmium-containing batteries	7440-43-9	NA	RTHRM
K107		Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
K108		Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.

Table 2.-Technology-Based Standards by RCRA Waste Code

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
K109		Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	NA	INCIN; or CHOXD fb, CARBN; BIODG or fb CARBN	INCIN.
K110		Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
K112		Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
K123		Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebis-dithiocarbamic acid and its salts	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
K124		Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.

Table 2.-Technology-Based Standards by RCRA Waste Code

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
K125		Filtration, evaporation, and centrifugation solids from the production of ethylenebisdi-thiocarbamic acid and its salts	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
K126		Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylene bisdithiocarbamic acid and its salts	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
U328		o-toluidine	95-53-4	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or Thermal Destruction.
U353		p-toluidine	106-49-0	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or Thermal Destruction.
U359		2-ethoxy-ethanol	110-80-5	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or FSUBS.

[REMAINDER OF TABLE WAS NOT CHANGED]

SECTION 278. NR 675.22(2)(a) and (c) and (5) are amended to read:

(2)(a) Any person may submit an application to EPA demonstrating that an alternative treatment method can achieve a level of performance equivalent to that achieved by methods specified in subs. (1), (4) and (5) for wastes or specified in Table 1 of s. NR 675.25 for hazardous debris. The applicant shall submit information demonstrating that the treatment method will not present an unreasonable risk to human health or the environment and is in compliance with federal, state and local requirements. On the basis of the information and any other available information, EPA may approve the use of the alternative treatment method if it finds that the alternative treatment method provides a level of performance equivalent to that achieved by methods specified in subs. (1), (4) and (5) for wastes or specified in Table 1 of s. NR 675.25 for hazardous debris. Any approval shall be stated in writing and may contain the provisions and conditions as EPA deems appropriate. The person to whom the certification is issued shall comply with all limitations contained in the determination.

(c) Persons who have had their applications for an alternative treatment method approved by EPA under par. (a) shall continue to use the treatment method specified in sub. (1) ~~unless~~ and until the department recognizes EPA's approval of an alternative treatment method except when waste is being treated in another state and the person complies with that state's requirements. A person may petition the department to recognize an EPA alternative treatment method by submitting the following to the department:

(5) Radioactive hazardous mixed wastes with treatment standards specified in table 3 are not subject to any treatment standards specified in s. NR 675.21, 675.23 or table 2. Radioactive hazardous mixed wastes not subject to treatment standards in table 3 of this section remain subject to all applicable treatment standards specified in ss. NR 675.21, 675.23 and table 2. Hazardous debris containing radioactive waste is not subject to the treatment standards specified in Table 3 of this section but is subject to the treatment standards specified in 40 CFR s. 268.45.

SECTION 279. NR 675.23(1) Table CCW is repealed and recreated to read as follows:

Table CCW. - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/kg)	Notes
D003 (Reactive Cyanides Sub-category based on s. NR 605.08 (4)(a)5.).	NA	NA	Cyanides (Total)	57-12-5	(4)		590	( <sup>3</sup> )
			Cyanides (Amenable)	57-12-5	0.86		30	
D004	NA	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	5.0		NA	
D005	NA	Table CCWE in s. NR 675.21	Barium	7440-39-3	100		NA	
D006	NA	Table CCWE in s. NR 675.21	Cadmium	7440-43-9	1.0		NA	
D007	NA	Table CCWE in s. NR 675.21	Chromium (Total)	7440-47-3	5.0		NA	
D008	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	5.0		NA	
D009	NA	Table CCWE in s. NR 675.21	Mercury	7439-97-6	0.20		NA	
D010	NA	Table CCWE in s. NR 675.21	Selenium	7782-49-2	1.0		NA	
D011	NA	Table CCWE in s. NR 675.21	Silver	7440-22-4	5.0		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
D012	NA	Table 2 in s. NR 675.22	Endrin	720-20-8	NA		0.13	( <sup>1</sup> )
D013	NA	Table 2 in s. NR 675.22	Lindane	58-89-9	NA		0.066	( <sup>1</sup> )
D014	NA	Table 2 in s. NR 675.22	Methoxychlor	72-43-5	NA		0.18	( <sup>1</sup> )
D015	NA	Table 2 in s. NR 675.22	Toxaphene	8001-35-1	NA		1.3	( <sup>1</sup> )
D016	NA	Table 2 in s. NR 675.22	2,4-D	94-75-7	NA		10.0	( <sup>1</sup> )
D017	NA	Table 2 in s. NR 675.22	2,4,5-TP (Silvex)	93-76-5	NA		7.9	( <sup>1</sup> )
F001-F005 spent solvents	NA		Acetone	67-64-1	0.28		160	
			Benzene	71-43-2	0.070		3.7	( <sup>1</sup> )
			n-Butyl alcohol	71-36-3	5.6		2.6	
			Carbon tetrachloride	56-23-5	0.057		5.6	
			Chlorobenzene	108-90-7	0.057		5.7	
			Cresol (m- and p-isomers)		0.77		3.2	
			o-cresol		0.11		5.6	
			o-Dichlorobenzene	95-50-1	0.088		6.2	
			Ethyl acetate	141-7-6	0.34		33	
Ethyl benzene	100-41-4	0.057		6.0				

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
F001-F005 spent solvents (Pharmaceutical Industry-Wastewater Subcategory).	NA	NA	Ethyl ether	60-29-7	0.12		160	
			Isobutyl alcohol	78-83-1	5.6		170	
			Methylene chloride	75-9-2	0.089		33	
			Methyl ethyl ketone	78-93-3	0.28		36	
			Methyl isobutyl ketone	108-10-1	0.14		33	
			Nitrobenzene	98-95-3	0.068		14	
			Pyridine	110-86-1	0.014		16	
			Tetrachloroethylene	127-18-4	0.056		5.6	
			Toluene	108-88-3	0.08		28	
			1,1,1-Trichloroethane	71-55-6	0.054		5.6	
			1,1,2-Trichloroethane	79-00-5	0.030		7.6	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054		5.6	
			1,1,2-Trichloro-1,2,2-trifluoromethane	76-13-1	0.057		28	
			Trichloromono-fluoromethane	75-69-4	0.02		33	
			Xylenes (total)		0.32		28	
F006	NA	Table CCWE in s. NR 675.21	Methylene chloride	75-09-2	0.44		NA	
			Cyanides (Total)	57-12-5	1.2		590	



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
F007	NA	Table CCWE in s. NR 675.21	Cyanides (Amenable)	57-12-5	0.86		30	
			Cadmium	7440-43-9	1.6		NA	
			Chromium	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.040		NA	
			Nickel	7440-02-0	0.44		NA	
			Cyanides (Total)	57-12-5	1.9		590	
			Cyanides (Amenable)	57-12-5	0.1		30	
F008	NA	Table CCWE in s. NR 675.21	Chromium (Total)	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
			Nickel	7440-02-0	0.44		NA	
			Cyanides (Total)	57-12-5	1.9		590	
			Cyanides (Amenable)	57-12-5	0.1		30	
			Chromium	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
F009	NA	Table CCWE in s. NR 675.21	Nickel	7440-02-0	0.44		NA	
			Cyanides (Total)	57-12-5	1.9		590	
			Cyanides (Amenable)	57-12-5	0.1		30	
			Chromium	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
			Nickel	7440-02-0	0.44		NA	
			Cyanides (Amenable)	57-12-5	0.1		30	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
F010	NA	NA	Cyanides (Total)	57-12-5	1.9		1.5	
			Cyanides (Amenable)	57-12-5	0.1		NA	
F011	NA	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
			Chromium (Total)	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
			Nickel	7440-02-0	0.44		NA	
F012	NA	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
			Chromium (Total)	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
			Nickel	7440-02-0	0.44		NA	
F019	NA	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.2		590	( <sup>3</sup> )
			Cyanides (Amenable)	57-12-5	0.86		30	( <sup>3</sup> )
			Chromium (Total)	7440-47-3	0.32		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
F024	NA	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22 (Note: F024 organic standards must be treated via incineration (INCIN))	2-Chloro-1,3-butadiene	126-99-8	0.28	( <sup>1</sup> )	0.28	( <sup>1</sup> )
			3-Chloropropene	107-05-1	0.28	( <sup>1</sup> )	0.28	( <sup>1</sup> )
			1,1-Dichloroethane	75-34-3	0.014	( <sup>1</sup> )	0.014	( <sup>1</sup> )
			1,2-Dichloroethane	107-06-2	0.014	( <sup>1</sup> )	0.014	( <sup>1</sup> )
			1,2-Dichloropropane	78-87-5	0.014	( <sup>1</sup> )	0.014	( <sup>1</sup> )
			cis-1,3-Dichloropropene	10061-01-5	0.014	( <sup>1</sup> )	0.014	( <sup>1</sup> )
			trans-1,3-Dichloropropene	10061-02-6	0.014	( <sup>1</sup> )	0.014	( <sup>1</sup> )
			Bis(2-ethylhexyl)phthalate	117-81-7	0.036	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.036	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.35		NA	
			Nickel	7440-02-0	0.47		NA	
F025 (Light Ends Sub-category).	NA	NA	Chloroform	67-66-3	0.046	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			1,2-Dichloroethane	107-06-2	0.21	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			1,1-Dichloroethylene	75-35-4	0.025	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Methylene chloride	75-9-2	0.089	( <sup>2</sup> )	31	( <sup>1</sup> )
			Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	6.2	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
F025 (Spent Filters or Aids and Desiccants Sub-category).	NA	NA	1,1,2-Trichloroethane	79-00-5	0.054	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054	(2)	5.6	( <sup>1</sup> )
			Vinyl chloride	75-01-4	0.27	( <sup>2</sup> )	33	( <sup>1</sup> )
			Chloroform	67-66-3	0.046	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Methylene chloride	75-9-2	0.089	( <sup>2</sup> )	31	( <sup>1</sup> )
			Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			1,1,2-Trichloroethane	79-00-5	0.054	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Vinyl chloride	75-01-4	0.27	( <sup>2</sup> )	33	( <sup>1</sup> )
			Hexachlorobenzene	118-74-1	0.055	( <sup>2</sup> )	37	( <sup>1</sup> )
F037	NA	Table CCWE in s. NR 675.21	Hexachlorobutadiene	87-68-3	0.055	( <sup>2</sup> )	28	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055	( <sup>2</sup> )	30	( <sup>1</sup> )
			Acenaphthene	208-96-8	0.059	( <sup>2</sup> )	NA	
			Anthracene	120-12-7	0.059	( <sup>2</sup> )	28	( <sup>1</sup> )
			Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )
			Benzo(a)anthracene	50-32-8	0.059	( <sup>2</sup> )	20	( <sup>1</sup> )
			Benzo(a)pyrene	117-81-7	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )
			Bis(2-ethylhexyl) phthalate	75-15-0	0.28	( <sup>2</sup> )	7.3	( <sup>1</sup> )
Chrysene	218-01-9	0.059	( <sup>2</sup> )	15	( <sup>1</sup> )			

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
F038	NA	Table CCWE in s. NR 675.21	Di-n-butyl phthalate	105-67-9	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Fluorene	86-73-7	0.059	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	42	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	36	( <sup>1</sup> )
			Toluene	108-88-3	0.08	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
			Lead	7439-92-1	0.037		NA	
			Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )
			Benzo(a)pyrene	50-32-8	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )
			Bis(2-ethylhexyl) phthalate	117-81-7	0.28	( <sup>2</sup> )	7.3	( <sup>1</sup> )
			Chrysene	218-01-9	0.059	( <sup>2</sup> )	15	( <sup>1</sup> )
			Di-n-butyl phthalate	84-74-2	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Fluorene	86-73-7	0.059	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	42	( <sup>1</sup> )
Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )			
Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )			

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
F039	NA	Table CCWE in s. NR 675.21	Pyrene	129-00-0	0.067	( <sup>2</sup> )	36	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
			Lead	7439-92-1	0.037		NA	
			Acetone	67-64-1	0.28	( <sup>2</sup> )	160	( <sup>1</sup> )
			Acenaphthalene	208-96-8	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Acenaphthene	83-32-9	0.059	( <sup>2</sup> )	4.0	( <sup>1</sup> )
			Acetonitrile	75-05-8	0.17	( <sup>2</sup> )	NA	
			Acetophenone	96-86-2	0.010	( <sup>2</sup> )	9.7	
			2-Acetylaminofluorene	53-96-3	0.059	( <sup>2</sup> )	140	( <sup>1</sup> )
			Acrolein	107-02-8	0.29	( <sup>2</sup> )	NA	
			Acrylonitrile	107-13-1	0.24	( <sup>2</sup> )	84	( <sup>1</sup> )
			Aldrin	309-00-2	0.021	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			4-Aminobiphenyl	92-67-1	0.13	( <sup>2</sup> )	NA	
			Aniline	62-53-3	0.81	( <sup>2</sup> )	14	( <sup>1</sup> )
			Anthracene	120-12-7	0.059	( <sup>2</sup> )	4.0	( <sup>1</sup> )
			Aramite	140-57-8	0.36	( <sup>2</sup> )	NA	
			Aroclor 1016	12674-11-2	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )
Aroclor 1221	11104-28-2	0.014	( <sup>2</sup> )	0.92	( <sup>1</sup> )			
Aroclor 1232	11141-16-5	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )			

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Aroclor 1242	53469-21-9	0.017	( <sup>2</sup> )	0.92	( <sup>1</sup> )
			Aroclor 1248	12672-29-6	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )
			Aroclor 1254	11097-69-1	0.014	( <sup>2</sup> )	1.8	( <sup>1</sup> )
			Aroclor 1260	11096-82-5	0.014	( <sup>2</sup> )	1.8	( <sup>1</sup> )
			alpha-BHC	319-84-6	0.00014	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			beta-BHC	319-85-7	0.00014	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			delta-BHC	319-86-8	0.023	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			gamma-BHC	58-89-9	0.0017	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Benzene	71-43-2	0.14	( <sup>2</sup> )	36	( <sup>1</sup> )
			Benz(a)anthracene	56-55-3	0.059	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Benzo(b)fluoranthene	205-99-2	0.055	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Benzo(k)fluoranthene	207-08-9	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Benzo(g,h,i)perylene	191-24-2	0.0055	( <sup>2</sup> )	1.5	( <sup>1</sup> )
			Benzo(a)pyrene	50-32-8	0.061	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Bromodichloromethane	75-27-4	0.35	( <sup>2</sup> )	15	( <sup>1</sup> )
			Bromoform (Tribromomethane)	75-25-2	0.63	( <sup>2</sup> )	15	( <sup>1</sup> )
			Bromomethane (methyl bromide)	74-83-9	0.11	( <sup>2</sup> )	15	( <sup>1</sup> )
			4-Bromophenyl phenyl ether	101-55-3	0.055	( <sup>2</sup> )	15	( <sup>1</sup> )
			n-Butyl alcohol	71-36-3	5.6	( <sup>2</sup> )	2.6	( <sup>1</sup> )
			Butyl benzyl phthalate	85-68-7	0.017	( <sup>2</sup> )	7.9	( <sup>1</sup> )
			2-sec-Butyl-4,6-dinitrophenol	88-85-7	0.066	( <sup>2</sup> )	2.5	( <sup>1</sup> )
			Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	5.6	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Carbon disulfide	75-15-0	0.014	( <sup>2</sup> )	NA	
			Chlordane	57-74-9	0.0033	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			p-Chloroaniline	106-47-8	0.46	( <sup>2</sup> )	16	( <sup>1</sup> )
			Chlorobenzene	108-90-7	0.057	( <sup>2</sup> )	5.7	( <sup>1</sup> )
			Chlorobenzilate	510-15-6	0.10	( <sup>2</sup> )	NA	
			2-Chloro-1,3-butadiene	126-99-8	0.057	( <sup>2</sup> )	NA	
			Chlorodibromomethane	124-48-1	0.057	( <sup>2</sup> )	15	( <sup>1</sup> )
			Chloroethane	75-00-3	0.27	( <sup>2</sup> )	6.0	( <sup>1</sup> )
			bis(2-Chloroethoxy) methane	111-91-1	0.036	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			bis(2-Chloroethyl) ether	111-44-4	0.033	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			Chloroform	67-66-3	0.046	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			bis(2-Chloroisopropyl) ether	39638-32-9	0.055	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			p-Chloro-m-cresol	59-50-7	0.018	( <sup>2</sup> )	14	( <sup>1</sup> )
			Chloromethane (Methyl chloride)	74-87-3	0.19	( <sup>2</sup> )	33	( <sup>1</sup> )
			2-Chloronaphthalene	91-8-7	0.055	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			2-Chlorophenol	95-57-8	0.044	( <sup>2</sup> )	5.7	( <sup>1</sup> )
			3-Chloropropylene	107-05-1	0.036	( <sup>2</sup> )	28	( <sup>1</sup> )
			Chrysene	218-01-9	0.059	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			o-Cresol	95-48-7	0.11	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Cresol (m- and p- isomers)		0.77	( <sup>2</sup> )	3.2	( <sup>1</sup> )
			Cyclohexanone	108-94-1	0.36	( <sup>2</sup> )	NA	
			1,2-Dibromo-3-chloropropane	96-12-8	0.11	( <sup>2</sup> )	15	( <sup>1</sup> )



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			1,2-Dibromoethane (Ethylene dibromide)	106-93-4	0.028	( <sup>2</sup> )	15	( <sup>1</sup> )
			Dibromomethane	74-95-3	0.11	( <sup>2</sup> )	15	( <sup>1</sup> )
			2,4-Dichlorophenoxyacetic acid (2, 4-D)	94-75-7	0.72	( <sup>2</sup> )	10	( <sup>1</sup> )
			o,p'-DDD	53-19-0	0.023	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDD	72-54-8	0.023	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			o,p'-DDE	3424-82-6	0.031	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDE	72-55-9	0.031	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			o,p'-DDT	789-02-6	0.0039	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDT	50-29-3	0.0039	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			Dibenz(a,h)anthracene	53-70-3	0.055	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Dibenzo(a,e)pyrene	192-65-4	0.061	( <sup>2</sup> )	NA	
			m-Dichlorobenzene	541-73-1	0.036	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			o-Dichlorobenzene	95-50-1	0.088	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			p-Dichlorobenzene	106-46-7	0.090	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Dichlorodifluoromethane	75-71-8	0.23	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			1,1-Dichloroethane	75-34-3	0.059	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			1,2-Dichloroethane	107-06-2	0.21	( <sup>2</sup> )	7.2	( <sup>1</sup> )
			1,1-Dichloroethylene	75-35-4	0.025	( <sup>2</sup> )	33	( <sup>1</sup> )
			trans-1,2-Dichloroethylene		0.054	( <sup>2</sup> )	33	( <sup>1</sup> )
			2,4-Dichlorophenol	120-83-2	0.044	( <sup>2</sup> )	14	( <sup>1</sup> )
			2,6-Dichlorophenol	87-65-0	0.044	( <sup>2</sup> )	14	( <sup>1</sup> )
			1,2-Dichloropropane	78-87-5	0.85	( <sup>2</sup> )	18	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
			cis-1,3-Dichloropropene	10061-01-5	0.036	( <sup>2</sup> )	18	( <sup>1</sup> )
			trans-1,3-Dichloropropene	10061-02-6	0.036	( <sup>2</sup> )	18	( <sup>1</sup> )
			Dieldrin	60-57-1	0.017	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Diethyl phthalate	84-66-2	0.20	( <sup>2</sup> )	28	( <sup>1</sup> )
			2,4-Dimethyl phenol	105-67-9	0.036	( <sup>2</sup> )	14	( <sup>1</sup> )
			Dimethyl phthalate	131-11-3	0.047	( <sup>2</sup> )	28	( <sup>1</sup> )
			Di-n-butyl phthalate	84-74-2	0.057	( <sup>2</sup> )	28	( <sup>1</sup> )
			1,4-Dinitrobenzene	100-25-4	0.32	( <sup>2</sup> )	2.3	( <sup>1</sup> )
			4,6-Dinitro-o-cresol	534-52-1	0.28	( <sup>2</sup> )	160	( <sup>1</sup> )
			2,4-Dinitrophenol	51-28-5	0.12	( <sup>2</sup> )	160	( <sup>1</sup> )
			2,4-Dinitrotoluene	121-14-2	0.32	( <sup>2</sup> )	140	( <sup>1</sup> )
			2,6-Dinitrotoluene	606-20-2	0.55	( <sup>2</sup> )	28	( <sup>1</sup> )
			Di-n-octyl phthalate	117-84-0	0.017	( <sup>2</sup> )	28	( <sup>1</sup> )
			Di-n-propylnitrosoamine	621-64-7	0.40	( <sup>2</sup> )	14	( <sup>1</sup> )
			Diphenylamine	122-39-4	0.52	( <sup>2</sup> )	NA	
			1,2-Diphenyl hydrazine	122-66-7	0.087	( <sup>2</sup> )	NA	
			Diphenyl nitrosamine	621-64-7	0.40	( <sup>2</sup> )	NA	
			1, 4-Dioxane	123-91-1	0.12	( <sup>2</sup> )	170	( <sup>1</sup> )
			Disulfoton	298-04-4	0.017	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Endosulfan I	939-98-8	0.023	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Endosulfan II	33213-6-5	0.029	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Endosulfan sulfate	1031-07-8	0.029	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Endrin	72-20-8	0.0028	( <sup>2</sup> )	0.13	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Endrin aldehyde	7421-93-4	0.025	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Ethyl acetate	141-78-6	0.34	( <sup>2</sup> )	33	( <sup>1</sup> )
			Ethyl cyanide	107-12-0	0.24	( <sup>2</sup> )	360	( <sup>1</sup> )
			Ethyl benzene	100-41-4	0.057	( <sup>2</sup> )	6.0	( <sup>1</sup> )
			Ethyl ether	60-29-7	0.12	( <sup>2</sup> )	160	( <sup>1</sup> )
			bis(2-Ethylhexyl) phthalate	117-81-7	0.28	( <sup>2</sup> )	28	( <sup>1</sup> )
			Ethyl methacrylate	97-63-2	0.14	( <sup>2</sup> )	160	( <sup>1</sup> )
			Ethylene oxide	75-21-8	0.12	( <sup>2</sup> )	NA	
			Famphur	52-85-7	0.017	( <sup>2</sup> )	15	( <sup>1</sup> )
			Fluoranthene	206-44-0	0.068	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Fluorene	86-73-7	0.059	( <sup>2</sup> )	4.0	( <sup>1</sup> )
			Fluorotrichloromethane	75-69-4	0.020	( <sup>2</sup> )	33	( <sup>1</sup> )
			Heptachlor	76-44-8	0.0012	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Heptachlor epoxide	1024-57-3	0.016	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Hexachlorobenzene	118-74-1	0.055	( <sup>2</sup> )	37	( <sup>1</sup> )
			Hexachlorobutadiene	87-68-3	0.055	( <sup>2</sup> )	28	( <sup>1</sup> )
			Hexachlorocyclopentadiene	77-47-4	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Hexachlorodibenzo-furans		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			Hexachlorodibenzo-p-dioxins		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055	( <sup>2</sup> )	28	( <sup>1</sup> )
			Hexachloropropene	1888-71-7	0.035	( <sup>2</sup> )	28	( <sup>1</sup> )
			Indeno(1,2,3-c,d) pyrene	193-39-5	0.0055	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Iodomethane	74-88-4	0.19	( <sup>2</sup> )	65	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
			Isobutanol	78-83-1	5.6	( <sup>2</sup> )	170	( <sup>1</sup> )
			Isodrin	465-73-6	0.021	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Isosafrole	120-58-1	0.081	( <sup>2</sup> )	2.6	( <sup>1</sup> )
			Kepone	143-50-8	0.0011	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Methacrylonitrile	126-98-7	0.24	( <sup>2</sup> )	84	( <sup>1</sup> )
			Methanol	67-56-1	5.6	( <sup>2</sup> )	NA	
			Methapyrilene	91-80-5	0.081	( <sup>2</sup> )	1.5	( <sup>1</sup> )
			Methoxychlor	72-43-5	0.25	( <sup>2</sup> )	0.18	( <sup>1</sup> )
			3-Methylcholanthrene	56-49-5	0.0055	( <sup>2</sup> )	15	( <sup>1</sup> )
			4,4-Methylene-bis-(2-chloroaniline)	101-14-4	0.50	( <sup>2</sup> )	35	( <sup>1</sup> )
			Methylene chloride	75-09-2	0.089	( <sup>2</sup> )	33	( <sup>1</sup> )
			Methyl ethyl ketone	78-93-3	0.28	( <sup>2</sup> )	36	( <sup>1</sup> )
			Methyl isobutyl ketone	108-10-1	0.14	( <sup>2</sup> )	33	( <sup>1</sup> )
			Methyl methacrylate	80-62-6	0.14	( <sup>2</sup> )	160	( <sup>1</sup> )
			Methyl methansulfonate	66-27-3	0.018	( <sup>2</sup> )	NA	
			Methyl parathion	298-00-0	0.014	( <sup>2</sup> )	4.6	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	3.1	( <sup>1</sup> )
			2-Naphthylamine	91-59-8	0.52	( <sup>2</sup> )	NA	
			p-Nitroaniline	100-01-6	0.028	( <sup>2</sup> )	28	( <sup>1</sup> )
			Nitrobenzene	98-95-3	0.068	( <sup>2</sup> )	14	( <sup>1</sup> )
			5-Nitro-o-toluidine	99-55-8	0.32	( <sup>2</sup> )	28	( <sup>1</sup> )
			4-Nitrophenol	100-02-7	0.12	( <sup>2</sup> )	29	( <sup>1</sup> )
			N-Nitrosodiethylamine	55-18-5	0.40	( <sup>2</sup> )	28	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			N-Nitrosodimethylamine	62-75-9	0.40	( <sup>2</sup> )	NA	
			N-Nitroso-di-n-butylamine	924-16-3	0.40	( <sup>2</sup> )	17	( <sup>1</sup> )
			N-Nitrosomethylethylamine	10595-95-6	0.40	( <sup>2</sup> )	2.3	( <sup>1</sup> )
			N-Nitrosomorpholine	59-89-2	0.40	( <sup>2</sup> )	2.3	( <sup>1</sup> )
			N-Nitrosopiperidine	100-75-4	0.013	( <sup>2</sup> )	35	( <sup>1</sup> )
			N-Nitrosopyrrolidine	930-55-2	0.013	( <sup>2</sup> )	35	( <sup>1</sup> )
			Parathion	56-38-2	0.014	( <sup>2</sup> )	4.6	( <sup>1</sup> )
			Pentachlorobenzene	608-93-5	0.055	( <sup>2</sup> )	37	( <sup>1</sup> )
			Pentachlorodibenzo-furans		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			Pentachlorodibenzo-p-dioxins		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			Pentachloronitrobenzene	82-68-8	0.055	( <sup>2</sup> )	4.8	( <sup>1</sup> )
			Pentachlorophenol	87-86-5	0.089	( <sup>2</sup> )	7.4	( <sup>1</sup> )
			Phenacetin	62-44-2	0.081	( <sup>2</sup> )	16	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	3.1	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Phorate	298-02-2	0.021	( <sup>2</sup> )	4.6	( <sup>1</sup> )
			Phthalic anhydride	85-44-9	0.069	( <sup>2</sup> )	NA	
			Pronamide	23950-58-5	0.093	( <sup>2</sup> )	1.5	( <sup>1</sup> )
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	8.2	( <sup>1</sup> )
			Pyridine	110-86-1	0.014	( <sup>2</sup> )	16	( <sup>1</sup> )
			Safrole	94-59-7	0.081	( <sup>2</sup> )	22	( <sup>1</sup> )
			Silvex (2,4,5-TP)	93-72-1	0.72	( <sup>2</sup> )	7.9	( <sup>1</sup> )
			2,4,5-T	93-76-5	0.72	( <sup>2</sup> )	7.9	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			1,2,4,5,-Tetrachlorobenzene	95-94-3	0.055	( <sup>2</sup> )	19	( <sup>1</sup> )
			Tetrachlorodibenzo-furans		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			Tetrachlorodibenzo-p-dioxins		0.000063	( <sup>2</sup> )	0.001	( <sup>1</sup> )
			1,1,1,2-Tetrachloroethane	630-20-6	0.057	( <sup>2</sup> )	42	( <sup>1</sup> )
			1,1,2,2-Tetrachloroethane	79-34-6	0.057	( <sup>2</sup> )	42	( <sup>1</sup> )
			Tetrachloroethylene	127-18-4	0.056	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			2,3,4,6-Tetrachlorophenol	58-90-2	0.030	( <sup>2</sup> )	37	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	28	( <sup>1</sup> )
			Toxaphene	8001-35-1	0.0095	( <sup>2</sup> )	1.3	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055	( <sup>2</sup> )	19	( <sup>1</sup> )
			1,1,1-Trichloroethane	71-55-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			1,1,2-Trichloroethane	79-00-5	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			2,4,5-Trichlorophenol	95-95-4	0.18	( <sup>2</sup> )	37	( <sup>1</sup> )
			2,4,6-Trichlorophenol	88-06-2	0.035	( <sup>2</sup> )	37	( <sup>1</sup> )
			1,2,3-Trichloropropane	96-18-4	0.85	( <sup>2</sup> )	28	( <sup>1</sup> )
			1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	( <sup>2</sup> )	28	( <sup>1</sup> )
			Tris(2,3-dibromopropyl) phosphate	126-72-7	0.11	( <sup>2</sup> )	NA	
			Vinyl chloride	75-01-4	0.27	( <sup>2</sup> )	33	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	28	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	1.2	( <sup>2</sup> )	1.8	( <sup>1</sup> )
			Fluoride	16964-48-8	35	( <sup>2</sup> )	NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K001	NA	Table CCWE in s. NR 675.21	Sulfide	8496-25-8	14	( <sup>2</sup> )	NA	
			Antimony	7440-36-0	1.9	( <sup>2</sup> )	NA	
			Arsenic	7440-38-2	1.4	( <sup>2</sup> )	NA	
			Barium	7440-39-3	1.2	( <sup>2</sup> )	NA	
			Beryllium	7440-41-7	0.82	( <sup>2</sup> )	NA	
			Cadmium	7440-43-9	0.20	( <sup>2</sup> )	NA	
			Chromium (Total)	7440-47-3	0.37	( <sup>2</sup> )	NA	
			Copper	7440-50-8	1.3	( <sup>2</sup> )	NA	
			Lead	7439-92-1	0.28	( <sup>2</sup> )	NA	
			Mercury	7439-97-6	0.15	( <sup>2</sup> )	NA	
			Nickel	7440-02-0	0.55	( <sup>2</sup> )	NA	
			Selenium	7782-49-2	0.82	( <sup>2</sup> )	NA	
			Silver	7440-22-4	0.29	( <sup>2</sup> )	NA	
			Thallium	7440-28-0	1.4	( <sup>2</sup> )	NA	
			Vanadium	7440-62-2	0.042	( <sup>2</sup> )	NA	
			Zinc	7440-66-6	1.0	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.031	( <sup>1</sup> )	1.5	( <sup>1</sup> )
Pentachlorophenol	87-86-5	0.18	( <sup>1</sup> )	7.4	( <sup>1</sup> )			
Phenanthrene	85-01-8	0.031	( <sup>1</sup> )	1.5	( <sup>1</sup> )			
Pyrene	129-00-0	0.028	( <sup>1</sup> )	1.5	( <sup>1</sup> )			
Toluene	108-88-3	0.028	( <sup>1</sup> )	28	( <sup>1</sup> )			
Xylenes (Total)		0.032	( <sup>1</sup> )	33	( <sup>1</sup> )			

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K002	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.037		NA	
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	
K003	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	
K004	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	@
K005	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	
K006	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
			Cyanides (Total)	57-12-5	0.74	( <sup>2</sup> )	(4)	
			Chromium (Total)	7440-47-3	0.9	3.4	( <sup>2</sup> )	NA
K007	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1			( <sup>2</sup> )	NA
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	
K008	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
			Cyanides (Total)	57-12-5	0.74	( <sup>2</sup> )	(4)	
			Chromium (Total)	7440-47-3	0.9	( <sup>2</sup> )	NA	



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Lead	7439-92-1	3.4	( <sup>2</sup> )	NA	
K009	NA	NA	Chloroform	67-66-3	0.1		6.0	( <sup>1</sup> )
K010	NA	NA	Chloroform	67-66-3	0.1		6.0	( <sup>1</sup> )
K011	NA	NA	Acetonitrile	75-05-8	38		1.8	( <sup>1</sup> )
			Acrylonitrile	107-13-1	0.06		1.4	( <sup>1</sup> )
			Acrylamide	79-06-1	19		23	( <sup>1</sup> )
			Benzene	71-43-2	0.02		0.03	( <sup>1</sup> )
			Cyanide (Total)	57-12-5	21		57	
K013	NA	NA	Acetonitrile	75-05-8	38		1.8	( <sup>1</sup> )
			Acrylonitrile	107-13-1	0.06		1.4	( <sup>1</sup> )
			Acrylamide	79-06-1	19		23	( <sup>1</sup> )
			Benzene	71-43-2	0.02		0.03	( <sup>1</sup> )
			Cyanide (Total)	57-12-5	21		57	
K014	NA	NA	Acetonitrile	75-05-8	38		1.8	( <sup>1</sup> )
			Acrylonitrile	107-13-1	0.06		1.4	( <sup>1</sup> )
			Acrylamide	79-06-1	19		23	( <sup>1</sup> )
			Benzene	71-43-2	0.02		0.03	( <sup>1</sup> )
			Cyanide (Total)	57-12-5	21		57	
K015	NA	Table CCWE in s. NR 675.21	Anthracene	120-12-7	0.059		3.4	( <sup>1</sup> )
			Benzal Chloride	98-87-3	0.28		6.2	( <sup>1</sup> )
			Sum of Benzo(b) fluoranthene and Benzo(k) fluoranthene	207-08-9	0.055		3.4	
			Phenanthrene	85-01-8	0.059		3.4	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K016	NA		Toluene	108-88-3	0.08		6.0	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.32		NA	
			Nickel	7440-02-0	0.44		NA	
			Hexachlorobenzene	118-74-1	0.055		28	( <sup>1</sup> )
			Hexachlorobutadiene	87-68-3	0.055		5.6	( <sup>1</sup> )
			Hexachlorocyclopentadiene	77-47-4	0.057		5.6	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
K017	NA	NA	Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			1,2-Dichloropropane	78-87-5	0.85	( <sup>1,2</sup> )	18	( <sup>1</sup> )
			1,2,3-Trichloropropane	96-18-4	0.85	( <sup>1,2</sup> )	28	( <sup>1</sup> )
K018	NA		Bis(2-chloroethyl)ether	111-44-4	0.033	( <sup>1,2</sup> )	7.2	( <sup>1</sup> )
			Chloroethane	76-00-5	0.27		6.0	( <sup>1</sup> )
			Chloromethane	74-87-3	0.19		NA	
			1,1-Dichloroethane	75-34-3	0.059		6.0	( <sup>1</sup> )
			1,2-Dichloroethane	107-06-2	0.21		6.0	( <sup>1</sup> )
			Hexachlorobenzene	118-74-1	0.055		28	( <sup>1</sup> )
			Hexachlorobutadiene	87-68-3	0.055		5.6	( <sup>1</sup> )
			Pentachloroethane	76-01-7	NA		5.6	
			1,1,1-Trichloroethane	71-55-6	0.054		6.0	
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
K019	NA		Bis(2-chloroethyl) ether	111-44-4	0.033		5.6	( <sup>1</sup> )
			Chlorobenzene	108-90-7	0.057		6.0	( <sup>1</sup> )
			Chloroform	67-66-3	0.046		6.0	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
K020	NA		p-Dichlorobenzene	106-46-7	0.09		NA	
			1,2-Dichloroethane	107-06-2	0.21		6.0	( <sup>1</sup> )
			Fluorene	86-73-7	0.059		NA	
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059		5.6	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059		5.6	( <sup>1</sup> )
			1,2,4,5- Tetrachlorobenzene	95-94-3	0.055		NA	
			Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055		19	( <sup>1</sup> )
			1,1,1-Trichloroethane	71-55-6	0.054		6.0	( <sup>1</sup> )
			1,2-Dichloroethane	106-93-4	0.21		6.0	( <sup>1</sup> )
K021	NA	Table CCWE in s. NR 675.21	1,1,2,2-Tetrachloroethane	79-34-6	0.057		5.6	( <sup>1</sup> )
			Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			Chloroform	67-66-3	0.046	( <sup>2</sup> )	6.2	( <sup>1</sup> )
K022	NA	Table CCWE in s. NR 675.21	Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Antimony	7440-36-0	0.60	( <sup>2</sup> )	NA	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	0.034	( <sup>1</sup> )
			Acetophenone	96-86-2	0.010		19	( <sup>1</sup> )
			Diphenylamine	22-39-4	0.52	( <sup>2</sup> )	NA	
			Diphenylnitrosamine	86-30-6	0.40	( <sup>2</sup> )	NA	
			Sum of Diphenylamine and Diphenylnitrosamine		NA		13	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K023	NA		Phenol	108-95-2	0.039		12	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.35		NA	
			Nickel	7440-02-0	0.47		NA	
K024	NA		Phthalic anhydride (measured as Phthalic acid)	85-44-9	0.069		28	( <sup>1</sup> )
K028	NA	Table CCWE in s. NR 675.21	Phthalic anhydride (measured as Phthalic acid)	85-44-9	0.069		28	( <sup>1</sup> )
			1,1-Dichloroethane trans-1,2-	75-34-3	0.059		6.0	( <sup>1</sup> )
			Dichloroethane		0.054		6.0	( <sup>1</sup> )
			Hexachlorobutadiene	87-68-3	0.055		5.6	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
			Pentachloroethane	76-01-7	NA		5.6	( <sup>1</sup> )
			1,1,1,2-Tetrachloroethane	630-20-6	0.057		5.6	( <sup>1</sup> )
			1,1,2,2-Tetrachloroethane	79-34-6	0.057		5.6	( <sup>1</sup> )
			1,1,1,-Trichloroethane	71-55-6	0.054		6.0	( <sup>1</sup> )
			1,1,2-Trichloroethane	79-00-5	0.054		6.0	( <sup>1</sup> )
			Tetrachloroethylene	127-18-4	0.056		6.0	( <sup>1</sup> )
			Cadmium	7440-43-9	6.4		NA	
			Chromium (Total)	7440-47-3	0.35		NA	
			Lead	7439-92-1	0.037		NA	
			Nickel	7440-02-0	0.47		NA	
K029	NA	NA	Chloroform	67-66-3	0.046		6.0	( <sup>1</sup> )
			1,2-Dichloroethane	107-06-2	0.21		6.0	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K030	NA		1,1-Dichloroethylene	75-35-4	0.025		6.0	( <sup>1</sup> )
			1,1,1-Trichloroethane	71-55-6	0.054		6.0	( <sup>1</sup> )
			Vinyl chloride	75-01-4	0.27		6.0	( <sup>1</sup> )
			o-Dichlorobenzene	95-50-1	0.088		NA	
			p-Dichlorobenzene	106-46-7	0.09		NA	
			Hexachlorobutadiene	87-68-3	0.055		5.6	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
			Hexachloropropene	1888-71-7	NA		19	( <sup>1</sup> )
			Pentachlorobenzene	608-93-5	NA		28	( <sup>1</sup> )
			Pentachloroethane	76-01-7	NA		5.6	( <sup>1</sup> )
			1,2,4,5-Tetrachlorobenzene	95-94-3	0.055		14	( <sup>1</sup> )
			Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055		19	( <sup>1</sup> )
			K030	NA		2,4-Dichlorophenol	120-83-2	0.044
2,6-Dichloropheno	187-65-0	0.044					0.34	( <sup>1</sup> )
2,4,5-Trichlorophenol	95-95-4	0.18					8.2	( <sup>1</sup> )
2,4,6-Trichlorophenol	88-06-2	0.035					7.6	( <sup>1</sup> )
Tetrachlorophenols (Total)		NA					0.68	( <sup>1</sup> )
Pentachlorophenol	87-86-5	0.089					1.9	( <sup>1</sup> )
Tetrachloroethene	79-01-6	0.056					1.7	( <sup>1</sup> )
Hexachlorodibenzo-p-dioxins		0.000063					0.001	( <sup>1</sup> )
Hexachlorodibenzofurans		0.000063					0.001	( <sup>1</sup> )
Pentachlorodibenzo-p-dioxins		0.000063					0.001	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K031	NA	Table CCWE in s. NR 675.21	Pentachlorodibenzo furans		0.000063		0.001	( <sup>1</sup> )
			Tetrachlorodibenzo-p-dioxins		0.000063		0.001	( <sup>1</sup> )
			Tetrachlorodibenzofurans		0.000063		0.001	( <sup>1</sup> )
			Arsenic	7440-38-2	0.79		NA	( <sup>1</sup> )
K032	NA	NA	Hexachloropentadiene	77-47-4	0.057	( <sup>2</sup> )	2.4	( <sup>1</sup> )
			Chlordane	57-74-9	0.0033	( <sup>2</sup> )	0.26	( <sup>1</sup> )
			Heptachlor	76-44-8	0.0012	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Heptachlor epoxide	1024-57-3	0.016	( <sup>2</sup> )	0.066	( <sup>1</sup> )
K033	NA	NA	Hexachlorocyclopentadiene	77-47-4	0.057	( <sup>2</sup> )	2.4	( <sup>1</sup> )
K034	NA	NA	Hexachlorocyclopentadiene	77-47-4	0.057	( <sup>2</sup> )	2.4	( <sup>1</sup> )
K035	NA	NA	Acenaphthene	83-32-9	NA		3.4	( <sup>1</sup> )
			Anthracene	120-12-7	NA		3.4	( <sup>1</sup> )
			Benz(a)anthracene	56-55-3	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Benzo(a)pyrene	50-32-8	NA		3.4	( <sup>1</sup> )
			Chrysene	218-01-9	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Dibenz(a,h)anthracene	53-70-3	NA		3.4	( <sup>1</sup> )
			Fluoranthene	206-44-0	0.068	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Fluorene	86-73-7	NA		3.4	( <sup>1</sup> )
			Indeno(1,2,3-cd)pyrene	193-39-5	NA		3.4	( <sup>1</sup> )
			Cresols (m- and p- isomers)		0.77	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			o-cresol	95-48-7	0.11	( <sup>2</sup> )	NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Phenol	108-95-2	0.039		NA	
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	8-2	( <sup>1</sup> )
K036	NA	NA	Disulfoton	298-04-4	0.025	( <sup>2</sup> )	0.1	( <sup>1</sup> )
K037	NA	NA	Disulfoton	298-04-4	0.025	( <sup>2</sup> )	0.1	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	28	( <sup>1</sup> )
K038	NA	NA	Phorate	298-02-2	0.025	( <sup>2</sup> )	0.1	( <sup>1</sup> )
K040	NA	NA	Phorate	298-02-2	0.025	( <sup>2</sup> )	0.1	( <sup>1</sup> )
K041	NA	NA	Toxaphene	8001-35-1	0.0095	( <sup>2</sup> )	2.6	( <sup>1</sup> )
K042	NA	NA	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			o-Dichlorobenzene	95-50-1	0.088	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			p-Dichlorobenzene	106-46-7	0.090	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			Pentachlorobenzene	608-93-5	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
K043	NA	NA	2,4-Dichlorophenol	120-83-2	0.049	( <sup>1</sup> )	0.38	( <sup>1</sup> )
			2,6-Dichlorophenol	87-65-0	0.013	( <sup>1</sup> )	0.34	( <sup>1</sup> )
			2,4,5-Trichlorophenol	95-95-4	0.016	( <sup>1</sup> )	8.2	( <sup>1</sup> )
			2,4,6-Trichlorophenol	88-06-2	0.039	( <sup>1</sup> )	7.6	( <sup>1</sup> )
			Tetrachlorophenols (Total)		0.018	( <sup>1</sup> )	0.68	( <sup>1</sup> )
			Pentachlorophenol	87-86-5	0.022	( <sup>1</sup> )	1.9	( <sup>1</sup> )
			Tetrachloroethene	79-01-6	0.006	( <sup>1</sup> )	1.7	( <sup>1</sup> )
			Hexachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Hexachlorodibenzo-furans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
K046	NA	Table CCWE in s. NR 675.21	Pentachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Pentachlorodibenzo-furans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Tetrachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Tetrachlorodibenzo-furans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
K048	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.37		NA	
K048	NA	Table CCWE in s. NR 675.21	Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )
			Benzo(a)pyrene	50-32-8	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )
			Bis(2-ethylhexyl) phthalate	117-81-7	0.28	( <sup>2</sup> )	7.3	( <sup>1</sup> )
			Chrysene	218-01-9	0.059	( <sup>2</sup> )	15	( <sup>1</sup> )
			Di-n-butyl phthalate	84-74-2	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Fluorene	86-73-7	0.059	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	42	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	36	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
Lead	7439-92-1	0.037		NA				



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
K049	NA	Table CCWE in s. NR 675.21	Anthracene	120-12-7	0.059	( <sup>2</sup> )	28	( <sup>1</sup> )
			Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )
			Benzo(a)pyrene	117-81-7	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )
			Bis(2-ethylhexyl) phthalate	75-150-0	0.28	( <sup>2</sup> )	7.3	( <sup>1</sup> )
			Carbon disulfide	75-15-0	0.014	( <sup>2</sup> )	NA	
			Chrysene	2218-01-9	0.059	( <sup>2</sup> )	15	( <sup>1</sup> )
			2,4-Dimethyl phenol	105-67-9	0.036	( <sup>2</sup> )	NA	
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	42	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	36	( <sup>1</sup> )
			Toluene	108-88-3	0.08	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	56-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
			K050	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.037
Benzo(a)pyrene	50-32-8	0.061				( <sup>2</sup> )	12	( <sup>1</sup> )
Phenol	108-95-2	0.039				( <sup>2</sup> )	3.6	( <sup>1</sup> )
Cyanides (Total)	57-12-5	0.028				( <sup>1</sup> )	1.8	( <sup>1</sup> )
Chromium (Total)	7440-47-3	0.2					NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/L)	Notes	Concentration (mg/k)	Notes
K051	NA	Table CCWE in s. NR 675.21	Lead	7439-29-1	0.037		NA	
			Acenaphthene	83-32-9	0.059	( <sup>2</sup> )	NA	
			Anthracene	120-12-7	0.059	( <sup>2</sup> )	28	( <sup>1</sup> )
			Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )
			Benzo(a) anthracene	50-32-8	0.059	( <sup>2</sup> )	20	( <sup>1</sup> )
			Benzo(a)pyrene	117-81-7	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )
			Bis(2-ethylhexyl) phthalate	75-15-0	0.28	( <sup>2</sup> )	7.3	( <sup>1</sup> )
			Chrysene	2218-01-9	0.059	( <sup>2</sup> )	15	( <sup>1</sup> )
			Di-n-butyl phthalate	105-67-9	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Fluorene	86-73-7	0.059	( <sup>2</sup> )	NA	
			Naphthalene	91-20-3	0.059	(2)	42	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Pyrene	129-00-0	0.067	( <sup>2</sup> )	36	( <sup>1</sup> )
			Toluene	108-88-3	0.08	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylene(s)		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
			Lead	7439-92-1	0.037		NA	
Benzene	71-43-2	0.14	( <sup>2</sup> )	14	( <sup>1</sup> )			
Benzo(a)pyrene	50-32-8	0.061	( <sup>2</sup> )	12	( <sup>1</sup> )			

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K052	NA	Table CCWE in s. NR 675.21	o-Cresol	95-48-7	0.11	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			p-Cresol	106-44-5	0.77	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			2,4-Dimethylphenol	105-67-9	0.036	( <sup>2</sup> )	NA	
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	14	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	42	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	34	( <sup>1</sup> )
			Phenol	108-95-2	0.039	( <sup>2</sup> )	3.6	( <sup>1</sup> )
			Toluene	108-88-3	0.08	( <sup>2</sup> )	14	( <sup>1</sup> )
			Xylenes		0.32	( <sup>2</sup> )	22	( <sup>1</sup> )
			Cyanides (Total)	56-12-5	0.028	( <sup>1</sup> )	1.8	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.2		NA	
			Lead	7439-92-1	0.037		NA	
			K060	NA	NA	Benzene	71-43-2	0.17
Benzo(a)pyrene	50-32-8	0.035				( <sup>1,2</sup> )	3.6	( <sup>1</sup> )
Naphthalene	91-20-3	0.028				( <sup>1,2</sup> )	3.4	( <sup>1</sup> )
Phenol	108-95-2	0.042				( <sup>1,2</sup> )	3.4	( <sup>1</sup> )
Cyanides (Total)	57-12-5	1.9					1.2	
K061	NA	Table CCWE in s. NR 675.21	Cadmium	7440-43-9	1.61		NA	
			Chromium (Total)	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.51		NA	
			Nickel	7440-02-0	0.44		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K062	NA	Table CCWE in s. NR 675.21	Chromium (Total)	7440-47-3	0.32		NA	
			Lead	7439-92-1	0.04		NA	
			Nickel	7440-02-0	0.44		NA	
K069	NA	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Cadmium	7440-43-9	1.6		NA	
			Lead	7439-92-1	0.51		NA	
K071	NA	Table CCWE in s. NR 675.21	Mercury	7439-97-6	0.030		NA	
K073	NA	NA	Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Chloroform	67-66-3	0.046	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055	( <sup>2</sup> )	30	( <sup>1</sup> )
			Tetrachloroethane	127-18-4	0.056	( <sup>2</sup> )	6.2	( <sup>1</sup> )
			1,1,1-Trichloroethane	71-55-6	0.054	( <sup>2</sup> )	6.2	( <sup>1</sup> )
K083	NA	Table CCWE in s. NR 675.21	Benzene	71-43-2	0.14	( <sup>2</sup> )	6.6	( <sup>1</sup> )
			Aniline	62-53-3	0.81		14	( <sup>1</sup> )
			Diphenylamine	22-39-4	0.52	( <sup>2</sup> )	NA	
			Diphenylnitrosamine	86-30-6	0.40	( <sup>2</sup> )	NA	
			Sum of Diphenylamine and Diphenylnitrosamine		NA		14	( <sup>1</sup> )
			Nitrobenzene	98-95-3	0.068	( <sup>2</sup> )	14	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K084	NA	NA	Phenol	108-95-2	0.039		5.6	( <sup>1</sup> )
			Cyclohexanone	108-94-1	0.36		NA	
K085	NA	NA	Nickel	7440-02-0	0.47		NA	
			Arsenic	7440-38-2	0.79		NA	
			Benzene	71-43-2	0.14	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			Chlorobenzene	108-90-7	0.057	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			o-Dichlorobenzene	95-50-1	0.088	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			m-Dichlorobenzene	541-73-1	0.036	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			p-Dichlorobenzene	106-46-7	0.090	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			Pentachlorobenzene	608-93-5	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			Hexachlorobenzene	118-74-1	0.055	( <sup>2</sup> )	4.4	( <sup>1</sup> )
			Aroclor 1016	12674-11-2	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )
			Aroclor 1221	11104-28-2	0.014	( <sup>2</sup> )	0.92	( <sup>1</sup> )
			Aroclor 1232	11141-16-5	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )
			Aroclor 1242	53469-21-9	0.017	( <sup>2</sup> )	0.92	( <sup>1</sup> )
Aroclor 1248	12672-29-6	0.013	( <sup>2</sup> )	0.92	( <sup>1</sup> )			
Aroclor 1254	11097-69-1	0.014	( <sup>2</sup> )	1.8	( <sup>1</sup> )			
Aroclor 1260	11096-82-5	0.014	( <sup>2</sup> )	1.8	( <sup>1</sup> )			
K086	NA	Table CCWE in s. NR 675.21	Acetone	67-64-1	0.28		160	( <sup>1</sup> )
			Acetophenone	96-86-2	0.010		9.7	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Bis(2-ethylhexyl)phthalate	117-81-7	0.28	( <sup>2</sup> )	28	( <sup>1</sup> )
			n-Butyl alcohol	71-36-3	5.6		2.6	( <sup>1</sup> )
			Butylbenzylphthalate	85-68-7	0.017	( <sup>2</sup> )	7.9	( <sup>1</sup> )
			Cyclohexanone	108-94-1	0.36		NA	
			1,2-Dichlorobenzene	95-50-1	0.088		6.2	( <sup>1</sup> )
			Diethyl phthalate	84-66-2	0.20	( <sup>2</sup> )	28	( <sup>1</sup> )
			Dimethyl phthalate	131-11-3	0.047	( <sup>2</sup> )	28	( <sup>1</sup> )
			Di-n-butyl phthalate	84-74-2	0.057	( <sup>2</sup> )	28	( <sup>1</sup> )
			Di-n-octyl phthalate	117-84-0	0.017	( <sup>2</sup> )	28	( <sup>1</sup> )
			Ethyl acetate	141-78-6	0.34	( <sup>2</sup> )	33	( <sup>1</sup> )
			Ethylbenzene	100-41-4	0.057	( <sup>2</sup> )	6.0	( <sup>1</sup> )
			Methanol	67-56-1	5.6	( <sup>2</sup> )	NA	
			Methyl isobutyl ketone	108-10-1	0.14		33	( <sup>1</sup> )
			Methyl ethyl ketone	78-93-3	0.28		36	( <sup>1</sup> )
			Methylene chloride	75-09-2	0.089	( <sup>2</sup> )	33	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	3.1	( <sup>1</sup> )
			Nitrobenzene	98-95-3	0.068	( <sup>2</sup> )	14	( <sup>1</sup> )
			Toluene	108-88-3	0.080	( <sup>2</sup> )	28	( <sup>1</sup> )
			1,1,1-Trichloroethane	71-55-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Xylenes (Total)		0.32	( <sup>2</sup> )	28	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	1.9		1.5	( <sup>1</sup> )
			Chromium (Total)	7440-47-3	0.32		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K087	NA	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.037		NA	
			Acenaphthalene	208-96-8	0.059	( <sup>2</sup> )	3.4	
			Benzene	71-43-2	0.14	( <sup>2</sup> )	0.071	( <sup>1</sup> )
			Chrysene	218-01-9	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Fluoranthene	206-44-0	0.068	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Indeno (1,2,3-cd) pyrene	193-39-5	0.0055	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Naphthalene	91-20-3	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.059	( <sup>2</sup> )	3.4	( <sup>1</sup> )
			Toluene	108-88-3	0.08	( <sup>2</sup> )	0.65	( <sup>1</sup> )
			Xylenes		0.32	( <sup>2</sup> )	0.07	( <sup>1</sup> )
K093	NA		Lead	7439-92-1	0.037		NA	
			Phthalic anhydride (measured as Phthalic acid)	85-44-9	0.069		28	( <sup>1</sup> )
K094	NA		Phthalic anhydride (measured as Phthalic acid)	85-44-9	0.069		28	( <sup>1</sup> )
K095	NA	NA	1,1,1,2-Tetrachloroethane	630-20-6	0.057		5.6	( <sup>1</sup> )
			1,1,2,2-Tetrachloroethane	79-34-6	0.057		5.6	( <sup>1</sup> )
			Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			1,1,2-Trichloroethane	79-00-5	0.054		6.0	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054		5.6	( <sup>1</sup> )
			Hexachloroethane	67-72-1	0.055		28	( <sup>1</sup> )
			Pentachloroethane	76-01-7	0.055		5.6	( <sup>1</sup> )
K096	NA	NA	1,1,1,2-Tetrachloroethane	630-20-6	0.057		5.6	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K097	NA	NA	1,1,2,2-Tetrachloroethane	79-34-6	0.057		5.6	( <sup>1</sup> )
			Tetrachloroethene	127-18-4	0.056		6.0	( <sup>1</sup> )
			1,1,2-Trichloroethane	79-00-5	0.054		6.0	( <sup>1</sup> )
			Trichloroethene	79-01-6	0.054		5.6	( <sup>1</sup> )
			Trichloroethylene	79-01-6	0.054		5.6	( <sup>1</sup> )
			1,3-Dichlorobenzene	541-73-1	0.036		5.6	( <sup>1</sup> )
			Pentachloroethane	76-01-7	0.055		5.6	( <sup>1</sup> )
			1,2,4-Trichlorobenzene	120-82-1	0.055		19	( <sup>1</sup> )
			Hexachlorocyclopentadiene	77-47-4	0.057	( <sup>2</sup> )	2.4	( <sup>1</sup> )
			Chlordane	57-74-9	0.0033	( <sup>2</sup> )	0.26	( <sup>1</sup> )
			Heptachlor	76-44-8	0.0012	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Heptachlor epoxide	1024-57-3	0.016	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			K098	NA	NA	Toxaphene	8001-35-1	0.0095
K099	NA	NA	2,4-Dichlorophenoxyacetic acid	94-75-7	1.0	( <sup>1</sup> )	1.0	( <sup>1</sup> )
K100	NA	Table CCWE in s. NR 675.21	Hexachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Hexachlorodibenzofurans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Pentachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Pentachlorodibenzofurans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Tetrachlorodibenzo-p-dioxins		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Tetrachlorodibenzofurans		0.001	( <sup>1</sup> )	0.001	( <sup>1</sup> )
			Cadmium	7440-43-9	1.6		NA	
			Chromium (Total)	7440-47-3	0.32		NA	



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K101	NA	NA	Lead	7439-92-1	0.51		NA	
			o-Nitroaniline		0.27	( <sup>1</sup> )	14	( <sup>1</sup> )
			Arsenic	7440-38-2	0.79		NA	
			Cadmium	7440-43-9	0.24		NA	
			Lead	7439-92-1	0.17		NA	
K102	NA	Table CCWE in s. NR 675.21	Mercury	7439-97-6	0.082		NA	
			o-Nitrophenol		0.028	( <sup>1</sup> )	13	( <sup>1</sup> )
			Arsenic	7440-38-2	0.79		NA	
			Cadmium	7440-43-9	0.24		NA	
			Lead	7439-92-1	0.17		NA	
K103	NA	NA	Mercury	7439-97-6	0.082		NA	
			Aniline	62-53-3	4.5		5.6	( <sup>1</sup> )
			Benzene	71-43-2	0.15		6.0	( <sup>1</sup> )
			2,4-Dinitrophenol	51-28-5	0.61		5.6	( <sup>1</sup> )
			Nitrobenzene	98-95-3	0.073		5.6	( <sup>1</sup> )
K104	NA	NA	Phenol	108-95-2	1.4		5.6	( <sup>1</sup> )
			Aniline	62-53-3	4.5		5.6	( <sup>1</sup> )
			Benzene	71-43-2	0.15		6.0	( <sup>1</sup> )
			2,4-Dinitrophenol	51-28-5	0.61		5.6	( <sup>1</sup> )
			Nitrobenzene	98-95-3	0.073		5.6	( <sup>1</sup> )
			Phenol	108-95-2	1.4		5.6	( <sup>1</sup> )
			Cyanides (Total)	57-12-5	2.7		1.8	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K105	NA	NA	Benzene	71-43-2	0.14		4.4	( <sup>1</sup> )
			Chlorobenzene	108-90-7	0.057		4.4	( <sup>1</sup> )
			o-Dichlorobenzene	95-50-1	0.088		4.4	( <sup>1</sup> )
			p-Dichlorobenzene	106-46-7	0.090		4.4	( <sup>1</sup> )
			2,4,5-Trichlorophenol	95-95-4	0.18		4.4	( <sup>1</sup> )
			2,4,6-Trichlorophenol	88-06-2	0.035		4.4	( <sup>1</sup> )
			2-Chlorophenol	95-57-8	0.044		4.4	( <sup>1</sup> )
			Phenol	108-95-2	0.039		4.4	( <sup>1</sup> )
K106	NA	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Mercury	7439-97-6	0.030		NA	
K111	NA		2,4-Dinitrotoluene	121-14-2	0.32		140	( <sup>1</sup> )
			2,6-Dinitrotoluene	606-20-2	0.55		28	( <sup>1</sup> )
K115	NA	Table CCWE in s. NR 675.21	Nickel	7440-02-0	0.47		NA	
K117	NA		Ethylene dibromide	106-93-4	0.028		15	( <sup>1</sup> )
			Methyl bromide	74-83-9	0.11		15	( <sup>1</sup> )
			Chloroform	67-66-3	0.046		5.6	( <sup>1</sup> )
K118	NA		Ethylene dibromide	106-93-4	0.028		15	( <sup>1</sup> )
			Methyl bromide	74-83-9	0.11		15	( <sup>1</sup> )
			Chloroform	67-66-3	0.046		5.6	( <sup>1</sup> )
K131	NA		Methyl bromide	74-83-9	0.11		15	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
K132	NA		Methyl bromide	74-83-9	0.11		15	( <sup>1</sup> )
K136	NA		Ethylene dibromide	106-93-4	0.028		15	( <sup>1</sup> )
			Methyl bromide	74-83-9	0.11		15	( <sup>1</sup> )
			Chloroform	67-66-3	0.046		5.6	( <sup>1</sup> )
			Aldrin	309-00-2	0.021	( <sup>2</sup> )	0.066	( <sup>1</sup> )
P004	Aldrin	NA	Aldrin	309-00-2	0.021	( <sup>2</sup> )	0.066	( <sup>1</sup> )
P010	Arsenic acid	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
P011	Arsenic pentoxide	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
P012	Arsenic trioxide	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
P013	Barium cyanide	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	NA	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066		2.5	( <sup>1</sup> )
P021	Calcium cyanide	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
P022	Carbon disulfide	Table 2 in s. NR 675.22	Carbon disulfide	75-15-0	0.014		NA	
P024	p-Chloroaniline	NA	p-Chloroaniline	106-47-8	0.46		16	( <sup>1</sup> )
P029	Copper cyanide	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
P030	Cyanides (soluble salts and complexes)	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
P036	Dichlorophenylarsine	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
P037	Dieldrin	NA	Dieldrin	60-57-1	0.017	( <sup>2</sup> )	0.13	( <sup>1</sup> )
P038	Diethylarsine	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
P039	Disulfoton	NA	Disulfoton	298-04-4	0.017		0.1	( <sup>1</sup> )
P047	4,6-Dinitro-o-cresol	NA	4,6-Dinitro-o-cresol	534-52-1	0.28	( <sup>2</sup> )	160	( <sup>1</sup> )
P048	2,4-Dinitrophenol	NA	2,4-Dinitrophenol	51-28-5	0.12	( <sup>2</sup> )	160	( <sup>1</sup> )
P050	Endosulfan	NA	Endosulfan I	939-98-8	0.023	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Endosulfan II	33213-6-5	0.029	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Endosulfan sulfate	1031-07-8	0.029	( <sup>2</sup> )	0.13	( <sup>1</sup> )
P051	Endrin	NA	Endrin	72-20-8	0.0028	( <sup>2</sup> )	0.13	( <sup>1</sup> )
			Endrin aldehyde	7421-93-4	0.025	( <sup>2</sup> )	0.13	( <sup>1</sup> )
P056	Fluoride	Table 2 in s. NR 675.22	Fluoride	16964-48-8	35		NA	
P059	Heptachlor	NA	Heptachlor	76-44-8	0.0012	( <sup>2</sup> )	0.066	( <sup>1</sup> )
			Heptachlor epoxide	1024-57-3	0.016	( <sup>2</sup> )	0.066	( <sup>1</sup> )
P060	Isodrin	NA	Isodrin	465-73-6	0.021	( <sup>2</sup> )	0.066	( <sup>1</sup> )
P063	Hydrogen cyanide	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
P065	Mercury fulminate	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Mercury	7439-97-6	0.030		NA	
P071	Methyl parathion	NA	Methyl parathion	298-00-0	0.025		0.1	( <sup>1</sup> )
P073	Nickel carbonyl	Table CCWE in s. NR 675.21	Nickel	7440-02-0	0.44		NA	
P074	Nickel cyanide	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	
			Nickel	7440-02-0	0.44		NA	
P077	p-Nitroaniline	NA	p-Nitroaniline	100-01-6	0.028	( <sup>2</sup> )	28	( <sup>1</sup> )
P082	N-Nitrosodimethylamine	Table 2 in s. NR 675.22	N-Nitrosodimethylamine	62-75-9	0.40	( <sup>2</sup> )	NA	
P089	Parathion	NA	Parathion	56-38-2	0.025		0.1	( <sup>1</sup> )
P092	Phenylmercury acetate	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Mercury	7439-97-6	0.030		NA	
P094	Phorate	NA	Phorate	298-02-2	0.025		0.1	( <sup>1</sup> )
P097	Famphur	NA	Famphur	52-85-7	0.025		0.1	( <sup>1</sup> )
P098	Potassium cyanide	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
P099	Potassium silver cyanide	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.1		9.1	
			Silver	7440-22-4	0.29		NA	
P101	Ethyl cyanide (Propanenitrile)	NA	Ethyl cyanide (Propanenitrile)	107-12-0	0.24	( <sup>2</sup> )	360	( <sup>1</sup> )
P103	Selenourea	Table CCWE in s. NR 675.21	Selenium	7782-49-2	1.0	( <sup>2</sup> )	NA	
P104	Silver cyanide	Table CCWE in s. NR 675.21	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	
			Silver	7440-22-4	0.29		NA	
P106	Sodium cyanide	NA	Cyanides (Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	
P110	Tetraethyl lead	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Lead	7439-92-1	0.040		NA	
P113	Thallic oxide	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	
P114	Thallium selenite	Table CCWE in s. NR 675.21	Selenium	7782-49-2	1.0		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
P115	Thallium(I)sulfate	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	
P119	Ammonia vandate	Table 2 in s. NR 675.22	Vanadium	7440-62-2	28	( <sup>2</sup> )	NA	
P120	Vanadium pentoxide	Table 2 in s. NR 675.22	Vanadium	7440-62-2	28	( <sup>2</sup> )	NA	
P121	Zinc cyanide	NA	Cyanides Total)	57-12-5	1.9		110	
			Cyanides (Amenable)	57-12-5	0.10		9.1	
P123	Toxaphene	NA	Toxaphene	8001-35-1	0.0095	( <sup>2</sup> )	1.3	( <sup>1</sup> )
U002	Acetone	NA	Acetone	67-64-1	0.28		160	( <sup>1</sup> )
U003	Acetonitrile	Table 2 in s. NR 675.22	Acetonitrile	75-05-8	0.17		NA	
U004	Acetophenone	NA	Acetophenone	98-86-2	0.010	( <sup>1</sup> )	9.7	( <sup>1</sup> )
U005	2-Acetylaminofluorene	NA	2-Acetylaminofluorene	53-96-3	0.059	( <sup>2</sup> )	140	( <sup>1</sup> )
U009	Acrylonitrile	NA	Acrylonitrile	107-13-1	0.24	( <sup>2</sup> )	84	( <sup>1</sup> )
U012	Aniline	NA	Aniline	62-53-3	0.81		14	( <sup>1</sup> )
U018	Benz(a)anthracene	NA	Benz(a)anthracene	56-55-3	0.059	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U019	Benzene	NA	Benzene	71-43-2	0.14	( <sup>2</sup> )	36	( <sup>1</sup> )
U022	Benzo(a)pyrene	NA	Benzo(a)pyrene	50-32-8	0.061	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U024	Bis(2-chloroethoxy)methane	NA	Bis(2-chloroethoxy)methane	111-91-1	0.036		7.2	( <sup>1</sup> )
U025	Bis(2-chloroethyl)ether	NA	Bis(2-chloroethyl)ether	111-44-4	0.033		7.2	( <sup>1</sup> )
U027	Bis(2-chloroisopropyl)ether	NA	Bis(2-chloroisopropyl)ether	39638-32-9	0.055	( <sup>2</sup> )	7.2	( <sup>1</sup> )
U028	Bis(2-ethylhexyl) phthalate		Bis(2-ethylhexyl) phthalate	117-81-7	0.28		28	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U029	Bromomethane (Methyl bromide)	NA	Bromomethane (Methyl bromide)	74-83-9	0.11	( <sup>1</sup> )	15	( <sup>1</sup> )
U030	4-Bromophenyl phenyl ether	NA	4-Bromophenyl phenyl ether	101-55-3	0.055	( <sup>1</sup> )	15	( <sup>1</sup> )
U031	n-Butyl alcohol	NA	n-Butyl alcohol	71-36-3	5.6		2.6	( <sup>1</sup> )
U032	Calcium chromate	Table CCWE in s. NR 675.21	Chromium (Total)	7440-47-3	0.32		NA	
U036	Chlordane (alpha and gamma)	NA	Chlordane (alpha and gamma)	57-74-9	0.0033	( <sup>2</sup> )	0.13	( <sup>1</sup> )
U037	Chlorobenzene	NA	Chlorobenzene	108-90-7	0.057	( <sup>2</sup> )	5.7	( <sup>1</sup> )
U038	Chlorobenzilate	Table 2 in s. NR 675.22	Chlorobenzilate	510-15-6	0.10	( <sup>2</sup> )	NA	
U039	p-Chloro-m-cresol	NA	p-Chloro-m-cresol	59-50-7	0.018	( <sup>2</sup> )	14	( <sup>1</sup> )
U043	Vinyl chloride	NA	Vinyl chloride	75-01-4	0.27	( <sup>2</sup> )	33	( <sup>1</sup> )
U044	Chloroform	NA	Chloroform	67-66-3	0.046	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U045	Chloromethane (Methyl chloride)	NA	Chloromethane (Methyl chloride)	74-87-3	0.19	( <sup>2</sup> )	33	( <sup>1</sup> )
U047	2-Chloronaphthalene	NA	2-Chloronaphthalene	91-58-7	0.055	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U048	2-Chlorophenol	NA	2-Chlorophenol	95-57-8	0.044	( <sup>2</sup> )	5.7	( <sup>1</sup> )
U050	Chrysene	NA	Chrysene	218-01-9	0.059	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U051	Creosote	Table CCWE in s. NR 675.21	Naphthalene	91-20-3	0.031		1.5	( <sup>1</sup> )
			Pentachlorophenol	87-86-5	0.18		7.4	( <sup>1</sup> )
			Phenanthrene	85-01-8	0.031		1.5	( <sup>1</sup> )
			Pyrene	129-00-0	0.028		1.5	( <sup>1</sup> )
			Toluene	108-88-3	0.028		28	( <sup>1</sup> )



Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
			Xylenes (Total)		0.032		33	( <sup>1</sup> )
			Lead	7439-92-1	0.037		NA	
U052	Cresols (Cresylic acid)	NA	o-Cresol	95-48-7	0.11	( <sup>2</sup> )	5.6	( <sup>1</sup> )
			Cresols (m- and p- isomers)		0.77	( <sup>2</sup> )	3.2	( <sup>1</sup> )
U057	Cyclohexanone	Table 2 in s. NR 675.22	Cyclohexanone	108-94-1	0.36		NA	
U060	DDD	NA	o,p'-DDD	53-19-0	0.023		0.087	( <sup>1</sup> )
			p,p'-DDD	72-54-8	0.023		0.087	( <sup>1</sup> )
U061	DDT	NA	o,p'-DDT	789-02-6	0.0039	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDT	50-29-3	0.0039	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			o,p'-DDD	53-19-0	0.023	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDD	72-54-8	0.023	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			o,p'-DDE	3424-82-6	0.031	( <sup>2</sup> )	0.087	( <sup>1</sup> )
			p,p'-DDE	72-55-9	0.031	( <sup>2</sup> )	0.087	( <sup>1</sup> )
U063	Dibenzo(a,h)anthracene	NA	Dibenzo(a,h)anthracene	53-70-3	0.055	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U066	1,2-Dibromo-3-chloropropane	NA	1,2-Dibromo-3-chloropropane	96-12-8	0.11	( <sup>2</sup> )	15	( <sup>1</sup> )
U067	1,2-Dibromoethane (Ethylene dibromide)	NA	1,2-Dibromoethane (Ethylene dibromide)	106-93-4	0.028	( <sup>2</sup> )	15	( <sup>1</sup> )
U068	Dibromomethane	NA	Dibromomethane	74-95-3	0.11	( <sup>2</sup> )	15	( <sup>1</sup> )
U069	Di-n-butyl phthalate		Di-n-butyl phthalate	84-74-2	0.057		28	( <sup>1</sup> )
U070	o-Dichlorobenzene	NA	o-Dichlorobenzene	95-50-1	0.088	( <sup>2</sup> )	6.2	( <sup>1</sup> )
U071	m-Dichlorobenzene	NA	m-Dichlorobenzene	541-73-1	0.036		6.2	( <sup>1</sup> )
U072	p-Dichlorobenzene	NA	p-Dichlorobenzene	104-46-7	0.090	( <sup>2</sup> )	6.2	( <sup>1</sup> )
U075	Dichlorodifluoromethane	NA	Dichlorodifluoromethane	75-71-8	0.23	( <sup>2</sup> )	7.2	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U076	1,1-Dichloroethane	NA	1,1-Dichloroethane	75-34-3	0.059	( <sup>2</sup> )	7.2	( <sup>1</sup> )
U077	1,2-Dichloroethane	NA	1,2-Dichloroethane	107-06-2	0.21	( <sup>2</sup> )	7.2	( <sup>1</sup> )
U078	1,1-Dichloroethylene	NA	1,1-Dichloroethylene	75-35-4	0.025	( <sup>2</sup> )	33	( <sup>1</sup> )
U079	1,2-Dichloroethylene	NA	trans-1,2-Dichloroethylene	156-60-5	0.054	( <sup>2</sup> )	33	( <sup>1</sup> )
U080	Methylene chloride	NA	Methylene chloride	75-09-2	0.089	( <sup>2</sup> )	33	( <sup>1</sup> )
U081	2,4-Dichlorophenol	NA	2,4-Dichlorophenol	120-83-2	0.044	( <sup>2</sup> )	14	( <sup>1</sup> )
U082	2,6-Dichlorophenol	NA	2,6-Dichlorophenol	87-65-0	0.044	( <sup>2</sup> )	14	( <sup>1</sup> )
U083	1,2-Dichloropropane	NA	1,2-Dichloropropane	78-87-5	0.85	( <sup>2</sup> )	18	( <sup>1</sup> )
U084	1,3-Dichloropropene	NA	cis-1,3-Dichloropropylene	10061-01-5	0.036	( <sup>2</sup> )	18	( <sup>1</sup> )
			trans-1,3-Dichloropropylene	10061-02-6	0.036	( <sup>2</sup> )	18	( <sup>1</sup> )
U088	Diethyl phthalate		Diethyl phthalate	84-66-2	0.2		28	( <sup>1</sup> )
U093	p-Dimethylaminoazobenzene	Table 2 in s. NR 675.22	p-Dimethylaminoazobenzene	60-11-7	0.13	( <sup>2</sup> )	NA	
U101	2,4-Dimethylphenol	NA	2,4-Dimethylphenol	105-67-9	0.036	( <sup>2</sup> )	14	( <sup>1</sup> )
U102	Dimethyl phthalate		Dimethyl phthalate	131-11-3	0.047		28	( <sup>1</sup> )
U105	2,4-Dinitrotoluene	NA	2,4-Dinitrotoluene	121-14-2	0.32	( <sup>2</sup> )	140	( <sup>1</sup> )
U106	2,6-Dinitrotoluene	NA	2,6-Dinitrotoluene	606-20-2	0.55	( <sup>2</sup> )	28	( <sup>1</sup> )
U107	Di-n-octyl phthalate		Di-n-octyl phthalate	117-84-0	0.017		28	( <sup>1</sup> )
U108	1,4-Dioxane	NA	1,4-Dioxane	123-91-1	0.12	( <sup>2</sup> )	170	( <sup>1</sup> )
U111	Di-n-propylnitrosoamine	NA	Di-n-propylnitrosoamine	621-64-7	0.40	( <sup>2</sup> )	14	( <sup>1</sup> )
U112	Ethyl acetate	NA	Ethyl acetate	141-78-6	0.34	( <sup>2</sup> )	33	( <sup>1</sup> )
U117	Ethyl ether	NA	Ethyl ether	60-29-7	0.12	( <sup>2</sup> )	160	( <sup>1</sup> )
U118	Ethyl methacrylate	NA	Ethyl methacrylate	97-63-2	0.14	( <sup>2</sup> )	160	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U120	Fluoranthene	NA	Fluoranthene	206-44-0	0.068	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U121	Trichloromonofluoromethane	NA	Trichloromonofluoromethane	75-69-4	0.020	( <sup>2</sup> )	33	( <sup>1</sup> )
U127	Hexachlorobenzene	NA	Hexachlorobenzene	118-74-1	0.055	( <sup>2</sup> )	37	( <sup>1</sup> )
U128	Hexachlorobutadiene	NA	Hexachlorobutadiene	87-68-3	0.055	( <sup>2</sup> )	28	( <sup>1</sup> )
U129	Lindane	NA	alpha-BHC	319-84-6	0.00014	( <sup>2</sup> )	0.66	( <sup>1</sup> )
			beta-BHC	319-85-7	0.00014	( <sup>2</sup> )	0.66	( <sup>1</sup> )
			Delta-BHC	319-86-8	0.023	( <sup>2</sup> )	0.66	( <sup>1</sup> )
			gamma-BHC (Lindane)	58-89-9	0.0017	( <sup>2</sup> )	0.66	( <sup>1</sup> )
U130	Hexachlorocyclopentadiene	NA	Hexachlorocyclopentadiene	77-47-7	0.057	( <sup>2</sup> )	3.6	( <sup>1</sup> )
U131	Hexachloroethane	NA	Hexachloroethane	67-72-1	0.055	( <sup>2</sup> )	28	( <sup>1</sup> )
U134	Hydrogen fluoride	Table 2 in s. NR 675.22	Fluoride	16964-48-8	35		NA	
U136	Cacodylic acid	Table CCWE in s. NR 675.21	Arsenic	7440-38-2	0.79		NA	
U137	Indeno(1,2,3-c,d)pyrene	NA	Indeno(1,2,3-c,d)pyrene	193-39-5	0.0055	( <sup>2</sup> )	8.2	( <sup>1</sup> )
U138	Iodomethane	NA	Iodomethane	74-88-4	0.19	( <sup>2</sup> )	65	( <sup>1</sup> )
U140	Isobutyl alcohol	NA	Isobutyl alcohol	78-83-1	5.6		170	( <sup>1</sup> )
U141	Isosafrole	NA	Isosafrole	120-58-1	0.081		2.6	( <sup>1</sup> )
U142	Kepone	NA	Kepone	143-50-8	0.0011		0.13	( <sup>1</sup> )
U144	Lead acetate	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.040		NA	
U145	Lead phosphate	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.040		NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U146	Lead subacetate	Table CCWE in s. NR 675.21	Lead	7439-92-1	0.040		NA	
U151	Mercury	Table CCWE in s. NR 675.21 and Table 2 in s. NR 675.22	Mercury	7439-97-6	0.030		NA	
U152	Methacrylonitrile	NA	Methacrylonitrile	126-98-7	0.24	( <sup>2</sup> )	84	( <sup>1</sup> )
U154	Methanol	See also Table 2 in s. NR 675.22	Methanol	67-56-1	5.6		NA	
U155	Methapyrilene	NA	Methapyrilene	91-80-5	0.081		1.5	( <sup>1</sup> )
U157	3-Methylcholanthrene	NA	3-Methylcholanthrene	56-49-5	0.0055	( <sup>2</sup> )	15	( <sup>1</sup> )
U158	4,4'-Methylenebis(2-chloroaniline)	NA	4,4'-Methylenebis(2-chloroaniline)	101-14-4	0.50	( <sup>2</sup> )	35	( <sup>1</sup> )
U159	Methyl ethyl ketone	NA	Methyl ethyl ketone	78-93-3	0.28		36	( <sup>1</sup> )
U161	Methyl isobutyl ketone	NA	Methyl isobutyl ketone	108-10-1	0.14		33	( <sup>1</sup> )
U162	Methyl methacrylate	NA	Methyl methacrylate	80-62-6	0.14		160	( <sup>1</sup> )
U165	Naphthalene	NA	Naphthalene	91-20-3	0.059	( <sup>2</sup> )	3.1	( <sup>1</sup> )
U168	2-Naphthylamine	Table 2 in s. NR 675.22	2-Naphthylamine	91-59-8	0.52	( <sup>2</sup> )	NA	
U169	Nitrobenzene	NA	Nitrobenzene	98-95-3	0.068	( <sup>2</sup> )	14	( <sup>1</sup> )
U170	4-Nitrophenol	NA	4-Nitrophenol	100-02-7	0.12	( <sup>2</sup> )	29	( <sup>1</sup> )
U172	N-Nitrosodi-n-butylamine	NA	N-Nitrosodi-n-butylamine	924-16-3	0.40	( <sup>2</sup> )	17	( <sup>1</sup> )
U174	N-Nitrosodiethylamine	NA	N-Nitrosodiethylamine	55-18-5	0.40	( <sup>2</sup> )	28	( <sup>1</sup> )

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U179	N-Nitrosopiperidine	NA	N-Nitrosopiperidine	100-75-4	0.013	( <sup>2</sup> )	35	( <sup>1</sup> )
U180	N-Nitrosopyrrolidine	NA	N-Nitrosopyrrolidine	930-55-2	0.013	( <sup>2</sup> )	35	( <sup>1</sup> )
U181	5-Nitro-o-toluidine	NA	5-Nitro-o-toluidine	99-55-8	0.32	( <sup>2</sup> )	28	( <sup>1</sup> )
U183	Pentachlorobenzene	NA	Pentachlorobenzene	608-93-5	0.055	( <sup>2</sup> )	37	( <sup>1</sup> )
U185	Pentachloronitrobenzene	NA	Pentachloronitrobenzene	82-68-8	0.055	( <sup>2</sup> )	4.8	( <sup>1</sup> )
U187	Phenacetin	NA	Phenacetin	62-44-2	0.081		16	( <sup>1</sup> )
U188	Phenol	NA	Phenol	108-95-2	0.039		6.2	( <sup>1</sup> )
U190	Phthalic anhydride (measured as Phthalic acid)		Phthalic anhydride (measured as Phthalic acid)	85-44-9	0.069		28	( <sup>1</sup> )
U192	Pronamide	NA	Pronamide	23950-58-5	0.093		1.5	( <sup>1</sup> )
U196	Pyridine	NA	Pyridine	110-86-1	0.014	( <sup>2</sup> )	16	( <sup>1</sup> )
U203	Safrole	NA	Safrole	94-59-7	0.081		22	( <sup>1</sup> )
U204	Selenium dioxide	Table CCWE in s. NR 675.21	Selenium	7782-49-2	1.0		NA	
U205	Selenium sulfide	Table CCWE in s. NR 675.21	Selenium	7782-49-2	1.0		NA	
U207	1,2,4,5-Tetrachlorobenzene	NA	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	( <sup>2</sup> )	19	( <sup>1</sup> )
U208	1,1,1,2-Tetrachloroethane	NA	1,1,1,2-Tetrachloroethane	630-20-6	0.057		42	( <sup>1</sup> )
U209	1,1,2,2-Tetrachloroethane	NA	1,1,2,2-Tetrachloroethane	79-34-5	0.057	( <sup>2</sup> )	42	( <sup>1</sup> )
U210	Tetrachloroethylene	NA	Tetrachloroethylene	127-18-4	0.056	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U211	Carbon tetrachloride	NA	Carbon tetrachloride	56-23-5	0.057	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U214	Thallium(I)acetate	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	

Table CCW - Constituent Concentrations in Wastes

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS number for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/k)	Notes
U215	Thallium(I) carbonate	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	
U216	Thallium(I)chloride	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	
U217	Thallium(I)nitrate	Table 2 in s. NR 675.22	Thallium	7440-28-0	0.14	( <sup>2</sup> )	NA	
U220	Toluene	NA	Toluene	108-88-3	0.080	( <sup>2</sup> )	28	( <sup>1</sup> )
U225	Tribromomethane (Bromoform)	NA	Tribromomethane (Bromoform)	75-25-2	0.63	( <sup>2</sup> )	15	( <sup>1</sup> )
U226	1,1,1-Trichloroethane	NA	1,1,1-Trichloroethane	71-55-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U227	1,1,2-Trichloroethane	NA	1,1,2-Trichloroethane	79-00-5	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U228	Trichloroethylene	NA	Trichloroethylene	79-01-6	0.054	( <sup>2</sup> )	5.6	( <sup>1</sup> )
U235	tris-(2,3-Dibromopropyl) phosphate	NA	tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.025		0.10	( <sup>1</sup> )
U239	Xylenes	NA	Xylenes		0.32	( <sup>2</sup> )	28	( <sup>1</sup> )
U240	2,4-Dichlorophenoxyacetic acid	NA	2,4-Dichlorophenoxyacetic acid	94-75-7	0.72		10	( <sup>1</sup> )
U243	Hexachloropropene	NA	Hexachloropropene	1888-71-7	0.035	( <sup>2</sup> )	28	
U247	Methoxychlor	NA	Methoxychlor	72-43-5	0.25	( <sup>2</sup> )	0.18	( <sup>1</sup> )

Note: <sup>1</sup>Treatment standards for this organic constituent were established based upon incineration in units operated in accordance with the technical requirements of ch. NR 665, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may certify compliance with these treatment standards according to provisions in s. NR 675.07.

Note: <sup>2</sup>Based on analysis of composite samples.

Note: <sup>3</sup>As analyzed using SW-846 Method 9010 or 9012; sample size 10 gram; distillation time: one hour and fifteen minutes.

Note: <sup>4</sup>Reserved.

Note: NA means Not Applicable.

## No Land Disposal for:

K005 Nonwastewaters generated by the process described in the waste listing description, and disposed after June 8, 1989, and not generated in the course of treating wastewater forms of these wastes. (Based on No Generation)

K007 Nonwastewaters generated by the process described in the waste listing description, and disposed after June 8, 1989, and not generated in the course of treating wastewater forms of these wastes. (Based on No Generation)

K021 Nonwastewater forms of these wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on No Generation)

K025 Nonwastewater forms of these wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on No Generation)

K036 Nonwastewater forms of these wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on No Generation)

K044 (Based on Reactivity)

K045 (Based on Reactivity)

K047 (Based on Reactivity)

K060 Nonwastewater forms of these wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on No Generation)

K061 Nonwastewaters -- High Zinc Subcategory (greater than or equal to 15% total zinc) (Based on Recycling): effective 8/8/90

K069 Non-Calcium Sulfate Subcategory -- Nonwastewater forms of these wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on Recycling)

K100 Nonwastewater forms of those wastes generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes (Based on No Generation)

SECTION 280. NR 675.23(1) Table CCW Footnote 3 is amended to read:

<sup>3</sup> As analyzed using ~~SW-846 Method 9010~~ EPA method 9010A or 9012 in SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", third edition, September, 1986, as amended by update I in July, 1992; sample size 10 gram; distillation time: one hour and fifteen minutes.

Note: Publication SW-846 may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

This publication is available for inspection at the offices of the department, the secretary of state and the revisor of statutes.

SECTION 281. NR 675.24(1)(a), (b) and (c) (c)1. and 2., (d), (d)2., and (e)(Note) are amended to read:

NR 675.24(1)(a) Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition EPA for a variance from the treatment standard under 40 CFR 268.44, July 1, ~~1990~~ 1993. The petitioner shall demonstrate that because the physical or chemical properties of the waste differ significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods.

(b) If EPA denies the petition for a variance under 40 CFR 268.44, July 1, ~~1990~~ 1993, the department shall recognize that denial.

(c) Generators or owners or operators of treatment facilities who have had their petitions for a variance approved by EPA under 40 CFR 268.44, July 1, ~~1990~~ 1993, shall continue to treat their wastes in compliance with ss. NR 675.20 to 675.23 ~~unless and until~~ except when waste is being treated in another state and the person complies with that state's requirements Generators or owners or operators of treatment facilities may petition the department to recognize an EPA variance by submitting the following to the department:



1. Copies of all materials and information submitted to EPA concerning the variance under 40 CFR 268.44, July 1, ~~1990~~ 1993.

2. Copies of all material and information received from EPA, including the EPA notice of approval, concerning the variance under 40 CFR 268.44, July 1, ~~1990~~ and 1993.

(d) When determining whether to recognize an EPA granted variance under 40 CFR 268.44, July 1, ~~1990~~ 1993, the department shall:

2. Apply the same criteria as applied by EPA under 40 CFR 268.44, July 1, ~~1990~~ 1993.

(e) Note: The publication containing the CFR references may be obtained from:

~~The~~ Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 282. NR 675.25 and 675.26 are created to read:

NR 675.25 TREATMENT STANDARDS FOR HAZARDOUS DEBRIS. (1)  
TREATMENT STANDARDS. Hazardous debris shall be treated prior to land disposal as follows unless the department determines under s. NR 605.04(4)(b) that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this chapter for the waste contaminating the debris:

(a) General. Hazardous debris shall be treated for each "contaminant subject to treatment" defined by sub. (2) using the technology or technologies identified in Table 1 of this section.

(b) Characteristic debris. Hazardous debris that exhibits the characteristic of ignitability, corrosivity or reactivity identified under s. NR 605.08(2) to (4) shall be deactivated by treatment using one of the technologies identified in Table 1 of this section.

(c) Mixtures of debris types. The treatment standards of Table 1 in this section shall be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it shall be the last treatment technology used.

(d) Mixtures of contaminant types. Debris that is contaminated with two or more contaminants subject to treatment identified under sub. (2) shall be treated for each contaminant using one or more treatment technologies identified in Table 1 of this section. If an immobilization technology is used in a treatment train, it shall be the last treatment technology used.

(e) Waste PCBs. Hazardous debris that is also a waste PCB under ch. NR 157 is subject to the requirements of either ch. NR 157 or this section, whichever are more stringent.

(2) CONTAMINANTS SUBJECT TO TREATMENT. Hazardous debris shall be treated for each "contaminant subject to treatment." The contaminants subject to treatment shall be determined as follows:

(a) Toxicity characteristic debris. The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic by s. NR 605.08(5) are those EP constituents for which the debris exhibits the TC toxicity characteristic.

(b) Debris contaminated with listed waste. The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents for which BDAT standards are established for the waste under ss. NR 675.21 and 675.23.

(c) Cyanide reactive debris. Hazardous debris that is reactive because of cyanide shall be treated for cyanide.

(3) CONDITIONED EXCLUSION OF TREATED DEBRIS. Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this section and that does not exhibit a characteristic of hazardous waste identified in s. NR 605.08 after treatment is not a hazardous waste and need not be managed in a hazardous waste facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and shall be managed in a hazardous waste facility.

(4) TREATMENT RESIDUALS (a) General requirements. Except as provided by pars. (b) and (d):

1. Residue from the treatment of hazardous debris shall be separated from the treated debris using simple physical or mechanical means; and

2. Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by ss. NR 675.20 to 675.24 for the waste contaminating the debris.

(b) Nontoxic debris. Residue from the deactivation of ignitable, corrosive or reactive characteristic hazardous debris that is not cyanide-reactive and that is not contaminated with a contaminant subject to treatment defined by sub. (2) shall be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of ss. NR 675.20 to 675.24.

(c) Cyanide-reactive debris. Residue from the treatment of debris that is reactive because of cyanide shall meet the standards for D003 under s. NR 675.23.

(d) Ignitable nonwastewater residue. Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology-based standards for D001: "Ignitable Liquids based on s. NR 605.08(2)(a)1." under s. NR 675.22.

(e) Residue from spalling. Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

Table 1.-Alternative Treatment Standards For Hazardous Debris<sup>1</sup>

Technology description	Performance and/or design and operating standard	Contaminant restrictions <sup>2</sup>
<b>A. Extraction Technologies:</b>		
<b>1. Physical Extraction</b>		
a. Abrasive Blasting: Removal of contaminated debris surface layers using water or air pressure to propel a solid media, such as steel shot, aluminum oxide grit, plastic beads.	Glass, Metal, Plastic, Rubber: Treatment to a clean debris surface. <sup>3</sup> Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface. <sup>3</sup>	All Debris: None.
b. Scarification, Grinding, and Planing: Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above	Same as above
c. Spalling: Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above	Same as above

d. Vibratory Finishing: Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed. <sup>4</sup>	Same as above	Same as above
e. High Pressure Steam and Water Sprays: Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers	Same as above	Same as above.
2. Chemical Extraction		
a. Water Washing and Spraying: Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.	All Debris: Treatment to a clean debris surface <sup>3</sup> ; Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: The thickness of the debris shall be limited to no more than 1.2 cm (1/2 inch) in one dimension, <sup>5</sup> except that this thickness limit may be waived under an "Equivalent Technology" approval under s. NR 675.22(2); <sup>6</sup> debris surfaces shall be in contact with water solution for at least 15 minutes	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Contaminant shall be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste, <sup>5</sup> an "Equivalent Technology" approval under s. NR 675.22(2) shall be obtained. <sup>6</sup>
b. Liquid Phase Solvent Extraction: Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time. <sup>4</sup>	Same as above	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Same as above, except that contaminant shall be soluble to at least 5% by weight in the solvent.
c. Vapor Phase Solvent Extraction: Application of an organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor. <sup>4</sup>	Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces shall be in contact with the organic vapor for at least 60 minutes.	Same as above.

**3. Thermal Extraction****a. High Temperature Metals**

**Recovery:** Application of sufficient heat, residence time, mixing, fluxing agents or carbon in a smelting, melting, or refining furnace to separate metals from debris.

For refining furnaces, treated debris shall be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residuals shall meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.

Debris contaminated with a dioxin-listed waste:<sup>5</sup> Obtain an "Equivalent Technology" approval under s. NR 675.22(2).<sup>9</sup>

**b. Thermal Desorption:** Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas.<sup>7</sup>

All Debris: Obtain an "Equivalent Technology" approval under s. NR 675.22(2);<sup>9</sup> treated debris shall be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue shall meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.  
Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: The thickness of the debris shall be limited to no more than 10 cm (4 inches) in one dimension,<sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval.

All Debris: Metals other than mercury.

**B. Destruction Technologies:****1. Biological Destruction**

**(Biodegradation):** Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegradation of organic or nonmetallic inorganic compounds, such as inorganics that contain phosphorus, nitrogen, or sulfur, in units operated under either aerobic or anaerobic conditions.

All Debris: Obtain an "Equivalent Technology" approval under s. NR 675.22(2);<sup>9</sup> treated debris shall be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue shall meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.  
Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: The thickness of the debris shall be limited to no more than 1.2 cm (1/2 inch) in one dimension,<sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval

All Debris: Metal contaminants.

**2. Chemical Destruction**

a. Chemical Oxidation: Chemical or electrolytic oxidation utilizing the following oxidation reagents, waste reagents or combination of reagents (1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; or (9) other oxidizing reagents of equivalent destruction efficiency.<sup>4</sup> Chemical oxidation specifically includes what is referred to as alkaline chlorination.

b. Chemical Reduction: Chemical reaction utilizing the following reducing reagents, waste reagents or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; or (5) other reducing reagents of equivalent efficiency.<sup>4</sup>

3. Thermal Destruction: Treatment in an incinerator operating in accordance with ch. NR 665; a boiler or industrial furnace operating in accordance with 40 CFR Part 266, Subpart H or other thermal treatment unit operated in accordance with ch. NR 670, or s. NR 670.11, but excluding for purposes of these debris treatment standards Thermal Desorption units.

C. Immobilization Technologies:  
1. Macroencapsulation:  
Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.

All Debris: Obtain an "Equivalent Technology" approval under s. NR 675.22(2);<sup>8</sup> treated debris shall be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue shall meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: The thickness of this debris shall be limited to no more than 1.2 cm (1/2 inch) in one dimension,<sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval

Same as above

Treated debris shall be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue shall meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.

Encapsulating material shall completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).

All Debris: Metal contaminants.

Same as above.

Brick, Concrete, Glass, Metal, Pavement, Rock, Metal: Metals other than mercury, except that there are no metal restrictions for vitrification. Debris contaminated with a dioxin-listed waste.<sup>6</sup> Obtain an "Equivalent Technology" approval under s. NR 675.22(2),<sup>8</sup> except that this requirement does not apply to vitrification.

None.

<p>2. Microencapsulation: Stabilization of the debris with the following reagents or waste reagents such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set and cure time or compressive strength, or to reduce the leachability of the hazardous constituents.<sup>5</sup></p>	<p>Leachability of the hazardous contaminants shall be reduced.</p>	<p>None.</p>
<p>3. Sealing: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant.</p>	<p>Sealing shall avoid exposure of the debris surface to potential leaching media and sealant shall be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).</p>	<p>None.</p>

Note: <sup>1</sup>Hazardous debris shall be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards shall be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

Note: <sup>2</sup>Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant shall be subsequently treated by a technology for which it is not restricted in order to be land disposed and excluded from regulation as hazardous waste.

Note: <sup>3</sup>"Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

Note: <sup>4</sup>Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular combination of debris and contaminant. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

Note: <sup>5</sup>If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means shall be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

Note: <sup>6</sup>Dioxin-listed wastes are EPA Hazardous Waste numbers F020, F021, F022, F023, F026, and F027.

Note: <sup>7</sup>Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.

Note: <sup>8</sup>The demonstration "Equivalent Technology" under s. NR 675.22(2) shall document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.

Note: <sup>9</sup>Any soil, waste, and other nondebris material that remains on the debris surface or remains mixed with the debris after treatment is considered a treatment residual that shall be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface shall be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

NR 675.26 ALTERNATIVE TREATMENT STANDARDS BASED ON HTMR.

Table 1 identifies alternative treatment standards for F006 and K062 nonwastewaters.

Table 1.-Alternative Treatment Standards

Waste code	See also	Regulated hazardous constituent	CAS No. for regulated hazardous constituent	Nonwastewaters concentration (mg/l) TCLP
F006	Table CCWE in s. NR 675.21 and Table CCW in s. NR 675.23	Antimony	7440-36-0	2.1
		Arsenic	7440-38-2	0.055
		Barium	7440-39-3	7.6
		Beryllium	7440-41-7	0.014
		Cadmium	7440-43-9	0.19
		Chromium (total)	7440-47-32	0.33
		Cyanide (mg/kg) (total)	57-12-5	1.8
		Lead	7439-92-1	0.37
		Mercury	7439-97-6	0.009
		Nickel	7440-02-0	5.0
		Selenium	7782-49-2	0.16
		Silver	7440-22-4	0.30
		Thallium		0.078
K062	Table CCWE in s. NR 675.21 and Table CCW in s. NR 675.23	Zinc	7440-66-6	5.3
		Antimony	7440-36-0	2.1
		Arsenic	7440-38-2	0.055
		Barium	7440-39-3	7.6
		Beryllium	7440-41-7	0.014



Cadmium	7440-43-9	0.19
Chromium (total)	7440-47-32	0.33
Lead	7439-92-1	0.37
Mercury	7439-97-6	0.009
Nickel	7440-02-0	5.0
Selenium	7782-49-2	0.16
Silver	7440-22-4	0.30
Thallium		0.078
Zinc	7440-66-6	5.3

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SECTION 283. NR 675.30(1)(Intro.)(Note), (1)(a) and (b)(intro.) (4)(Note) and (5)(Note) are amended to read:

NR 675.30(1)Note: The publication containing title 42 of the United States code may be obtained from:

~~The~~ Superintendent of Documents  
 U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(a) A generator stores the wastes in tanks ~~or~~ containers, or containment buildings on-site solely for the purpose of the accumulation of the quantities of hazardous waste as necessary to facilitate proper recovery, treatment or disposal and the generator complies with the requirements in chs. NR 610 and 615. A generator existing on the effective date of a regulation under this chapter and storing hazardous wastes for longer than 90 days due to the regulations under this chapter becomes an owner or operator of a storage facility and shall obtain a hazardous waste operating license. A facility may qualify for an interim license upon compliance with the regulations governing interim license issuance under ch. NR 680.

(b) An owner or operator of a hazardous waste treatment, storage or disposal facility stores the wastes in tanks ~~or~~ containers, or containment buildings solely for the purpose of the accumulation of the quantities of hazardous waste as necessary to facilitate proper recovery, treatment or disposal and:

(4)Note: Examples of exemptions from the prohibition against the type of land disposal include a case-by-case extension

granted under s. NR 675.05 (1), an approved petition granted under 40 CFR 268.6, July 1, ~~1990~~ 1993, or a national capacity variance granted under 40 CFR 268 Subpart C, July 1, ~~1990~~ 1993.

(5)Note: The publication containing title 42 of the United States code may be obtained from:

The Superintendent of Documents  
U.S. Government Printing Office  
~~Washington, D.C. 20402~~  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

SECTION 284. Appendix I to NR 675 is repealed and recreated to read:

Appendix I - Treatment Standards (As Concentrations in the Treatment Residual Extract)

Note: The treatment standards for F001-F005 Spent Solvent Wastes appear in ss. NR 675.21, 675.22 and 675.23.

SECTION 285. Appendix VI to NR 675 is amended by renumbering the existing table Table 1 of Appendix VI and by creating the following Table 2:

Table 2. - Summary of Effective Dates of Land Disposal Restrictions for Contaminated Soil and Debris (CSD)

Restricted hazardous waste in CSD	Effective date
1. Solvent-(F001-F005) and dioxin-(F020-F023 and F026-F028) containing soil and debris from CERCLA response of RCRA corrective actions.	Nov. 8, 1990.
2. Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001-F005) or dioxins (F020-F023 and F026-F028).	Nov. 8, 1988.
3. Soil and debris contaminated with California list HOCs from CERCLA response or RCRA corrective actions.	Nov. 8, 1990.
4. Soil and debris contaminated with California list HOCs not from CERCLA response or RCRA corrective actions.	July 8, 1989.
5. All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration.	Aug. 8, 1990.
6. All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration.	June 8, 1991.
7. All soil and debris contaminated with Third Third wastes or, First or Second Third "soft hammer" wastes which had treatment standards promulgated in the Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury	May 8, 1992.

retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals, as well as all inorganic solids debris contaminated with D004-D011 wastes, and all soil and debris contaminated with mixed RCRA/radioactive wastes.

Note: 1. Appendix VII is provided for the convenience of the reader.

2. Contaminated Soil and Debris Rule will be promulgated in the future.

SECTION 286. NR 680.02 is amended to read:

NR 680.02 APPLICABILITY. Except as otherwise provided, this chapter applies to recycling, storage, treatment or disposal facilities that manage hazardous waste. This chapter does not apply to solid waste facilities that manage only non-hazardous solid waste, or metallic mining waste resulting from a mining operation as defined in s. 144.81 (5), Stats., ~~or polychlorinated biphenyls (PCBs), except where portions of this chapter are referenced in ch. NR 157.~~

Note: The provisions of this chapter are consistent with, and in some instances identical to, federal regulations found in 40 CFR parts 124, 260 to 265 and 270, July 1, ~~1990~~ 1993.

Note: The publication containing the CFR references may be obtained from:

~~The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402  
PO Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238~~

SECTION 287. NR 680.03 is repealed and recreated to read:

NR 680.03 DEFINITIONS. The definitions in s. NR 600.03 apply to this chapter. In addition, the following definitions also apply to this chapter:

(1) "Class 1 modification" means a minor modification of a license or plan of operation approval for a hazardous waste facility that is subject to an operating license issued by the department.

(2) "Class 2 modification" means a major modification of a license or plan of operation approval for a hazardous waste facility that is subject to an operating license issued by the department.

(3) "Class 3 modification" means an expansion of a hazardous waste facility that is subject to an operating license issued by the department.

Note: Examples of class 1, 2 and 3 modifications are listed in appendix I of this chapter.

(4) "Reconstruction" means changes to a hazardous waste facility where the capital investment in the changes to the facility exceeds 50% of the capital cost of a comparable entirely new hazardous waste facility.

SECTION 288. NR 680.04(1) and (3) are amended to read:

NR 680.04 (1) GENERAL. Exemptions from the requirements of chs. NR 600 to 685 may be granted under this section by the department for hazardous waste facilities in relation to location, engineering design and operations, except as otherwise provided in those chapters. A person may apply for an exemption by providing the department with a written request and documentation justifying the need for an exemption. A person applying for an exemption has the burden of showing and documenting that the proposed alternative requirement provides the same level of control and protection as the requirements of ~~s. NR 600.04~~ and chs. NR 630 to 685. Prior to granting an exemption, the department shall find that the proposed alternative requirement does not pose an increased threat to human health or the environment, taking into consideration factors such as the quantity, composition and degree of hazard of the waste to be managed, any potential degradation of the environment and potential nuisance conditions. All exemptions pertaining to a hazardous waste facility shall be granted in writing by the department. Exemptions shall be reviewed periodically by the department regarding any potential nuisance, hazard to public health and safety, or potential degradation of the environment.

(3) CERTIFICATION. Alternative requirements exemption requests shall meet the certification requirements of s. NR ~~680.05 (1) (d)~~ 680.05(1)(c)1.

SECTION 289. NR 680.05(1)(c)1. and 3. are amended to read:

NR 680.05(1)(c)1. Certification. All reports and all plan sheets shall be under the seal of and certified by a registered professional engineer, unless a written exemption is granted by the department. Reports where interpretation of geology or hydrogeology is necessary shall be signed by a hydrogeologist. Modifications and subsequent submittals shall also meet this certification requirement. Engineering certification may be demonstrated by using the following language;

"I \_\_\_\_\_, hereby certify that I am a registered Professional Engineer in the State of Wisconsin in accordance with ch. A-E 4, Wis. Adm. Code and that this report has been prepared in accordance with the Rules Of Professional Conduct in ch. A-E 8, Wis. Adm. Code."

signature, title and P.E. number      P. E. Stamp

Note: Hydrogeologist certification may be demonstrated by using the following language;

"I \_\_\_\_\_, hereby certify that I am a hydrogeologist as defined in s. NR 600.03 (98), Wis. Adm. Code, and that to the best of my knowledge all information contained in this document is correct."

signature and title

3. Required information. The required technical information as specified in ~~this chapter~~ chs. NR 600 to 685.

SECTION 290. NR 680.06(3)(b) is amended to read:

NR 680.06(3)(b) Chemical and physical analyses of the hazardous waste and hazardous debris to be handled at the facility. At a minimum, these analyses shall contain all the information which must be known to treat, store or dispose of the wastes properly in accordance with chs. NR 600 to 685.

SECTION 291. NR 680.06(3)(n) is created to read:

NR 680.06(3)(n) For hazardous debris, a description of the debris categories and contaminant categories to be treated, stored or disposed at the facility.

SECTION 292. NR 680.07 is repealed and recreated to read:

NR 680.07 FACILITY EXPANSIONS AND MODIFICATIONS OF LICENSES AND PLAN OF OPERATION APPROVALS. (1) CLASS 1 MODIFICATIONS. For

facilities with operating licenses issued under this chapter, class 1 or minor modifications of licenses and plan of operation approvals include only the changes listed in appendix I of this chapter as class 1 modifications and changes identified as class 1 modifications by the department under sub. (5). Class 1 modifications of licenses and plan of operation approvals may be made only with the consent of the owner or operator of the facility. If the owner or operator of the facility does not consent to a class 1 modification, the change shall be a class 2 modification under sub. (2).

(2) CLASS 2 MODIFICATIONS. For facilities with operating licenses issued under this chapter, class 2 modifications of licenses and plan of operation approvals include the changes listed in appendix I of this chapter as class 1 modifications which are not consented to by the owner or operator of the facility; changes listed in appendix I as class 2 modifications; changes identified as class 2 modifications by the department under sub. (5) and changes made for the following reasons, but do not include changes which are also class 1 modifications under sub. (1):

(a) The owner or operator proposes to change the facility's operation in such a way so as to not constitute an expansion or class 3 modification.

(b) The department determines that good cause exists for modification of a compliance schedule at the licensee's request, such as an act of God, strike, flood or materials shortage or other events over which the licensee has little or no control and for which there is no reasonably available remedy.

(c) The department establishes that one or more of the conditions in s. 144.44(3)(d), Stats., exists, necessitating a modification of the design or construction requirements of the facility's plan of operation approval.

(d) The operational requirements on which the license, plan of operation approval or interim license were based have been changed by statute, through promulgation of amendments or revisions to chs. NR 600 to 685, or by judicial decision after the license, plan of operation approval or interim license was issued.

(e) The department receives new information that was not available previously, such as information revealed in monitoring results, reports, plans, submittals, records and inspection results, if the cause specified in par. (f) also exists.

(f) The department determines that a modification is necessary for the licensee to meet the conditions of the

facility's plan of operation approval, the requirements of chs. NR 600 to 685, or any of the additional requirements specified in s. NR 680.42(5).

(g) Notwithstanding any other provisions of this chapter, when a plan submittal or license renewal application is received by the department in accordance with s. NR 680.45(8), the department shall condition the plan of operation approval or operating license as necessary to ensure that the facility continues to comply with all applicable requirements of chs. NR 600 to 685.

(3) CLASS 3 MODIFICATIONS. No person may modify a hazardous waste facility by expanding it without first obtaining written approval from the department of the necessary plans and reports required in s. NR 680.06. Any change which is not a class 3 modification is a class 1 or 2 modification. For facilities with operating licenses issued under this chapter, class 3 modifications include the changes listed in appendix I of this chapter as class 3 modifications, changes identified as class 3 modifications by the department under sub. (5) and the following changes:

(a) Material and substantial alterations or additions to a facility or activity, including the addition of any new treatment, storage or disposal process or unit.

(b) Increases in the design capacity of any treatment, storage or disposal process or unit.

(c) Any addition of any new hazardous waste to the list of hazardous wastes that the facility is authorized by the department to manage. This change may not be considered an expansion if the department determines that the new waste to be managed is not substantially different than any of the wastes which the facility is already authorized to manage, and the addition of the new waste will not significantly affect the facility's operation any other way.

(d) Increases in the maximum inventory of waste specified in the facility's closure plan, if the increase causes an increase in the design capacity of any treatment, storage or disposal process or unit.

(e) Reconstruction.

(4) MODIFICATIONS OF FACILITIES WITHOUT OPERATING LICENSES.

(a) Modifications of interim licenses and plan of operation approvals for facilities may be made by the department if the change is for a facility without an operating license issued under this chapter. Modifications of facilities without operating

licenses may authorize or require any change at the facility if the change would not be an expansion or class 3 modification if the facility had an operating license. Modifications made under this paragraph shall be treated as minor or class 1 modifications.

(b) No person may modify a facility without an operating license by expanding it without first obtaining written approval from the department of the necessary plans and reports required in s. NR 680.06. For facilities without an operating license, expansions include all changes which would be class 3 modifications if the facility had an operating license.

(5) CLASSIFICATION OF MODIFICATIONS. (a) Pursuant to s. NR 680.42(5), the department shall advise the owner or operator of an existing facility, in writing, of the receipt of and the department's findings on any request for a determination of whether a proposed change at a facility or in a license or plan of operation approval constitutes a class 1, class 2 or class 3 modification. The department shall advise the owner or operator, in writing, of whether the request is complete and of its determination in accordance with sub. (6)(a). No person may implement a class 1, 2 or 3 modification without prior written approval from the department. Class 3 modifications of existing facilities under sub. (3) are subject to the public participation procedures of s. NR 680.06(10) for storage or treatment facilities or s. NR 680.06(11) and (12) for disposal facilities. Class 2 modifications of licenses and plan of operation approvals under sub. (2) and class 1 modifications of licenses and plan of operation approvals under subs. (1) and (4) are subject to the procedures of sub. (6).

(b) In the case of changes not listed in appendix I of this chapter, the owner or operator of a facility may request that the change be reviewed and approved as a class 3 modification or may request a determination by the department that the change be reviewed and approved as a class 1 or class 2 modification. If the owner or operator requests that the change be reviewed and approved as a class 1 or 2 modification, the person shall provide the department with information necessary to support the requested classification.

(c) The department shall determine if a request under par. (b) is complete within 65 business days after receiving it. Within 65 business days after completeness has been determined, the department shall determine whether the change is a class 1, 2 or 3 modification. In determining the appropriate class for a specific modification, the department shall consider the similarity of the modification to other modifications in appendix I and the following criteria:



1. Class 1 modifications include changes that keep the license or plan of operation approval current with routine changes to the facility or its operation. These changes do not substantially alter the license or plan of operation approval conditions or reduce the capacity of the facility to protect human health or the environment.

2. Class 2 modifications include changes that are necessary for a facility to respond in a timely manner to,

a. Common variations in the types and quantities of the wastes managed under the facility's license,

b. Technological advancements, and

c. Changes necessary to comply with new rules where these changes can be implemented without substantially changing design specifications or management practices in the license or plan of operation approval.

3. Class 3 modifications include changes that substantially alter the facility or its operation, including facility expansions.

(6) PROCEDURES. In addition to any procedures required or authorized by ss. 144.431(2)(a) and 144.44, Stats., for modification of licenses or plan of operation approvals, the following procedures apply to class 1 and 2 modifications:

(a) Requests and time for department response. Licenses, including interim licenses, and plan of operation approvals may be modified either at the request of any interested person, including the licensee, or upon the department's initiative. All requests shall be in writing and shall contain facts or reasons supporting the request. The department shall determine if a request is complete within 65 business days after receiving the request. The department shall review and approve, conditionally approve or deny a request and issue its final determination within 65 business days after receiving a complete request. The department shall advise, in writing, the requestor and the owner or operator if the owner or operator is a different person, of the receipt of the request and its determination on the request.

(b) Preliminary determination and notice. 1. Upon determining that a request is complete or upon initiating a modification, the department shall issue its preliminary determination on the modification. If the department initiates or proposes to approve or conditionally approve a class 2 modification, the preliminary determination shall include, but need not be limited to the information required to be contained in RCRA draft permits under 40 CFR 124.6(d) as of July 1, 1993.

2. Upon issuing its preliminary determination on a modification, the department also shall issue a notice of its preliminary determination.

3. If the department initiates or proposes to approve or conditionally approve a class 2 modification, the notice shall include but need not be limited to, the following information:

a. Name and address of the office processing the modification action for which notice is being given;

b. Name and address of the licensee or applicant and, if different, of the facility or activity regulated by the license;

c. A brief description of the business conducted at the facility or activity described in the modification request or preliminary determination;

d. Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the preliminary determination, fact sheet and the modification request;

e. A brief description of the comment procedures required by subd. 5. and par. (d), the time and place of any hearing that will be held, including a statement of procedures to request a hearing unless a hearing has already been scheduled.

f. The location of relevant public records, the times at which the records will be open for public inspection, and a statement that all nonconfidential data submitted by the applicant are available for public inspection;

g. Any additional information the department considers necessary or proper; and,

h. In addition to the requirements of subpars. a. to g., when the department gives notice of a public hearing under par. (d), the notice shall contain: references to the date of previous public notices relating to the plan of operation approval and license; date, time and place of the hearing; and a brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

4. Notice of a preliminary determination to disapprove a request need not be issued to anyone other than the requestor and the owner or operator. If the department initiates or proposes to approve or conditionally approve a class 2 modification, it shall publish a class I notice under ch. 985, Stats., in the official newspaper designated under s. 985.04 or 985.05, Stats., if one exists, in a major local newspaper of general circulation in the

area of the facility and by broadcast over local radio stations and it shall distribute the notice by mailing a copy of it to the requestor, the owner or operator of the facility, the U. S. environmental protection agency, the U. S. fish and wildlife service, the advisory council on historic preservation, other state agencies having any authority with respect to the construction or operation of the facility, the clerk of each affected municipality, the main library in each affected municipality and persons on a mailing list which shall be developed by including those who request in writing to be on the list, by soliciting persons for "area lists" from participants in past approval proceedings in that area, and by notifying the public of the opportunity to be put on the mailing list. In addition, the department may distribute the notice by any other method to give actual notice to persons potentially affected by it.

5. If the department initiates or proposes to approve or conditionally approve a class 2 modification, the notice shall invite the submission of written comments by any person within 45 days after the notice is published and shall describe the method by which an informational hearing under par. (d)3. may be requested by any person.

6. The department may disapprove class 2 modifications and make class 1 modifications of licenses and plan of operation approvals without inviting written comment or offering an opportunity for a public informational hearing. Notice of preliminary determinations on class 1 modifications and on disapprovals of class 2 modifications shall be sent by first class mail to the owner or operator and the requestor.

(c) Fact sheet. The department shall prepare a fact sheet that briefly sets forth the principal facts and the significant factual, legal, methodological and policy questions considered in initiating or preparing the proposed approval or conditional approval of a class 2 modification. The department shall send the fact sheet to the requestor, the owner or operator and, on request, to any other person. The fact sheet shall include:

1. A brief description of the type of facility or activity which is the subject of the preliminary determination;

2. The type and quantity of wastes which are being or are proposed to be treated, stored or disposed of;

3. A brief summary of the basis for the proposed conditions of approval including references to applicable statutory or administrative code provisions and appropriate supporting references to the administrative record required by par. (f);

4. Reasons why any requested variances or alternatives to required standards do or do not appear justified;

5. A description of the procedures for reaching a final determination including the beginning and ending dates of the comment period under par. (b)5., the address where comments shall be received, procedures for requesting a hearing and the nature of the hearing, and any other procedures by which the public may participate in the final determination; and

6. The name and telephone number of a person to contact for additional information.

(d) Informational hearing. 1. Under s. 227.42(5), Stats., informational hearings under this paragraph are not contested cases. Hearings under this subdivision are held as part of the process for approving a feasibility report, plan of operation or license under s. 144.44 or 144.64, Stats., and are therefore exempt from s. 227.42(1), Stats.

2. The department shall hold an informational hearing whenever it finds, on the basis of requests, a significant degree of public interest in a proposed class 2 modification of a license or plan of operation approval.

3. If, during the 45 day written comment period the department receives written notice of opposition to a class 2 modification initiated by the department or to a request for a class 2 modification and its proposed approval or conditional approval accompanied by a request for an informational hearing, it shall hold an informational hearing on the proposed class 2 modification of the license or plan of operation approval. Requests for a hearing shall be in writing and state the nature of the issues to be raised in the hearing. Hearings under this subdivision shall be held after at least 30 days notice but no sooner than 30 days after the issuance of the notice under par. (b)2., and no later than 45 days after the close of the written comment period. The hearing shall be held in the area where the facility is located.

4. Notwithstanding s. NR 2.135, the conduct of hearings under this paragraph shall be governed by the procedures of this subdivision. At a hearing held under this paragraph, the presiding officer shall open the hearing and make a concise statement of its scope and purposes. Appearances may be entered on the record. Persons entering an appearance may make statements, present arguments or opinions, offer evidence or ask questions concerning the matter being heard, but the presiding officer may limit oral presentations if the hearing would be unduly lengthened by repetitious testimony. The presiding officer may continue the hearing on another date if it appears there will

not be enough time for all who wish to speak. Statements may be submitted in oral or written form. Any person may submit a written statement within the time period allowed by the presiding officer. Statements need not be made under oath. The hearing shall be recorded by use of an electronic recording device. The recording is a public record under s. 19.35, Stats.

(e) Response to comments. The department shall issue a response to comments received during the written comment period and at any informational hearing. The department shall indicate any provisions in its preliminary determination that were changed in the final determination and the reason for the change and it shall briefly describe and respond to all significant comments.

(f) Determination based on administrative record. The department's final determination shall be based on an administrative record which includes the request and any supporting data furnished by the requestor; the preliminary determination; the fact sheet; all documents cited in the fact sheet; other documents contained in the supporting file for the preliminary determination; the notice; all comments received during the written comment period and at any informational hearing; the department's response to comments; and any other information which the department considered.

(7) TEMPORARY AUTHORIZATIONS. (a) Upon request of an owner or operator of a hazardous waste facility which has an operating license, the department may, without prior public notice and comment, temporarily authorize a modification of the facility's license or plan of operation approval in accordance with this subsection. Temporary authorizations may not exceed 180 days in duration and may not be granted to unlicensed facilities.

(b) An owner or operator may request a temporary authorization for:

1. Any class 1 or 2 modification that meets the criteria in par. (c).~~7~~—and
2. Any class 3 modification that meets the criteria in par. (e)2.c., d. or e. and provides improved management or treatment of a hazardous waste already listed in the facility's plan of operation approval and license or that meets the criteria in par. (e)2.a. or b.; or

(c) Temporary authorization requests shall include:

1. A description of the activities to be conducted under the temporary authorization;

2. An explanation of why the temporary authorization is necessary; and

3. Sufficient information to ensure compliance with ch. NR 630 and the facility-specific requirements of chs. NR 625 and 640 to 670.

(d) The owner or operator shall send a notice about the temporary authorization request in the manner described for notices in sub. (6)(b)4. within 7 days after submission of the request.

(e) The department shall approve, conditionally approve or deny the request as soon as is practical. The department may not grant a temporary authorization unless it finds:

1. The authorized activities are in compliance with the standards of ch. NR 630 and the facility-specific requirements of chs. NR 625 and 640 to 670.

2. The temporary authorization is necessary to achieve one of the following objectives before action is likely to be taken on a modification request:

a. To facilitate timely implementation of closure or corrective action activities;

b. To allow treatment or storage in tanks or containers of restricted wastes in accordance with ch. NR 675;

c. To prevent disruption of ongoing waste management activities;

d. To enable the owner or operator to respond to sudden changes in the types or quantities of the wastes managed under the facility's plan of operation approval or license; or

e. To facilitate other changes to protect human health and the environment.

(f) A temporary authorization may be reissued for one additional term of up to 180 days if the owner or operator has requested a class 1, 2 or 3 modification for the activity covered in the temporary authorization, and:

1. The reissued temporary authorization constitutes the department's decision on a class 1 or 2 modification request in accordance with sub. (6)(b), or

2. The temporary authorization is for a class 3 modification and the department determines that reissuance of the temporary

authorization is warranted to allow the authorized activities to continue while the modification procedures of sub. (6) for expansions are being conducted.

(g) Department determinations under this subsection are made as part of the process for approving a feasibility report, plan of operation or license under s. 144.44 or 144.64, Stats., and are therefore exempt from s. 227.42(1), Stats.

SECTION 293. NR 680.08(2) is amended to read:

NR 680.08(2) A registered professional engineer shall document facility construction and render an opinion whether the facility has been constructed in substantial conformity with the plan of operation or has conducted all closure activities in substantial conformity with the closure plan. The department shall review, and approve, deny or deem incomplete the request for approval of facility construction documentation within 65 business days after receiving the request. Operation of the facility may not commence until the construction documentation report is approved by the department, and, if necessary, a license to operate the facility has been issued by the department.

SECTION 294. NR 680.22(28) is amended to read:

NR 680.22(28) ~~Landfill and surface impoundment groundwater~~ Groundwater, leachate and other monitoring requirements and corrective action requirements in ch. NR 635. Pursuant to s. NR 600.07, the department may require the owner or operator of ~~other hazardous waste facilities, including treatment and storage facilities,~~ to comply with all or part of the requirements of ch. NR 635.

SECTION 295. NR 680.22(33) to (35) are created to read:

NR 680.22(33) Drip pad requirements in ch. NR 656 for wood preserving facilities.

(34) Air emission standards for process vents in ch. NR 631, except s. NR 631.09.

(35) Air emission standards for equipment leaks in ch. NR 632, except s. NR 632.10.

SECTION 296. NR 680.45 Tables XII and XIII, and footnotes (10) and (11) to Tables XII and XIII, are amended to read:

**TABLE XII  
FEE SCHEDULE - ALL FACILITIES EXCEPT LANDFILLS AND SURFACE IMPOUNDMENTS**

A D M CODE	Facility Type	License Required	Plan Review Fees (1) (2)										License Fees (3) (8)			
			Plan Review Required	Interim License Report	Variance Report	Feasibility and Plan of Operation Rpt. (5)	Const Inspect	Site Const Doc	Closure Plan (6)	Major Plan Mod. (4)	Minor Plan Mod. (4)	Corr. Action (7)	Commercial Fac. (10)		Non- Commercial Fac. (11)	
													Variance and Final License	Interim License (9)	Variance and Final License	Interim License (9)
620	Transporters	Yes	No										300		300	
625	Recycling	No	Yes									1,200				
640	Container	Yes	Yes	600	1,200	3,000	600	300	1,200	1,200	300	1,200	2,400	4,800	600	1,200
645	Tanks	Yes	Yes	600	1,200	4,800	600	600	1,800	1,200	300	1,200	2,400	4,800	600	1,200
655	Waste Piles	Yes	Yes	600	1,200	4,800	600	600	2,400	1,800	300	1,200	3,600	7,200	1,800	3,600
665	Incinerators	Yes	Yes	600	3,000	15,000	600	1,200	2,400	2,400	300	1,200	4,800	9,600	2,400	4,800
670	Miscellaneous	Yes	Yes	600	1,200	3,000	600	300	1,200	1,200	300	1,200	2,400	4,800	600	1,200

(10) A commercial facility has the definition in s. NR 600.03 ~~(37)~~ (40).

(11) A non-commercial facility has the definition in s. NR 600.03 ~~(144)~~ (172).

**TABLE XIII  
FEE SCHEDULE - LANDFILLS AND SURFACE IMPOUNDMENTS**

A D M CODE	Facility Type	License Requ'd	Plan Review Fees (1) (2)										License Fees (3)			
			Plan Review Requ'd	Interim License Report	Initial Site Report	Feas. Report	Plan of Operation Report	Const Inspect	Site Const Doc	Closure Plan (5)	Major Plan Mod. (4)	Minor Plan Mod. (4)	Corr. Action (7)	Final License	Interim License (9)	Closure and Long- term Care License (8)
660	Commercial Landfills & Surf Imp (10)	Yes	Yes	1,200	12,000	90,000	30,000	(6)	3,000	18,000	3,000	600	6,000	30,000	60,000	60,000
660	Non- Commercial Landfills & Surf Imp (11)	Yes	Yes	600	3,600	24,000	8,400	(6)	1,200	6,000	1,800	180	1,200	8,400	17,000	24,000

(10) A commercial facility has the definition in s. NR 600.03 ~~(37)~~ (40).

(11) A non-commercial facility has the definition in s. NR 600.03 ~~(144)~~ (172).



## SECTION 297. Chapter NR 680 Appendix I is created to read:

## Appendix I to ch. NR 680 -- Classification of License and Plan of Operation Approval Modifications

Modifications	Class
A. General Plan of Operation Provisions	
1. Administrative and informational changes	1
2. Correction of typographical errors	1
3. Changes in the frequency of or procedures for monitoring, reporting, sampling, or maintenance activities by the applicant:	
a. To provide for more frequent monitoring, reporting, sampling, or maintenance.	1
b. Other changes	2
4. Schedule of compliance:	
a. Changes in interim compliance dates if the new date is not more than 120 days after the date specified in the existing license or plan approval and the change does not interfere with attainment of the final compliance date requirement.	1
b. Extension of final compliance date.	2
5. Changes in expiration date of license to allow earlier license termination, with prior approval of the Department.	1
6. Changes in ownership or operational control of a facility, provided the procedures of s. NR 680.44 are followed, where the department determines that no other change in the license or plan of operation approval is necessary.	1
B. General Facility Standards	
1. Changes to waste sampling or analysis methods:	
a. To conform with department guidance or regulations.	1
b. To incorporate changes associated with F039 (multi-source leachate) sampling or analysis methods.	1
c. Other changes.	2
2. Changes to analytical quality assurance/control plan:	
a. To conform with department guidance or regulations.	1
b. Other changes.	2
3. Changes in procedures for maintaining the operating record.	1
4. Changes in frequency or content of inspection schedules.	2
5. Changes in the training plan:	
a. That affect the type or decrease the amount of training given to employees.	2
b. Other changes.	1
6. Contingency plan:	
a. Changes in emergency procedures (i.e., spill or release response procedures).	2
b. Equipment upgrade or relocate emergency equipment listed.	1
c. Removal of equipment from emergency equipment list.	2
d. Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan.	1

Note: When a license or plan of operation approval modification (such as introduction of a new unit) requires a change in facility plans or other general facility standards, that change will be reviewed under the same procedures as the license or plan of operation approval modification.

## C. Ground-Water Protection

1. Changes to wells:

- a. Changes in the number, location, depth, or design of upgradient or downgradient wells of an approved ground-water monitoring system. 2
- b. Replacement of an existing well that has been damaged or rendered inoperable, without change to location, design, or depth of the well. 1
- 2. Changes in ground-water sampling or analysis procedures or monitoring schedule. 1
- 3. Changes in statistical procedure for determining whether a statistically significant change in ground-water quality between upgradient and downgradient wells has occurred, with prior approval of the department. 1
- 4. Changes in point of compliance. 2
- 5. Changes in indicator parameters, hazardous constituents, or concentration limits (including alternative concentration limits):
  - a. As specified in the groundwater protection standard. 2
  - b. As specified in the detection monitoring program. 2
- 6. Changes to a detection monitoring program as required by s. NR 635.13(10), unless otherwise specified in this appendix. 2
- 7. Compliance monitoring program:
  - a. Addition of compliance monitoring program as required by ss. NR 635.13(8)(d) and 635.14. 2
  - b. Changes to a compliance monitoring program as required by 635.14(11), unless otherwise specified in this appendix. 2
- 8. Corrective action program:
  - a. Addition of a corrective action program as required by ss. NR 635.14(9)(b) and 635.15. 2
  - b. Changes to a corrective action program as required by s. NR 635.15(8), unless otherwise specified in this appendix. 2

#### D. Closure

- 1. Changes to the closure plan as approved as part of an approved plan of operation:
  - a. Changes in estimate of maximum extent of operations or maximum inventory of waste on-site at any time during the active life of the facility. 1
  - b. Changes in the closure schedule for any unit, changes in the final closure schedule for the facility, or extension of the closure period. 1
  - c. Changes in the expected year of final closure, where other plan of operation approval or license conditions are not changed. 1
  - d. Changes in procedures for decontamination of facility equipment or structures. 1
  - e. Changes in approved closure plan resulting from unexpected events occurring during partial or final closure, unless otherwise specified in this appendix. 2
  - f. Extension of the closure period to allow a landfill, surface impoundment or land treatment unit to receive non-hazardous wastes after final receipt of hazardous wastes under s. NR 685.05(6) and (7). 2
- 2. Creation of a new landfill unit as part of closure of a licensed hazardous waste landfill. 3
- 3. Addition of the following new units to be used temporarily for closure activities:
  - a. Surface impoundments. 3
  - b. Incinerators. 2
  - c. Waste piles that do not comply with ch. NR 655. 2
  - d. Waste piles that comply with ch. NR 655. 2
  - e. Tanks or containers (other than specified below). 2
  - f. Tanks used for neutralization, dewatering, phase separation, or component separation. 1

#### E. Long-Term Care

- 1. Changes in name, address, or phone number of contact in the long-term care plan. 1
- 2. Extension of long-term care period. 2
- 3. Reduction in the long-term care period. 2
- 4. Changes to the expected year of final closure, where other plan of operation approval or license conditions are not changed. 1

5. Changes in long-term plan necessitated by events occurring during the active life of the facility, including partial and final closure. 2

#### F. Containers

1. Modification or addition of container units resulting in an increase in the facility's container storage capacity. 3
2. Modification of a container unit without increasing the capacity: 2
- a. Modification of a container unit without increasing the capacity of the unit, except for container facility maintenance. 2
- b. Addition of a roof to a container unit without alteration of the containment system. 1
3. Storage of different wastes in containers: 3
- a. That require additional or different management practices from those authorized in the license. 3
- b. That do not require additional or different management practices from those authorized in the license. 2

Note: See ss. NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

4. Storage or treatment of different wastes in containers that do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027 and F028). 1

#### G. Tanks

- 1: 3
- a. Modification or addition of tank units resulting in an increase in the facility's tank capacity, except as provided in G(1)(b). 3
- b. Addition of a new tank that will operate for up to 90 days using any of the following physical or chemical treatment technologies: neutralization, dewatering, phase separation, or component separation. 2
2. Modification of a tank unit or secondary containment system without increasing the capacity of the unit, other than tank or secondary containment system maintenance. 2
3. Modification of a tank management practice. 2
4. Management of different wastes in tanks: 2
- a. That require additional or different management practices, tank design, different fire protection specifications, or significantly different tank treatment process from that authorized in the plan of operation approval except as provided in (G)(4)(c). 3
- b. That do not require additional or different management practices, tank design, different fire protection specifications, or significantly different tank treatment process than authorized in the plan of operation approval except as provided in (G)(4)(c). 2
- c. That do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027 and F028). 1

Note: See ss. NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

Note: Procedures considered to be maintenance may be considered Class 1 or 2 modifications, or may not be subject to modification procedures. Facilities proposing maintenance should contact the Department and request clarification or a determination under s. NR 680.07(5)(b).

## H. Surface Impoundments

1. Modification or addition of surface impoundment units that result in increasing the facility's surface impoundment storage or treatment capacity. 3
2. Replacement of a surface impoundment unit. 3
3. Modification of a surface impoundment unit without increasing the facility's surface impoundment storage or treatment capacity and without modifying the unit's liner, leak detection system, or leachate collection system. 2
4. Modification of a surface impoundment management practice. 2
5. Treatment, storage, or disposal of different wastes in surface impoundments:
  - a. That require additional or different management practices or different design of the liner or leak detection system than authorized in the plan of operation approval. 3
  - b. That do not require additional or different management practices or different design of the liner or leak detection system than authorized in the plan of operation approval. 2
  - c. That are residues from wastewater treatment or incineration, provided that disposal occurs in a unit that meets the minimum technological requirements stated in ch. NR 635 and ss. NR 660.09, 660.13, and 660.18, and provided further that the surface impoundment has previously received wastes of the same type (for example, incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027 and F028). 1

Note: See NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

I. Enclosed Waste Piles. For all waste piles except those complying with s. NR 655.05(2), modifications are treated the same as for a landfill. The following modifications are applicable only to waste piles complying with s. NR 655.05(2).

1. Modification or addition of waste pile units resulting in an increase in the facility's waste pile storage or treatment capacity. 3
2. Modification of waste pile unit without increasing the capacity of the unit. 2
3. Replacement of a waste pile unit with another waste pile unit of the same design and capacity and meeting all waste pile conditions in the plan of operation approval. 2
4. Modification of a waste pile management practice. 2
5. Storage or treatment of different wastes in waste piles:
  - a. That require additional or different management practices or different design of the unit. 3
  - b. That do not require additional or different management practices or different design of the unit. 2
6. Conversion of an enclosed waste pile to a containment building unit. 2

Note: See ss. NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

## J. Landfills and Unenclosed Waste Piles

1. Modification or addition of landfill units that result in increasing the facility's disposal capacity. 3
2. Replacement of a landfill. 3
3. Addition or modification of a liner, leachate collection system, leachate detection system, run-off control, or final cover system. 3
4. Modification of a landfill unit without changing a liner, leachate collection system, leachate detection system, run-off control, or final cover system. 2
5. Modification of a landfill management practice. 2
6. Landfill different wastes:
  - a. That require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system. 3
  - b. That do not require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system. 2

- c. That are residues from wastewater treatment or incineration, provided that disposal occurs in a landfill unit that meets the minimum technological requirements stated in s. NR 660.13(10), and provided further that the landfill has previously received wastes of the same type (for example, incinerator ash). This modification is not applicable to dioxin-containing wastes (F020, 021, 022, 023, 026, 027, and 028). 1

Note: See ss. NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

K. Incinerators, Boilers, and Industrial Furnaces:

- 1. Changes to increase any of the following limits authorized in the plan of operation approval: A thermal feed rate limit, a feedstream feed rate limit, a chlorine/chloride feed rate limit, a metal feed rate limit, or an ash feed rate limit. 3

The Department will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.

- 2. Modification of an incinerator, boiler, or industrial furnace unit by changing the internal size or geometry of the primary or secondary combustion units, by adding a primary or secondary combustion unit, by substantially changing the design of any component used to remove HCl/Cl<sub>2</sub>, metals, or particulate from the combustion gases, or by changing other features of the incinerator, boiler, or industrial furnace that could affect its capability to meet the regulatory performance standards. 3

The Department will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.

- 3. Modification of an incinerator, boiler, or industrial furnace unit in a manner that would not likely affect the capability of the unit to meet the regulatory performance standards but which would change the operating conditions or monitoring requirements specified in the plan of operation approval or license. 2

The Department may require a new trial burn to demonstrate compliance with the regulatory performance standards.

- 4. Operating requirements.
  - a. Modification of the limits specified in the plan of operation approval for minimum or maximum combustion gas temperature, minimum combustion gas residence time, oxygen concentration in the secondary combustion chamber, flue gas carbon monoxide and hydrocarbon concentration, maximum temperature at the inlet to the particulate matter emission control system, or operating parameters for the air pollution control system. 3

The Department will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.

- b. Modification of any stack gas emission limits specified in the plan of operation approval, or modification of any conditions in the plan of operation approval concerning emergency shutdown or automatic waste feed cutoff procedures or controls. 3
  - c. Modification of any other operating condition or any inspection or recordkeeping requirement specified in the plan of operation approval. 2
- 5. Burning different wastes:
  - a. If the waste contains a POHC that is more difficult to burn than authorized by the plan of operation approval or if burning of the waste requires compliance with different regulatory performance standards than 3

specified in the plan of operation approval. The Department will require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means. 2

b. If the waste does not contain a POHC that is more difficult to burn than authorized by the plan of operation approval and if burning of the waste does not require compliance with different regulatory performance standards than specified in the plan of operation approval. 2

Note: See ss. NR 680.07(5) and 680.20 for modification procedures to be used for the management of newly listed or identified wastes.

6. Shakedown and trial burn:
- a. Modification of the trial burn plan or any of the plan of operation approval conditions applicable during the shakedown period for determining operational readiness after construction, the trial burn period, or the period immediately following the trial burn. 2
  - b. Authorization of up to an additional 720 hours of waste burning during the shakedown period for determining operational readiness after construction. 1
  - c. Changes in the operating requirements set in the plan of operation approval for conducting a trial burn, provided the change is not significant. 1
  - d. Changes in the ranges of the operating requirements set in the plan of operation approval to reflect the results of the trial burn, provided the change is not significant. 1
7. Substitution of an alternative type of nonhazardous waste fuel that is not specified in the plan of operation approval. 1
- M. Containment Buildings.
- 1. Modification or addition of containment building units resulting in an increase in the facility's containment building storage or treatment capacity. 3
  - 2. Modification of a containment building unit or secondary containment system without increasing the capacity of the unit. 2
  - 3. Replacement of a containment building with a containment building that meets the same design standards provided:
    - a. The unit capacity is not increased. 1
    - b. The replacement containment building meets the same conditions in the permit. 1
  - 4. Modification of a containment building management practice. 2
  - 5. Storage or treatment of different wastes in containment buildings:
    - a. That require additional or different management practices. 3
    - b. That do not require additional or different management practices. 2

SECTION 298. NR 685.02(2) is amended to read:

NR 685.02(2) Metallic mining wastes resulting from a mining operation as defined in s. 144.81 (5), Stats., or

SECTION 299. NR 685.02(3) is repealed.

SECTION 300. NR 685.02(4) is renumbered (3) and is amended to read:

NR 685.02(3) A combination of wastes described in subs. (1) to ~~(3)~~ and (2).

SECTION 301. NR 685.05(1)(e) and (2)(intro.) are amended to read:

NR 685.05(1)(e) Complies with the requirements of this chapter and the requirements of ss. NR ~~640.16, 645.17~~ 640.16, 645.17, 655.06, 655.10, 655.12 655.11, 660.24(14), 665.10 and ~~660.19(14)~~ 670.10.

(2) The owner or operator of a facility shall have a written closure plan demonstrating compliance with this subsection. The plan closure shall be submitted to the department for approval as part of the reports or plans required under chs. NR 635 to 680. Closure plans may be required by the department for a facility which is no longer in operation, if the facility was in existence on August 1, 1981 and has not been properly closed. A copy of the approved closure plan and all revisions to the closure plan shall be provided to the department upon request, including a written request by mail, and kept at the facility until final closure is completed and certified in accordance with sub. (10). The closure plan shall identify the steps necessary to finally or partially close the facility at any point during its active life and to finally close the facility at the end of its active life. The department's approval of the closure plan shall require that the approved closure plan is consistent with this section and the applicable requirements of ss. NR ~~640.13, 645.12, 650.11, 655.09, 660.09, 660.093, 660.095~~ 640.16, 645.17, 665.10, 655.11, 660.20, 660.21 and ~~670.07~~ 670.10. The closure plan shall identify steps necessary to perform partial or final closure of the facility at any point during its active life. The closure plan shall include, but not be limited to:

SECTION 302. NR 685.05(10)(c) to (e) are created to read:

NR 685.05(10)(c) At the time the certification of closure under par. (b) is submitted to the department, or as provided in s. NR 680.06(3)(k), whichever is earlier, the owner of a disposal facility shall file with the office of the register of deeds in each county in which a portion of the facility was located, and with the department, a survey plat, indicating the location and dimensions of landfill cells or other disposal units with respect to permanently surveyed benchmarks. This plat shall be prepared and certified by a professional land surveyor. The plat filed with each office of the register of deeds shall contain a note, prominently displayed, which states the owner's obligation to restrict disturbance of the site as specified in s. NR 685.06(3). In addition, at the time the certification under par. (b) is submitted to the department, the owner shall submit to the office of the register of deeds in each county in which a portion of the facility was located, and to the department, a record of the type, location and quantity of hazardous wastes disposed of within each cell or unit of the facility. For wastes disposed of before these regulations were promulgated, the owner shall identify the type, location and quantity of the wastes to the

best of the owner's knowledge and in accordance with any records the owner has kept. Any changes in the type, location or quantity of hazardous wastes disposed of within each cell or area of the facility that occur after the survey plat and record of wastes have been filed shall be reported to the office of the register of deeds in each county in which a portion of the facility was located and to the department.

(d) The owner of the property on which a disposal facility is located shall, at the time the certification of closure under par. (b) is submitted to the department, record, in accordance with applicable requirements for the recording of documents in the office of the register of deeds under ss. 59.51 to 59.575, Stats., a notation on the deed to the facility property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property that:

1. The land has been used to manage hazardous wastes;
2. Its use is restricted under s. NR 685.06(3);

3. The survey plat and record of the type, location and quantity of hazardous waste disposed of within each cell or disposal unit of the facility required in par. (c) have been filed with the office of the register of deeds in each county in which a portion of the facility was located and with the department; and

(e) The owner of the property shall sign a certification that the notation specified in par. (d) has been recorded. The owner shall submit the certification and a copy of the document in which the notation has been placed.

SECTION 303. NR 685.06(1) and (5) are amended to read:

NR 685.06(1) The requirements of this section apply to the owners and operators of facilities identified in pars. (a) to (d). In accordance with s. 144.441 (2) (c), Stats., the owner's responsibility for long-term care does not terminate. The owner shall provide long-term care ~~for a period of 30 years from the date partial or final closure is completed under s. 144.441, Stats., unless the responsibility to provide long-term care is terminated earlier under s. 144.441 (2) (d) or (e), Stats.,~~ for the following:

(5) The owner or operator of a hazardous waste disposal facility shall have a written long-term care plan demonstrating compliance with this subsection. In addition, certain other facilities are required, under ss. NR 600.07, 640.16, 645.17,



655.11, 660.17, 665.10 and 670.10, to have a long-term care plan demonstrating compliance with this subsection. The long-term care plan shall be submitted to the department for approval as part of the application for an interim license under ch. NR 680. The long-term care plan shall also be submitted to the department for approval as part of the reports or plans required for an initial operating license, where specifically required under chs. NR 600 to 685. A copy of the approved long-term care plan and all revisions to the long-term care plan shall be provided to the department upon request, including a written request by mail, and be kept at the facility until final closure is completed and certified in accordance with s. NR 685.05 ~~(9)~~ (10) and the long-term care period begins. After final closure has been certified, the long-term care plan shall be kept at the office or location specified in par. (b) 3. This long-term care plan shall identify the activities that will be carried out after any partial or final closure of each disposal unit and the frequency of these activities and include, but not be limited to:

SECTION 304. NR 685.06(8) and (9) are repealed.

SECTION 305. NR 685.06(10) and (11) are renumbered NR 685.06(8) and (9):

SECTION 306. NR 685.07(1)(b)1. and 2. are amended to read:

NR 685.07(1)(b) Long-term care. 1. The owner of every hazardous waste disposal facility shall provide, as part of an initial license submittal or an initial operating license application and annually thereafter for the period of active facility life, proof of financial responsibility to ensure compliance with the long-term care requirements of the approved plan of operation for the facility, or if no approved plan of operation exists for the facility, with the requirements in s. NR 685.06. An owner responsible for long-term care ~~shall be responsible for the 30 year period of owner responsibility~~ shall provide financial responsibility for a period of time in accordance with s. 144.441 (2) (b), Stats.

2. The owner of every hazardous waste facility required under s. NR 600.07, 640.16, 645.17, 655.11, 660.17 or 665.10 to submit a long-term care plan, shall provide proof of financial responsibility to ensure compliance with the long-term care requirements of s. NR 685.06. An owner responsible for long-term care ~~shall be responsible for the 30 year period of owner responsibility~~ shall provide financial responsibility for a period of time in accordance with s. 144.441 (2) (b), Stats.

SECTION 307. NR 685.08(2) is amended to read:

NR 685.08(2) COVERAGE FOR NONSUDDEN ACCIDENTAL OCCURRENCES. The owner or operator of every hazardous waste surface impoundment, landfill, miscellaneous unit used for disposal or surface impoundment with discharges regulated under ch. 147, Stats., or group of the facilities, located in Wisconsin, except facilities owned and operated by a state agency, or a federal agency, department or instrumentality, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of the facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million, exclusive of legal defense costs. An owner or operator subject to the requirements of this section may combine the required per occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences shall maintain liability coverage in the amount of at least \$4 million per occurrence and \$8 million annual aggregate. This liability coverage may be demonstrated as specified in sub. (3).

SECTION 308. NR 685.08(3)(g)1. and 2. are repealed and recreated and NR 685.08(3)(g)3. is created to read:

NR 685.08(3)(g)1. A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in pars. (a) to (f); or

2. A certification of valid claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under pars. (a) to (f); or

3. A final court order establishing a judgement for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under pars. (a) to (f).

SECTION 309. NR 685.08(10)(c) is amended to read:

NR 685.08(10)(c) The wording of the letter of credit shall be identical to the wording specified in par. ~~(d)~~ (f).

SECTION 310. NR 685.08(10)(d) and (e) are created to read:

NR 685.08(10)(d) An owner or operator who uses a letter of credit to satisfy the requirements of this section may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund shall be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(e) The wording of the standby trust fund shall be identical to the wording specified in par. (g).

SECTION 311. NR 685.08(10)(d) is renumbered NR 685.08(10)(f) and is amended to read:

NR 685.08(10)(f) A letter of credit, as specified in this subsection, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit

Name and Address of Issuing Institution

Secretary

Wisconsin Department of Natural Resources

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. \_\_\_\_\_ in the favor of ~~any and all third-party liability claimants~~ ["any and all third-party liability claimants" or insert name of trustee of the standby trust fund], at the request and for the account of [owner's or operator's name and address] for third-party liability awards or settlements up to [in words] U.S. dollars \$\_\_\_\_\_ per occurrence and the annual aggregate amount of [in words] U.S. dollars \$\_\_\_\_\_, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of [in words] U.S. dollars \$\_\_\_\_\_ per occurrence, and the annual aggregate amount of [in words] U.S. dollars \$\_\_\_\_\_.

for nonsudden accidental occurrences available upon presentation of a sight draft, bearing reference to this letter of credit No. \_\_\_\_\_, and  
[insert the following language if the letter of credit is being used without a standby trust fund]

(A) a signed certificate reading as follows:

Certification of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of \$[ ]. We hereby certify that the claim does not apply to any of the following:

(1) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(2) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(3) Bodily injury to:

(a) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(b) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

1. Whether [insert principal] may be liable as an employer or in any other capacity; and

2. To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (a) and (b).

(4) Bodily injury or property damage arising out of the ownership, maintenance, use or entrustment to others of any aircraft, motor vehicle or watercraft.

(5) Property damage to:

(a) Any property owned, rented or occupied by [insert principal];

(b) Premises that are sold, given away or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(c) Property loaned to [insert principal];

(d) Personal property in the care, custody or control of [insert principal];

(e) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures]

Principal

[Signatures]

Claimant(s)

or

(B) a valid final court order establishing a judgment against the principal for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of the principal's facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the Wisconsin Department of Natural Resources, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us.

[Insert the following language if a standby trust fund is not being used.] In the event that this letter of credit is used in combination with another mechanism for liability coverage,

this letter of credit shall be considered [insert "primary" or "excess"] coverage.

We certify that the wording of this letter of credit is identical to the wording specified in s. NR 685.08 (10) (d), Wis. Adm. Code, as the regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]

[Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce" or "the Uniform Commercial Code"].

SECTION 312. NR 685.08(10)(g) is created to read:

NR 685.08(10)(g)1. A standby trust agreement, as specified in par. (d), shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

#### Standby Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of a State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the State of " or "a national bank"], the "trustee."

Whereas the Department of Natural Resources, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental or nonsudden accidental occurrences, or both, arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of [up to \$1 million] per occurrence and [up to \$2 million] annual aggregate for sudden accidental occurrences and [up to \$3 million] per occurrence and [up to \$6 million] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee or [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) Whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert Grantor];

(2) Premises that are sold, given away or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) Property loaned [insert Grantor];

(4) Personal property in the care, custody or control of [insert Grantor];

(5) That particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department of Natural Resources.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by drawing on



the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of \$[ ].

[Signature]

Grantor

[Signatures]

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of s. NR 685.08(10)(f), Wis. Adm. Code and Section 4 of this Agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates

representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any

reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Department and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Department, or by the Trustee and the Department if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Department, or by the Trustee and the Department, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Department will agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in s. NR 685.08.

Section 16. Immunity and indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and the Department issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal

liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Wisconsin.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in NR 685.08(10), Wis. Adm. Code, as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

2. The following is an example of the certification of acknowledgement which must accompany the trust agreement for a standby trust fund as specified in this subsection.

State of

County of

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]  
Title: \_\_\_\_\_  
My Commission expires \_\_\_\_\_ [DATE] \_\_\_\_\_.  
\*/\*

SECTION 313. NR 685.09(1)(intro.) is amended to read:

NR 685.09 ENVIRONMENTAL FEES. (1) ~~WASTE MANAGEMENT FUND IMPOSITION OF TONNAGE FEE.~~ (intro.) All owners or operators of approved nonapproved licensed hazardous waste land disposal facilities shall pay to the department a tonnage fee for each ton of hazardous waste or solid waste received and disposed of at the facility, ~~or a minimum waste management fund base fee as specified in s. 144.441 (5) (c), Stats., whichever is greater,~~ until the facility no longer receives waste and begins closure activities, except as otherwise provided in s. 144.441(3)(b) ~~or (c), Stats.~~ The department shall deposit all tonnage and ~~waste management base fees paid by a nonapproved facility into the waste management fund provided for in s. 25.45, Stats~~ environmental fund for environmental repair. ~~The department may use the money accumulated in the waste management fund only at approved facilities.~~ The monies in the waste management fund shall be expended exclusively as set forth in s. 144.441 (6), Stats.

SECTION 314. NR 685.09(1)(a) and (b) are repealed.

SECTION 315. NR 685.09(1)(intro.) is renumbered (1)(a).

SECTION 316. NR 685.09(1)(intro.) and (c) are renumbered NR 685.09(1)(a) and (b) and NR 685.09(1)(b), as renumbered, is amended to read:

NR 685.09(1)(b) For all nonapproved hazardous waste land disposal facilities, the total annual tonnage fees for all solid waste received by the facility shall be reduced by the amount of the environmental repair base fee. If the environmental repair base fee for a nonapproved facility is greater than the annual

tonnage fee imposed under s. 144.441 (4), Stats., the waste received by the facility is exempt from the ~~waste management~~ tonnage fee for that year.

SECTION 317. NR 685.09(2)(title) and (2)(a) are amended to read:

NR 685.09(2)(title) ENVIRONMENTAL REPAIR FEE. (a) All owners or operators of licensed hazardous waste land disposal facilities shall pay to the department an environmental repair fee for each ton of hazardous waste or solid waste received and disposed of at the facility, until the facility no longer receives waste and begins closure activities. The environmental repair fee shall be as specified in s. 144.442(1m) ~~(e)~~ and (cm) and (cp), Stats.

SECTION 318. NR 685.09(2)(b) and (c) are renumbered (c) and (d), and NR 685.09(2)(c), as renumbered, is amended to read:

NR 685.09(2)(c) All owners or operators of licensed nonapproved facilities shall pay to the department an environmental repair base fee for each calendar year until the facility no longer receives waste and begins closure activities. The environmental repair base fees are specified in s. 144.442(2)(b), Stats. The environmental repair base fees may be reduced in accordance with s. 144.442(2)(d), Stats. The environmental repair surcharge is specified in s. 144.442(3), Stats.

SECTION 319. NR 685.09(2)(b) is created to read:

NR 685.09(2)(b) All generators of hazardous waste who are required to report annually on hazardous waste activities in accordance with s. NR 610.08(1)(e) or NR 615.11(1), shall pay to the department an environmental repair fee for each ton of hazardous waste generated during the reporting year. The environmental repair fee for generators shall be as specified in s. 144.442(1s)(b), Stats.

SECTION 320. NR 685.09(3)(title) and (3)(intro.) are amended to read:

NR 685.09(3)(title) GROUNDWATER, SOLID WASTE CAPACITY AND WELL COMPENSATION FEES. All owners or operators of licensed hazardous waste land disposal facilities shall pay to the department a groundwater, solid waste capacity and well compensation fee for each ton of hazardous waste or solid waste received and disposed of at the facility, until the facility no longer receives wastes and begins closure activities. ~~The amount of the groundwater, solid waste capacity and well compensation fees is~~ shall be as specified in s. 144.441 (7) (c), Stats. The

department shall deposit all groundwater fees into the groundwater environmental fund for groundwater management as provided for in s. ~~25.48-25.46~~, Stats. ~~The monies in the groundwater fund shall be expended as set forth in ss. 20.115 (1) (s), 20.370 (2) (mq) and (ms), 20.435 (1) (q), and 20.445 (1) (q), Stats.~~ The department shall deposit all well compensation and solid waste capacity fees into the environmental fund for environmental repair as provided for in s. 25.46, Stats.

SECTION 321. NR 685.09(6)(a) and (b) are amended to read:

NR 685.09(6)(a) Payments for long-term care after termination of ~~owner~~ proof of financial responsibility. The department shall determine the necessary maintenance requirements for the long-term care of an approved hazardous waste disposal facility after the termination of the ~~owner's~~ proof of financial responsibility. The department shall comply with s. 16.75, Stats., when applicable, for contracting services for the required long-term care and maintenance of hazardous waste disposal facilities.

(b) Payments of related costs. ~~The department shall comply with s. 144.441 (6) (f), Stats., prior to making any expenditures from the waste management fund under s. 144.441 (6) (e), Stats.~~ The department may expend monies from the waste management fund in accordance with s. 144.441 (6), Stats.

SECTION 322. NR 685.09(6)(c) is repealed.

The foregoing rules were approved and adopted by the State of Wisconsin Natural Resources Board on September 29, 1994

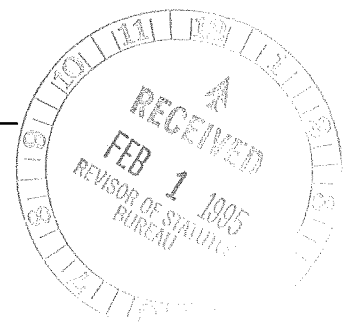
The rules shall take effect the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro), Stats.

Dated at Madison, Wisconsin

January 25, 1995

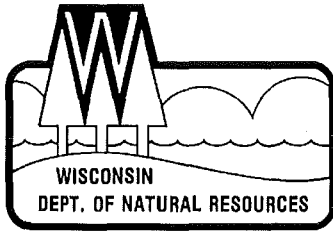
STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By George E. Meyer  
George E. Meyer, Secretary



(SEAL)





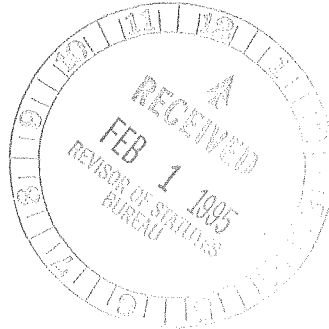
George E. Meyer  
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street  
Box 7921  
Madison, Wisconsin 53707  
TELEPHONE 608-266-2621  
TELEFAX 608-267-3579  
TDD 608-267-6897

January 24, 1995

Mr. Gary L. Poulson  
Assistant Revisor of Statutes  
131 West Wilson Street - Suite 800  
Madison, WI



Dear *Gary* Mr. Poulson:

Enclosed are two copies, including one certified copy, of State of Wisconsin Natural Resources Board Order No. SW-13-94a. These rules were reviewed by the Assembly Committee on Natural Resources and the Senate Committee on Environment and Energy pursuant to s. 227.19, Stats. Summaries of the final regulatory flexibility analysis and comments of the legislative review committees are also enclosed.

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

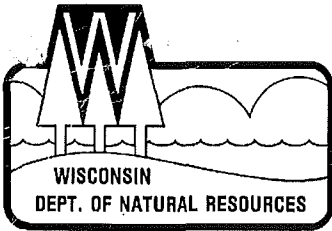
Sincerely,

*George E. Meyer*

George E. Meyer  
Secretary

Enc.

CR 94-76, Part II



George E. Meyer  
Secretary

**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

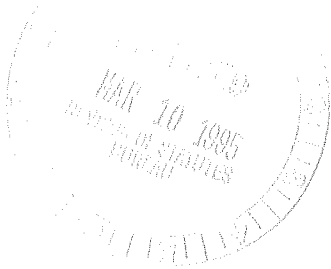
101 South Webster Street  
Box 7921  
Madison, Wisconsin 53707  
TELEPHONE 608-266-2621  
TELEFAX 608-267-3579  
TDD 608-267-6897

STATE OF WISCONSIN )  
 )  
DEPARTMENT OF NATURAL RESOURCES )      SS

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, George E. Meyer, 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. SW-13-94b was duly approved and adopted by this Department on September 29, 1994 and February 23, 1995. 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 the Natural Resources Building in the City of Madison, this 27th day of February, 1995.



*George E. Meyer*  
George E. Meyer, Secretary

(SEAL)

6-1-95





DEPARTMENT OF NATURAL RESOURCES  
WISCONSIN

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

.....  
IN THE MATTER OF amending ss. NR 502.07(1)(Intro.) and 502.09(2)(d) and 600.10(1) : SW-13-94b  
(intro) and creating s. NR 502.05(2)(f), 502.07(2m), 502.08(2)(f) and ch. NR 590, of :  
the Wisconsin Administrative Code pertaining to solid and hazardous waste management. :  
.....

Analysis Prepared by the Department of Natural Resources

Statutory authority: ss. 144.431(1)(a), 144.435(1), 144.44(3),  
(7), (7)(g) and (9), 144.50, 144.60(2), 144.62, 159.07 and 159.15  
and 227.11(2)(a), Stats.

Statutes interpreted: ss. 144.44, 144.441, 144.443, 144.444,  
144.50 and 144.60 to 144.79, 159.07 and 159.15 Stats.

Consent for incorporation by reference of federal and technical  
standards has been requested from the Revisor of Statutes and the  
Attorney General pursuant to s. 227.21(2)(a), Stats.

This order amends the hazardous waste rules in chs. NR 600 to  
685, Wis. Adm. Code. The order assimilates recent revisions in  
U.S. Environmental Protection Agency (EPA) regulations, includes  
several State-initiated actions and corrects errors in chs. NR  
600 to 685 Wis. Adm. Code:

1. Used Oil Management

A new chapter NR 590 will be created which adopts 40 CFR Part  
279, and consolidates its requirements with those of Wisconsin  
statutes and regulations (NR 183). Cross-references to tank  
standards found in ch. ILHR 10 will ensure consistency between  
regulations of the two agencies.

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SECTION 3. NR 502.05(2)(f) is created to read:

NR 502.05(2)(f) Facilities that store used oil which is  
managed in compliance with ch. NR 590.

SECTION 4. NR 502.07(1)(Intro.) is amended to read:

NR 502.07(1) GENERAL. No person may operate or maintain a  
solid waste transfer facility unless the person has received an  
operating license from the department, except as otherwise  
provided in sub. (2) or (2m). Any person intending to establish  
or construct a solid waste transfer facility shall contact the  
department to arrange for an initial inspection.

SECTION 5. NR 502.07(2m) is created to read:

NR 502.07(2m) EXEMPT USED OIL FACILITIES. Transfer facilities for used oil which is managed in compliance with ch. NR 590 are exempt from the plan approval and licensing requirements of this chapter.

SECTION 6. NR 502.08(2)(f) is created to read:

NR 502.08(2)(f) Facilities that process used oil which is managed in compliance with ch. NR 590.

SECTION 7. NR 502.09(2)(d) is amended to read:

NR 502.09(2)(d) Incinerators which burn used oil which is managed in compliance with ch. NR 590 are exempt from all requirements of this section except sub. (5).

SECTION 8. Chapter NR 590 is created to read:

USED OIL MANAGEMENT STANDARDS

Subchapter I - General

- NR 590.01 Purpose.
- NR 590.02 Applicability.
- NR 590.03 Definitions.
- NR 590.04 Exemptions.
- NR 590.05 Prohibitions.
- NR 590.06 Applicability of other regulations.
- NR 590.07 Notification.
- NR 590.08 Used oil annual report.
- NR 590.09 Used oil specifications.
- NR 590.10 Mixtures of used oil and waste.
- NR 590.11 Rebuttable presumption for used oil.

Subchapter II - Standards for Used Oil Generators

- NR 590.12 Applicable generator provisions.
- NR 590.13 Used oil storage.
- NR 590.14 On-site burning in space heaters.
- NR 590.15 Off-site shipments.

Subchapter III - Standards for Used Oil Collection Centers and Aggregation Points

- NR 590.20 Used oil collection centers.

- NR 590.21 Municipal and retail engine waste oil collection centers.
- NR 590.22 Minimum standards for used oil collection centers.
- NR 590.23 Plans of operation.

Subchapter IV - Standards for Used Oil Transporters and Transfer Facilities

- NR 590.30 Applicability.
- NR 590.31 Imports and exports.
- NR 590.32 Trucks used to transport hazardous waste.
- NR 590.33 Other applicable provisions.
- NR 590.34 Restrictions on transporters who are not also processors or re-refiners.
- NR 590.35 Used oil transportation.
- NR 590.36 Used oil storage at transfer facilities.
- NR 590.37 Tracking.
- NR 590.38 Management of residues.

Subchapter V - Standards for Used Oil Processors and Re-Refiners

- NR 590.50 Applicability.
- NR 590.51 Other applicable provisions.
- NR 590.52 General facility standards.
- NR 590.53 Used oil management.
- NR 590.54 Analysis plan.
- NR 590.55 Tracking.
- NR 590.56 Operating record and reporting.
- NR 590.57 Off-site shipments of used oil.
- NR 590.58 Management of residues.

Subchapter VI - Standards for Burning Off-Specification Used Oil for Energy Recovery

- NR 590.70 Applicability.
- NR 590.71 Other applicable provisions.
- NR 590.72 Restrictions on burning.
- NR 590.73 Used oil storage.
- NR 590.74 Tracking.
- NR 590.75 Notices.
- NR 590.76 Management of residues.

Subchapter VII - Standards for Used Oil Fuel Marketers

- NR 590.80 Applicability.
- NR 590.81 Prohibitions.
- NR 590.82 Exemptions.
- NR 590.83 Other applicable provisions.
- NR 590.84 On-specification used oil fuel.
- NR 590.85 Tracking.
- NR 590.86 Notices.

NR 590.87 Management of residues.

## SUBCHAPTER I

### GENERAL

NR 590.01 PURPOSE. The purpose of this chapter is to provide standards for the management of used oil by recycling that are protective of human health and the environment.

NR 590.02 APPLICABILITY. (1) This chapter applies to used oil and to materials identified in this chapter as being subject to regulation as used oil.

Note: This chapter also identifies some materials that are not subject to regulation as used oil and indicates whether these materials may be subject to regulation as hazardous waste under chs. NR 600 to 685.

Note: Used oil filters are regulated as solid waste and are exempt from regulation as hazardous waste if they are properly managed and are not terne-plated, as specified in s. NR 605.05(1)(v).

(2) This chapter applies to used oil generators, collection centers, transporters and transfer facilities, processors and re-refiners, burners, and marketers.

(3) Subchapter I applies to all persons to whom this chapter applies. The individual subchapters apply as specified in the subchapter applicability sections.

(4)(a) Except as provided in s. NR 590.04(1)(b), mixtures of used oil and fuels or other products are subject to regulation as used oil under this chapter.

(b) Mixtures of used oil and diesel fuel mixed on-site by the generator of the used oil for use in the generator's own vehicles are subject to the requirements of ss. NR 590.11 to 590.15 prior to mixing.

Note: Used oil managed in this manner is not subject to this chapter once the used oil and diesel fuel have been mixed.

(5) Materials produced from used oil that are burned for energy recovery are subject to regulation as used oil under this chapter.

(6) Used oil that is placed directly into a crude oil or natural gas pipeline is subject to the management standards of this chapter prior to the point of introduction to the pipeline.

Note: Once used oil is introduced into a pipeline, the material is exempt from of this chapter, as stated in s. NR 590.04(1)(d).

(7) Used oil produced on vessels from normal shipboard operations is subject to this chapter after it is transported ashore. The owner or operator of the vessel and the person or persons removing or accepting used oil from the vessel are co-generators of the used oil and are both responsible for managing the waste in compliance with this chapter once the used oil is transported ashore. The co-generators may decide among them which party will fulfill the requirements of this chapter.

NR 590.03 DEFINITIONS. In this chapter: (1) "Above ground tank" means a tank that is used to store or process used oil that is not an underground tank.

(2) "Aggregation point" or "used oil aggregation point" means any site or facility that accepts, aggregates, or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gallons under the provisions of s. NR 590.15(2). "Aggregation point" includes facilities that accept used oil from consumers.

(3) "Automotive engine oil" means "any oil to be used in the engine or crankcase of a motor vehicle."

(4) "Beneficial use or reuse" means the use of used oil as an ingredient or feedstock in production processes, the use of used oil as a substitute for raw material in processes that usually use raw materials as feedstocks or using used oil as a substitute for commercial products. This term does not include burning for energy recovery or use in a manner constituting disposal.

(5) "Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

(a) The unit has physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids or heated gases; and

(b) The unit's combustion chamber and primary energy recovery sections are of integral design. To be of integral design, the combustion chamber and the primary energy recovery



sections shall be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery sections are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters and fluidized bed combustion units; and

Note: Examples of primary energy recovery sections include waterwalls and superheaters.

Note: Examples of secondary energy recovery equipment include economizers and air preheaters.

Note: Process heaters are units that transfer energy directly to a process stream.

(c) While in operation, the unit maintains a thermal energy recovery efficiency of at least 60%, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(d) The unit exports and utilizes at least 75% of the recovered energy, calculated on an annual basis. In this calculation, no credit may be given for recovered heat used internally in the same unit.

Note: Examples of internal use of recovered heat are the preheating of fuel or combustion air and the driving of induced or forced draft fans or feedwater pumps.

(6) "Burner" means an owner or operator of a boiler or industrial furnace as defined in subs. (5) and (22) that burns used oil or hazardous waste fuel.

(7) "Consumer" means a person who, for personal or family purposes, purchases or uses automotive engine oil or generates, collects, stores or transports engine waste oil in quantities of less than 200 gallons per year.

(8) "Consumer used oil collection center" means any site or facility that accepts, aggregates and stores used oil collected only from consumers.

Note: "Household 'do-it-yourselfer' used oil" means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles or other internal combustion powered devices.

(9) "Container" means any portable enclosure in which a material is stored, transported, treated, disposed of or otherwise handled.

(10) "Critical habitat area" means any area providing habitat determined by the department to be critical to the continued existence of any endangered species listed in ch. NR 27.

(11) "Department" means the department of natural resources.

(12) "Engine waste oil" means automotive engine oil after it is used and removed from the engine or crankcase of a motor vehicle but before that oil is recycled.

(13) "Engine waste oil collection center" means a commercial or municipal establishment or operation that accepts and either temporarily accumulates engine waste oil or stores engine waste oil prior to recycling.

(14) "EPA" means the United States environmental protection agency.

(15) "EPA identification number" means the number assigned by EPA to each generator, transporter, and treatment, storage or disposal facility.

(16) "Existing tank system" or "existing tank system component" means a tank system or tank system component that is used for the storage or processing of used oil and that is in operation, or for which installation has commenced on or prior to the effective date of this chapter [Revisor: insert date]. Installation shall be considered to have commenced if the owner or operator has obtained all federal, state and local approvals, licenses or permits necessary to begin physical construction of the site or installation of the tank system and if either:

(a) A continuous on-site physical construction or installation program has begun, or

(b) The owner or operator has entered into a contract, which may not be cancelled or modified without substantial loss, for physical construction of the site or installation of the tank system to be completed within a reasonable time.

(17) "Fuel oil" is defined in s. 159.15(1)(d), Stats.

(18) "Hazardous waste" means a solid waste that meets the definition of hazardous waste in s. NR 605.04, and is not excluded by the provisions of s. NR 605.05.

(19) "Hazardous waste constituent" or "hazardous constituent" means a constituent listed in ch. NR 605, Appendix IV which caused the department to list a hazardous waste in s. NR 605.09, or a contaminant listed in Table I in s. NR 605.08.

(20) "Hazardous waste fuel" means hazardous waste burned for energy recovery and fuel produced from hazardous waste by processing, blending or other treatment.

(21) "Incinerator" means an enclosed device using controlled flame combustion that is not a boiler or an industrial furnace.

(22) "Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and use controlled flame combustion to accomplish recovery of materials or energy:

- (a) Cement kilns.
- (b) Lime kilns.
- (c) Aggregate kilns.
- (d) Phosphate kilns.
- (e) Blast furnaces.
- (f) Smelting furnaces.
- (g) Methane reforming furnaces.
- (h) Combustion devices used in the recovery of sulfur values from spent sulfuric acid.
- (i) Pulping liquor recovery furnaces.
- (j) Coke ovens.
- (k) Titanium dioxide chloride process oxidation reactors.

Note: The department may add devices to this list on the basis of one or more of the following factors: (1) The device is designed and used primarily to accomplish recovery of material products; (2) The device burns secondary materials as ingredients in an industrial process to make a material product; (3) The device burns secondary materials as effective substitutes for raw materials in processes using raw materials as principal feed stocks; (4) The device burns raw materials to make a material product; (5) The device is in common industrial use to produce a material product; (6) Other factors, as appropriate.

(23) "Land treatment" means the application of waste onto the soil surface or into the soil surface through incorporation. The term does not include the placement of waste into a landfill cell.

(24) "Legitimate recovery or reclamation" means the regeneration of used oil to remove contaminants so that the oil may be put to further use, the processing of used oil to recover usable materials or the regeneration of used oil to its original form. This term does not include the burning or beneficial use of used oil.

Note: Examples of legitimate recovery or reclamation is used oil re-refining.

(25) "Manage" or "management" means the systematic source reduction, source separation, collection, aggregation, storage, transportation, transfer, processing, re-refining or burning for energy recovery of used oil.

(26) "Marketer" or "used oil marketer" means any person who:

(a) Directs a shipment of off-specification used oil from the marketer's facility to a used oil burner; or

(b) First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in s. NR 590.09.

(27) "Motor vehicle" means any vehicle propelled by an internal combustion engine and includes any automobile, truck, bus, motorcycle, snowmobile or vehicle which travels on or off roads or highways.

(28) "Municipality" means any city, town, village, county, county utility district, town sanitary district, public inland lake protection and rehabilitation district or metropolitan sewage district.

(29) "On-specification used oil" means used oil which meets the specifications in s. NR 590.09.

(30) "Off-specification used oil" means used oil which fails to meet the specifications in s. NR 590.09.

(31) "Operator" means the person who is responsible for the overall operation of a used oil collection or storage facility, a used oil transporter or transfer facility, a used oil processor or re-refining facility, a used oil burning facility, or a used oil marketing facility.

(32) "Owner" means the person who owns, leases or holds a department approval for a used oil collection or storage facility, a used oil transporter or transfer facility, a used oil processor or re-refining facility, a used oil burning facility, or a used oil marketing facility, or part of such a facility.

(33) "Person" means an individual, owner, operator, corporation, partnership, association, municipality, interstate agency, state agency or federal agency, department or instrumentality.

(34) "Pile" means any non-containerized accumulation of nonflowing solid waste that is used for treatment or storage.

(35) "Processing" means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants or other used oil-derived product. Processing includes, but is not limited to: blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation and re-refining.

(36) "Reclaimed oil" means engine waste oil which is processed by settling, dehydration, filtration or mixing, or combinations of those procedures, which removes some of the harmful physical and chemical characteristics which are acquired through use.

(37) "Recycled oil" means re-refined or reclaimed oil.

(38) "Recycling" means the beneficial use, reuse or legitimate recovery or reclamation of used oil. Recycling includes burning used oil for energy recovery, and the re-refining of used oil.

(39) "Re-refined oil" means engine waste oil which is processed by high temperature distillation and chemical treatment or any other process which removes all harmful physical and chemical characteristics acquired through use. In addition, re-refined oil includes used oil from sources other than engine waste oil.

(40) "Re-refining distillation bottoms" means the heavy fraction produced by vacuum distillation of filtered and dehydrated used oil.

Note: The composition of still bottoms varies with column operation and feedstock.

(41) "Retail sales establishment" means a person who is engaged in the business of selling automotive engine oil to consumers.

(42) "Service establishment" means a person who is engaged in the business of servicing and removing automotive engine oil from motor vehicles for consumers.

(43) "Surface impoundment" means any natural topographic depression, constructed excavation or diked area that is formed primarily of earthen materials and that holds or is designed to hold used oil.

(44) "Tank" means a stationary device, designed to contain an accumulation of used oil which is constructed primarily of nonearthen materials, such as wood, concrete, steel or plastic which provides structural support.

Note: Other unit operations, such as presses, filters, sumps and other types of processing equipment may be tanks.

Note: Standards for the proper management of tanks are found in ch. ILHR 10.

(45) "Tank system" means a used oil or hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.

(46) "Tank system component" means either the tank or ancillary equipment of a tank system.

(47) "Transfer facility" means any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of used oil are held during the normal course of transportation.

(48) "Underground storage tank" or "UST" means any one or a combination of tanks, including connected pipes, that is used to contain an accumulation of hazardous substances, and the volume of which, including the volume of connected underground pipes, is 10% or more beneath the surface of the ground. The term does not include any of the following or pipes connected to any of the following:

(a) Septic tanks.

(b) Pipeline facilities, including gathering lines, regulated under:

1. The Natural Gas Pipeline Safety Act of 1968 (49 USC App. 1671, et seq.).

2. The Hazardous Liquid Pipeline Safety Act of 1979 (49 USC App. 2001, et seq.).

3. State laws comparable to the provisions of the law referred to in subd. 1. or 2. for intrastate pipeline facilities.

(c) Surface impoundments, pits, ponds or lagoons.

(d) Storm water or waste water collection systems.

(e) Flow-through process tanks.

(f) Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations.

(g) Storage tanks situated in an underground area, such as, but not limited to, a basement, cellar, mineworking, drift, shaft or tunnel, if the storage tank is situated upon or above the surface of the floor.

Note: This definition of "underground storage tank" is based on the definition found in s. ILHR 10.01(98).

(49) "Used oil" means any petroleum-derived or synthetic oil which, as a result of use or management, is contaminated. Used oil includes, but is not limited to, the following:

1. Engine, turbine and gear lubricants.

2. Hydraulic fluid, including transmission fluid.

3. Metalworking fluid, including cutting, grinding, machining, rolling, stamping, quenching and coating oils.

4. Insulating fluid or coolant.

Note: Used oil includes engine waste oil as defined in sub. (12).

(50) "Used oil burner" means a facility where used oil not meeting the specification requirements in s. NR 590.09 is burned for energy recovery in devices identified in s. NR 590.72.

(51) "Used oil collection center" means any site or facility that accepts, aggregates and stores used oil collected from used oil generators regulated under subch. II who bring used oil to the collection center in shipments of no more than 55 gallons under the provisions of s. NR 590.15. Used oil collection centers may also accept used oil from consumers.

(52) "Used oil fuel" means any fuel designated by the department by rule that contains used oil or is produced from used oil or from a combination of used oil or other material. As used in this chapter, used oil fuel means used oil when burned for energy recovery.

(53) A "used oil generator" is any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

(54) "Used oil processor or re-refiner" means a facility that processes or re-refines used oil.

(55) "Used oil transporter" means any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities.

(56) "Very small quantity generator" or "VSQG" means any person who generates in a calendar month a total of less than 100 kilograms (220 pounds) of hazardous waste and does not accumulate at any time quantities of hazardous waste greater than 1000 kilograms (2,205 pounds) and does not exceed the limitations in s. NR 610.09 on generating or accumulating acute hazardous waste.

(57) "Waste oil" is defined in s. 159.15(1)(k), Stats.

(58) "Wetland" means an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

NR 590.04 EXEMPTIONS. (1) GENERAL EXEMPTIONS. The following are exempt from regulation under this chapter, except for the prohibitions in s. NR 590.05:

(a) Mixtures of used oil and diesel fuel. Mixtures of used oil and diesel fuel that are mixed on-site by the generator of the used oil for use in the generator's own vehicles are not subject to this chapter once the used oil and diesel fuel have been mixed.

Note: Prior to mixing, the used oil is regulated under ss. NR 590.11 to 590.15.

(b) Materials derived from used oil. 1. Materials that are reclaimed from used oil that are used beneficially and are not burned for energy recovery or used in a manner constituting disposal are:



a. Not used oil and thus are not subject to this chapter, and

b. Not solid wastes and are thus not subject to hazardous waste regulations.

2. Re-refining distillation bottoms that are used as feedstock to manufacture asphalt products are:

a. Not subject to this chapter, and

b. Not subject to hazardous waste regulations.

(c) Used oil introduced into crude oil or natural gas pipelines. Used oil that is placed directly into a crude oil or natural gas pipeline is exempt from the requirements of this chapter once the used oil is introduced to the pipeline.

Note: Prior to the point of introduction to the pipeline the used oil is subject to the management standards of this chapter, as stated in s. NR 590.02(5).

(d) Used oil on vessels. Used oil produced on vessels from normal shipboard operations is not subject to the requirements of this chapter until it is transported ashore.

Note: Once the used oil is transported ashore, the used oil is subject to the requirements of this chapter, as stated in s. NR 590.02(6).

(e) Farmers. Farmers who generate an average of 25 gallons per month or less of used oil from vehicles or machinery used on the farm in a calendar year are not subject to the requirements of this chapter except for the prohibitions identified in s. NR 590.05.

(f) Consumers. Consumers are not subject to the requirements of this chapter except for the prohibitions identified in s. NR 590.05.

(2) LIMITED EXEMPTIONS. The following are exempt from regulation under this chapter, except for the prohibitions in s. NR 590.05, but may be regulated under another program:

(a) Persons who manage hazardous waste by mixing hazardous waste with used oil. This constitutes the treatment of hazardous waste and the provisions of chs. NR 600 to 685 apply to such activities, except as provided in s. NR 590.14(2). This mixture is regulated under s. NR 590.10.

(b) Persons who manage used oil that has been mixed with PCBs. The provisions of ch. NR 157 apply to the management of PCBs, including used oil that contains PCBs.

(c) Persons who manage used oil not destined for recycling or who own or operate facilities that manage used oil by some method other than recycling. The department presumes that used oil is to be recycled. Facilities that manage used oil that is hazardous waste, and that will not be recycled are subject to regulation under chs. NR 600 to 685, as applicable. Facilities that manage used oil that is not hazardous waste, and that will not be recycled are subject to regulation under chs. NR 500 to 522, as applicable.

Note: Persons complying with all the requirements of this chapter are exempt from obtaining a solid waste processing license under ch. NR 502 for the processing of used oil to be recycled. If other solid wastes are processed, then a license must be obtained for the processing of the other solid wastes.

(d) Materials derived from used oil that are disposed. Except as provided in sub. (1)(b), materials derived from used oil that are disposed of or used in a manner constituting disposal are:

1. Not used oil and thus are not subject to this chapter, and
2. Are subject to solid waste regulations and to hazardous waste regulations if the materials are identified as hazardous waste.

(e) Wastewater. Wastewater, the discharge of which is subject to regulation under chs. NR 200 to 299, contaminated with de minimis quantities of used oil is not subject to the requirements of this chapter.

Note: "De minimis" quantities of used oils are small spills, leaks or drippings from pumps, machinery, pipes, and other similar equipment during normal operations or small amounts of oil lost to the wastewater treatment system during washing or draining operations. This exception will not apply if the used oil is discarded as a result of abnormal manufacturing operations resulting in substantial leaks, spills or other releases, or to used oil recovered from wastewaters.

(f) Rebuttable presumption for used oil. The rebuttable presumption for used oil of s. NR 590.11 applies to used oil managed by generators. Under the rebuttable presumption for used oil of s. NR 590.11, used oil containing greater than 1,000 ppm total halogens is presumed to be a hazardous waste and thus shall

be managed as hazardous waste and not as used oil unless the presumption is successfully rebutted. However, the rebuttable presumption does not apply to certain metalworking oils or fluids and certain used oils removed from refrigeration units.

NR 590.05 PROHIBITIONS. The following activities are prohibited:

(1) No person may dispose of waste oil in surface impoundments or waste piles.

(2) (a) No person may dispose of waste oil or material containing waste oil in a solid waste disposal facility, except as provided in par. (b).

(b) Material containing, or otherwise contaminated with, minimal amounts of oil from which the oil has been removed to the extent possible such that no visible signs of free flowing oil remain in or on the material, may be disposed of in a solid waste disposal facility, provided the material is not listed or identified as hazardous waste.

Note: The Department encourages the recycling of used oil including oil-soaked rags and similar materials, by the use of laundering services, burning for energy recovery and other recycling methods.

Note: Disposal of petroleum contaminated soil and materials into solid waste disposal facilities shall be done in accordance with the applicable provisions of chs. NR 419, 506 and 722.

(c) Oil drained or removed from materials containing or otherwise contaminated with oil is subject to regulation as used oil.

Note: The Department encourages that solid waste material from which oil is removed, such as used oil filters that have been drained in accordance with s. NR 605.05(1)(v), be recycled. If the material cannot be recycled, it should be properly characterized and disposed of in accordance with the requirements of chs. NR 500 to 520 and NR 600 to 685.

(d) No person may mix oil with other material for the purpose of avoiding the prohibition of s. 159.07(1m)(b) Stats.

(3) No person may burn waste oil in a solid waste treatment facility without energy recovery.

Note: According to 159.07(1m)(b), Stats., no person may dispose of waste oil in a solid waste disposal facility or burn

waste oil without energy recovery in a solid waste treatment facility.

(4) No person may use used oil for dust suppression or road treatment.

(5) The land treatment of used oil is prohibited, except as allowed by ch. NR 518.

(6) No person may place noncontainerized or bulk used oil in any salt dome formation, underground mine or cave.

(7) Except as allowed by s. NR 590.14, no person may burn off-specification used oil for energy recovery, except in any of the following devices:

(a) Industrial furnaces identified in s. NR 590.03.

(b) Boilers, as defined in s. NR 590.03, and as identified as follows:

1. Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes.

2. Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale.

(c) Hazardous waste incinerators subject to regulation under ch. NR 665 or 40 CFR 266 Subpart H.

(8) Except as allowed by s. NR 590.14(2), no person may mix hazardous waste with used oil without first obtaining a license to treat hazardous waste pursuant to ch. NR 680.

NR 590.06 APPLICABILITY OF OTHER REGULATIONS. (1) GENERAL. The provisions of this chapter do not exempt any person from any other regulations, except as explicitly stated in this chapter.

Note: The following regulations may apply:

(a) Chapters NR 158, "Notification of the Discharge of Hazardous Substances," and NR 705 - "Discharge Reporting and Source Confirmation for Underground Storage Tank Systems."

(b) Chapters NR 500 to 520 - "Solid and Hazardous Waste Management."

(c) Chapters NR 600 to 685 - "Hazardous Waste Management."

(d) Chapter ILHR 10 - "Flammable and Combustible Liquids."

(e) Chapters NR 700 to 736, "Investigation and Remediation of Environmental Contamination."

(2) USED OIL DISCHARGES. (a) In the event of a discharge of used oil, appropriate immediate action shall be taken to protect human health and the environment, including notifying appropriate authorities, diking the discharge area, and remediating affected areas. Spill response actions shall follow chs. NR 700 to 736.

(b) If a discharge of used oil occurs, the person managing the oil shall do all of the following:

1. Comply with the requirements of s. 144.76, Stats., and chs. NR 158 and 705.

2. Telephone the division of emergency government.

Note: The division of emergency government's 24-hour toll-free number is 1-(800)943-0003.

3. Notify the department of natural resources.

4. If the discharge occurs in the course of transport, give notice as required by 49 CFR 171.15, October 1, 1993, to the national response center at (800) 424-8802.

5. If the discharge occurs in the course of transport, report in writing as required by 49 CFR 171.16, October 1, 1993, to the director, office of hazardous materials regulations, materials transportation bureau, U. S. DOT, Washington, D.C. 20590.

(c) A bulk shipment water transporter who has discharged used oil shall give the same notice as required by 33 CFR 153.203, July 1, 1993, for oil and hazardous substances.

Note: The publications containing the CFR references may be obtained from:

Superintendent of Documents  
U.S. Government Printing Office  
P.O. Box 371954  
Pittsburgh, PA 15250-7954  
(202) 783-3238

(d) The removal and subsequent containerization, transportation and management of spilled used oil shall be in compliance with the provisions of this chapter and chs. NR 500 to

520 and 600 to 685 applicable to solid and hazardous waste management.

(e) If the department determines that immediate removal of the used oil is necessary to protect human health or the environment, the department may authorize the removal of the waste by transporters who do not have transportation licenses or EPA identification numbers.

NR 590.07 NOTIFICATION. (1) EXISTING ACTIVITIES. Except as provided in sub. (5), any person subject to subchs. IV to VII shall, within 90 days of the effective date of this chapter, [Revisor: insert date] notify the department and EPA of the activities, unless that person has previously notified the EPA in compliance with the notification requirements of 42 USC 6930, or is otherwise exempted from this chapter under s. NR 590.04.

(2) NEW ACTIVITIES. Any person who will own or operate a facility subject to subchs. IV, V, VI or VII shall notify the department and EPA at least 30 days prior to the initiation of these activities, unless the person is otherwise exempted from this requirement under s. NR 590.04.

(3) SEPARATE FORMS REQUIRED. Separate notification forms shall be submitted to the department and EPA in accordance with sub. (1) or (2) for each transportation service, processing, re-refining, marketing and burning facility.

Note: In order to obtain an identification number, a notification form shall be filed in accordance with this section.

(4) CONTENTS OF NOTIFICATION FORM. The notification form shall be provided by the department upon request and shall contain all of the following information:

(a) The name of the transportation service or processing, marketing, re-refining or burning facility.

(b) The mailing address of the transportation service or facility.

(c) The location of the transportation service or facility.

(d) The name and telephone number of a responsible individual at the transportation service or facility who can be contacted for clarification of information submitted in the notification.

(e) The name of the operator and the owner of the transportation service or facility.

(f) The types of used oil activity conducted, such as:

1. The transportation, processing, re-refining, burning or marketing.

2. Used oil fuel activities.

(g) The type of combustion device for waste fuel burning.

(h) The mode of transportation.

(i) Whether this is the first, or a subsequent, notification of used oil or hazardous waste activities.

(j) Transportation services shall include the location of all transfer facilities at which used oil is stored.

(k) A certification stating: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submittal information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment." This certification shall be signed by the owner or operator, or an authorized representative, of the transportation service or facility.

Note: The notification form may be obtained from the Department of Natural Resources, P.O. Box 8094, Madison, Wisconsin 53708 at no charge.

Note: Generators and used oil collection centers, including used oil aggregation points and consumer used oil collection centers, are not required to notify.

NR 590.08 USED OIL ANNUAL REPORT. Any person who is subject to subch. V, VI or VII shall submit an annual report to the department on a form supplied by the department. All activities conducted at a facility covered by this chapter shall be reported in a single annual report. The annual report shall be submitted by March 1 for activities performed during the previous calendar year. The annual report shall contain all of the following information:

(1) Name and address of the facility processing, re-refining, burning or marketing used oil.

(2) Types of activities conducted at the facility.

- (3) Size or capacity of facility for each waste activity.
- (4) Contact person and phone number.
- (5) Calendar year on which each report is based.
- (6) Total amount of used oil managed on-site in gallons for the calendar year.
- (7) Total amount of used oil accepted from off-site transporters and facilities, in gallons, for the calendar year.
- (8) Total amount of used oil accepted from outside Wisconsin, in gallons, for the calendar year, including the amount from each jurisdiction.
- (9) Total amount of used oil, in gallons, managed on site by activity identified in sub. (2) during the calendar year.
- (10) Total gallons of used oil transported off-site during the calendar year; the name and transportation license number of each transporter used to transport used oil off-site; the type of each facility to which used oil was transported and the total gallons of used oil transported to each type of facility and activity conducted there.
- (11) A statement of how much of the used oil managed during the calendar year has been accounted for and an explanation of any shipments of used oil shipped off-site that are not accounted for.
- (12) Signature of the administrator or chief executive officer of the used oil facility.
- (13) Date of signature.

NR 590.09 USED OIL SPECIFICATIONS. (1) Used oil burned for energy recovery, and any fuel produced from used oil by processing, blending or other treatment, is regulated under this chapter unless it is shown not to exceed any of the allowable levels of the constituents and properties in the specification shown in Table 1. Once used oil that is to be burned for energy recovery has been shown not to exceed any specification and the person making that showing complies with ss. NR 590.07, 590.84 and 590.85(2), the used oil is no longer regulated under this chapter.

(2) Generators, transporters, marketers, processors, re-refiners or burners may determine that used oil to be burned for energy recovery meets these specifications by performing analyses



or by obtaining copies of analyses or other information documenting that the used oil meets these specifications.

Table 1-Used Oil Not Exceeding Any Specification Level Is Not Subject to This Chapter When Burned for Energy Recovery<sup>1</sup>

Constituent/property	Allowable level
Arsenic	5 ppm maximum.
Cadmium	2 ppm maximum.
Chromium	10 ppm maximum.
Lead	100 ppm maximum.
Flash point	100 °F minimum.
Total halogens	4,000 ppm maximum. <sup>2</sup>

Note: <sup>1</sup>The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste [see s. NR 590.10].

Note: <sup>2</sup>Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under s. NR 590.11. Such used oil is subject to ch. NR 665 and 40 CFR 266 Subpart H rather than this chapter when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

Note: Applicable standards for the burning of PCBs are imposed by s. NR 157.07(2).

Note: On specification used oil must be managed in accordance with applicable DILHR regulations concerning its storage and burning.

NR 590.10 MIXTURES OF USED OIL AND WASTE. (1) MIXING HAZARDOUS WASTE WITH USED OIL. Mixing hazardous waste with used oil constitutes treatment of hazardous waste except as allowed by s. NR 590.14(2). No person may treat hazardous waste without an interim license issued under s. NR 680.22 or a license issued under s. NR 680.32.

(2) LISTED HAZARDOUS WASTE. Mixtures of used oil and hazardous waste that is listed in s. NR 605.09 are subject to regulation as hazardous waste under chs. NR 600 to 685, rather than as used oil under this chapter.

(3) CHARACTERISTIC HAZARDOUS WASTE. Mixtures of used oil and hazardous waste that exhibits one or more hazardous waste characteristic identified in s. NR 605.08 are subject to:

(a) Except as provided in par. (c), regulation as hazardous waste under chs. NR 600 to 685 rather than as used oil under this chapter, if the resultant mixture exhibits any characteristics of hazardous waste identified in s. NR 605.08; or

(b) Regulation as used oil under this chapter, if the resultant mixture does not exhibit any characteristics of hazardous waste identified under s. NR 605.08.

(c) Regulation as used oil under this chapter, if the mixture is of used oil and a waste which is hazardous solely

because it exhibits the characteristic of ignitability and is not listed in s. NR 605.09, or is listed solely because it exhibits the characteristic of ignitability, provided that the mixture does not exhibit the characteristic of ignitability under s. NR 605.08(2).

(4) VERY SMALL QUANTITY GENERATOR HAZARDOUS WASTE. Mixtures of used oil and waste which is hazardous solely because it exhibits the characteristic of ignitability, or is listed solely because it exhibits the characteristic of ignitability, from very small quantity generators regulated under s. NR 610.07 are subject to regulation as used oil under this chapter.

(5) MIXTURES OF USED OIL WITH NON-HAZARDOUS SOLID WASTES. Mixtures of used oil and non-hazardous solid waste are subject to regulation as used oil under this chapter provided the mixing is conducted in accordance with a solid waste processing license issued under ch. NR 502.

NR 590.11 REBUTTABLE PRESUMPTION FOR USED OIL. (1) Used oil containing greater than or equal to 1,000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in s. NR 605.09. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste.

Note: An analytical method from SW-846, Edition III, is an example of a method that could be used to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix IV of ch. NR 605.

Note: EPA Publication SW-846, Third Edition, is available from the Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. 202-783-3238 (document number 955-001-00000-1).

(a) The rebuttable presumption does not apply to metalworking oils or fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement as described in s. NR 590.15(3), to reclaim metalworking oils or fluids. The presumption does apply to metalworking oils or fluids if such oils or fluids are recycled in any other manner.

(b) The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.

(2) To ensure that used oil is not a hazardous waste under the rebuttable presumption, any person subject to subchs. IV to VI shall determine whether the total halogen content of used oil being managed is greater than or equal to, or below 1,000 ppm.

(3) Any person subject to subch. IV, V, or VI shall determine if the used oil contains greater than or equal to, or below 1,000 ppm total halogens by:

(a) Testing the used oil; or

(b) Applying knowledge of the halogen content of the used oil in light of the materials or processes used.

(4) A burner who receives used oil from a processor or refiner subject to regulation under subch. V, may use information provided by the processor or re-refiner.

(5) Records retention. Records of analyses conducted or information used to comply with subs. (1), (2), and (3) shall be maintained for at least 3 years.

## SUBCHAPTER II

### STANDARDS FOR USED OIL GENERATORS

NR 590.12 APPLICABLE GENERATOR PROVISIONS. (1) Generators of used oil shall comply with this subchapter and subch. I.

(2) Used oil generators who conduct the following activities are subject to the requirements of other provisions of this chapter as indicated in pars. (a) to (d):

(a) Generators who transport used oil, except under the self-transport provisions of s. NR 590.15(1) and (2), shall also comply with subch. IV.

(b) Except as provided in s. NR 590.50(3), generators who process or re-refine used oil shall also comply with subch. V.

(c) Except as provided in s. NR 590.14, generators who burn off-specification used oil for energy recovery, shall also comply with subch. VI.

(d) Generators who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications in s. NR 590.09 shall also comply with subch. VII.

NR 590.13 USED OIL STORAGE. Used oil generators are subject to all applicable Spill Prevention, Control and Countermeasures (SPCC) requirements in accordance with 40 CFR 112, July 1, 1993, in addition to the requirements of this chapter. If the owner or operator has already prepared an SPCC plan, then this plan shall only be amended to incorporate the requirements of this chapter. Used oil generators are also subject to the standards of ch. ILHR 10 for the storage of used oil in tanks and containers whether or not the used oil exhibits any characteristics of hazardous waste in addition to the requirements of this chapter.

Note: Used oil generators are also responsible for complying with the requirements of chs. NR 158 and NR 705.

(1) STORAGE UNITS. Used oil generators may not store used oil in units other than the following:

- (a) Tanks subject to regulation under ILHR 10, or
- (b) Containers.

(2) CONDITION OF UNITS. Containers and tanks used to store used oil at generator facilities:

- (a) Shall be in good condition, having no severe rusting, apparent structural defects or deterioration; and
- (b) May not be leaking.

(3) AISLE SPACE. Container aisle space shall be a minimum of 3 feet in width to allow for observation of the condition of the containers and to allow for proper response in the event of a release.

(4) LABELS. (a) Containers and aboveground tanks used to store used oil at generator facilities shall be labeled or marked clearly with the words "Used Oil." No other substance may be placed in a tank so labelled.

(b) Fill pipes used to transfer used oil into underground storage tanks at generator facilities shall be labeled or marked clearly with the words "Used Oil."

(5) RESPONSE TO RELEASES. Upon detection of a release of used oil to the environment, a generator shall perform all of the following cleanup steps:

- (a) Stop the release.
- (b) Contain the released used oil.

(c) Clean up and manage properly the released used oil and other materials.

(d) If necessary to prevent future releases, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(e) Comply with the requirements of s. NR 590.06(2).

NR 590.14 ON-SITE BURNING IN SPACE HEATERS. (1) Generators may burn used oil in used oil-fired space heaters provided that all of the following conditions are met:

(a) The heater burns only used oil that the owner or operator generates on-site or used oil received directly from consumer used oil generators.

Note: Used oil which has been collected from a consumer and aggregated by a second party is no longer consumer used oil once it is received by a third party.

(b) The heater is designed to have a maximum capacity of not more than 0.5 million Btu per hour.

(c) The combustion gases from the heater are vented to the ambient air.

(d) The heater has been approved by DILHR for the burning of used oil.

(e) The used oil burned in the heater is not hazardous waste according to the rebuttable presumption in s. NR 590.11 and does not exceed the specification levels for flash point and total halogens in s. NR 590.09.

(2) Very small quantity generators (VSQGs) subject to s. NR 610.07 may mix their used oil and waste which is hazardous solely because it exhibits the ignitability characteristic, such as ignitable-only mineral spirits, provided the resultant mixture does not exhibit the ignitability characteristic in s. NR 605.08(2), for the purpose of burning the mixture in an on-site space heater provided the requirements of sub. (1) are met.

Note: Used oil which fails the rebuttable presumption test of s. NR 590.11 is presumed to be hazardous waste and is subject to regulation under chs. NR 600 to 685. Except as allowed in sub. (2), generators of used oil may not mix used oil and hazardous waste without a hazardous waste treatment license.

NR 590.15 OFF-SITE SHIPMENTS. Except as provided in this section, generators shall ensure that their used oil is

transported only by transporters who have obtained EPA identification numbers and possess a solid waste transporter's license issued pursuant to s. NR 502.06.

(1) SELF-TRANSPORTATION OF SMALL AMOUNTS TO COLLECTION CENTERS. Generators may transport, without an EPA identification number, used oil that is generated at the generator's site and used oil collected from consumers to a used oil collection center provided all of the following conditions are met:

(a) The generator transports the used oil in a vehicle owned by the generator.

(b) The generator transports no more than 55 gallons of used oil at any time.

(c) The generator transports the used oil to a used oil collection center that is regulated under subch. III.

(2) SELF-TRANSPORTATION OF SMALL AMOUNTS TO AGGREGATION POINTS OWNED BY THE GENERATOR. Generators may transport, without an EPA identification number, used oil that is generated at the generator's site to an aggregation point provided all of the following conditions are met:

(a) The generator transports the used oil in a vehicle owned by the generator.

(b) The generator transports no more than 55 gallons of used oil at any time.

(c) The generator transports the used oil to an aggregation point that is owned or operated by the same generator.

(3) TOLLING ARRANGEMENTS. Used oil generators may arrange for used oil to be transported by a transporter without an EPA identification number if the used oil is reclaimed under a contractual agreement pursuant to which reclaimed oil is returned by the processor or re-refiner to the generator for use as a lubricant, cutting oil or coolant. The contract shall indicate all of the following:

(a) The type of used oil and the frequency of shipments.

(b) That reclaimed oil will be returned to the generator.

(c) That the vehicle used to transport the used oil to the processing or re-refining facility and to deliver recycled used oil back to the generator is owned and operated by the used oil processor or re-refiner.

(d) That the vehicle has a solid waste transportation license issued pursuant to s. NR 502.06.

### SUBCHAPTER III

#### STANDARDS FOR USED OIL COLLECTION CENTERS AND AGGREGATION POINTS

NR 590.20 USED OIL COLLECTION CENTERS. (1) APPLICABILITY. Owners and operators of used oil collection centers, consumer used oil collection centers and generator used oil aggregation points shall comply with subchs. I and II and this subchapter.

(2) EXEMPTIONS. (a) Owners and operators of generator used oil aggregation points are exempt from the following:

1. The minimum standards requirements in s. NR 590.22 provided used oil is not accepted from consumers.

2. The plan of operation requirements in s. NR 590.23.

(b) Owners and operators of used oil collection centers that do not accept used oil from consumers are exempt from the plan of operation requirements in s. NR 590.23.

Note: Used oil in shipments in quantities greater than 55 gallons may only be transported by a licensed solid waste transporter in accordance with subch. IV. As stated in s. NR 590.35(1), a used oil transporter may only ship used oil to another transporter, a processor or re-refiner, an off-specification burner, or an on-specification burner.

NR 590.21 MUNICIPAL AND RETAIL ENGINE WASTE OIL COLLECTION CENTERS. (1) ENGINE WASTE OIL COLLECTION CENTERS MAINTAINED BY RETAIL SALES ESTABLISHMENTS. (a) All retail sales establishments in the state shall either:

1. Establish and maintain a used oil collection center and post at least one sign at the location of the sale of automotive engine oil to consumers which contains wording similar to: "Engine oil collection center. Please return your used oil here."; or

2. Post at least one sign at the location of the sale of automotive engine oil to consumers which contains wording similar to: "Engine waste oil can be recycled. Please return your oil to an engine waste oil storage center. The nearest center is located \_\_\_\_\_ and is open \_\_\_\_\_," and which describes the location and days and hours of operation of the nearest engine waste oil collection center.

(b) A retail sales establishment that maintains or proposes to establish an engine waste oil collection center which complies with this chapter is exempt from the requirements of ss. 144.44, 144.46, 144.63, and 144.64, Stats., and rules promulgated under those sections with respect to that facility.

(2) ENGINE WASTE OIL COLLECTION CENTERS MAINTAINED BY MUNICIPALITIES. A city, county, village or town located in a county with a population of 50,000 or more shall establish and maintain, or otherwise provide for, adequate engine waste oil collection if such facilities do not exist. A county with a population of less than 50,000 shall establish and maintain, or otherwise provide for, adequate engine waste oil collection and storage centers if such facilities do not exist. As used in this subsection, adequate engine waste oil collection centers means at least the minimum number of separate engine waste oil collection and storage facilities as set forth in pars. (a) and (b), each with a capacity of at least 250 gallons and each located so as to be accessible to the public. A tank is considered accessible to the public if its location is reasonably convenient for use by the residents of the municipality in question and if that location is indicated by means of adequate signs. A municipal engine waste oil collection center is a consumer used oil collection center.

(a) The minimum number of engine waste oil collection centers for a city, village, or town located in a county with a population of 50,000 or more is:

1. Zero, if the population is less than 3,500.
2. One, if the population is at least 3,500 but less than 25,000.
3. Two, if the population is at least 25,000 but less than 100,000.
4. Three, if the population is at least 100,000 plus one additional center for each additional 100,000 of population.

(b) The minimum number of engine waste oil collection centers for a county with a population under 50,000 is one.

(c) A municipality which submits to the department, prior to the construction of a new center, a plan of operation that meets the requirements of s. NR 590.23 and which constructs and maintains, or provides for, an engine waste oil collection center that complies with the applicable standards in s. NR 590.22 is exempt from the requirements of ss. 144.44, 144.46, 144.63 and 144.64, Stats., and rules promulgated under those sections with respect to that center.



(d) If adequate used oil collection centers already exist, a municipality is not required to establish additional centers. To be considered adequate, the centers shall be in compliance with applicable requirements of this chapter. The centers may be publicly or privately owned and operated.

NR 590.22 MINIMUM STANDARDS FOR USED OIL COLLECTION CENTERS.

(1) LOCATIONAL CRITERIA. (a) A used oil collection center may not be located in a wetland or a critical habitat area.

(b) The siting of a used oil collection center shall be done in accordance with all applicable local, state or federal laws.

(2) DESIGN STANDARDS. (a) General standards. The following standards are applicable to used oil collection centers.

Note: These standards are in addition to those found in ch. ILHR 10.

1. Used oil collection centers shall be designed and maintained so that they are leak-proof.

2. Used oil collection centers shall be permanently located, stationary or mobile structures properly anchored or otherwise designed and constructed to prevent any spillage of oil.

3. Owners and operators of all used oil collection centers shall have in place a spill control plan adequate to ensure that no spillage or leakage from any engine used oil or used oil tank be released to the environment.

4. Tanks used for used oil collection or storage or both shall have spill containment, as in ch. ILHR 10, a level gauge, or some other adequate means for checking the level of oil in the tank, have adequate venting and an exterior constructed of noncorrosive materials, or be treated so as to make the exterior materials noncorrosive. Such tanks shall be of any shape or type consistent with sound engineering design. Each storage area shall have a containment system designed and constructed to have a continuous base which is free of cracks or gaps and is impervious to the material to be stored, and will contain any discharges, leaks or spills and precipitation until the collected material is detected and can be removed. The base of the storage areas shall be sloped or the containment system shall be otherwise designed and operated to drain and remove liquids resulting from discharges, leaks, spills and any precipitation, unless the tanks are elevated or are otherwise protected from contact with accumulated liquids. The storage areas shall have a secondary containment structure with a minimum capacity equal to 125% of the contents of the largest tank.

5. Used oil collection centers shall be installed and maintained in accordance with sound engineering practice.

6. A collection center may serve as both a used oil collection center and a used oil storage facility.

7. A sign shall be located at the collection center which contains wording: "Engine waste oil (or used oil) collection only. Depositing other material is prohibited. No smoking." The sign shall also give information regarding proper disposal of gasoline and other flammable liquids.

(b) Above-ground tanks. The standards found in ch. ILHR 10 apply to the design and installation of above-ground tanks.

(c) Underground tanks. The standards found in ch. ILHR 10 apply to the design and installation of underground tanks.

(3) OPERATIONAL REQUIREMENTS. The following operational requirements apply to all used oil collection centers:

(a) The owner or operator of the center shall insure that all containment devices, including tanks, pipes and containers used for the collection or storage of used oil, are inspected at least once a week.

(b) The owner or operator shall insure that the tank level is checked at least once a week, by the use of either a level gauge or some other means of checking the level of oil in the tank, and shall ensure that the tank is emptied before it becomes full, to avoid any overfilling and spillage.

(c) Any deterioration of a containment device observed during the weekly inspection shall be noted on the inspection log and remedied on a schedule that ensures that the device will not leak or rupture.

(d) Upon detection of a release of used oil to the environment, the owner or operator of a collection center shall perform all of the following cleanup steps:

1. Stop the release.
2. Contain the released used oil.
3. Clean up and manage properly the released used oil and other materials.
4. If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

5. Comply with the requirements of s. NR 590.06(2).

(e) The owner or operator of the center shall comply with all applicable environmental protection statutes and administrative rules, including s. 144.76, Stats., and chs. NR 158 or 705.

(f) The owner or operator shall comply with all applicable safety regulations.

NR 590.23 PLANS OF OPERATION. (1) Owners and operators of used oil collection centers that accept used oil from consumers shall prepare a plan of operation for the collection center.

(2) A plan of operation shall contain all of the following information:

(a) The name of the municipality in which the center is located.

(b) The population of the municipality and, where the municipality is a city, village, or town, the population of the county in which the municipality is located.

(c) The name of the owner and the name of the operator of the collection center.

(d) A general description of the collection center or proposed collection center, including the type of above-ground or underground tanks which are being used or are proposed to be used, and the capacity of each tank and container storage area, a plan sheet showing tank and container configuration and minimum container aisle space.

(e) A statement that tanks have been evaluated for compliance with ch. ILHR 10 and that all ch. ILHR 10 requirements are met.

(f) A description of what is done or is proposed to be done with the used oil, including the name and address of any recycling facility or transportation service that is to be used.

(g) A map of the municipality indicating the location of the collection center or proposed center and a section, quartersection description of the facility.

(3) The plan of operation shall be maintained on-site and be provided to the department in the event of an inspection.

## SUBCHAPTER IV

## STANDARDS FOR USED OIL TRANSPORTERS AND TRANSFER FACILITIES

NR 590.30 APPLICABILITY. This subchapter applies to all used oil transporters, except as provided in subs. (1) to (4):

(1) This subchapter does not apply to on-site transportation.

(2) This subchapter does not apply to generators who transport used oil in shipments of 55 gallons or less from the generator to a used oil collection center as specified in s. NR 590.15(1).

(3) This subchapter does not apply to generators who transport used oil in shipments of 55 gallons or less from the generator to a used oil aggregation point owned or operated by the same generator as specified in s. NR 590.15(2).

(4) This subchapter does not apply to transportation of used oil by consumers to a regulated used oil generator, collection center, aggregation point, processor or re-refiner, or burner subject to this chapter.

NR 590.31 IMPORTS AND EXPORTS. Transporters who import used oil from abroad or export used oil outside of Wisconsin are subject to the requirements of this subchapter from the time the used oil enters and until the time it exits Wisconsin. Transporters who import used oil from abroad or export used oil outside of the United States are subject to the requirements of 40 CFR Part 279 from the time the used oil enters and until the time it exits the United States.

NR 590.32 TRUCKS USED TO TRANSPORT HAZARDOUS WASTE. Trucks previously used to transport hazardous waste shall be emptied as described in s. NR 605.06 prior to transporting used oil. Used oil mixed with the hazardous waste in a truck shall be managed as hazardous waste unless, under the provisions of s. NR 590.10, the mixture of hazardous waste and used oil is determined not to be hazardous waste.

NR 590.33 OTHER APPLICABLE PROVISIONS. Used oil transporters who conduct the following activities are also subject to other applicable provisions of this chapter as indicated in subs. (1) to (4):

(1) Transporters who generate used oil shall also comply with the requirements for used oil generators found in subch. II;

(2) Transporters who process or re-refine used oil, except as provided in s. NR 590.31, shall also comply with the requirements for processors and re-refiners found in subch. V;

(3) Transporters who burn off-specification used oil for energy recovery shall also comply with the requirements for burners of off-specification used oil found in subch. VI.

(4) Transporters who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in s. NR 590.09 shall also comply with subch. VII.

NR 590.34 RESTRICTIONS ON TRANSPORTERS WHO ARE NOT ALSO PROCESSORS OR RE-REFINERS. (1) Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation. However, except as provided in sub. (2), used oil transporters may not process used oil unless they also comply with the requirements for processors and re-refiners in subch. V.

(2) Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation, such as settling and water separation, but that are not designed to produce or make more amenable for production of used oil derived products.

NR 590.35 USED OIL TRANSPORTATION. (1) DELIVERIES. A used oil transporter shall deliver all used oil received to one of the following:

(a) Another used oil transporter, provided that the transporter has obtained an EPA identification number.

(b) A used oil processing or re-refining facility who has obtained an EPA identification number.

(c) An off-specification used oil burner facility who has obtained an EPA identification number.

(d) An on-specification used oil burner facility.

(2) DOT REQUIREMENTS. Used oil transporters shall comply with all applicable requirements under the U.S. department of transportation regulations in 49 CFR parts 171 to 180. Persons transporting used oil that meets the definition of a hazardous material in 49 CFR 171.8 shall comply with all applicable regulations in 49 CFR parts 171 to 180.

(3) USED OIL DISCHARGES. In the event of a discharge of used oil during transportation, the transporter shall take appropriate immediate action to protect human health and the environment, including notifying appropriate authorities, diking the discharge area and comply with s. NR 590.06(2).

NR 590.36 USED OIL STORAGE AT TRANSFER FACILITIES. Used oil transporters are subject to all applicable Spill Prevention, Control and Countermeasures requirements in accordance with 40 CFR 112, July 1, 1993, in addition to the requirements of this subchapter. If the owner or operator has already prepared an SPCC plan, then this plan shall only be amended to incorporate the requirements of this chapter. Used oil transporters are also subject to the requirements of ch. ILHR 10 for the storage of used oil in tanks and containers, regardless of whether or not the used oil exhibits the characteristics of hazardous waste in addition to the requirements of this chapter.

Note: Used oil transporters are also responsible for complying with the applicable provisions of chs. NR 158 and 705.

(1) **APPLICABILITY.** This section applies to transfer facilities. Used oil transfer facilities are transportation related facilities including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours during the normal course of transportation and not longer than 35 days. Transfer facilities that store used oil for more than 35 days are subject to regulation as a processor or re-refiner under subch. V.

(2) **STORAGE UNITS.** Owners or operators of used oil transfer facilities may not store used oil in units other than:

(a) Tanks subject to regulation under ch. ILHR 10, or

(b) Containers meeting U.S. DOT packaging requirements in 49 CFR Parts 173 and 178.

(3) **CONDITION OF UNITS.** Containers and aboveground tanks used to store used oil at transfer facilities:

(a) Shall be in good condition; and

(b) May not be leaking.

(4) **SECONDARY CONTAINMENT FOR CONTAINERS.** Containers used to store used oil at transfer facilities shall be equipped with a secondary containment system.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dikes, berms or retaining walls; or

2. An equivalent secondary containment system.

(b) The entire containment system, including walls and floors, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(5) SECONDARY CONTAINMENT FOR ABOVEGROUND TANKS. Existing aboveground tanks used to store used oil at transfer facilities shall be equipped with a secondary containment system within 6 months of the effective date of these rules [Revisor: insert date]. New above ground tanks shall be equipped with secondary containment prior to accepting any used oil.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dike, berm or retaining wall; or
2. An equivalent secondary containment system.

(b) The entire containment system, including walls and floors, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(6) LABELS. (a) Containers and aboveground tanks used to store used oil at transfer facilities shall be labeled or marked clearly with the words "Used Oil." No other substance may be placed in a tank so labeled.

(b) Fill pipes used to transfer used oil into underground storage tanks at transfer facilities shall be labeled or marked clearly with the words "Used Oil."

(7) RESPONSE TO RELEASES. Upon detection of a release of used oil to the environment, the owner or operator of a transfer facility shall perform all of the following cleanup steps:

- (a) Stop the release.
- (b) Contain the released used oil.
- (c) Clean up and manage properly the released used oil and other materials.
- (d) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.
- (e) Comply with the requirements of s. NR 590.06(2).

NR 590.37 TRACKING. (1) ACCEPTANCE. Used oil transporters shall keep a record of each used oil shipment accepted for transport. Records for each shipment shall include all of the following:

(a) The name and address of the generator, transporter, or processor or re-refiner who provided the used oil for transport.

(b) The EPA identification number, if applicable, of the generator, transporter, or processor or re-refiner who provided the used oil for transport.

(c) The quantity of used oil accepted.

(d) The date of acceptance.

(e) The signature, dated upon receipt of the used oil, of a representative of the generator, transporter, or processor or re-refiner who provided the used oil for transport.

(2) DELIVERIES. Used oil transporters shall keep a record of each shipment of used oil that is delivered to another used oil transporter, or to a used oil burner, processor or re-refiner, or disposal facility. Records of each delivery shall include:

(a) The name and address of the receiving facility or transporter.

(b) The EPA identification number of the receiving facility or transporter.

(c) The quantity of used oil delivered.

(d) The date of delivery.

(e) The signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter.

(3) EXPORTS OF USED OIL. Used oil transporters shall maintain the records described in sub. (2) for each shipment of used oil exported to any foreign country.

(4) RECORDS RETENTION. The records described in subs. (1) to (3) shall be maintained for at least 3 years.

NR 590.38 MANAGEMENT OF RESIDUES. Transporters who generate residues from the storage or transport of used oil shall manage the residues as specified in s. NR 590.04(1)(b).



## SUBCHAPTER V

## STANDARDS FOR USED OIL PROCESSORS AND RE-REFINERS

NR 590.50 APPLICABILITY. This subchapter applies to owners and operators of facilities that process used oil. This subchapter does not apply to:

(1) Transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in s. NR 590.34;

(2) Burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in s. NR 590.70(2); or

(3) Generators who perform any of the following activities, provided the used oil is generated on-site and is not being sent off-site to a burner of on-specification or off-specification used oil:

(a) Filtering, cleaning or otherwise reconditioning used oil before returning it for reuse by the generator.

(b) Separating used oil from wastewater generated on-site to make the wastewater acceptable for discharge or reuse pursuant to section 402 or section 307(b) of the Clean Water Act or other applicable federal or state regulations governing the management of wastewaters.

(c) Using oil mist collectors to remove small droplets of used oil from in-plant air to make plant air suitable for continued recirculation.

(d) Draining or otherwise removing used oil from materials containing or otherwise contaminated with used oil in order to remove excess oil to the extent possible.

(e) Filtering, separating or otherwise reconditioning used oil before burning in a space heater pursuant to s. NR 590.14.

NR 590.51 OTHER APPLICABLE PROVISIONS. Used oil processors or re-refiners who conduct the following activities are also subject to the requirements of other applicable provisions of this chapter as follows:

(1) Processors or re-refiners who generate used oil shall also comply with subch. II;

(2) Processors or re-refiners who transport used oil shall also comply with subch. IV;

(3) Except when used oil is burned for purposes of processing used oil, which is considered burning incidentally to used oil processing; processors or re-refiners who burn off-specification used oil for energy recovery shall also comply with subch. VI; and

(4) Processors or re-refiners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in s. NR 590.09 shall also comply with subch. VII.

NR 590.52 GENERAL FACILITY STANDARDS. (1) PREPAREDNESS AND PREVENTION. Owners and operators of used oil processors and re-refiners facilities shall comply with all of the following requirements:

(a) Maintenance and operation of facility. Facilities shall be maintained and operated to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of used oil to air, soil or surface water which could threaten human health or the environment.

(b) Required equipment. All facilities shall be equipped with all of the following equipment, unless none of the hazards posed by used oil handled at the facility could require a particular kind of equipment:

1. An internal communications or alarm system capable of providing immediate emergency instruction, by voice or signal, to facility personnel.

2. A device, such as a telephone, immediately available at the scene of operations, or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams.

3. Portable fire extinguishers, fire control equipment, including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals, spill control equipment and decontamination equipment.

4. Water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers or water spray systems.

(c) Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.

(d) Access to communications or alarm system. 1. Whenever used oil is being poured, mixed, spread or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required by par. (b).

2. If there is ever just one employee on the premises while the facility is operating, the employee shall have immediate access to a device, such as a telephone immediately available at the scene of operation, or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required by par. (b).

(e) Required aisle space. The owner or operator shall maintain aisle space of at least 3 feet in width to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

(f) Arrangements with local authorities. 1. The owner or operator shall attempt to make the following arrangements, as appropriate for the type of used oil handled at the facility and the potential need for the services of these organizations:

a. Arrangements to familiarize police, fire departments and emergency response teams with the layout of the facility, properties of used oil handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility and possible evacuation routes;

b. Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

c. Agreements with state emergency response teams, emergency response contractors and equipment suppliers; and

d. Arrangements to familiarize local hospitals with the properties of used oil handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases at the facility.

2. Where state or local authorities decline to enter into such arrangements, the owner or operator shall document the refusal in the operating record.

(2) CONTINGENCY PLAN AND EMERGENCY PROCEDURES. Owners and operators of used oil processors and re-refiners facilities shall comply with all of the following requirements:

(a) Purpose and implementation of contingency plan. 1. Each owner or operator shall have a contingency plan for the facility. The contingency plan shall be designed to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or non-sudden release of used oil to air, soil or surface water.

2. The provisions of the plan shall be carried out immediately whenever there is a fire, explosion or release of used oil which could threaten human health or the environment.

(b) Content of contingency plan. 1. The contingency plan shall describe the actions facility personnel shall take to comply with pars. (a) and (f) in response to fires, explosions or any unplanned sudden or non-sudden release of used oil to air, soil or surface water at the facility.

2. If the owner or operator has already prepared a spill prevention, control and countermeasures (SPCC) plan in accordance with 40 CFR 112, July 1, 1993, this plan need only be amended to incorporate used oil management provisions that are sufficient to comply with the requirements of this chapter.

3. The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services, pursuant to sub. (1)(f).

4. The plan shall list the name, address and phone number, office and home, of every person qualified to act as emergency coordinator, and this list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates.

5. The plan shall include a list of all emergency equipment at the facility, such as fire extinguishing systems, spill control equipment, communications and alarm systems, internal and external, and decontamination equipment, where this equipment is required. This list shall be kept up to date. In addition, the plan shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

6. The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall describe signals to be used to begin evacuation, evacuation routes and alternate evacuation routes in

cases where the primary routes could be blocked by releases of used oil or fires.

(c) Copies of contingency plan. A copy of the contingency plan and all revisions to the plan shall be:

1. Maintained at the facility; and
2. Submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

(d) Amendment of contingency plan. The contingency plan shall be reviewed, and immediately amended, if necessary, whenever any of the following events occur:

1. Applicable regulations are revised.
2. The plan fails in an emergency.
3. The facility changes, in its design, construction, operation, maintenance or other circumstances, in a way that materially increases the potential for fires, explosions or releases of used oil, or changes the response necessary in an emergency.
4. The list of emergency coordinators changes.
5. The list of emergency equipment changes.

(e) Emergency coordinator. At all times, there shall be at least one employee either on the facility premises or on call, available to respond to an emergency by reaching the facility within a short period of time, with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristic of used oil handled, the location of all records within the facility, and facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

Note: The emergency coordinator's responsibilities are more fully spelled out in par. (f). Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of used oil handled by the facility, and type and complexity of the facility.

(f) Emergency procedures. 1. Whenever there is an imminent or actual emergency situation, the emergency coordinator, or the

designee when the emergency coordinator is on call, shall immediately:

a. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

b. Notify appropriate state or local agencies with designated response roles if their help is needed.

2. Whenever there is a release, fire or explosion, the emergency coordinator shall immediately identify the character, exact source, amount and areal extent of any released materials. The coordinator may do this by observation or review of facility records of manifests and, if necessary, by chemical analysis.

3. Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment shall consider both direct and indirect effects of the release, fire or explosion, including the effects of any toxic, irritating or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions.

4. If the emergency coordinator determines that the facility has had a release, fire or explosion which could threaten human health, or the environment, outside the facility, the coordinator shall comply with the requirements of s. NR 590.06(2).

5. If the assessment of the emergency coordinator indicated that evacuation of local areas may be advisable, the coordinator shall immediately notify appropriate local authorities. The coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

6. During an emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions and releases do not occur, recur or spread to other used oil or hazardous waste at the facility. These measures shall include, where applicable, stopping processes and operation, collecting and containing released used oil, and removing or isolating containers.

7. If the facility stops operation in response to a fire, explosion or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation or ruptures in valves, pipes or other equipment, wherever this is appropriate.

8. Immediately after an emergency, the emergency coordinator shall provide for recycling, storing or disposing of recovered used oil, contaminated soil or surface water, or any other

material that results from a release, fire or explosion at the facility.

9. The emergency coordinator shall ensure that, in the affected areas of the facility:

a. No used oil that may be incompatible with the released material is recycled, treated, stored or disposed of until cleanup procedures are completed; and

b. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

10. The owner or operator shall notify the department, and appropriate local authorities that the facility is in compliance with subd. 9. before operations are resumed in the affected areas of the facility.

11. The owner or operator shall note in the operating record the time, date and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he or she shall submit a written report on the incident to the department. The report shall include all of the following:

a. Name, address and telephone number of the owner or operator.

b. Name, address and telephone number of the facility.

c. Date, time and type of incident (e.g., fire, explosion).

d. Name and quantity of materials involved.

e. The extent of injuries, if any.

f. An assessment of actual or potential hazards to human health or the environment, where applicable.

g. Estimated quantity and disposition of recovered material that resulted from the incident.

h. Demonstrate compliance with s. NR 590.06.

NR 590.53 USED OIL MANAGEMENT. Used oil processors or re-refiners are subject to all applicable spill prevention, control and countermeasures (SPCC) requirements in accordance with 40 CFR 112, July 1, 1993, in addition to the requirements of this subchapter. If the owner or operator has already prepared an SPCC plan, then this plan shall only be amended to incorporate the requirements of this chapter. In addition to the requirements of

this chapter, used oil processors or re-refiners are also subject to the requirements of ch. ILHR 10 for the storage of used oil in tanks and containers, regardless of whether or not the used oil exhibits the characteristics of hazardous waste.

Note: Used oil processors or re-refiners are also responsible for complying with the applicable provisions of chs. NR 158 and 705.

(1) MANAGEMENT UNITS. Used oil processors or re-refiners may not store used oil in units other than:

(a) Tanks subject to regulation under ch. ILHR 10, or

(b) Containers meeting U.S. DOT packaging requirements in 49 CFR Parts 173 and 178.

(2) CONDITION OF UNITS. (a) Containers and aboveground tanks used to store or process used oil at processing and re-refining facilities:

1. Shall be in good condition; and

2. May not be leaking.

(3) AISLE SPACE. Container aisle space shall be a minimum of 3 feet in width to observe the condition of the containers and to allow for proper response action in the event of a release.

(4) SECONDARY CONTAINMENT FOR CONTAINERS. Containers used to store or process used oil at processing and re-refining facilities shall be equipped with a secondary containment system.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dike, berm or retaining wall; or

2. An equivalent containment system.

(b) The entire containment system, including walls and floor, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(5) SECONDARY CONTAINMENT FOR TANKS. Existing above-ground tanks used to store or process used oil at processing and re-refining facilities shall be equipped with a secondary containment system within 6 months of the effective date of these rules [Revisor: insert date]. New above ground tanks shall be



equipped with secondary containment prior to accepting any used oil.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dike, berm or retaining wall; or

2. An equivalent containment system.

(b) The entire containment system, including walls and floors, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(6) LABELS. (a) Containers and aboveground tanks used to store or process used oil at processing and re-refining facilities shall be labeled or marked clearly with the words "Used Oil." No other substance may be placed in a tank so labelled.

(b) Fill pipes used to transfer used oil into underground storage tanks at processing and re-refining facilities shall be labeled or marked clearly with the words "Used Oil."

(7) RESPONSE TO RELEASES. Upon detection of a release of used oil to the environment, an owner or operator shall perform all of the following cleanup steps:

(a) Stop the release.

(b) Contain the released used oil.

(c) Clean up and manage properly the released used oil and other materials.

(d) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(e) Comply with the requirements of s. NR 590.06(2).

(8) CLOSURE. (a) Aboveground tanks. Owners and operators who store or process used oil in aboveground tanks shall comply with the following requirements:

1. At closure of a tank system, the owner or operator shall remove or decontaminate used oil residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as

hazardous waste, unless the materials are not hazardous waste under chapter NR 605 and this chapter.

Note: Underground storage tanks shall comply with the requirements of ch. NR 705 as well as the applicable portions of chs. NR 700 to 736 when closing the underground tanks.

2. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in subd. 1., then the owner or operator shall close the tank system and perform long term care in accordance with the closure and long term care requirements that apply to hazardous waste landfills in ss. NR 660.15 to 660.17.

(b) Containers. Owners and operators who store used oil in containers shall comply with the following requirements:

1. At closure, containers holding used oils or residues of used oil shall be removed from the site;

2. The owner or operator shall remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste, unless the materials are not hazardous waste under ch. NR 605 and this chapter.

NR 590.54 ANALYSIS PLAN. Owners or operators of used oil processing and re-refining facilities shall develop and follow a written analysis plan describing the procedures that will be used to comply with the analysis requirements of s. NR 590.11 and, if applicable, s. NR 590.83. The owner or operator shall keep the plan at the facility.

(1) REBUTTABLE PRESUMPTION FOR USED OIL IN S. NR 590.11. At a minimum, the plan shall specify all of the following:

(a) Whether sample analyses or knowledge of the halogen content of the used oil will be used to make this determination.

(b) If sample analyses are used to make this determination:

1. The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

a. One of the sampling methods in appendix I of ch. NR 605;  
or

b. A method shown to be equivalent under 40 CFR §§ 260.20 and 260.21, July 1, 1993;

2. The frequency of sampling to be performed, and whether the analysis will be performed on-site or off-site; and

3. The methods used to analyze used oil for the parameters specified in s. NR 590.11; and

(c) The type of information that will be used to determine the halogen content of the used oil.

(2) ON-SPECIFICATION USED OIL FUEL IN S. NR 590.84. At a minimum, the plan shall specify all of the following if s. NR 590.84 is applicable:

(a) Whether sample analyses or other information will be used to make this determination.

(b) If sample analyses are used to make this determination:

1. The sampling method used to obtain representative samples to be analyzed. A representative sample may be obtained using either:

a. One of the sampling methods in appendix I of ch. NR 605; or

b. A method shown to be equivalent under 40 CFR §§ 260.20 and 260.21, July 1, 1993;

2. Whether used oil will be sampled and analyzed prior to or after any processing or re-refining.

3. The frequency of sampling to be performed, and whether the analysis will be performed on-site or off-site.

4. The methods used to analyze used oil for the parameters specified in s. NR 590.84.

(c) The type of information that will be used to make the on-specification used oil fuel determination.

NR 590.55 TRACKING. (1) ACCEPTANCE. Used oil processors or re-refiners shall keep a record of each used oil shipment accepted for processing and re-refining. These records may take the form of a log, invoice, bill of lading or other shipping documents. Records for each shipment shall include all of the following information:

(a) The name and address of the transporter who delivered the used oil to the processor or re-refiner.

(b) The name and address of the generator or processor or re-refiner from whom the used oil was sent for processing or re-refining.

(c) The EPA identification number of the transporter who delivered the used oil to the processor or re-refiner.

(d) The EPA identification number of the generator or processor or re-refiner from whom the used oil was sent for processing or re-refining.

(e) The quantity of used oil accepted.

(f) The date of acceptance.

(2) DELIVERY. Used oil processors or re-refiners shall keep a record of each shipment of used oil that is shipped to a used oil burner, processor or re-refiner. These records may take the form of a log, invoice, bill of lading or other shipping documents. Records for each shipment shall include all of the following information:

(a) The name and address of the transporter who delivers the used oil to the burner, processor or re-refiner facility.

(b) The name and address of the burner, processor or re-refiner or disposal facility who will receive the used oil.

(c) The EPA identification number of the transporter who delivers the used oil to the burner, processor or re-refiner or disposal facility.

(d) The EPA identification number of the burner, processor or re-refiner, or disposal facility who will receive the used oil.

(e) The quantity of used oil shipped.

(f) The date of shipment.

(3) RECORDS RETENTION. The records described in subs. (1) and (2) shall be maintained for at least 3 years.

NR 590.56 OPERATING RECORD AND REPORTING. (1) OPERATING RECORD. (a) The owner or operator shall keep a written operating record at the facility.

(b) The following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

1. Records and results of used oil analyses performed as described in the analysis plan required under s. NR 590.54; and

2. Summary reports and details of all incidents that require implementation of the contingency plan as specified in s. NR 590.52(2).

(2) REPORTING. A used oil processor or re-refiner shall report to the department, on an annual basis, by March 1 of the following year, all of the information required in s. NR 590.08.

NR 590.57 OFF-SITE SHIPMENTS OF USED OIL. Used oil processors or re-refiners who initiate shipments of used oil off-site shall ship the used oil using a used oil transporter who has obtained an EPA identification number and a solid waste transportation license.

NR 590.58 MANAGEMENT OF RESIDUES. Owners and operators who generate residues from the storage, processing, or re-refining of used oil shall manage the residues as specified in s. NR 590.04(1)(b).

## SUBCHAPTER VI

### STANDARDS FOR BURNING OFF-SPECIFICATION USED OIL FOR ENERGY RECOVERY

NR 590.70 APPLICABILITY. This subchapter apply to used oil burners except as specified in subs. (1), (2) and (3). Facilities burning used oil for energy recovery under the following conditions are not subject to this subchapter:

(1) The used oil is burned by the generator in an on-site space heater under the provisions of s. NR 590.14;

(2) The used oil is burned by a processor or re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing; or

(3) The used oil meets the used oil fuel specifications of s. NR 590.09 and the burner complies with the requirements of subch. VII.

NR 590.71 OTHER APPLICABLE PROVISIONS. Used oil burners who conduct the following activities are also subject to the requirements of other applicable provisions of this chapter as follows:

(1) Burners who generate used oil shall also comply with subch. II;

(2) Burners who transport used oil shall also comply with subch. IV;

(3) Burners who process or re-refine used oil shall also comply with subch. V;

(4) Burners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil specifications in s. NR 590.09 shall also comply with subch. VII.

NR 590.72 RESTRICTIONS ON BURNING. Off-specification used oil may be burned for energy recovery in only the following devices:

(1) Industrial furnaces identified in s. NR 590.03.

(2) Boilers, as defined in s. NR 590.03, that are identified as any of the following:

(a) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes.

(b) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale.

(c) Used oil-fired space heaters provided that the burner meets the provisions of s. NR 590.14.

(3) Hazardous waste incinerators subject to regulation under chs. NR 665 or 40 CFR Part 266 Subpart H.

NR 590.73 USED OIL STORAGE. Used oil burners are subject to all applicable spill prevention, control and countermeasures (SPCC) requirements in accordance with 40 CFR 112, July 1, 1993, in addition to the requirements of this subchapter. If the owner or operator has already prepared an SPCC plan, then this plan shall only be amended to incorporate the requirements of this chapter. In addition to the requirements of this chapter, used oil burners are also subject to the requirements of ch. ILHR 10 for the storage of used oil in tanks and containers, regardless of whether or not the used oil exhibits the characteristics of hazardous waste.

Note: Used oil burners are also responsible for complying with the applicable provisions of chs. NR 158 and 705.

(1) STORAGE UNITS. Used oil burners may not store used oil in units other than:

(a) Tanks subject to regulation under ch. ILHR 10, or

(b) Containers meeting U.S. DOT packaging requirements in 49 CFR Parts 173 and 178.

(2) CONDITION OF UNITS. Containers and aboveground tanks used to store oil at burner facilities:

(a) Shall be in good condition.

(b) May not be leaking.

(3) AISLE SPACE. Container aisle space shall be a minimum of 3 feet in width to observe the condition of the containers and to allow for proper response in the event of a release.

(4) SECONDARY CONTAINMENT FOR CONTAINERS. Containers used to store used oil at burner facilities shall be equipped with a secondary containment system.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dike, berm or retaining wall; or

2. An equivalent containment system.

(b) The entire containment system, including walls and floor, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(5) SECONDARY CONTAINMENT FOR TANKS. Existing tanks used to store used oil at transfer facilities shall be equipped with a secondary containment system within 6 months of the effective date of these rules [Revisor: insert date]. New above ground tanks shall be equipped with secondary containment prior to accepting any used oil.

(a) The secondary containment system shall consist of, at a minimum:

1. Dikes, berms or retaining walls and a floor that covers the entire area within the dike, berm or retaining wall; or

2. An equivalent containment system.

(b) The entire containment system, including walls and floors, shall be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater or surface water.

(6) LABELS. (a) Containers and aboveground tanks used to store used oil at burner facilities shall be labeled or marked clearly with the words "Used Oil." No other substance may be placed in a tank or container so labeled.

(b) Fill pipes used to transfer used oil into underground storage tanks at burner facilities shall be labeled or marked clearly with the words "Used Oil."

(7) RESPONSE TO RELEASES. Upon detection of a release of used oil to the environment a burner shall perform all of the following:

(a) Stop the release.

(b) Contain the released used oil.

(c) Clean up and manage properly the released used oil and other materials.

(d) If necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.

(e) Comply with the requirements of s. NR 590.06(2).

NR 590.74 TRACKING. (1) ACCEPTANCE. Used oil burners shall keep a record of each used oil shipment accepted for burning. These records may take the form of a log, invoice, bill of lading or other shipping documents. Records for each shipment shall include all of the following information:

(a) The name and address of the transporter who delivered the used oil to the burner.

(b) The name and address of the generator or processor or re-refiner from whom the used oil was sent to the burner.

(c) The EPA identification number of the transporter who delivered the used oil to the burner.

(d) The EPA identification number, if applicable, of the generator or processor or re-refiner from whom the used oil was sent to the burner.

(e) The quantity of used oil accepted.



(f) The date of acceptance.

(2) RECORDS RETENTION. The records described in sub. (1) shall be maintained for at least 3 years.

NR 590.75 NOTICES. (1) CERTIFICATION. Before a burner accepts the first shipment of off-specification used oil fuel from a generator, transporter, or processor or re-refiner, the burner shall provide to the generator, transporter, or processor or re-refiner a one-time written and signed notice certifying that:

(a) The burner has notified EPA stating the location and general description of his or her used oil management activities; and

(b) The burner will burn the used oil only in a combustion device identified in s. NR 590.72.

(2) CERTIFICATION RETENTION. The certification described in sub. (1) shall be maintained for 3 years from the date the burner last receives shipment of off-specification used oil from that generator, transporter, or processor or re-refiner.

NR 590.76 MANAGEMENT OF RESIDUES. Burners who generate residues from the storage or burning of used oil shall manage the residues as specified in s. NR 590.04(1)(b).

## SUBCHAPTER VII

### STANDARDS FOR USED OIL FUEL MARKETERS

NR 590.80 APPLICABILITY. This subchapter applies to any person who conducts either of the following activities:

(1) Directs a shipment of off-specification used oil from their facility to a used oil burner; or

(2) First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in s. NR 590.09.

NR 590.81 PROHIBITIONS. A used oil fuel marketer may initiate a shipment of off-specification used oil only to a used oil burner who:

(1) Has an EPA identification number; and

(2) Burns the used oil in a combustion device identified in s. NR 590.72.

NR 590.82 EXEMPTIONS. The following persons are not marketers subject to this subchapter:

(1) Used oil generators, and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner. However, processors or re-refiners who burn some used oil fuel for purposes of processing are considered to be burning incidentally to processing. Thus, generators and transporters who direct shipments of off-specification used oil to processor or re-refiners who incidentally burn used oil are not marketers subject to this subchapter.

(2) Persons who direct shipments of on-specification used oil and who are not the first person to claim the oil meets the used oil fuel specifications of s. NR 590.09.

NR 590.83 OTHER APPLICABLE PROVISIONS. Any person subject to the requirements of this subchapter shall also comply with one of the following:

(1) Subchapter II - Standards for Used Oil Generators.

(2) Subchapter IV - Standards for Used Oil Transporters and Transfer Facilities.

(3) Subchapter V - Standards for Used Oil Processors and Re-refiners.

(4) Subchapter VI - Standards for Used Oil Burners who Burn Off-Specification Used Oil for Energy Recovery.

NR 590.84 ON-SPECIFICATION USED OIL FUEL. (1) ANALYSIS OF USED OIL FUEL. A generator, collection center, transporter, processor or re-refiner, or burner may determine that used oil that is to be burned for energy recovery meets the fuel specifications of s. NR 590.09 by performing analyses or obtaining copies of analyses or other information documenting that the used oil fuel meets the specifications.

(2) RECORDS RETENTION. A generator, transporter, processor or re-refiner, or burner who first claims that used oil that is to be burned for energy recovery meets the specifications for used oil fuel under s. NR 590.09, shall keep copies of analyses of the used oil, or other information used to make the determination, for 3 years.

NR 590.85 TRACKING. (1) OFF-SPECIFICATION USED OIL DELIVERY. Any used oil marketer who directs a shipment of off-specification used oil to a burner shall keep a record of each shipment of used

oil to a used oil burner. These records may take the form of a log, invoice, bill of lading or other shipping documents. Records for each shipment shall include all of the following information:

(a) The name and address of the transporter who delivers the used oil to the burner.

(b) The name and address of the burner who will receive the used oil.

(c) The EPA identification number of the transporter who delivers the used oil to the burner.

(d) The EPA identification number of the burner.

(e) The quantity of used oil shipped.

(f) The date of shipment.

(2) ON-SPECIFICATION USED OIL DELIVERY. A generator, collection center, transporter, processor or re-refiner, or burner who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under s. NR 590.09 shall keep a record of each shipment of used oil to an on-specification used oil burner. Records for each shipment shall include the following information:

(a) The name and address of the facility receiving the shipment;

(b) The quantity of used oil fuel delivered;

(c) The date of shipment or delivery; and

(d) A cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under s. NR 590.84(1).

(3) RECORDS RETENTION. The records described in subs. (1) and (2) shall be maintained for at least 3 years.

NR 590.86 NOTICES. (1) CERTIFICATION. Before a used oil generator, transporter, or processor or re-refiner directs the first shipment of off-specification used oil fuel to a burner, the owner or operator shall obtain a one-time written and signed notice from the burner certifying that:

(a) The burner has notified EPA stating the location and general description of used oil management activities; and

(b) The burner will burn the off-specification used oil only in a combustion device identified in s. NR 590.72.

(2) CERTIFICATION RETENTION. The certification described in sub. (1) shall be maintained for 3 years from the date the last shipment of off-specification used oil is shipped to the burner.

NR 590.87 MANAGEMENT OF RESIDUES. Marketers who generate residues from the storage or burning of used oil shall manage the residues as specified in s. NR 590.04(1)(b).

The foregoing rules were approved and adopted by the State of Wisconsin Natural Resources Board on September 29, 1994 and February 23, 1995

The rules shall take effect the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro), Stats.

Dated at Madison, Wisconsin February 27th, 1995

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By George E. Meyer  
George E. Meyer, Secretary



(SEAL)

