

Minnesota Attorney General: Administrative Rules Proceedings

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Adopted Rule

Minnesota Pollution Control Agency

Solid and Hazardous Waste Division

Adopted Amendment of Rules Governing Generators of, and the Identification, Transportation and Management of, Hazardous Waste

Rules as Adopted

Chapter One: Definitions, References, Petitions, and Other Standards

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Chapter One: Definitions, References, Petitions, and Other Standards

6 MCAR S 4.9100 Definitions.

As used in 6 MCAR SS 4.9100-4.9560 the following words shall have the meanings given them.

A. Act. "Act" means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, United States Code, title 42, sections 3259 and 6901-6986, as amended through June 30, 1983.

B. Active portion. "Active portion" means that portion of a facility, other than a closed portion, where treatment, storage, or disposal operations are being or have been conducted after the effective date of 6 MCAR SS 4.9100-4.9560.

C. Agency. "Agency" means the Minnesota Pollution Control Agency.

D. Aquifer. "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

E. Authorized representative. "Authorized representative" means the person responsible for the overall operation of a facility or an operational unit which is part of a facility, such as the plant manager, superintendent, or a person of equivalent responsibility.

F. Certification. "Certification" means a statement of professional opinion based upon knowledge and belief.

G. Chemical composition. "Chemical composition" means any of the following:

1. a standard chemical nomenclature such as those adopted by the International Union of Pure and Applied Chemistry or the Chemical Abstracts' Service;

2. a common chemical name when it is documented to the director that the number of isomers, related compounds of similar chemical structure and property, etc., make chemical analysis or delineation impractical; or

3. a common chemical name of a mixture of components with similar properties, but not including a trade name.

H. Closed portion. "Closed portion" means that portion of a facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements.

I. Confined aquifer. "Confined aquifer" means an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined ground water.

J. Container. "Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

K. Contingency plan. "Contingency plan" means a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

L. Control equipment. "Control equipment" means an "air containment treatment facility" or a "treatment facility" as

defined in Minnesota Statutes, section 116.06, subdivision 6.

M. Demolition debris. "Demolition debris" means concrete, blacktop, bricks, stone facing, concrete block, stucco, glass, structural metal, and wood from demolished structures.

N. Designated facility. "Designated facility" means a hazardous waste treatment, storage, or disposal facility which:

1. has received an agency permit, or if located outside Minnesota, has either received an Environmental Protection Agency permit or a permit from an authorized state, or has interim status; and

2. has been designated on the manifest by the generator pursuant to 6 MCAR S 4.9212.

O. Dike. "Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

P. Director. "Director" means the executive director of the Minnesota Pollution Control Agency or his designee.

Q. Discarded. "Discarded" means abandoned by being:

1. disposed of; or

2. burned or incinerated, except where the material is being burned as a fuel for the purpose of recovering useable energy; or

3. physically, chemically, or biologically treated (other than burned or incinerated) in lieu of or prior to being disposed of.

R. Disposal. "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of waste into or on any land or water so that the waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

S. Disposal facility. "Disposal facility" means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

T. Elementary neutralization unit. "Elementary neutralization unit" means a device which:

1. is used for neutralizing wastes which are hazardous wastes only because they exhibit the corrosivity characteristic defined in 6 MCAR S 4.9132 D., or are listed in 6 MCAR S 4.9134 only for this reason; and

2. meets the definition of tank, container, transport vehicle, or vessel.

U. Equivalent method. "Equivalent method" means any testing or analytical method approved by the director under 6 MCAR S 4.9104 A.

V. Existing portion. "Existing portion" means the land surface area of an existing waste management unit that is included in the original Part A permit application, and on which wastes have been placed before a permit has been issued.

W. Facility. "Facility" means all contiguous land, 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, such as one or more landfills, surface impoundments, or combinations thereof.

X. Flash point. "Flash point" means the minimum temperature at which a material gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the material when in contact with a spark or flame.

Y. Food chain crops. "Food chain crops" means tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans.

Z. Formation. "Formation" means a body of soil or rock characterized by a degree of lithologic homogeneity which is prevailing, but not necessarily tabular, and is mappable on the earth's surface or traceable in the subsurface.

AA. Freeboard. "Freeboard" means the vertical distance between the top of a tank or surface impoundment dike, and the surface of the waste contained therein.

BB. Free liquids. "Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

CC. Garbage. "Garbage" means discarded material resulting from the handling, processing, storage, preparation, serving, and consumption of food.

DD. Generator. "Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in 6 MCAR SS 4.9128-4.9137, or whose act first causes a hazardous waste to become subject to regulation.

EE. Ground water or underground water. "Ground water" or "underground water" has the meaning given in 6 MCAR S 4.8022.

FF. Hazardous waste. "Hazardous waste" has the meaning given in Minnesota Statutes, section 116.06, subdivision 13.

GG. Hazardous waste constituent. "Hazardous waste constituent" means a constituent that caused the director to list the waste in 6 MCAR S 4.9134 or a constituent listed in Exhibit 6 MCAR S 4.9137-1.

HH. Hazardous waste incinerator. "Hazardous waste incinerator" means an enclosed device using controlled flame combustion, a purpose of which is to thermally break down hazardous waste. Examples of incinerators are rotary kiln, fluidized bed, and liquid injection incinerators.

II. Hazardous waste management. "Hazardous waste management" means the total system for the identification, storage, collection, source separation, and removal of hazardous waste from public or private property, the transportation of the waste to a hazardous waste facility, and the processing, treatment, recovery, and disposal of the waste by approved methods in accordance with 6 MCAR SS 4.9100-4.9560. Any reference to hazardous waste being managed shall refer to the foregoing.

JJ. Hazardous waste number. "Hazardous waste number" means the number assigned to each hazardous waste listed in 6 MCAR S 4.9134 and to each characteristic identified in 6 MCAR S 4.9132.

KK. Identification number. "Identification number" means the number assigned to each generator, transporter, and treatment, storage, or disposal facility.

LL. In operation. "In operation" means a facility which is

treating, storing, or disposing of hazardous waste.

MM. Inactive portion. "Inactive portion" means that portion of a facility which is not operated after the effective date of 6 MCAR SS 4.9100-4.9560.

NN. Incompatible wastes. "Incompatible wastes" means a hazardous waste which is unsuitable for:

1. placement in a particular device or facility because it may cause corrosion or decay of containment materials such as the container inner liners or tank walls; or

2. commingling with another waste or material under uncontrolled conditions because the commingling might produce heat or pressure, fire or explosion, violent reactions, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

OO. Independent registered engineer. "Independent registered engineer" means a registered engineer who is not a regular employee of the owner or operator of the facility, but rather is consulted on an intermittent basis.

PP. Individual generation site. "Individual generation site" means the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous.

QQ. Injection well. "Injection well" means a well into which fluids are injected.

RR. Inner liner. "Inner liner" means a continuous layer of material placed inside a tank or container which protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste.

SS. Interim status. "Interim status" has the meaning given in 6 MCAR S 4.9381.

TT. International shipment. "International shipment" means the transportation of hazardous waste into or out of the jurisdiction of the United States.

UU. Land treatment facility. "Land treatment facility" means a facility or part of a facility at which hazardous waste

is applied onto or incorporated into the soil surface. Such facilities are disposal facilities if the waste will remain after closure.

VV. Landfill. "Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.

WW. Landfill cell. "Landfill cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

XX. Leachate. "Leachate" means any liquid including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

YY. Liner. "Liner" means a continuous layer of reworked natural or man-made materials beneath or on the sides of a surface impoundment, landfill, landfill cell, or waste pile, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

ZZ. Manifest. "Manifest" means the shipping document originated and signed by the generator which contains the information required by 6 MCAR S 4.9212.

AAA. Manifest document number. "Manifest document number" means the serially increasing number assigned to the manifest by the generator for recording and reporting purposes.

BBB. Manufacturing or mining by-product. "Manufacturing or mining by-product" means a material that is not one of the primary products of a particular manufacturing or mining operation, and is a secondary and incidental product of the particular operation and would not be solely and separately manufactured or mined by the particular manufacturing or mining operation. The term does not include an intermediate manufacturing or mining product which results from one of the steps in a manufacturing or mining process and is typically processed through the next step of the process within a short time.

CCC. Median lethal concentration. "Median lethal concentration" means the calculated concentration at which a material kills 50 percent of a group of test animals within a specified time.

DDD. Median lethal dose. "Median lethal dose" means the calculated dose at which a material kills 50 percent of a group of test animals within a specified time.

EEE. Mining overburden returned to the mine site. "Mining overburden returned to the mine site" means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

FFF. Movement. "Movement" means hazardous waste that is transported to a facility in an individual vehicle.

GGG. On-site. "On-site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection, and access is by crossing as opposed to going along the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which he or she controls and to which the public does not have access, is also considered on-site property.

HHH. Open burning. "Open burning" means the combustion of any material without the following characteristics:

1. control of combustion air to maintain adequate temperature for efficient combustion;

2. containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; or

3. control of emission of the gaseous combustion products.

III. Operator. "Operator" means the person responsible for the overall operation of a facility.

JJJ. Other waste material. "Other waste material" means any solid, liquid, semi-solid, or gaseous material, resulting from industrial, commercial, mining, or agricultural operations, or from community activities, and which:

1. is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded; or

2. has served its original intended use and sometimes is discarded; or

3. is a manufacturing or mining by-product and sometimes is discarded.

KKK. Owner. "Owner" means the person who owns a facility or part of a facility.

LLL. Partial closure. "Partial closure" means the closure of a discrete part of a facility in accordance with the applicable closure requirements of 6 MCAR SS 4.9280-4.9322 or 4.9380-4.9422. For example, partial closure may include the closure of a trench, a unit operation, a landfill cell, or a pit, while other parts of the same facility continue in operation or will be placed in operation in the future.

MMM. Person. "Person" has the meaning given in Minnesota Statutes, section 116.06, subdivision 8.

NNN. Personnel; facility personnel. "Personnel" or "facility personnel" means all persons who work at or oversee the operation of a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of 6 MCAR SS 4.9100-4.9560.

OOO. Pesticide. "Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

PPP. Petroleum-derived waste oil. "Petroleum-derived waste oil" means a waste that:

1. lacks a defined chemical structure;

2. contains mixtures of isomers; and

3. contains three or more members of a homologous series that differ by a fixed carbon-containing increment.

QQQ. Pile. "Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

RRR. Point source. "Point source" has the meaning given in Minnesota Statutes, section 115.03, subdivision 15, but does not include irrigation return flows.

SSS. Pretreatment unit. "Pretreatment unit" means a device which:

1. is part of a wastewater treatment facility which is subject to regulation under the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1317(b), as amended through June 30, 1983;

2. receives and treats or stores an influent wastewater which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; and

3. meets the definition of "tank" as defined in KKKK.

TTT. Publicly owned treatment works. "Publicly owned treatment works" means any device or system used in the treatment of municipal sewage or industrial wastes of a liquid nature, including recycling and reclamation, which is owned by a state or municipality as defined in the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1362(4), as amended through June 30, 1983. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

UUU. Representative sample. "Representative sample" means a sample of a universe or whole, such as a waste pile, lagoon, or ground water which can be expected to exhibit the average properties of the universe or whole.

VVV. Resource recovery. "Resource recovery" has the meaning given in Minnesota Statutes, section 115A.03, subdivision 27.

WWW. Rubbish. "Rubbish" means discarded paper, cardboard, yard clippings, crop residues, brush, wood, glass, bedding, crockery, or litter.

XXX. Run-off. "Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

YYY. Run-on. "Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

ZZZ. Saturated zone or zone of saturation. "Saturated zone" or "zone of saturation" means that part of the earth's crust in which all voids are filled with water.

AAAA. Seasonal high water table. "Seasonal high water table" means the highest level the water table reaches during a given year.

BBBB. Sewage. "Sewage" has the meaning given in Minnesota Statutes, section 115.01, subdivision 2.

CCCC. Sewer system. "Sewer system" has the meaning given in Minnesota Statutes, section 115.01, subdivision 6.

DDDD. Shoreland. "Shoreland" has the meaning given in Minnesota Statutes, section 105.485, subdivision 2 and rules adopted pursuant to that section.

EEEE. Sludge. "Sludge" has the meaning given in Minnesota Statutes, section 116.06.

FFFF. Spill. "Spill" means the accidental or intentional spilling, leaking, pumping, pouring, emitting, or dumping into or on any land or water of hazardous wastes or materials which, when spilled, become hazardous wastes.

GGGG. State. "State" means the state of Minnesota.

HHHH. Storage. "Storage" means the holding of hazardous waste for a temporary period at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

IIII. Surface impoundment or impoundment. "Surface impoundment" or "impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials which is designed to hold an accumulation of liquid wastes or wastes containing free liquids and which is not an injection well ~~or seepage facility~~. HE 33-36 Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons. Impoundments may be lined with man-made materials.

JJJJ. Surficial karst features. "Surficial karst features" means features formed in soluble bedrock and which have surficial expressions or are shallow enough to potentially affect the integrity of an overlying facility.

KKKK. Tank. "Tank" means a stationary device designed to contain an accumulation of hazardous waste which is constructed primarily of nonearthen materials, such as wood, concrete, steel, and plastic, which provide structural support.

LLLL. Thermal treatment. "Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. "Thermal treatment" includes processes of incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge.

MMMM. Totally enclosed treatment facility. "Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

NNNN. Transfer facility. "Transfer facility" means any transportation-related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

OOOO. Transportation. "Transportation" means the movement of hazardous waste by air, rail, highway, or water.

PPPP. Transport vehicle. "Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body, such as a trailer or railroad freight car, is a separate transport vehicle.

QQQQ. Transporter. "Transporter" means a person engaged in the off-site transportation of hazardous waste by air, rail, highway, or water.

RRRR. Treatment. "Treatment" means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize the waste, or so as to recover energy or material resources from the waste, or so as to render the waste nonhazardous, or less hazardous, safer to transport, store, or dispose of, or amenable for recovery, amenable for storage, or reduced in volume.

SSSS. Treatment zone. "Treatment zone" means a soil area of the unsaturated zone of a land treatment unit within which hazardous constituents are degraded, transformed, or immobilized.

TTTT. Unsaturated zone; zone of aeration. "Unsaturated zone" or "zone of aeration" means the zone between the land surface and the water table.

UUUU. Uppermost aquifer. "Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

VVVV. Vessel. "Vessel" means every description of watercraft used or capable of being used as a means of transportation on the water.

WWWW. Waste. "Waste" ~~means any discarded material including, but not limited to, solids, semisolids, sludges, liquids, gases, and their vapors, mists, or dusts~~ has the meaning given in Minnesota Statutes, section 116.06, subdivision 9a.

XXXX. Wastewater treatment unit. "Wastewater treatment unit" means a device which:

1. is part of a wastewater treatment facility which is subject to regulation under the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, sections 1317(b) and 1342, as amended through June 30, 1983;

2. receives and treats or stores an influent wastewater which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; or generates and accumulates a wastewater

treatment sludge which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137; and

3. meets the definition of "tank" as defined in KKKK.

YYYY. Water bulk shipment. "Water bulk shipment" means the bulk transportation of hazardous waste which is loaded or carried on board a vessel without containers or labels.

ZZZZ. Waters of the state. "Waters of the state" has the meaning given in Minnesota Statutes, section 115.01, subdivision 9.

AAAAA. Water table. "Water table" means the surface of the ground water at which the pressure is atmospheric. Generally, this is the top of the saturated zone.

BBBBB. Well. "Well" means any shaft or pit dug or bored into the earth, generally of a cylindrical form, and often walled with bricks or tubing to prevent the earth from caving in.

CCCCC. Wetland. "Wetland" has the meaning given to "wetlands" in Minnesota Statutes, section 105.37, subdivision 15.

6 MCAR S 4.9101 Variances.

Any person who applies for a variance from any requirement of 6 MCAR SS 4.9100 to 4.9560 shall comply with 6 MCAR S 4.3007. An application for a variance must be acted upon by the agency according to Minnesota Statutes, section 116.07, subdivision 5 and 6 MCAR S 4.3007. However, no variance may be granted if granting the variance would result in noncompliance with EPA regulations for the generation, storage, processing, treatment, transportation, or disposal of hazardous waste or the operation of hazardous waste facilities.

6 MCAR S 4.9102 Availability of references.

The documents referred to in 6 MCAR SS 4.9100-4.9560 may be obtained by contacting the appropriate offices as listed in A.-H.

A. Standards of the American Society for Testing and Materials, in the Annual Book of ASTM Standards, 1916 Race Street, Philadelphia, Pennsylvania 19103, available at the

Engineering Library of the University of Minnesota;

B. Flammable and Combustible Liquids Code in the National Fire Codes, 1981, issued by the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269, available at the Engineering Library of the University of Minnesota;

C. Implicit Price Deflator for Gross National Product in the Survey of Current Business, Bureau of Economic Analysis, United States Department of Commerce, 110 4th Street South, Minneapolis, Minnesota 55401, available at the St. Paul Public Library;

D. The Manual on Disposal of Refinery Wastes, volume 1, issued by the American Petroleum Institute, (Washington, D.C., 1969), available at the state of Minnesota Law Library;

E. Methods for Chemical Analysis of Water and Wastes, publication number 600/4-79-020, March 1979, issued by the Environmental Monitoring and Support Laboratory, 26 West St. Clair, Cincinnati, Ohio 45268, available at the state of Minnesota Law Library;

F. Standard TM-01-69 of the National Association of Corrosion Engineers, P.O. Box 218340, Houston, Texas 77218, available at the state of Minnesota Law Library;

G. Test Methods for ~~the Evaluation of~~ Evaluating Solid Waste, Physical/Chemical Methods, publication number SW 846, ~~1980~~ First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982, of the Office of Solid Waste, United States Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460, available at the state of Minnesota Law Library and by subscription from the Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402, (202) 783-3238; and

H. Uniform Customs and Practice for Documentary Credits (Publication 290), 1975: International Chamber of Commerce Publishing Corporation, Incorporated, 156 5th Avenue, Suite 820, New York, New York 10017.

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6 MCAR S 4.9103 Other standards.

Nothing in 6 MCAR SS 4.9100-4.9560 shall relieve any person from any obligations or duties imposed by any other laws, statutes, rules, standards, or ordinances of the federal, state, or local governments or any agency thereof now in effect or which become effective in the future. In the event 6 MCAR SS 4.9100-4.9560 conflict with any such laws, statutes, rules, standards, or ordinances, the more stringent shall apply. Nothing in 6 MCAR SS 4.9100-4.9560 shall be construed to require any person to comply with any portion of 6 MCAR SS 4.9100-4.9560 if that portion should at any time be preempted by federal law.

6 MCAR S 4.9104 Petitions.

A. Petitions for equivalent testing or analytical methods. Any person seeking to use a testing or analytical method other than those described in 6 MCAR SS 4.9128-4.9137, 4.9280-4.9322, or 4.9380-4.9422 may petition under these provisions. The person must demonstrate (to the satisfaction of the director) that the proposed method is equal to or superior to the corresponding method prescribed in 6 MCAR SS 4.9128-4.9137, 4.9280-4.9322, or 4.9380-4.9422 in terms of its sensitivity, accuracy, precision, and reproducibility. Each petition must include:

1. the petitioner's name and address;

2. a statement of the petitioner's interest in the proposed action;

3. a full description of the proposed method, including all procedural steps and equipment used in the method;

4. a description of the types of wastes or waste matrices for which the proposed method may be used;

5. comparative results obtained from using the proposed method with those obtained from using the relevant or corresponding methods prescribed in 6 MCAR SS 4.9128-4.9137, 4.9280-4.9322, or 4.9380-4.9422;

6. an assessment of any factors which may interfere with, or limit the use of, the proposed method; and

7. a description of the quality control procedures

necessary to ensure the sensitivity, accuracy, and precision of the proposed method.

After receiving a petition for an equivalent testing or analytical method, the director may request any additional information on the proposed method which he may reasonably require to evaluate the method.

B. Petitions to exclude a waste produced at a particular facility.

1. Any person seeking to exclude a waste at a particular generating facility from regulation under 6 MCAR SS 4.9100-4.9560 may petition under these provisions. The petitioner must demonstrate to the satisfaction of the agency that the waste produced by a particular generating facility does not meet any of the criteria under which the waste was listed as a hazardous waste and, in the case of an acutely hazardous waste meeting the criteria in 6 MCAR S 4.9131 A.2., that it also does not meet the criteria of 6 MCAR S 4.9131 A.3. A waste which is so excluded may still, however, be a hazardous waste by operation of 6 MCAR S 4.9132.

2. These procedures may also be used to petition the agency to exclude from 6 MCAR S 4.9205 B.1. or C. a waste which is described in those rules and is either a waste listed in 6 MCAR S 4.9134, contains a waste listed in 6 MCAR S 4.9134, or is derived from a waste listed in 6 MCAR S 4.9134. This exclusion may only be issued for a particular generating, storage, treatment, or disposal facility. The petitioner must make the same demonstration as required by 1., except that where the waste is a mixture of solid waste and one or more listed hazardous wastes or is derived from one or more hazardous wastes, this demonstration may be made with respect to each constituent listed waste or the waste mixture as a whole. A waste which is so excluded may still be a hazardous waste by operation of 6 MCAR S 4.9132.

3. Demonstration samples must consist of enough representative samples, but in no case less than four samples, taken over a period of time sufficient to represent the

variability or the uniformity of the waste.

4. If the waste is listed with codes "I," "C," "R," or "E" in 6 MCAR S 4.9134, the petitioner must show that demonstration samples of the waste do not exhibit a relevant characteristic defined in 6 MCAR S 4.9132 using any applicable test methods prescribed in 6 MCAR S 4.9132.

5. If the waste is listed with code "T" in 6 MCAR S 4.9134, the petitioner must demonstrate that:

a. demonstration samples of the waste do not contain the constituent that caused the agency to list the waste, using the appropriate test methods prescribed in Code of Federal Regulations, title 40, part 261, appendix III (1983); or

b. the waste does not meet the criterion of 6 MCAR S 4.9131 A.3. when considering the factors in 6 MCAR S 4.9131 A.3.a.-k.

6. If the waste is listed with the code "H" in 6 MCAR S 4.9134, the petitioner must demonstrate that the waste does not meet the criterion of 6 MCAR S 4.9131 A.2. and that the waste does not meet the criterion of 6 MCAR S 4.9131 A. when considering the factors listed in 6 MCAR S 4.9131 A.3.a.-k.

7. Each petition must include in addition to the information required by 2.:

a. the petitioner's name and address;

b. a statement of the petitioner's interest in the proposed action;

c. the name and address of the laboratory facility performing the sampling or testing of the waste;

d. the names and qualifications of the persons sampling and testing the waste;

e. the dates of sampling and testing;

f. the location of the generating facility;

g. a description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations, or feed materials can or might produce a waste that is not covered by the demonstration;

h. a description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration;

i. pertinent data on and discussion of the factors delineated in the respective criterion for listing a hazardous waste, when the demonstration is based on the factors in 6 MCAR S 4.9131 A.3.a.-k.;

j. a description of the methodologies and equipment used to obtain the representative samples;

k. a description of the sample handling and preparation techniques, including techniques used for extraction, containerization, and preservation of the samples;

l. a description of the tests performed, including results;

m. the names and model numbers of the instruments used in performing the tests; and

n. the following statement signed by the generator of the waste or his authorized representative:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted 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."

8. After receiving a petition for an exclusion, the agency or the director may request any additional information which it may reasonably require to evaluate the petition. An exclusion will only apply to the waste generated at the individual facility covered by the demonstration and will not apply to waste from any other facility. The agency may exclude only part of the waste for which the demonstration is submitted when it has reason to believe that variability of the waste justifies a partial exclusion. The agency may grant a temporary exclusion before making a final decision whenever it finds that

there is a substantial likelihood that an exclusion will be finally granted.

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Rules as Adopted

Chapter Two: Identification and Listing of Hazardous Waste

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6 MCAR S 4.9134 Lists of hazardous wastes.

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6 MCAR S 4.9136 Basis for listing hazardous waste.

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Chapter Two: Identification and Listing of Hazardous Waste

6 MCAR S 4.9128 Classification of certain wastes.

A. Applicability. This rule establishes the criteria for determining whether a mixture of hazardous and nonhazardous waste is a hazardous waste and identifies wastes that are exempt wastes.

B. Mixtures of hazardous and nonhazardous wastes.

1. A mixture is a hazardous waste if it is a mixture of nonhazardous waste and any waste which is hazardous solely because it exhibits the characteristic of ignitability, corrosivity, oxidativity, or reactivity as described in 6 MCAR S 4.9132, unless the resulting mixture no longer exhibits any of the characteristics of ignitability, corrosivity, oxidativity, or reactivity and does not exhibit characteristics of extraction procedure (EP) toxicity or toxicity as defined in 6 MCAR S 4.9132.

2. A mixture is a hazardous waste if it is a mixture of nonhazardous waste and any waste listed in 6 MCAR S 4.9134 solely because of ignitability, corrosivity, or reactivity,

unless the resulting mixture either no longer exhibits any of the characteristics of ignitability, corrosivity, and reactivity, and does not exhibit characteristics of extraction procedure (EP) toxicity or toxicity as defined in 6 MCAR S 4.9132, or has been excluded from regulation pursuant to 6 MCAR S 4.9104 B.

3. A mixture is a hazardous waste if it is a nonsewered mixture of nonhazardous waste and any waste listed in 6 MCAR S 4.9134 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) or any waste which is hazardous because it exhibits the characteristics of extraction procedure (EP) toxicity or toxicity as identified in 6 MCAR S 4.9132 unless the resulting mixture has been excluded from regulation pursuant to 6 MCAR S 4.9104 B.

4. A mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste which is hazardous because it exhibits the characteristics of extraction procedure (EP) toxicity or toxicity as defined in 6 MCAR S 4.9132 unless prior to entering the sewer the resulting mixture no longer exhibits the characteristics of extraction procedure (EP) toxicity or toxicity, and the sewering of the mixture has been approved by the agency pursuant to 6 MCAR S 4.9211. This provision does not apply to those mixtures defined as nonhazardous under 6.

5. Except as provided in 6., a mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste listed in 6 MCAR S 4.9134 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) unless the resulting mixture has been excluded from regulation under 6 MCAR S 4.9104 B.

6. Except as otherwise provided in 1., 2., or 4., the following sewered mixtures of nonhazardous wastes and hazardous wastes listed in 6 MCAR S 4.9134 are not hazardous wastes if the generator can demonstrate that the mixture consists of wastewater, the discharge of which is subject to regulation under the Federal Water Pollution Control Act Amendments of

1972, United States Code, title 33, section 1317(b) or 1342, as amended through June 30, 1983, including wastewater at facilities which have eliminated the discharge of wastewater; and

a. one or more of the following spent solvents listed in 6 MCAR S 4.9134: carbon tetrachloride, tetrachloroethylene, trichloroethylene; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed one part per million;

b. one or more of the following spent solvents listed in 6 MCAR S 4.9134: methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million;

c. heat exchanger bundle cleaning sludge from the petroleum refining industry, hazardous waste No. K050 as listed in 6 MCAR S 4.9134;

d. a discarded commercial chemical product, or chemical intermediate listed in 6 MCAR S 4.9134 arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. 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 or leaks from pipes, valves, or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsing from empty containers or from containers that are rendered empty by that rinsing; or

e. wastewater resulting from laboratory operations containing toxic wastes listed in 6 MCAR S 4.9134, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system, or provided the waste's combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation.

7. For the purpose of B., headworks refers to the influent plumbing of a privately owned national pollutant discharge elimination system, state disposal system, or pretreatment facility or to the facility's point of discharge to a municipal collection system when the treament facility is a publicly owned wastewater treatment facility.

treatment. — notify Revisor

C. Exempt wastes. The following wastes may be stored, labeled, transported, treated, processed, and disposed of without complying with the requirements of 6 MCAR SS 4.9100-4.9560:

1. normal refuse from households including garbage, trash, and sanitary wastes in septic tanks. Households include single and multiple residences, hotels, and motels;

2. sewage and any mixture of untreated sanitary sewage and other wastes that is formed by the combination of untreated sanitary sewage and one or more other wastes discharged through a sewage system to a publicly owned treatment works for

treatment, except that this exemption does not include any of the individual wastes which form the composite wastewater;

3. garbage, rubbish, and demolition debris from nonhousehold sources;

4. mining overburden returned to the mine site;

5. an air contaminant or emission emitted pursuant to an emission facility operating permit;

6. fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated from the combustion of fuel which is at least 51 percent coal or other fossil fuels and the balance of the fuel does not contain hazardous waste;

7. wastes discharged pursuant to a national pollutant discharge elimination system permit;

8. drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy;

9. waste from the extraction, beneficiation, and processing of ores and minerals, including coal, and including phosphate rock and overburden from the mining of uranium ore;

10. wastes resulting from spills if the exemption is determined by the director to be necessary to expedite the proper management of the spilled material and to prevent, abate, or control pollution as an immediate response to an emergency provided the waste is ultimately taken to a hazardous waste facility as specified in 6 MCAR S 4.9210 E.7. a.-d.;

11. a waste which contains chromium and which is not hazardous because of another component or because of a hazardous characteristic if it is shown by a generator that:

a. the chromium in the waste is exclusively or nearly exclusively trivalent chromium;

b. the waste is generated from an industrial process which used trivalent chromium exclusively or nearly exclusively and the process does not generate hexavalent chromium; and

c. the waste is typically and frequently managed in nonoxidizing environments;

12. a hazardous waste which is generated in a product or

raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated nonwaste-treatment-manufacturing unit until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing or for storage or transportation of product or raw materials;

13. petroleum-derived waste oils which do not contain waste listed in 6 MCAR S 4.9134 and are to be beneficially used, reused, recycled, or reclaimed; or

14. a sample of waste, water, soil, or air, which is collected for the sole purpose of testing to determine its characteristics or composition when:

a. the sample is being transported to a laboratory for the purpose of testing; or

b. the sample is being transported back to the sample collector after testing; or

c. the sample is being stored by the sample collector before transport to a laboratory for testing; or

d. the sample is being stored in a laboratory before testing; or

e. the sample is being stored in a laboratory after testing but before it is returned to the sample collector; or

f. the sample is being stored temporarily in the laboratory after testing for a specific purpose such as the conclusion of a court case or other ongoing enforcement action where further testing of the sample may be necessary.

In all cases a sample collector who ships samples to a laboratory and a laboratory that returns samples to a sample collector must comply with United States Department of Transportation, United States Postal Service, or any other applicable shipping requirements. If the sample collector or laboratory determines that the United States Department of Transportation, United States Postal Service, or other shipping

requirements do not apply to the shipment of the sample, then the collector or laboratory must assure that the following information accompanies the sample: the sample collector's name, mailing address, and telephone number; the laboratory's name, mailing address, and telephone number; the quantity of the sample; the date of the shipment; and a description of the sample. The sample must be packaged so that it does not leak, spill, or vaporize from its packaging. This exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions specified in a.-f.

15. scrap metal which is not hazardous because of a hazardous characteristic other than toxicity, is not a waste listed in 6 MCAR S 4.9134 and is to be beneficially used, reused, recycled, or reclaimed. Scrap metal means manufactured metal objects and products; metal workings including but not limited to sandings, grindings, shavings, cuttings, turnings, and stampings; and solid metallic residues of metal production excluding sludges, air pollution control dusts, semi-solids, and liquid solutions.

6 MCAR S 4.9129 Management of waste by use, reuse, recycling, and reclamation.

A. Scope. This rule regulates hazardous waste that is to be beneficially used, reused, or legitimately recycled or reclaimed.

B. Requirements. A hazardous waste that is to be beneficially used, reused, or legitimately recycled or reclaimed is exempt from 6 MCAR SS 4.9200-4.9560, and the agency's permitting requirements, except as specified in 1.-5. Hazardous waste must be transported in accordance with all applicable requirements in Minnesota Statutes, section 221.033 and Code of Federal Regulations, title 49, parts 171 to 179 (1983).

1. A hazardous waste that is not a sludge, and neither is nor contains a waste listed in 6 MCAR S 4.9134, and neither is nor contains a waste that is toxic pursuant to 6 MCAR S 4.9132 F. is subject to the following requirements:

a. 6 MCAR SS 4.9205-4.9208;

b. 6 MCAR SS 4.9211-4.9213;

c. 6 MCAR S 4.9215;

d. 6 MCAR S 4.9216 A.5.-7.;

e. 6 MCAR SS 4.9217-4.9221;

f. 6 MCAR S 4.9317 C.2., G.1.a., H., and I.;

g. 6 MCAR S 4.9318 C.3.-4., 6., G.1., H., and I.;

h. 6 MCAR S 4.9415 B., D., E., F., and G.;

i. 6 MCAR SS 4.9559-4.9560; and

j. A hazardous waste that is EP toxic according to 6 MCAR S 4.9132 G. and is stored outdoors in tanks, surface impoundments, or waste piles prior to beneficial use, reuse, recycling, or reclamation is subject to the agency's permitting procedures and the following requirements: 6 MCAR SS 4.9200-4.9318; 4.9380-4.9417; and 4.9559-4.9560.

2. Spent pickle liquor that is reused in wastewater treatment at a facility holding a National Pollution Discharge Elimination System permit, or that is being accumulated, stored, or physically, chemically, or biologically treated before reuse, is subject to the requirements in 6 MCAR SS 4.9205-4.9208; 4.9211-4.9213; 4.9215; 4.9216 A.5.-6.; 4.9217-4.9221; and 4.9559-4.9560.

3. A hazardous waste that is a sludge, or is or contains a waste listed in 6 MCAR S 4.9134, or is or contains a waste that is toxic under 6 MCAR S 4.9132 F., and is transported or stored prior to beneficial use, reuse, or legitimate recycling or reclamation by methods other than burning, is subject to the agency's permitting procedures for hazardous waste storage facilities and the following requirements;

a. 6 MCAR SS 4.9200-4.9318;

b. 6 MCAR SS 4.9380-4.9417; and

c. 6 MCAR SS 4.9559-4.9560.

4. A hazardous waste listed in 6 MCAR S 4.9134 for ignitability only and transported or stored prior to a beneficial use that involves burning is subject to the agency's permitting procedures for hazardous waste storage facilities and the following requirements;

a. 6 MCAR SS 4.9200-4.9318;

b. 6 MCAR SS 4.9380-4.9417; and

c. 6 MCAR SS 4.9559-4.9560.

5. A hazardous waste that is a sludge, or is or contains a waste listed in 6 MCAR S 4.9134 for reasons other than ignitability, or is or contains a waste that is toxic under 6 MCAR S 4.9132 F. and is transported or stored prior to a beneficial use involving burning is subject to the agency's permitting procedures for hazardous waste storage facilities and the following requirements:

a. 6 MCAR SS 4.9200-4.9318;

b. 6 MCAR S 4.9321, except D.3. and G.1.b.;

c. 6 MCAR SS 4.9380-4.9417;

d. 6 MCAR S 4.9421;

e. 6 MCAR SS 4.9559-4.9560; and

f. must apply for or have an air quality permit as required.

C. Out-of-state wastes. Hazardous waste from an out-of-state generator that is to be beneficially used, reused, or legitimately recycled or reclaimed by methods other than burning, is exempt from the requirements of 6 MCAR SS 4.9211 and 4.9218.

6 MCAR S 4.9130 Residues in empty containers and empty inner liners.

A. Applicability. Any hazardous waste remaining in an empty container or an empty inner liner removed from an empty container, as defined in B.-D. is not subject to regulation under 6 MCAR SS 4.9128-4.9560 or a hazardous waste facility permit. Any hazardous waste in a container or an inner liner removed from a container that is not empty, as defined in B.-D., is subject to regulation under 6 MCAR SS 4.9128-4.9560 and the agency's permitting procedures.

B. Empty containers or inner liners; definition. A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified in 6 MCAR S 4.9134 D.3., is empty if:

1. all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container such as pouring, pumping, and aspirating; and

2. no more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner; or

3. no more than three percent by weight of the total capacity of the container remains in the container or inner liner if the container or inner liner is less than or equal to 110 gallons in size; or

4. no more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container or inner liner is greater than 110 gallons in size.

C. Other empty containers or inner liners. A container or inner liner that has held a hazardous waste identified in 6 MCAR S 4.9134 D.5. is empty if:

1. the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

2. the container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

3. in the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

D. Empty compressed gas containers. A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric pressure.

6 MCAR S 4.9131 Criteria for listing hazardous waste.

A. Criteria used by agency for listing hazardous waste. The agency shall list a waste as hazardous if:

1. the waste exhibits any of the characteristics of hazardous waste in 6 MCAR S 4.9132;

2. the waste has been found to be fatal to humans in low

doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral median lethal dose toxicity (rat) of less than 50 milligrams per kilogram, an inhalation median lethal concentration toxicity (rat) of less than two milligrams per liter, or a dermal median lethal dose toxicity (rabbit) of less than 200 milligrams per kilogram, or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness; or

3. the waste contains any of the toxic constituents listed in 6 MCAR S 4.9137 unless the agency 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, or otherwise managed. The agency shall consider the following factors when it makes this decision:

a. the nature of the toxicity presented by the constituent;

b. the concentration of the constituent in the waste;

c. the potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in g.;

d. the persistence of the constituent or any toxic degradation product of the constituent;

e. the potential for the constituent or any toxic degradation product of the constituent to degrade into nonharmful constituents and the rate of degradation;

f. the degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems;

g. the plausible types of improper management to which the waste could be subjected;

h. the quantities of the waste generated at individual generation sites or on a regional or national basis;

i. the nature and severity of the human health and

environmental damage that has occurred as a result of the improper management of wastes containing the constituent;

j. action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent; and

k. other factors ~~as may be appropriate~~ that are relevant to the agency's determination of whether the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

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B. Classes of wastes. The agency may list classes or types of waste as hazardous waste if there is reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste in 6 MCAR S 4.9100.

C. Acute and toxic wastes. Waste listed in accordance with the criteria of A.2. shall be designated acute hazardous waste. Waste listed in accordance with the criteria of A.3. or which exhibits the characteristic of toxicity under A.1. shall be designated as toxic waste. Substances shall be listed in 6 MCAR S 4.9137 only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms.

D. Director's recommendation. The director may recommend to the agency that a specific generator's waste be classified as a hazardous waste because it meets one or more of the criteria in A., or because its quantity, concentration, or chemical, physical, or infectious characteristics may (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health, or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. If the director makes such a recommendation, the procedures in 6 MCAR S 4.9209 shall be followed.

6 MCAR S 4.9132 Characteristics of hazardous waste.

A. In general. A waste which is not excluded from regulation as a hazardous waste under 6 MCAR S 4.9128 C. is a hazardous waste if it exhibits ignitability, corrosivity, reactivity, toxicity, extraction procedure (EP) toxicity, or is an oxidizer, as described in B.-G.

B. Ignitability.

1. A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

a. it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees Celsius (140 degrees Fahrenheit), as determined by a Pensky-Martens Closed Cup Tester using the test method specified in standard D-93-79 or D-93-80 in the Annual Book of ASTM Standards, issued by the American Society for Testing and Materials (Philadelphia 1982), or a Setaflash Closed Cup Tester using the test method specified in standard D-3278-78 in the Annual Book of ASTM Standards, issued by the American Society for Testing and Materials (Philadelphia 1982), or as determined by an equivalent test method approved by the director under the procedures set forth in 6 MCAR S 4.9104 A.;

b. it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; or

c. it is an ignitable compressed gas as defined in Code of Federal Regulations, title 49, section 173.300 (1983) and as determined by the test methods described in that regulation or equivalent test methods approved by the director under 6 MCAR S 4.9104 A.

2. A waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number of D001.

C. Oxidizers.

1. A waste exhibits the characteristics of an oxidizer if a representative sample of the waste has the following properties:

a. It is an oxidizer as defined in Code of Federal Regulations, title 49, section 173.151 (1983); or

b. It readily supplies oxygen to a reaction in the absence of air. Oxidative materials include, but are not limited to, oxides, organic and inorganic peroxides, permanganates, perrhenates, chlorates, perchlorates, persulfates, nitric acid, organic and inorganic nitrates, iodates, periodates, bromates, perselenates, perbromates, chromates, dichromates, ozone, and perborates. Bromine, chlorine, fluorine, and iodine react similarly to oxygen under some conditions and are therefore also oxidative materials.

2. A waste that exhibits the characteristics of an oxidizer, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number of D001.

D. Corrosivity.

1. A waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following properties:

a. It is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by a pH meter using either the test method in the Test Methods for ~~the Evaluation of~~ Evaluating Solid Waste, Physical/Chemical Methods issued by the United States Environmental Protection Agency, publication number SW 846 (~~1980~~)-(First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) also described in Methods for Chemical Analysis of Water and Waste issued by the Environmental Monitoring and Support Laboratory, publication number 600/7-79-020 (March 1979), or an equivalent test method approved by the director under the procedures set forth in 6 MCAR S 4 4.9104 A.; or

b. It is liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test

temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by the test method specified in National Association of Corrosion Engineers Standard TM-01-69 as standardized in Test Methods for ~~the Evaluation of~~ Evaluating Solid Waste, Physical/Chemical Methods, issued by the United States Environmental Protection Agency, publication number SW 846 (~~1980~~ First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) or an equivalent test method approved by the director under the procedures set forth in 6 MCAR S 4.9104 A.

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2. A waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number of D002.

E. Reactivity.

1. A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

a. it is normally unstable and readily undergoes violent change without detonating;

b. it reacts violently with water;

c. it forms potentially explosive mixtures with water;

d. when mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

e. it is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2.0 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

f. it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

g. it is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; or

h. it is a forbidden explosive as defined in Code of Federal Regulations, title 49, section 173.51 (1983), a Class A

explosive as defined in Code of Federal Regulations, title 49, section 173.53 (1983), or a Class B explosive as defined in Code of Federal Regulations, title 49, Section 173.88 (1983).

2. A waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number of D003.

F. Toxicity.

1. A waste exhibits the characteristic of toxicity as determined in 2., if a representative sample of the waste has any one of the following properties:

a. an oral median lethal dose less than 500 milligrams of material per kilogram of body weight of test animal;

b. a dermal median lethal dose less than 1,000 milligrams of material per kilogram of body weight of test animal;

c. an inhalation median lethal concentration of less than 2,000 milligrams of material per cubic meter of air, if the material or a component is in a form that may be inhaled as a dust or mist; or

d. an inhalation median lethal concentration of less than 1,000 parts per million of material per million parts of air, if the material or component may be inhaled as gas or vapor.

2. Toxicity shall be determined by applying knowledge of materials and processes used, including reasonably available information on the toxicity of the components of the waste. If available information and knowledge are insufficient to reasonably determine toxicity, the generator must notify the director. The director may order additional evaluation as specified in 6 MCAR S 4.9208. Additional evaluation may include testing according to the specifications of 3.

3. Toxicity shall be determined as described in a.-c.

a. Oral median lethal dose shall be determined by a test in which the specified time is 14 days, the group of test animals is at least ten white laboratory rats of 200 to 300 grams each, half of which are male and half of which are female, and the route of administration is a single oral dose.

b. Dermal median lethal dose shall be determined by a test in which the specified time is 14 days and the group of test animals is ten or more white rabbits, half of which are male and half of which are female, and the route of administration is a 24-hour exposure with continuous contact on bare skin.

c. Inhalation median lethal concentration shall be determined by a test in which the specified time is 14 days, the group of the test animals is at least ten white laboratory rats of 200 to 300 grams each, half of which are male and half of which are female, and the route of administration is continuous respiratory exposure for a period of one hour.

4. A waste that exhibits the characteristics of toxicity, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number MN01.

G. Extraction procedure (EP) toxicity.

1. A waste exhibits the characteristic of extraction procedure (EP) toxicity if, using the test methods described in Code of Federal Regulations, title 40, part 261, appendix II (1983), or equivalent methods approved by the director under the procedures set forth in 6 MCAR S 4.9104 A., the extract from a representative sample of the waste contains any of the contaminants listed in Exhibit 6 MCAR S 4.9132 G.3.-1 at a concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract.

2. A waste that exhibits the characteristic of extraction procedure (EP) toxicity, but is not listed as a hazardous waste in 6 MCAR S 4.9134, has the hazardous waste number specified in Exhibit 6 MCAR S 4.9132 G.3.-1 which corresponds to the toxic contaminant causing it to be hazardous.

3. If the concentration of a constituent in a waste is known and that constituent is listed in Exhibit 6 MCAR S 4.9132 G.3.-1, the maximum possible concentration in the extract can be calculated on the assumption that 100 percent of the constituent

will be extracted. If the calculated maximum possible concentration in the extract is less than the limit listed in Exhibit 6 MCAR S 4.9132 G.3.-1, the waste is not a hazardous waste because of the subject constituent.

Exhibit 6 MCAR S 4.9132 G.3.-1

Maximum Concentration of Contaminants for Characteristic of Extraction Procedure (EP) Toxicity

Hazardous Waste Number	Contaminant	Maximum Concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy 1,4,4a,5,6,7,8,8a-octahydro-1,4-endo,endo 5,8-dimethano naphthalene)	0.02
D013	Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.4
D014	Methoxychlor (1,1,1-Trichloro-2,2-bis [p-methoxphenyl] ethane)	10.0
D015	Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine)	0.5
D016	2,4-D (2,4-Dichlorophenoxyacetic acid)	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	1.0

6 MCAR S 4.9133 Exemption from listing due to toxicity.

A. In general. A specific generator's waste that meets any

of the toxicity characteristics as described in 6 MCAR S 4.9132 F.1. and 2. may be exempted from regulation under 6 MCAR SS 4.9128-4.9560 if the generator can demonstrate to the satisfaction of the agency that the waste is not capable of posing a present or potential hazard to human health and the environment if the waste were to be improperly treated, transported, stored, disposed, or managed under routine waste management methods.

B. Factors to be considered. In demonstrating that a waste should be exempt from regulation under 6 MCAR SS 4.9128-4.9560, the generator must present information related to the following factors:

1. the nature of the toxicity displayed by the waste;

2. the median lethal dose or median lethal concentration of the entire waste and each of the toxic constituents within the waste;

3. the toxic constitutent or constituents present in the waste and the respective concentrations;

4. the quantity of the waste produced by the generator on an annual basis;

5. the types of improper or routine waste management to which the waste could be subjected;

6. based upon the improper or routine waste management methods considered in 5., the following factors:

a. the potential of the toxic constituent or constituents or any toxic degradation product or products to migrate from the waste into the environment;

b. the persistence of the toxic constituent or constituents or any toxic degradation product or products;

c. the degree to which the toxic constituent or constituents or any toxic degradation product or products may bioaccumulate in the environment;

d. the potential for the toxic constituents or constituents of any toxic degradation product or products to degrade into nonhazardous constituents and the rate of degradation; and

e. the potential nature and severity of the human health and environmental damage which may result; and

7. other factors ~~required by the agency~~ that are relevant to the agency's determination of whether the waste is capable of posing a present or potential hazard to human health and the environment if the waste were to be improperly treated, transported, stored, disposed of, or managed under routine waste management methods.

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6 MCAR S 4.9134 Lists of hazardous wastes.

A. General.

1. A waste is a hazardous waste if it is listed under B.-E. unless it has been excluded from the list under 6 MCAR S 4.9104 B.

2. The basis for listing the classes or types of wastes listed in B.-E. is indicated by employing one or more of the following hazard codes:

a. ignitable waste, (I);

b. corrosive waste, (C);

c. reactive waste, (R);

d. EP toxic waste, (E);

e. acute hazardous waste, (H); and

f. toxic waste, (T).

The constituent which caused the agency to list the waste as an EP toxic waste (E) or toxic waste (T) in B. and C. is identified in 6 MCAR S 4.9136.

3. Each listed hazardous waste is assigned a hazardous waste number which precedes the name of the waste. This number must be used in complying with the disclosure requirements of 6 MCAR SS 4.9200-4.9222 and certain record keeping and reporting requirements under 6 MCAR SS 4.9200-4.9560 and the agency's permitting procedures.

B. Hazardous wastes from nonspecific sources. Hazardous wastes from nonspecific sources are listed in Exhibit 6 MCAR S 4.9134 B.-1.

Exhibit 6 MCAR S 4.9134 B.-1

Hazardous Wastes From Nonspecific Sources

Hazardous Waste No.	Hazardous Waste	Hazard Code
Generic:		
F001.....	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons, and sludges from the recovery of these solvents in degreasing operations	(T)
F002.....	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, and trichlorofluoromethane, and the still bottoms from the recovery of these solvents	(T)
F003.....	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol, and the still bottoms from the recovery of these solvents	(I)
F004.....	The following spent nonhalogenated solvents: cresols and cresylic acid, and nitrobenzene, and the still bottoms from the recovery of these solvents	(T)

F005.....	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine, and the still bottoms from the recovery of these solvents	(I,T)
F006.....	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum, (2) tin plating on carbon steel, (3) zinc plating (segregated basis) on carbon steel, (4) aluminum or zinc-aluminum plating on carbon steel, (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel, and (6) chemical etching and milling of aluminum	(T)
F019.....	Wastewater treatment sludges from the chemical conversion coating of aluminum	(T)
F007.....	Spent cyanide plating bath solutions from electroplating operations, except for precious metals electroplating spent cyanide plating bath solutions	(R,T)
F008.....	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process, except for precious metals electroplating plating bath sludges	(R,T)

F009.....	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process, except for precious metals electroplating spent stripping and cleaning bath solutions	(R,T)
F010.....	Quenching bath sludge from oil baths from metal heat-treating operations where cyanides are used in the process, except for precious metals heat-treating quenching bath sludges	(R,T)
F011.....	Spent cyanide solutions from salt bath pot cleaning from metal heat-treating operations, except for precious metals heat-treating spent cyanide solutions from salt bath pot cleaning	(R,T)
F012.....	Quenching wastewater treatment sludges from metal heat-treating operations where cyanides are used in the process, except for precious metals heat-treating quenching wastewater treatment sludges	(T)

C. Hazardous waste from specific sources. Hazardous wastes from specific sources are listed in Exhibit 6 MCAR S 4.9134 C.-2.

Exhibit 6 MCAR S 4.9134 C.-2

Hazardous Wastes From Specific Sources

Industry and Hazardous Waste No.	Hazardous Waste	Hazard Code
Wood Preservation:		

K001.....	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol	(T)
Inorganic Pigments:		
K002.....	Wastewater treatment sludge from the production of chrome yellow and orange pigments	(T)
K003.....	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
K004.....	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
K005.....	Wastewater treatment sludge from the production of chrome green pigments	(T)
K006.....	Wastewater treatment sludge from the production of chrome oxide green pigments, anhydrous and hydrated	(T)
K007.....	Wastewater treatment sludge from the production of iron blue pigments	(T)
K008.....	Oven residue from the production of chrome oxide green pigments	(T)
Organic Chemicals:		
K009.....	Distillation bottoms from the production of acetaldehyde from ethylene	(T)
K010.....	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
K011.....	Bottom stream from the wastewater stripper in the production of	(R,T)

K013.....	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R,T)
K014.....	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
K015.....	Still bottoms from the distillation of benzyl chloride	(T)
K016.....	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
K017.....	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin	(T)
K018.....	Heavy ends from the fractionation column in ethyl chloride production	(T)
K019.....	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
K020.....	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
K021.....	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
K022.....	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
K023.....	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
K024.....	Distillation bottoms from the production of phthalic anhydride from napthalene	(T)

K093.....	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094.....	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K025.....	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026.....	Stripping still tails from the production of methyl ethyl pyridines	(T)
K027.....	Centrifuge and distillation residues from toluene diisocyanate production	(R,T)
K028.....	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)
K029.....	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
K095.....	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
K096.....	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K030.....	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
K083.....	Distillation bottoms from aniline production	(T)
K103.....	Process residues from aniline extraction from the production	(T)

	of aniline	
K104.....	Combined wastewater streams generated from nitrobenzene/ aniline production	(T)
K085.....	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K105.....	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes	(T)
Inorganic Chemicals:		
K071.....	Brine purification muds from the mercury cell process in chlorine production, when separately pre-purified brine is not used	(T)
K073.....	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production	(T)
K106.....	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
Pesticides:		
K031.....	By-product salts generated in the production of monosodium methanearsonate (MSMA) and cacodylic acid	(T)
K032.....	Wastewater treatment sludge from the production of chlordane	(T)
K033.....	Wastewater and scrub water from the chlorination of cyclo-pentadiene in the production of chlordane	(T)
K034.....	Filter solids from the filtration of hexachlorocyclopentadiene in	(T)

	the production of chlordane	
K097.....	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane	(T)
K035.....	Wastewater treatment sludges generated in the production of creosote	(T)
K036.....	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
K037.....	Wastewater treatment sludges from the production of disulfoton	(T)
K038.....	Wastewater from the washing and stripping of phorate production	(T)
K039.....	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate	(T)
K040.....	Wastewater treatment sludge from the production of phorate	(T)
K041.....	Wastewater treatment sludge from the production of toxaphene	(T)
K098.....	Untreated process wastewater from the production of toxaphene	(T)
K042.....	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T	(T)
K043.....	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K099.....	Untreated wastewater from the production of 2,4-D	(T)
Explosives:		
K044.....	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045.....	Spent carbon from the treatment of	(R)

	wastewater containing explosives	
K046.....	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds	(T)
K047.....	Pink/red water from operations involving 2,4,6-trinitro-toluene (TNT)	(R)
Petroleum Refining:		
K048.....	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049.....	Slop oil emulsion solids from the petroleum refining industry	(T)
K050.....	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051.....	American Petroleum Institute separator sludge from the petroleum refining industry as specified in The Manual on Disposal of Refinery Wastes, volume 1, issued by the American Petroleum Institute, (Washington, D.C., 1969), available at the State of Minnesota Law Library	(T)
K052.....	Tank bottoms (leaded) from the petroleum refinery industry	(T)
Iron and Steel:		
K061.....	Emission control dust or sludge from the primary production of steel in electric furnaces	(T)
K062.....	Spent pickle liquor from steel finishing operations	(C,T)
Secondary Lead:		
K069.....	Emission control dust or sludge from secondary lead smelting	(T)

K100.....	Waste leaching solution from acid leaching of emission control dust or sludge from secondary lead smelting	(T)

Veterinary Pharmaceuticals:

K084.....	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
K101.....	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
K102.....	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)

Ink Formulation:

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)

Coke:

K060.....	Ammonia still lime sludge from coking operations	(T)
K087.....	Decanter tank tar sludge from coking operations	(T)

D. Discarded commercial chemical products, off-specification species, containers, and spill residues. The following

materials or items are hazardous wastes if and when they are discarded or intended to be discarded:

1. any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in 5. or 6.;

2. any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in 5. or 6.;

3. any residue remaining in a container or inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic names listed in 5., unless the container or inner liner is empty as defined in 6 MCAR S 4.9130 C.;

4. any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in 5. or 6., or any residue or contaminated soil, water, or other debris resulting from the clean-up of a spill into or on any land or water of any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications would have the generic name listed in 5. or 6.; and

5. the commercial chemical products or manufacturing chemical intermediates, or off-specification commercial chemical products or manufacturing chemical intermediates referred to in 1.-4. and listed in 6 MCAR S 4.9134 D.5.-3, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in 6 MCAR S 4.9210 A.2. and 3. The primary hazardous properties of these materials have been indicated by the letters T (toxicity), and R (reactivity). Absence of a letter indicates that the compound is listed only for acute toxicity. These wastes and their corresponding hazardous waste numbers are listed in Exhibit 6 MCAR S 4.9134 D.5.-3.

Exhibit 6 MCAR S 4.9134 D.5.-3

Hazardous Wastes from Commercial Chemical Products

Hazardous Waste No.	Substance	Hazard Code
P023	Acetaldehyde, chloro-	
P002	Acetamide, N-(aminothioxomethyl)-	
P057	Acetamide, 2-fluoro-	
P058	Acetic acid, fluoro-, sodium salt	
P066	Acetimidic acid, N-[(methylcarbamoyl)oxy] thio-, methyl ester	
P001	3-(alpha-Acetonyl-benzyl)-4-hydroxycoumarin and salts	
P002	1-Acetyl-2-thiourea	
P003	Acrolein	
P070	Aldicarb	
P004	Aldrin	
P005	Allyl alcohol	
P006	Aluminum phosphide	(R,T)
P007	5-(Aminomethyl)-3-isoxazolol	
P008	4-Aminopyridine	
P009	Ammonium picrate	(R)
P119	Ammonium vanadate	
P010	Arsenic acid	
P012	Arsenic (III) oxide	
P011	Arsenic (V) oxide	
P011	Arsenic pentoxide	
P012	Arsenic trioxide	
P038	Arsine, diethyl-	
P054	Aziridine	
P013	Barium cyanide	
P024	Benzenamine, 4-chloro-	
P077	Benzenamine, 4-nitro-	
P028	Benzene, (chloromethyl)-	
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methyl-amino)ethyl]-	
P014	Benzenethiol	
P028	Benzyl chloride	

P015.....Beryllium dust

P016.....Bis(chloromethyl) ether

P017.....Bromoacetone

P018.....Brucine

P021.....Calcium cyanide

P123.....Camphene, octachloro-

P103.....Carbamimidoselenoic acid

P022.....Carbon bisulfide

P022.....Carbon disulfide

P095.....Carbonyl chloride

P033.....Chlorine cyanide

P023.....Chloroacetaldehyde

P024.....p-Chloroaniline

P026.....1-(o-Chlorophenyl)thiourea

P027.....3-Chloropropionitrile

P029.....Copper cyanides

P030.....Cyanides (soluble cyanide salts), not elsewhere specified

P031.....Cyanogen

P033.....Cyanogen chloride

P036.....Dichlorophenylarsine

P037.....Dieldrin

P038.....Diethylarsine

P039.....O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate

P041.....Diethyl-p-nitrophenyl phosphate

P040.....O,O-Diethyl O-pyrazinyl phosphorothioate

P043.....Diisopropyl fluorophosphate

P044.....Dimethoate

P045.....3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino)carbonyl] oxime

P071.....O,O-Dimethyl O-p-nitrophenyl phosphorothioate

P082.....Dimethylnitrosamine

P046.....alpha, alpha-Dimethylphenethylamine

P047.....4,6-Dinitro-o-cresol and salts

P034.....4,6-Dinitro-o-cyclohexylphenol

P048.....2,4-Dinitrophenol

P020.....Dinoseb

P085.....Diphosphoramide, octamethyl-

P039.....Disulfoton

P049.....2,4-Dithiobiuret

P109.....Dithiopyrophosphoric acid, tetraethyl ester

P050.....Endosulfan

P088.....Endothall

P051.....Endrin

P042.....Epinephrine

P046.....Ethanamine, 1,1-dimethyl-2-phenyl-

P084.....Ethenamine, N-methyl-N-nitroso-

P101.....Ethyl cyanide

P054.....Ethylenimine

P097.....Famphur

P056.....Fluorine

P057.....Fluoroacetamide

P058.....Fluoroacetic acid, sodium salt

P065.....Fulminic acid, mercury(II) salt (R,T)

P059.....Heptachlor

P051.....1,2,3,4,10,10-Hexachloro-6,7-epoxy-
1,4,4a,5,6,7,8,8a-octahydro-endo,endo-
1,4:5,8-dimethanonaphthalene

P037.....1,2,3,4,10,10-Hexachloro-6,7-epoxy-
1,4,4a,5,6,7,8,8a-octahydro-endo,exo-
1,4:5,8-dimethanonaphthalene

P060.....1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
hexahydro-1,4:5,8-endo,
endo-dimethanonaphthalene

P004.....1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-
hexahydro-1,4:5,8-endo,exo-
dimethanonaphthalene

P060.....Hexachlorohexahydro-endo,endo-
dimethanonaphthalene

P062.....Hexaethyl tetraphosphate

P116.....Hydrazinecarbothioamide
P068.....Hydrazine, methyl-
P063.....Hydrocyanic acid
P063.....Hydrogen cyanide
P096.....Hydrogen phosphide
P064.....Isocyanic acid, methyl ester
P007.....3(2H)-Isoxazolone, 5-(aminomethyl)-
P092.....Mercury, (acetato-O)phenyl-
P065.....Mercury fulminate (R,T)
P016.....Methane, oxybis(chloro)-
P112.....Methane, tetranitro- (R)
P118.....Methanethiol, trichloro-
P059.....4,7-Methano-1H-indene, 1,4,5,6,7,8,8-hep-
tachloro-3a,4,7,7a-tetrahydro-
P066.....Methomyl
P067.....2-Methylaziridine
P068.....Methyl hydrazine
P064.....Methyl isocyanate
P069.....2-Methyllactonitrile
P071.....Methyl parathion
P072.....alpha-Naphthylthiourea
P073.....Nickel carbonyl
P074.....Nickel cyanide
P074.....Nickel(II) cyanide
P073.....Nickel tetracarbonyl
P075.....Nicotine and salts
P076.....Nitric oxide
P077.....p-Nitroaniline
P078.....Nitrogen dioxide
P076.....Nitrogen(II) oxide
P078.....Nitrogen(IV) oxide
P081.....Nitroglycerine (R)
P082.....N-Nitrosodimethylamine
P084.....N-Nitrosomethylvinylamine
P050.....5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-
hexachloro, cyclic sulfite

P085.....Octamethylpyrophosphoramide

P087.....Osmium oxide

P087.....Osmium tetroxide

P088.....7-Oxabicyclo[2.2.1]heptane-2,3-
dicarboxylic acid

P089.....Parathion

P034.....Phenol, 2-cyclohexyl-4,6-dinitro-

P048.....Phenol, 2,4-dinitro-

P047.....Phenol, 2,4-dinitro-6-methyl-, and salts

P020.....Phenol, 2,4-dinitro-6-(1-methylpropyl)-

P009.....Phenol, 2,4,6-trinitro-, ammonium salt (R)

P036.....Phenyl dichloroarsine

P092.....Phenylmercuric acetate

P093.....N-Phenylthiourea

P094.....Phorate

P095.....Phosgene

P096.....Phosphine

P041.....Phosphoric acid, diethyl p-nitrophenyl
ester

P044.....Phosphorodithioic acid, O,O-dimethyl S-
[2-(methylamino)-2-oxoethyl]ester

P043.....Phosphorofluoridic acid, bis(1-methylethyl)
ester

P094.....Phosphorothioic acid, O,O-diethyl S-
(ethylthio)methyl ester

P089.....Phosphorothioic acid, O,O-diethyl
O-(p-nitrophenyl) ester

P040.....Phosphorothioic acid, O,O-diethyl O-
pyrazinyl ester

P097.....Phosphorothioic acid, O,O-dimethyl O-[p-
((dimethylamino)-sulfonyl)phenyl]ester

P110.....Plumbane, tetraethyl-

P098.....Potassium cyanide

P099.....Potassium silver cyanide

P070.....Propanal, 2-methyl-2-(methylthio)-,
O- [(methylamino)carbonyl]oxime

P101.....Propanenitrile

P027.....Propanenitrile, 3-chloro-

P069.....Propanenitrile, 2-hydroxy-2-methyl-

P081.....1,2,3-Propanetriol, trinitrate- (R)

P017.....2-Propanone, 1-bromo-

P102.....Propargyl alcohol

P003.....2-Propenal

P005.....2-Propen-1-ol

P067.....1,2-Propylenimine

P102.....2-Propyn-1-ol

P008.....4-Pyridinamine

P075.....Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts

P111.....Pyrophosphoric acid, tetraethyl ester

P103.....Selenourea

P104.....Silver cyanide

P105.....Sodium azide

P106.....Sodium cyanide

P107.....Strontium sulfide

P108.....Strychnidin-10-one, and salts

P018.....Strychnidin-10-one, 2,3-dimethoxy-

P108.....Strychnine and salts

P115.....Sulfuric acid, thallium(I) salt

P109.....Tetraethyldithiopyrophosphate

P110.....Tetraethyl lead

P111.....Tetraethylpyrophosphate

P112.....Tetranitromethane (R)

P062.....Tetraphosphoric acid, hexaethyl ester

P113.....Thallic oxide

P113.....Thallium(III) oxide

P114.....Thallium(I) selenide

P115.....Thallium(I) sulfate

P045.....Thiofanox

P049.....Thioimidodicarbonic diamide

P014.....Thiophenol

P116.....Thiosemicarbazide

P026.....Thiourea, (2-chlorophenyl)-
P072.....Thiourea, 1-naphthalenyl-
P093.....Thiourea, phenyl-
P123.....Toxaphene
P118.....Trichloromethanethiol
P119.....Vanadic acid, ammonium salt
P120.....Vanadium pentoxide
P120.....Vanadium(V) oxide
P001.....Warfarin
P121.....Zinc cyanide
P122.....Zinc phosphide (R,T)

6. The commercial chemical products or manufacturing chemical intermediates, or off-specification commercial chemical products referred to in 1., 2., and 4., and listed in 6 MCAR S 4.9134 D.6.-4 are identified as toxic wastes (T) unless otherwise designated and are subject to the small quantity exclusion defined in 6 MCAR S 4.9210 A.1. The primary hazardous properties of these materials have been indicated by the letters T (toxicity), R (reactivity), I (ignitability), and C (corrosivity). Absence of a letter indicates that the compound is listed only for toxicity. These wastes and their corresponding hazardous waste numbers are listed in Exhibit 6 MCAR S 4.9134 D.6.-4.

Exhibit 6 MCAR S 4.9134 D.6.-4

Hazardous Wastes from Commercial Chemical Products

Hazardous Waste No.	Substance	Hazard Code
U001	Acetaldehyde	(I)
U034	Acetaldehyde, trichloro-	
U187	Acetamide, N-(4-ethoxyphenyl)-	
U005	Acetamide, N-9H-fluoren-2-yl-	
U112	Acetic acid, ethyl ester	(I)
U144	Acetic acid, lead salt	

U214.....Acetic acid, thallium(I) salt
U002.....Acetone (I)
U003.....Acetonitrile (I,T)
U004.....Acetophenone
U005.....2-Acetylaminofluorene
U006.....Acetyl chloride (C,R,T)
U007.....Acrylamide
U008.....Acrylic acid (I)
U009.....Acrylonitrile
U150.....Alanine, 3-[p-bis(2-chloroethyl) amino] phenyl-,L-
U011.....Amitrole
U012.....Aniline (I,T)
U014.....Auramine
U015.....Azaserine
U010.....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-,
U157.....Benz[j]aceanthrylene, 1,2-dihydro -3-methyl-
U016.....Benz[c]acridine
U016.....3,4-Benzacridine
U017.....Benzal chloride
U018.....Benz[a]anthracene
U018.....1,2-Benzanthracene
U094.....1,2-Benzanthracene, 7,12-dimethyl-
U012.....Benzenamine (I,T)
U014.....Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl)-
U049.....Benzenamine, 4-chloro-2-methyl-
U093.....Benzenamine, N,N'-dimethyl-4-phenylazo -
U158.....Benzenamine, 4,4'-methylenebis (2-chloro)-
U222.....Benzenamine, 2-methyl-, hydrochloride

U181.....Benzenamine, 2-methyl-5-nitro
U019.....Benzene (I,T)
U038.....Benzeneacetic acid, 4-chloro-alpha-
(4-chlorophenyl)-alpha-hydroxy,
ethyl ester
U030.....Benzene, 1-bromo-4-phenoxy-
U037.....Benzene, chloro-
U190.....1,2-Benzenedicarboxylic acid anhydride
U028.....1,2-Benzenedicarboxylic acid,
[bis(2-ethyl-hexyl)] ester
U069.....1,2-Benzenedicarboxylic acid,
dibutyl ester
U088.....1,2-Benzenedicarboxylic acid,
diethyl ester
U102.....1,2-Benzenedicarboxylic acid,
dimethyl ester
U107.....1,2-Benzenedicarboxylic acid,
di-n-octyl ester
U070.....Benzene, 1,2-dichloro-
U071.....Benzene, 1,3-dichloro-
U072.....Benzene, 1,4-dichloro-
U017.....Benzene, (dichloromethyl)-
U223.....Benzene, 1,3-diisocyanatomethyl- (R,T)
U239.....Benzene, dimethyl- (I,T)
U201.....1,3-Benzenediol
U127.....Benzene, hexachloro-
U056.....Benzene, hexahydro- (I)
U188.....Benzene, hydroxy-
U220.....Benzene, methyl-
U105.....Benzene, 1-methyl-1-2,4-dinitro-
U106.....Benzene, 1-methyl-2,6 dinitro-
U203.....Benzene, 1,2-methylenedioxy-4-
allyl-
U141.....Benzene, 1,2-methylenedioxy-4-
propenyl-
U090.....Benzene, 1,2-methylenedioxy-4-

propyl-

U055.....Benzene, (1-methylethyl)- (I)

U169.....Benzene, nitro- (I,T)

U183.....Benzene, pentachloro-

U185.....Benzene, pentachloronitro-

U020.....Benzenesulfonic acid chloride (C,R)

U020.....Benzenesulfonyl chloride (C,R)

U207.....Benzene, 1,2,4,5-tetrachloro-

U023.....Benzene, (trichloromethyl)- (C,R,T)

U234.....Benzene, 1,3,5-trinitro- (R,T)

U021.....Benzidine

U202.....1,2-Benzisothiazolin-3-one,
1,1-dioxide and salts

U120.....Benzo[j,k]fluorene

U022.....Benzo[a]pyrene

U022.....3,4-Benzopyrene

U197.....p-Benzoquinone

U023.....Benzotrichloride (C,R,T)

U050.....1,2-Benzphenanthrene

U085.....2,2'-Bioxirane (I,T)

U021.....(1,1'-Biphenyl)-4,4'-diamine

U073.....(1,1'-Biphenyl)-4,4'-diamine, 3,3'-
dichloro-

U091.....(1,1'-Biphenyl)-4,4'-diamine, 3,3'-
dimethoxy-

U095.....(1,1'-Biphenyl)-4,4'-diamine, 3,3'-
dimethyl-

U024.....Bis(2-chloroethoxy) methane

U027.....Bis(2-chloroisopropyl) ether

U244.....Bis(dimethylthiocarbamoyl) disulfide

U028.....Bis(2-ethylhexyl) phthalate

U246.....Bromine cyanide

U225.....Bromoform

U030.....4-Bromophenyl phenyl ether

U128.....1,3-Butadiene, 1,1,2,3,4,4-hexachloro-

U172.....1-Butanamine, N-butyl-N-nitroso-

U035.....Butanoic acid, 4-[bis(2-chloroethyl) amino] benzene-

U031.....1-Butanol (I)

U159.....2-Butanone (I,T)

U160.....2-Butanone peroxide (R,T)

U053.....2-Butenal

U074.....2-Butene, 1,4-dichloro- (I,T)

U031.....n-Butyl alchohol (I)

U136.....Cacodylic acid

U032.....Calcium chromate

U238.....Carbamic acid, ethyl ester

U178.....Carbamic acid, methylnitroso-, ethyl ester

U176.....Carbamide, N-ethyl-N-nitroso-

U177.....Carbamide, N-methyl-N-nitroso-

U219.....Carbamide, thio-

U097.....Carbamoyl chloride, dimethyl-

U215.....Carbonic acid, dithallium(I) salt

U156.....Carbonochloridic acid, methyl ester (I,T)

U033.....Carbon oxyfluoride (R,T)

U211.....Carbon tetrachloride

U033.....Carbonyl fluoride (R,T)

U034.....Chloral

U035.....Chlorambucil

U036.....Chlordane, technical

U026.....Chlornaphazine

U037.....Chlorobenzene

U039.....4-Chloro-m-cresol

U041.....1-Chloro-2,3-epoxypropane

U042.....2-Chloroethyl vinyl ether

U044.....Chloroform

U046.....Chloromethyl methyl ether

U047.....beta-Chloronaphthalene

U048.....o-Chlorophenol

U049.....4-Chloro-o-toluidine, hydrochloride

U032.....Chromic acid, calcium salt

U050.....Chrysene
U051.....Creosote
U052.....Cresols
U052.....Cresylic acid
U053.....Crotonaldehyde
U055.....Cumene (I)
U246.....Cyanogen bromide
U197.....1,4-Cyclohexadienedione
U056.....Cyclohexane (I)
U057.....Cyclohexanone (I)
U130.....1,3-Cyclopentadiene, 1,2,3,4,5,
5-hexachloro-
U058.....Cyclophosphamide
U240.....2,4-D, salts and esters
U059.....Daunomycin
U060.....DDD, 1,1-(2,2-dichloroethylidene)-bis-4-
chlorobenzene
U061.....DDT, 1,1'-(2,2,2-trichloroethylidene)-bis
-4-chlorobenzene
U142.....Decachlorooctahydro-1,3,4-metheno
-2H-cyclobuta[c,d]-pentalen-2-one
U062.....Diallate
U133.....Diamine (R,T)
U221.....Diaminotoluene
U063.....Dibenz[a,h]anthracene
U063.....1,2:5,6-Dibenzanthracene
U064.....1,2:7,8-Dibenzopyrene
U064.....Dibenz[a,i]pyrene
U066.....1,2-Dibromo-3-chloropropane
U069.....Dibutyl phthalate
U062.....S-(2,3-Dichloroallyl)
diisopropylthiocarbamate
U070.....o-Dichlorobenzene
U071.....m-Dichlorobenzene
U072.....p-Dichlorobenzene
U073.....3,3'-Dichlorobenzidine

U074.....1,4-Dichloro-2-butene (I,T)
U075.....Dichlorodifluoromethane
U192.....3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
U060.....Dichloro diphenyl dichloroethane
U061.....Dichloro diphenyl trichloroethane
U078.....1,1-Dichloroethylene
U079.....1,2-Dichloroethylene
U025.....Dichloroethyl ether
U081.....2,4-Dichlorophenol
U082.....2,6-Dichlorophenol
U240.....2,4-Dichlorophenoxyacetic acid, salts and esters
U083.....1,2-Dichloropropane
U084.....1,3-Dichloropropene
U085.....1,2:3,4-Diepoxybutane (I,T)
U108.....1,4-Diethylene dioxide
U086.....N,N-Diethylhydrazine
U087.....O,O-Diethyl-S-methyl-dithiophosphate
U088.....Diethyl phthalate
U089.....Diethylstilbestrol
U148.....1,2-Dihydro-3,6-pyridazinedione
U090.....Dihydrosafrole
U091.....3,3'-Dimethoxybenzidine
U092.....Dimethylamine (I)
U093.....Dimethylaminoazobenzene
U094.....7,12-Dimethylbenz[a]anthracene
U095.....3,3'-Dimethylbenzidine
U096.....alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097.....Dimethylcarbamoyl chloride
U098.....1,1-Dimethylhydrazine
U099.....1,2-Dimethylhydrazine
U101.....2,4-Dimethylphenol
U102.....Dimethyl phthalate

U103.....Dimethyl sulfate

U105.....2,4-Dinitrotoluene

U106.....2,6-Dinitrotoluene

U107.....Di-n-octyl phthalate

U108.....1,4-Dioxane

U109.....1,2-Diphenylhydrazine

U110.....Dipropylamine (I)

U111.....Di-n-propylnitrosamine

U001.....Ethanal (I)

U174.....Ethanamine, N-ethyl-N-nitroso-

U067.....Ethane, 1,2-dibromo-

U076.....Ethane, 1,1-dichloro-

U077.....Ethane, 1,2-dichloro-

U114.....1,2-Ethanediylbiscarbamodithioic acid

U131.....Ethane, 1,1,1,2,2,2-hexachloro-

U024.....Ethane, 1,1'[methylenebis(oxy)]bis [2-chloro]-

U003.....Ethanenitrile (I,T)

U117.....Ethane, 1,1'-oxybis- (I)

U025.....Ethane, 1,1'-oxybis[2-chloro]-

U184.....Ethane, pentachloro-

U208.....Ethane, 1,1,1,2-tetrachloro-

U209.....Ethane, 1,1,2,2-tetrachloro-

U218.....Ethanethioamide

U227.....Ethane, 1,1,2-trichloro-

U247.....Ethane, 1,1,1-trichloro-2,2-bis (p-methoxyphenyl)

U043.....Ethene, chloro-

U042.....Ethene, 2-chloroethoxy-

U078.....Ethene, 1,1-dichloro-

U079.....Ethene, trans-1,2-dichloro-

U210.....Ethene, 1,1,2,2-tetrachloro-

U173.....Ethanol, 2,2'-(nitrosoimino)bis-

U004.....Ethanone, 1-phenyl-

U006.....Ethanoyl chloride (C,R,T)

U112.....Ethyl acetate (I)
U113.....Ethyl acrylate (I)
U238.....Ethyl carbamate(urethan)
U038.....Ethyl 4,4'-dichlorobenzilate
U114.....Ethylenebis(dithiocarbamic acid), salts and esters
U067.....Ethylene dibromide
U077.....Ethylene dichloride
U115.....Ethylene oxide (I,T)
U116.....Ethylene thiourea
U117.....Ethyl ether (I)
U076.....Ethylidene dichloride
U118.....Ethyl methacrylate
U119.....Ethyl methanesulfonate
U139.....Ferric dextran
U120.....Fluoranthene
U122.....Formaldehyde
U123.....Formic acid (C,T)
U124.....Furan (I)
U125.....2-Furancarboxaldehyde (I)
U147.....2,5-Furandione
U213.....Furan, tetrahydro- (I)
U125.....Furfural (I)
U124.....Furfuran (I)
U206.....D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126.....Glycidylaldehyde
U163.....Guanidine, N-nitroso-N-methyl-N'-nitro-
U127.....Hexachlorobenzene
U128.....Hexachlorobutadiene
U129.....Hexachlorocyclohexane (gamma isomer)
U130.....Hexachlorocyclopentadiene
U131.....Hexachloroethane
U132.....Hexachlorophene
U243.....Hexachloropropene

U133	Hydrazine	(R,T)
U086	Hydrazine, 1,2-diethyl-	
U098	Hydrazine, 1,1-dimethyl-	
U099	Hydrazine, 1,2-dimethyl-	
U109	Hydrazine, 1,2-diphenyl-	
U134	Hydrofluoric acid	(C,T)
U134	Hydrogen fluoride	(C,T)
U135	Hydrogen sulfide	
U096	Hydroperoxide, 1-methyl-1-phenylethyl-	(R)
U136	Hydroxydimethylarsine oxide	
U116	2-Imidazolidinethione	
U137	Indeno[1,2,3-cd]pyrene	
U139	Iron dextran	
U140	Isobutyl alcohol	(I,T)
U141	Isosafrole	
U142	Kepone	
U143	Lasiocarpine	
U144	Lead acetate	
U145	Lead phosphate	
U146	Lead subacetate	
U129	Lindane	
U147	Maleic anhydride	
U148	Maleic hydrazide	
U149	Malononitrile	
U150	Melphalan	
U151	Mercury	
U152	Methacrylonitrile	(I,T)
U092	Methanamine, N-methyl-	(I)
U029	Methane, bromo-	
U045	Methane, chloro-	(I,T)
U046	Methane, chloromethoxy-	
U068	Methane, dibromo-	
U080	Methane, dichloro-	
U075	Methane, dichlorodifluoro-	
U138	Methane, iodo-	

U119.....Methanesulfonic acid, ethyl ester
U211.....Methane, tetrachloro-
U121.....Methane, trichlorofluoro-
U153.....Methanethiol (I,T)
U225.....Methane, tribromo-
U044.....Methane, trichloro-
U121.....Methane, trichlorofluoro-
U123.....Methanoic acid (C,T)
U036.....4,7-Methanoindan, 1,2,4,5,6,7,8,8-
octachloro-3a,4,7,7a-tetrahydro-
U154.....Methanol (I)
U155.....Methapyrilene
U247.....Methoxychlor
U154.....Methyl alcohol (I)
U029.....Methyl bromide
U186.....1-Methylbutadiene (I)
U045.....Methyl chloride (I,T)
U156.....Methyl chlorocarbonate (I,T)
U226.....Methyl chloroform
U157.....3-Methylcholanthrene
U158.....4,4'-Methylenebis(2-chloroaniline)
U132.....2,2'-Methylenebis(3,4,6-
trichlorophenol)
U068.....Methylene bromide
U080.....Methylene chloride
U122.....Methylene oxide
U159.....Methyl ethyl ketone (I,T)
U160.....Methyl ethyl ketone peroxide (R,T)
U138.....Methyl iodide
U161.....Methyl isobutyl ketone (I)
U162.....Methyl methacrylate (I,T)
U163.....N-Methyl-N'-nitro-N-
nitrosoguanidine
U161.....4-Methyl-2-pentanone (I)
U164.....Methylthiouracil
U010.....Mitomycin C

U059.....5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-

U165.....Naphthalene

U047.....Naphthalene, 2-chloro-

U166.....1,4-Naphthalenedione

U236.....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.....1,4 -Naphthoquinone

U167.....1-Naphthylamine

U168.....2-Naphthylamine

U167.....alpha-Naphthylamine

U168.....beta-Naphthylamine

U026.....2-Naphthylamine, N,N-bis(2-chloro-ethyl)-

U169.....Nitrobenzene (I,T)

U170.....p-Nitrophenol

U171.....2-Nitropropane (I)

U172.....N-Nitrosodi-n-butylamine

U173.....N-Nitrosodiethanolamine

U174.....N-Nitrosodiethylamine

U111.....N-Nitrosodi-N-propylamine

U176.....N-Nitroso-N-ethylurea

U177.....N-Nitroso-N-methylurea

U178.....N-Nitroso-N-methylurethane

U179.....N-Nitrosopiperidine

U180.....N-Nitrosopyrrolidine

U181.....5-Nitro-o-toluidine

U193.....1,2-Oxathiolane, 2,2-dioxide

U058.....2H-1,3,2-Oxazaphosphorine, 2[bis(2-chloroethyl)amino]-tetrahydro-, 2-oxide

U115.....Oxirane (I,T)
U041.....Oxirane, 2-(chloromethyl)-
U182.....Paraldehyde
U183.....Pentachlorobenzene
U184.....Pentachloroethane
U185.....Pentachloronitrobenzene
U242.....Pentachlorophenol
U186.....1,3-Pentadiene (I)
U187.....Phenacetin
U188.....Phenol
U048.....Phenol, 2-chloro-
U039.....Phenol, 4-chloro-3-methyl-
U081.....Phenol, 2,4-dichloro-
U082.....Phenol, 2,6-dichloro-
U101.....Phenol, 2,4-dimethyl-
U170.....Phenol, 4-nitro-
U242.....Phenol, pentachloro-
U212.....Phenol, 2,3,4,6-tetrachloro-
U230.....Phenol, 2,4,5-trichloro-
U231.....Phenol, 2,4,6-trichloro-
U137.....1,10-(1,2-Phenylene)pyrene
U145.....Phosphoric acid, lead salt
U087.....Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189.....Phosphorus sulfide (R)
U190.....Phthalic anhydride
U191.....2-Picoline
U192.....Pronamide
U194.....1-Propanamine (I,T)
U110.....1-Propanamine, N-propyl- (I)
U066.....Propane, 1,2-dibromo-3-chloro-
U149.....Propanedinitrile
U171.....Propane, 2-nitro- (I)
U027.....Propane, 2,2'oxybis[2-chloro]-
U193.....1,3-Propane sultone
U235.....1-Propanol, 2,3-dibromo-,

	phosphate (3:1)	
U126	1-Propanol, 2,3-epoxy-	
U140	1-Propanol, 2-methyl-	(I,T)
U002	2-Propanone	(I)
U007	2-Propenamide	
U084	Propene, 1,3-dichloro-	
U243	1-Propene, 1,1,2,3,3,3-hexachloro-	
U009	2-Propenenitrile	
U152	2-Propenenitrile, 2-methyl-	(I,T)
U008	2-Propenoic acid	(I)
U113	2-Propenoic acid, ethyl ester	(I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester	
U162	2-Propenoic acid, 2-methyl-, methyl ester	(I,T)
U233	Propionic acid, 2-(2,4,5-trichlorophenoxy)-	
U194	n-Propylamine	(I,T)
U083	Propylene dichloride	
U196	Pyridine	
U155	Pyridine, 2-[(2-dimethylamino)ethyl]-2-thenylamino-	
U179	Pyridine, hexahydro-N-nitroso-	
U191	Pyridine, 2-methyl-	
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	
U180	Pyrrole, tetrahydro-N-nitroso-	
U200	Reserpine	
U201	Resorcinol	
U202	Saccharin and salts	
U203	Safrole	
U204	Selenious acid	
U204	Selenium dioxide	
U205	Selenium disulfide	(R,T)
U015	L-Serine, diazoacetate (ester)	
U233	Silvex	

U089.....4,4'-Stilbenediol, alpha,alpha'-diethyl-

U206.....Streptozotocin

U135.....Sulfur hydride

U103.....Sulfuric acid, dimethyl ester

U189.....Sulfur phosphide (R)

U205.....Sulfur selenide (R,T)

U232.....2,4,5-T

U207.....1,2,4,5-Tetrachlorobenzene

U208.....1,1,1,2-Tetrachloroethane

U209.....1,1,2,2-Tetrachloroethane

U210.....Tetrachloroethylene

U212.....2,3,4,6-Tetrachlorophenol

U213.....Tetrahydrofuran (I)

U214.....Thallium(I) acetate

U215.....Thallium(I) carbonate

U216.....Thallium(I) chloride

U217.....Thallium(I) nitrate

U218.....Thioacetamide

U153.....Thiomethanol (I,T)

U219.....Thiourea

U244.....Thiram

U220.....Toluene

U221.....Toluenediamine

U223.....Toluene diisocyanate (R,T)

U222.....o-Toluidine hydrochloride

U011.....1H-1,2,4-Triazol-3-amine

U226.....1,1,1-Trichloroethane

U227.....1,1,2-Trichloroethane

U228.....Trichloroethene

U228.....Trichloroethylene

U121.....Trichloromonofluoromethane

U230.....2,4,5-Trichlorophenol

U231.....2,4,6-Trichlorophenol

U232.....2,4,5-Trichlorophenoxyacetic acid

U234.....sym-Trinitrobenzene (R,T)

U182.....1,3,5-Trioxane, 2,4,6-trimethyl-
U235.....Tris (2,3-dibromopropyl) phosphate
U236.....Trypan blue
U237.....Uracil, 5[bis(2-chloroethyl)amino]-
U237.....Uracil mustard
U043.....Vinyl chloride
U239.....Xylene (I)
U200.....Yohimban-16-carboxylic acid, 11, 17-di-methoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester,

E. PCB wastes.

1. Definition. For the purposes of this rule, "PCB" means the class of organic compounds known as polychlorinated biphenyls at a concentration of 50 parts per million or greater and includes any of several compounds produced by replacing one or more hydrogen atoms on the biphenyl molecule with chlorine. "PCB" does not include chlorinated biphenyl compounds that have functional groups attached other than chlorine.

2. PCB materials or items. PCB materials or items are hazardous waste if and when they are discarded or stored prior to being discarded and are subject to the small quantity generator exemption limit specified in 6 MCAR S 4.9210 A.1.

3. Storage. A generator of PCB wastes who stores on-site prior to disposal is exempt from the agency's hazardous waste storage facility permit requirements and 6 MCAR SS 4.9216 and 4.9280-4.9422 for the storage of those wastes except for the following requirements:

a. the storage standards described in Code of Federal Regulations, title 40, section 761.65 (1983); and

b. the requirements of 6 MCAR S 4.9216 A.3., 4., and 8. regarding proper labeling and marking, personnel training, preparedness, prevention, and contingency planning.

4. Transportation. PCB wastes may be transported without a hazardous waste manifest if transportation is via the owner's own vehicle and if that transportation is between the owner's facilities or premises.

5. Thermal treatment of PCB wastes at concentrations less than 500 parts per million. High efficiency boilers as defined in Code of Federal Regulations, title 40, section 761.60 (1983), which are used for treatment of mineral oil dielectric fluid containing less than 500 ppm PCB, are exempt from the agency's hazardous waste facility permit requirements and 6 MCAR SS 4.9216 and 4.9280-4.9422 for storage and treatment of those wastes, except for the following requirements:

a. 6 MCAR SS 4.9315-4.9316;

b. 6 MCAR SS 4.9382-4.9383;

c. 6 MCAR SS 4.9385-4.9396; and

d. 6 MCAR SS 4.9399-4.9400.

6. Hazardous waste number. PCB wastes have the hazardous waste number of MN03.

6 MCAR S 4.9135 Small amounts of unrelated chemicals.

A collection of small amounts of unrelated chemicals as described in 6 MCAR S 4.9211 D. has the hazardous waste number of MN02.

6 MCAR S 4.9136 Basis for listing hazardous wastes.

Exhibit 6 MCAR S 4.9136-1 lists the constituents which caused the agency to list wastes as hazardous in 6 MCAR S 4.9134 B. and C. The notation "N.A." indicates the waste is hazardous because it fails the test for the characteristics of ignitability, corrosivity, reactivity, or toxicity, and the listing of a chemical name is not applicable.

Exhibit 6 MCAR S 4.9136-1

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, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, o-dichlorobenzene, trichlorofluoromethane

F003.....N.A.

F004.....Cresols and cresylic acid, nitrobenzene

F005.....Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine

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)

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, benzotrichloride

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 hydrocar-

bons)

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

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

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, nitroben-
zene, phenylenediamine
K105.....Benzene, monochlorobenzene, dichloro-
benzenes, 2,4,6-trichlorophenol
K106.....Mercury

6 MCAR S 4.9137 Hazardous constituents.

Exhibit 6 MCAR S 4.9137-1 lists hazardous constituents.

Exhibit 6 MCAR S 4.9137-1
Hazardous Constitutents

Acetonitrile
Acetophenone
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
2-Acetylaminofluorene
Acetyl chloride
1-Acetyl-2-thiourea
Acrolein
Acrylamide
Acrylonitrile
Aflatoxins
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminobiphenyl
6-Amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-
methylcarbamate azirino(2',3':3,4) pyrrolo(1,2-a)indole-4,7-
dione, (ester), (Mitomycin C)
5-(Aminomethyl)-3-isoxazolol
Amitrole
Aniline
Antimony and compounds not otherwise specified in this list

1 Aramite
2 Arsenic and compounds not otherwise specified in this list
3 Arsenic acid
4 Arsenic pentoxide
5 Arsenic trioxide
6 Auramine
7 Azaserine
8 Barium and compounds not otherwise specified in this list
9 Barium cyanide
10 Benz[c]acridine
11 Benz[a]anthracene
12 Benzene
13 Benzenearsonic acid
14 Benzene, dichloromethyl-
15 Benzenethiol
16 Benzidine
17 Benzo[b]fluoranthene
18 Benzo[j]fluoranthene
19 Benzo[a]pyrene
20 p-Benzoquinone
21 Benzotrichloride
22 Benzyl chloride
23 Beryllium and compounds not otherwise specified in this list
24 Bis(2-chloroethoxy)methane
25 Bis(2-chloroethyl) ether
26 N,N-Bis(2-chloroethyl)-2-naphthylamine
27 Bis(2-chloroisopropyl) ether
28 Bis(chloromethyl) ether
29 Bis(2-ethylhexyl) phthalate
30 Bromoacetone
31 Bromomethane
32 4-Bromophenyl phenyl ether
33 Brucine
34 2-Butanone peroxide
35 Butyl benzyl phthalate
36 2-sec-Butyl-4,6-dinitrophenol (DNBP)

1 Cadmium and compounds not otherwise specified in this list
2 Calcium chromate
3 Calcium cyanide
4 Carbon disulfide
5 Carbon oxyfluoride
6 Chloral
7 Chlorambucil
8 Chlordane (alpha and gamma isomers)
9 Chlorinated benzenes not otherwise specified in this list
10 Chlorinated ethane not otherwise specified in this list
11 Chlorinated fluorocarbons not otherwise specified in this list
12 Chlorinated naphthalene not otherwise specified in this list
13 Chlorinated phenol not otherwise specified in this list
14 Chloroacetaldehyde
15 Chloroalkyl ethers not otherwise specified in this list
16 p-Chloroaniline
17 Chlorobenzene
18 Chlorobenzilate
19 p-Chloro-m-cresol
20 1-Chloro-2,3-epoxybutane
21 1-Chloro-2,3-epoxypropane
22 2-Chloroethyl vinyl ether
23 Chloroform
24 Chloromethane
25 Chloromethyl methyl ether
26 2-Chloronaphthalene
27 2-Chlorophenol
28 1-(o-Chlorophenyl)thiourea
29 3-Chloropropionitrile
30 Chromium and compounds not otherwise specified in this list
31 Chrysene
32 Citrus red No. 2
33 Coal Tars
34 Copper cyanide
35 Creosote
36 Cresols

1 Crotonaldehyde
2 Cyanides (soluble salts and complexes) not otherwise specified
3 in this list
4 Cyanogen
5 Cyanogen bromide
6 Cyanogen chloride
7 Cycasin
8 2-Cyclohexyl-4,6-dinitrophenol
9 Cyclophosphamide
10 Daunomycin
11 DDD (1,1-(2,2-dichloroethylidene)-bis-4-chlorobenzene)
12 DDE (Ethylene, 1,1-dichloro-2,2-bis(4-chlorophenyl)-)
13 DDT (1,1'-(2,2,2-trichloroethylidene)-bis-4-chlorobenzene)
14 Diallate
15 Dibenz[a,h]acridine
16 Dibenz[a,j]acridine
17 Dibenz[a,h]anthracene
18 7H-Dibenzo[c,g]carbazole
19 Dibenzo[a,e]pyrene
20 Dibenzo[a,h]pyrene
21 Dibenzo[a,i]pyrene
22 1,2-Dibromo-3-chloropropane
23 1,2-Dibromoethane
24 Dibromomethane
25 Di-n-butyl phthalate
26 o-Dichlorobenzene
27 m-Dichlorobenzene
28 p-Dichlorobenzene
29 Dichlorobenzene not otherwise specified in this list
30 3,3'-Dichlorobenzidine
31 1,4-Dichloro-2-butene
32 Dichlorodifluoromethane
33 1,1-Dichloroethane
34 1,2-Dichloroethane
35 trans-1,2-Dichloroethene
36 Dichloroethylene not otherwise specified in this list

1,1-Dichloroethylene

Dichloromethane

2,4-Dichlorophenol

2,6-Dichlorophenol

2,4-Dichlorophenoxyacetic acid, salts and esters (2,4-D)

Dichlorophenylarsine

Dichloropropane not otherwise specified in this list

1,2-Dichloropropane

Dichloropropanol not otherwise specified in this list

Dichloropropene not otherwise specified in this list

1,3-Dichloropropene

Dieldrin

1,2:3,4-Diepoxybutane

Diethylarsine

N,N-Diethylhydrazine

O,O-Diethyl-S-methyl ester of phosphorodithioic acid

O,O-Diethylphosphoric acid, O-p-nitrophenyl ester

Diethyl phthalate

O,O-Diethyl-O-(2-pyrazinyl)phosphorothioate

Diethylstilbestrol

Dihydrosafrole

3,4-Dihydroxy-alpha-(methylamino)methyl benzyl alcohol

Di-isopropylfluorophosphate (DFP)

Dimethoate

3,3'-Dimethoxybenzidine

p-Dimethylaminoazobenzene

7,12-Dimethylbenz[a]anthracene

3,3'-Dimethylbenzidine

Dimethylcarbamoyl chloride

1,1-Dimethylhydrazine

1,2-Dimethylhydrazine

3,3-Dimethyl-1-(methylthio)-2-butanone-O-[(methylamino) carbonyl] oxime

alpha, alpha-Dimethylphenethylamine

2,4-Dimethylphenol

Dimethyl phthalate

1 Dimethyl sulfate
2 Dinitrobenzene not otherwise specified in this list
3 4,6-Dinitro-o-cresol and salts
4 2,4-Dinitrophenol
5 2,4-Dinitrotoluene
6 2,6-Dinitrotoluene
7 Di-n-octyl phthalate
8 1,4-Dioxane
9 Diphenylamine
10 1,2-Diphenylhydrazine
11 Di-n-propylnitrosamine
12 Disulfoton
13 2,4-Dithiobiuret
14 Endosulfan
15 Endrin and metabolites
16 Ethyl carbamate
17 Ethyl cyanide
18 Ethylenebisdithiocarbamic acid, salts and esters
19 Ethyleneimine
20 Ethylene oxide
21 Ethylenethiourea
22 Ethyl methacrylate
23 Ethyl methanesulfonate
24 Fluoranthene
25 Fluorine
26 2-Fluoroacetamide
27 Fluoroacetic acid, sodium salt
28 Formaldehyde
29 Formic acid
30 Glycidylaldehyde
31 Halomethane not otherwise specified in this list
32 Heptachlor
33 Heptachlor epoxide (alpha, beta, and gamma isomers)
34 Hexachlorobenzene
35 Hexachlorobutadiene
36 Hexachlorocyclohexane (all isomers)

Hexachlorocyclopentadiene
Hexachloroethane
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaphthalene
Hexachlorophene
Hexachloropropene
Hexaethyl tetraphosphate
Hydrazine
Hydrocyanic acid
Hydrofluoric acid
Hydrogen sulfide
Hydroxydimethylarsine oxide
Indeno(1,2,3-cd)pyrene
Iodomethane
Iron dextran
Isocyanic acid, methyl ester
Isobutyl alcohol
Isosafrole
Kepone
Lasiocarpine
Lead and compounds not otherwise specified in this list
Lead acetate
Lead phosphate
Lead subacetate
Maleic anhydride
Maleic hydrazide
Malononitrile
Melphalan
Mercury fulminate
Mercury and compounds not otherwise specified in this list
Methacrylonitrile
Methanethiol
Methapyrilene
Methomyl
Methoxychlor
2-Methylaziridine

1 3-Methylcholanthrene

2 Methyl chlorocarbonate

3 4,4'-Methylene-bis-(2-chloroaniline)

4 Methyl ethyl ketone (MEK)

5 Methyl hydrazine

6 2-Methyllactonitrile

7 Methyl methacrylate

8 Methyl methanesulfonate

9 2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime

10 N-Methyl-N'-nitro-N-nitrosoguanidine

11 Methyl parathion

12 Methylthiouracil

13 Mustard gas

14 Naphthalene

15 1,4-Naphthoquinone

16 1-Naphthylamine

17 2-Naphthylamine

18 1-Naphthyl-2-thiourea

19 Nickel and compounds not otherwise specified in this list

20 Nickel carbonyl

21 Nickel cyanide

22 Nicotine and salts

23 Nitric oxide

24 p-Nitroaniline

25 Nitrobenzene

26 Nitrogen dioxide

27 Nitrogen mustard and hydrochloride salt

28 Nitrogen mustard N-oxide and hydrochloride salt

29 Nitroglycerine

30 4-Nitrophenol

31 4-Nitroquinoline-1-oxide

32 Nitrosamine not otherwise specified in this list

33 N-Nitrosodi-N-butylamine

34 N-Nitrosodiethanolamine

35 N-Nitrosodiethylamine

36 N-Nitrosodimethylamine

N-Nitroso-N-ethylurea

N-Nitrosomethylethylamine

N-Nitroso-N-methylurea

N-Nitroso-N-methylurethane

N-Nitrosomethylvinylamine

N-Nitrosomorpholine

N-Nitrosonornicotine

N-Nitrosopiperidine

N-Nitrosopyrrolidine

N-Nitrososarcosine

5-Nitro-o-toluidine

Octamethylpyrophosphoramide

Osmium tetroxide

7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid

Paraldehyde

Parathion

Pentachlorobenzene

Pentachloroethane

Pentachloronitrobenzene (PCNB)

Pentachlorophenol

Phenacetin

Phenol

Phenylenediamine

Phenylmercury acetate

N-Phenylthiourea

Phosgene

Phosphine

Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl]ester (Phorate)

Phosphorothioic acid, O,O-dimethyl O-[p-(dimethylamino-sulfonyl)phenyl] ester

Phthalic acid esters not otherwise specified in this list

Phthalic anhydride

2-Picoline

Polychlorinated biphenyl not otherwise specified in this list

Potassium cyanide

Potassium silver cyanide
Pronamide
1,3-Propane sultone
n-Propylamine
Propylthiouracil
2-Propyn-1-ol
Pyridine
Reserpine
Recorcinol
Saccharin and salts
Safrole
Selenious acid
Selenium and compounds not otherwise specified in this list
Selenium sulfide
Selenourea
Silver and compounds not otherwise specified in this list
Silver cyanide
Sodium cyanide
Streptozotocin
Strontium sulfide
Strychnine and salts
1,2,4,5-Tetrachlorobenzene
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
Tetrachloroethane not otherwise specified in this list
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Tetrachloromethane
2,3,4,6-Tetrachlorophenol
Tetraethyldithiopyrophosphate
Tetraethyl lead
Tetraethylpyrophosphate
Tetranitromethane
Thallium and compounds not otherwise specified in this list
Thallic oxide
Thallium (I) acetate

1 Thallium (I) carbonate
2 Thallium (I) chloride
3 Thallium (I) nitrate
4 Thallium selenide
5 Thallium (I) sulfate
6 Thioacetamide
7 Thiosemicarbazide
8 Thiourea
9 Thiuram
10 Toluene
11 Toluenediamine
12 o-Toluidine hydrochloride
13 Tolylene diisocyanate
14 Toxaphene
15 Tribromomethane
16 1,2,4-Trichlorobenzene
17 1,1,1-Trichloroethane
18 1,1,2-Trichloroethane
19 Trichloroethene
20 Trichloromethanethiol
21 Trichloromonofluoromethane
22 2,4,5-Trichlorophenol
23 2,4,6-Trichlorophenol
24 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
25 2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)
26 Trichloropropane not otherwise specified in this list
27 1,2,3-Trichloropropane
28 0,0,0-Triethyl phosphorothioate
29 sym-Trinitrobenzene
30 Tris(1-azridinyl)phosphine sulfide
31 Tris(2,3-dibromopropyl) phosphate
32 Trypan blue
33 Uracil mustard
34 Vanadic acid, ammonium salt
35 Vanadium pentoxide
36 Vinyl chloride

1 Zinc cyanide

2 Zinc phosphide

AG copy

Rules as Adopted

Chapter Three: Standards Applicable to Generators of Hazardous Waste

6 MCAR S 4.9200 Applicability of generator standards.
6 MCAR S 4.9201 Financial responsibility of hazardous waste generators.
6 MCAR S 4.9202 Requirements for generators with on-site facilities.
6 MCAR S 4.9203 Importers of hazardous waste.
6 MCAR S 4.9204 Farmers; pesticides.
6 MCAR S 4.9205 Evaluation of wastes.
6 MCAR S 4.9206 Timing of waste evaluation.
6 MCAR S 4.9207 Evaluation reports to the director.
6 MCAR S 4.9208 Additional evaluations ordered by the director.
6 MCAR S 4.9209 Classification of wastes as hazardous by the agency.
6 MCAR S 4.9210 Special requirements for small quantity generators of hazardous waste.
6 MCAR S 4.9211 Disclosure preparation and generator identification numbers.
6 MCAR S 4.9212 Manifest document; general requirements.
6 MCAR S 4.9213 Use of the manifest.
6 MCAR S 4.9214 Pretransport requirements.
6 MCAR S 4.9215 Proper hazardous waste management.
6 MCAR S 4.9216 Accumulation of hazardous waste.
6 MCAR S 4.9217 Record keeping.
6 MCAR S 4.9218 Annual reporting.
6 MCAR S 4.9219 Exception reporting.
6 MCAR S 4.9220 Additional reporting.
6 MCAR S 4.9221 International shipments; special conditions.
6 MCAR S 4.9222 Farmers; special conditions.

Chapter Three: Standards Applicable to Generators of Hazardous Waste

6 MCAR S 4.9200 Applicability of generator standards.

A. Applicability to generators. Rules 6 MCAR SS 4.9200-4.9222 apply to generators of hazardous waste.

B. Applicability to transporters. Rules 6 MCAR SS 4.9200-4.9222 apply to transporters of hazardous waste as provided in 6 MCAR S 4.9251.

C. Applicability to owners or operators of hazardous waste facilities. Rules 6 MCAR SS 4.9200-4.9222 apply to owners or operators of hazardous waste treatment, storage, or disposal facilities if the hazardous waste facility initiates a shipment of hazardous waste.

6 MCAR S 4.9201 Financial responsibility of hazardous waste generators.

No person shall produce a hazardous waste within the state of Minnesota or produce a hazardous waste outside the state of Minnesota that is transported to a hazardous waste facility within the state of Minnesota unless that person has adequate financial resources to insure that the hazardous waste is disposed of, treated, or processed at a hazardous waste facility permitted to manage such waste. Nothing in this provision is intended to restrict or enlarge or affect in any way, any liability the generator may have to correct the mismanagement of the hazardous waste or pay for damages or alleviate any pollution caused by the mismanagement of the hazardous waste.

6 MCAR S 4.9202 Requirements for generators with on-site facilities.

A. Waste procedures. A generator who treats, stores, or disposes of hazardous wastes on-site which have been produced on-site must only comply with the following rules with respect to that waste:

1. 6 MCAR SS 4.9205-4.9208 for determining whether he has a hazardous waste;

2. 6 MCAR S 4.9211 for obtaining an identification number;

3. 6 MCAR S 4.9211 for submitting a disclosure;

4. 6 MCAR S 4.9216 for accumulation time;

5. 6 MCAR S 4.9217 C. and D. for record keeping;

6. 6 MCAR S 4.9220 for additional reporting; and

7. if applicable, 6 MCAR S 4.9222 for farmers.

B. Standards for wastes shipped off-site. A generator who ships waste off-site which has been treated or stored on-site and which remains hazardous shall comply with 6 MCAR SS 4.9100-4.9560.

C. On-site facility standards. A generator who operates an on-site treatment, storage, or disposal facility must comply with the applicable standards and permit requirements set forth in 6 MCAR SS 4.9280-4.9560 and the agency's permitting procedures.

6 MCAR S 4.9203 Importers of hazardous waste.

Any person who imports hazardous waste into the state of Minnesota from a source outside the United States must comply with the standards applicable to generators established in 6 MCAR SS 4.9200-4.9222.

6 MCAR S 4.9204 Farmers; pesticides.

A farmer who generates waste pesticides which are hazardous waste and who complies with all of the requirements of 6 MCAR S 4.9222 is not required with respect to those pesticides, to comply with other standards in 6 MCAR SS 4.9200-4.9222 or to comply with 6 MCAR SS 4.9280-4.9560, or to obtain a hazardous waste facility permit.

6 MCAR S 4.9205 Evaluation of wastes.

A. General requirement. Any person who produces a waste within the state of Minnesota or any person who produces a waste outside the state of Minnesota that is managed within the state of Minnesota, must evaluate the waste to determine if it is hazardous. Any waste evaluated and exempted under 6 MCAR S 4.9128 C. or 4.9104 does not need to be reevaluated under this rule.

B. Method for evaluation. The person evaluating the waste must determine if the waste meets any of the following criteria for a hazardous waste:

1. the waste is listed in 6 MCAR S 4.9134; or

2. the waste exhibits any of the characteristics of hazardous waste in 6 MCAR S 4.9132 by either:

a. testing the waste according to the methods set forth in 6 MCAR S 4.9132 or according to an equivalent method approved by the director pursuant to 6 MCAR S 4.9104 A.; or

b. applying knowledge of the hazard characteristics of the waste in light of the materials or the processes used.

C. Wastes generated by treatment, storage, or disposal. Any waste generated from the treatment, storage, or disposal of hazardous waste, including any sludge, spill residue, ash, emission control dust or leachate, but not including precipitation run-off, is a hazardous waste if it meets the criteria of B. or if it is derived from a waste that is listed in 6 MCAR S 4.9134.

6 MCAR S 4.9206 Timing of waste evaluation.

A. Individual wastes; combined wastes. Waste evaluation must be of the individual waste prior to any mingling or combining with other wastes. If wastes are subsequently mingled or combined, except for wastes that are mingled or combined in a sewer system, the generator must also evaluate the waste resulting from the mingling or combining.

B. Reevaluations. The person must reevaluate the waste whenever the person has reason to believe that the composition of the waste is altered so that the results of the previous evaluation are no longer representative of the waste.

C. Representative evaluations. A person who produces two or more wastes that are substantively identical or are from substantively identical processes, such that one waste is representative of the other wastes, may use one evaluation for all such wastes.

6 MCAR S 4.9207 Evaluation reports to the director.

A. Necessary information. The director may request at any time that a person producing a waste submit the results of the evaluation of the waste. The person must submit the following information as requested by the director:

1. The type of waste and the source or process from which it was produced;

2. The chemical composition of the waste and the anticipated fluctuations in its chemical composition;

3. The concentration of each component listed in Exhibit 6 MCAR S 4.9132 G.3.-1 found in the leachate of the waste. The person evaluating the waste may submit soft data in lieu of testing the waste if the data is sufficient to demonstrate whether the waste is hazardous or nonhazardous due to EP toxicity;

4. The results of the evaluation to determine whether the waste has any characteristics listed in 6 MCAR S 4.9132; and

5. If any tests were conducted to evaluate the waste, the person must submit the results of all tests conducted.

B. Consequences of failure to report. If the person who is requested by the director to submit the results of an evaluation of a waste fails to submit the required information within 30 days after the request, the waste must be managed as a hazardous waste, and the person who produces the waste must be considered a generator until the director has determined whether the waste is hazardous or not.

6 MCAR S 4.9208 Additional evaluations ordered by the director. If the director determines that the results of the evaluation are not adequate to determine whether the waste is hazardous, the director may require the person to conduct an additional evaluation. The director shall notify the person in writing of such determination, the reasons therefor, and the additional tests that must be run or additional data that must be obtained. If the results of the additional evaluation are not reported to the director within 30 days of the request, the waste must be managed as a hazardous waste and the person who produces the waste must be considered a generator until the director has determined whether the waste is hazardous or not. The director may grant additional time for evaluation when the person demonstrates that an extension is necessary.

Criteria

6 MCAR S 4.9209 Classification of wastes as hazardous by the agency.

If the director recommends to the agency that a specific generator's waste be classified as a hazardous waste pursuant to 6 MCAR S 4.9131 D., the director shall notify the person producing the waste in writing of the recommendation and the person shall have at least 30 days to submit any additional material or written comments to the agency before the agency makes a determination. The agency shall notify the person in writing of its decision. The agency shall hold a contested case hearing pursuant to Minnesota Statutes, chapter 14 upon request of the person producing the waste. The waste must be managed as a hazardous waste and the person who produces the waste must be considered a hazardous waste generator until the agency has determined whether the waste is hazardous or until six months after the date of the director's recommendation whichever occurs first; provided, however, that the person shall not be required to obtain a hazardous waste facility permit for storage of the waste on-site during this time. Any recommendation by the director shall be considered on an expeditious basis.

6 MCAR S 4.9210 Special requirements for small quantity generators of hazardous waste.

A. Applicability; quantities. A generator is a small quantity generator subject to the requirements of B.- F. if, in a calendar month, he generates less than:

1. a total of 1,000 kilograms of hazardous waste not listed in 6 MCAR S 4.9134 D.5.; and

2. a total of one kilogram of commercial chemical products and manufacturing chemical intermediates having the generic names listed in 6 MCAR S 4.9134 D.5. and off-specification commercial chemical products and manufacturing chemical intermediates which, if they met specification, would have the generic names listed in 6 MCAR S 4.9134 D.5.; and

3. a total of 100 kilograms of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any

commercial chemical products or manufacturing chemical intermediates having the generic names listed in 6 MCAR S 4.9134 D.5., or any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification commercial chemical products or manufacturing chemical intermediates which, if they met specification would have the generic names listed in 6 MCAR S 4.9134 D.5.

B. Exemption. A small quantity generator's hazardous wastes are not subject to the requirements of 6 MCAR SS 4.9200-4.9222 and a hazardous waste facility permit if the generator complies with the requirements of this rule.

C. Excessive generation. If the quantity of hazardous waste generated in any calendar month exceeds the quantities listed in A., the small quantity generator becomes a generator and thereafter is subject to the requirements of 6 MCAR SS 4.9100-4.9560.

D. Accumulation on-site. A small quantity generator may accumulate hazardous waste on-site. If the quantity of hazardous waste accumulated at any time exceeds the quantities listed in A., the small quantity generator must manage all of the accumulated waste according to the requirements of 6 MCAR SS 4.9100-4.9560 but does not lose the small quantity generator status. The time period of 6 MCAR S 4.9216 A.1. for accumulation of wastes on-site for a small quantity generator begins when the accumulated wastes exceed the applicable exclusion level.

E. Management requirements. A small quantity generator shall comply with the following requirements:

1. 6 MCAR SS 4.9205-4.9208;
2. 6 MCAR S 4.9211 except 6 MCAR S 4.9211 C.7.;
3. 6 MCAR SS 4.9212-4.9213;
4. 6 MCAR S 4.9215;
5. 6 MCAR S 4.9216 A.5.-7.;
6. 6 MCAR SS 4.9217-4.9221; and
7. Either treat or dispose of the hazardous waste in an

on-site facility or ensure delivery to an off-site storage, treatment, or disposal facility. The facility used must be:

a. permitted to accept hazardous waste under the agency's permitting procedures; or

b. in interim status under 6 MCAR SS 4.9380-4.9422; or

c. authorized to manage hazardous waste by the Environmental Protection Agency or by a state with a hazardous waste management program authorized by the Environmental Protection Agency; or

d. a facility which in accordance with 6 MCAR S 4.9129 beneficially uses or reuses, or legitimately recycles, or reclaims the waste or treats the waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

e. another site belonging to the same owner for consolidation of shipments providing the receiving site complies with 6 MCAR SS 4.9200-4.9560 and the waste is ultimately managed according to a.-d.

8. Transport hazardous waste in accordance with all applicable requirements of Minnesota Statutes, section ~~221.203~~ 221.033 and Code of Federal Regulations, title 49, parts 171 through 179 (1983). ? statute reads "199" why different

F. Mixtures. A small quantity generator's hazardous waste subject to the reduced requirements of this rule may be mixed with nonhazardous waste pursuant to 6 MCAR S 4.9128 B. and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this rule unless the resultant mixture is hazardous pursuant to 6 MCAR S 4.9128 B.

6 MCAR S 4.9211 Disclosure preparation and generator identification numbers.

A. Disclosure; management plan. Each generator shall prepare a disclosure for each hazardous waste that he produces or transports on the forms provided by the director. This disclosure must contain a management plan for each hazardous waste produced.

B. Identification number. Prior to transportation,

treatment, storage, or disposal of any hazardous waste a generator must obtain a generator identification number on forms provided by the director.

C. Content of disclosure. Each disclosure must include the following information:

1. a list of all hazardous wastes generated, their corresponding hazardous waste numbers from 6 MCAR SS 4.9132 and 4.9134 and the source or process from which the disclosed wastes are generated;

2. a list of all nonexempt wastes of the generator that have been determined by the generator to be nonhazardous wastes. The list must include the type of waste and the source or process from which the waste was produced;

3. the chemical composition of each waste which is hazardous due to one of the characteristics identified in 6 MCAR S 4.9132 and the anticipated fluctuations in the chemical composition that will occur during normal operations;

4. the concentration of each component in Exhibit 6 MCAR S 4.9132 G.3.-1 that is known or suspected to be in the leachate of the waste following the extraction procedure toxicity test. If a component listed in that exhibit is known or suspected to be in the waste, the results from the extraction procedure toxicity test for that component must be included unless alternative data approved by the director is submitted;

5. the hazardous properties of the waste and the source of the data or information used to identify the hazardous properties;

6. in the event any tests were conducted to evaluate the waste, the results of all tests conducted;

7. a copy of the contingency plan prepared pursuant to 6 MCAR S 4.9216 A.8. and a certification stating that the contingency plan is being maintained for currency of information on-site and is available for staff review;

8. the following information relating to the management of the hazardous waste:

a. the estimated amounts to be produced in a one year

period;

b. the names and identification numbers of the transporters to be used;

c. the frequency with which the hazardous waste is expected to be transported or discharged;

d. the name of the wastewater treatment works to which a sewered hazardous waste is being discharged;

e. the national pollutant discharge elimination system or state disposal permit number for discharges to sewers and waters of the state;

f. the names of the hazardous waste facilities to be involved in the management of the hazardous waste and, as applicable, the numbers of the Hazardous Waste Facility Permits issued by the agency for those facilities located in the state of Minnesota, or the addresses and identification numbers of those facilities located outside the state of Minnesota; and

g. the method(s) of treatment and/or disposal proposed for each hazardous waste.

9. any other information that the generator deems important.

OK

D. Laboratory wastes. A person who produces a waste from a laboratory or pilot plant that is a mixture of small amounts of unrelated but compatible chemicals such that the description of any sample or set of samples is not representative of the total waste may declare the waste a hazardous waste and need not test the mixture. The generator of such waste is exempt from C.3., 4., and 6. but must disclose that waste according to United States Department of Transportation classifications in Code of Federal Regulations, title 49, section 172.101 (1983).

E. Prohibition. No person shall make a false statement in a disclosure. The disclosure shall be submitted under oath.

F. Submission of a disclosure to the director; existing hazardous waste. Each generator who is producing a hazardous waste in the state of Minnesota or who is producing a hazardous waste outside the state of Minnesota that is being transported to a hazardous waste facility within the state of Minnesota on

the day these hazardous waste rules take effect shall submit a disclosure to the director within 90 days after the effective date of 6 MCAR SS 4.9200-4.9222. If a generator has a disclosure on file with the director, then the generator shall submit all necessary amendments to the disclosure within 90 days of the effective date of these rules. A hazardous waste shall not be treated, disposed of, or change possession until at least 30 days after the disclosure or necessary amendments are submitted to the director. An out-of-state generator transporting hazardous waste through Minnesota to an out-of-state treatment, storage, or disposal facility is exempt from this requirement.

G. Submission of a disclosure to the director; new hazardous waste.

1. A generator who produces a hazardous waste in the state of Minnesota that is not being produced on the day these hazardous waste rules take effect shall submit a disclosure to the director within 75 days after first producing the hazardous waste if a disclosure is not on file with the director. The hazardous waste shall not be treated, disposed of, or change possession until at least 15 days after the disclosure is submitted to the director.

2. If a generator outside the state of Minnesota wishes to transport hazardous waste to a hazardous waste facility located within the state of Minnesota, the generator shall submit a written notification to the director. The hazardous waste shall not be transported to a hazardous waste facility within the state of Minnesota until at least 15 days after the written notification is submitted to the director. The notification must include the following:

a. the type of hazardous waste and the corresponding hazardous waste number from 6 MCAR SS 4.9132 and 4.9134 and the source or process from which the waste is generated;

b. the chemical composition of the waste if it is hazardous due to one of the characteristics identified in 6 MCAR S 4.9132;

c. the information described in C.4.-6.;

d. the quantity of hazardous waste to be shipped; and

e. the information described in C.8.b. and f.

H. Approval of disclosures. After receiving the disclosure, the director shall conduct a review of the submitted information and shall:

1. issue an approval of the disclosure and management plan or plans;

2. require the submission of additional information or management plans or both to make the disclosure complete and approvable; or

3. require changes in the management of the disclosed hazardous waste or wastes to make the disclosure approvable.

I. Management changes. A generator who changes management of his hazardous waste following submission of the disclosure must report the change in the next annual report.

J. One-time disposal requirements. Except for persons who are generators under 6 MCAR S 4.9200 B. and C., a person having hazardous waste subject to regulation under these rules who is only a hazardous waste generator for the one-time disposal of hazardous waste which is not currently being produced, must comply with 6 MCAR SS 4.9100-4.9560 except 6 MCAR SS 4.9200 C., 4.9202, 4.9203, 4.9216, and 4.9218. This kind of hazardous waste generator is exempt from 6 MCAR S 4.9211 except that the generator must obtain an identification number and a management plan must be submitted to the director for approval on the forms provided.

6 MCAR S 4.9212 Manifest document; general requirements.

A. When required. A generator who transports or offers for transportation hazardous waste for off-site treatment, storage, or disposal must prepare a manifest before transporting the waste off-site.

B. Designation of facility. A generator must designate on the manifest either one facility which is permitted to handle the waste described on the manifest or one facility which in accordance with 6 MCAR S 4.9129 beneficially uses or reuses, or

legitimately recycles, or reclaims the waste or treats the waste prior to beneficial use or reuse, or legitimate recycling or reclamation. A small quantity generator may, in the alternative, designate another site belonging to the same owner for consolidation of shipments providing the receiving site complies with 6 MCAR SS 4.9200-4.9560.

C. Alternate facility. A generator may also designate on the manifest one alternate facility which meets the requirements of B. in the event an emergency prevents delivery of the waste to the primary designated facility.

D. Unable to deliver. If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.

E. Permitted facilities. The facilities shall be permitted by:

1. the agency if the hazardous waste facility is located in Minnesota; or

2. the state agency with a hazardous waste program authorized by the Environmental Protection Agency pursuant to Code of Federal Regulations, title 40, part 271 (1983); or

3. the Environmental Protection Agency; or

4. having interim status.

F. Specific Minnesota hazardous wastes. If a generator located in the state of Minnesota produces a waste classified as hazardous in Minnesota which is not classified as hazardous in the state where the receiving facility is located, the generator must ensure that the facility is permitted to accept and manage the waste by the appropriate state agency.

G. Manifest information. The hazardous waste manifest must include the following information:

1. the names, addresses, telephone numbers, and identification numbers of the generator, the designated hazardous waste facility, and an alternate facility, if any, to which the waste is being transported;

2. the name and identification number of each transporter;

3. a manifest document number, assigned by the generator in sequential order for each waste shipment;

4. the total quantity of each hazardous waste by units of weight or volume and the type and number of containers as loaded into or onto the transport vehicle;

5. the description of waste or wastes by the proper shipping name, required by regulations of the United States Department of Transportation in Code of Federal Regulations, title 49, sections 172.101, 172.202, and 172.203 (1983) if applicable; otherwise the description of the waste or wastes as listed on the Minnesota hazardous waste disclosure; and

6. signature and date blocks for the generator, the transporter, and the facility operator.

H. Certification. The following certification must appear on the manifest: "This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the United States Department of Transportation and the EPA."

I. Number of copies. The manifest must consist of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records, another copy to be returned to the generator by the facility, and the required copies to be returned to the director, pursuant to 6 MCAR SS 4.9213, 4.9292 B.4., and 4.9392 B.4.

6 MCAR S 4.9213 Use of manifest.

A. General requirements. The generator must:

1. sign the manifest certification by hand;

2. obtain the handwritten signature of the initial transporter and the date of acceptance on the manifest;

3. retain one copy, in accordance with 6 MCAR S 4.9217 A;

4. send one copy to the director within five working days of the initial transporter's acceptance of the hazardous waste shipment; and

5. give the transporter the remaining copies of the

manifest except as provided in B. and C.

B. Shipments by water. For bulk shipments of hazardous waste within the United States solely by water the generator must:

1. send three copies of the manifest dated and signed in accordance with A. to the owner or operator of the designated facility, or the last bulk shipment water transporter to handle the waste in the United States if exported by water; and

2. send one copy to the director within five working days of the initial transporter's acceptance of the hazardous waste shipment.

C. Shipments by rail. For a rail shipment of hazardous waste within the United States which originates at the site of generation, the generator must:

1. send at least three copies of the manifest dated and signed in accordance with A. to:

a. the next nonrail transporter, if any;

b. the designated facility if transported solely by rail; or

c. the last rail transporter to handle the waste in the United States if exported by rail; and

2. send one copy to the director within five working days of the initial transporter's acceptance of the hazardous waste shipment.

D. Out-of-state shipments. When a shipment of hazardous waste is to be delivered to a hazardous waste facility located outside the state of Minnesota, the generator must ensure that the copy of the hazardous waste manifest signed by the facility operator is sent to the director within 40 days of the acceptance of the hazardous waste by the hazardous waste facility.

E. Director's request for manifest. Upon the request of the director any generator must submit the original or a copy of the hazardous waste manifest at the time and in the manner specified by the director. If the request requires the generator to inform all transporters and facility operators managing the

hazardous waste of the request, the generator must so inform the transporters and facility operators, and the generator, transporters, and facility operators shall comply with the director's request.

6 MCAR S 4.9214 Pretransport requirements.

A. Packaging. Before transporting hazardous waste or offering a hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable United States Department of Transportation regulations on packaging under Code of Federal Regulations, title 49, parts 173, 178, and 179 (1983).

B. Labeling. Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172 (1983).

C. Marking. Before transporting or offering hazardous waste for transportation off-site, a generator must:

1. mark each package of hazardous waste in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172 (1983); and

2. mark each container of 110 gallons or less used in such transportation with the following words and information according to the Code of Federal Regulations, title 49, section 172.304 (1983):

a. HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

b. Generator Name and Address .....

c. Manifest Document Number .....

3. Any generator or other person who maintains a storage tank containing hazardous waste shall display the words "Hazardous Waste" on the storage tank in a legible and conspicuous manner. The words "Hazardous Waste" shall be plainly visible and legible to any person who may operate any

outlet valve.

D. Placarding. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate placards according to United States Department of Transportation regulations for hazardous materials under Code of Federal Regulations, title 49, part 172, subpart F (1983).

E. Loading of hazardous waste. A generator who is responsible for loading hazardous waste on a transport vehicle in lieu of the transporter must comply with the provisions of 6 MCAR S 4.9254.

6 MCAR S 4.9215 Proper hazardous waste management.

A. Relinquishing control. A generator must not relinquish control of a hazardous waste if a transporter, or treatment, storage, or disposal facility not exempt under 6 MCAR SS 4.9100-4.9560 has not:

1. received an identification number by a state with a hazardous waste program authorized by the Environmental Protection Agency pursuant to Code of Federal Regulations, title 40, part 271 (1983); or

2. received an identification number by the Environmental Protection Agency.

B. Spills; duty to report. Any person in control of a hazardous waste that spills, leaks, or otherwise escapes from a container, tank, or other containment system, including its associated piping, shall immediately notify the agency if the hazardous waste may cause pollution of the air, land resources, or waters of the state. The person shall use the agency's 24-hour telephone number, 612-296-7373.

C. Spills; duty to recover. Any person who generates a hazardous waste that spills, leaks, or otherwise escapes from a container, tank, or other containment system, including its associated piping, shall recover the hazardous waste as rapidly and as thoroughly as possible and shall immediately take other action as may be reasonably possible to protect human life and health and minimize or abate pollution of the water, air, or

land resources of the state.

D. Improper hazardous waste management. No generator shall relinquish control of a hazardous waste when the generator has reason to believe that the hazardous waste is not being properly managed.

E. Effect on liability. Nothing in D. is intended to restrict or enlarge or affect in any way, any liability the generator may have to correct the mismanagement of the hazardous waste or pay for damanges or alleviate any pollution caused by the mismanagement of the hazardous waste.

6 MCAR S 4.9216 Accumulation of hazardous waste.

A. When allowed without a permit. A generator may accumulate hazardous waste on-site or hazardous waste received from off-site pursuant to 6 MCAR S 4.9210 E.7.e. without a permit or without having interim status if:

1. all accumulated hazardous waste is, within 90 days of the accumulation start date, shipped off-site to a designated facility or placed in an on-site facility either of which has interim status under 6 MCAR SS 4.9380-4.9422 or has a hazardous waste facility permit issued by the agency; or has a hazardous waste facility permit issued by a state with a hazardous waste program authorized by the Environmental Protection Agency pursuant to Code of Federal Regulations, title 40, part 271 (1983); or has a hazardous waste facility permit issued by the Environmental Protection Agency; and

2. the waste is placed in containers which meet the standards of 6 MCAR S 4.9214 A. and are managed in accordance with 6 MCAR S 4.9414 D.-F.; or in tanks provided the generator complies with the requirements of 6 MCAR S 4.9415 except 6 MCAR S 4.9415 C.; and

3. the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container or the generator maintains a record of the accumulation starting date for each tank used for storage; and

4. each container and tank is properly labeled and marked according to 6 MCAR S 4.9214 B. and C.;

5. outdoor storage areas are protected from unauthorized access and inadvertent damage from vehicles or equipment;

6. all containers in outdoor storage areas which hold free liquids are placed on a curbed surface which is impermeable to the wastes stored;

7. hazardous wastes displaying the characteristic of ignitability are shaded from direct sunlight in outdoor storage areas; and

8. the requirements of 6 MCAR SS 4.9383 and 4.9386-4.9390 are fulfilled regarding personnel training, preparedness, prevention, and contingency planning.

B. Starting date. A generator's accumulation starting date begins when the generator initiates accumulation in a container or tank.

C. Accumulation requiring a permit. A generator who accumulates hazardous waste for more than 90 days is an operator of a storage facility and is subject to the requirements of 6 MCAR SS 4.9280-4.9422 and the agency's permitting procedures unless he or she has been granted an extension to the 90-day period. An extension may be granted by the director if hazardous wastes must remain on-site for longer than 90 days due to unforseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the director on a case-by-case basis.

6 MCAR S 4.9217 Record keeping.

A. Manifests. A generator must keep a copy of each manifest signed in accordance with 6 MCAR S 4.9213 A. for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

B. Reports. A generator must keep a copy of the disclosure, each annual report and each exception report for a period of at least three years from the due date of the report.

C. Test results. A generator must keep records of any test results, waste analyses, or other determinations made in

accordance with 6 MCAR SS 4.9205-4.9208 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

D. Extension of retention period. The periods of retention referred to in A.-C. are extended automatically during the course of any unresolved enforcement action regarding the regulated activity ~~or as requested by the director~~. Amended FF

6 MCAR S 4.9218 Annual reporting.

A. Generators who ship wastes. A generator who ships hazardous waste off-site must submit annual reports to the director on the forms provided no later than March 1 for the preceding calendar year.

B. Required information. The annual report must contain the following information related for each hazardous waste or wastes produced during the preceding calendar year:

1. the generator's name, address, and identification number;

2. the name of the hazardous waste or wastes, the hazardous waste number or numbers, and the U.S. Department of Transportation hazard class;

3. the amount of each hazardous waste produced;

4. the names and identification numbers of the transporters utilized;

5. the names and addresses of the hazardous waste facilities utilized, their identification numbers, the method of treatment or disposal, or both, and, as applicable:

a. the numbers of the hazardous waste facility permits issued by the agency for those facilities located in the state of Minnesota;

b. the addresses of those facilities located outside the state of Minnesota;

c. the name of the wastewater treatment works to which a sewered hazardous waste was discharged; and

d. the national pollution discharge elimination system or state disposal permit number for discharge to land and waters of the state; and

of the state; and

C. Generators who do not ship wastes. Any generator who treats, stores, or disposes of hazardous waste on-site must submit an annual report covering those wastes in accordance with the provisions of 6 MCAR SS 4.9280-4.9422.

D. Approval of annual reports. Annual reports shall be subject to the director's procedures and approval as described in 6 MCAR S 4.9211 H.

6 MCAR S 4.9219 Exception reporting.

A. When applicable. A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter must contact the transporter and the owner or operator of the designated facility to determine the status of the hazardous waste. A generator must submit an exception report to the director if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 45 days of the date the waste was accepted by the initial transporter.

B. Content of report. The exception report must include:

1. a legible copy of the manifest for which the generator does not have confirmation of delivery; and

2. a cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

6 MCAR S 4.9220 Additional reporting.

The director, ~~as he deems~~ when necessary to determine compliance with the requirements of 6 MCAR SS 4.9100-4.9560, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in 6 MCAR SS 4.9128-4.9137.

amended FF

6 MCAR S 4.9221 International shipments; special conditions.

A. General requirement. Any person who exports hazardous waste to a foreign country from Minnesota or imports hazardous

waste from a foreign country into Minnesota must comply with the special requirements of B.-D.

B. Procedures. When shipping hazardous waste outside the state of Minnesota to a foreign country the generator must:

1. notify the administrator of the Environmental Protection Agency and the director in writing four weeks before the initial shipment of hazardous waste to each country in each calendar year. The waste must be identified by its hazardous waste identification number and its United States Department of Transportation shipping description and the name and address of the foreign consignee must be included in this notice. These notices must be sent to: "Office of International Activities (A-106)," United States Environmental Protection Agency, Washington, D.C. 20460; and Minnesota Pollution Control Agency, Division of Solid and Hazardous Waste, 1935 West County Road B2, Roseville, Minnesota 55113;

2. require that the foreign consignee confirm the delivery of the waste in the foreign country. A copy of the manifest signed by the foreign consignee may be used for this purpose; and

3. meet the requirements under 6 MCAR SS 4.9212 and 4.9213 for the manifest except that:

a. in place of the name, address, and identification number of the designated facility, the name and address of the foreign consignee must be used; and

b. the generator must identify the point of departure from the United States through which the waste must travel before entering a foreign country.

C. Exception report. A generator must file an exception report to the addresses listed in B.1. if:

1. he has not received a copy of the manifest signed by the transporter stating the date and place of departure from Minnesota within 45 days from the date it was accepted by the initial transporter; or

2. within 90 days from the date the waste was accepted by the initial transporter, the generator has not received written

confirmation from the foreign consignee that the hazardous waste was received.

D. Manifest. When importing hazardous waste, a person must meet all requirements of 6 MCAR SS 4.9212 and 4.9213 for the manifest except that:

1. in place of the generator's name, address, and identification number, the name and address of the foreign generator and the importer's name, address, and identification number must be used; and

2. in place of the generator's signature on the certification statement, the United States importer or his agent must sign and date the certification and obtain the signature of the initial transporter.

6 MCAR S 4.9222 Farmers; special conditions.

A farmer disposing of waste pesticides from his own use which are hazardous wastes is not required to comply with the standards of 6 MCAR SS 4.9100-4.9560 or a hazardous waste facility permit for those wastes if he triple rinses each emptied pesticide container in accordance with 6 MCAR S 4.9130 C. and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

Rules as Adopted

Chapter Four:

Standards Applicable to Transporters of Hazardous Waste

6 MCAR S 4.9250 Applicability and exemptions.

6 MCAR S 4.9251 Applicability of generator requirements.

6 MCAR S 4.9252 Identification numbers.

6 MCAR S 4.9253 Transfer facility requirements.

6 MCAR S 4.9254 Transportation of hazardous waste.

6 MCAR S 4.9255 The manifest system; general requirements.

6 MCAR S 4.9256 Use of the manifest.

6 MCAR S 4.9257 Compliance with the manifest.

6 MCAR S 4.9258 Record keeping.

6 MCAR S 4.9259 Hazardous waste discharges.

Chapter Four:

Standards Applicable to Transporters of Hazardous Waste

6 MCAR S 4.9250 Applicability and exemptions.

A. Applicability. The provisions of 6 MCAR SS 4.9251-4.9258 establish standards that apply to persons transporting hazardous waste that originates or terminates within the state of Minnesota if the transportation requires a manifest under 6 MCAR SS 4.9200-4.9222. Rule 6 MCAR S 4.9259 applies to the transportation of all hazardous waste within the state of Minnesota.

B. Exemptions. The provisions of 6 MCAR SS 4.9251-4.9259 do not apply to:

1. the on-site transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities; or

2. hazardous waste that is sewered on-site and flows directly to a wastewater treatment facility operated according to a national pollutant discharge elimination system or a state disposal permit.

6 MCAR S 4.9251 Applicability of generator requirements.

A transporter of hazardous waste must comply with standards applicable to generators of hazardous waste if he or she transports hazardous waste into Minnesota from a foreign country or mixes hazardous waste of different United States Department of Transportation shipping descriptions, as described in Code of Federal Regulations, title 49, section 172.101 (1983), by placing them into a single container.

6 MCAR S 4.9252 Identification numbers.

A person who transports hazardous waste that originates or terminates in Minnesota must obtain an identification number from the Environmental Protection Agency on forms provided by the agency before transporting the hazardous waste.

6 MCAR S 4.9253 Transfer facility requirements.

A transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of 6 MCAR S 4.9214 A. at a transfer facility for a period of ten days or fewer is not subject to regulation under 6 MCAR SS 4.9280-4.9422 and a hazardous waste facility permit with respect to the storage of those wastes.

6 MCAR S 4.9254 Transportation of hazardous waste.

Hazardous waste shall be transported in accordance with all applicable requirements of Minnesota Statutes, section ~~221.203~~ 221.033 and Code of Federal Regulations, title 49, parts 171 through 179 (1983). why not "199" as in statute ?

6 MCAR S 4.9255 The manifest system; general requirements.

A. Acceptance of shipment. A transporter may not accept hazardous waste from a generator unless it is accompanied by a manifest signed by the generator according to 6 MCAR SS 4.9200-4.9222.

B. Prior to acceptance of shipment. Before transporting the hazardous waste, the transporter must sign and date the manifest acknowledging acceptance of the hazardous waste from the generator. The transporter must return a signed copy to the generator before leaving the generator's property.

C. Manifest with shipment. The transporter must ensure that the manifest accompanies the hazardous waste shipment and is maintained in an accessible location during transportation if required by 6 MCAR S 4.9256.

6 MCAR S 4.9256 Use of manifest.

A. Delivery of shipment. A transporter who delivers a hazardous waste to another transporter or to the designated facility must:

1. obtain the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest;

2. retain one copy of the manifest according to 6 MCAR S 4.9258; and

3. give the remaining copies of the manifest to the accepting transporter or designated facility.

B. Delivery of bulk shipments by water. The requirements of A. do not apply to bulk shipments by water if:

1. the bulk shipment of hazardous waste is delivered by water to the designated facility;

2. a shipping paper containing all the information required on the manifest, excluding the identification numbers, generator certification, and signatures, accompanies the hazardous waste;

3. the delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper;

4. the person delivering the hazardous waste to the initial bulk shipment water transporter obtains the date of delivery and signature of the bulk shipment water transporter on the manifest and forwards it to the designated facility; and

5. a copy of the shipping paper or manifest is retained by each bulk shipment water transporter in accordance with 6 MCAR S 4.9258.

C. Delivery of shipments by rail. The requirements of A. and B. do not apply to shipments by rail and the requirements of

1.-6. do apply.

1. When accepting hazardous waste from a nonrail transporter, the initial rail transporter must:

a. sign and date the manifest acknowledging acceptance of the hazardous waste;

b. return a signed copy of the manifest to the nonrail transporter;

c. forward at least three copies of the manifest to the next nonrail transporter, if any, or the designated facility, if the shipment is delivered to that facility by rail, or the last rail transporter designated to handle the waste in the United States; and

d. retain one copy of the manifest and rail shipping paper according to 6 MCAR S 4.9258.

2. Rail transporters must ensure that a shipping paper containing all the information required on the manifest excluding the identification numbers, generator certification, and signatures accompanies the hazardous waste at all times.

3. Intermediate rail transporters are not required to sign either the manifest or shipping paper.

4. When delivering hazardous waste to the designated facility, a rail transporter must:

a. obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper, if the manifest has not been received by the facility; and

b. retain a copy of the manifest or signed shipping paper according to 6 MCAR S 4.9258.

5. When delivering hazardous waste to a nonrail transporter, a rail transporter must:

a. obtain the date of delivery and the handwritten signature of the next nonrail transporter on the manifest; and

b. retain a copy of the manifest according to 6 MCAR S 4.9258.

6. Before accepting hazardous waste from a rail transporter, a nonrail transporter must sign and date the

manifest and provide a copy to the rail transporter.

D. Transportation to foreign country from Minnesota. Transporters who transport hazardous waste to a foreign country from Minnesota must:

1. indicate on the manifest the date the hazardous waste left the United States;

2. sign the manifest and retain one copy according to 6 MCAR S 4.9258; and

3. return a signed copy of the manifest to the generator.

6 MCAR S 4.9257 Compliance with the manifest.

A. Acceptable destinations for shipments. The transporter must deliver the entire quantity of hazardous waste which he or she has accepted from a generator or a transporter to:

1. the designated facility listed on the manifest;

2. the alternate designated facility if an emergency prevents delivery to the designated facility listed on the manifest;

3. the next designated transporter; or

4. the place outside the United States designated by the generator.

B. Return of shipment to generator. If the hazardous waste cannot be delivered according to A., or if a shipment or partial shipment of hazardous waste is not accepted by the facility operator after arrival at the destination or if the facility operator does not sign the hazardous waste manifest, the transporter must immediately contact the generator for further instructions and must revise the manifest according to the generator's instructions.

6 MCAR S 4.9258 Record keeping.

A. Manifest. A transporter of hazardous waste must keep a copy of the manifest signed by the generator, by him or herself, and by the next designated transporter or the owner or operator of the designated facility for a period of three years from the date the hazardous waste was accepted by the initial transporter.

B. Manifest; bulk shipments by water. For bulk shipments

delivered by water to the designated facility, each bulk shipment water transporter must retain a copy of the shipping paper containing all the information required in 6 MCAR S 4.9256 B. for a period of three years from the date the hazardous waste was accepted by the initial transporter.

C. Manifest; shipments by rail. The provisions of 1.-3. apply to shipments of hazardous waste by rail within the United States.

1. The initial rail transporter must keep a copy of the manifest and shipping paper with all the information required in 6 MCAR S 4.9256 C.2. for a period of three years from the date the hazardous waste was accepted by the initial transporter.

2. Intermediate rail transporters are not required to keep records pursuant to this rule.

3. The final rail transporter must keep a copy of the signed manifest or the shipping paper, if signed by the designated facility in lieu of the manifest, for a period of three years from the date the hazardous waste was accepted by the initial transporter.

D. Manifest; transportation out of United States. A transporter who transports hazardous waste out of the United States must keep a copy of the manifest indicating that the hazardous waste left the United States for a period of three years from the date the hazardous waste was accepted by the initial transporter.

E. Extension of retention period. The periods of retention referred to in A.-D. are extended automatically during the course of any unresolved enforcement action regarding the regulated activity ~~or as requested by the director~~. Amended FofF

6 MCAR S 4.9259 Hazardous waste discharges.

A. Immediate action. If during the course of transportation, a container is discovered to be broken or leaking, or a discharge of hazardous waste occurs, the transporter must take appropriate immediate action to protect human health and the environment including the notification of local authorities and the generator, and the diking of the

discharge area. The generator shall render all reasonable assistance to the transporter in repackaging, packing, and cleaning up the waste so that the trip may be resumed. "All reasonable assistance" means providing the transporter with all necessary information about the waste and about procedures for repackaging, packing, and cleaning up the waste and, in addition, providing any physical assistance that the generator is uniquely suited to provide and for which the transporter is willing to bear the costs. Nothing in this provision, however, is intended to restrict or enlarge or affect in any way the liability the generator may have to repackage, pack, and clean up the waste.

B. Removal without a manifest. If a discharge of hazardous waste occurs during transportation and an official of a state or local government or a federal agency acting within the scope of his or her official responsibilities determines that immediate removal of the waste is necessary to protect human health or the environment, that official may authorize the removal of the waste by transporters who do not have identification numbers and without the preparation of a manifest.

C. Notification. An air, rail, highway, or water transporter who has discharged hazardous waste must:

1. Immediately notify the agency if the hazardous waste may cause pollution of the air, land, or waters or the state. The person shall use the agency's 24-hour telephone notification service (612-296-7373);

2. Give notice, if required by Code of Federal Regulations, title 49, section 171.15 (1983), to the National Response Center (800-424-8802 or 202-426-2675);

3. Immediately notify the generator of any spill or leak during transit; and

4. Give the same notice as required by Code of Federal Regulations, title 33, section 153.203 (1983), for oil and hazardous substances if the transporter is a water transporter of bulk shipments.

D. Duty to recover. A transporter who owns, has possession

of, or otherwise has control of a hazardous waste that spills, leaks, or otherwise escapes from a container, vehicle tank, storage tank, portable tank, or other containment system, including its associated piping, shall recover the hazardous waste as rapidly and as thoroughly as possible and shall immediately take other action as may be reasonably possible to protect human life and health and minimize or abate pollution of the water, air, or land resources of the state caused thereby.

E. Reporting. Any air, rail, highway, or water transporter who has discharged hazardous waste must:

1. report in writing as required by Code of Federal Regulations, title 49, section 171.16 (1983), to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, D.C. 20590;

2. submit a copy or photocopy of the report required in 1. within 15 days of the incident to the director; and

3. in the case of a spill or leakage of hazardous waste during transit, the amount spilled, the location of the spill site, and the name of the state or federal agency responsible for overseeing the clean-up of the site shall be noted on or attached to the hazardous waste manifest by the transporter.

F. Delivery of hazardous waste. No person shall deliver hazardous waste to a hazardous waste facility or give hazardous waste to a transporter for shipment to a hazardous waste facility located in the state of Minnesota, if the facility operator has not obtained a hazardous waste facility permit from the agency unless the facility is specifically exempt from a hazardous waste facility permit pursuant to 6 MCAR SS 4.9100-4.9560. Nothing in this provision is intended to require the transporter to undertake any evaluation of a waste to determine whether it is hazardous.

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Rules as Adopted

Chapter Five: Facility Standards

6 MCAR S 4.9280 Facilities governed by facility standards.

6 MCAR S 4.9281 General facility standards.

6 MCAR S 4.9282 Personnel training.

6 MCAR S 4.9283 General requirements for ignitable, reactive, or incompatible waste.

6 MCAR S 4.9284 Waste analysis requirements.

6 MCAR S 4.9285 Location standards.

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6 MCAR S 4.9287 Arrangements with local authorities for emergencies.

6 MCAR S 4.9288 Contingency plan.

6 MCAR S 4.9289 Emergency procedures.

6 MCAR S 4.9290 Post-emergency requirements.

6 MCAR S 4.9291 Facility shipping requirements.

6 MCAR S 4.9292 Manifest system.

6 MCAR S 4.9293 Manifest discrepancies.

6 MCAR S 4.9294 Operating record.

6 MCAR S 4.9295 Retention and disposition of records.

6 MCAR S 4.9296 Required reports.

6 MCAR S 4.9297 Ground water protection.

6 MCAR S 4.9298 Closure.

6 MCAR S 4.9299 Closure activities.

6 MCAR S 4.9300 Post-closure.

6 MCAR S 4.9301 Post-closure care and use of property.

6 MCAR S 4.9302 Notice to local land authority.

6 MCAR S 4.9303 Notice in deed to property.

6 MCAR S 4.9304 Financial requirements.

6 MCAR S 4.9305 Cost estimate for facility closure.

6 MCAR S 4.9306 Financial assurance for facility closure.

6 MCAR S 4.9307 Cost estimate for post-closure care.

6 MCAR S 4.9308 Financial assurance for post-closure care.

6 MCAR S 4.9309 Cost estimate for corrective action.

6 MCAR S 4.9310 Financial assurance for corrective action.

6 MCAR S 4.9311 Use of a mechanism for financial assurance of

corrective action, closure, and post-closure care.

6 MCAR S 4.9312 Liability requirements.

6 MCAR S 4.9313 Incapacity of owners or operators, guarantors, or financial institutions.

6 MCAR S 4.9314 Wording of the instruments.

6 MCAR S 4.9315 Use and management of containers.

6 MCAR S 4.9316 Tanks.

6 MCAR S 4.9317 Surface impoundments.

6 MCAR S 4.9318 Waste piles.

6 MCAR S 4.9319 Land treatment.

6 MCAR S 4.9320 Landfills.

6 MCAR S 4.9321 Thermal treatment.

6 MCAR S 4.9322 Cochran's approximation to the Behrens-Fisher Students' t-test.

Chapter Five: Facility Standards

6 MCAR S 4.9280 Facilities governed by facility standards.

A. General requirements. Rules 6 MCAR SS 4.9280-4.9322 apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste except as specifically provided otherwise in this rule or in 6 MCAR SS 4.9128-4.9222.

Rules 6 MCAR SS 4.9280-4.9322 apply to the owners or operators of publicly owned treatment works which treat, store, or dispose of hazardous waste only to the extent they are included in a permit-by-rule granted under the agency's permitting procedures.

Rules 6 MCAR SS 4.9280-4.9322 apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sancturaries Act of 1972, United States Code, title 16, sections 1431-1434, as amended through December 31, 1982, and United States Code, title 33, section 1401, as amended through December 31, 1982, only to the extent they are included in a permit-by-rule granted under the agency's permitting procedures. Rules 6 MCAR SS 4.9280-4.9322 apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.

B. Relationship to interim status standards. A facility owner or operator who has fully complied with the requirements for interim status under 6 MCAR S 4.9381 shall comply with 6 MCAR SS 4.9380-4.9422 in lieu of the rules in 6 MCAR SS 4.9280-4.9322 until final administrative disposition of the permit application is made. The treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit and except for the extent to which 6 MCAR SS 4.9380-4.9422 provide for the continued operation of an existing facility which meets certain conditions until final administrative disposition of the owner's or operator's permit application is made.

C. Exemptions. Rules 6 MCAR SS 4.9280-4.9322 do not apply to the following:

1. the owner or operator of a facility which treats or stores hazardous waste if the treatment or storage meets the criteria in 6 MCAR S 4.9129 B.1. or 2. except to the extent that 6 MCAR S 4.9129 B.1.i., 3., 4., or 5. provides otherwise and 6 MCAR S 4.9216 A.5.-7. is complied with;

2. a generator accumulating waste on-site in compliance with 6 MCAR S 4.9216;

3. a farmer disposing of waste pesticides from his own use in compliance with 6 MCAR S 4.9222;

4. the owner or operator of a totally enclosed treatment facility;

5. the owner or operator of an elementary neutralization unit, pretreatment unit, or a wastewater treatment unit, but only if the unit does not receive hazardous waste from generators other than the owner or operator of the unit;

6. the owner or operator of a publicly owned treatment works with respect to the treatment or storage of hazardous waste which is delivered to the treatment works by a transport vehicle or vessel or through a pipe, unless the requirements of 6 MCAR SS 4.9280-4.9322 are included in a permit-by-rule;

7. the owner or operator of that portion of a combustion waste facility which is used to manage hazardous waste produced

in conjunction with the combustion of fossil fuels provided that the wastes:

a. are generated on-site;

b. traditionally have been and actually are mixed with and co-disposed or co-treated with fly ash, bottom ash, boiler slag, or flue gas emission control wastes from coal combustion; and

c. are necessarily associated with the production of energy; such as boiler cleaning solutions, boiler blowdown, demineralizer regenerant, pyrites, and cooling tower blowdown;

8. a transporter storing manifested shipments of hazardous waste in containers meeting the requirements of 6 MCAR S 4.9214 A. at a transfer facility for a period of ten days or less;

9. persons with respect to the addition of absorbent material to hazardous waste in a container or the addition of hazardous waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container, and 6 MCAR SS 4.9283 B., and 4.9315 B. and C. are complied with; or

10. a. except as provided in b., a person engaged in treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste; an imminent and substantial threat of a discharge of hazardous waste; a discharge of a material which, when discharged, becomes a hazardous waste.

b. an owner or operator of a facility otherwise regulated by 6 MCAR SS 4.9280-4.9322 who must comply with all applicable requirements of 6 MCAR SS 4.9259, 4.9282, and 4.9286-4.9290.

c. a person who is covered by a. and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of 6 MCAR SS 4.9280-4.9322 and the agency's permitting procedures for those activities.

6 MCAR S 4.9281 General facility standards.

A. Scope. The requirements of B.-E. apply to owners and operators of all hazardous waste facilities except as provided by 6 MCAR S 4.9280.

B. Identification number. Every facility owner or operator shall apply for an identification number in accordance with the agency's procedures.

C. Required notices. The owner or operator of a facility shall give notice in the following situations:

1. The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the director as well as the Environmental Protection Agency's Region V administrator in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

2. No facility owner or operator may accept a shipment of hazardous waste which he or she is not allowed to manage under the hazardous waste facility permit. The owner or operator shall notify the director immediately upon receiving the hazardous wastes.

3. Except when the owner or operator is also the generator, the owner or operator of a facility that receives hazardous waste from an off-site source shall inform the generator in writing that he or she has the appropriate permit or permits for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

4. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator shall notify the new owner or operator in writing of the requirements of 6 MCAR SS 4.9280-4.9322 and all permit requirements. An owner's or operator's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with all applicable requirements.

D. Security. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless he or she can demonstrate to the director in the permit application that:

1. physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which could enter the active portion of a facility; and

2. disturbance of the waste or equipment by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility will not cause a violation of 6 MCAR SS 4.9280-4.9322.

Unless the owner or operator has made a successful demonstration in the permit application that has been approved by the director, a facility must have a 24-hour surveillance system which continuously monitors and controls entry onto the active portion of the facility, or an artificial or natural barrier which completely surrounds the active portion of the facility and a means to control entry at all times through the gates or other entrances to the active portion of the facility. OK

Unless the owner or operator has made a successful demonstration in the permit application that has been approved by the director, a sign with the legend, "Danger - Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility and at other locations in sufficient numbers to be seen from any approach to the active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion and that entry onto the active portion can be dangerous. OK

E. General inspection requirements. General inspection requirements include the following:

1. The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to the release of hazardous waste constituents to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. The owner or operator shall develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards. This schedule must be kept at the facility. The schedule must identify the types of problems which are to be looked for during the inspection such as inoperative sump pumps, leaking fittings, and eroding dikes.

3. The frequency of inspection may vary for the items on the schedule. However, it must 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 malfunctions or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. The inspection schedule must include the terms and frequencies called for in 6 MCAR SS 4.9315 E., 4.9316 D., 4.9317 E., 4.9318 E. and F., 4.9320 E., and 4.9321 G., where applicable. The inspection schedule must be submitted with the permit application. The director shall evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, the director may modify or amend the schedule as necessary.

4. The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard

is imminent or has already occurred, remedial action must be taken immediately.

5. The owner or operator shall record inspections in an inspection log or summary and shall keep these records for at least three years from the date of inspection. These records must include the date and time of the inspection, the name of the inspector, a notation of the observation made, and the date and nature of any repairs or other remedial actions.

6 MCAR S 4.9282 Personnel training.

A. General. Hazardous waste facility personnel shall successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of 6 MCAR SS 4.9100-4.9560. The owner or operator shall ensure that this program includes all the elements described in the document required by F.3.

B. Program director. The training program must be directed by a person trained in hazardous waste management procedures.

C. Minimum program requirements. The training program must include instruction which teaches facility personnel hazardous waste management procedures relevant to the positions in which they are employed, including contingency plan implementation procedures. The training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

1. procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

2. key parameters for automatic waste feed cutoff systems;

3. communications or alarm systems;

4. procedures for response to fires or explosions;

5. procedures for response to ground water contamination incidents; and

6. procedures for shutdown of operations.

D. Effective date. Facility personnel shall successfully

complete the program required in C. by the effective date of this rule or six months after the date of their employment or assignment to a facility or assignment to a new position at a facility, whichever is later. Facility personnel not subject to the requirements of Code of Federal Regulations, title 40, section 264.18 (1983) shall successfully complete the program required in C. within six months after the effective date of this rule or six months after the date of their employment or assignment to a facility or assignment to a new position at a facility, whichever is later. Employees hired after the effective date of this rule shall not work in unsupervised positions until they have completed the training requirements of A.-C.

? this appears to have retroactive effect — permissible?

OK

E. Training review. Facility personnel shall take part in an annual review of the initial training required in A.-C.

F. Personnel records. The following documents and records must be maintained at the facility:

1. the job title for each position at the facility related to hazardous waste management and the name of the employee filling each job;

2. a written job description for each position at the facility related to hazardous waste. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications and duties of employees assigned to each position;

OK

3. a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position described in 1.; and

4. records that document that the training or job experience required under A.-D. has been given to, and completed by, facility personnel.

G. Record retention. Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the

date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

6 MCAR S 4.9283 General requirements for ignitable, reactive, or incompatible waste.

A. Required notices. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction, including but not limited to open flames, smoking, cutting and welding, hot surfaces, frictional heat, static sparks, electrical sparks, mechanical sparks, spontaneous ignition, and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

B. Required precautions. When specifically required by other rules in 6 MCAR SS 4.9100-4.9560, the owner or operator of a facility that treats, stores, or disposes of ignitable or reactive waste or mixes incompatible waste or incompatible wastes and other materials, shall take precautions to prevent reactions which:

1. generate extreme heat, pressure, fire, explosions, or violent reactions unless the process has a permit to handle these types of reactions;

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; or

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

C. Documentation of compliance. When required to comply

with A. or B., the owner or operator shall document that compliance. This documentation may be based on reference to published scientific or engineering literature, data from trial tests, waste analyses, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

6 MCAR S 4.9284 Waste analysis requirements.

A. Waste analysis. Waste analysis procedures are as follows:

1. Before an owner or operator treats, stores, or disposes of any hazardous waste, he or she shall obtain a detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of 6 MCAR SS 4.9280-4.9322 or with the conditions of a permit issued under the agency's permitting procedures.

2. The analysis may include data developed under 6 MCAR SS 4.9128-4.9137 and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes, including data obtained from the generator.

3. The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. The analysis must be repeated at the following times:

a. when the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

b. for off-site facilities, when the results of the inspection required in 4. indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

4. The owner or operator of an off-site facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

B. Waste analysis plan. The owner or operator shall develop

and follow a written waste analysis plan which describes the procedures which he or she will carry out to comply with A. The owner or operator shall keep this plan at the facility. The plan must specify:

1. the parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters;

2. the test methods which will be used to test for these parameters;

3. the sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

a. one of the sampling methods described in Code of Federal Regulations, title 40, part 261, appendix I (1983); or

b. an equivalent sampling method as approved by the director;

4. the frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date;

5. for off-site facilities, the waste analyses that hazardous waste generators have agreed to supply;

6. where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in 6 MCAR SS 4.9283 and 4.9321 B.; and

7. for off-site facilities, the waste analysis plan must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

a. the procedures which will be used to determine the identity of each movement of waste managed at the facility; and

b. the sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling. The waste analysis plan must be submitted with the permit application.

6 MCAR S 4.9285 Location standards.

A. Floodplains. A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood unless the owner or operator can demonstrate to the director that the conditions in 1. or 2. are met:

1. Procedures are in effect which will cause the waste to be removed safely before flood waters can reach the facility to a location where the wastes will not be vulnerable to floodwaters. The location to which wastes are moved must be a facility which is either permitted by this agency, the Environmental Protection Agency, or by a state with a hazardous waste management program authorized by the Environmental Protection Agency, or which has interim status.

2. For existing surface impoundments, waste piles, land treatment units, and landfills, no adverse effects on human health or the environment will result if washout occurs, considering:

a. the volume and physical and chemical characteristics of the waste in the facility;

b. the concentration of hazardous constituents that would potentially affect surface waters as a result of washout;

c. the impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and

d. the impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year floodplain that could result from washout.

As used in A., "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source; "washout" means the flow of hazardous waste from the active portion of the facility, the buildings, or equipment as a result of flooding; and "100-year flood" means a flood that has a one percent chance of being equalled or exceeded in any given year.

B. Other location standards. No facility may be established

or constructed in a wetland or within a shoreland.

No facility may be established or constructed in a location where the topography, geology, hydrology, or soil is unsuitable for the protection of the ground water and the surface water. Factors to be used in determining unsuitability of a site include:

1. proximity to lakes, streams, or ponds;
2. proximity to and type of bedrock;
3. presence of natural aquicludes to protect ground water;
4. value of the ground water as a water supply; and
5. ground water flow patterns, particularly if the site is located in a zone of recharge to aquifers useable as sources of drinking water.

No facility may be established or constructed in a location where facility activity would result in emissions of air contaminants causing the violation of the ambient air quality standards established in 6 MCAR S 4.0001.

6 MCAR S 4.9286 Preparedness and prevention.

A. Scope. The provisions of B.-F. apply to owners and operators of all hazardous waste facilities except as otherwise provided in 6 MCAR S 4.9280.

B. Design and operation of facility. Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release to air, land, or water of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

C. Required equipment. All facilities must be equipped with the following, unless it can be demonstrated to the director that none of the hazards posed by waste handled at the facility could require the particular equipment specified below:

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 or a hand-held two-way radio, which is immediately available at the scene of operations

and which is capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

3. portable fire extinguishers, spill control equipment, decontamination equipment, and fire control equipment, including special extinguishing devices such as those using foam, inert gas, or dry chemicals; and

4. water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

D. Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to ensure proper operation in time of emergency.

E. Access to communications or alarm system. Whenever hazardous waste 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 the director has ruled that such a device is not required under C.

If at any time only one employee is on the premises while the facility is operating, that employee shall have immediate access to a device, such as a telephone or a hand-held, two-way radio, which is immediately available at the scene of operation and which is capable of summoning external emergency assistance unless the director has ruled that such a device is not required under C.

F. Required aisle space. The owner or operator shall maintain aisle space 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 it can be demonstrated to the director that aisle space is not needed for any of these purposes.

6 MCAR S 4.9287 Arrangements with local authorities for

emergencies.

A. Arrangements required. The owner or operator shall attempt to make the following arrangements, as appropriate, for the type of waste handled at the facility and the potential need for the services of these organizations:

1. arrangements to familiarize the police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

2. if 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;

3. agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and

4. arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

B. Refusal by authorities. If state or local authorities decline to enter into arrangements required under A., the owner or operator shall document the refusal in the operating record.

6 MCAR S 4.9288 Contingency plan.

A. Scope. The provisions of B.-F., 6 MCAR SS 4.9287, 4.9289, and 4.9290 apply to owners and operators of all hazardous waste facilities except as otherwise provided in 6 MCAR S 4.9280.

B. General requirements. Each owner or operator shall have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, land, or water.

C. Implementation of plan. The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

D. Content of contingency plan. The contingency plan must contain the following:

1. A description of the actions that facility personnel shall take to comply with B. and C., and 6 MCAR S 4.9289.

2. If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures Plan in accordance with Code of Federal Regulations, title 40, sections 112 and 1510 (1983), or another emergency or contingency plan, that plan must only be amended to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of 6 MCAR SS 4.9100-4.9560.

3. A description of arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services pursuant to 6 MCAR S 4.9287.

4. An up-to-date list of names, addresses, and office and home telephone numbers of all persons qualified to act as emergency coordinator. If more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the director at the time of certification rather than at the time of permit application.

5. A list of all emergency equipment at the facility such as fire extinguishing systems, spill control equipment, internal and external communications and alarm systems, and decontamination equipment, where this equipment is required. This list must be kept up-to-date. In addition, the plan must include the location and a physical description of each item on the list and a brief outline of its capabilities.

6. An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan

must describe the signal or signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes in cases where the primary routes could be blocked by the release of hazardous waste or fire.

E. Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:

1. maintained at the facility;

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; and

3. submitted to the director with the permit application and, after modification or approval, will become a condition of any permit issued.

F. Amendment of contingency plan. The contingency plan must be reviewed, and immediately amended if necessary, whenever:

1. the facility permit is 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 the release of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. the list of emergency coordinators changes; or

5. the list of emergency equipment changes.

6 MCAR S 4.9289 Emergency procedures.

A. Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call 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 characteristics of waste handled, the location of all records within the facility, and the facility layout. This person shall also have the authority to commit the resources needed to carry out the contingency plan. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type

and variety of waste handled by the facility and type and complexity of the facility.

B. Notification of emergency. Whenever there is an imminent or actual emergency situation, the emergency coordinator or designee when the emergency coordinator is on call, shall immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate state or local agencies with designated response roles with at least the information listed in C. and D.

C. Identification of released material. 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. He or she may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

D. Assessment of hazards. 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 must consider both direct and indirect effects of the release, fire, or explosion; the effects of any toxic, irritating, or asphyxiating gases that are generated; and the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions.

E. Report on released material. 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 findings must be reported as provided in 1. and 2.

1. If the assessment indicates that evacuation of local areas may be advisable, the appropriate local authorities must be immediately notified, and the emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

2. The agency's emergency response unit must be immediately notified at the 24-hour telephone number,

612-296-7373, and notification must also be given to either the governmental official designated as the on-scene coordinator for that geographical area in the applicable regional contingency plan under Code of Federal Regulations, title 40, part 1510 (1983) or to the National Response Center using their 24-hour toll free telephone number, 800-424-8802. The report must include:

a. name and telephone number of reporter;

b. name and address of facility;

c. time and type of incident;

d. name and quantity of material involved, to the extent known;

e. the extent of injuries, if any; and

f. the possible hazards to human health or the environment outside the facility.

F. Duty to notify. The hazardous waste coordinator shall immediately notify the agency if the released hazardous waste may cause pollution of the air, land resources, or waters of the state. The emergency coordinator shall use the agency's 24-hour telephone number 612/296-7373.

G. Containment measures. 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 hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

H. Facility monitoring. If the facility stops operations 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.

6 MCAR S 4.9290 Post-emergency requirements.

A. Cleanup. Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or water, or any other

material that results from a release, fire, or explosion at the facility in a manner approved by the director. Unless the owner or operator can demonstrate that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9128-4.9259. The emergency coordinator shall ensure that in the affected area or areas of the facility no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed, and all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

B. Notice before resuming operations. The owner or operator shall notify the regional administrator, the director, and other appropriate state and local authorities that the facility is in compliance with A. before operations are resumed in the affected area or areas of the facility.

C. Report to agency. 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 must submit a written report on the incident to the director. The report must include:

1. name, address, and telephone number of the owner or operator;

2. name, address, and telephone number of the facility;

3. date, time, and type of incident;

4. name and quantity of material involved;

5. the extent of injuries, if any;

6. an assessment of actual or potential hazards to human health or the environment, where this is applicable; and

7. estimated quantity and disposition of recovered material that resulted from the incident.

6 MCAR S 4.9291 Facility shipping requirements.

When a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility shall comply with the requirements of 6 MCAR SS 4.9200-4.9222.

6 MCAR S 4.9292 Manifest system.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9280 provides otherwise. The provisions of B. do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. General manifest requirements. If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent, shall:

1. sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

2. note any discrepancies in the manifest on each copy of the manifest. The owner or operator of a facility whose procedures under 6 MCAR S 4.9284 B.7. include waste analysis need not perform that analysis before signing the manifest and giving it to the transporter. However, 6 MCAR S 4.9293 requires reporting any discrepancy discovered during later analysis;

3. immediately give the transporter at least one copy of the signed manifest;

4. within ten days after the delivery, send a copy of the manifest to the generator and the director; and

5. retain at the facility a copy of each manifest for at least three years from the date of delivery.

C. Rail and water shipment requirements. If a facility receives hazardous waste from a rail or water bulk shipment transporter and the waste is accompanied by a shipping paper containing all the information required on the manifest, excluding the identification numbers, generator's certification, and signatures, the owner or operator, or his agent, shall do all of the following:

1. Sign and date each copy of the manifest or shipping paper, if the manifest has not been received, to certify that the hazardous waste covered by the manifest or shipping paper was received.

2. Note any discrepancies in the manifest, or in the shipping paper if the manifest has not been received, on each

copy of the manifest or shipping paper. The owner or operator of a facility whose procedures under 6 MCAR S 4.9284 B.7. include waste analysis need not perform that analysis before signing the shipping paper and giving it to the transporter. However, 6 MCAR S 4.9293 requires reporting any discrepancy discovered during later analysis.

3. Immediately give the rail or water bulk shipment transporter at least one copy of the signed manifest, or shipping paper if the manifest has not been received.

4. Within ten days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within ten days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator. The generator is required under 6 MCAR S 4.9213 to send three copies of the manifest to the facility when hazardous waste is sent by rail or water bulk shipment.

5. Retain at the facility a copy of the manifest and shipping paper if signed in lieu of the manifest at the time of delivery, for at least three years from the date of delivery.

6 MCAR S 4.9293 Manifest discrepancies.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9280 provides otherwise. This rule does not apply to owners or operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. Definition of a discrepancy. Manifest discrepancies are defined as significant or minor. Significant discrepancies include differences between the quantity or type of hazardous waste designated on the manifest or shipping paper and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are weight differences for bulk wastes greater than ten percent and any variation in piece count for batch waste, such as a difference of one drum in a truck load. Significant discrepancies in types of waste are obvious differences which can be discovered by

inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper. Minor discrepancies are all other discrepancies including, but not limited to, incomplete manifests or shipping papers, manifests or shipping papers which are inconsistent, and a container or portable tank containing hazardous waste which is not properly labeled.

? nonspecific OK

C. Handling of discrepancies. Upon discovering a discrepancy, the owner or operator of a treatment, storage, or disposal facility shall take action as described in 1., 2. or 3., as appplicable:

1. Upon discovering a significant discrepancy, the owner or operator shall attempt to reconcile the discrepancy with the waste generator and the transporter. If the discrepancy is not resolved in ten days, the owner or operator shall immediately submit to the director a letter describing the discrepancy, attempts made to reconcile it, and a copy of the manifest or shipping paper. The type of discrepancy must be noted on the manifest.

2. Upon discovering a minor discrepancy, the owner or operator shall attempt to reconcile the discrepancy with the waste generator and the transporter. The owner or operator shall indicate the type of discrepancy and its resolution on the manifest. If the discrepancy cannot be reconciled, the owner or operator shall note this on the manifest with a brief explanation.

3. If a movement of hazardous waste is delivered to a facility not allowed to manage the waste under the facility's hazardous waste permit, the owner or operator shall notify the director immediately.

6 MCAR S 4.9294 Operating record.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9280 provides otherwise.

B. Record requirement. The owner or operator shall keep a written operating record at the facility.

C. Record information. All of the following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

1. The names of the generators of the hazardous waste and their identification numbers.

2. The date of arrival of each shipment along with the transporter's name and identification numbers.

3. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility.

4. The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of the hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers if the waste was accompanied by a manifest.

5. Records and results of waste analysis performed as specified in 6 MCAR SS 4.9283, 4.9284, and 4.9321 B.

6. Summary reports and details of all incidents that require implementing the contingency plan as specified in 6 MCAR S 4.9290.

7. Records and results of inspections as required by 6 MCAR S 4.9281 E.

8. Monitoring, testing, or analytical data where required by 6 MCAR SS 4.9297, 4.9317 E., 4.9318 E. and F., 4.9319 E., F., and H., 4.9320 E. and F., and 4.9321 G.

9. For off-site facilities, notices to generators as specified in 6 MCAR S 4.9281 C.3.

10. All closure cost estimates under 6 MCAR S 4.9305 and, for disposal facilities, all post-closure cost estimates under 6 MCAR S 4.9307.

6 MCAR S 4.9295 Retention and disposition of records.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9280 provides otherwise.

B. Retention of records. The retention period for all records required under 6 MCAR SS 4.9280-4.9322 is three years and is extended automatically during the course of an unresolved enforcement action regarding the facility ~~or as requested by the agency~~. amended FF

C. Disposition of records. A copy of records of waste disposal locations and quantities under 6 MCAR S 4.9294 C. must be submitted to the director and the local land authority upon closure of the facility.

6 MCAR S 4.9296 Required reports.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9280 provides otherwise. The requirements of C. do not apply to owners or operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. Annual report. The owner or operator shall prepare and submit a single copy of an annual report to the director no later than March 1 for the preceding calendar year. The report form and instructions to be used may be obtained from the director. The annual report must cover (facility activities) during the previous calendar year and must include the following information:

1. the identification number, name, and address of the facility;

2. the year covered by the report;

3. for off-site facilities, the identification number of each hazardous waste generator for whom the facility treated, disposed of, or stored a hazardous waste during the year and for imported shipments, the report must give the name and address of the foreign generator;

4. a description and the quantity of each hazardous waste the facility treated, disposed of, or stored during the year. For off-site facilities, this information must be listed by identification number of the generator;

5. the method of treatment, storage, or disposal for each hazardous waste;

6. the most recent closure cost estimate under 6 MCAR S 4.9305 and, for disposal facilities, the most recent post-closure cost estimates under 6 MCAR S 4.9307; and

7. the certification signed by the owner or operator of the facility or his authorized representative.

C. Unmanifested waste report. If a shipment of hazardous waste is delivered to a hazardous waste facility from an off-site source without an accompanying manifest or without an accompanying shipping paper, the facility operator shall attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy cannot be resolved, the owner or operator shall notify the director prior to acceptance of the waste. Within ten days, a follow-up report must be mailed to the director. The report must include all of the following:

1. The identification number, name, and address of the facility.

2. The date the facility received the waste.

3. The transporter's name, vehicle license, address, and identification number, if available.

4. The generator's name, address, and identification number, if available.

5. A description and the quantity of each unmanifested hazardous waste the facility received.

6. The method of treatment, storage, or disposal for each hazardous waste.

7. A brief explanation of why the waste was unmanifested, if known.

8. The certification signed by the owner or operator of the facility or his authorized representative.

D. Additional reports. In addition to submitting the manifest discrepancy report described in 6 MCAR S 4.9293 C. and the annual reports and the unmanifested waste reports described in B. and C., the owner or operator shall also report to the director:

1. releases, fires, and explosions as specified in 6 MCAR S 4.9289;

2. facility closures as specified in 6 MCAR S 4.9299 D.; and

3. as otherwise required by 6 MCAR SS 4.9297, and 4.9317-4.9320.

6 MCAR S 4.9297 Ground water protection.

A. Scope. This rule applies as follows:

1. Except as provided in 2., the requirements of B.-M. apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills. The owner or operator shall satisfy the requirements of B.-M. for all wastes or waste constituents contained in a waste management unit at a facility that receives hazardous waste after the effective date of B.-M. This type of waste management unit is hereinafter referred to as a "regulated unit." Owners and operators of closed facilities that have treated, stored, or disposed of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills between January 26, 1983, and the effective date of B.-M. shall comply with Code of Federal Regulations, title 40 (1983). A waste or a waste constituent migrating beyond the waste management area under H. is assumed to originate from a regulated unit unless the director finds that the waste or waste constituent originated from another source.

2. The owner or operator is not subject to B.-M. if the criteria in a., b., or c. are met:

a. he or she is exempted under 6 MCAR S 4.9280;

b. he or she designs and operates a waste pile in compliance with 6 MCAR S 4.9318 A. or 4.9318 E.; or

c. the director finds, under 6 MCAR S 4.9319 H.4., that the treatment zone of a land treatment unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of 6 MCAR S 4.9319 F. has not shown a statistically significant increase in hazardous

constituents below the treatment zone during the operating life of the unit. An exemption can only relieve an owner or operator of responsibility to meet the requirements of B.-M. during the post-closure care period.

3. The agency may impose any or all of the requirements of B.-M. on the owner or operator of a facility that treats or stores hazardous waste in tanks or containers if it determines that the facility has the potential to adversely impact ground water quality. The agency shall specify in the facility permit which requirements of B.-M. shall apply.

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4. The requirements under B.-M. apply during the active life of the regulated unit, including the closure period. After closure of the regulated unit, the applicability of the requirements in B.-M. is as described in a.-c.:

a. The requirements of B.-M. do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure. The owner or operator shall conduct sufficient soil analyses and ground water analyses for all hazardous constituents which are reasonably expected to be in or derived from the waste contained in the regulated unit to ensure that all waste residues and contaminated soil have been removed or decontaminated.

b. The requirements of B.-M. apply during the post-closure care period under 6 MCAR S 4.9301 if the owner or operator is conducting a detection monitoring program.

c. The requirements of B.-M. apply during the compliance period if the owner or operator is conducting a compliance monitoring program or a corrective action program.

B. Required programs. Required programs include the following:

1. Owners and operators subject to this rule shall conduct a monitoring and response program as follows:

a. If hazardous constituents or monitoring parameters from a regulated unit are detected and show a statistically significant increase at the compliance point, the owner or

operator shall implement the compliance monitoring program.

b. If the ground water protection standard is exceeded, the owner or operator shall institute a corrective action program.

c. If hazardous constituents from a regulated unit exceed concentration limits in ground water at or past the compliance point, the owner or operator shall institute a corrective action program.

d. In all other cases, the owner or operator shall institute a detection monitoring program.

2. All facilities must have a detection monitoring program, a compliance monitoring program, and a corrective action plan as part of the permit.

3. The agency shall specify in the facility permit the specific elements of the monitoring and response program and the circumstances under which each of the programs will be required.

4. The owner or operator shall submit a corrective action plan for the regulated unit with the permit application. The corrective action plan must demonstrate that corrective action is feasible. The plan must address the measures necessary to meet the requirements specified in M.2.-.6 to remove or treat in place the hazardous constituents which exceed their concentration limits, and to monitor or demonstrate the effectiveness of the corrective action program. The plan must also include estimates of the time which may be necessary to complete corrective action if implemented when a concentration limit is first exceeded at the compliance point and the cost for completing the corrective action.

C. Ground water protection standard. The owner or operator shall comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents entering the ground water from a regulated unit do not exceed the concentration limits in the ground water at and beyond the point of compliance during the compliance period. The agency shall establish the ground water protection standard in the facility permit based on data provided by monitoring of the ground water

quality as specified in J. and K.

D. Hazardous constituents. The agency shall specify in the facility permit the hazardous constituents to which the ground water protection standard applies. Hazardous constituents are constituents identified in 6 MCAR S 4.9137, or constituents which are not listed in 6 MCAR S 4.9137, but which are contained in wastes that meet criteria established in 6 MCAR S 4.9132 F. for toxicity and which may reasonably be expected to contribute to the toxicity.

E. Hazardous constituent exemptions. The agency shall exclude a hazardous constituent from the list of hazardous constituents specified in the facility permit if it finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the agency shall consider the following:

1. potential adverse effects on ground water quality, considering:

a. the physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

b. the hydrogeological characteristics of the facility and surrounding land;

c. the quantity of ground water and the directions of ground water flow;

d. the proximity and withdrawal rates of ground water users;

e. the current and future uses of ground water in the area;

f. the existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;

g. the potential for health risks caused by human exposure to waste constituents;

h. the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste

constituents;

i. the persistence and permanence of the potential adverse effects; and

2. potential adverse effects on hydraulically-connected surface water quality, considering:

a. the volume and physical and chemical characteristics of the waste in the regulated unit including its potential for migration;

b. the hydrogeological characteristics of the facility and surrounding land;

c. the quantity and quality of the ground water, and the directions of ground water flow;

d. the patterns of precipitation in the region;

e. the proximity of the regulated unit to surface waters;

f. the current and future uses of surface waters in the area and any water quality standards established for those surface waters;

g. the existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

h. the potential for health risks caused by human exposure to waste constituents;

i. the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

j. the persistence and permanence of the potential adverse effects.

F. Concentration limits. The agency shall specify in the facility permit the concentration limits in the ground water for hazardous constituents which are reasonably expected to be in or derived from waste contained in a regulated unit or which are detected as a result of ground water monitoring at the unit. The concentration of a hazardous constituent:

1. must not exceed the background level of that constituent in the ground water at the time that limit is

specified in the permit;

2. for any of the constituents listed in Exhibit 6 MCAR S 4.9297 F.2.-1 must not exceed the respective value given in that exhibit if the background level of the constituent is below the value given in Exhibit 6 MCAR S 4.9297 F.2.-1.; or

3. must not exceed an alternate limit established by the agency under G.

Exhibit 6 MCAR S 4.9297 F.2.-1

Maximum Concentration of Constituents for Ground Water Protection

Constituent	Maximum Concentration (milligrams per liter)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1, 4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenyl)ethane)	0.1
Toxaphene (C_{10}-C_{10}-Cl_8, Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxy-propionic acid)	0.01

G. Alternate concentration limits. The agency shall establish in the permit an alternate concentration limit for a hazardous constituent if it finds that the constituent will not pose a substantial present or potential hazard to human health

or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the agency shall consider the following factors:

1. potentially adverse effects on ground water quality, considering:

a. the physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

b. the hydrogeological characteristics of the facility and surrounding land;

c. the quantity of ground water and the directions and rates of ground water flow;

d. the proximity and withdrawal rates of ground water users;

e. the current and future uses of ground water in the area;

f. the existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water quality;

g. the potential for health risks caused by human exposure to waste constituents;

h. the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

i. the persistence and permanence of the potential adverse effects; and

2. potential adverse effects on hydraulically-connected surface water quality, considering:

a. the volume and physical and chemical characteristics of the waste in the regulated unit;

b. the hydrogeological characteristics of the facility and surrounding land;

c. the quantity and quality of ground water, and the directions and rates of ground water flow;

d. the patterns of rainfall in the region;

e. the proximity of the regulated unit to surface

waters;

f. the current and future uses of surface waters in the area and any water quality standards established for those surface waters;

g. the existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

h. the potential for health risks caused by human exposure to waste constituents;

i. the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

j. the persistence and permanence of the potentially adverse effects.

H. Point of compliance. The agency shall specify in the facility permit the point of compliance at which the ground water protection standard applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends to the bottom of potentially affected ground water underlying the regulated units.

The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit. The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

If the facility contains more than one regulated unit, the agency shall establish compliance points for each unit. The agency may establish a single compliance point for more than one unit if the owner or operator demonstrates that ground water contamination can be detected from all units in a timely manner.

I. Compliance period. The agency shall specify in the facility permit the compliance period during which the ground water protection standard applies. The compliance period is the number of years equal to the active life of the waste management

area, including any waste management activity prior to permitting, and the closure period. The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of L. If the owner or operator is engaged in a corrective action program at the end of the compliance period, the compliance period is extended until the owner or operator demonstrates that the ground water protection standard has not been exceeded for a period of five consecutive years.

J. General ground water monitoring requirements. The owner or operator shall comply with the requirements of 1.-10. for any ground water monitoring program developed to satisfy K., L., or M.:

1. The ground water monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield ground water samples from ground water that:

a. represent the quality of background ground water that has not been affected by leakage from a regulated unit;

b. represent the quality of ground water passing the point of compliance; and

c. are likely to detect potential contamination from the regulated unit.

2. If a facility contains more than one regulated unit, the agency shall require a separate ground water monitoring system for each unit. The agency may require a single ground water monitoring system for more than one unit if the owner or operator of a multi-unit facility demonstrates that a single ground water monitoring system enables timely detection and measurement at the compliance point of hazardous constituents from the regulated units.

3. Monitoring wells must be constructed and installed in accordance with 7 MCAR SS 1.210-1.224 and cased in a manner that maintains the integrity of the monitoring well bore hole. The hole must be screened and packed with gravel or sand, where necessary, to enable collection of ground water samples. Where necessary, wells must be properly developed to enable collection

of representative ground water samples. The annular space, that is, the space between the bore hole and well casing, above the sampling depth must be sealed to prevent contamination of samples and the ground water. Materials used in well construction must be compatible with the intended use of the well.

4. The ground water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground water quality below the waste management area. The program must include procedures and techniques for: sample collection, sample preservation and shipment, analytical procedures, and chain of custody control.

5. The ground water monitoring program must include sampling and analytical methods that are appropriate for ground water sampling and that accurately measure hazardous constituents and monitoring parameters in ground water samples. "Monitoring parameter" means waste reaction products, nonhazardous waste constituents, and indicator parameters that provide a reliable indication of the presence of hazardous constituents in the ground water.

6. The ground water monitoring program must include a determination of the potentiometric surface and ground water flow directions at least quarterly and immediately prior to each time ground water is sampled. At least annually, the owner or operator shall determine the flow rates of the ground water being monitored. The agency must be notified of the results and if significant change has been detected, the appropriate changes must be made in the facility permit.

7. The ground water monitoring program must establish background ground water quality for each hazardous constituent which may reasonably be expected to be in or derived from the wastes to be managed at the facility and for each of the hazardous constituents or monitoring parameters specified in the permit. The agency may also require the establishment of background values as well as periodic monitoring of ground water

for chemical components and physical properties which are necessary to document ground water quality. The agency may require additional ground water monitoring systems if the subsurface beneath the regulated unit contains multiple soil or rock formations and if these formations have significant hydraulic or compositional differences. The basis of background ground water quality must be as follows:

a. For new facilities, background ground water quality for a hazardous constituent or monitoring parameter must be based on data from at least quarterly sampling of all monitoring wells at the waste management area for one year prior to operation.

b. For existing facilities, background ground water quality for a hazardous constituent or monitoring parameter must be based on data from at least quarterly sampling of all monitoring wells upgradient from the waste management area for one year.

c. For facilities in a compliance monitoring program, background ground water quality for a hazardous constituent or monitoring parameter must be based on data from upgradient wells that: are available before the permit is issued; account for measurement errors in sampling and analysis; and account, to the extent feasible, for seasonal fluctuations in background ground water quality if the fluctuations are expected to affect the concentration of the hazardous constituent or monitoring parameter.

d. Background ground water quality may be based on alternate procedures if the agency determines that sampling at other wells provides an indication of background ground water quality that is as representative as that provided by the procedures in a. and b.

e. In developing the data base used to determine a background value for a monitoring parameter or hazardous constituent, the owner or operator shall take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background ground water quality,

each time the system is sampled.

8. The owner or operator shall use one of the statistical procedures given in a. and b. in determining whether background values or concentration limits have been exceeded if, in a detection monitoring program, the level of a hazardous constituent or monitoring parameter at the compliance point is to be compared to the hazardous constituent's or monitoring parameter's background value and that background value has a sample coefficient of variation less than 1.00. The statistical procedures are:

a. The owner or operator shall take at least four portions from a sample at each well at the compliance point and determine whether the difference between the mean of the hazardous constituent or monitoring parameter at each well, using all portions taken, and the background value for the hazardous constituent or monitoring parameter is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Students' t-test as described in 6 MCAR S 4.9322. If the test indicates that the difference is significant, the owner or operator shall repeat the same procedure, with at least the same number of portions as used in the first test, with a fresh sample from the monitoring well. Within seven days of completing the statistical analysis of the data from the first round of sampling, the owner or operator shall collect the fresh ground water sample from the monitoring well. If the second round of analyses indicates that the difference is significant, the owner or operator shall conclude that a statistically significant change has occurred.

b. The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The agency shall specify the procedure in the facility permit 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 a.

9. In a compliance monitoring program and in situations where the sample coefficient of variation is not less than 1.00 between the hazardous constituent's or monitoring parameter's background value and the level of a hazardous constituent or monitoring parameter at the compliance point in a detection monitoring program, the owner or operator shall use a statistical procedure providing reasonable confidence that the migration of hazardous constituents or monitoring parameters from a regulated unit into and through the ground water will be indicated. The agency shall specify a statistical procedure in the facility permit that it finds:

a. is appropriate for the distribution of the data used to establish background values or concentration limits; and

b. 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.

10. The owner or operator shall provide the director in writing with any field data, analytical data, and statistical calculations from the sampling of ground water monitoring wells as part of establishing or complying with the general ground water monitoring requirements, ground water protection standard, detection monitoring program, compliance monitoring program, or corrective action program. The data and calculations shall be submitted within seven days after the completion of statistical calculations, unless a different reporting period is established in the permit.

K. Detection monitoring program. An owner or operator required to establish a detection monitoring program under this rule shall perform the following:

1. The owner or operator shall monitor for monitoring parameters and hazardous constituents established in the permit to indicate the presence of hazardous constituents in the ground water. The monitoring parameters and hazardous constituents in the facility permit shall be determined after considering the

following factors:

a. the types, quantities, and concentrations of hazardous constituents and monitoring parameters in wastes managed at the regulated unit;

b. the mobility, stability, and persistence of hazardous constituents and monitoring parameters in the unsaturated zone beneath the waste management area;

c. the detectability of hazardous constituents and monitoring parameters in ground water; and

d. the concentrations or values and coefficients of variation of proposed monitoring parameters or hazardous constituents in the ground water background.

2. The owner or operator shall install a ground water monitoring system at the compliance point. The ground water monitoring system must comply with J.1.b.-c., 2., and 3.

3. The owner or operator shall establish a background value for each monitoring parameter or hazardous constituent which may reasonably be expected to be in or derived from the wastes to be managed at the facility. The permit must specify the hazardous constituents and monitoring parameters and their background values or specify the procedures to be used to calculate the background values.

The owner or operator shall comply with J.7. in developing the data base used to determine background values.

The owner or operator shall express background values in a form necessary for the determination of statistically significant increases under J.8. and 9.

In taking samples used in the determination of background values, the owner or operator shall use a ground water monitoring system that complies with J.1.a., 2., and 3.

4. The owner or operator shall determine ground water quality at each monitoring well at the compliance point for a monitoring parameter or hazardous constituent under 1. at least semiannually during the active life of a regulated unit, including the closure period, and the post-closure care period. The owner or operator shall express the ground water quality at

a monitoring well in a form necessary for the determination of statistically significant increases under J.8. and 9.

5. The owner or operator of single lined waste piles, land treatment units that have detected a significant increase in hazardous constituents or monitoring parameters below the treatment zone, and double lined surface impoundments, waste piles, and landfills where liquids have been detected in the leak detection system, shall comply with a. and b.:

a. Ground water quality shall be determined at the compliance point at least quarterly during the active life of a regulated unit, including the closure period, and the post-closure period.

b. The analysis of ground water samples must include analysis for hazardous constituents that are reasonably expected to be in or derived from the waste contained in the unit. The owner or operator shall express the ground water quality at a monitoring well in a form necessary for the determination of statistically significant increases under J.8. and 9.

6. The owner or operator shall use procedures and methods for sampling and analysis that meet the requirements of J.4. and 5.

7. The owner or operator shall determine whether there is a statistically significant increase over background values for a monitoring parameter or hazardous constituent specified in the permit pursuant to 1., or 5.b. where applicable, each time he or she determines ground water quality at the compliance point under 4. and 5.

In determining whether a statistically significant increase has occurred, the owner or operator shall compare the ground water quality at each monitoring well at the compliance point for each monitoring parameter or hazardous constituent to the background value for that monitoring parameter or hazardous constituent, according to the statistical procedure specified in the permit under J.8. and 9.

The owner or operator shall determine whether there has been a statistically significant increase at each monitoring

well at the compliance point within the time period established in the permit.

8. If the owner or operator determines that there is a statistically significant increase for monitoring parameters or hazardous constituents specified under 1., or 5.b. where applicable, at any monitoring well at the compliance point, the owner or operator shall:

a. Notify the director of this finding in writing within seven days. The notification must indicate the monitoring parameters or hazardous constituents that have shown statistically significant increases and identify the wells in which the increases have occurred.

b. Immediately sample the ground water in all monitoring wells and determine the concentration of all hazardous constituents.

c. Determine background values for all hazardous constituents as follows:

(1) the owner or operator shall comply with J.7. in developing the data base used to determine background values;

(2) the owner or operator shall express background values in a form necessary for the determination of statistically significant increases under J.8. and 9.; and

(3) in taking samples used in the determination of background values, the owner or operator shall use a ground water monitoring system that complies with J.1.a., 2., and 3.

d. Determine if statistically significant increases in the ground water have occurred for any hazardous constituent.

e. Immediately institute a compliance monitoring program as specified in the permit and, within 90 days, submit to the agency an application for permit modification if it is necessary to revise the compliance monitoring program to meet the requirements of L. The application must include the following information:

(1) an identification of the concentration of any hazardous constituents found in the ground water at each monitoring well at the compliance point;

(2) proposed changes to the ground water monitoring system at the facility necessary to meet the requirements of L.;

(3) proposed changes to the monitoring frequency, sampling, and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of L.; and

(4) for each hazardous constituent that does not have a concentration limit established in the permit, a proposed concentration limit under F.1., 2., or G.

9. If the owner or operator determines that there is a statistically significant increase of monitoring parameters or hazardous constituents specified under 1., or 5.b. where applicable, at any monitoring well at the compliance point, he or she may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph, he or she is not relieved of the requirement to submit a permit modification application within the time specified in 8.e. or of immediately instituting the compliance monitoring program until the demonstration successfully shows that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration, the owner or operator shall:

a. notify the director in writing within seven days of determining a statistically significant increase at the compliance point that he or she intends to make a demonstration;

b. within 90 days, submit a report to the director which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;

c. within 90 days, submit to the agency an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and

d. continue to monitor in accordance with the compliance monitoring program established under 8.e.

10. If the owner, operator, or director determines that the detection monitoring program no longer satisfies the requirements of 1.-9., the owner or operator shall, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

11. The owner or operator shall assure that monitoring and corrective action measures necessary to achieve compliance with the ground water protection standard are taken during the term of the permit.

L. Compliance monitoring program. An owner or operator required to establish a compliance monitoring program under this rule shall perform the following:

1. The owner or operator shall monitor the ground water to determine whether regulated units are in compliance with the ground water protection standard. The agency shall specify the ground water protection standard in the facility permit including:

a. a list of hazardous constituents;

b. concentration limits for each of those hazardous constituents;

c. the compliance point; and

d. the compliance period.

2. The owner or operator shall install a ground water monitoring system at the compliance point. The ground water monitoring system must comply with J.1.b.-c., 2., and 3.

3. If a concentration limit is based on background ground water quality, the agency shall specify the concentration limit in the permit as described in a.-b.:

a. The owner or operator shall comply with J.7. in developing the data base used to determine background values; express background values in a form necessary for the determination of statistically significant increases under J.8. and 9.; and use a ground water monitoring system that complies with J.1.b.-c., 2., and 3.

b. If a hazardous constituent is identified in Exhibit 6 MCAR S 4.9297 F.2.-1 and the difference between the respective

concentration limit in Exhibit 6 MCAR S 4.9297 F.2.-1 and the background value of that constituent under J.7. is not statistically significant, the owner or operator shall use the background value of the constituent as the concentration limit. In determining whether this difference is statistically significant, the owner or operator shall use a statistical procedure providing reasonable confidence that a real difference will be indicated. The statistical procedure must be appropriate for the distribution of the data used to establish background values and provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference.

4. The owner or operator shall determine the concentration of hazardous constituents which have been detected in the ground water or are reasonably expected to be in or derived from the waste in the unit, in ground water at each monitoring well at the compliance point at least quarterly during the compliance period. The owner or operator shall express the concentration at each monitoring well in a form necessary for the determination of statistically significant increases under J.8. and 9.

5. The owner or operator shall analyze samples from all monitoring wells at the compliance point for all hazardous constituents at least annually to determine whether hazardous constituents other than those specified under 4. are present in the monitoring wells. The owner or operator shall report the concentrations of all hazardous constituents to the director within seven days after completion of the analysis. The agency shall require a permit modification to include additional hazardous constituents, which have been detected in the ground water, in all subsequent quarterly ground water monitoring under 4.

6. The owner or operator shall use procedures and methods for sampling and analysis that meet the requirements of J.4. and 5.

7. The owner or operator shall determine whether there is

a statistically significant increase over the concentration limits for any hazardous constituents specified in the permit under 1. each time he or she determines the concentration of hazardous constituents in ground water at the compliance point.

In determining whether a statistically significant increase has occurred, the owner or operator shall compare the ground water quality at each monitoring well at the compliance point for each hazardous constituent to the concentration limit for that hazardous constituent according to the statistical procedures specified in the permit under J.8. and 9.

The owner or operator shall determine whether there has been a statistically significant increase at each monitoring well at the compliance point within the time period established in the permit.

8. If the owner or operator determines that the ground water protection standard is being exceeded at any monitoring well at the point of compliance, he or she shall comply with the requirements of a.-c.:

a. The owner or operator shall notify the director of this finding in writing within seven days. The notification must indicate the concentration limits that have been exceeded.

b. The owner or operator shall institute the corrective action program specified in the permit and submit to the agency an application for permit modification, if necessary to supplement the corrective action program to meet the requirements of M., within 90 days. The application must include a detailed description of corrective actions that will achieve compliance with the ground water protection standard specified in the permit and a plan for a ground water monitoring program that will demonstrate the effectiveness of the corrective action program. The ground water monitoring program may be based on a compliance monitoring program developed to meet the requirements of 1.-7. The ground water monitoring program must also be capable of demonstrating compliance with the concentration limits in the ground water at the downgradient portion of the property line of the facility.

c. If the owner, operator, or director determines that the concentration limits are being exceeded at a monitoring well at the property line pursuant to b., the owner or operator shall cease accepting wastes at the facility. If he or she can demonstrate that specific individual units have not violated the ground water protection standard, those units for which a demonstration can be made may resume accepting wastes following agency approval of the demonstration.

9. If the owner or operator determines, under 7. or 8., that the ground water protection standard is being exceeded at any monitoring well, he or she may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. Until the owner or operator makes a demonstration, he or she is not relieved of the requirement to submit a permit modification application if necessary to comply with 8. within the time specified in 8.b. or of the requirement to institute corrective actions as established in 8.b. In making a demonstration, the owner or operator shall:

a. notify the director in writing within seven days of the intent to make a demonstration;

b. within 90 days, submit a report to the director which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation;

c. within 90 days, submit to the agency an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and

d. continue to monitor in accordance with the compliance monitoring program.

10. If the owner, operator, or director determines that the compliance monitoring program no longer satisfies the requirements of 1.-9. the owner or operator shall, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

11. The owner or operator shall ensure that monitoring and corrective action measures necessary to achieve compliance with the ground water protection standard are taken during the term of the permit.

M. Corrective action program. An owner or operator required to establish a corrective action program shall perform the following:

1. The owner or operator shall take corrective action to ensure that regulated units are in compliance with the ground water protection standard. The agency shall specify the ground water protection standard in the facility permit, including:

a. a list of the hazardous constituents;

b. concentration limits for each of those hazardous constituents;

c. the compliance point; and

d. the compliance period.

2. The owner or operator shall implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit must indicate the specific measures that will be taken.

3. The owner or operator shall begin corrective action within one week after the ground water protection standard is exceeded, unless a different period is established in the permit.

4. In conjunction with a corrective action program, the owner or operator shall establish and implement a ground water monitoring program to demonstrate the effectiveness of the corrective action program. The monitoring program may be based on the requirements for a compliance monitoring program and must be as effective as that program in determining compliance with the ground water protection standard, and in determining the success of a corrective action program under 5. where appropriate. This monitoring program must also be capable of demonstrating compliance with the concentration limits in the permit in the ground water at the downgradient portion of the

facility property line.

5. In addition to the other requirements the owner or operator shall conduct a corrective action program to remove or treat in place hazardous constituents that exceed concentration limits in ground water that has passed the compliance point. The permit must specify the measures to be taken.

Corrective action measures must be initiated and completed within a reasonable period of time considering the extent and magnitude of contamination. If the owner, operator, or director determines that corrective action measures are not initiated or completed within a reasonable period of time considering the extent and magnitude of contamination, the owner or operator shall cease accepting wastes at the facility.

Corrective action measures may be terminated once the concentration of hazardous constituents is reduced to levels below their respective concentration limits at the compliance point and areas downgradient of the compliance point including areas beyond the facility property line.

6. The owner or operator shall continue corrective action measures during the compliance period to the extent necessary to ensure that the ground water protection standard is not exceeded at a monitoring well. If the owner or operator is conducting corrective action at the end of the compliance period, he or she shall continue that corrective action for as long as necessary to achieve compliance with the ground water protection standard at all monitoring wells. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area, including the closure period, if he or she can demonstrate, based on data from the ground water monitoring program under 4. that the ground water protection standard has not been exceeded for a period of five consecutive years at any monitoring well.

7. The owner or operator shall report semiannually in writing to the director on the effectiveness of the corrective action program.

8. If the owner, operator, or director determines that

the corrective action program no longer satisfies the requirements of 1.-7., the owner or operator shall, within 90 days, submit an application for a permit modification to make appropriate changes to the program.

6 MCAR S 4.9298 Closure.

A. Scope. Except as 6 MCAR S 4.9280 provides otherwise, the provisions of B.-E. and 6 MCAR S 4.9299 apply to the owner or operator of a hazardous waste facility.

B. Closure performance standard. The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

C. Submittal and contents of closure plan. The owner or operator of a hazardous waste facility shall submit a closure plan with the permit application, and the closure plan must be approved by the agency as part of the permit issuance procedure. The approved closure plan shall become a condition of any permit. The agency's approval must ensure that the approved closure plan is consistent with B., D., and E., and 6 MCAR S 4.9299, and the applicable closure requirements of 6 MCAR SS 4.9315 I., 4.9316 F., 4.9317 G., 4.9318 G., 4.9319 H., 4.9320 G., and 4.9321 H.

A copy of the approved closure plan and all revisions to the plan must be kept at the facility until closure is completed and certified. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must at least include all of the following:

1. A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of the operation

which will be unclosed during the life of the facility and how the requirements of B., E., 6 MCAR S 4.9299, and the applicable closure requirements of 6 MCAR SS 4.9315 I., 4.9316 F., 4.9317 G., 4.9318 G., 4.9319 H., 4.9320 G., and 4.9321 H. will be met.

2. An estimate of the maximum inventory of wastes in storage and in treatment at any time during the life of the facility.

3. A description of the steps needed to decontaminate facility equipment during closure.

4. An estimate of the expected year of closure and a schedule for final closure. The schedule must include the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure.

D. Amendment of plan. The owner or operator may amend the closure plan at any time during the active life of the facility. The active life of the facility is that period during which wastes are periodically received. The owner or operator shall amend the plan whenever changes in operating plans or facility design affect the closure plan and whenever there is a change in the expected year of closure. When the owner or operator requests a permit modification to authorize a change in operating plans or facility design, he or she shall request a modification of the closure plan at the same time. If a permit modification is not needed to authorize the change in operating plans or facility design, the request for modification of the closure plan must be made within 60 days after the change.

E. Notification of closure. The owner or operator shall notify the director at least 180 days prior to the date he or she expects to begin closure. The date when he or she expects to begin closure must be within 30 days after the date on which he or she expects to receive the final volume of waste. If the facility's permit or interim status is terminated, or if the facility is otherwise ordered by judicial decree or compliance order to cease receiving waste or to close, then this requirement does not apply. However, the owner or operator

shall close the facility in accordance with established deadlines.

6 MCAR S 4.9299 Closure activities.

A. Time allowance to begin closure activities. Within 90 days after receiving the final volume of hazardous waste, the owner or operator shall treat, remove from the site, or dispose of on-site all hazardous waste in accordance with the approved closure plan. The director may approve a longer period if the owner or operator demonstrates that he has taken and will continue to take all steps to prevent threats to human health and the environment and:

1. the activities required to comply with the approved closure plan will, of necessity, take longer than 90 days to complete; or

2. the facility has the capacity to receive additional waste, there is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site, and closure of the facility would be incompatible with continued operation of the site.

If the owner or operator of a facility required to maintain financial assurance for closure, post-closure care, or corrective action fails to make a required payment or to substitute alternative financial assurance when required to do so, the director shall order the owner or operator to begin closure activities.

B. Time extension for closure activities. The owner or operator shall complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of waste. The director may approve a longer closure period if the owner or operator demonstrates he has taken and will continue to take all steps to prevent threats to human health and the environment and:

1. the closure activities will, of necessity, take longer than 180 days to complete; or

2. the facility has capacity to receive additional waste, there is a reasonable likelihood that a person other than the

owner or operator will recommence operation of the site, and closure of the facility would be incompatible with continued operation of the site.

If operation of the site is recommended, the director may defer completion of closure activities until the new operation is terminated.

C. Disposal or decontamination of equipment. When closure is completed, all facility equipment and structures must have been properly disposed of or decontaminated by removing all hazardous wastes and residues.

D. Certification of closure. When closure is completed, the owner or operator shall submit to the director certification by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

6 MCAR S 4.9300 Post-closure.

A. Scope. Except as otherwise provided in 6 MCAR S 4.9280, the provisions of B., C., and 6 MCAR SS 4.9301-4.9303 apply to the owner or operator of a hazardous waste disposal facility and the owner or operator of a waste pile or surface impoundment which is required by 6 MCAR SS 4.9317 G. or 4.9318 G. to have a post-closure plan.

B. Submittal of post-closure plan. The owner or operator of a facility shall submit a post-closure plan with the permit application, and the plan must be approved by the agency as part of the permit issuance procedure. The approved post-closure plan will become a condition of any permit issued.

C. Post-closure plan; amendment of plan. A copy of the approved plan and all revisions to the plan must be kept at the facility until the post-closure care period begins. This plan must identify the activities which will be carried on after closure and the frequency of these activities, and it must include at least:

1. a description of the planned monitoring activities and frequencies at which they will be performed to comply with 6 MCAR SS 4.9297 and 4.9317-4.9320 during the post-closure care

period;

2. a description of the planned maintenance activities and frequencies at which they will be performed to ensure the integrity of the cap and final cover or other containment systems according to the requirements of 6 MCAR SS 4.9317-4.9320, and the function of the facility monitoring equipment according to the requirements of 6 MCAR SS 4.9297 and 4.9317-4.9320; and

3. the name, address, and telephone number of the person or office to contact about the disposal facility during the post-closure period. This person or office must keep an updated post-closure plan during the post-closure period.

The owner or operator may amend the post-closure plan at any time during the active life of the disposal facility or during the post-closure period. The owner or operator shall amend the plan whenever changes in operating plans, or facility design, or events which occur during the active life of the facility or during the post-closure period affect the post-closure plan. He or she shall also amend the plan whenever there is a change in the expected year of closure.

When a permit modification is requested during the active life of the facility to authorize a change in operating plans or facility design, modification of the post-closure plan must be requested at the same time. In all other cases, the request for modification of the post-closure plan must be made within 60 days after the changes in operating plans or facility design, or the events which affect the post-closure plan occur.

6 MCAR S 4.9301 Post-closure care and use of property.

A. Post-closure care requirements. Post-closure care requirements are as follows:

1. Post-closure care must continue for 30 years after the date of completing closure and must consist of at least monitoring and reporting according to the requirements of 6 MCAR SS 4.9297 and 4.9317-4.9320, and the maintenance of monitoring and waste containment systems, according to the requirements of 6 MCAR SS 4.9297 and 4.9317-4.9320.

2. During the 180-day period preceding closure or at any time thereafter, the director may reduce the post-closure care period to less than 30 years if it is found that the reduced period is sufficient to protect human health and the environment. This determination must be based on leachate or ground water monitoring results, waste characteristics, application of advanced technology, or alternative disposal, treatment, or reuse techniques indicating the facility is secure.

3. Prior to the time that the post-closure care period is due to expire, the director may extend the post-closure care period if it is found that the extended period is necessary to protect human health and the environment. This determination must be based on factors such as leachate or ground water monitoring results that indicate a potential for migration of waste at levels which may be harmful to human health and the environment.

4. All post-closure care activities must be in accordance with the provisions of the approved post-closure plan.

B. Continuation of security requirements. The director may require, at closure, continuation of any of the security requirements during part of or all of the post-closure period after the date of completing closure when wastes may remain exposed after completion of closure or when access by the public or domestic livestock may pose a hazard to human health.

C. Post-closure use of property. Post-closure use of property on or in which hazardous wastes remain after closure shall never be allowed by the owner or operator to disturb the integrity of the final cover, liners, or any other components of any containment system or the function of the facility's monitoring system, unless the owner or operator can demonstrate to the director either in the post-closure plan or by petition that the disturbance:

1. is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

2. is necessary to reduce a threat to human health or the

environment.

6 MCAR S 4.9302 Notice to local land authority.

Within 90 days after closure is completed, the owner or operator of a disposal facility shall submit to the local zoning authority or the authority with jurisdiction over local land use and to the director a survey plat indicating the location and dimensions of landfill cells or other disposal areas with respect to permanently surveyed bench marks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority or authority with jurisdiction over local land use must contain a prominently displayed note which states the owner's or operator's obligation to restrict disturbance of the site as specified. In addition, the owner or operator shall submit to the local zoning authority or the authority with jurisdiction over local land use and to the director a record of the type, location, and quantity of hazardous waste disposed of within each cell or area of the facility. For waste disposed of before January 12, 1981, the owner or operator shall comply with all requirements of Code of Federal Regulations, title 40, section 264.119 (1983). The owner or operator shall identify the type, location, and quantity of the waste to the best of his or her knowledge and in accordance with any records he or she has kept. A change in the type, location, or quantity of hazardous waste disposed of within each cell or area of the facility that occurs after the survey plat and record of waste have been filed must be reported to the local zoning authority or the authority with jurisdiction over local land use and to the director.

6 MCAR S 4.9303 Notice in deed to property.

A. Deed notation. The owner of the property on which a disposal facility is located shall record, in accordance with state law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

1. the land has been used to manage hazardous waste;

2. the land use is restricted; and

3. the survey plat and record of the type, location, and quantity of hazardous waste disposed of within each cell or area of the facility required in 6 MCAR S 4.9302 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the director.

B. Changes to the deed. If at any time the owner or operator or a subsequent owner of the land upon which a hazardous waste facility was located removes the waste and waste residues, the liner, if any, and all contaminated underlying and surrounding soil, he or she may remove the notation on the deed to the facility property or other instrument normally examined during title search, or he may add a notation to the deed or instrument indicating the removal of the waste. Upon removing the waste and waste residue, the liner, if any, and the contaminated soil, the owner or operator, unless he or she can demonstrate that any waste removed is not a hazardous waste, becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9100-4.9560.

6 MCAR S 4.9304 Financial requirements.

A. Scope. Rules 6 MCAR SS 4.9305, 4.9306, and 4.9312-4.9314 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this rule or in 6 MCAR S 4.9280 C.

Rules 6 MCAR SS 4.9307 and 4.9308 apply only to owners and operators of:

1. disposal facilities; and

2. waste piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that he or she is required to develop a contingent closure and post-closure care plan in 6 MCAR SS 4.9317 G. and 4.9318 G.

Rules 6 MCAR SS 4.9309-4.9311 apply only to owners and operators of facilities that treat, store, or dispose of

hazardous waste in surface impoundments, waste piles, land treatment units, or landfills.

The state and the federal government are exempt from the requirements of 6 MCAR SS 4.9304-4.9314.

B. Definitions. The following definitions apply:

1. When used in 6 MCAR SS 4.9304-4.9314, the following terms have the meanings given.

a. "Closure plan" means the plan for closure prepared in accordance with the requirements of 6 MCAR S 4.9298.

b. "Corrective action plan" means the plan for corrective action prepared in accordance with 6 MCAR SS 4.9297 B.4. and 4.9297 M.

c. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR S 4.9305 A., B., and C.

d. "Current corrective action cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR S 4.9309 A., B., and C.

e. "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR S 4.9307 A., B., and C.

f. "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the later corporation is deemed a "subsidiary" of the parent corporation.

g. "Post-closure plan" means the plan for post-closure care prepared according to 6 MCAR SS 4.9300-4.9303.

2. The following terms are used in the specifications for the financial tests for corrective action, closure, post-closure care, and liability coverage. The following definitions are intended to assist in the understanding of these rules and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices:

a. "Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

b. "Current assets" means cash or other assets or

resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

c. "Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

d. "Independently audited" means an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

e. "Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

f. "Net working capital" means current assets minus current liabilities.

g. "Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

h. "Tangible net worth" means the tangible assets that remain after deducting liabilities, not including intangibles such as goodwill and rights to patents or royalties.

3. In the liability insurance requirements the terms "bodily injury" and "property damage" have the meanings given these terms by applicable state law. However, these terms do not include liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The agency intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The following definitions of several of the terms are intended to assist in the understanding of these rules and are not intended to limit their meanings in a way that conflicts with general insurance industry usage:

a. "Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor

intended from the standpoint of the insured.

b. "Legal defense costs" means expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

c. "Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

d. "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

6 MCAR S 4.9305 Cost estimate for facility closure.

A. Cost estimate requirements. The owner or operator shall have a written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in 6 MCAR SS 4.9298 and 4.9299 and applicable closure requirements in 6 MCAR SS 4.9315 I., 4.9316 F., 4.9317 G., 4.9318 G., 4.9319 H., 4.9320 G., and 4.9321 H. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

B. Yearly update of cost estimate. The owner or operator shall adjust the closure cost estimate for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made as specified in 1. and 2. using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Adjustments must be made as follows:

1. The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

C. Cost estimate revisions. The owner or operator shall revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in B.

D. Record retention. The owner or operator shall keep the following at the facility during the operating life of the facility: the latest closure cost estimate prepared in accordance with A. and C. and, when this estimate has been adjusted in accordance with B., the latest adjusted closure cost estimate.

6 MCAR S 4.9306 Financial assurance for facility closure.

An owner or operator of a facility shall establish financial assurance for closure of the facility by choosing from the options specified in A.-F.:

A. Closure trust fund. The following apply to closure trust funds:

1. An owner or operator may satisfy the requirements of this rule by establishing a closure trust fund that conforms to the requirements of 1.-12., and by submitting to the director an originally signed duplicate of the trust agreement. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee 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.

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 A.1.-1 and must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR S 4.9314 A.2.-2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or

over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as described in a. and b.:

a. For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the director before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in G., divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE-CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

b. If an owner or operator establishes a trust fund as specified in 6 MCAR S 4.9407 A., and the value of that trust fund is less than the current closure cost estimate when a permit is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in 3. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to 6 MCAR S 4.9407 A. The amount of each payment must be determined by this formula:

$$\text{next payment} = \frac{CE-CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining

in the pay-in period.

4. The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 3.

5. If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this rule or in 6 MCAR S 4.9407, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of A. and 6 MCAR S 4.9407 A., as applicable.

6. After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate and submit a receipt from the trustee for this payment to the director, or obtain other financial assurance as specified in this rule to cover the difference.

7. If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

8. If an owner or operator substitutes other financial assurance as specified in this rule for all or part of the trust fund, he or she may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

9. Within 60 days after receiving a request from the

owner or operator for release of funds as specified in 7. or 8. the director shall instruct the trustee to release to the owner or operator such funds as the director specifies in writing.

10. The trustee shall notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by both the owner or operator and the director of a notice of nonpayment of any payment required by this rule, the owner or operator shall:

a. make the required payment;

b. provide alternative financial assurance as specified in this rule and obtain the director's written approval of the assurance provided; or

c. stop accepting waste and begin closure of the facility.

11. After beginning final closure, an owner, operator, or other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, the director shall instruct the trustee to make reimbursement in amounts as the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the director may withhold reimbursement of the amounts as deemed prudent until it is determined, in accordance with I., that the owner or operator is no longer required to maintain financial assurance for closure.

12. The director shall agree to termination of the trust if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the

requirements of this rule in accordance with I.

B. Surety bond guaranteeing payment into a closure trust fund. The following apply to surety bonds that guarantee payment into a closure trust fund:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond that conforms to the requirements of 1.-9., and by submitting the bond to the director. An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made under the bond will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A., except that an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and until the standby trust fund is funded under B., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility;

b. fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the director, the agency, or court of competent jurisdiction; or

c. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in G.

7. Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent based on the director's receipt of evidence of alternate financial assurance as specified in this rule.

C. Surety bond guaranteeing performance of closure. The following apply to surety bonds that guarantee performance of closure:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond that conforms to the requirements of 1.-10., and by submitting the bond to the director. An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made under the bond will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust must meet the requirements specified in A., except that an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and unless the standby trust fund is funded under C. the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so; or

b. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety becomes liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the director that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, under the terms of the bond the surety shall perform final closure in accordance with the closure plan and other permit requirements or will deposit the amount of the penal sum into the standby trust fund.

6. The penal sum of the bond must be in an amount at least equal to the current closure cost estimate.

7. Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not

occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent. The agency shall provide such written consent if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

10. The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the agency releases the owner or operator from the requirements of this rule in accordance with I.

D. Closure letter of credit. The following apply to closure letters of credit:

1. An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of 1.-10., and by submitting the letter to the director. An owner or operator of a new facility shall submit the letter of credit to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5.

3. An owner or operator who uses a letter of credit to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director.

This standby trust fund must meet the requirements of the trust fund specified in A. except that an originally signed duplicate of the trust agreement must be submitted to the director with the letter of credit; and unless the standby trust fund is funded under D., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the identification number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the director have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in G.

7. Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least

equals the current closure cost estimate and shall submit evidence of the increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the director.

8. Following a determination by the director that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the director may draw on the letter of credit.

9. If the owner or operator does not establish alternate financial assurance as specified in this rule and obtain written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director shall draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this rule and obtain written approval of the assurance from the director.

10. The director shall return the letter of credit to the issuing institution for termination if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

E. Closure insurance. The following apply to closure insurance:

1. An owner or operator may satisfy the requirements of this rule by obtaining closure insurance which conforms to the requirements of 1.-10., and submitting a certificate of

insurance to the director. An owner or operator of a new facility shall submit the certificate of insurance to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6.

3. The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in G. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer must not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer is responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director, to a party or parties as the director specifies.

5. After beginning final closure, an owner, operator, or other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, the director shall instruct the insurer to make reimbursement in amounts as the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, the director may withhold

reimbursement of amounts as deemed prudent until it is determined, in accordance with I., that the owner or operator is no longer required to maintain financial assurance for closure of the facility.

6. The owner or operator shall maintain the policy in full force and effect until the director consents to termination of the policy by the owner or operator as specified in 10.

7. A policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration one or more of the following occurs:

a. the agency deems the facility abandoned;

b. the permit is terminated or revoked or a new permit is denied;

c. closure is ordered by the director, the agency or a court of competent jurisdiction;

d. the owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy;

e. the premium due is paid.

9. Whenever the current closure cost estimate increases to

an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the director. when approved

10. The director shall give written consent to the owner or operator to terminate the insurance policy if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

F. Financial test and corporate guarantee for closure. The financial test and corporate guarantee for closure is as follows:

1. An owner or operator may satisfy the requirements of this rule by demonstrating that he or she passes a financial test as specified in 1.-12. To pass this test the owner or operator shall meet the criteria of either 2. or 3.

2. The owner or operator shall have:

a. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; or a ratio of current assets to current liabilities greater than 1.5;

b. net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

3. The owner or operator shall have:

a. a current rating for his most recent bond issuance

of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

4. The phrase "current closure and post-closure cost estimates" as used in 1.-3. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer as specified in Exhibit 6 MCAR S 4.9314 F.-7.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the director:

a. a letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 F.-7.;

b. a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

c. a special report from the owner's or operator's independent certified public accountant to the owner or operator stating that he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and in connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted.

6. An owner or operator of a new facility shall submit the items specified in 5. to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

7. After the initial submission of items specified in 5.

the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1. he or she shall send notice to the director of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of the fiscal year.

9. The director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 1., require reports of financial condition at any time from the owner or operator in addition to those specified in 5. If the director finds, on the basis of the reports or other information, that the owner or operator no longer meets the requirements of 1., the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the finding.

10. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in the report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

11. The owner or operator is no longer required to submit the items specified in 5. if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

12. An owner or operator may meet the requirements of this rule by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in 1.-10., and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9. The corporate guarantee must accompany the items sent to the director as specified in 5. The terms of the corporate guarantee must provide that:

a. If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in A. in the name of the owner or operator.

b. The corporate guarantee remains in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

c. If the owner or operator fails to provide alternate financial assurance as specified in this rule and obtain the written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor shall provide alternative financial assurance in the name of the owner or operator.

G. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds

guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in A., B., D., and E. respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the mechanisms to provide for closure of the facility.

H. Use of financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this rule to meet the requirements of this rule for more than one facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the identification number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the director may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

I. Release of owner or operator from requirements of this rule. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the agency shall notify the owner or operator in writing that he or she is no longer required by this rule to maintain financial assurance for closure of the particular facility, unless the agency has reason to believe that closure has not been in accordance with the closure plan.

6 MCAR S 4.9307 Cost estimate for post-closure care.

A. Cost estimate requirements. The owner or operator of a facility subject to post-closure monitoring or maintenance requirements shall have a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure requirements in 6 MCAR SS 4.9300-4.9303, 4.9317 G., 4.9318 G., 4.9319 H., and 4.9320 G. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under 6 MCAR S 4.9301.

B. Yearly update of cost estimate. During the operating life of the facility, the owner or operator shall adjust the post-closure cost estimate for inflation within 30 days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made as specified in 1. and 2. using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Adjustments are made as follows:

1. The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

C. Cost estimate revisions. The owner or operator shall revise the post-closure cost estimate during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in B.

D. Record retention. The owner or operator shall keep the following at the facility during the operating life of the

facility: the latest post-closure cost estimate prepared in accordance with A. and C. and, when this estimate has been adjusted in accordance with B., the latest adjusted post-closure cost estimate.

6 MCAR S 4.9308 Financial assurance for post-closure care.

The owner or operator of a facility subject to post-closure monitoring or maintenance requirements shall establish financial assurance for post-closure care of the facility. He or she shall choose from the options specified in A.-F.:

A. Post-closure trust fund. The following apply to post closure trust funds:

1. An owner or operator may satisfy the requirements of this rule by establishing a post-closure trust fund which conforms to the requirements of 1.-13., and by submitting an originally signed duplicate of the trust agreement to the director. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the director at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must 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.

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 A.1.-1 and the trust agreement must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR S 4.9314 A.2.-2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as described in a. and b.:

a. For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the director before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in G., divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE-CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

b. If an owner or operator establishes a trust fund as specified in 6 MCAR S ~~4.941~~0 4.9409 A., and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund must be paid in over the pay-in period as defined in 3. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to 6 MCAR S ~~4.941~~0 4.9409 A. The amount of each payment must be determined by this formula:

$$\text{next payment} = \frac{CE-CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

4. The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no

less than the value that the fund would have if annual payments were made as specified in 3.

5. If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this rule or in 6 MCAR S 4.9409, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of A. and 6 MCAR S 4.9409 A., as applicable.

6. After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in this rule to cover the difference.

7. During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the director for release of the amount in excess of the current post-closure cost estimate.

8. If an owner or operator substitutes other financial assurance as specified in this rule for all or part of the trust fund, he or she may submit a written request to the director for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

9. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 7. or 8., the director shall instruct the trustee to release to the owner or operator funds as the director specifies in writing.

10. During the period of post-closure care, the director may approve a release of funds if the owner or operator

demonstrates to the director that the value of the trust fund exceeds the remaining cost of post-closure care.

11. The trustee shall notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by both the owner or operator and the director of a notice of nonpayment of any payment required by this rule, the owner or operator shall:

a. make the required payment;

b. provide alternative financial assurance as specified in this rule and obtain the director's written approval of the assurance provided; or

c. stop accepting waste and begin closure of the facility.

12. An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for post-closure activities, the director shall determine whether the post-closure activities are in accordance with the post-closure plan or otherwise justified, and if so, the director shall instruct the trustee to make reimbursement in amounts as the director specifies in writing.

13. The director shall agree to termination of the trust if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

B. Surety bond guaranteeing payment into post-closure trust fund. The following apply to surety bonds that guarantee payment into post-closure trust funds:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond which conforms to the

requirements of 1.-9., and by submitting the bond to the director. An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder must be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A., except that an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and until the standby trust fund is funded under B., the following requirements are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current post-closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility;

b. fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the director, the agency, or a court of competent

jurisdiction; or

c. provide alternate financial assurance as specified in this rule, and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation if the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in G.

7. Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of the increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this rule.

C. Surety bond guaranteeing performance of post-closure care. The following apply to surety bonds that guarantee performance of post-closure care:

1. An owner or operator may satisfy the requirements of

this rule by obtaining a surety bond which conforms to the requirements of 1.-11., and submitting the bond to the director. An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 C.-4.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder must be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A. except that an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and unless the standby trust fund is funded under C., the following requirements are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current post-closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility; or

b. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the

assurance provided, within 90 days of receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the director that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, under the terms of the bond the surety will perform post-closure care in accordance with the post-closure plan and other permit requirements or will deposit the amount of the penal sum into the standby trust fund.

6. The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate.

7. Whenever the current post-closure cost estimate increases to an amount greater than the penal sum during the operating life of the facility, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

8. During the period of post-closure care, the director may approve a decrease in the penal sum if the owner or operator demonstrates to the director that the amount exceeds the remaining cost of post-closure care.

9. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

10. The owner or operator may cancel the bond if the director has given prior written consent. The agency shall provide written consent if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

11. The surety is not liable for deficiencies in the performance of post-closure care by the owner or operator after the agency releases the owner or operator from the requirements of this rule in accordance with I.

D. Post-closure letter of credit. The following apply to post-closure letters of credit:

1. An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of 1.-11. and by submitting the letter to the director. An owner or operator of a new facility shall submit the letter of credit to the director at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5.

3. An owner or operator who uses a letter of credit to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements of the trust fund specified in A. except that an originally signed duplicate of the trust agreement must be submitted to the director with the letter of credit; and unless the standby trust fund is

funded under D., the following requirements are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current post-closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the identification number, name, and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the director have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in G.

7. Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate

decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

8. During the period of post-closure care, the director may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the director that the amount exceeds the remaining cost of post-closure care.

9. Following a determination by the director that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, the director may draw on the letter of credit.

10. If the owner or operator does not establish alternate financial assurance as specified in this rule and obtain written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director shall draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of an extension the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this rule and to obtain written approval of assurance from the director.

11. The director shall return the letter of credit to the issuing institution for termination if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

E. Post-closure insurance. The following apply to post-closure insurance:

1. An owner or operator may satisfy the requirements of this rule by obtaining post-closure insurance which conforms to the requirements of 1.-11., and by submitting a certificate of

such insurance to the director. An owner or operator of a new facility shall submit the certificate of insurance to the director at least 60 days before the date on which hazardous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. The insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6.

3. The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in G. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer do not change the face amount, although the insurer's future liability will be lowered by the amount of payments.

4. The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director, to a party or parties as the director specifies.

5. An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for post-closure activities, the director shall determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, the director shall instruct the insurer to make reimbursement in amounts as the director specifies in writing.

6. The owner or operator shall maintain the policy in

full force and effect until the director consents to termination of the policy by the owner or operator as specified in 11.

7. A policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy remains in full force and effect in the event that on or before the date of expiration one or more of the following events occurs:

a. the agency deems the facility abandoned;

b. the permit is terminated or revoked or a new permit is denied;

c. closure is ordered by the director, the agency, or a court of competent jurisdiction;

d. the owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy;

e. the premium due is paid.

9. Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of

the increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

10. Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer shall thereafter annually increase the face amount of the policy. The increase must be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the United States Treasury for 26-week treasury securities.

11. The director shall give written consent to the owner or operator to terminate the insurance policy if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

F. Financial test and corporate guarantee for post-closure care. The financial test and corporate guarantee for post-closure care is as follows:

1. An owner or operator may satisfy the requirements of this rule by demonstrating that he or she passes a financial test as specified in 1.-13. To pass this test the owner or operator shall meet the criteria of either 2. or 3.

2. The owner or operator must have:

a. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;

b. net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

3. The owner or operator shall have:

a. a current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

4. The phrase "current closure and post-closure cost estimates" as used in 1.-3. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer as specified in Exhibit 6 MCAR S 4.9314 F.-7.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the director.

a. a letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 F.-7;

b. a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

c. a special report from the owner's or operator's independent certified public accountant to the owner or operator stating that he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements, and in connection with that procedure, no matters came to his or her attention which caused him or her to

believe that the specified data should be adjusted.

6. An owner or operator of a new facility shall submit the items specified in 5. to the director at least 60 days before the date on which hazardous waste is first received for disposal.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall send notice to the director of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of such fiscal year.

9. The director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 1., require reports of financial condition at any time from the owner or operator in addition to those specified in 5. If the director finds, on the basis of the reports or other information, that the owner or operator no longer meets the requirements of 1., the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of a finding.

10. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as

specified in this rule within 30 days after notification of the disallowance.

11. During the period of post-closure care, the director may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the director that the amount of the cost estimate exceeds the remaining cost of post-closure care.

12. The owner or operator is no longer required to submit the items specified in 5. if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

13. An owner or operator may meet the requirements of this rule by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor shall meet the requirements for owners or operators in 1.-11., and shall comply with the terms of the corporate guarantee. The wording of the corporate guarantee shall be identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9. The corporate guarantee must accompany the items sent to the director as specified in 5. The terms of the corporate guarantee must provide that:

a. If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in A. in the name of the owner or operator.

b. The corporate guarantee remains in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or

operator and the director, as evidenced by the return receipts.

c. If the owner or operator fails to provide alternate financial assurance as specified in this rule and to obtain the written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor shall provide alternate financial assurance in the name of the owner or operator.

G. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in A., B., D., and E., respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the mechanisms to provide for post-closure care of the facility.

H. Use of financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this rule to meet the requirements of this rule for more than one facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the identification number, name, address, and the amount of funds for post-closure care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the

mechanism, the director may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

I. Release of owner or operator from requirements of this rule. When an owner or operator has completed, to the satisfaction of the agency, all post-closure care requirements in accordance with the post-closure plan, the agency will, at the request of the owner or operator, notify him in writing that he is no longer required by this rule to maintain financial assurance for post-closure care of the particular facility.

6 MCAR S 4.9309 Cost estimate for corrective action.

A. Cost estimate requirements. The owner or operator shall have a written estimate, in current dollars, of the cost of performing corrective action in accordance with the requirements in 6 MCAR SS 4.9297 B.4. and 4.9297 M. The corrective action cost estimate must equal the cost of implementing the corrective action plan when a concentration limit is first exceeded at the compliance point.

B. Yearly update of cost estimate. The owner or operator shall adjust the corrective action cost estimate for inflation within 30 days after each anniversary of the date on which the first corrective action cost estimate was prepared. The adjustment must be made as specified in 1. and 2. using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Adjustments are made as follows:

1. The first adjustment is made by multiplying the corrective action cost estimate by the inflation factor. The result is the adjusted corrective action cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted corrective action cost estimate by the latest inflation factor.

C. Cost estimate revisions. The owner or operator shall revise the corrective action cost estimate whenever a change in the corrective action plan increases the cost of corrective action. The revised corrective action cost estimate must be adjusted for inflation as specified in B.

D. Record retention. The owner or operator shall keep the following at the facility during the operating life and post-closure care period of the facilty: the latest corrective action cost estimate prepared in accordance with A. and C. and, when this estimate has been adjusted in accordance with B., the latest adjusted corrective action cost estimate.

6 MCAR S 4.9310 Financial assurance for corrective action.

An owner or operator of a facility shall establish financial assurance for corrective action for the facility by choosing an option in A.-F.

A. Corrective action trust fund. The following apply to corrective action trust funds:

1. An owner or operator may satisfy the requirements of this rule by establishing a corrective action trust fund which conforms to the requirements of 1.-12. and by submitting an originally signed duplicate of the trust agreement to the director. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee must 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.

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 A.1.-1 and the trust agreement must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR S 4.9314 A.2.-2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current corrective action cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by

the owner or operator over the first ten years of facility operation or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the corrective action trust fund must be made as described in a. and b.:

a. For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the director before this initial receipt of hazardous waste. The first payment must be at least equal to the current corrective action cost estimate, except as provided in G., divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE - CV}{Y}$$

where CE is the current corrective action cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

b. For an existing facility, the first payment must be made within 90 days of permit issuance. A receipt from the trustee for this payment must be submitted by the owner or operator to the director within seven days of the payment. The amounts of the first payment and subsequent payments and the timing of subsequent payments shall be the same as for a new facility as specified in a.

4. The owner or operator may accelerate payments into the trust fund or he or she may deposit the full amount of the current corrective action cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 3.

5. If the owner or operator establishes a corrective action trust fund after having used one or more alternate mechanisms specified in this rule, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of A., as applicable.

6. After the pay-in period is completed, whenever the current corrective action cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current corrective action cost estimate or obtain other financial assurance as specified in this rule to cover the difference.

7. If the value of the trust fund is greater than the total amount of the current corrective action cost estimate, the owner or operator may submit a written request to the director for release of the amount in excess of the current corrective action cost estimate covered by the trust fund.

8. If an owner or operator substitutes other financial assurance as specified in this rule for all or part of the trust fund, he or she may submit a written request to the director for release of the amount in excess of the current corrective action cost estimate covered by the trust fund.

9. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 7. or 8., the director shall instruct the trustee to release to the owner or operator the funds as the director specifies in writing. OK

10. The trustee shall notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by both the owner or operator and the director of a

notice of nonpayment of any payment required by this rule, the owner or operator shall:

a. make the required payment;

b. provide alternative financial assurance as specified in this rule and obtain the director's written approval of the assurance provided; or

c. stop accepting waste and begin closure of the facility.

11. After beginning corrective action, an owner, operator, or other person authorized to perform corrective action may request reimbursement for corrective action expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for corrective action activities, the director shall determine whether the corrective action expenditures are in accordance with the corrective action plan or otherwise justified, and if so, the director shall instruct the trustee to make reimbursement in amounts as the director specifies in writing. If the director has reason to believe that the cost of corrective action will be significantly greater than the value of the trust fund, the director may withhold reimbursement of amounts as deemed prudent until it is determined, in accordance with I., that the owner or operator is no longer required to maintain financial assurance for corrective action.

12. The director shall agree to termination of the trust if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

B. Surety bond guaranteeing payment into corrective action trust fund. The following apply to surety bonds that guarantee payment into corrective action trust funds:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond which conforms to the requirements of 1.-9. and by submitting the bond to the director.

An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United Stated Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A., except that: an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and until the standby trust fund is funded pursuant to the requirements of B., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current corrective action cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of corrective action for the facility;

b. fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin correction

action is issued by the director, the agency, or a court of competent jurisdiction; or

c. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current corrective action cost estimate, except as provided in G.

7. Whenever the current corrective action cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current corrective action cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current corrective action cost estimate decreases, the penal sum may be reduced to the amount of the current corrective action cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent based on the director's receipt of evidence of alternate financial assurance as specified in this rule.

C. Surety bond guaranteeing performance of corrective action. The following apply to surety bonds that guarantee

performance of corrective action:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond which conforms to the requirements of 1.-10. and submitting the bond to the director. An owner or operator of a new facility shall submit the bond to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 C.-4.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust must meet the requirements specified in A., except that: an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and unless the standby trust fund is funded under C., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current corrective action cost estimates;

c. annual valuations as required by the trust agreement; and

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. perform corrective action in accordance with the corrective action plan and other requirements of the permit for

the facility whenever required to do so; or

b. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination that the owner or operator has failed to perform corrective action in accordance with the corrective action plan and other permit requirements when required to do so, under the terms of the bond the surety will perform corrective action according to the corrective action plan and other permit requirements or will deposit the amount of the penal sum into the standby trust fund.

6. The penal sum of the bond must be in an amount at least equal to the current corrective action cost estimate.

7. Whenever the current corrective action cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current corrective action cost estimate and submit evidence of the increase to the director or obtain other financial assurance as specified in this rule. Whenever the current corrective action cost estimate decreases, the penal sum may be reduced to the amount of the current corrective action cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

10. The surety is not liable for deficiencies in the performance of corrective action by the owner or operator after the agency releases the owner or operator from the requirements of this rule in accordance with I.

D. Corrective action letter of credit. The following apply to corrective action letters of credit:

1. An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of 1.-10. and by submitting the letter to the director. An owner or operator of a new facility must submit the letter of credit to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5.

3. An owner or operator who uses a letter of credit to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements of the trust fund specified in A. except that an orginally signed duplicate of the trust agreement must be submitted to the director with the letter of credit; and unless the standby trust fund is funded pursuant to the requirements of D., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current corrective action cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date and providing the following information: the identification number, name and address of the facility, and the amount of funds assured for corrective action for the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the director have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current corrective action cost estimate, except as provided in G.

7. Whenever the current corrective action cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current corrective action cost estimate and shall submit evidence of the increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current corrective action cost estimate decreases, the amount of the credit may be reduced to the amount of the current corrective action cost estimate following written

approval by the director.

8. Following a determination that the owner or operator has failed to perform corrective action in accordance with the corrective action plan and other permit requirements when required to do so, the director may draw on the letter of credit.

9. If the owner or operator does not establish alternate financial assurance as specified in this rule and obtain written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director shall draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of an extension, the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this rule and to obtain written approval of assurance from the director.

10. The director shall return the letter of credit to the issuing institution for termination if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

E. Corrective action insurance. The following apply to corrective action insurance:

1. An owner or operator may satisfy the requirements of this rule by obtaining corrective action insurance which conforms to the requirements of 1.-10. and by submitting a certificate of insurance to the director. An owner or operator of a new facility must submit the certificate of insurance to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an

excess or surplus lines insurer, in one or more states.

2. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6.

3. The corrective action insurance policy must be issued for a face amount at least equal to the current corrective action cost estimate, except as provided in G. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer do not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The corrective action insurance policy must guarantee that funds will be available to perform corrective action for the facility whenever required by the facility permit. The policy must also guarantee that once closure or corrective action begins, the insurer is responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director, to the party or parties the agency specifies.

5. After beginning corrective action, an owner or operator or any other person authorized to perform corrective action may request reimbursement for corrective action expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for corrective action activities, the director shall determine whether the corrective action expenditures are in accordance with the corrective action plan or otherwise justified, and if so, the director shall instruct the insurer to make reimbursement in amounts the director specifies in writing. If the director has reason to believe that the cost of corrective action will be significantly greater than the face amount of the policy, the director may withhold reimbursement of these amounts as deemed prudent until it is determined, in accordance with I., that the owner or operator is no longer required to maintain financial assurance for corrective action for the facility.

6. The owner or operator shall maintain the policy in

full force and effect until the director consents to termination of the policy by the owner or operator as specified in 10.

7. Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided the consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy remains in full force and effect if on or before the date of expiration one or more of the following events occurs:

a. the agency deems the facility abandoned;

b. the permit is terminated or revoked or a new permit is denied;

c. corrective action is ordered by the director, the agency, or a court of competent jurisdiction;

d. the owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy;

e. the premium due is paid;

f. closure is ordered by the director, the agency, or a court of competent jurisdiction.

9. Whenever the current corrective action cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to

an amount at least equal to the current corrective action cost estimate and submit evidence of the increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current corrective action cost estimate decreases, the face amount may be reduced to the amount of the current corrective action cost estimate following written approval by the director.

10. The director shall give written consent to the owner or operator that he or she may terminate the insurance policy if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

F. Financial test and corporate guarantee for corrective action. The financial test and corporate guarantee for corrective action is as follows:

1. An owner or operator may satisfy the requirements of this rule by demonstrating that he or she passes a financial test as specified in 1.-12. To pass this test, the owner or operator shall meet the criteria of either 2. or 3.

2. The owner or operator shall have:

a. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;

b. net working capital and tangible net worth each at least six times the current corrective action cost estimate;

c. tangible net worth of a least $10,000,000; and

d. assets in the United States amounting to at least 90 percent of his or her total assets or at least six times the current corrective action cost estimate.

3. The owner or operator shall have:

a. a current rating for his or her most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth at least six times the current corrective action cost estimate;

c. tangible net worth of at least $10,000,000; and

d. assets located in the United States amounting to at least 90 percent of his or her total assets or at least six times the current corrective action cost estimate.

4. The phrase "current corrective action cost estimates" as used in 1.-3. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer as specified in Exhibit 6 MCAR S 4.9314 F.7.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the director:

a. a letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 F.-7;

b. a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

c. a special report from the owner's or operator's independent certified public accountant to the owner or operator stating that he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements and, in connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted.

6. An owner or operator of a new facility shall submit the items specified in 5. to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding

fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall send notice to the director of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of the fiscal year.

9. The director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 1., require reports of financial condition at any time from the owner or operator in addition to those specified in 5. If the director finds, on the basis of these reports or other information, that the owner or operator no longer meets the requirements of 1., the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of a finding.

10. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion is cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

11. The owner or operator is no longer required to submit the items specified in 5. if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with I.

12. An owner or operator may meet the requirements of

this rule by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in 1.-10. and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9. The corporate guarantee must accompany the items sent to the director as specified in 5. The terms of the corporate guarantee must provide that:

a. If the owner or operator fails to perform corrective action of a facility covered by the corporate guarantee in accordance with the corrective action plan and other permit requirements whenever required to do so, the guarantor will do so or will establish a trust fund as specified in A. in the name of the owner or operator.

b. The corporate guarantee remains in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

c. If the owner or operator fails to provide alternate financial assurance as specified in this rule and to obtain the written approval of alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide alternative financial assurance in the name of the owner or operator.

G. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in A., B., D., and E. respectively, except that it is the combination of

mechanisms rather than the single mechanism which must provide financial assurance for an amount at least equal to the current corrective action cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the mechanisms to provide for corrective action for the facility.

H. Use of financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this rule to meet the requirements of this rule for more than one facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the identification number, name, address, and the amount of funds for corrective action assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for corrective action for any of the facilities covered by the mechanism, the agency may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

I. Release of the owner or operator from the requirements of this rule. Within 60 days after the end of the post-closure care period or after termination of corrective action in accordance with 6 MCAR S 4.9297 M.6., whichever is later, the agency shall notify the owner or operator in writing that he or she is no longer required by this rule to maintain financial assurance for corrective action for the particular facility, unless the agency has reason to believe that corrective action, if necessary, has not been accomplished in accordance with the corrective action plan.

6 MCAR S 4.9311 Use of a mechanism for financial assurance of

corrective action, closure, and post-closure care.

An owner or operator may satisfy the requirements for financial assurance for corrective action, closure, and post-closure care or any combination thereof for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in 6 MCAR SS 4.9306, 4.9308, and 4.9310. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of corrective action, closure, and post-closure care.

6 MCAR S 4.9312 Liability requirements.

A. Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of the following ways:

1. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in a. and b.:

a. Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 J.-11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the director. If requested by the

director, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the hazardous waste facility liability endorsement or the certificate of liability insurance to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

b. Each insurance policy must be issued by an insurer, which is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. An owner or operator may meet the requirements of this rule by passing a financial test for liability coverage as specified in F.

3. An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage demonstrated must total at least the minimum amounts required by A.

B. Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, 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 facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of the following ways:

1. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in a. and b.:

a. Each insurance policy must be amended by attachment

of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 J.-11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the director. If requested by the director, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the hazardous waste facility liability endorsement or the certificate of liability insurance to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

b. Each insurance policy must be issued by an insurer which is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. An owner or operator may meet the requirements of this rule by passing a financial test for liability coverage as specified in F.

3. An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage must total at least the minimum amounts required by B.

4. For existing facilities, the required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding the effective date of 6 MCAR SS 4.9100-4.9560, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or

revenues of the owner or operator with the largest sales or revenues will determine the date by which the coverage must be demonstrated. The dates are as follows:

a. for an owner or operator with sales or revenues totaling $10,000,000 or more, six months after the effective date of 6 MCAR SS 4.9100-4.9560;

b. for an owner or operator with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after the effective date of 6 MCAR SS 4.9100-4.9560;

c. for all other owners or operators, 30 months after the effective date of 6 MCAR SS 4.9100-4.9560;

d. for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 264.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 264.147 (1983) or on the effective date of 6 MCAR SS 4.9100-4.9560, whichever is later.

C. Adjustment of liability requirements. If an owner or operator can demonstrate to the satisfaction of the director that the levels of financial responsibility required by A. and B. are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain an adjustment from the director. The request for an adjustment must be submitted to the director as part of the permit application in accordance with the agency's permitting procedures for a facility that does not have a permit, or pursuant to the procedures for permit modification for a facility that has a permit. If granted, the adjustment will take the form of an adjusted level of required liability coverage, the level to be based on the director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The director may require an owner or operator who requests an adjustment to provide the technical and engineering information as is deemed necessary by the director to determine a level of financial

responsibility other than that required by A. or B.

D. Adjustment of financial liability to protect health and environment. If the director determines that the levels of financial responsibility required by A. or B. are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the director may adjust the level of financial responsibility required under A. or B. as may be necessary to protect human health and the environment. This adjusted level will be based on the director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the director determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, the director may require that an owner or operator of the facility comply with B. An owner or operator shall furnish to the director within a reasonable time, any information which the director requests to determine whether cause exists for such adjustments of level or type of coverage. An adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under the agency's permitting procedures.

E. Period of coverage. An owner or operator shall continuously provide liability coverage for a facility as required by this rule until certifications of closure of the facility, as specified in 6 MCAR S 4.9299, are received by the director.

F. Financial test for liability coverage. The financial test for liability coverage is as follows:

1. An owner or operator may satisfy the requirements of this rule by demonstrating that he or she passes a financial test as specified in 1.-9. To pass this test the owner or operator must meet the criteria of either 2. or 3.

2. The owner or operator shall have:

a. net working capital and tangible net worth each at

least six times the amount of liability coverage to be demonstrated by this test;

b. tangible net worth of at least $10,000,000; and

c. assets in the United States amounting to either at least 90 percent of his or her total assets, or at least six times the amount of liability coverage to be demonstrated by this test.

3. The owner or operator shall have:

a. a current rating for his or her most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth of at least $10,000,000;

c. tangible net worth of at least six times the amount of liability coverage to be demonstrated by this test; and

d. assets in the United States amounting to either: at least 90 percent of his or her total assets; or at least six times the amount of liability coverage to be demonstrated by this test.

4. The phrase "amount of liability coverage" as used in 1.-3. refers to the annual aggregate amounts for which coverage is required under A. and B.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following three items to the director:

a. A letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 G.-8. If an owner or operator is using the financial test to demonstrate assurance for corrective action, closure or post-closure care, as specified by 6 MCAR SS 4.9306 F., 4.9308 F., 4.9310 F., 4.9407 E., and 4.9409 E., and liability coverage, he or she shall submit the letter specified in Exhibit 6 MCAR S 4.9314 G.-8 to cover both forms of financial responsibility; a separate letter as specified in Exhibit 6 MCAR S 4.9314 F.-7 is not required.

b. A copy of the independent certified public accountant's report on examination of the owner's or operator's

financial statements for the latest completed fiscal year.

c. A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, and in connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted.

6. An owner or operator of a new facility shall submit the items specified in 5. to the director at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall obtain insurance for the entire amount of required liability coverage as specified in this rule. Evidence of insurance must be submitted to the director within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

9. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of insurance for the entire amount of required liability coverage as specified in this rule within 30 days after notification of disallowance.

6 MCAR S 4.9313 Incapacity of owners or operators, guarantors, or financial institutions.

A. Notification of bankruptcy. An owner or operator shall notify the director by certified mail of the commencement of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, naming the owner or operator as debtor, within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in 6 MCAR SS 4.9306 F., 4.9308 F. and 4.9310 F. shall make the notification if he or she is named as debtor, as required under the terms of the corporate guarantee.

B. Incapacity of financial institutions. An owner or operator who fulfills the requirements of 6 MCAR S 4.9306, 4.9308, 4.9310, or 4.9312 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue these instruments. The owner or operator shall establish other financial assurance or liability coverage within 60 days after such an event.

6 MCAR S 4.9314 Wording of instruments.

A. Trust agreement for trust fund. The trust agreement and certificate of acknowledgement are as follows:

1. A trust agreement for a trust fund as specified in 6 MCAR S 4.9306 A., 4.9308 A., 4.9310 A., 4.9407 A., or 4.9409 A. must be worded as specified in Exhibit 6 MCAR S 4.9314 A. 1.-1, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 A.1.-1

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of

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 Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota has established certain rules applicable to the Grantor, requiring that an owner or operator of a hazardous waste facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of, and/or corrective action for the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of the financial assurance 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 and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A, for each facility list the identification number, name, address, and the current corrective action, closure, and/or post-closure cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. This property 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 Agency.

Section 4. Payment for Corrective Action, Closure, and Post-Closure Care. The Trustee shall make payments from the Fund as the Agency Director shall direct, in writing, to provide for the payment of the costs of corrective action, closure, and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the Agency Director from the Fund for corrective action, closure, and post-closure expenditures in amounts as the Agency Director shall direct in writing. In addition, the Trustee shall refund to the Grantor the amounts as the Agency Director specifies in writing. Upon refund, these funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to

the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between 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:**

a. 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, United States Code, title 15, section 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the federal or state government;

b. 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 state government; and

c. 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, United States Code, title 15, sections 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 may be bound to see to the application of the purchase money or to inquire into the validity or expediency of a 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 the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified

central depository even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the 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 these 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 of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Agency Director a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Director shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. 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 12. 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 13. Successor Trustee. The trustee may resign or the Grantor may replace the Trustee, but the 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 Agency Director and the present Trustee by certified mail ten days before the 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 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by the persons as are designated in the attached Exhibit A or other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Agency to the Trustee shall be in writing, signed by the Agency Director; and the Trustee shall act and shall be fully protected in acting in accordance with the 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 Agency hereunder has occurred. The Trustee shall have no duty to act in the absence of orders, requests, and instructions from the Grantor and/or the Agency Director, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the Agency Director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Director, or by the Trustee and the Agency Director, if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Director, or by the Trustee and the Agency Director, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. 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 or the Agency Director 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 a defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the state of Minnesota.

Section 20. 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 or 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 Exhibit 6 MCAR S 4.9314 A.1.-1, as such rules were constituted on the date first above written.

[SIGNATURE OF GRANTOR]
[TITLE]
Attest:
[TITLE]
[SEAL]
[SIGNATURE OF TRUSTEE]
Attest:
[TITLE]
[SEAL]

2. Exhibit 6 MCAR S 4.9314 A.2.-2 is an example of the certification of acknowledgment, which must accompany the trust agreement for a trust fund as specified in 6 MCAR S 4.9306 A., 4.9308 A., 4.9310 A., 4.9407 A., or 4.9409 A.

EXHIBIT 6 MCAR S 4.9314 A.2.-2

CERTIFICATION OF ACKNOWLEDGMENT

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 the instrument is the 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]

B. Surety bond guaranteeing payment into a trust fund. A surety bond guaranteeing payment into a trust fund as specified in 6 MCAR S 4.9306 B., 4.9308 B., 4.9310 B., 4.9407 B., or 4.9409 B. must be worded as described in Exhibit 6 MCAR S 4.9314 B.-3, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 B.-3

FINANCIAL GUARANTEE BOND

Date bond executed: _____

Effective date: _____

Principal: [legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture,"

"partnership," or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]

Identification number, name, address, and corrective action, closure, and/or post-closure amount(s) for each facility guaranteed by this bond [indicate corrective action, closure, and post-closure amounts separately]: _____

Total penal sum of bond: $_____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit or interim status in order to own or operate each hazardous waste facility identified above, and

Whereas said principal is required to provide financial assurance for closure; closure and post-closure care; closure and corrective action; or closure, post-closure care, and corrective action as a condition of the permit or interim status, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the closure and/or post-closure care of the facility,

Or, if the Principal shall fund the standby trust fund in the amount(s) identified above for the closure and/or post-closure care of the facility within 15 days after an order to begin closure is issued by the Agency Director, the Agency, or court of competent jurisdiction,

Or, if the Principal shall faithfully, before beginning corrective action at any facility identified above, fund the standby trust fund in the amount identified above for corrective action at the facility,

Or, if the Principal shall fund the standby trust fund in the amount identified above for corrective action at the facility within 15 days after an order to begin corrective action is issued by the Agency Director, the Agency, or a court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in 6 MCAR SS 4.9304-4.9314 or 4.9405-4.9413 as applicable and obtain the Agency Director's written approval of assurance, within 90 days after the date notice of cancellation is received by both the Principal and the

Agency Director from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Agency Director that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Agency Director.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Agency Director, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Agency Director, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new corrective action, closure, and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Agency Director.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3, as the rules were constituted on the date this bond was executed.

Principal

[SIGNATURE(S)]

[NAME(S)]

[TITLES(S)

[CORPORATE SEAL]

Corporate Surety(ies)

[NAME AND ADDRESS]

State of incorporation: _____

Liability limit: $_____

[SIGNATURE(S)]

[NAME(S) AND TITLE(S)]

[CORPORATE SEAL]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $_____

C. Surety bond guaranteeing performance. A surety bond guaranteeing performance of corrective action, closure and/or post-closure care, as specified in 6 MCAR S 4.9306 C., 4.9308 C., or 4.9310 C. must be worded as specified in Exhibit 6 MCAR S 4.9314 C.-4, except that the instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 C.-4

PERFORMANCE BOND

Date bond executed: _____
Effective date: _____
Principal: [legal name and business address of owner or operator]
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
Identification number, name, address, and corrective action, closure, and/or post-closure amount(s) for each facility guaranteed by this bond [indicate corrective action, closure, and post-closure amounts separately]:
Total penal sum of bond: $_____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit in order to own or operate each hazardous waste facility identified above, and

Whereas said Principal is required to provide financial assurance for closure; closure and post-closure care; closure and corrective action; or closure, post-closure care, and corrective action as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide financial

assurance,

Now, Therefore, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as the plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as these laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as the plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as these laws, statutes, rules, and regulations may be amended,

And, if the Principal shall faithfully perform corrective action for each facility for which this bond guarantees corrective action, when required by and in accordance with the corrective action plan and other requirements of the permit, as the plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall provide alternate financial assurance as specified in 6 MCAR SS 4.9304-4.9314, and obtain the Agency Director's written approval of the assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Agency Director from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Agency Director that the Principal has been found in violation of the closure requirements of 6 MCAR SS 4.9280-4.9322 for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the Agency Director.

Upon notification by the Agency Director that the Principal has been found in violation of the post-closure requirements of 6 MCAR SS 4.9280-4.9322 for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Agency Director.

Upon notification by the Agency Director that the Principal has been found in violation of the corrective action requirements of 6 MCAR SS 4.9280-4.9322 for a facility for which this bond guarantees performance of corrective action, the Surety(ies) shall either perform corrective action in accordance with the corrective action plan and other permit requirements or place the corrective action amount guaranteed for the facility into the standby trust fund as directed by the Agency Director.

Upon notification by the Agency Director that the Principal has failed to provide alternate financial assurance as specified in 6 MCAR SS 4.9304-4.9314 and obtain written approval of the assurance from the Agency Director during the 90 days following receipt by both the Principal and the Agency of a notice of cancellation of the bond, the Surety(ies) shall place funds in

the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Agency Director.

The Surety(ies) hereby waive(s) notification of amendments to closure, post-closure, and corrective action plans, permits, applicable laws, statutes, rules, and regulations and agrees that no amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Agency Director, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Agency Director, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new corrective action, closure, and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Agency Director.

In Witness Whereof, the Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Exhibit 6 MCAR S 4.9314 C.-4, as the rule was constituted on the date this bond was executed.

Principal

[SIGNATURE(S)]

[NAME(S)]

[TITLE(S)]

[CORPORATE SEAL]

Corporate Surety(ies)

[NAME AND ADDRESS]

State of incorporation: _____

Liability limit: $_____

[SIGNATURE(S)]

[NAME(S) AND TITLE(S)]

[CORPORATE SEAL]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $_____

D. Letter of credit. A letter of credit as specified in 6 MCAR S 4.9306 D., 4.9308 D., 4.9310 D., 4.9407 C., or 4.9409 C. must be worded as specified in Exhibit 6 MCAR S 4.9314 D.-5, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 D.-5

IRREVOCABLE STANDBY LETTER OF CREDIT

[Agency Director]

Minnesota Pollution Control Agency

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No._____ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $_____, available upon presentation of:

1. your sight draft, bearing reference to this letter of Credit No._____, and

2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to the State of Minnesota's hazardous waste rules."

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 both you and the [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. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts.

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, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5, as the rules 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 published in Minnesota Statutes, chapter 336"].

E. Certificate of insurance. A certificate of insurance, as specified in 6 MCAR S 4.9306 E., 4.9308 E., 4.9310 E., 4.9407 D., or 4.9409 D. must be worded as specified in Exhibit 6 MCAR S 4.9314 E.-6, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 E.-6

CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE OR CORRECTIVE ACTION

Name and Address of Insurer (herein called the "insurer"): _____

Name and Address of Insured (herein called the "insured"): _____

Facilities Covered: [List for each facility: the identification number, name, address, and the amount of insurance for closure and/or the amount for post-closure care, and/or the amount for corrective action (these amounts for all facilities covered must total the face amount shown below).]

Face Amount: _____

Policy Number: _____

Effective Date: _____

The insurer hereby certifies that it has issued to the insured the policy of insurance identified above to provide financial assurance for [insert "closure," "closure and post-closure care," "post-closure care," "closure and corrective action," "post-closure care and corrective action," "corrective action," or "closure, post-closure care, and corrective action"] for the facilities identified above. The insurer further warrants that the policy conforms in all respects with the requirements of 6 MCAR SS 4.9306 E., 4.9308 E., 4.9310 E., 4.9407 D., and 4.9409 D. as applicable and as the rules were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with the rules is hereby amended to eliminate the inconsistency.

Whenever requested by the Minnesota Pollution Control Agency (Agency) Director, the insurer agrees to furnish to the Agency Director a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6, as the rules were constituted on the date shown immediately below.

[AUTHORIZED SIGNATURE FOR INSURER]

[NAME OF PERSON SIGNING]

[TITLE OF PERSON SIGNING]

[SIGNATURE OF WITNESS OR NOTARY]

[DATE]

F. Letter from chief financial officer for corrective action, closure, and/or post-closure care. A letter from the chief financial officer as specified in 6 MCAR S 4.9306 F., 4.9308 F., 4.9310 F., 4.9407 E., or 4.9409 E. must be worded as specified in Exhibit 6 MCAR S 4.9314 F.-7, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 F.-7

LETTER FROM CHIEF FINANCIAL OFFICER FOR CORRECTIVE ACTION, CLOSURE, AND/OR POST-CLOSURE CARE

[Agency Director]

Minnesota Pollution Control Agency

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413.

[Fill out the following four paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current corrective action, closure, and/or post-closure cost estimates. Identify each cost estimate as to whether it is for corrective action, closure, or post-closure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for corrective action, closure, or post-closure care is demonstrated through the financial test specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413. The current corrective action, closure, and/or post-closure cost estimates covered by the text are shown for each facility: _____.

2. This firm guarantees, through the corporate guarantee specified in 6 MCAR SS 4.9304-4.9314 and 4.9405- 4.9413, the corrective action, closure, or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the corrective action, closure, or post-closure care so guaranteed are shown for each facility: _____.

3. In states other than Minnesota, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the corrective action, closure, or post-closure care of the following facilities either to the United States Environmental Protection Agency through the use of the financial test specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, or to an authorized state through the use of a test equivalent or substantially equivalent to the specified

financial test. The current corrective action, closure, and/or post-closure cost estimates covered by such a test are shown for each facility: _____.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for corrective action, if required, closure, or if a disposal facility, post-closure care, is not demonstrated either to the United States Environmental Protection Agency or a state through the financial test or any other financial assurance mechanism specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, or equivalent or substantially equivalent state mechanisms. The current corrective action, closure, and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: _____.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of 6 MCAR S 4.9306 F.2., 4.9308 F.2., 4.9310 F.2., 4.9407 E.2., or 4.9409 E.2. are used. Fill in Alternative II if the criteria of 6 MCAR S 4.9306 F.3., 4.9308 F.3., 4.9310 F.3., 4.9407 E.3., or 4.9409 E.3. are used.]

ALTERNATIVE I

1.	Sum of current corrective action, closure, and post-closure cost estimate [total of all cost estimates shown in the four paragraphs above] ...	$_____
*2.	Total liabilities [if any portion of the corrective action, closure, or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4].	$_____
*3.	Tangible net worth	$_____
*4.	Net worth	$_____
*5.	Current assets	$_____
*6.	Current liabilities	$_____
7.	Net working capital [line 5 minus line 6]	$_____
*8.	The sum of net income plus depreciation, depletion, and amortization	$_____
*9.	Total assets in U.S. (required only if less than 90 percent of firm's assets are located in U.S.)	$_____

		YES	NO
10.	Is line 3 at least $10,000,000?	___	___
11.	Is line 3 at least 6 times line 1?	___	___
12.	Is line 7 at least 6 times line 1?	___	___
*13.	Are at least 90 percent of firm's assets located in the U.S.? If not, complete line 14	___	___
14.	Is line 9 at least 6 times line 1?	___	___

15. Is line 2 divided by line 4 less than 2.0? ..... ___ ___

16. Is line 8 divided by line 2 greater than 0.1? .. ___ ___

17. Is line 5 divided by line 6 greater than 1.5? .. ___ ___

ALTERNATIVE II

1. Sum of current corrective action, closure, and post-closure cost estimates [total of all cost estimates shown in the four paragraphs above] .. $_____

2. Current bond rating of most recent issuance of this firm and name of rating service ..... _____

3. Date of issuance of bond ..... _____

4. Date of maturity of bond ..... _____

*5. Tangible net worth [if any portion of the corrective action, closure, and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line] ..... $_____

*6. Total assets in U.S. (required only if less than 90 percent of firm's assets are located in U.S.) $_____

	YES	NO
7. Is line 5 at least $10,000,000?	___	___
8. Is line 5 at least 6 times line 1?	___	___
*9. Are at least 90 percent of firm's assets located in U.S.? If not, complete line 10	___	___
10. Is line 6 at least 6 times line 1?	___	___

I hereby certify that the wording of this letter is identical to the wording specified in Exhibit 6 MCAR S 4.9314 F.-7, as such rules were constituted on the date shown immediately below.

[SIGNATURE]

[NAME]

[TITLE]

[DATE]

G. Letter from chief financial officer for liability coverage. A letter from the chief financial officer as specified in 6 MCAR S 4.9312 F. or 4.9411 F. must be worded as specified in Exhibit 6 MCAR S 4.9314 G.-8, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 G.-8

LETTER FROM CHIEF FINANCIAL OFFICER

FOR LIABILITY COVERAGE OR LIABILITY COVERAGE,

CORRECTIVE ACTION, CLOSURE, AND/OR POST-CLOSURE CARE

[Agency Director]

Minnesota Pollution Control Agency

I am the chief financial officer of [owner's or operator's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and corrective action, closure, and/or post-closure care" if applicable] as specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413.

[Fill out the following paragraph regarding facilities and liability coverage. For each facility, include its identification number, name, and address.]

The owner or operator identified above is the owner or operator of the following facilities for which liability coverage is being demonstrated through the financial test specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413: _____.

[If you are using the financial test to demonstrate coverage of both liability and corrective action, closure, and post-closure care, fill in the following four paragraphs regarding facilities and associated corrective action, closure, and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current corrective action, closure, and/or post-closure cost estimates. Identify each cost estimate as to whether it is for corrective action, closure, or post-closure care.]

1. The owner or operator identified above owns or operates the following facilities for which financial assurance for corrective action, closure, or post-closure care is demonstrated through the financial test specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413. The current corrective action, closure, and/or post-closure cost estimates covered by the test are shown for each facility: _____.

2. The owner or operator identified above guarantees, through the corporate guarantee specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413, the corrective action, closure, and post-closure care of the following facilities owned or operated by its subsidiaries. The current cost estimates for the corrective action, closure, or post-closure care so guaranteed are shown for each facility: _____.

3. In states other than Minnesota, this owner or operator is demonstrating financial assurance for the corrective action, closure, or post-closure care of the following facilities either to the United States Environmental Protection Agency through the use of the financial test specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, or to an authorized state through the use of a test equivalent or substantially equivalent to the specified financial test. The current corrective action, closure, and/or post-closure cost estimates covered by such a test are shown for each facility: _____.

4. The owner or operator identified above owns or operates the following hazardous waste management facilities for which financial assurance for corrective action, if required, closure, or, if a disposal facility, post-closure care, is not demonstrated either to the United States Environmental Protection Agency, or a state through the financial test or any other financial assurance mechanism specified in Code of Federal

Regulations, title 40, parts 264 or 265, subpart H, or equivalent or substantially equivalent state mechanisms. The current corrective action, closure, and/or post-closure cost estimates not covered by such financial assurance are shown for each facility: _____.

This owner or operator [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this owner or operator ends on [month, day]. The figures for the following items marked with an asterisk are derived from this owner's or operator's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Part A if you are using the financial test to demonstrate coverage only for the liability requirements.]

Part A. Liability Coverage for Accidental Occurrences.

[Fill in Alternative I if the criteria of 6 MCAR S 4.9312 F.2. or 4.9411 F.2. are used. Fill in Alternative II if the criteria of 6 MCAR S 4.9312 F.3. or 4.9411 F.3. are used.]

ALTERNATIVE I

1.	Amount of annual aggregate liability coverage to be demonstrated	$_____
*2.	Current assets	$_____
*3.	Current liabilities	$_____
4.	Net working capital (line 2 minus line 3)	$_____
*5.	Tangible net worth	$_____
*6.	If less than 90 percent of assets are located in the U.S., give total U.S. assets	$_____

		YES	NO
7.	Is line 5 at least $10,000,000?	___	___
8.	Is line 4 at least 6 times line 1?	___	___
9.	Is line 5 at least 6 times line 1?	___	___
*10.	Are at least 90 percent of assets located in the U.S.? If not, complete line 11	___	___
11.	Is line 6 at least 6 times line 1?	___	___

ALTERNATIVE II

1.	Amount of annual aggregate liability coverage to be demonstrated	$_____
2.	Current bond rating of most recent issuance and name of rating service	
3.	Date of issuance of bond	
4.	Date of maturity of bond	
*5.	Tangible net worth	$_____
*6.	Total assets in U.S. (required only if less than 90 percent of assets located in the U.S.)	$_____

		YES	NO
7.	Is line 5 at least $10,000,000?	___	___
8.	Is line 5 at least 6 times line 1?	___	___
*9.	Are at least 90 percent of assets located in the U.S.? If not, complete line 10	___	___
10.	Is line 6 at least 6 times line 1?	___	___

Part B. Corrective Action, Closure, or Post-Closure Care and Liability Coverage.

[Fill in Alternative I if the criteria of 6 MCAR S 4.9306 F.2., 4.9308 F.2., or 4.9310 F.2., and 4.9312 F.2. are used or if the criteria of 6 MCAR S 4.9407 E.2. or 4.9409 E.2. and 4.9411 E.2. are used. Fill in Alternative II if the criteria of 6 MCAR S 4.9306 F.3., 4.9308 F.3., or 4.9310 F.3., and 4.9312 F.3. are used or if the criteria of 6 MCAR S 4.9407 E.3. or 4.9409 E.3. and 4.9411 E.3. are used.]

ALTERNATIVE I

1.	Sum of current corrective action, closure, and post-closure cost estimates (total of all cost estimates listed above)	$_____
2.	Amount of annual aggregate liability coverage to be demonstrated	$_____
3.	Sum of lines 1 and 2	$_____
*4.	Total liabilities (if any portion of your current corrective action, closure, or post-closure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6)	$_____
*5.	Tangible net worth	$_____
*6.	Net worth	$_____
*7.	Current assets	$_____
*8.	Current liabilities	$_____
9.	Net working capital (line 7 minus line 8)	$_____
*10.	The sum of net income plus depreciation, depletion, and amortization	$_____
*11.	Total assets in U.S. (required only if less than 90 percent of assets are located in the U.S.) ...	$_____

		YES	NO
12.	Is line 5 at least $10,000,000?	___	___
13.	Is line 5 at least 6 times line 3?	___	___
14.	Is line 9 at least 6 times line 3?	___	___
*15.	Are at least 90 percent of assets located in the U.S.? If not, complete line 16	___	___
16.	Is line 11 at least 6 times line 3?	___	___
17.	Is line 4 divided by line 6 less than 2.0? ..	___	___
18.	Is line 10 divided by line 4 greater than		

	YES	NO
0.1?	___	___
19. Is line 7 divided by line 8 greater than 1.5?	___	___

ALTERNATIVE II

1. Sum of current corrective action, closure, and post-closure cost estimates (total of all cost estimates listed above) ..... $_____

2. Amount of annual aggregate liability coverage to be demonstrated ..... $_____

3. Sum of lines 1 and 2 ..... $_____

4. Current bond rating of most recent issuance and name of rating service .....

5. Date of issuance of bond .....

6. Date of maturity of bond .....

*7. Tangible net worth (if any portion of the current corrective action, closure, or post-closure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line)..... $_____

*8. Total assets in the U.S. (required only if less than 90 percent of assets are located in the U.S.).... $_____

	YES	NO
9. Is line 7 at least $10,000,000?	___	___
10. Is line 7 at least 6 times line 3?	___	___
*11. Are at least 90 percent of assets located in the U.S.? If not, complete line 12	___	___
12. Is line 8 at least 6 times line 3?	___	___

I hereby certify that the wording of this letter is identical to the wording specified in Exhibit 6 MCAR S 4.9314 G.-8, as the rules were constituted on the date shown immediately below.

[SIGNATURE]

[NAME]

[TITLE]

[DATE]

H. Corporate guarantee for corrective action, closure, or post-closure care. A corporate guarantee as specified in 6 MCAR S 4.9306 F., 4.9308 F., 4.9310 F., 4.9407 E., or 4.9409 E. must be worded as specified in Exhibit 6 MCAR S 4.9314 H.-9, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 H.-9

CORPORATE GUARANTEE FOR CORRECTIVE ACTION, CLOSURE,

OR POST-CLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the state of [insert name of state], herein referred to as guarantor, to the Minnesota Pollution Control Agency (Agency), obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 6 MCAR SS 4.9306 F., 4.9308 F., 4.9310 F., 4.9407 E., and 4.9409 E.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: identification number, name, and address. Indicate for each whether guarantee is for corrective action, closure, post-closure care, or a combination of the three.]

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by 6 MCAR SS 4.9298-4.9302 and 4.9399-4.9404 for the closure and post-closure care of facilities as identified above. "Corrective action plans" as used below refers to the plans maintained as required by 6 MCAR SS 4.9297 B.4. and 4.9297 M. for corrective action for the facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the Agency that in the event that [owner or operator] fails to perform [insert "corrective action," "closure," "post-closure care," or any combination of the three] of the above facility(ies) in accordance with the corrective action, closure, or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in 6 MCAR SS 4.9304-4.9314 or 4.9405-4.9413, as applicable, in the name of [owner or operator] in the amount of the current corrective action, closure, or post-closure cost estimates as specified in 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Agency Director and to [owner or operator] that he or she intends to provide alternate financial assurance as specified in 6 MCAR SS 4.9304-4.9314 or 4.9405-4.9413, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the Agency Director by certified mail of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, naming guarantor as debtor, within ten days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Agency Director of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor of corrective action, closure, or post-closure care, the guarantor shall establish alternate financial assurance as specified in 6 MCAR SS 4.9304-4.9314 or 4.9405-4.9413, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the corrective action, closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of corrective action, closure, post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to 6 MCAR SS 4.9280-4.9322 or 4.9380-4.9422.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of 6 MCAR SS 4.9304-4.9314 and 4.9405-4.9413 for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the Agency Director and to [owner or operator], the cancellation to become effective no earlier than 120 days after receipt of notice by both the Agency Director and [owner or operator], as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in 6 MCAR SS 4.9304-4.9314 or 4.9405-4.9413, as applicable, and obtain written approval of such assurance from the Agency Director within 90 days after a notice of cancellation by the guarantor is received by the Agency Director from guarantor, guarantor shall provide alternate financial assurance in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the Agency or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the corrective action, closure, and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9, as such rules were constituted on the date first above written.

Effective date: _____

[NAME OF GUARANTOR]

[AUTHORIZED SIGNATURE FOR GUARANTOR]

[NAME OF PERSON SIGNING]

[TITLE OF PERSON SIGNING]

[SIGNATURE OF WITNESS OR NOTARY]

I. Hazardous waste facility liability endorsement. A hazardous waste facility liability endorsement as required in 6 MCAR S 4.9312 or 4.9411 must be worded as specified in Exhibit 6 MCAR S 4.9314 I.-10, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 I.-10

HAZARDOUS WASTE FACILITY LIABILITY ENDORSEMENT

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering

bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under 6 MCAR S 4.9312 or 4.9411. The coverage applies at [list identification number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the insurer's liability] exclusive of legal defense costs.

2. The insurance afforded with respect to the occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with a.-e. are hereby amended to conform with a.-e.

a. Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy to which this endorsement is attached.

b. The insurer is liable for the payment of amounts within any deductible applicable to the policy with a right of reimbursement by the insured for any such payment made by the insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 6 MCAR S 4.9312 F. or 4.9411 F.

c. Whenever requested by the Minnesota Pollution Control Agency (Agency) Director, the insurer agrees to furnish to the Agency Director a signed duplicate original of the policy and all endorsements.

d. Cancellation of this endorsement, whether by the insurer or the insured, will be effective only upon written notice and only after the expiration of 60 days after a copy of written notice is received by the Agency Director.

e. Any other termination of this endorsement will be effective only upon written notice and only after the expiration of 30 days after a copy of written notice is received by the Agency Director.

Attached to and forming part of policy number _____ issued by [name of insurer], herein called the insurer, of [address of insurer] to [name of insured] of [address] this _____ day of _____, 19___. The effective date of said policy is _____ day of _____, 19___.

I hereby certify that the wording of this endorsement is identical to the wording specified in Exhibit 6 MCAR S 4.9314 I.-10, as the rule was constituted on the date first above written and that the insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

[SIGNATURE OF AUTHORIZED REPRESENTATIVE OF INSURER]

[TYPE NAME]

[TITLE], Authorized Representative of [NAME OF INSURER]

[ADDRESS OF REPRESENTATIVE]

J. Hazardous waste facility certificate of liability insurance. A certificate of liability insurance as required in

6 MCAR S 4.9312 or 4.9411 must be worded as specified in Exhibit 6 MCAR S 4.9314 J.-11, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR S 4.9314 J.-11

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. [Name of insurer], (the "insurer"), of [address of insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under 6 MCAR S 4.9312 or 4.9411. The coverage applies [list identification number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the insurer's liability], exclusive of legal defense costs. The coverage is provided under policy number _____, issued on [date]. The effective date of the policy is [date].

2. The insurer further certifies the following with respect to the insurance described in 1.:

a. Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy.

b. The insurer is liable for the payment of amounts within any deductible applicable to the policy with a right of reimbursement by the insured for any such payment made by the insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 6 MCAR S 4.9312 F. or 4.9411 F.

c. Whenever requested by the Minnesota Pollution Control Agency (Agency) Director, the insurer agrees to furnish to the Agency Director a signed duplicate original of the policy and all endorsements.

d. Cancellation of the insurance, whether by the insurer or the insured, will be effective only upon written notice and only after the expiration of 60 days after a copy of written notice is received by the Agency Director.

e. Any other termination of the insurance will be effective only upon written notice and only after the expiration of 30 days after a copy of written notice is received by the Agency Director.

I hereby certify that the wording of this instrument is identical to the wording specified in Exhibit 6 MCAR S 4.9314 J.-11, as the rule was constituted on the date first above written, and that the insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

[SIGNATURE OF AUTHORIZED REPRESENTATIVE OF INSURER]

[TYPE NAME]

[TITLE], Authorized Representative of [NAME OF INSURER]
[ADDRESS OF REPRESENTATIVE]

6 MCAR S 4.9315 Use and management of containers.

A. Scope. This rule applies to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as 6 MCAR S 4.9280 provides otherwise. Under 6 MCAR SS 4.9130 and 4.9134 D.3., if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in 6 MCAR S 4.9130. In that event, management of the container is exempt from the requirements of this rule.

B. Condition of containers. Containers used to store hazardous waste must meet the following requirements:

1. be of sturdy leak-proof construction, adequate wall thickness, adequate weld, hinge, and seam strength and sufficient strength to withstand side and bottom shock, while filled, without impairment of the ability of the container to fully contain the hazardous waste; and

2. have lids, caps, hinges, or other closure devices of sufficient strength and construction so that when closed they will withstand dropping, overturning, or other shock without impairment of the container's ability to fully contain the hazardous waste.

If a container holding hazardous waste does not meet the requirements of 1. and 2., or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that does meet the requirements of 1. and 2. or manage the waste in some other way that complies with the requirements of this rule.

C. Compatibility of waste with container. The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored and other substances that the container may foreseeably contact, so that the ability of the container to contain the waste is not impaired.

D. Management of containers. A container holding hazardous

waste must always be closed during storage, except when it is necessary to add or remove waste.

A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. Reuse of containers is governed by the United States Department of Transportation regulations, including those set forth in Code of Federal Regulations, title 49, section 173.28 (1983).

If exposure of the containers to moisture or direct sunlight may create a hazardous condition or adversely affect the container's ability to contain the hazardous waste, the owner or operator must store the containers in an area with overhead roofing or other covering that does not obstruct the visibility of the labels.

E. Inspections. At least weekly, the owner or operator shall inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors. The owner or operator shall comply with B., and 6 MCAR S 4.9281 E.4. if remedial action is required because deterioration or leaks are detected.

F. Containment. Requirements for containment systems are as follows:

1. Container storage areas must have a containment system that is capable of collecting and holding spills, leaks, and precipitation. The containment system must:

a. have a base underlying the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

b. have a base which is sloped, or be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or in some other manner are protected from contact with accumulated liquids; and

c. have sufficient capacity to contain ten percent of

the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination.

2. Run-on into the containment system must be prevented, unless the agency waives this requirement in the permit after determining that the collection system has sufficient excess capacity in addition to that required in l.c. to accommodate any run-on which might enter the system.

3. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of the federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended, through June 30, 1983.

4. Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by 1. if:

a. the storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation; or

b. the containers are elevated or are otherwise protected from contact with accumulated liquid.

G. Special requirements for ignitable or reactive waste. Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

H. Special requirements for incompatible wastes. Incompatible wastes or incompatible wastes and material must not be placed in the same container, unless compliance with 6 MCAR S 4.9283 B. is achieved.

Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material. As

required by 6 MCAR S 4.9284, the waste analysis plan must include analyses needed to comply with these special requirements. Rule 6 MCAR S 4.9283 C. also requires waste analyses, trial tests, or other documentation to ensure compliance with 6 MCAR S 4.9283 B. As required by 6 MCAR S 4.9294, the owner or operator shall place the results of each waste analysis, trial test, and any other documented information in the operating record of the facility.

A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments, must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

I. Closure. At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed. At closure and throughout the operating period, unless the owner or operator can demonstrate that the waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560.

6 MCAR S 4.9316 Tanks.

A. Scope. This rule applies to owners and operators of facilities that use tanks to treat or store hazardous waste, except as 6 MCAR S 4.9280 provides otherwise.

B. Design of tanks. Tanks must be designed as follows:

1. Tanks must have sufficient shell strength and, for closed tanks, pressure controls to ensure that they do not collapse or rupture. The director shall review the design of the tanks, including the foundation, structural support, seams, and pressure controls. A minimum shell thickness must be maintained at all times to ensure sufficient shell strength. Factors to be considered in establishing minimum thickness include the width, height, and materials of construction of the

tank, and the specific gravity of the waste which will be placed in the tank. In reviewing the design of the tank and establishing a minimum thickness, the director shall rely upon appropriate industrial design standards and other available information.

2. Tanks and their closures must be constructed of materials, or protected by a liner that will not undergo chemical reaction with the contained hazardous waste or other substances that the tank may foreseeably contact if such a reaction may impair the tank's ability to contain the waste. Gasketed closures must be fitted with gaskets of material that is sufficient to prevent leakage and that will not be deteriorated by the contents.

3. The owner or operator shall design and construct underground tanks to meet the general design requirements of 1. and 2. for all tanks and must allow for the inspection of the interior and exterior of the tank according to D. or:

a. provide for corrosion protection by use of protective coatings or cathodic protection;

b. provide for the detection of any leakage through the use of sensing devices or other equivalent methods;

c. perform hydrostatic testing on all tanks with the initial test being performed within three years of the effective date of this rule and at least every three years thereafter; and

d. keep a weekly inventory for each tank. Inventories must be based upon the actual daily measurement of tank liquid level. The written record must include a computation of gain or loss for the period. Inventory records must be maintained for at least three years at the facility. Upon discovery of loss of ten percent of the waste volume, the owner or operator shall notify the director and implement the procedures outlined in the owner's or operator's contingency plan for that occurrence.

C. General operating requirements. Wastes and other materials that are incompatible with the material of the construction of the tank must not be placed in the tank, unless the tank is protected from accelerated corrosion, erosion, or

abrasion through the use of an inner liner or coating which is compatible with the waste or material and which is free of leaks, cracks, holes, or other deterioration; or an alternate means of protection such as cathodic protection, or corrosion inhibitors.

The owner or operator must use appropriate controls and practices to prevent overfilling. These must include controls to prevent overfilling such as waste feed cutoff systems or by-pass systems to a standby tank, and for uncovered tanks, maintenance of sufficient freeboard to prevent overtopping by wave or wind action or by precipitation.

D. Inspections. The following apply to inspections:

1. The owner or operator shall inspect:

a. overfilling control equipment, including waste feed cut off systems and by-pass systems, at least once each operating day to ensure that it is in good working order;

b. data gathered from monitoring equipment, where present, at least once each operating day to ensure that the tank is being operated according to its design;

c. for uncovered tanks, the level of waste in the tank at least once each operating day to ensure compliance with C.;

d. the construction materials of the tank, at least weekly to detect corrosion or erosion and leaking of fixtures and seams; and

e. the area immediately surrounding the tank and the containment system, at least weekly to detect obvious signs of leakage and deterioration of the containment system caused by corrosion, erosion, or other factors.

2. As part of the inspection schedule required in 6 MCAR S 4.9281 and in addition to the specific requirements of 1., the owner or operator shall develop a schedule and procedure for assessing the condition of the tank. The schedule and procedure must be adequate to detect cracks, leaks, or corrosion or erosion which may lead to cracks, leaks, or wall thinning to less than the thickness required under B. Procedures for emptying a tank to allow entry and inspection of the interior

must be established when necessary to detect corrosion or erosion of the tank sides and bottom. The frequency of these assessments must be based on the material of construction of the tank, type of corrosion or erosion protection used, rate of corrosion or erosion observed during previous inspections, and the characteristics of the waste being treated or stored.

3. As part of the contingency plan required under 6 MCAR SS 4.9287-4.9290, the owner or operator must specify the procedures he or she intends to use to respond to tank spills or leakage, including procedures and timing for expeditious removal of leaked or spilled waste and repair of the tank. As required in 6 MCAR S 4.9281 E.4., the owner or operator shall remedy any leak, crack, or wall thinning in violation of B., or equipment or process malfunction in violation of C., which he or she discovers during inspection.

E. Containment. Requirements for containment systems are as follows:

1. Storage or treatment tank areas must have a containment system that is capable of collecting and holding spills, leaks, and precipitation. The containment system must:

a. have a base underlying the tanks which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

b. have a base which is sloped, or be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the tank is protected from contact with accumulated liquids;

c. have sufficient capacity to contain ten percent of the volume of tanks, or the volume of the largest tank, whichever is greater, plus ten centimeters (four inches) of freeboard; and

d. be constructed so that the interface between the dike or sidewall and the underlying base is sealed to contain leaks, spills, and accumulated liquids.

2. Run-on into the containment system must be prevented,

unless the agency waives this requirement in the permit after determining that the collection system has sufficient excess capacity in addition to that required in l.c. to accommodate any run-on which might enter the system.

3. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste as defined in 6 MCAR SS 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of the federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended through June 30, 1983.

F. Closure. At closure, all hazardous waste and hazardous residues must be removed from tanks, discharge control equipment, discharge confinement structures, and the containment system. Remaining liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed. At closure, as throughout the operating period, unless the owner or operator can demonstrate that the waste removed from his tank or containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560.

G. Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a tank unless:

1. the waste is treated, rendered, or mixed before or immediately after placement in the tank so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. and E., and compliance with 6 MCAR S 4.9283 B. is maintained;

2. the waste is stored or treated in such a way that it is protected from any materials or conditions which may cause the waste to ignite or react; or

3. the tank is used solely for emergencies.

The owner or operator of a facility that treats or stores ignitable or reactive waste in covered tanks shall comply with the National Fire Protection Association's buffer zone requirements for tanks contained in Tables 2-1 to 2-6 of the Flammable and Combustible Liquids Code in the National Fire Codes, 1981 issued by the National Fire Protection Association (Quincy, Massachusetts, 1981). As required by 6 MCAR S 4.9284, the waste analysis plan must include analyses needed to comply with these special requirements for ignitable or reactive waste. Additional requirements for ignitable and reactive wastes are contained in 6 MCAR S 4.9283 A. Rule 6 MCAR S 4.9283 C. also requires waste analysis, trial tests, or other documentation to ensure compliance with 6 MCAR S 4.9283 B. As required by 6 MCAR S 4.9294, the owner or operator shall place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

H. Special requirements for incompatible wastes. Incompatible wastes or incompatible wastes and materials, must not be placed in the same tank, unless compliance with 6 MCAR S 4.9283 B. is maintained.

Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless compliance with 6 MCAR S 4.9283 B. is maintained. As required by 6 MCAR S 4.9284, the waste analysis plan must include analyses needed to comply with these special requirements for incompatible wastes. Rule 6 MCAR S 4.9283 C. also requires waste analyses, trial tests, or other documentation to ensure compliance with 6 MCAR S 4.9283 B. As required by 6 MCAR S 4.9294, the owner or operator shall place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

6 MCAR S 4.9317 Surface impoundments.

A. Scope. The requirements of B.-I. apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as 6 MCAR S 4.9280

provides otherwise.

B. Locational requirements. Locational requirements are as follows:

1. A surface impoundment must not be located in an area characterized by surficial karst features.

2. The owner or operator of a proposed or existing surface impoundment shall submit to the agency with the permit application a hydrogeologic report which provides sufficient information and detail on the site's topography, soils, geology, surface hydrology, and ground water hydrology to evaluate the facility's actual and potential effects on subsoils, surface water, and ground water. This report must include:

a. a geologic history of the area;

b. the stratigraphy of the area;

c. the composition of the site's soil and rock formations;

d. the hydraulic characteristics of the site's soil and rock formations;

e. the occurrence of ground water in the area;

f. directions and rates of ground water and surface water movements;

g. ground water and surface water interactions;

h. existing and future uses of ground water and surface water;

i. existing quality of ground water and surface water; and

j. if a ground water monitoring system which complies with 6 MCAR S 4.9297 J.1. can be installed at the site;

k. climatological information; and

l. all other factors that would influence the quality and mobility of the leachate produced and the potential for it to migrate to subsoils, ground water, or surface water.

3. A surface impoundment, including its underlying liners, must be located entirely above the seasonal high water table.

C. Design and operating requirements. Design and operating

requirements are as follows:

1. A surface impoundment must have a double liner system that is designed, constructed, and installed to prevent migration of waste out of the impoundment to the adjacent soil or ground water or surface water at any time during the active life, including the closure period, of the impoundment. The double liner system must consist of two liners with a leak detection system between the liners. This system must be designed, constructed, maintained, and operated to detect, collect, and remove liquids from the space between the liners, without clogging, through the scheduled post-closure care period of the surface impoundment. The liners may be constructed of materials that may allow wastes to migrate into the liner, but not into the adjacent subsurface soil or drainage layer or ground water or surface water, during the active life, including the closure period, of the facility provided that the impoundment is closed in accordance with G.1.a. For impoundments that will be closed in accordance with G.1.b., at least one liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life, including the closure period, of the facility. The liners must 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

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; and

c. installed to cover all surrounding earth likely to be in contact with the waste or leachate.

2. A surface impoundment must be designed, constructed,

maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and water action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

3. A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. Massive failure of the dikes means any uncontrolled flow of hazardous waste from the surface impoundment. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

4. The owner or operator of a surface impoundment shall have a method of emptying its wastes in an emergency. Acceptable methods include back-up surface impoundments or tanks.

5. The owner or operator of a surface impoundment shall submit to the agency with the permit application a plan for the treatment and disposal of leachate which is removed from the surface impoundment.

6. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1.-5. are satisfied.

D. Leak detection. If liquids are detected in the leak detection, collection, and removal system, the owner or operator shall notify the director of that fact in writing within seven days after detecting the liquids and:

1. within a period of time specified in the permit, remove accumulated liquids, repair or replace any liner which is leaking to prevent the migration of liquids through the liner, and obtain a certification from a qualified engineer that, to the best of his knowledge and opinion, the leak has been stopped; or

2. remove accumulated liquids and begin to comply with the monitoring requirements of 6 MCAR S 4.9297 K.5. within a time specified in the permit. The owner or operator shall continue to remove accumulated liquids from the leak detection, collection, and removal system during the active life and the

post-closure care period of the surface impoundment.

3. The agency shall specify in the permit the design and operating practices that are necessary to ensure that the requirements of 1. or 2. are satisfied.

E. Monitoring and inspection. Monitoring and inspection requirements are as follows:

1. During construction and installation, liners and cover systems, such as membranes, sheets, or coatings, must be inspected for uniformity, damage, and imperfections, such as holes, cracks, thin spots, or foreign materials. Immediately after construction or installation and for liners prior to the placement of waste into the impoundment:

a. Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters;

b. Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover; and

c. The owner or operator shall conduct a water balance test which demonstrates that the liner system is functioning as designed.

The agency shall specify in the permit acceptable methods of liner and cover inspection and the method and duration of the water balance test.

2. While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

a. deterioration, malfunctions, or improper operation of overtopping control systems;

b. drops in the level of the impoundment's contents;

c. the presence of liquids in leak detection, collection, and removal systems; and

d. severe erosion or other signs of deterioration in dikes or other containment devices.

If evidence of a condition described in a.-d. is detected,

the owner or operator shall immediately notify the director of the condition and remedies to correct the condition.

3. Prior to the issuance of a permit, and after any extended period of time, at least six months, during which the impoundment is not in service, the owner or operator of an existing surface impoundment shall obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. For a new surface impoundment, the owner or operator shall obtain the certification upon completion of construction in accordance with the plans and specifications, prior to the placement of waste into the impoundment. The certification must establish, in particular, that the dike:

a. will withstand the stress of the pressure exerted by the types and amounts of waste to be placed in the impoundment; and

b. will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

4. Prior to the issuance of a permit, after any dredging activities, and after any extended period of time, at least six months, during which the impoundment is not in service, the owner or operator shall obtain certification from a qualified engineer that the uppermost liner and the leak detection, collection, and removal system is intact and remains at design specifications. For a new surface impoundment, the owner or operator shall obtain the certification upon completion of construction in accordance with the plans and specifications, prior to the placement of waste into the impoundment. This certification must address both liners.

F. Emergency repairs, contingency plans. Emergency repairs and contingency plans are as follows:

1. A surface impoundment must be removed from service in accordance with 2. if:

a. the level of liquids in the impoundment drops and the drop is not known to be caused by changes in the flows into

or out of the impoundment; or

b. the dike leaks.

2. If a surface impoundment must be removed from service as required by 1., the owner or operator shall:

a. immediately shut off the flow or otherwise stop the addition of wastes into the impoundment;

b. immediately contain any surface leakage which has occurred or is occurring;

c. immediately stop the leak;

d. take any other necessary steps to stop or prevent catastrophic failure;

e. if a leak cannot be stopped immediately by any other means, empty the impoundment; and

f. notify the director of the problem immediately by telephone and submit a report in writing within seven days after detecting the problem. The report must discuss the problem and the remedial actions taken and their effects.

3. As part of the contingency plan required in 6 MCAR S 4.9288 the owner or operator shall specify a procedure for complying with the requirements of 2.

4. No surface impoundment that has been removed from service in accordance with the requirements of 1.-3. may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

a. If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with E.3.

b. If the impoundment was removed from service as the result of a drop in the liquid level, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

5. A surface impoundment that has been removed from service in accordance with the requirements of 1.-3. and that is not being repaired must be closed according to G.

G. Closure and post-closure care. The requirements of closure and post-closure care are as follows:

1. At closure, the owner or operator shall:

a. remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless they are shown to not be hazardous in accordance with 6 MCAR SS 4.9128-4.9137; or

b. eliminate free liquids by removing liquid waste or solidifying the remaining waste and waste residues; stabilize remaining wastes to a bearing capacity sufficient to support final cover; and provide a final cover over the surface impoundment. The final cover must be designed and constructed to provide long-term minimization of the migration of liquids through the closed impoundment, function with minimum maintenance, promote drainage and minimize erosion or abrasion of the final cover, accommodate settling and subsidence so that the cover's integrity is maintained, and have a permeability less than or equal to the permeability of any bottom liner system.

2. If waste residues or contaminated materials are left in place at final closure, the owner or operator shall comply with the post-closure requirements contained in 6 MCAR SS 4.9300-4.9303, including maintenance and monitoring throughout the post-closure care period specified in the permit under 6 MCAR S 4.9300. The owner or operator shall:

a. maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

b. maintain and monitor the leak detection system in accordance with C. and D.;

c. maintain and monitor the ground water monitoring system and comply with all other applicable requirements of 6 MCAR S 4.9297; and

d. prevent run-on and run-off from eroding or otherwise damaging the final cover.

3. If an owner or operator plans to close a surface impoundment in accordance with 1.a. and the impoundment does not comply with the liner requirements of C.1., then:

a. the closure plan for the impoundment under 6 MCAR S 4.9298 must include both a plan for complying with 1.a. and a contingent plan for complying with 1.b. in case not all contaminated subsoils can be practicably removed at closure; and

b. the owner or operator shall prepare a contingent post-closure plan under 6 MCAR S 4.9300 for complying with 2. if not all contaminated subsoils can be practicably removed at closure.

4. The cost estimates calculated under 6 MCAR SS 4.9305 and 4.9307 for closure and post-closure care of an impoundment subject to 3. must include the cost of complying with the contingent closure plan and the contingent post-closure plan, as well as the cost of expected closure under 1.a.

5. During the post-closure care period, if liquids are detected in a leak detection, collection, and removal system, the owner or operator shall:

a. notify the director of that fact in writing within seven days after detecting the liquids; and

b. remove accumulated liquids and begin to comply with the monitoring requirements of 6 MCAR S 4.9297 K.5. within a time specified in the permit.

H. Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a surface impoundment, unless:

1. the waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. and E., and compliance with 6 MCAR S 4.9283 B. is maintained;

2. the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; or

3. the surface impoundment is used solely for emergencies.

I. Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials, must not be placed in the same surface impoundment unless compliance with 6 MCAR S 4.9283 B. is maintained.

6 MCAR S 4.9318 Waste piles.

A. Scope. The requirements of B.-I. apply to owners and operators of facilities that store or treat hazardous waste in piles, except as 6 MCAR S 4.9280 provides or as otherwise provided in A.

The requirements of B.-I. do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under 6 MCAR S 4.9320.

The owner or operator of a waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to B.1. and 2., C., or 6 MCAR S 4.9297 if:

1. liquids or materials containing free liquids are not placed in the pile;

2. the pile is protected from surface water run-on by the structure or in some other manner;

3. the pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

4. the pile will not generate leachate through decomposition or other reactions.

B. Locational requirements. Locational requirements are as follows:

1. A waste pile must not be located in an area characterized by surficial karst features.

2. The owner or operator of a proposed or existing waste pile shall submit to the agency with the permit application a hydrogeologic report which provides sufficient information and detail on the site's topography, soils, geology, surface hydrology, and ground water hydrology to evaluate the facility's

actual and potential effects on subsoils, surface water, and ground water. This report must include:

a. a geologic history of the area;

b. the stratigraphy of the area;

c. the composition of the site's soil and rock formations;

d. the hydraulic characteristics of the site's soil and rock formations;

e. the occurrence of ground water in the area;

f. directions and rates of ground water and surface water movements;

g. ground water and surface water interactions;

h. existing and future uses of ground water and surface water;

i. existing quality of ground water and surface water;

j. if a ground water monitoring system which complies with 6 MCAR S 4.9297 J.1. can be installed at the site;

k. climatological information; and

l. all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to subsoils, ground water, or surface water.

3. A waste pile, including its underlying liners, must be located entirely above the seasonal high water table.

C. Design and operating requirements. Design and operating requirements are as follows:

1. A waste pile must have a liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life, including the closure period, of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself, but not into the adjacent subsurface soil or ground water or surface water, during the active life, including the closure period, of the facility. The liner must 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

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; and

c. installed to cover all surrounding earth likely to be in contact with the waste or leachate.

2. A waste pile must have a leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The agency shall specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 centimeters (one foot) at any point. The leachate collection and removal system must be:

a. constructed of materials that are chemically resistant to the waste managed in the pile and the leachate expected to be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

b. designed and operated to function without clogging through the scheduled closure of the waste pile.

3. The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 100-year storm.

4. 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, 100-year storm.

5. Collection and holding facilities, such as tanks or

basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

6. If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal of hazardous waste.

7. The owner or operator of a waste pile shall submit to the agency with the permit application a plan for the treatment and disposal of run-off contained in the run-off management system and leachate which is removed from the waste pile.

8. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1.-7. are satisfied.

D. Double-lined waste pile. Requirements for a double-lined waste pile are as follows:

1. The owner or operator of a double-lined waste pile is not subject to 6 MCAR S 4.9297 K.5. if:

a. the pile is underlain by two liners which are designed and constructed to prevent the migration of liquids into or out of the space between the liners, and which meet all the specifications of C.1.; and

b. a leak detection, collection, and removal system is designed, constructed, maintained, and operated between the liners to detect, collect, and remove any liquids in the space between the liners without clogging, through the scheduled closure of the waste pile.

2. If liquids are detected in the leak detection, collection, and removal system, the owner or operator shall notify the director of that fact in writing within seven days after detecting the liquids; and

a. within a period of time specified in the permit, remove accumulated liquids, repair or replace any liner which is leaking to prevent the migration of liquids through the liner, and obtain certification from a qualified engineer that, to the best of his or her knowledge and opinion, the leak has been

stopped; or

b. begin to comply with the requirements of 6 MCAR S 4.9297 K.5. and other applicable requirements of 6 MCAR S 4.9297 within a period of time specified in the permit.

3. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1. and 2. are satisfied.

E. Inspection of liners. Requirements for the inspection of liners are as follows:

1. The owner or operator of a pile is not subject to regulation under 6 MCAR S 4.9297 if:

a. the pile is underlain by a liner and base that meet all the specifications of C.1.; and

b. the wastes in the pile are removed periodically, and the liner is inspected for deterioration, cracks, or other conditions that may result in leaks. The frequency of inspection must be specified in the inspection plan required in 6 MCAR S 4.9281 E. and must be based on the potential for the liner and base to crack or otherwise deteriorate under the conditions of operation, such as waste type, rainfall, loading rates, and subsurface stability. The liner must 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 to clean and expose the liner surface for inspection.

2. If deterioration, a crack, or other condition is identified that is causing or could cause a leak, the owner or operator shall notify the director of the condition in writing within seven days after detecting the condition; and

a. repair or replace the liner and obtain a certification from a qualified engineer that, to the best of his or her knowledge and opinion, the liner has been repaired and leakage will not occur; or

b. comply with a., begin to comply with the requirements of 6 MCAR S 4.9297 within the period of time specified in the permit, and no longer comply with 1.b.

3. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1. and 2. are satisfied.

F. Monitoring and inspection. Monitoring and inspection requirements are as follows:

1. During construction or installation, liners and cover systems, such as membranes, sheets, or coatings, must be inspected for uniformity, damage, and imperfections such as holes, cracks, thin spots, or foreign materials. Immediately after construction or installation:

a. synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters;

b. soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover; and

c. the construction of the liners must be certified by a qualified engineer to comply with the approved plans and specifications.

2. While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

a. deterioration, malfunctions, or improper operation of run-on and run-off control systems;

b. the presence of liquids in leak detection, collection, and removal systems;

c. improper functioning of wind dispersal control systems, where present; or

d. the presence of leachate in and proper functioning of leachate collection and removal systems.

If any evidence of a condition described in a.-c. is detected, the owner or operator shall notify the director of the condition and remedies to correct this condition.

G. Closure and post-closure care. Closure and post-closure requirements are as follows:

1. At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate; and manage them as hazardous waste unless they are shown to not be hazardous in accordance with 6 MCAR SS 4.9128-4.9137.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in 1., the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills, 6 MCAR S 4.9320 G.

3. The owner or operator of a waste pile that does not comply with the liner requirements of C.1. and is not exempt from them in accordance with A. shall:

a. include in the closure plan for the pile under 6 MCAR S 4.9298 both a plan for complying with 1. and a contingent plan for complying with 2. in case not all contaminated subsoils can be practicably removed at closure; and

b. prepare a contingent post-closure plan under 6 MCAR S 4.9300 for complying with 2. in case not all contaminated subsoils can be practicably removed at closure.

4. The cost estimates calculated under 6 MCAR SS 4.9305 and 4.9307 for closure and post-closure care of a pile subject to 3. must include the cost of complying with the contingent closure plan and the contingent post-closure plan, as well as the cost of expected closure under 1.

H. Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a waste pile unless:

1. the waste is treated, rendered, or mixed before or immediately after placement in the pile so that the resulting waste, mixture, or dissolution of material no longer meets the

definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. or E., and compliance with 6 MCAR 4.9283 B. is maintained; or

2. the waste is managed to protect it from material or conditions which may cause it to ignite or react.

I. Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials, must not be placed in the same pile unless compliance with 6 MCAR S 4.9283 B. is maintained.

A pile of hazardous waste that is incompatible with waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with 6 MCAR S 4.9283 B.

6 MCAR S 4.9319 Land treatment.

A. Scope. The requirements of B.-J. apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units except as 6 MCAR S 4.9280 provides otherwise.

B. Treatment program. Treatment program requirements are as follows:

1. An owner or operator of a land treatment unit shall establish a land treatment program that is designed to ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed to nonhazardous forms, or immobilized within the treatment zone. The agency shall specify in the facility permit the elements of the treatment program, including:

a. the wastes that are capable of being treated at the unit based on a treatment demonstration;

b. design measures and operating practices necessary to ensure the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with D.1.; and

c. unsaturated zone monitoring provisions meeting the requirements of F.

2. The agency shall specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized.

3. The agency shall specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation, or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:

a. not more than 1.5 meters (five feet) from the initial soil surface; and

b. more than one meter (three feet) above the seasonal high water table. The actual separation distance must be based on soil characteristics, results of the demonstration, proposed management, and the characteristics of the waste applied. The seasonal high water table must be determined by monitoring at the unit or by other acceptable means.

C. Treatment demonstration. Treatment demonstration requirements are as follows:

1. For each waste that will be applied to the treatment zone, the owner or operator shall demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed to nonhazardous forms, or immobilized in the treatment zone.

2. In making this demonstration, the owner or operator may use laboratory analyses, available data, or in the case of existing units, operating data and shall conduct field tests unless a written exemption from field testing is obtained from the director. The owner or operator shall obtain a land treatment demonstration permit in accordance with the agency's permitting procedures. The agency shall specify in this permit the testing, analytical, design, and operating requirements, including the duration of the tests and analyses, and, for field

tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure, and clean-up activities necessary to meet the requirements in 3.

3. Any field test or laboratory analysis conducted in order to make a demonstration must:

a. accurately simulate the characteristics and operating conditions for the proposed land treatment unit including the characteristics of the waste and the presence of hazardous constituents that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone, the climate in the area, the topography of the surrounding area, the characteristics of the soil in the treatment zone, including depth, and the operating practices to be used at the unit;

b. be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed to a nonhazardous form, or immobilized in the treatment zone of the proposed land treatment unit;

c. be conducted in a manner that protects human health and the environment considering, the characteristics of the waste to be tested, the operating and monitoring measures taken during the course of the test, the duration of the test, the volume of waste used in the test, and the potential for migration of hazardous constituents to ground water or surface water; and

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d. provide for (acceptable) statistical analysis. → OK

D. Design and operating requirements. The agency shall specify in the facility permit how the owner or operator shall design, construct, operate, and maintain the land treatment unit. The owner or operator shall also comply with the following:

1. The owner or operator shall design, construct, operate, and maintain the unit to ensure the degradation, transformation to nonhazardous forms, and immobilization of hazardous constituents in the treatment zone. The owner or operator shall design, construct, operate, and maintain the unit in accordance with all design and operating conditions that were

used in the treatment demonstration. The agency shall specify the following in the facility permit:

a. the rate and method of waste application to the treatment zone;

b. measures to control soil pH;

c. measures to enhance microbial or chemical reactions such as fertilization and tilling; and

d. measures to control the moisture content of the treatment zone.

2. The owner or operator shall design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.

3. The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 100-year storm.

4. 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, 100-year storm.

5. The owner or operator of a land treatment unit shall submit to the agency with the permit application a plan for the treatment and disposal of run-off contained in the run-off management system.

6. Collection and holding facilities such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

7. The owner or operator shall manage the unit to control wind dispersal.

8. The owner or operator shall inspect the unit weekly and after storms to detect evidence of:

a. deterioration, malfunctions, or improper operation of run-on and run-off control systems; and

b. improper functioning of wind dispersal control

measures.

If evidence of the conditions described in a. and b. is detected, the owner or operator shall notify the agency of the condition and the measures taken to correct the condition.

9. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1.-8. are satisfied.

E. Food chain crops. The agency may specify in the permit the specific conditions of food chain crop production. The agency shall not allow the growth of food chain crops in or on the treatment zone unless the owner or operator satisfies the following requirements:

1. No food chain crops may be grown during the active life of the unit unless:

a. the only wastes disposed of at the land treatment unit are wastes which are hazardous only because they exhibit characteristics of ignitability, corrosivity, reactivity, or oxidativity as established in 6 MCAR S 4.9132; and

b. it can be demonstrated that no substantial risk to human health exists from the production of food chain crops in or on the treatment zone. The demonstration must be conducted according to 3.

2. Food chain crops may be grown on a land treatment unit after closure if:

a. cadmium is the only hazardous constituent present and no more than 5 kg/ha has been applied; or

b. the cumulative addition of cadmium does not exceed 10 kg/ha if soil cation exchange capacity (CEC) is 5-15 milliequivalents/100 grams (meq/100g); and 20 kg/ha if the CEC is greater than 15 meq/100g; and

c. it can be demonstrated that no substantial risk to human health exists or will exist from the current or future production of food chain crops in or on the treatment zone. The demonstration must be conducted according to 3.

3. The demonstration that there is no substantial risk to human health caused by the growth of food chain crops must be

conducted as specified in a.-e. The owner or operator shall make the required demonstration prior to the planting of crops at the facility. In making this demonstration, the owner or operator may use field tests, greenhouse studies, available data, or in the case of existing units, operating data.

a. The demonstration must show that under conditions of current and future land use hazardous constituents and characteristics will not be transferred to the food or feed portions of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals, or that hazardous constituents will not occur in greater concentrations than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.

b. The demonstration must be based on conditions similar to those present in the treatment zone, including soil characteristics such as pH, CEC and texture, specific waste characteristics, application rates and methods, and crops to be grown.

c. The demonstration must describe the procedures used in conducting tests, including the sample selection criteria, sample size, analytical methods, and statistical procedures.

d. The demonstration must address all hazardous characteristics and all hazardous constituents which are reasonably expected to be in or derived from the wastes to be deposited at the unit.

e. The owner or operator shall obtain a permit or letter of approval prior to the demonstration in accordance with the agency's permitting requirements for demonstration permits.

F. Unsaturated zone monitoring. An owner or operator shall establish an unsaturated zone monitoring program to discharge the following responsibilities:

1. The owner or operator shall monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone. The agency shall specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified

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under B.2. The agency may require monitoring for principal hazardous constituents in lieu of the constituents specified under B.2. Principal hazardous constituents are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The agency shall establish principal hazardous constituents if it finds, based on waste analyses, treatment demonstration, or other data, that effective degradation, transformation, or immobilization of the principal hazardous constituents will assure treatment at at least equivalent levels for the other hazardous constituents in the wastes.

2. The owner or operator shall install an unsaturated zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must be designed and maintained to prevent contamination of the unsaturated zone by migration through bore holes or along lysimeter installations. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:

a. represent the quality of background soil-pore liquid and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and

b. indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.

3. The owner or operator shall establish an unsaturated zone background value for each hazardous constituent to be monitored. The permit must specify the background values for each constituent or specify the procedures to be used to calculate the background values.

Background soil values shall be based on a sampling at the land treatment unit for new facilities, or at a background plot having characteristics similar to those of the treatment zone for existing facilities.

Background soil-pore liquid values must be based on at

least quarterly sampling for one year at the land treatment unit for new facilities or at a background plot having characteristics similar to those of the treatment zone for existing facilities.

The owner or operator shall express all background values in a form necessary for the determination of statistically significant increases under 6.

In taking samples used in the determination of all background values, the owner or operator shall use an unsaturated zone monitoring system that complies with 2.a.

4. The owner or operator shall conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The agency shall specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing, and rate of waste application, the climate, and the soil and waste characteristics. The owner or operator shall express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under 6.

5. The owner or operator shall use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. The owner or operator shall implement procedures and techniques for sample collection, sample preservation and shipment, analytical procedures, and chain of custody control.

6. The owner or operator shall determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under 1. below the treatment zone each time he or she conducts soil monitoring and soil pore liquid monitoring under 4.

In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value of a constituent, as determined under 4. to the background value for that constituent according to the statistical procedure

specified in the facility permit.

The owner or operator shall determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The determination of increase must be submitted to the director within two weeks of sampling unless a different reporting period is established in the permit.

The owner or operator shall determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The agency shall specify a statistical procedure in the facility permit that is appropriate for the distribution of the data used to establish background values and provides a reasonable balance between the probability of falsely identifying migration of hazardous constituents from the treatment zone and the probability of failing to identify real migration of hazardous constituents from the treatment zone.

7. If the owner or operator determines under 6. that there is a statistically significant increase of hazardous constituents below the treatment zone, he or she shall:

a. notify the director of this finding in writing within seven days, indicating in the notice the constituents that have shown statistically significant increases; and

b. within 90 days, submit to the agency an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation, or immobilization processes in the treatment zone.

8. If the owner or operator determines under 6. that there is a statistically significant increase of hazardous constituents below the treatment zone, he or she may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration, he or she is not relieved of the requirement to

submit a permit modification application within the time specified in 7.b. In making a demonstration the owner or operator shall:

a. notify the director in writing within seven days of determining a statistically significant increase below the treatment zone that he or she intends to make the determination;

b. within 90 days, submit a report to the director demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in sampling, analysis, or evaluation;

c. within 90 days, submit to the agency an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

d. continue to monitor in accordance with the unsaturated zone monitoring program.

G. Recordkeeping. The owner or operator shall include hazardous waste application dates and rates in the operating record required under 6 MCAR S 4.9294. The owner or operator shall also include in the operating record facility management practices, such as fertilization, cultivation, irrigation, and crop production, and climatological data, such as precipitation and temperature.

H. Closure and post-closure. Requirements of closure and post-closure are as follows:

1. During the closure period the owner or operator shall:

a. continue all operations, including pH control, necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under D.1.;

b. continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under D.2.;

c. maintain the run-on control system required under D.3.;

d. maintain the run-off management system required under D.4.;

e. control wind dispersal of hazardous waste if required under D.7.;

f. continue unsaturated zone monitoring in compliance with F.;

g. continue to comply with any prohibitions or conditions concerning growth of food chain crops under E.; and

h. establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

2. For the purpose of complying with 6 MCAR S 4.9298 D., when closure is complete the owner or operator may submit to the director certification by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

3. During the post-closure care period the owner or operator shall:

a. continue all operations, including pH control, necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone;

b. maintain a vegetative cover over closed portions of the facility;

c. maintain the run-on control system required under D.3.;

d. maintain the run-off management system required under D.4.;

e. control wind dispersal of hazardous waste under D.7.;

f. continue to comply with any prohibitions or conditions concerning growth of food chain crops under E.; and

g. continue unsaturated zone monitoring in compliance with F.

4. The owner or operator is not subject to regulation

under 1.h. and 3. if the director finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in c. The owner or operator may submit a demonstration to the director at any time during the closure or post-closure care periods. For this purpose:

a. The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under B.2. Background soil values shall be based on a sampling of the land treatment unit for new facilities, or at a background plot having characteristics similar to those of the treatment zone for existing facilities. Background values and values for hazardous constituents in the treatment zone must be expressed in a form necessary for the determination of statistically significant increases under c.

b. In taking samples used in the determination of background and treatment zone values, the owner or operator shall take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.

c. In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value of a hazardous constituent in the treatment zone to the background value for that hazardous constituent using a statistical procedure that provides reasonable confidence that the presence of the hazardous constituents in the treatment zone will be identified. The owner or operator shall use a statistical procedure that is appropriate for the distribution of the data used to establish background values and provides a reasonable balance between the probability of falsely indicating the presence of hazardous constituents in the treatment zone and

the probability of failing to indicate the real presence of hazardous constituents in the treatment zone.

5. The owner or operator is not subject to regulation under 6 MCAR S 4.9297 if the director finds that the owner or operator satisfies 4. and if unsaturated zone monitoring under F. indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

I. Ignitable or reactive waste. The owner or operator shall not apply ignitable or reactive waste to the treatment zone unless:

1. the waste is immediately incorporated into the soil so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. or E., and compliance with 6 MCAR S 4.9283 B. is maintained; or

2. the waste is managed to protect it from material or conditions which may cause it to ignite or react.

J. Incompatible wastes. The owner or operator shall not place incompatible wastes or incompatible wastes and materials in or on the same treatment zone, unless compliance with 6 MCAR S 4.9283 B. is maintained.

6 MCAR S 4.9320 Landfills.

A. Scope. The requirements of B.-L. apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as 6 MCAR S 4.9280 provides otherwise.

B. Location. Location requirements are as follows:

1. A landfill must not be located in an area characterized by surficial karst features.

2. The owner or operator of a proposed or existing landfill shall submit to the agency with the permit application a hydrogeologic report which provides sufficient information and detail on the site's topography, soils, geology, surface hydrology, and ground water hydrology to evaluate the facility's actual and potential effects on subsoils, surface water, and ground water. This report must include:

a. a geologic history of the area;

b. the stratigraphy of the area;

c. the composition of the site's soil and rock formations;

d. the hydraulic characteristics of the site's soil and rock formations;

e. the occurrence of ground water in the area;

f. directions and rates of ground water and surface water movements;

g. ground water and surface water interactions;

h. existing and future uses of ground water and surface water;

i. existing quality of ground water and surface water;

j. if a ground water monitoring system which complies with 6 MCAR S 4.9297 J.1. can be installed on the site;

k. climatological information; and

l. all other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to subsoils, ground water, or surface water.

3. A landfill, including its underlying liners, must be located entirely above the seasonal high water table.

C. Design and operation. Design and operation requirements are as follows:

1. A landfill must have a double liner system that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at any time during the active life, including the closure period, of the landfill. The double liner system must consist of two liners with a leak detection, collection, and removal system between the liners. This system must be designed, constructed, maintained, and operated to detect, collect, and remove liquids from the space between the liners, without clogging, through the scheduled post-closure care period of the landfill. One of the liners may be constructed of materials that may allow wastes to migrate into the liner, but not into the adjacent subsurface soil, drainage

layer, or ground water or surface water, during the active life of the facility and the post-closure care period. At least one liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility including the post-closure care period. Both liners must 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 leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

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; and

c. installed to cover all surrounding earth likely to be in contact with the waste or leachate.

2. A landfill must have a leachate collection and removal system immediately above each liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The agency shall specify design and operating conditions in the permit to ensure that the leachate depth over each liner does not exceed 30 centimeters (one foot) at any point. The leachate collection and removal systems must be:

a. constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

b. designed, constructed, maintained, and operated to function without clogging through the scheduled post-closure care period of the landfill.

3. The owner or operator shall design, construct,

operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 100-year storm.

4. 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, 100-year storm.

5. Collection and holding facilities such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

6. The owner or operator shall cover or otherwise manage the landfill to control wind dispersal of particulate matter.

7. The owner or operator shall develop the landfill in appropriately sized cells to minimize the amounts of liquids entering each cell due to precipitation.

8. The owner or operator of a landfill shall submit to the agency with the permit application a plan for the treatment and disposal of run-off contained in the run-off management system and leachate which is removed from the landfill.

9. The agency shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1.-8. are satisfied.

D. Leak detection. If liquids are detected in the leak detection, collection, and removal system, the owner or operator shall notify the director of that fact in writing within seven days after detecting the liquids, and:

1. within a period of time specified in the permit, remove accumulated liquids, repair or replace any liner which is leaking to prevent the migration of liquids through the liner, and obtain a certification from a qualified engineer that, to the best of his or her knowledge and opinion, the leak has been stopped; or

2. <u>if the owner or operator can demonstrate to the director that the repair of the liner is not possible or feasible, he or she must</u> begin to comply with the monitoring

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requirements of 6 MCAR S 4.9297 K.5. within a period of time specified in the permit.

The agency will specify in the permit all design and operating practices that are necessary to ensure that the requirements of 1. or 2. are satisfied.

E. Monitoring and inspection. Monitoring and inspection requirements are as follows:

1. During construction or installation, liners and cover systems such as membranes, sheets, or coatings, must be inspected for uniformity, damage, and imperfections such as holes, cracks, thin spots, or foreign materials. Immediately after construction or installation:

a. synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters;

b. soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the permeability of the liner or cover; and

c. the construction of the liners must be certified by a qualified engineer to be in accordance with the approved plans and specifications.

2. While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

a. deterioration, malfunctions, or improper operation of run-on and run-off control systems;

b. the presence of liquids in leak detection systems;

c. improper functioning of wind dispersal control systems, where present; and

d. the presence of leachate in and proper functioning of leachate collection and removal systems.

If any evidence of any condition described in a.-c. is detected, the owner or operator shall notify the director of the condition and remedies to correct the condition.

F. Surveying and recordkeeping. The owner or operator of a

landfill shall maintain the following items in the operating record required under 6 MCAR S 4.9294:

1. on a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

2. the contents of each cell and the approximate location of each hazardous waste type within each cell.

G. Closure and post-closure care. Closure and post-closure care requirements are as follows:

1. At final closure of the landfill and upon closure of any cell, the owner or operator shall cover the landfill or cell with a final cover designed and constructed to:

a. provide long-term minimization of migration of liquids through the closed landfill;

b. function with minimum maintenance;

c. promote drainage and minimize erosion or abrasion of the cover;

d. accommodate settling and subsidence so that the cover's integrity is maintained; and

e. have a permeability less than or equal to the permeability of any bottom liner system.

2. After final closure, the owner or operator shall comply with all post-closure requirements contained in 6 MCAR SS 4.9299-4.9302 including maintenance and monitoring throughout the post-closure care period specified in the permit under 6 MCAR S 4.9299. The owner or operator shall:

a. maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

b. maintain and monitor the leak detection system in accordance with C. and D.;

c. continue to operate the leachate collection and removal systems;

d. maintain and monitor the ground water monitoring systems and comply with all other applicable requirements of 6

MCAR S 4.9297;

e. prevent run-on and run-off from eroding or otherwise damaging the final cover;

f. protect and maintain surveyed benchmarks used in complying with F.; and

g. survey the landfill at least annually to determine any effects from settling, subsidence, erosion, or other events.

3. During the post-closure care period, if liquids are detected in a leak detection system, the owner or operator shall:

a. notify the director of that fact in writing within seven days after detecting the liquids; and

b. remove accumulated liquids and begin to comply with the monitoring requirements of 6 MCAR S 4.9297 K.5. within a time specified in the permit.

H. Special requirements for ignitable or reactive waste. Special requirements for ignitable or reactive waste are as follows:

1. Except as provided in 2. and L., ignitable or reactive waste must not be placed in a landfill, unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR SS 4.9132 B. and E., and compliance with 6 MCAR S 4.9283 B. is maintained.

2. Ignitable wastes in containers may be landfilled without meeting the requirements of 1., provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. Ignitable wastes must be disposed of in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

I. Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials must not be placed in the same landfill cell unless compliance with 6 MCAR S 4.9283 B. is maintained.

J. Special requirements for liquid waste. Special requirements for liquid waste are as follows:

1. Bulk or noncontainerized liquid waste or waste containing free liquids must not be placed in a landfill unless, before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically, such as by mixing with an absorbent solid, so that free liquids are no longer present.

2. Containers holding free liquids must not be placed in a landfill unless:

a. all free-standing liquid has been removed by decanting, or other methods; has been mixed with absorbent or solidified so that freestanding liquid is no longer observed; or has been otherwise eliminated;

b. the container is very small, such as an ampule; or

c. the container is a laboratory pack as defined in L. and is disposed of in accordance with L.

K. Special requirements for containers. Unless they are very small, such as an ampule, containers must be either:

1. at least 90 percent full when placed in the landfill; or

2. crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

L. Disposal of small containers of hazardous waste in overpacked drums. Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of 1.-5. are met:

1. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside

containers must be of the size and type specified in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, and 179 (1983), if those regulations specify a particular inside container for the waste.

2. The inside containers must be overpacked in an open head metal shipping container as specified in the United States Department of Transportation regulations under Code of Federal Regulations, title 49, parts 178 and 179 (1983), of no more than 415 liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent materials.

3. The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with 6 MCAR S 4.9283 B.

4. Incompatible wastes, as defined in 6 MCAR S 4.9100 must not be placed in the same outside container.

5. Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in 6 MCAR S 4.9132 E.1.e., must be treated or rendered nonreactive prior to packaging in accordance with 1.-4. Cyanide- and sulfide-bearing reactive waste may be packed in accordance with 1.-4. without first being treated or rendered nonreactive.

6 MCAR S 4.9321 Thermal treatment.

A. Scope. This rule applies as follows:

1. This rule applies to owners and operators of facilities that thermally treat hazardous waste, except as provided otherwise in 2., 3., and 4.; 6 MCAR SS 4.9129; and 4.9280.

2. For owners or operators of thermal treatment facilities, the director may, in establishing the permit conditions, exempt the applicant from all requirements of this rule except B. and H., if after examination of the waste

analysis included with the applicant's permit application, the director finds that the waste to be treated contains none of the hazardous constituents listed in 6 MCAR S 4.9137 which would reasonably be expected to be in the waste and that the waste to be treated is:

a. listed as a hazardous waste in 6 MCAR S 4.9134 only because it is ignitable, corrosive, or both;

b. listed as a hazardous waste in 6 MCAR S 4.9134 only because it is reactive for characteristics other than those listed in 6 MCAR S 4.9132 E.1.d. and e., and will not be treated when other hazardous wastes are present in the combustion zone;

c. a hazardous waste only because it possesses the characteristics of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under 6 MCAR S 4.9132; or

d. a hazardous waste only because it possesses any of the reactivity characteristics described by 6 MCAR S 4.9132 E.1.a., b., c., f., g., and h., and will not be treated when other hazardous wastes are present in the combustion zone.

3. For owners or operators of thermal treatment facilities, the director may, in establishing the permit conditions, exempt the applicant from all requirements of this rule except B. and H., if after examination of the waste analysis included with the applicant's permit application the director finds that:

a. the waste to be treated is one which is specified in 2.a., b., c., or d., and contains insignificant concentrations of the hazardous constituents listed in 6 MCAR S 4.9137; and

b. the thermal treatment facility will not endanger human health or the environment, if the exemption is approved.

4. For owners or operators of thermal treatment facilities whose primary purpose is the production of energy, the director may, after review of the request for exemption, exempt the owner or operator from any requirements of this rule except B. and H. The owner or operator shall submit to the

director a request for exemption which shall include the following information:

a. waste analysis results for each waste to be treated;

b. a complete description of the thermal treatment unit, including air pollution control equipment;

c. a description of the operating procedures; and

d. an evaluation of the suitability of the thermal treatment process for the wastes to be treated.

5. The director shall approve the request for exemption if the director finds that:

a. the primary purpose of the thermal treatment facility is the production of energy;

b. the thermal treatment process is suitable for the wastes to be treated; and

c. the thermal treatment facility will not endanger human health or the environment, if the exemption is approved.

6. The owner or operator of a thermal treatment facility may conduct trial burns, subject only to the requirements of a trial burn approval as issued under the agency's permitting procedures.

B. Waste analysis. As a portion of a trial burn plan or with his permit application, the owner or operator shall have included an analysis of his waste feed sufficient to provide all information required by the agency's permitting procedures. Owners or operators of new hazardous waste thermal treatment facilities shall provide the required information to the greatest extent possible.

Throughout normal operation the owner or operator shall conduct sufficient waste analysis to verify that waste feed to the thermal treatment process is within the physical and chemical composition limits specified in the permit.

C. Principal organic hazardous constituents. Principal organic hazardous constituents in the waste feed must be treated to the extent required by the performance standard of D.

One or more principal organic hazardous constituents will be specified in the facility's permit, from among those

constituents listed in 6 MCAR S 4.9137, for each waste feed to be treated. This specification will be based on the degree of difficulty of thermal treatment of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with the facility's permit application. Organic constituents which represent the greatest degree of difficulty of thermal treatment will be those most likely to be designated as a principal organic hazardous constituent. Constituents are more likely to be designated as principal organic hazardous constituents if they are present in large quantities or concentrations in the waste.

Trial principal organic hazardous constituents will be designated for performance of trial burns in accordance with the procedure specified for obtaining trial burn approval.

D. Performance standards. A thermal treatment facility thermally treating hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under F. it will comply with all federal and state air quality rules and regulations and will meet the performance standards of 1., 2., 3., and 4., whichever are applicable:

1. A thermal treatment facility thermally treating hazardous waste must achieve a destruction and removal efficiency of 99.99 percent for each principal organic hazardous constituent designated in its permit for each waste feed. The destruction and removal efficiency (DRE) is determined for each principal organic hazardous constituent from the following equation:

$$DRE = \frac{(Win - Wout)}{Win} \times 100\%$$

where:

Win = Mass feed rate of one principal organic hazardous constituent in the waste stream feeding the thermal treatment process, and

Wout = Mass emission rate of the same principal organic

hazardous constituent present in exhaust emissions prior to release to the atmosphere.

2. A thermal treatment facility thermally treating hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (four pounds per hour) of hydrogen chloride (HCl) must control hydrogen chloride emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or one percent of the hydrogen chloride in the stack gas prior to entering any pollution control equipment.

3. A thermal treatment facility thermally treating hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$Pc = Pm \times \frac{14}{21 - Y}$$

where:

Pc = corrected concentration of particulate matter;

Pm = measured concentration of particulate matter; and

Y = measured concentration of oxygen in the stack gas;

using the Orsat method for oxygen analysis of dry flue gas, presented in Code of Federal Regulations, title 40, part 60, appendix A (method 3) (1983). This correction procedure is to be used by all hazardous waste thermal treatment facilities except those operating under conditions of oxygen enrichment. For these facilities the director will select an appropriate correction procedure to be specified in the facility permit.

4. For purposes of permit enforcement, compliance with the operating requirements specified in the permit will be regarded as compliance with this rule. However, evidence that compliance with these permit conditions is insufficient to ensure compliance with the performance requirements of this rule may be information justifying modification, revocation, or reissuance of a permit.

E. Hazardous waste thermal treatment facility permits.

Requirements for hazardous waste thermal treatment facility permits are as follows:

1. The owner or operator of a hazardous waste thermal treatment facility may thermally treat only wastes specified in his permit and only under operating conditions specified for these wastes under F., except for the following cases:

a. in approved trial burns under the agency's permitting procedures; or

b. under exemptions created by A.

2. Other hazardous wastes may be thermally treated only after operating conditions have been specified in a new permit, or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with a permit application.

3. The permit for a new hazardous waste thermal treatment facility must establish appropriate conditions for each of the applicable requirements of this rule, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of F., sufficient to comply with the following standards:

a. For the period beginning with initial introduction of hazardous waste to the thermal treatment process and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in 2., not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of D., based on the director's engineering judgment. The agency may once extend the duration of this period for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

b. For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of D., and must be in accordance with the approved trial burn plan.

c. For the period immediately following completion of

the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the agency, the operating requirements must be those most likely to ensure compliance with the performance standards of D. based on the director's engineering judgment.

d. For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in the agency's permitting procedures, as sufficient to ensure compliance with the performance standards of D.

F. Operating requirements. Operating requirements are as follows:

1. A thermal treatment facility must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated in a trial burn or in alternative data as specified in E.2. and included with a facility's permit application to be sufficient to comply with the performance standards of D. The agency may specify additional operating requirements necessary to assure compliance with air quality emission and ambient limits and to protect public health and property.

2. Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of D.) to which the operating requirements apply. For each waste feed, the permit shall specify acceptable operating limits, including the following conditions:

a. carbon monoxide level in the stack exhaust gas;

b. waste feed rate;

c. treatment process temperature;

d. an appropriate indicator of combustion gas velocity;

e. allowable variations in treatment system design or operating procedures; and

f. other operating requirements that are necessary to ensure that the performance standards of D., federal and state statutes and rules, and those required by the agency to protect the environment are met.

3. During start-up and shut-down of a thermal treatment process, hazardous waste, except ignitable waste exempted in accordance with A., must not be fed into the thermal treatment process unless the treatment process and air pollution control equipment are operating within the conditions of operation specified in the permit.

4. Fugitive emissions from the thermal treatment zone must be controlled by:

a. keeping the thermal treatment zone totally sealed against fugitive emissions;

b. maintaining a thermal treatment zone pressure lower than atmospheric pressure; or

c. an alternate means of control demonstrated with the permit application to provide fugitive emissions control equivalent to maintenance of thermal treatment zone pressure lower than atmospheric pressure.

5. A thermal treatment facility must be operated with a functioning system to automatically cut off waste feed to the treatment process when operating conditions deviate from limits established under 1.

6. A thermal treatment facility must cease operation when changes in waste feed, treatment process design, or operating conditions exceed limits designated in its permit.

G. Monitoring, reporting, and inspections. Monitoring, reporting, and inspection requirements are as follows:

1. For monitoring:

a. The owner or operator shall conduct monitoring while thermally treating hazardous waste. Treatment temperature, waste feed rate, oxygen, carbon dioxide, and the indicator of combustion gas velocity specified in the permit must be monitored on a continuous basis.

b. Carbon monoxide, oxygen, and carbon dioxide must be

monitored on a continuous basis at a point in the treatment facility downstream of the thermal treatment zone and prior to release to the atmosphere.

c. Upon request by the director, sampling and analysis of the waste and exhaust emissions must be conducted as specified in the permit to verify that the operating requirements established in the permit achieve the performance standards of D. and requirements of federal and state statutes, regulations, and rules.

d. The agency may specify in the permit other monitors for demonstration of combustion and destruction efficiency of air pollutants.

2. The thermal treatment process and associated equipment must be subjected to thorough visual inspection at least daily for leaks, spills, fugitive emissions, and signs of tampering.

3. The emergency waste feed cut off system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the director that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. Operational testing must be conducted at least monthly.

4. This monitoring and inspection data must be recorded and the records must be placed in the operating log required by 6 MCAR S 4.9294.

H. Closure. At closure the owner or operator shall remove all hazardous waste and hazardous waste residues including, but not limited to, ash, scrubber waters, and scrubber sludges from the thermal treatment facility site. At closure, as throughout the operating period, unless the owner or operator can demonstrate that any waste removed from the thermal treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with the requirements of 6 MCAR SS 4.9200-4.9560.

I. Open burning; waste explosives. Open burning of hazardous waste is prohibited except for the open burning and

detonation of waste explosives. Waste explosives include waste which has the potential to detonate, and bulk military propellants which cannot safely be disposed through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level). Owners or operators choosing to open burn or detonate waste explosives shall do so in accordance with Exhibit 6 MCAR S 4.9321 I.-1 and in a manner that does not threaten human health or the environment.

Exhibit 6 MCAR S 4.9321 I.-1

Property Line Separation

Pounds of waste explosives or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet)
101 to 1,000	380 meters (1,250)
1,001 to 10,000	530 meters (1,730)
10,001 to 30,000	690 meters (2,260)

6 MCAR S 4.9322 Cochran's approximation to the Behrens-Fisher Students' t-test.

Exhibit 6 MCAR S 4.9322-1 describes Cochran's approximation to the Behrens-Fisher Students' t-test. Exhibit 6 MCAR S 4.9322-2 presents the standard t-tables at the 0.05 level of significance.

Exhibit 6 MCAR S 4.9322-1

Cochran's Approximation to

the Behrens-Fisher Students' t-test

Using all the available background data (n_b readings), calculate the background mean (X_B) and background variance (s_B^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (s_m^2).

For any set of data (X_1, X_2, ... X_n) the mean is calculated by:

$$\bar{X} = \frac{X_1 + X_2 \ldots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \bar{X})^2 + (X_2 - \bar{X})^2 \ldots + (X_n - \bar{X})^2}{n-1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t*) and a comparison t-statistic (t_c). The t* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - X_B}{\sqrt{\frac{s_m^2}{n_m} \quad \frac{s_m^2}{n_B}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t* will be compared, necessitates finding t_B and t_m from standard (one-tailed) tables where,

t_B = t-tables with (n_B-1) degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with (n_m-1) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_B and W_m are defined as:

$$W_B = \frac{s_B^2}{n_B} \quad \text{and} \quad W_M = \frac{s_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_B t_B + W_m t_m}{W_B + W_m}$$

The t-statistic (t*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t* is equal to or larger than t_c, then conclude that there most likely has been a significant increase in this specific parameter.

If t* is less than t_c, then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t* is equal to or larger than t_c then conclude that there most likely has been a significant increase (if the initial t* had been negative, this would imply a significant decrease). If t* is less than t_c, then conclude that there most likely has been no change.

A further discussion of the test may be found in Statistical Methods (Sixth Edition, section 4.14) by G.W. Snedecor and W.G. Cochran, or Principles and Procedures of Statistics (First Edition, section 5.8) by R.G.D. Steel and J.H. Torrie.

Exhibit 6 MCAR S 4.9322-2

Standard T-Tables 0.05 Level of Significance[1]

Degrees of Freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228

11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

[1]Adopted from Table III of Statistical Tables for Biological, Agricultural, and Medical Research (1947, R.A. Fisher and F. Yates).

Rules as Adopted

Chapter Six: Interim Status Standards.

6 MCAR S 4.9380 Facilities governed by interim status.

6 MCAR S 4.9381 Qualifications for obtaining interim status.

6 MCAR S 4.9382 General facility standards.

6 MCAR S 4.9383 Personnel training.

6 MCAR S 4.9384 General requirements for ignitable, reactive, or incompatible waste.

6 MCAR S 4.9385 Waste analysis requirements.

6 MCAR S 4.9386 Preparedness and prevention.

6 MCAR S 4.9387 Arrangements with local authorities for emergencies.

6 MCAR S 4.9388 Contingency plan.

6 MCAR S 4.9389 Emergency procedures.

6 MCAR S 4.9390 Post-emergency requirements.

6 MCAR S 4.9391 Facility shipment requirements.

6 MCAR S 4.9392 Manifest system.

6 MCAR S 4.9393 Manifest discrepancies.

6 MCAR S 4.9394 Operating record.

6 MCAR S 4.9395 Retention and disposition of records.

6 MCAR S 4.9396 Required reports.

6 MCAR S 4.9397 Ground water monitoring.

6 MCAR S 4.9398 Ground water quality assessment program.

6 MCAR S 4.9399 Closure.

6 MCAR S 4.9400 Closure activities.

6 MCAR S 4.9401 Post-closure.

6 MCAR S 4.9402 Post-closure care and use of property.

6 MCAR S 4.9403 Notice to local land authority.

6 MCAR S 4.9404 Notice in deed to property.

6 MCAR S 4.9405 Financial requirements.

6 MCAR S 4.9406 Cost estimate for facility closure.

6 MCAR S 4.9407 Financial assurance for facility closure.

6 MCAR S 4.9408 Cost estimate for post-closure care.

6 MCAR S 4.9409 Financial assurance for post-closure care.

6 MCAR S 4.9410 Use of a mechanism for financial assurance of

both closure and post-closure care.

6 MCAR S 4.9411 Liability requirements.

6 MCAR S 4.9412 Incapacity of owners, operators, guarantors, or financial institutions.

6 MCAR S 4.9413 Wording of the instruments.

6 MCAR S 4.9414 Use and management of containers.

6 MCAR S 4.9415 Tanks.

6 MCAR S 4.9416 Surface impoundments.

6 MCAR S 4.9417 Waste piles.

6 MCAR S 4.9418 Land treatment facilities.

6 MCAR S 4.9419 Additional requirements for land treatment facilities growing food chain crops.

6 MCAR S 4.9420 Landfills.

6 MCAR S 4.9421 Thermal treatment facilities.

6 MCAR S 4.9422 Chemical, physical, and biological treatment facilities.

Chapter Six: Interim Status Standards

6 MCAR S 4.9380 Facilities governed by interim status.

A. General requirements. Rules 6 MCAR SS 4.9380-4.9422 establish minimum standards for the management of hazardous waste during the period of interim status. These standards apply to owners and operators of existing facilities who have fully complied with the requirements for state or federal interim status and those who have failed to achieve state or federal interim status, until final disposition of the owner's or operator's permit application is made. These standards apply to all treatment, storage, or disposal of hazardous waste at these facilities after the effective date of 6 MCAR SS 4.9100-4.9560, except as specifically provided otherwise.

For existing facilities which were not required to obtain federal interim status under the Resource Conservation and Recovery Act, United States Code, title 42, sections 6901-6986, as amended through June 30, 1983, but are required to obtain state interim status, the requirements of 6 MCAR SS 4.9397, 4.9398, 4.9417 D.1. and 2., 4.9418 B., 4.9420 B., G., and H.

become effective 12 months after the effective date of 6 MCAR SS 4.9380-4.9422, and the requirements of 6 MCAR SS 4.9405-4.9413 become effective 90 days after the effective date of 6 MCAR SS 4.9380-4.9422.

B. Existing hazardous waste facilities. For facilities subject to the provisions of Code of Federal Regulations, title 40, part 265 (1983) an "existing hazardous waste facility" or "existing facility" means a facility which was in operation or for which construction commenced on or before November 19, 1980. For all other facilities, an "existing hazardous waste facility" or "existing facility" means a facility which was in operation on or before the effective date of 6 MCAR SS 4.9100-4.9560, or for which construction commenced on or before the effective date of 6 MCAR SS 4.9100-4.9560. A facility has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and either:

1. a continuous on-site, physical construction program has begun; or

2. the owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction of the facility to be completed within a reasonable time.

C. Exemptions. The requirements of 6 MCAR SS 4.9380-4.9422 do not apply to:

1. the owner or operator of a publicly owned treatment works which treats, stores, or disposes of hazardous waste. The owner or operator of a publicly owned treatment works is subject to the requirements of 6 MCAR SS 4.9280-4.9322 to the extent they are included in a permit-by-rule granted to such a person, under the agency permitting procedures;

2. the owner or operator of a facility which treats or stores hazardous waste if the treatment or storage meets the criteria in 6 MCAR S 4.9129 B.1., or 2., except to the extent that 6 MCAR S 4.9129 B.3., 4., or 5. provides otherwise and 6 MCAR S 4.9216 A.5.-7. are complied with;

3. a generator accumulating waste on-site in compliance with 6 MCAR S 4.9216, except to the extent the requirements are included in 6 MCAR S 4.9216;

4. a farmer disposing of waste pesticides from his own use in compliance with 6 MCAR S 4.9222;

5. the owner or operator of a totally enclosed treatment facility;

6. the owner or operator of an elementary neutralization unit, pretreatment unit, or wastewater treatment unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit;

7. the owner or operator of that portion of a combustion waste facility which is used to manage hazardous wastes produced in conjunction with the combustion of fossil fuels if the wastes:

a. are generated on-site;

b. traditionally have been and actually are mixed with and co-disposed or co-treated with fly ash, bottom ash, boiler slag, or flue gas emission control wastes from coal combustion; and

c. are necessarily associated with the production of energy, such as boiler cleaning solutions, boiler blowdown, demineralizer regenerant, pyrites, and cooling tower blowdown;

8. a transporter storing manifested shipments of hazardous waste in containers meeting the requirements of 6 MCAR S 4.9214 A. at a transfer facility for a period of ten days or less;

9. persons with respect to the addition of absorbent material to hazardous waste in a container or the addition of hazardous waste to absorbent material in a container if these actions occur at the time hazardous waste is first placed in the container, and 6 MCAR SS 4.9384 B., and 4.9414 B. and C. are complied with; or

10. a. Except as provided in b., a person engaged in treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste, an imminent and substantial threat of a discharge of a

hazardous waste, or a discharge of a material which, when discharged, becomes a hazardous waste.

b. An owner or operator of a facility otherwise regulated by 6 MCAR SS 4.9380-4.9422 shall comply with all applicable requirements of 6 MCAR SS 4.9259, 4.9383, and 4.9386-4.9390.

c. A person who is covered by a. and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of 6 MCAR SS 4.9380-4.9422 and the agency's permitting procedures for those activities.

6 MCAR S 4.9381 Qualifications for obtaining interim status.

A. Qualifications for obtaining state interim status. Any person who owns or operates an existing facility, has filed Part A of the permit application for the type of facility owned or operated with this agency within 90 days after the effective date of 6 MCAR SS 4.9380-4.9422 or to Environmental Protection Agency Region V, and has not received federal interim status shall be treated as having state interim status and a permit until such time as final disposition of the permit application is made.

B. Qualification for obtaining federal interim status. Owners or operators of existing facilities having fully complied with the requirements for interim status under the Resource Conservation and Recovery Act of 1976, United States Code, title 42, sections 6901-6986, as amended through June 30, 1983, before the effective date of 6 MCAR SS 4.9380-4.9422 are considered to have federal interim status and are not required to obtain state interim status.

6 MCAR S 4.9382 General facility standards.

A. Scope. This rule applies to owners and operators of all hazardous waste facilities except as provided by 6 MCAR S 4.9380.

B. Identification number. A facility owner or operator shall apply for an identification number in accordance with agency procedures.

C. Required notices. Notices are required in the following situations:

1. The owner or operator of a facility who has arranged to receive hazardous waste from a foreign source shall notify the director as well as the Environmental Protection Agency Region V Administrator in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

2. No facility owner or operator may accept a shipment of hazardous waste which he or she is not allowed to manage under interim status. The owner or operator shall notify the director immediately upon receiving such hazardous wastes.

3. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator shall notify the new owner or operator in writing of the requirements of 6 MCAR SS 4.9380-4.9422. An owner's or operator's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with all applicable requirements.

D. Security. Security measures include the following:

1. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless:

a. physical contact with the waste, structures, or equipment with the active portion of the facility will not injure unknowing or unauthorized persons or livestock which could enter the active portion of a facility; and

b. disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 6 MCAR SS 4.9380-4.9422.

2. Unless exempt under 1., a facility must have:

a. a 24-hour surveillance system which continously

monitors and controls entry onto the active portion of the facility; or

b. an artificial or natural barrier which completely surrounds the active portion of the facility and a means to control entry at all times through the gates or other entrances to the active portion of the facility.

3. Unless exempt under 1., a sign with the legend, "Danger-Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility and at other locations in sufficient numbers to be seen from any approach to the active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion and that entry onto the active portion can be dangerous.

E. General inspection requirements. The following are the general inspection requirements:

1. The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to the release of hazardous waste constituents to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. The owner or operator shall develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards. The owner or operator shall keep this schedule at the facility. The schedule must identify the types of problems which are to be looked for during the inspection.

3. The frequency of inspection may vary for the items on

the schedule. However, it must 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, must be inspected daily when in use. The inspection schedule must include the items and frequencies called for in 6 MCAR SS 4.9414 E., 4.9415 D., 4.9416 E., 4.9421 D., and 4.9422 D.

4. The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

5. The owner or operator shall record inspections in an inspection log or summary. He or she shall keep these records for at least three years from the date of inspection. These records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

F. Location in floodplains. A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood.

As used herein:

1. "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source;

2. "washout" means the flow of hazardous waste from the active portion of the facility, the buildings, or equipment as a result of flooding; and

3. "100-year flood" means a flood that has a one percent chance of being equalled or exceeded in any given year.

6 MCAR S 4.9383 Personnel training.

A. In general. Hazardous waste facility personnel must

successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of 6 MCAR SS 4.9100-4.9560. The owner or operator shall ensure that this program includes all the elements described in the document required by F.3.

B. Program director. This program must be directed by a person trained in hazardous waste management procedures.

C. Minimum program requirements. The training program must include instruction which teaches facility personnel hazardous waste management procedures relevant to the positions in which they are employed, including contingency plan implementation procedures. The training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

1. procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

2. key parameters for automatic waste feed cutoff systems;

3. communications or alarm systems;

4. procedures for response to fires or explosions;

5. procedures for response to ground water contamination incidents; and

6. procedures for shutdown of operations.

D. Effective date. Facility personnel shall successfully complete the program required in C. by the effective date of this rule or six months after the date of their employment or assignment to a facility or to a new position at a facility, whichever is later. Facility personnel not subject to the requirements of Code of Federal Regulations, title 40, section 265.16 (1983) shall successfully complete the program required in C. within six months after the effective date of this rule or six months after the date of their employment or assignment to a facility or assignment to a new position at a facility, whichever is later. Employees hired after the effective date of

? this appears to have retroactive requirement

this rule shall not work in unsupervised positions until they have completed the training requirements of A.-C.

E. Training review. Facility personnel shall take part in an annual review of the initial training required in A.-C.

F. Personnel records. The following documents and records must be maintained at the facility:

1. The job title for each position at the facility related to hazardous waste management and the name of the employee filling each job;

2. A written job description for each position at the facility related to hazardous waste. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

3. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position described in 1.; and

4. Records that document that the training or job experience required under A.-D. has been given to, and completed by, facility personnel.

G. Record retention. Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

6 MCAR S 4.9384 General requirements for ignitable, reactive, or incompatible waste.

A. Required notices. The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction, including but not limited to open flames, smoking, cutting and welding, hot surfaces, frictional heat, static sparks, electrical sparks,

mechanical sparks, spontaneous ignition, and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

B. Required precautions. When specifically required by other rules in 6 MCAR SS 4.9100-4.9560, the owner or operator of a facility that treats, stores, or disposes of ignitable or reactive waste or mixes incompatible waste or incompatible wastes and other materials, shall take precautions to prevent reactions which:

1. generate extreme heat, pressure, fire, explosions, or violent reactions unless the process is designed to handle these types of reactions;

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; or

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

C. Documentation of compliance. When required to comply with A. or B., the owner or operator shall document that compliance. This documentation may be based on reference to published scientific or engineering literature, data from trial tests, waste analyses, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

6 MCAR S 4.9385 Waste analysis requirements.

A. Waste analysis. The analysis must comply with the following requirements:

1. Before an owner or operator treats, stores, or disposes of any hazardous waste, he or she shall obtain a

detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of 6 MCAR SS 4.9380-4.9422.

2. The analysis may include data developed under 6 MCAR SS 4.9128-4.9137, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes, including data obtained from the generator.

3. The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. The analysis must be repeated:

a. when the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed; and

b. for off-site facilities, when the results of the inspection required in 4. indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

4. The owner or operator of an off-site facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

B. Waste analysis plan. The owner or operator shall develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with A. He or she shall keep this plan at the facility. The plan must specify:

1. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters;

2. The test methods which will be used to test for these parameters;

3. The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

a. one of the sampling methods described in Code of

Federal Regulations, title 40, part 261, appendix I (1983); or

b. an equivalent sampling method as approved by the director;

4. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date;

5. For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply;

6. Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in 6 MCAR SS 4.9415 C., 4.9416 D., 4.9417 C., 4.9418 C., 4.9421 B., and 4.9422 C.; and

7. For off-site facilities, the waste analysis plan must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

a. the procedures which will be used to determine the identity of each movement of waste managed at the facility; and

b. the sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

6 MCAR S 4.9386 Preparedness and prevention.

A. Scope. This rule applies to owners and operators of all hazardous waste facilities, except as provided otherwise in 6 MCAR S 4.9380.

B. Operation of facility. Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release to air, land, or water of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

C. Required equipment. All facilities must be equipped with the following, unless it can be demonstrated to the director that none of the hazards posed by waste handled at the facility could require the particular equipment specified below in 1.-4.:

1. an internal communications or alarm system capable of providing immediate emergency instruction to facility personnel;

2. a device, such as a telephone or a hand-held two-way radio, which is immediately available at the scene of operations and which is capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

3. portable fire extinguishers, spill control equipment, decontamination equipment, and fire control equipment, including special extinguishing devices such as those using foam, inert gas, or dry chemicals; and

4. water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

D. Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to ensure proper operation in time of emergency.

E. Access to communications or alarm system. Whenever hazardous waste 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 the director has ruled that such a device is not required under C.

If at any time only one employee is on the premises while the facility is operating, that employee shall have immediate access to a device, such as a telephone or a hand-held, two-way radio, which is immediately available at the scene of operation and which is capable of summoning external emergency assistance unless the director has ruled that such a device is not required under C.

F. Required aisle space. The owner or operator shall maintain aisle space 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 it can be demonstrated to the director that aisle space is not needed for any of these purposes.

6 MCAR S 4.9387 Arrangements with local authorities for emergencies.

A. Arrangements required. The owner or operator shall attempt to make the following arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations:

1. arrangements to familiarize the police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

2. 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;

3. agreements with state emergency response teams, emergency response contractors, and equipment suppliers; and

4. arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

B. Refusal by authorities. If state or local authorities decline to enter into arrangements described in A., the owner or operator shall document the refusal in the operating record.

6 MCAR S 4.9388 Contingency plan.

A. Scope. Rules 6 MCAR SS 4.9387-4.9390 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in 6 MCAR S 4.9380.

B. General requirements. An owner or operator shall have a contingency plan for the facility. The contingency plan must be

designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, land, or water.

C. Implementation of plan. The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

D. Content of contingency plan. The contingency plan must comply with the following:

1. The contingency plan must describe the actions facility personnel must take to comply with B. and C., and 6 MCAR S 4.9389.

2. If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures Plan in accordance with Code of Federal Regulations, title 40, sections 112 and 1510 (1983), or some other emergency or contingency plan, that plan must only be amended to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of 6 MCAR SS 4.9100-4.9560.

3. The plan must 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 6 MCAR S 4.9387.

4. The plan must list names, addresses, and office and home telephone numbers of all persons qualified to act as emergency coordinator, and this list must be kept up-to-date. If more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

5. The plan must include a list of all emergency equipment at the facility such as fire extinguishing systems, spill control equipment, internal and external communications and alarm systems, and decontamination equipment, where this equipment is required. This list must be kept up-to-date. In addition, the plan must include the location and a physical

description of each item on the list and a brief outline of its capabilities.

6. The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe the signal or signals to be used to begin evacuation, evacuation routes, and alternate evacuation routes in cases where the primary routes could be blocked by the release of hazardous waste or fire.

E. Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must 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.

F. Amendment of contingency plan. The contingency plan must be reviewed, and immediately amended if necessary, whenever:

1. the applicable rules 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 the release of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. the list of emergency coordinators changes; or

5. the list of emergency equipment changes.

6 MCAR S 4.9389 Emergency procedures.

A. Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. This person must also have the authority to commit the resources needed to carry out the contingency plan. Applicable responsibilities for the

emergency coordinator vary, depending on factors such as type and variety of waste handled by the facility and type and complexity of the facility.

B. Notification of emergency. Whenever there is an imminent or actual emergency situation, the emergency coordinator or designee when the emergency coordinator is on call, shall immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate state or local agencies with designated response roles with at least the information listed in C. and D.

C. Identification of released material. 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. He or she may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

D. Assessment of hazards. 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 must consider both direct and indirect effects of the release, fire, or explosion; the effects of any toxic, irritating, or asphyxiating gases that are generated; and the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions.

E. Report on released material. 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 findings must be reported as provided in 1. and 2.:

1. If the assessment indicates that evacuation of local areas may be advisable, the appropriate local authorities must be immediately notified, and the emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated.

2. The agency's emergency response unit must be

immediately notified at the 24-hour telephone number, 612-296-7373, and notification must also be given to either the governmental official designated as the on-scene coordinator for that geographical area in the applicable regional contingency plan under Code of Federal Regulations, title 40, part 1510 (1983) or to the National Response Center using their 24-hour toll free telephone number, 800-424-8802. The report must include:

a. name and telephone number of reporter;

b. name and address of facility;

c. time and type of incident;

d. name and quantity of material involved, to the extent known;

e. the extent of injuries, if any; and

f. the possible hazards to human health or the environment outside the facility.

F. Duty to notify. The emergency coordinator shall immediately notify the agency if the released hazardous waste may cause pollution of the air, land resources, or waters of the state. The emergency coordinator shall use the agency's 24-hour telephone number 612/296-7373.

G. Containment measures. 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 hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

H. Facility monitoring. If the facility stops operations 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.

6 MCAR S 4.9390 Post-emergency requirements.

A. Cleanup. Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of

recovered waste, contaminated soil or water, or any other material that results from a release, fire, or explosion at the facility in a manner approved by the director. Unless the owner or operator can demonstrate that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9128-4.9259. The emergency coordinator shall ensure that, in the affected area or areas of the facility, no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed, and all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

B. Notice before resuming operations. The owner or operator shall notify the regional administrator, the director, and other appropriate state and local authorities that the facility is in compliance with A. before operations are resumed in the affected area or areas of the facility.

C. Reporting. 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 director. The report must include:

1. name, address, and telephone number of the owner or operator;

2. name, address, and telephone number of the facility;

3. date, time, and type of incident;

4. name and quantity of material involved;

5. the extent of injuries, if any;

6. an assessment of actual or potential hazards to human health or the environment, where this is applicable; and

7. estimated quantity and disposition of recovered material that resulted from the incident.

6 MCAR S 4.9391 Facility shipment requirements.

Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility shall comply

with the requirements of 6 MCAR SS 4.9200-4.9222.

6 MCAR S 4.9392 Manifest system.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9380 provides otherwise. The provisions of B. do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. General manifest requirements. If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his agent, shall:

1. Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

2. Note any discrepancies in the manifest on each copy of the manifest. The owner or operator of a facility whose procedures under 6 MCAR S 4.9385 B.7. include waste analysis need not perform that analysis before signing the manifest and giving it to the transporter. However, 6 MCAR S 4.9393 C. requires reporting any discrepancy discovered during later analysis;

3. Immediately give the transporter at least one copy of the signed manifest;

4. Within ten days after the delivery, send a copy of the manifest to the generator and the director; and

5. Retain at the facility a copy of each manifest for at least three years from date of delivery.

C. Rail and water shipment requirements. If a facility receives from a rail or water bulk shipment transporter hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest, the owner or operator, or agent shall:

1. Sign and date each copy of the manifest or shipping paper, if the manifest has not been received, to certify that the hazardous waste covered by the manifest or shipping paper was received;

2. Note any discrepancies in the manifest or shipping paper, if the manifest has not been received, on each copy of

the manifest or shipping paper. The owner or operator of a facility whose procedures under 6 MCAR S 4.9385 B.7. include waste analysis need not perform that analysis before signing the shipping paper and giving it to the transporter. However, 6 MCAR S 4.9393 C., requires reporting any discrepancy discovered during later analysis;

3. Immediately give the rail or water bulk shipment transporter at least one copy of the signed manifest or shipping paper, if the manifest has not been received;

4. Within ten days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within ten days after delivery, the owner or operator, or agent, shall send a copy of the shipping paper signed and dated to the generator. The generator is required under 6 MCAR S 4.9213 to send three copies of the manifest to the facility when hazardous waste is sent by rail or water bulk shipment; and

5. Retain at the facility a copy of the manifest or shipping paper, if signed in lieu of the manifest at the time of delivery, for at least three years from the date of delivery.

6 MCAR S 4.9393 Manifest discrepancies.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9380 provides otherwise. This rule does not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. Definition of discrepancy. Manifest discrepancies are defined as significant or minor as follows:

1. Significant discrepancies include differences between the quantity or type of hazardous waste designated on the manifest or shipping paper and the quantity or type of hazardous waste a facility actually receives. Significant discrepancies in quantity are weight differences for bulk wastes greater than ten percent and variation in piece count for batch waste, such as a difference of one drum in a truckload. Significant discrepancies in types of waste are obvious differences which

can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

2. Minor discrepancies are all other discrepancies including but not limited to incomplete manifests or shipping papers, manifests or shipping papers which are inconsistent, and a container or portable tank containing hazardous waste which is not properly labeled.

C. Handling of discrepancies. Upon discovery of a discrepancy, the owner or operator of a treatment, storage or disposal facility shall take action as described in 1., 2., or 3., as applicable:

1. Upon discovering a significant discrepancy, the owner or operator shall attempt to reconcile the discrepancy with the waste generator and transporter. If the discrepancy is not resolved in ten days, the owner or operator shall immediately submit to the director a letter describing the discrepancy, attempts made to reconcile it, and a copy of the manifest or shipping paper. The type of discrepancy must be noted on the manifest.

2. Upon discovering a minor discrepancy, the owner or operator must attempt to reconcile the discrepancy with the waste generator and transporter. The owner or operator shall indicate the type of discrepancy and its resolution on the manifest. If the discrepancy cannot be reconciled, the owner or operator shall note this on the manifest with a brief explanation.

3. If a movement of hazardous waste is delivered to a facility not allowed to manage the waste under interim status, the owner or operator shall notify the director immediately.

6 MCAR S 4.9394 Operating record.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9380 provides otherwise.

B. Record requirements. The owner or operator shall keep a written operating record at the facility.

C. Record information. The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

1. The names of the generators of the hazardous waste and their identification numbers;

2. The date of arrival of each movement along with the transporter's name and identification numbers;

3. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility;

4. The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross references to specific manifest document numbers, if the waste was accompanied by a manifest;

5. Records and results of waste analysis and trial tests performed as specified in 6 MCAR SS 4.9385, 4.9415 C., 4.9416 D., 4.9417 C., 4.9418 C., 4.9421 B., and 4.9422 C.;

6. Summary reports and details of all incidents that require implementing the contingency plan as specified in 6 MCAR S 4.9388 C.;

7. Records and results of inspections as required by 6 MCAR S 4.9382 E.;

8. Monitoring, testing, or analytical data where required by 6 MCAR SS 4.9397 A., F., and G., 4.9398 A. and G., 4.9418 D. and F.4.a., 4.9419, and 4.9421 D. As required by 6 MCAR SS 4.9397 F. and G., and 4.9398 G., monitoring data at disposal facilities must be kept throughout the post-closure period; and

9. All closure cost estimates under 6 MCAR S 4.9406 and, for disposal facilities, all post-closure estimates under 6 MCAR S 4.9408.

6 MCAR S 4.9395 Retention and disposition of records.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9380

provides otherwise.

B. Retention of records. The retention period for all records required under 6 MCAR SS 4.9380-4.9422 is three years and is extended automatically during the course of any unresolved enforcement action regarding the facility ~~or as required by the director~~. amended FF

C. Disposition of records. A copy of records of waste disposal locations and quantities under 6 MCAR S 4.9394 C.4. must be submitted to the Environmental Protection Agency Region V Administrator, the director, and local land authority upon closure of the facility.

6 MCAR S 4.9396 Required reports.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilities, except as 6 MCAR S 4.9380 provides otherwise. The provisions of C. do not apply to owners or operators of on-site facilities that do not receive any hazardous waste from off-site sources.

B. Annual report. The owner or operator shall prepare and submit a single copy of an annual report to the director, no later than March 1 for the preceding calendar year. The report form and instructions to be used may be obtained from the director. The annual report must cover facility activities during the previous calendar year and must include the following information:

1. the identification number, name, and address of the facility;

2. the year covered by the report;

3. for off-site facilities, the identification number of each hazardous waste generator for whom the facility treated, disposed, or stored a hazardous waste during the year, and for imported shipments, the report must give the name and address of the foreign generator;

4. a description and the quantity of each hazardous waste the facility treated, disposed of, or stored during the year. For off-site facilities, this information must be listed by identification number of each generator;

5. the method of treatment, storage, or disposal for each hazardous waste;

6. monitoring data under 6 MCAR S 4.9397 G. where required;

7. the most recent closure cost estimate under 6 MCAR S 4.9406 and for disposal facilities, the most recent post-closure cost estimate under 6 MCAR S 4.9408; and

8. the certification signed by the owner or operator of the facility or the authorized representative.

C. Unmanifested waste report. If a shipment of hazardous waste is delivered to a hazardous waste facility from an off-site source without an accompanying manifest or without an accompanying shipping paper, the facility operator shall attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy cannot be resolved, the owner or operator shall notify the director prior to acceptance of the waste. Within ten days, a follow-up report shall be mailed to the director. The report must include:

1. The identification number, name, and address of the facility;

2. The date the facility received the waste;

3. The transporter's name, vehicle license, address, and identification number, if available;

4. The generator's name, address, and identification number, if available;

5. A description and the quantity of each unmanifested hazardous waste the facility received;

6. The method of treatment, storage, or disposal for each hazardous waste;

7. A brief explanation of why the waste was unmanifested, if known; and

8. The certification signed by the owner or operator of the facility or the authorized representative.

D. Additional reports. In addition to submitting the manifest discrepancy report described in 6 MCAR S 4.9393 C. and the annual report and the unmanifested waste reports described

in B. and C., the owner or operator shall also report to the director and the Environmental Protection Agency Region V Administrator:

1. releases, fires, and explosions as specified in 6 MCAR S 4.9390 C.;

2. ground water contamination and monitoring data as specified in 6 MCAR SS 4.9397 F. and G. and 4.9398 F.; and

3. facility closure as specified in 6 MCAR S 4.9399 C.

6 MCAR S 4.9397 Ground water monitoring.

A. General requirements. The owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste shall implement a ground water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility, except as B. and C. and 6 MCAR S 4.9380 provide otherwise.

Except as B., C., and E. provide otherwise, the owner or operator shall install, operate, and maintain a ground water monitoring system which meets the requirements of D. and E., and must comply with F., G., and H. and 6 MCAR S 4.9398. This ground water monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.

B. Neutralization surface impoundments. The ground water monitoring requirements of this rule and 6 MCAR S 4.9398 may be waived by the director with respect to any surface impoundment that:

1. is used to neutralize wastes which are hazardous only because they exhibit the corrosivity characteristic under 6 MCAR S 4.9132 D., or are listed as hazardous wastes in 6 MCAR S 4.9134 only for corrosivity; and

2. contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the

corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. This demonstration must be in writing and must be certified by a qualified professional, and submitted to the director for review.

C. Waiving of ground water monitoring requirements. All or part of the ground water monitoring requirements of this rule and 6 MCAR S 4.9398 may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells including domestic, industrial, or agricultural or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:

? no criteria

1. the potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

a. a water balance of precipitation, evapotranspiration, run-off, and infiltration; and

b. unsaturated zone characteristics including geologic materials, physical properties, and depth to ground water; and

2. the potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of:

a. saturated zone characteristics including geologic materials, physical properties, and rate of ground water flow; and

b. the proximity of the facility to water supply wells or surface water.

D. Ground water monitoring system. Requirements of ground water monitoring systems are as follows:

1. A ground water monitoring system must be capable of yielding ground water samples for analysis and must consist of:

a. At least one monitoring well installed

hydraulically upgradient from the limit of the waste management area. Their number, construction, location, and depth must be sufficient to yield ground water samples that are representative of background ground water quality in the uppermost aquifer near the facility, and not affected by the facility; and

b. At least three monitoring wells installed hydraulically downgradient at the limits of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

2. Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary.

In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

3. All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. The hole must be screened and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flows exist. Where necessary, wells must be properly developed to enable collection of representative ground water samples. The annular space, meaning the space between the bore hole and the well casing, above the sampling depth must be sealed with a suitable material, such as cement grout or bentonite slurry, to prevent contamination of samples and the ground water. All monitoring wells must be constructed in accordance with the Minnesota Water Well Construction Code in 7 MCAR SS 1.210-1.224.

E. Alternate ground water monitoring systems. If an owner

or operator assumes or knows that ground water monitoring of indicator parameters in accordance with D.1.-2. and F. would show statistically significant increases, or decreases in the case of pH, when evaluated under 1., he or she may install, operate, and maintain an alternate ground water monitoring system other than the one described in D. and F. If the owner or operator decides to use an alternate ground water monitoring system, he or she shall:

1. within one year after the effective date of 6 MCAR SS 4.9380-4.9422, submit to the director a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of 6 MCAR S 4.9398 D.3. for an alternate ground water monitoring system;

2. not later than one year after the effective date of 6 MCAR SS 4.9380-4.9422, initiate the determinations specified in 6 MCAR S 4.9398 D.4.;

3. prepare and submit a written report in accordance with 6 MCAR S 4.9398 D.5;

4. continue to make the determination specified in 6 MCAR S 4.9398 D.4. on a quarterly basis until final closure of the facility; and

5. comply with the record keeping and reporting requirements in G.

F. Sampling and analysis. The sampling and analysis process is as follows:

1. The owner or operator shall obtain and analyze samples from the installed ground water monitoring system. The owner or operator shall develop and follow a ground water sampling and analysis plan. He or she shall keep this plan at the facility. The plan shall include procedures and techniques for: sample collection, sample preservation and shipment, analytical procedures, and chain of custody control.

2. The owner or operator shall determine the concentration or value of the following parameters in ground water samples in accordance with 3. and 4:

a. Parameters characterizing the suitability of the

ground water as a drinking water supply, as specified in Code of Federal Regulations, title 40, part 265, appendix III (1983).

b. Parameters establishing ground water quality include chloride, iron, manganese, phenols, sodium, and sulfate. These parameters are to be used as a basis for comparison in the event a ground water quality assessment is required under 6 MCAR S 4.9398.

c. Parameters used as indicators of ground water contamination are pH, specific conductance, total organic carbon, and total organic halogen.

d. Waste-specific parameters where not covered in 1. and a.-c. determined by the director as appropriate to the waste managed at the facility.

3. For all monitoring wells, the owner or operator shall establish initial background concentrations or values of all parameters specified in 2. quarterly for one year.

For each of the indicator parameters specified in 2.c. and determined pursuant to 2.d., at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

4. After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

a. samples collected to establish ground water quality must be obtained and analyzed for the parameters specified in 2.b. at least annually; and

b. samples collected to indicate ground water contamination must be obtained and analyzed for the parameters specified in 2.c. and determined pursuant to 2.d. at least quarterly.

5. Elevation of the ground water surface at each monitoring well must be determined each time a sample is obtained.

G. Record keeping. Unless the ground water is monitored to

satisfy the requirements of 6 MCAR S 4.9398 D.4., the owner or operator shall keep records of the analyses required in F.3. and 4., the associated ground water surface elevations required in F.5., and the evaluations required in 6 MCAR S 4.9398 B. throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well.

If the ground water is monitored to satisfy the requirements of 6 MCAR S 4.9398 D.4., the owner or operator shall keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of 6 MCAR S 4.9398 D.3., throughout the active life of the facility, and for disposal facilities, throughout the post-closure care period as well.

H. Reporting. Reporting requirements are as follows:

1. Unless the ground water is monitored to satisfy the requirements of 6 MCAR S 4.9398 D.4., the owner or operator shall report the following ground water monitoring information to the director:

a. During the first year when initial background concentrations are being established for the facility, the owner or operator shall report concentrations or values of the parameters listed in F.2.a. for each ground water monitoring well within 15 days after completing each quarterly analysis. The owner or operator shall separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in Code of Federal Regulations, title 40, part 265, appendix III (1983).

b. The owner or operator shall annually report concentrations or values of the parameters listed in F.2.c. or d. for each ground water monitoring well, along with the required evaluations for these parameters under 6 MCAR S 4.9398 B. The owner or operator shall separately identify any significant differences from initial background found in the upgradient wells, in accordance with 6 MCAR S 4.9398 C. During the active life of the facility this information must be

submitted as part of the annual report required under 6 MCAR S 4.9396 B.

c. As a part of the annual report required under 6 MCAR S 4.9396 B. the owner or operator shall report results of the evaluation of ground water surface elevations under 6 MCAR S 4.9398 F. and a description of the response to that evaluation, where applicable.

2. If the ground water is monitored to satisfy the requirements of 6 MCAR S 4.9398 D.4., the owner or operator shall annually, until final closure of the facility, submit to the director a report containing the results of his or her ground water quality assessment program which includes, but is not limited to, the calculated or measured rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period. This report must be submitted as part of the annual report required under 6 MCAR S 4.9396 B.

6 MCAR S 4.9398 Ground water quality assessment program.

A. Program outline. The owner or operator shall prepare an outline of a ground water quality assessment program. The outline must describe a more comprehensive ground water monitoring program than that described in 6 MCAR S 4.9397 D., E. and F. The program must be capable of determining:

1. whether hazardous waste or hazardous waste constituents have entered the ground water;

2. the rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water; and

3. the concentrations of hazardous waste or hazardous waste constituents in the ground water.

B. Comparison of analysis results. For each indicator parameter specified in 6 MCAR S 4.9397 F.2.c. and determined pursuant to 6 MCAR S 4.9397 F.2.d., the owner or operator shall calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with 6 MCAR S 4.9397 F.4., and compare these results with its initial background arithmetic mean. The

comparison must consider individually each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance as described in Code of Federal Regulations, title 40, part 265, appendix IV (1983) to determine statistically significant increases and, in the case of pH, decreases from initial background.

C. Additional sampling. If the comparisons for the upgradient wells made under B. show a significant increase or pH decrease, the owner or operator shall submit this information in accordance with 6 MCAR S 4.9397 H.1.b.

If the comparisons for downgradient wells made under B. show a significant increase or pH decrease, the owner or operator shall then immediately obtain additional ground water samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

D. Notification. Notification requirements are as follows:

1. If the analyses performed under C. confirm the significant increase or pH decrease, the owner or operator shall provide written notice to the director, within seven days of the date of such confirmation, that the facility may be affecting ground water quality.

2. Within 15 days after the notification under 1., the owner or operator shall develop and submit to the director a specific plan, based on the outline required under A. and certified by a qualified geologist or geotechnical engineer, for a ground water quality assessment program at the facility.

3. The plan to be submitted under 2. or 6 MCAR S 4.9397 E.1. must specify:

a. the number, location, and depth of wells;

b. sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;

c. evaluation procedures, including any use of previously gathered ground water quality information; and

d. a schedule of implementation.

4. The owner or operator shall implement the ground water quality assessment plan which satisfies the requirements of 3. and determine:

a. the rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water; and

b. the concentrations of the hazardous waste or hazardous waste constituents in the ground water.

5. The owner or operator shall make the first determination under 4. as soon as technically feasible, and, within 15 days after determination, submit to the director a written report containing an assessment of the ground water quality.

6. If the owner or operator determines, based on the results of the first determination under 4., that no hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he or she may reinstate the indicator evaluation program described in 6 MCAR S 4.9397 F.2.a. and b. If the owner or operator reinstates the indicator evaluation program, he or she shall so notify the director in the report submitted under 5.

7. If the owner or operator determines, based on the first determination under 4., that hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he or she:

a. shall continue to make the determinations required under 4., on a quarterly basis until final closure of the facility, if the ground water quality assessment plan was implemented prior to final closure of the facility; or

b. may cease to make the determinations required under 4., if the ground water quality assessment plan was implemented during the post-closure care period.

E. Completion requirement. Notwithstanding any other provision of this rule, any ground water quality assessment to satisfy the requirements of D.4., which is initiated prior to final closure of the facility must be completed and reported in accordance with D.5.

F. Annual evaluation. Unless the ground water is monitored to satisfy the requirements of D.4., the owner or operator shall evaluate at least annually the data on ground water surface elevations obtained under 6 MCAR S 4.9397 F.5. to determine whether the requirements under 6 MCAR S 4.9397 D. for locating the monitoring wells continues to be satisfied. If the evaluation shows that 6 MCAR S 4.9397 D. is no longer satisfied, the owner or operator shall immediately modify the number, location, or depth of the monitoring wells to bring the ground water monitoring system into compliance with this requirement.

G. Record keeping and reporting. If the ground water is monitored to satisfy the requirements of D.4., the owner or operator shall:

1. keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of D.3., throughout the active life of the facility, and for disposal facilities, throughout the post-closure care period as well; and

2. annually, until final closure of the facility, submit to the director a report containing the results of the ground water quality assessment program which includes, but is not limited to, the calculated or measured rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period. This report must be submitted as part of the annual report.

what else can be included ?

6 MCAR S 4.9399 Closure.

A. Scope. Except as provided otherwise in 6 MCAR S 4.9380, this rule and 6 MCAR S 4.9400 apply to the owners and operators of all hazardous waste facilities.

B. Closure performance standard. The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

C. Submittal of closure plan. The closure plans must be submitted as follows:

1. A copy of the written closure plan and all revisions to the plan must be kept at the facility until closure is completed and certified. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must include:

a. A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of the operation which will be unclosed during the life of the facility and how the requirements of B., 6 MCAR S 4.9400, and the applicable closure requirements of 6 MCAR SS 4.9414 H., 4.9415 E., 4.9416 F., 4.9417 G., 4.9418 F., 4.9420 D., 4.9421 E., 4.9422 E., and 4.9481 F. will be met;

b. An estimate of the maximum inventory of wastes in storage and in treatment at any time during the life of the facility;

c. A description of the steps needed to decontaminate facility equipment during closure; and

d. An estimate of the expected year of closure and a schedule for final closure. The schedule must include the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure.

2. The owner or operator may amend the closure plan at any time during the active life of the facility. The active life of the facility is that period during which wastes are periodically received. The owner or operator shall amend the plan whenever changes in operating plans or facility design affect the closure plan and whenever there is a change in the expected year of closure. The plan must be amended within 60 days of the changes.

3. The owner or operator of a hazardous waste facility

having interim status shall submit a closure plan to the director at least 180 days before the date he or she expects to begin closure. The owner or operator shall submit the closure plan no later than 15 days after:

a. termination of interim status, except when a permit is issued simultaneously with termination of interim status; or

b. issuance of a judicial decree or agency order to cease receiving wastes or close.

4. The director shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments, to request modifications, or to request a public information meeting on the closure plan within 30 days of the date of the notice. In response to a request or at his or her own discretion, the director shall hold a public information meeting whenever a meeting might clarify one or more issues concerning the closure plan. The director shall approve, modify, or disapprove closure plans for facilities having interim status. If the director does not approve the plan, the owner or operator shall submit a modified or new plan for approval within 30 days. The director shall approve or modify this plan. If the director modifies the plan, this modified plan becomes the approved closure plan. A copy of the modified plan shall be mailed to the owner or operator.

6 MCAR S 4.9400 Closure activities.

A. Time allowance to begin closure activities. Within 90 days after receiving the final volume of hazardous waste or within 90 days after approval of the closure plan, the owner or operator shall treat, remove from the site, or dispose on-site all hazardous waste in accordance with the approved closure plan. The director may approve a longer period if the owner or operator demonstrates that he or she has taken and will continue to take all steps to prevent threats to human health and the environment and:

1. the activities required to comply with the approved closure plan will, of necessity, take longer than 90 days to complete; or

2. the facility has the capacity to receive additional waste, there is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site and closure of the facility would be incompatible with continued operation of the site.

If the owner or operator of a facility required to maintain financial assurance for closure, post-closure care, or corrective action fails to make any required payment or to substitute alternative financial assurance when required to do so, the director shall order the owner or operator to begin closure activities.

B. Time extension for closure activities. The owner or operator shall complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of waste or 180 days after approval of the closure plan if that is later. The director may approve a longer closure period if the owner or operator demonstrates he or she has taken and will continue to take all steps to prevent threats to human health and the environment and:

1. the closure activities will, of necessity, take longer than 180 days to complete; or

2. the facility has capacity to receive additional waste, there is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site, and closure of the facility would be incompatible with continued operation of the site.

If operation of the site is recommended, the director may defer completion of closure activities until the new operation is terminated.

C. Disposal or decontamination of equipment. When closure is completed, all facility equipment and structures must have been properly disposed of or decontaminated by removing all hazardous wastes and residues.

D. Certification of closure. When closure is completed, the owner or operator shall submit to the director certification by the owner or operator and by an independent registered

professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

6 MCAR S 4.9401 Post-closure.

A. Scope. This rule and 6 MCAR SS 4.9402-4.9404 apply to the owners and operators of all hazardous waste disposal facilities, except as provided otherwise in 6 MCAR S 4.9380.

B. Submittal of post-closure plan. The post-closure plan must be submitted as follows:

1. The owner or operator of a disposal facility shall have a written post-closure plan. A copy of the plan and all revisions to the plan must be kept at the facility until the post-closure care period begins. This plan must identify the activities which will be carried on after closure and the frequency of these activities, and it must include:

a. a description of the planned ground water monitoring activities and frequencies at which they will be performed;

b. a description of the planned maintenance activities and frequencies at which they will be performed to ensure the integrity of the cap and final cover or other containment structures, where applicable, and the function of the facility monitoring equipment; and

c. the name, address, and telephone number of the person or office to contact about the disposal facility during the post-closure period. This person or office must keep an updated post-closure plan during the post-closure period.

2. The owner or operator may amend the post-closure plan at any time during the active life of the disposal facility or during the post-closure period. The owner or operator shall amend the plan whenever changes in operating plans or facility design, or events which occur during the active life of the facility or during the post-closure period affect the post-closure plan. He or she shall also amend the plan whenever there is a change in the expected year of closure. A request for modification of the post-closure plan must be made to the director within 60 days after the changes in operating plans or

facility design, or the events which affect the post-closure plan occur. This request must include the revised post-closure plan and indicate the reasons for modifying the plan. The request must be made in accordance with the procedures of C. and the director shall take actions in accordance with the procedures required in C.

3. The owner or operator of a facility shall submit the post-closure plan to the director at least 180 days before the date he or she expects to begin closure. The date he or she expects to begin closure must begin immediately after the date on which he or she expects to receive the final volume of wastes. The owner or operator shall submit the plan to the director no later than 15 days after:

a. termination of interim status, except when a permit is issued to the facility simultaneously with termination of interim status; or

b. issuance of a judicial decree or agency order to cease receiving waste or close.

4. The director shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments, to request modification, or to request a public information meeting on the post-closure plan or substantive amendments to the post-closure plan within 30 days of the date of the notice. In response to a request or at his or her own discretion, the director shall hold a public information meeting whenever a meeting might clarify one or more issues concerning the post-closure plan. The director shall approve, modify, or disapprove post-closure plans for facilities having interim status. If the director does not approve the plan, the owner or operator shall submit a modified or new plan for approval within 30 days. The director shall approve or modify this plan. If the director modifies the plan, this modified plan becomes the approved post-closure plan. A copy of the modified plan shall be mailed to the owner or operator.

C. Modification of post-closure period. The post-closure period may be modified during the post-closure care period as

described in 1. and 2.:

1. The owner or operator or any member of the public may petition the director to extend or reduce the post-closure care period or alter the requirements based on cause.

a. The petition must include evidence demonstrating that the secure nature of the facility makes the post-closure care requirements unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan, or that the requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment. Areas which must be considered in demonstrating the secure nature of the facility include leachate or ground water monitoring results, characteristics of the waste, application of advanced technology; or alternative disposal, treatment, or reuse techniques that indicate the facility is secure.

b. These petitions will be considered by the director only when they present new and relevant information. Whenever the director is considering a petition, the director shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments or request a public information meeting within 30 days of the date of the notice. In response to a request or at his or her own discretion, the director shall hold a public information meeting whenever a meeting might clarify one or more issues concerning the post-closure plan. After considering the comments, a final determination shall be issued. The criteria listed in a. shall serve as a basis for the final determination. If the director denies the petition, he or she shall send the petitioner a written response detailing the reason for denial.

2. The director may decide to modify the post-closure plan if necessary to prevent threats to human health and the environment. Extension or reduction of the post-closure care period or alteration of the requirements of the post-closure care period may be proposed based on cause.

The director shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments or request a public information meeting within 30 days of the date of the notice. The director shall in response to a request or at his or her own discretion hold a public information meeting whenever a meeting might clarify one or more issues concerning the post-closure plan. After considering the comments, a final determination shall be issued.

The director shall base the final determination upon the criteria outlined in 1.a. A modification of the post-closure plan may include, when appropriate, the temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the director shall determine whether the requirements should be permanently discontinued or reinstated to prevent threats to human health and the environment.

6 MCAR S 4.9402 Post-closure care and use of property.

A. Post-closure care requirements. Post-closure care must continue for 30 years after the date of completing closure and must consist of at least ground water monitoring and reporting and the maintenance of monitoring and waste containment systems, as applicable.

The director may reduce the post-closure care period to less than 30 years if it is found that the reduced period is sufficient to protect human health and the environment. This determination must be based on leachate or ground water monitoring results, waste characteristics, application of advanced technology, or alternative disposal, treatment, or reuse techniques indicating the facility is secure.

Prior to the time that the post-closure care period is due to expire, the director may extend the post-closure care period if it is found that the extended period is necessary to protect human health and the environment. This determination must be based on leachate or groundwater monitoring results which indicate a potential for migration of wastes at levels which may be harmful to the environment.

All post-closure care activities must be in accordance with the provisions of the approved post-closure plan.

B. Continuation of security requirements. The director may require, at closure, continuation of any of the security requirements during part of or all of the post-closure period after the date of completing closure when wastes may remain exposed after completion of closure or when access by the public or domestic livestock may pose a hazard to human health.

C. Post-closure use of property. Post-closure use of property on or in which hazardous wastes remain after closure must never be allowed by the owner or operator to disturb the integrity of the final cover, liners, or any other components of any containment system or the function of the facility's monitoring system, unless the owner or operator can demonstrate to the director either in the post-closure plan or by protection that the disturbance:

1. is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

2. is necessary to reduce a threat to human health or the environment.

6 MCAR S 4.9403 Notice to local land authority.

Within 90 days after closure is completed, the owner or operator of a disposal facility shall submit to the local zoning authority or the authority with jurisdiction over local land use and to the director a survey plat indicating the location and dimensions of landfill cells or other disposal areas with respect to permanently surveyed bench marks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority or authority with jurisdiction over local land use must contain a prominently displayed note which states the owner's or operator's obligation to restrict disturbance of the site as specified. In addition, the owner or operator shall submit to the local zoning authority or the authority with jurisdiction over local land use and to the director a record of the type, location, and quantity of

hazardous waste disposed of within each cell or area of the facility. For waste disposed of before January 12, 1981, the owner or operator shall identify the type, location, and quantity of the waste to the best of his knowledge and in accordance with any records he has kept. Any changes in the type, location, or quantity of hazardous waste disposed of within each cell or area of the facility that occur after the survey plat and record of waste have been filed must be reported to the local zoning authority or the authority with jurisdiction over local land use and to the director.

6 MCAR S 4.9404 Notice in deed to property.

A. Deed notation. The owner of the property on which a disposal facility is located shall record, in accordance with state law, a notation on the deed to the facility property, or on another instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

1. the land has been used to manage hazardous waste;

2. the land use is restricted; and

3. the survey plat and record of the type, location, and quantity of hazardous waste disposed of within each cell or area of the facility required in 6 MCAR S 4.9403 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the director.

B. Changes to deed. If at any time the owner or operator or any subsequent owner of the land upon which a hazardous waste facility was located removes the waste and waste residues, the liner, if any, and all contaminated underlying and surrounding soil, he or she may remove the notation on the deed to the facility property or other instrument normally examined during title search, or he or she may add a notation to the deed or instrument indicating the removal of the waste. Upon removing the waste and waste residue; the liner, if any; and the contaminated soil, the owner or operator, unless he or she can demonstrate that any waste removed is not a hazardous waste, becomes a generator of hazardous waste and shall manage it in

accordance with all applicable requirements of 6 MCAR SS 4.9100-4.9560.

6 MCAR S 4.9405 Financial requirements.

A. Scope. The requirements of 6 MCAR SS 4.9406, 4.9407, and 4.9411-4.9413 apply to owners and operators of hazardous waste facilities except as provided otherwise in this rule or in 6 MCAR S 4.9380.

The requirements of 6 MCAR SS 4.9408-4.9410 apply only to owners and operators of disposal facilities.

The state and the federal government are exempt from the requirements of 6 MCAR SS 4.9405-4.9413.

B. Definitions. Definitions are as follows:

1. When used in 6 MCAR SS 4.9405-4.9413, the following terms have the meanings given.

a. "Closure plan" means the plan for closure prepared in accordance with the requirements of 6 MCAR S 4.9399.

b. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR S 4.9406 A., B., and C.

c. "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR S 4.9408 A., B., and C.

d. "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

e. "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of 6 MCAR SS 4.9401-4.9404.

2. The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The following definitions are intended to assist in the understanding of these rules and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices:

a. "Assets" means all existing and all probable future

economic benefits obtained or controlled by a particular entity.

b. "Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

c. "Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

d. "Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

e. "Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

f. "Net working capital" means current assets minus current liabilities.

g. "Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

h. "Tangible net worth" means the tangible assets that remain after deducting liabilities; these assets do not include intangibles such as goodwill and rights to patents or royalties.

3. In the liability insurance requirements, the terms "bodily injury" and "property damage" have the meanings given them by applicable state law. However, these terms do not include liabilities which, consistent with standard industry practice, are excluded from coverage in liability policies for bodily injury and property damage. The agency intends the meanings of other terms used in the liability insurance requirements to be consistent with common meanings within the insurance industry. The definitions given in a.-d. of several of the terms are intended to assist in the understanding of these rules and are not intended to limit their meanings in a way that conflicts with general insurance industry usage:

a. "Accidental occurrence" means an accident,

including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

b. "Legal defense costs" means expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

c. "Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

d. "Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

6 MCAR S 4.9406 Cost estimate for facility closure.

A. Cost estimate requirements. The owner or operator shall prepare a written estimate, in current dollars, of the cost of closing the facility in accordance with the closure plan in 6 MCAR S 4.9399. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

B. Yearly update of cost estimate. The owner or operator shall adjust the closure cost estimate for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made as specified in 1. and 2. using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year.

Adjustments must be made as follows:

1. The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

C. Cost estimate revisions. The owner or operator shall revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost extimate must be adjusted for inflation as specified in B.

D. Record retention. The owner or operator shall keep the following at the facility during the operating life of the facility: the latest closure cost estimate prepared in accordance with A. and C. and, when this estimate has been adjusted in accordance with B., the latest adjusted closure cost estimate.

6 MCAR S 4.9407 Financial assurance for facility closure.

An owner or operator of a facility shall establish financial assurance for closure of the facility by choosing from the options specified in A.-E.

A. Closure trust fund. Requirements for closure trust funds are as follows:

1. An owner or operator may satisfy the requirements of this rule by establishing a closure trust fund which conforms to the requirements of 1.-13., and by submitting an originally signed duplicate of the trust agreement to the director. The trustee must 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.

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 A.1.-1, and the trust agreement must be accompanied by a formal certification of acknowledgement as shown in Exhibit 6 MCAR S 4.9314 A.2.-2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by the owner or operator of a facility required to establish financial assurance for closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) over the 20 years beginning the effective date of Code of Federal Regulations, title 40, section 265.143 (1983), or over the

remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund must be made as described in a. and b.:

a. The first payment must be made by the effective date of Code of Federal Regulations, title 40, section 265.143 (1983), except as provided in 6. The first payment must be at least equal to the current closure cost estimate, except as provided in F., divided by the number of years in the pay-in period.

b. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment.

4. Payments into the trust fund must be made annually by the owner or operator of a facility which was not required to establish financial assurance for closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for closure under these rules over the 20 years beginning with the effective date of 6 MCAR SS 4.9405-4.9413, or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. The first payment must be made within 90 days of the effective date of 6 MCAR SS 4.9405-4.9413. The first payment must be at least equal to the current closure cost estimate, except as provided in F., divided by the number of years in the pay-in period. Subsequent payments must be made as specified in 3.b. The amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

5. The owner or operator may accelerate payments into the trust fund or may deposit the full amount of the current closure

cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 3. or 4.

6. If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this rule, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in 3. or 4.

7. After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate and submit a receipt from the trustee for this payment to the director, or obtain other financial assurance as specified in this rule to cover the difference.

8. If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the director for release of the amount in excess of the current closure cost estimate.

9. If an owner or operator substitutes other financial assurance as specified in this rule for all or part of the trust fund, he or she may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

10. The trustee shall notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust, if no payment is received from the owner or operator during that period. Within 60 days after

receipt by both the owner or operator and the director of a notice of nonpayment of any payment required by this rule, the owner or operator shall:

a. make the required payment;

b. provide alternative financial assurance as specified in this rule and obtain the director's written approval of the assurance provided; or

c. stop accepting waste and begin closure of the facility.

11. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 8. or 9., the director shall instruct the trustee to release to the owner or operator funds as the director specifies in writing.

12. After beginning final closure, an owner or operator or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for closure activities, the director shall determine whether the closure expenditures comply with the closure plan or are otherwise justified, and if so, the director shall instruct the trustee to make reimbursement in amounts as the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the director may withhold reimbursement of the amounts as deemed prudent until it is determined, under H., that the owner or operator is no longer required to maintain financial assurance for closure.

13. The director shall agree to termination of the trust if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

B. Surety bond guaranteeing payment into a closure trust fund. Requirements for surety bonds that guarantee payment into a closure trust fund are as follows:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond which conforms to the requirements of 1.-9., and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule, shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A. except that: an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and until the standby trust fund is funded pursuant to the requirements of B., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A;

b. updating of Schedule A of the trust agreement to show current closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility;

b. fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the director, the agency, or a court of competent jurisdiction; or

c. provide alternate financial assurance as specified in this rule and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety becomes liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in F.

7. Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the director.

when approved

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent based on receipt of evidence of alternate financial assurance as specified in this rule.

C. Closure letter of credit. Requirements for closure letters of credit are as follows:

1. An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of 1.-10., and by submitting

the letter to the director. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5.

3. An owner or operator who uses a letter of credit to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director, shall be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements of the trust fund specified in A. except that: an originally signed duplicate of the trust agreement must be submitted to the director with the letter of credit; and unless the standby trust fund is funded according to C., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the identification number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution

notifies both the owner or operator and the director, by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days begins on the date when both the owner or operator and the director have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in F.

7. Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the director or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the director.

8. Following a determination by the director that the owner or operator has failed to perform final closure in accordance with the closure plan and other interim status requirements when required to do so, the director may draw on the letter of credit.

9. If the owner or operator does not establish alternate financial assurance as specified in this rule and obtain written approval of the alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director shall draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of an extension the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this rule and obtain written approval of such assurance from the director.

10. The director shall return the letter of credit to the issuing institution for termination if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

D. Closure insurance. Requirements for closure insurance are as follows:

1. An owner or operator may satisfy the requirements of this rule by obtaining closure insurance which conforms to the requirements of 1.-10., and by submitting a certificate of the insurance to the director by the effective date of this rule. By the effective date of 6 MCAR SS 4.9405-4.9413, the owner or operator of a facility which is not required to establish financial assurance for closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for closure under these rules shall submit to the director a letter from an insurer stating that the insurer is considering issuance of closure insurance conforming to the requirements of 1.-10. to the owner or operator. Within 90 days after the effective date of 6 MCAR SS 4.9405-4.9413, the owner or operator of a facility which is not required to establish financial assurance for closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for closure under these rules shall submit the certificate of insurance to the director, or establish other financial assurance as specified in this rule. The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6.

3. The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate,

except as provided in F. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer do not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director, to such party or parties as the director specifies.

5. After beginning final closure, an owner or operator, or other person authorized to perform closure, may request reimbursement for closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, the director shall instruct the insurer to make reimbursement in the amounts the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, the director may withhold reimbursement of the amounts deemed prudent until it is determined in accordance with H. that the owner or operator is no longer required to maintain financial assurance for closure of the facility.

6. The owner or operator shall maintain the policy in full force and effect until the director consents to termination of the policy by the owner or operator as specified in 10.

7. Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, if the consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for

failure to pay the premium. The automatic renewal of the policy must provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect if on or before the date of expiration one or more of the events specified in a.-e. occurs:

a. the agency deems the facility abandoned;

b. interim status is terminated or revoked;

c. closure is ordered by the director, the agency, or a court of competent jurisdicton;

d. the owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy;

e. the premium due is paid.

9. Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the director.

10. The director shall give written consent to the owner or operator to terminate the insurance policy if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the

requirements of this rule in accordance with H.

E. Financial test and corporate guarantee for closure. The financial test and corporate guarantee for closure is as follows:

1. An owner or operator may satisfy the requirements of this rule by demonstrating passage of a financial test as specified in 1.-12. To pass this test the owner or operator shall meet the criteria of either 2. or 3.

2. The owner or operator shall have:

a. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;

b. net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

3. The owner or operator shall have:

a. a current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

4. The phrase "current closure and post-closure cost estimates" as used in 1.-3. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer, as specified in Exhibit 6 MCAR S 4.9314 F.-7.

5. To demonstrate that he or she meets this test, the

owner or operator shall submit the following items to the director:

a. a letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 F.-7;

b. a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

c. a special report from the owner's or operator's independent certified public accountant to the owner or operator stating that: he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements; and in connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted.

6. The owner or operator of a facility which is not required to establish financial assurance for closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for closure under these rules may obtain an extension of the time allowed for submission of the documents specified in 5. if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of 6 MCAR SS 4.9405-4.9413 and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension ends no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer shall send, by the effective date of 6 MCAR SS 4.9405-4.9413, a letter to the director. This letter from the chief financial officer must:

a. request the extension;

b. certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

c. specify for each facility to be covered by the test

the identification number, name, address, and current closure and post-closure cost estimates to be covered by the test;

d. specify the date ending the owner's or operator's last complete fiscal year before the effective date of 6 MCAR SS 4.9405-4.9413;

e. specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in 5.; and

f. certify that the year-end financial statements of the owner or operator for the fiscal year will be audited by an independent certified public accountant.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall send notice to the director of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of the fiscal year.

9. The director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 1., require reports of financial condition at any time from the owner or operator in addition to those specified in 5. If the director finds, on the basis of these reports or other information, that the owner or operator no longer meets the requirements of 1., the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the finding.

10. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the

independent certified public accountant in his or her report on examination of the owner's or operator's financial statements, required by 5.b. An adverse opinion or disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

11. The owner or operator is no longer required to submit the items specified in 5. if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

12. An owner or operator may meet the requirements of this rule by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owner or operator in 1.-10.; and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9. The corporate guarantee must accompany the items sent to the director as specified in 5. The terms of the corporate guarantee must provide that:

a. If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in A. in the name of the owner or operator.

b. The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or

operator and the director, as evidenced by the return receipts.

c. If the owner or operator fails to provide alternate financial assurance as specified in this rule and obtain the written approval of the alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide the alternate financial assurance in the name of the owner or operator.

F. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in A.-D., respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the mechanisms to provide for closure of the facility.

G. Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this rule to meet the requirements of this rule for more than one facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the identification number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the director

may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

H. Release of the owner or operator from the requirements of this rule. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the agency shall notify the owner or operator in writing that he or she is no longer required by this rule to maintain financial assurance for closure of the particular facility, unless the agency has reason to believe that closure has not been in accordance with the closure plan.

6 MCAR S 4.9408 Cost estimate for post-closure care.

A. Cost estimate requirements. The owner or operator of a disposal facility shall prepare a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure requirements in 6 MCAR SS 4.9401-4.9404. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under 6 MCAR S 4.9402.

B. Yearly update of cost estimate. During the operating life of the facility, the owner or operator shall adjust the post-closure cost estimate for inflation within 30 days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made as specified in 1. and 2. using an inflation factor derived from the annual Implicit Price Deflator for Gross National Product as found in the "Survey of Current Business" issued by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator of the previous year. Adjustments must be made as follows:

1. The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

C. Cost estimate revisions. The owner or operator shall revise the post-closure cost estimate during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in B.

D. Record retention. The owner or operator shall keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with A. and C. and, when this estimate has been adjusted in accordance with B., the latest adjusted post-closure cost estimate.

6 MCAR S 4.9409 Financial assurance for post-closure care.

An owner or operator of a disposal facility shall establish financial assurance for post-closure care of the facility by choosing from the options specified in A.-E.

A. Post-closure trust fund. Requirements of a post-closure trust fund are as follows:

1. An owner or operator may satisfy the requirements of this rule by establishing a post-closure trust fund which conforms to the requirements of 1.-14., and by submitting an originally signed duplicate of the trust agreement to the director. The trustee must 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.

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 A.1.-1, and the trust agreement must be accompanied by a formal certification of acknowledgement, as shown in Exhibit 6 MCAR S 4.9314 A.2.-2. Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by

the owner or operator of a facility required to establish financial assurance for post-closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) over the 20 years beginning with the effective date of Code of Federal Regulations, title 40, section 265.145 (1983) or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund must be made as described in a. and b.:

a. The first payment must be made by the effective date of Code of Federal Regulations, title 40, section 265.145 (1983) except as provided in 6. The first payment must be at least equal to the current post-closure cost estimate, except as provided in F., divided by the pay-in period.

b. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE-CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

4. Payments into the trust fund must be made annually by the owner or operator of a facility which was not required to establish financial assurance for post-closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for post-closure under these rules over the 20 years beginning with the effective date of 6 MCAR SS 4.9405-4.9413, or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. The first payment must be made within 90 days of the effective date of 6 MCAR SS 4.9405-4.9413. The

first payment must be at least equal to the current post-closure cost estimate, except as provided in F., divided by the number of years in the pay-in period. Subsequent payments must be made as specified in 3.b.

5. The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 3. or 4.

6. If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this rule, the first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in 3. or 4.

7. After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate and submit a receipt from the trustee for this payment to the director, or obtain other financial assurance as specified in this rule to cover the difference.

8. During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the director for release of the amount in excess of the current post-closure cost estimate.

9. If an owner or operator substitutes other financial assurance as specified in this rule for all or part of the trust fund, he or she may submit a written request to the director for

release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

10. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 8. or 9., the director shall instruct the trustee to release to the owner or operator such funds as the director specifies in writing.

11. During the period of post-closure care, the director may approve a release of funds if the owner or operator demonstrates to the director that the value of the trust fund exceeds the remaining cost of post-closure care.

12. The trustee shall notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust, if no payment is received from the owner or operator during that period. Within 60 days after receipt by both the owner or operator and the director of a notice of nonpayment of any payment required by this rule, the owner or operator shall:

a. make the required payment;

b. provide alternative financial assurance as specified in this rule and obtain the director's written approval of the assurance provided; or

c. stop accepting waste and begin closure of the facility.

13. An owner or operator or other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for post-closure activities, the director shall determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, the director shall instruct the trustee to make reimbursement in the amounts the director specifies in writing.

14. The director shall agree to termination of the trust if:

a. an owner or operator substitutes alternate

financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

B. Surety bond guaranteeing payment into a post-closure trust fund. The following are requirements for surety bonds that guarantee payment into a post-closure trust fund:

1. An owner or operator may satisfy the requirements of this rule by obtaining a surety bond which conforms to the requirements of 1.-9., and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1.

2. The wording of the surety bond must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 B.-3.

3. The owner or operator who uses a surety bond to satisfy the requirements of this rule, shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements specified in A., except that: an originally signed duplicate of the trust agreement must be submitted to the director with the surety bond; and until the standby trust fund is funded pursuant to the requirements of B., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current post-closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

a. fund the standby trust fund in an amount equal to

the penal sum of the bond before the beginning of final closure of the facility;

b. fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin closure is issued by the director, the agency, or a court of competent jurisdiction; or

c. provide alternate financial assurance as specified in this rule, and obtain the director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in F.

7. Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the director has given prior written consent based on his or her receipt of evidence of alternate financial assurance as

specified in this rule.

C. Post-closure letter of credit. The following are requirements for post-closure letters of credit:

1. An owner or operator may satisfy the requirements of this rule by obtaining an irrevocable standby letter of credit which conforms to the requirements of 1.-11., and by submitting the letter to the director. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 D.-5.

3. An owner or operator who uses a letter of credit to satisfy the requirements of this rule shall also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the director will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the director. This standby trust fund must meet the requirements of the trust fund specified in A. except that: an originally signed duplicate of the trust agreement must be submitted to the director with the letter of credit; and unless the standby trust fund is funded pursuant to the requirements of C., the requirements specified in a.-d. are not required:

a. payments into the trust fund as specified in A.;

b. updating of Schedule A of the trust agreement to show current post-closure cost estimates;

c. annual valuations as required by the trust agreement;

d. notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the identification number, name, and address of the facility, and the amount of funds assured for

post-closure care of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the director have received the notice, as evidenced by both the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in F.

7. Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the director, or to obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

8. During the period of post-closure care, the director may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the director that the amount exceeds the remaining cost of post-closure care.

9. Following a determination that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other interim status requirements, the director may draw on the letter of credit.

10. If the owner or operator does not establish alternate financial assurance as specified in this rule and obtain written approval of the alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the director shall draw on the letter of credit. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of an extension the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this rule and obtain written approval of the assurance from the director.

11. The director shall return the letter of credit to the issuing institution for termination if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

D. Post-closure insurance. The following requirements apply to post-closure insurance:

1. An owner or operator may satisfy the requirements of this rule by obtaining post-closure insurance which conforms to the requirements of 1.-11., and by submitting a certificate of the insurance to the director by the effective date of this rule. By the effective date of 6 MCAR SS 4.9405-4.9413, the owner or operator of a facility which is not required to establish financial assurance for post-closure care under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for post-closure care under these rules shall submit to the director by certified mail a letter from an insurer stating that the insurer is considering issuance of post-closure insurance conforming to the requirements of 1.-11., to the owner or operator. Within 90 days after the effective date of 6 MCAR SS 4.9405-4.9413, the owner or operator of a facility which is not required to

establish financial assurance for post-closure care under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for post-closure care under these rules shall submit the certificate of insurance to the director, or establish other financial assurance as specified in this rule. The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 E.-6.

3. The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in F. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the director to the party or parties the agency specifies.

5. An owner or operator or other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for post-closure activities, the director shall determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he or she shall instruct the insurer to make reimbursement in the amounts the director specifies in writing.

6. The owner or operator shall maintain the policy in full force and effect until the director consents to termination of the policy by the owner or operator as specified in 11.

7. Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, if the consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the director, and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration one or more of the events specified in a.-e. occurs:

a. the agency deems the facility abandoned;

b. interim status is terminated or revoked;

c. closure is ordered by the director, the agency, or a court of competent jurisdiction;

d. the owner or operator is named as debtor in a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy;

e. the premium due is paid.

9. Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of

the increase to the director, or obtain other financial assurance as specified in this rule to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the director.

10. Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer shall thereafter annually increase the face amount of the policy. The increase must be equivalent to the face amounts of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or the equivalent coupon-issue yield announced by the United States Treasury for 26-week treasury securities.

11. The director shall give written consent to the owner or operator to terminate the insurance policy if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

E. Financial test and corporate guarantee for post-closure care. The following is the financial test and corporate guarantee for post-closure care:

1. An owner or operator may satisfy the requirements of this rule by demonstrating that he or she passes a financial test as specified in 1.-13. To pass this test the owner or operator shall meet the criteria either of 2. or 3.

2. The owner or operator shall have:

a. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;

b. net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

3. The owner or operator shall have:

a. a current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

b. tangible net worth at least six times the sum of the current closure and post-closure cost estimates;

c. tangible net worth of at least $10,000,000; and

d. assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

4. The phrase "current closure and post-closure cost estimates" as used in 1.-3., refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer, as specified in Exhibit 6 MCAR S 4.9314 F.-7.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the director:

a. a letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 F.-7;

b. a copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

c. a special report from the owner's or operator's independent certified public accountant to the owner or operator stating that: he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements from the latest fiscal year with the amounts in the financial statements; and in connection with that procedure, no matters came to his or her attention which caused him or her to

believe that the specified data should be adjusted.

6. The owner or operator of a facility which is not required to establish financial assurance for post-closure under Code of Federal Regulations, title 40, part 265, subpart H (1983) but is required to establish financial assurance for post-closure care under these rules may obtain an extension of the time allowed for submission of the documents specified in 5. if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of 6 MCAR SS 4.9405-4.9413 and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension ends no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer shall send, by the effective date of 6 MCAR SS 4.9405-4.9413, a letter to the director. This letter from the chief financial officer must:

a. request the extension;

b. certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

c. specify for each facility to be covered by the test the identification number, name, address, and the current closure and post-closure cost estimates to be covered by the test;

d. specify the date ending the owner's or operator's latest complete fiscal year before the effective date of 6 MCAR SS 4.9405-4.9413;

e. specify the date, no later than 90 days after the end of the fiscal year, when he will submit the documents specified in 5.; and

f. certify that the year-end financial statements of the owner or operator for the fiscal year will be audited by an independent certified public accountant.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items

specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall send notice to the director of intent to establish alternate financial assurance as specified in this rule. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of the fiscal year.

9. The director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 1., require reports of financial condition at any time from the owner or operator in addition to those specified in 5. If the director finds, on the basis of these reports or other information, that the owner or operator no longer meets the requirements of 1., the owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the finding.

10. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this rule within 30 days after notification of the disallowance.

11. During the period of post-closure care, the director may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the director that the amount of the cost estimate exceeds the remaining cost of post-closure care.

12. The owner or operator is no longer required to submit

the items specified in 5. if:

a. an owner or operator substitutes alternate financial assurance as specified in this rule; or

b. the agency releases the owner or operator from the requirements of this rule in accordance with H.

13. An owner or operator may meet the requirements of this rule by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in 1.-11., and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 H.-9. The corporate guarantee must accompany the items sent to the director as specified in 5. The terms of the corporate guarantee must provide that:

a. If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in A. in the name of the owner or operator.

b. The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the director, as evidenced by the return receipts.

c. If the owner or operator fails to provide alternate financial assurance as specified in this rule, and obtain the written approval of the alternate assurance from the director within 90 days after receipt by both the owner or operator and the director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide the alternate financial assurance in the name of the owner or operator.

F. Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this rule by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, and insurance. The mechanisms must be as specified in A.-D., respectively, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the mechanisms to provide for post-closure care of the facility.

G. Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this rule to meet the requirements of this rule for more than one facility. Evidence of financial assurance submitted to the director, must include a list showing, for each facility, the identification number, name, address, and the amount of funds for post-closure care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the director may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

H. Release of the owner or operator from the requirements of this rule. When an owner or operator has completed, (to the satisfaction of the agency,) all post-closure care requirements in accordance with the post-closure plan, the agency shall, at the request of the owner or operator, notify him or her in

writing that he or she is no longer required by this rule to maintain financial assurance for post-closure care of the particular facility.

6 MCAR S 4.9410 Use of a mechanism for financial assurance of both closure and post-closure care.

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both 6 MCAR S 4.9407 and 6 MCAR S 4.9409. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

6 MCAR S 4.9411 Liability requirements.

A. Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of these facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in 1., 2., and 3.:

1. An owner or operator may demonstrate the required liabilty coverage by having liability insurance as specified in a. and b.:

a. Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in

Exhibit 6 MCAR S 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 J.-11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the director. If requested by the director, the owner or operator shall provide a signed duplicate original of the insurance policy.

b. Each insurance policy must be issued by an insurer which is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

2. An owner or operator may meet the requirements of this rule by passing a financial test for liability coverage as specified in E.

3. An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage demonstrated must total at least the minimum amounts required by A.

B. Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of these facilities, shall demonstrate financial responsibility for bodily damage and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways as specified in 1., 2., and 3.:

1. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in a. and b.:

a. Each insurance policy must be amended by attachment

of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR S 4.9314 J.-11. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the director. If requested by the director, the owner or operator shall provide a signed duplicate original of the insurance policy.

b. Each insurance policy must be issued by an insurer which is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

2. An owner or operator may meet the requirements of this rule by passing a financial test for liability coverage as specified in E.

3. An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this rule. The amounts of coverage must total at least the minimum amounts required by A.

4. The required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates specified in a., b., c., and d. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding the effective date of 6 MCAR SS 4.9405-4.9413, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues determines the date by which the coverage must be demonstrated. The following dates apply:

a. for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues totalling $10,000,000 or

more, six months after the effective date of 6 MCAR SS 4.9405-4.9413;

b. for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after the effective date of 6 MCAR SS 4.9405-4.9413;

c. all other owners or operators not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) 30 months after the effective date of 6 MCAR SS 4.9405-4.9413;

d. for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 265.147 (1983).

5. By the date six months after the effective date of 6 MCAR SS 4.9405-4.9413, an owner or operator who is within either of categories b. or c. shall, unless he or she has demonstrated liability coverage for nonsudden accidental occurrences, send a letter to the director, stating the date by which he or she plans to establish the coverage.

C. Adjustment of liability requirements. If an owner or operator can demonstrate to the satisfaction of the director that the levels of financial responsibility required by A. or B. are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain an adjustment from the director. The request for an adjustment must be submitted in writing to the director. If granted, the adjustment takes the form of an adjusted level of required liability coverage, such level to be based on the director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The director may require an owner or operator who requests an adjustment to provide technical and engineering

information deemed necessary by the director, to determine a level of financial responsibility other than that required by A. or B.

If the director determines that the levels of financial responsibility required by A. or B. are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the director may adjust the level of financial responsibility required under A. or B., as may be necessary to protect human health and the environment. This adjusted level will be based on the director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the director determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, the director may require that an owner or operator of the facility comply with B. An owner or operator shall furnish to the director, within a reasonable time, any information which the director requests to determine whether cause exists for adjustments of level or type of coverage.

The director shall process an adjustment of the level of required coverage as if it were a permit modification in accordance with the agency's permitting procedures. Notwithstanding any other provision, the director may hold a public information meeting at his or her discretion or whenever the director finds, on the basis of requests for a public information meeting, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.

D. Period of coverage. An owner or operator shall continuously provide liability coverage for a facility as required by this rule, until certifications of closure of the facility, as specified in 6 MCAR S 4.9400, are received by the director.

E. Financial test for liability coverage.

1. An owner or operator may satisfy the requirements of this rule, by demonstrating that he or she passes a financial test as specified in 1.-9. To pass this test the owner or operator shall meet the criteria of 2. or 3.:

2. The owner or operator shall have:

a. net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test;

b. tangible net worth of at least $10,000,000; and

c. assets in the United States amounting to either at least 90 percent of his or her total assets, or at least six times the amount of liability coverage to be demonstrated by this test.

3. The owner or operator shall have:

a. a current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's;

b. tangible net worth at least $10,000,000;

c. tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

d. assets in the United States amounting to either at least 90 percent of his total assets, or at least six times the amount of liability coverage to be demonstrated by this test.

4. The phrase "amount of liability coverage" as used in 1.-3., refers to the annual aggregate amounts for which coverage is required under A. and B.

5. To demonstrate that he or she meets this test, the owner or operator shall submit the following three items to the director:

a. A letter signed by the owner's or operator's chief financial officer and worded as specified in Exhibit 6 MCAR S 4.9314 G.-8. If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by 6 MCAR SS 4.9306 F., 4.9308 F., 4.9407 E., and 4.9409 E., and liability coverage, he or she shall submit

the letter specified in Exhibit 6 MCAR S 4.9314 G.-8 to cover both forms of financial responsibility; a separate letter as specified in Exhibit 6 MCAR S 4.9314 F.-7 is not required.

b. A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

c. A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that he or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements, and in connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted.

6. The owner or operator of a facility which is not required to have liability insurance under Code of Federal Regulations, title 40, section 265.147 (1983) may obtain a one-time extension of the time allowed for submission of the documents specified in 5. if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of 6 MCAR SS 4.9405-4.9413, and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer shall send, by the effective date of 6 MCAR SS 4.9405-4.9413, a letter to the director. This letter from the chief financial officer must:

a. request the extension;

b. certify that he or she has grounds to believe that the owner or operator meets the criteria of the financial test;

c. specify for each facility to be covered by the test the identification number, name, address, the amount of liability coverage and, when applicable, current closure and post-closure cost estimates to be covered by the test;

d. specify the date ending the owner's or operator's last complete fiscal year before the effective date of 6 MCAR SS 4.9405-4.9413;

e. specify the date, no later than 90 days after the end of the fiscal year, when he or she will submit the documents specified in 5.; and

f. certify that the year-end financial statements of the owner or operator for the fiscal year will be audited by an independent certified public accountant.

7. After the initial submission of items specified in 5., the owner or operator shall send updated information to the director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 5.

8. If the owner or operator no longer meets the requirements of 1., he or she shall obtain insurance for the entire amount of required liability coverage as specified in this rule. Evidence of insurance must be submitted to the director within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

9. The director may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements required by 5.b. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The director shall evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of insurance for the entire amount of required liability coverage as specified in this rule within 30 days after notification of disallowance.

6 MCAR S 4.9412 Incapacity of owners or operators, guarantors, or financial institutions.

A. Notification of bankruptcy. An owner or operator shall notify the director by certified mail of the commencement of a voluntary or involuntary proceeding under United States Code,

title 11, Bankruptcy, naming the owner or operator as debtor, within ten days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in 6 MCAR SS 4.9407 E. and 4.9409 E. shall make a notification if he or she is named as debtor, as required under the terms of the corporate guarantee.

B. Incapacity of financial institutions. An owner or operator who fulfills the requirements of 6 MCAR SS 4.9407, 4.9409, or 4.9411 by obtaining a trust fund, surety bond, letter of credit, or insurance policy is without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing the surety bond, letter of credit, or insurance policy to issue the instruments. The owner or operator shall establish other financial assurance or liability coverage within 60 days after such an event.

6 MCAR S 4.9413 Wording of instruments.

Instruments used to satisfy the requirements of 6 MCAR SS 4.9405-4.9412, must be worded as specified in 6 MCAR S 4.9314.

6 MCAR S 4.9414 Use and management of containers.

A. Scope. This rule applies to owners and operators of hazardous waste facilities that store containers of hazardous waste, except as 6 MCAR S 4.9380 provides otherwise. Under 6 MCAR SS 4.9130 B.-D. and 4.9134 D.3., if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in 6 MCAR S 4.9130 B.-D. In that event, management of the container is exempt from the requirements of this rule.

B. Condition of containers. Containers used to store hazardous waste must meet the following requirements:

1. be of sturdy leak-proof construction, adequate wall thickness, adequate weld, hinge, and seam strength and sufficient strength to withstand side and bottom shock, while filled, without impairment of the ability of the container to

fully contain the hazardous waste; and

2. have lids, caps, hinges, or other closure devices of sufficient strength and construction so that when closed they will withstand dropping, overturning, or other shock without impairment of the container's ability to fully contain the hazardous waste.

If a container holding hazardous waste does not meet the requirements of 1. and 2. or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that does meet the requirements of 1. and 2., or manage the waste in some other way that complies with the requirements of this rule.

C. Compatability of waste with containers. The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored and other substances that the container may foreseeably contact, so that the ability of the container to contain the waste is not impaired.

D. Management of containers. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. Reuse of containers is governed by United States Department of Transportation regulations, including those set forth in Code of Federal Regulations, title 49, section 173.28 (1983).

The owner or operator shall store containers which if exposed to moisture or direct sunlight may create a hazardous condition or adversely affect the container's ability to contain the hazardous waste, in an area with overhead roofing or other covering that does not obstruct the visibility of the labels.

E. Inspections. The owner or operator shall inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.

F. Special requirements for incompatible wastes.

Incompatible wastes or incompatible wastes and materials must not be placed in the same container, unless compliance with 6 MCAR S 4.9384 B. is maintained.

Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material unless compliance with 6 MCAR S 4.9384 B. is maintained.

A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device. The purpose of this requirement is to prevent fires, explosions, gaseous emissions, leaching or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.

G. Special requirements for ignitable or reactive waste. Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

H. Closure. At closure, all hazardous waste and hazardous waste residues must be removed from the storage area. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed. At closure and throughout the operating period, unless the owner or operator can demonstrate that the waste removed from the storage area is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560.

6 MCAR S 4.9415 Tanks.

A. Scope. This rule applies to owners and operators of facilities that use tanks to treat or store hazardous waste, except as 6 MCAR S 4.9380 provides otherwise.

B. General operating requirements.

Treatment or storage of hazardous waste in tanks must comply with 6 MCAR S 4.9384 B.

Hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank, its closures, or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

Uncovered tanks must be operated to ensure at least 60 centimeters (two feet) of freeboard, unless the tank is equipped with a containment structure, a drainage control system, or a diversion structure with a capacity that equals or exceeds the volume of the top 60 centimeters (two feet) of the tank.

When hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow. These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure.

C. Waste analysis and trial tests. In addition to the waste analysis required by 6 MCAR S 4.9385, whenever a tank is to be used to chemically treat or store a hazardous waste which is substantially different from waste previously treated or stored in that tank, or chemically treat hazardous waste with a substantially different process than any previously used in that tank, the owner or operator shall, before treating or storing the different waste or using the different process:

1. conduct waste analyses and trial treatment or storage tests; or

2. obtain written, documented information on similar storage or treatment of similar waste under similar operating conditions to show that this proposed treatment or storage will meet all applicable requirements of B. As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with F. and G. As required by 6 MCAR S 4.9394, the owner or operator shall place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.

D. Inspection. The owner or operator of a tank shall inspect, where possible:

1. discharge control equipment, at least once each operating day, to ensure that it is in good working order;

2. data gathered from monitoring equipment, at least once each operating day, to ensure that the tank is being operated according to its design;

3. the level of waste in the tank, at least once each operating day, to ensure compliance with B.;

4. the construction materials of the tank, at least weekly, to detect corrosion or leaking of fixtures or seams; and

5. the construction materials of, and the area immediately surrounding, discharge confinement structures, at least weekly, to detect erosion or obvious signs of leakage. As required by 6 MCAR S 4.9382 E. the owner or operator shall remedy any deterioration or malfunction he or she finds.

E. Closure. At closure, all hazardous waste and hazardous waste residues must be removed from tanks, discharge control equipment, and discharge confinement structures. At closure, as throughout the operating period, unless the owner or operator can demonstrate that any waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9259 and 4.9380-4.9422.

F. Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be placed in a tank unless:

1. the waste is treated, rendered, or mixed before or immediately after placement in the tank so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. or E., and compliance with 6 MCAR S 4.9384 B. is maintained; or

2. the waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react; or

3. the tank is used solely for emergencies.

The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks shall comply with

the National Fire Protection Association's buffer zone requirements for tanks, contained in Tables 2-1 through 2-6 of the Flammable and Combustible Code, in the National Fire Codes, 1981 issued by the National Fire Protection Association (Quincy, Massachusetts, 1981).

G. Special requirement for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials must not be placed in the same tank, unless compliance with 6 MCAR S 4.9384 B. is maintained.

Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless compliance with 6 MCAR S 4.9384 B. is maintained.

6 MCAR S 4.9416 Surface impoundments.

A. Scope. This rule applies to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as 6 MCAR S 4.9380 provides otherwise.

B. General operating requirements. A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action or a storm. There must be at least 60 centimeters (two feet) of freeboard. Any point source discharge from a surface impoundment to waters of the United States is subject to the requirements of the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended through June 30, 1983. Spills may be subject to the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1312, as amended through June 30, 1983.

C. Containment system. All earthen dikes must have a protective cover, such as grass, shale, or rock, to minimize wind and water erosion and to preserve their structural integrity.

D. Waste analysis and trial tests. In addition to the waste analyses required by 6 MCAR S 4.9385, whenever a surface impoundment is to be used to chemically treat a hazardous waste which is substantially different from waste previously treated

in that impoundment or to chemically treat hazardous waste with a substantially different process than any previously used in that impoundment, the owner or operator shall, before treating the different waste or using the different process, conduct waste analyses and trial treatment tests to show that this treatment will comply with 6 MCAR S 4.9384 B. In the alternative, the owner or operator may obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this treatment will comply with 6 MCAR S 4.9384 B. As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with G. and H. As required by 6 MCAR S 4.9394, the owner or operator shall place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.

E. Inspections. The owner or operator shall inspect:

1. the freeboard level at least once each operating day to ensure compliance with B.; and

2. the surface impoundment, including dikes and vegetation surrounding the dike, at least once a week to detect any leaks, deterioration, or failures in the impoundment. As required by 6 MCAR S 4.9382 E., the owner or operator shall remedy any deterioration or malfunction he finds.

F. Closure and post-closure. The requirements of closure and post-closure are as follows:

1. At closure, the owner or operator may elect to remove from the impoundment any standing liquids, waste and waste residues, the liner, if any, and underlying and surrounding contaminated soil.

2. If the owner or operator removes all the impoundment materials described in 1. or can demonstrate that none of the materials listed in 1. remaining at any stage of removal are hazardous waste, the impoundment is not further subject to the requirements of 6 MCAR SS 4.9380-4.9422. At closure and throughout the operating period, unless the owner or operator can demonstrate that any waste removed from the surface

impoundment is not a hazardous waste, he or she becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9259 and 4.9380-4.9422.

3. If the owner or operator does not remove all the impoundment materials described in 1., or does not make the demonstration described in 2., he or she shall close the impoundment and provide post-closure care as for a landfill under 6 MCAR SS 4.9399-4.9404 and 4.9420 D. If necessary to support the final cover specified in the approved closure plan, the owner or operator shall treat remaining liquids, residues, and soils by removal of liquids, drying, or other means. The closure requirements under 6 MCAR S 4.9420 D., will vary with the amount and nature of the residues remaining, if any, and the degree of contamination of the underlying and surrounding soil. The director may vary post-closure requirements, according to 6 MCAR S 4.9402 A.

G. Special requirements for ignitable or reactive wastes. Ignitable or reactive waste must not be placed in a surface impoundment unless:

1. the waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR SS 4.9132 B. or E., and 4.9384 B. is followed; or

2. the surface impoundment is used solely for emergencies.

H. Special requirements for incompatible wastes. Incompatible waste, or incompatible wastes and materials, must not be placed in the same surface impoundment unless 6 MCAR S 4.9384 B. is followed.

6 MCAR S 4.9417 Waste piles.

A. Scope. This rule applies to owners and operators of facilities that treat or store hazardous waste in piles, except as 6 MCAR S 4.9380 provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under 6 MCAR S 4.9420.

B. Protection from wind. The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind shall cover or otherwise manage the pile so that wind dispersal is controlled.

C. Waste analysis. In addition to the waste analyses required by 6 MCAR S 4.9385, the owner or operator shall analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless:

1. the only wastes the facility receives which are amenable to piling are compatible with each other; or

2. the waste received is compatible with the waste in the pile to which it is to be added.

The analyses conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture. As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with E. and F. As required by 6 MCAR S 4.9394, the owner or operator shall place the results of this analysis in the operating record of the facility.

D. Containment. If leachate or run-off from a pile is a hazardous waste, all the requirements of 1. or 2. must be met:

1. The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage.

The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.

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.

Collection and holding facilities, such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously to maintain design

capacity of the system.

2. The pile must be protected from precipitation and run-on by some other means, and no liquids or wastes containing free liquids may be placed in the pile. If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended through June 30, 1983.

E. Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a pile unless:

1. addition of the waste to an existing pile results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under 6 MCAR S 4.9132 B. or E., and the addition complies with 6 MCAR S 4.9384 B.; and

2. the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

F. Special requirements for incompatible waste.

Incompatible wastes, or incompatible wastes and materials must not be placed in the same pile, unless 6 MCAR S 4.9384 B. is followed.

A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device. The purpose of this requirement is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the contact or mixing of incompatible wastes or materials.

Hazardous wastes must not be piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with 6 MCAR S 4.9384 B.

G. Closure and post-closure care. At closure, the owner or operator shall:

1. remove or decontaminate all hazardous waste, hazardous waste residues, contaminated containment system components, such as liners, contaminated subsoils, and structures and equipment contaminated with hazardous waste and leachate, and manage them as hazardous waste, unless the owner or operator can demonstrate that the waste removed is not a hazardous waste; or

2. close the facility and perform post-closure care in accordance with the closure and post-closure requirements for landfills under 6 MCAR S 4.9420 D., if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated.

6 MCAR S 4.9418 Land treatment.

A. Scope. This rule applies to owners and operators of hazardous waste land treatment facilities, except as 6 MCAR S 4.9380 provides otherwise.

B. General operating requirements. Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by biological degradation or chemical reactions occurring in or on the soil.

The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

The owner or operator shall design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25-year storm.

Collection and holding facilities, such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator shall manage

the unit to control wind dispersal.

C. Waste analysis. In addition to the waste analyses required by 6 MCAR S 4.9385 before placing a hazardous waste in or on a land treatment facility, the owner or operator shall:

1. determine the concentrations in the waste of any substances which exceed the maximum concentrations contained in Exhibit 6 MCAR S 4.9132 G.3.-1 that cause a waste to exhibit the extraction procedure (EP) toxicity characteristic;

2. for any waste listed in 6 MCAR S 4.9134, determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

3. if food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the owner or operator has written, documented data that show that the constituent is not present.

As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with G. and H. As required by 6 MCAR S 4.9394, the owner or operator shall place the results from each waste analysis, or the documented information, in the operating record of the facility.

D. Unsaturated zone or zone of aeration monitoring. Requirements for unsaturated zone or zone of aeration monitoring are as follows:

1. The owner or operator shall have in writing, and shall implement, an unsaturated zone monitoring plan which is designed to:

a. detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility; and

b. provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby. This background monitoring must be conducted before or in conjunction with the monitoring required to detect the vertical migration.

2. The unsaturated zone monitoring plan must include soil

monitoring using soil cores, and soil-pore water monitoring using devices such as lysimeters.

3. To comply with 1.a., the owner or operator shall demonstrate in the unsaturated zone monitoring plan that:

a. the depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

b. the number of soil and soil-pore water samples to be taken is based on the variability of the hazardous waste constituents as identified in C.1. and 2. in the waste and in the soil and the soil types; and

c. the frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

4. The owner or operator shall keep the unsaturated zone monitoring plan, and the rationale used in developing this plan at the facility.

5. The owner or operator shall analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under C.1 and 2.

As required by 6 MCAR S 4.9394, all data and information developed by the owner or operator under this rule must be placed in the operating record of the facility.

E. Record keeping. The owner or operator of a land treatment facility shall include hazardous waste application dates and rates in the operating record required in 6 MCAR S 4.9394.

F. Closure and post-closure. Closure and post-closure requirements are as follows:

1. In the closure plan under 6 MCAR S 4.9399 and the post-closure plan under 6 MCAR S 4.9401, the owner and operator shall address the following objectives and indicate how they will be achieved:

a. control of the migration of hazardous waste and

hazardous waste constituents from the treated area into the ground water;

b. control of the release of contaminated run-off from the facility into surface water;

c. control of the release of airborne particulate contaminants caused by wind erosion; and

d. compliance with 6 MCAR S 4.9419 concerning the growth of food chain crops.

2. The owner or operator shall consider at least the following factors in addressing the closure and post-closure care objectives of 1.:

a. type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

b. the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

c. site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration including at a minimum the proximity to ground water, surface water, and drinking water sources;

d. climate, including amount, frequency, and pH of precipitation;

e. geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

f. unsaturated zone monitoring information obtained under D.; and

g. type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

3. The owner or operator shall consider at least the following methods in addressing the closure and post-closure care objectives of 1.:

a. removal of contaminated soils;

b. placement of a final cover, considering the functions of the cover including infiltration control, erosion and run-off control and wind erosion control, and

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

c. monitoring of ground water.

4. In addition to the requirements of 6 MCAR SS 4.9399-4.9404, during the closure period, the owner or operator of a land treatment facility shall:

a. continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

b. maintain the run-on control system required under B.;

c. maintain the run-off management system required under B.; and

d. control wind dispersal of particulate matter which may be subject to wind dispersal.

5. For the purpose of complying with 6 MCAR S 4.9400 D., when closure is completed the owner or operator may submit to the director certification both by the owner or operator and by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

6. In addition to the requirements of 6 MCAR S 4.9402, during the post-closure care period, the owner or operator of a land treatment facility shall:

a. continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

b. restrict access to the facility as appropriate for its post-closure use;

c. assure that growth of food chain crops complies with 6 MCAR S 4.9419; and

d. control wind dispersal of hazardous waste.

G. Special requirements for ignitable or reactive waste.

Ignitable or reactive wastes must not be land treated, unless the waste is immediately incorporated into the soil so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR SS 4.9132 B. or E. and 4.9384 B. is complied with.

H. Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials, must not be placed in the same land treatment area, unless 6 MCAR S 4.9384 B. is complied with.

6 MCAR S 4.9419 Additional requirements for land treatment facilities growing food chain crops.

A. Notification. An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown, and will be grown in the future, shall notify the director within 60 days after the effective date of this rule. The growth of food chain crops at a facility which has never before been used for this purpose constitutes a significant change under the permitting procedures. Owners or operators of these land treatment facilities who propose to grow food chain crops after the effective date of this rule shall comply with the applicable permitting procedures.

B. Acceptability of the land treatment facility.

Food chain crops must not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury, or other constituents identified under 6 MCAR S 4.9418 C.2. and 3.:

a. will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals; or

b. will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

The information necessary to make this demonstration must be kept at the facility and must be based on tests for the

specific waste and application rates being used at the facility and must include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods, and statistical procedures.

C. Cadmium limitations; human food crops. Food chain crops must not be grown on a land treatment facility receiving waste that contains cadmium unless:

1. the pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of two milligrams per kilogram (dry weight) or less;

2. the annual application of cadmium from waste does not exceed 0.5 kilograms per hectare on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption and for other food chain crops, the annual cadmium application rate does not exceed the levels specified in Exhibit 6 MCAR S 4.9419 C.3.-1; and

3. the cumulative application of cadmium from waste does not exceed the levels specified in Exhibit 6 MCAR S 4.9419 C.3.-2.

Exhibit 6 MCAR S 4.9419 C.3.-1

Annual Cadmium Application Rates

Time Period	Annual Cadmium application rate (kilograms per hectare)
Present to June 30, 1984.....	2.0
July 1, 1984 to Dec. 31, 1986.....	1.25
Beginning Jan. 1, 1987.....	0.5

Exhibit 6 MCAR S 4.9419 C.3.-2

Maximum Cadmium Cumulative Application (kilograms per hectare)

Soil cation exchange capacity (meq/100g)	Background soil pH less than 6.5	Background soil pH greater than	Background soil pH less than 6.5

		6.5	and waste/soil mixture pH greater than 6.5
Less than 5....	5	5	5
5-15.....	5	10	10
Greater than 15	5	20	20

D. Cadmium limitations; animal feed crops. Notwithstanding the provisions of C., food chain crops may be grown on a land treatment facility receiving waste that contains cadmium if:

1. the only food chain crop produced is animal feed;

2. the pH of the waste and soil mixture is 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown;

3. there is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans and the facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain which may result from alternative land uses; and

4. future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with 1.-3.

As required by 6 MCAR S 4.9394, if an owner or operator grows food chain crops on his land treatment facility, he or she shall place the information developed in this rule in the operating record of the facility.

6 MCAR S 4.9420 Landfills.

A. Scope. This rule applies to owners and operators of facilities that dispose of hazardous waste in landfills, except as 6 MCAR S 4.9380 provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by this rule.

B. General operating requirements.

The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

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.

Collecting and holding facilities, such as tanks or basins, associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

The owner or operator of a landfill containing hazardous waste which is subject to dispersal by wind shall cover or otherwise manage the landfill so that wind dispersal of the hazardous waste is controlled. As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with E. and F. As required by 6 MCAR S 4.9394, the owner or operator shall place the results of these analyses in the operating record of the facility.

C. Surveying and record keeping. The owner or operator of a landfill shall maintain the following items in the operating record required in 6 MCAR S 4.9394:

1. a map detailing the exact location and dimensions, including depth, of each cell with respect to permanently surveyed bench marks; and

2. the contents of each cell and the approximate location of each hazardous waste type within each cell.

D. Closure and post-closure. Closure and post-closure requirements are as follows:

1. The owner or operator shall place a final cover over the landfill, and the closure plan under 6 MCAR S 4.9399 must specify the function and design of the cover. In the post-closure plan under 6 MCAR S 4.9401; the owner or operator shall include the post-closure care requirements of 4.

2. In the closure and post-closure plans, the owner or operator shall address the following objectives and indicate how

they will be achieved:

a. control of pollutant migration from the facility via ground water, surface water, and air;

b. control of surface water infiltration, including prevention of pooling; and

c. prevention of erosion.

3. The owner or operator shall consider at least the following factors in addressing the closure and post-closure care objectives of 2.:

a. type and amount of hazardous waste and hazardous waste constituents in the landfill;

b. the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

c. site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration including at a minimum the proximity to ground water, surface water, and drinking water sources;

d. climate, including amount, frequency, and pH of precipitation;

e. 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

f. geological and soil profiles and surface and subsurface hydrology of the site.

4. In addition to the requirements of 6 MCAR S 4.9402 during the post-closure care period, the owner or operator of a hazardous waste landfill shall:

a. maintain the function and integrity of the final cover as specified in the approved closure plan;

b. maintain and monitor the leachate collection, removal, and treatment system to prevent excess accumulation of leachate in the system. If the collected leachate is a hazardous waste under 6 MCAR SS 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9259 and 4.9380-4.9422. If

the collected leachate is discharged through a point source to waters of the United States, it is subject to the requirements of the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended through June 30, 1983;

c. maintain and monitor the gas collection and control system to control the vertical and horizontal escape of gases;

d. protect and maintain surveyed bench marks; and

e. restrict access to the landfill as appropriate for its post-closure use.

E. Special requirements for ignitable or reactive waste. Special requirements for ignitable or reactive waste are as follows:

1. Except as provided in 2., G., and I., ignitable or reactive waste must not be placed in a landfill unless the waste is treated, rendered, or mixed before or immediately after placement in the landfill so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR SS 4.9132 B. or E. and 4.9384 B. is complied with.

2. Ignitable wastes in containers may be landfilled without meeting the requirements of 1. if the wastes are disposed so that they are protected from any material or conditions which may cause them to ignite. Ignitable wastes must be disposed in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the wastes.

F. Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and materials must not be placed in the same landfill cell unless 6 MCAR S 4.9384 B. is complied with.

G. Special requirements for liquid waste.

Bulk or noncontainerized liquid waste or waste containing free liquids must not be placed in a landfill.

A container holding liquid waste or waste containing free liquids must not be placed in a landfill, unless:

1. all free-standing liquid has been removed by decanting, or other methods; has been mixed with absorbent or solidified so that free-standing liquid is no longer observed; or has been otherwise eliminated;

2. the container is a laboratory pack as defined in I. and is disposed of in accordance with I.;

3. the container is designed to hold liquids or free liquids for a use other than storage, such as a battery or capacitor; or

4. the container is very small, such as an ampule.

H. Special requirements for containers. An empty container must be crushed flat, shredded, or similarly reduced in volume before it is buried beneath the surface of a landfill.

I. Special requirements for disposal of laboratory packs. Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of 1.-5. are met:

1. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, and 179 (1983), if those regulations specify a particular inside container for the waste.

2. The inside containers must be overpacked in an open head metal shipping container as specified in United States Department of Transportation regulations under Code of Federal Regulations, title 49, parts 178 and 179 (1983), of no more than

416 liter (110 gallon) capacity, and surrounded by a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent material.

3. The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with 6 MCAR S 4.9384 B.

4. Incompatible wastes, as defined in 6 MCAR S 4.9100, must not be placed in the same outside container.

5. Reactive waste, other than cyanide- or sulfide-bearing waste as defined in 6 MCAR S 4.9132 E.1.e., must be treated or rendered nonreactive prior to packaging in accordance with 1.-4. Cyanide- and sulfide-bearing reactive waste may be packaged in accordance with 1.-4. without first being treated or rendered nonreactive.

6 MCAR S 4.9421 Thermal treatment facilities.

A. Scope.

This rule applies to owners and operators of facilities that thermally treat hazardous waste, except as 2., 6 MCAR SS 4.9129 and 4.9380 provide otherwise.

Owners and operators of thermal treatment facilities that thermally treat hazardous waste are exempt from all the requirements of this rule except E., if the owner or operator has documented, in writing, that the waste would not reasonably be expected to contain constituents listed in 6 MCAR S 4.9137, and the documentation is kept at the facility, and the waste to be treated is:

1. listed as a hazardous waste in 6 MCAR S 4.9134 only because it is ignitable, or corrosive, or both;

2. listed as a hazardous waste in 6 MCAR S 4.9134 only because it is reactive for characteristics other than those listed in 6 MCAR S 4.9132 E.1.d. and e., and will not be treated when other hazardous wastes are present in the combustion zone;

3. a hazardous waste only because it possesses the

characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under 6 MCAR S 4.9132; or

4. a hazardous waste only because it possesses any of the reactivity characteristics described by 6 MCAR S 4.9132 E.1.a., b., c., f., g., and h., and will not be treated when other hazardous wastes are present in the combustion zone.

B. Waste analysis. In addition to the waste analysis required by 6 MCAR S 4.9385, the owner or operator shall sufficiently analyze any waste which he or she has not previously treated in the thermal treatment process to enable him or her to establish steady state or other appropriate operating conditions for a noncontinuous process, including waste and auxiliary fuel feed and air flow and to determine the type of pollutants which might be emitted. The analysis must determine:

1. heating value of the waste;

2. halogen content and sulfur content in the waste; and

3. concentrations in the waste of lead and mercury,

unless the owner or operator has written, documented data that show that the element is not present. As required by 6 MCAR S 4.9394, the owner or operator shall place the results from each waste analysis, or the documented information, in the operating record of the facility.

C. General operating requirements. Before adding hazardous waste, the owner or operator shall bring the thermal treatment process to steady state conditions of operation, including steady state operating temperature and air flow, using auxillary fuel or other means, unless the process is a noncontinuous thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste. For incinerators, this requirement applies during start-up and shut-down.

D. Monitoring and inspections. The owner or operator shall conduct the following monitoring and inspections when thermally treating hazardous waste:

1. Existing instruments which relate to temperature, combustion, and emission control, if an emission control device is present, must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately either automatically or by the operator. Instruments which relate to temperature, combustion, and emission control would normally include those measuring waste feed, auxillary fuel feed, air flow, treatment process temperature, scrubber flow, scrubber pH, and relevant process flow and level controls.

2. The stack plume, where present, must be observed visually at least hourly for normal appearance, including color and opacity. The operator must immediately make indicated operating corrections necessary to return visible emissions to their normal appearance.

3. The complete thermal treatment process and associated equipment including pumps, valves, conveyors, and pipes must be inspected at least daily for leaks, spills, and fugitive emissions; and all emergency shut-down controls and system alarms must be checked to assure proper operation.

E. Closure. At closure, the owner or operator shall remove all hazardous waste and hazardous waste residues, including, but not limited to, ash, scrubber waters, and scrubber sludges, from the thermal treatment process or equipment. At closure, as throughout the operating period, unless the owner or operator can demonstrate that any waste removed from the thermal treatment process, or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560.

F. Open burning; waste explosives. Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate, and bulk military propellants which cannot safely be disposed of through other

modes of treatment. Detonation is an explosion in which chemical transformation passes through all material faster than the speed of sound, 0.33 kilometers per second at sea level. Owners or operators choosing to open burn or detonate waste explosives shall do so in accordance with the distance limitations of Exhibit 6 MCAR S 4.9421 F.-1 and in a manner that does not threaten human health or the environment.

Exhibit 6 MCAR S 4.9421 F.-1

Property Line Separation

Pounds of waste explosives or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet)
101 to 1,000	380 meters (1250 feet)
1,001 to 10,000	530 meters (1730 feet)
10,001 to 30,000	690 meters (2260 feet)

6 MCAR S 4.9422 Chemical, physical, and biological treatment facilities.

A. Scope. This rule applies to owners and operators of facilities which treat hazardous waste by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as 6 MCAR S 4.9380 provides otherwise. Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments, and land treatment facilities must be conducted in accordance with 6 MCAR SS 4.9415, 4.9416, and 4.9418, respectively.

B. General operating requirements.

Chemical, physical, or biological treatment of hazardous waste must comply with 6 MCAR S 4.9384 B.

Hazardous wastes or treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life.

Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment must be equipped with a means to stop this inflow including such items as a waste feed cut-off system or by-pass system to a standby containment

device.

C. Waste analysis and trial tests. Whenever a hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in a treatment process or equipment at the facility or a process which is substantially different than any process previously used at the facility is to be used to chemically treat hazardous waste at the facility, the owner or operator shall comply with the requirements of 1. or 2. before treating the different waste or using the different process or equipment:

1. conduct waste analyses and trial treatment tests; and

2. obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this proposed treatment will meet all applicable requirements of B.

As required by 6 MCAR S 4.9385, the waste analysis plan must include analyses needed to comply with F. and G. As required by 6 MCAR S 4.9394, the owner or operator shall place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.

D. Inspections. The owner or operator of a treatment facility shall inspect, where present:

1. discharge control and safety equipment at least once each operating day, to ensure that it is in good working order;

2. data gathered from monitoring equipment at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

3. the construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

4. the construction materials of, and the area immediately surrounding, discharge confinement structures at least weekly, to detect erosion or obvious signs of leakage. As required by 6 MCAR S 4.9382 E., the owner or operator shall remedy any deterioration or malfunction he finds.

E. Closure. At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures. At closure, as throughout the operating period, unless the owner or operator can demonstrate that any waste removed from the treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of 6 MCAR SS 4.9200-4.9560.

F. Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a treatment process or equipment unless the requirements of 1. or 2. are met:

1. The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 6 MCAR SS 4.9132 B. or E., and 4.9384 B. is complied with; or

2. the waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

G. Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials must not be placed in the same treatment process or equipment unless 6 MCAR S 4.9384 B. is complied with.

Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material unless 6 MCAR S 4.9384 B. is complied with.

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Rules as Adopted

Chapter Seven: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

6 MCAR S 4.9480 Facilities governed by facility standards.

6 MCAR S 4.9481 General facility standards.

Chapter Seven: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

6 MCAR S 4.9480 Facilities governed by facility standards.

A. General requirements. Rules 6 MCAR SS 4.9480-4.9481 apply in lieu of rules 6 MCAR SS 4.9280-4.9422 to the owner or operator of the following types of units or facilities:

1. An elementary neutralization unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit. For units which are transport vehicles, vessels, or containers used to transport the waste after neutralization, this neutralization must occur in these units while they remain stationary and before transport of the neutralized waste begins;

2. A pretreatment unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit;

3. A wastewater treatment unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit; and

4. That portion of a combustion waste facility which is used to manage hazardous wastes produced in conjunction with the combustion of fossil fuels provided that the wastes:

a. are generated on-site;

b. traditionally have been and actually are mixed with and co-disposed or co-treated with fly ash, bottom ash, boiler slag, or flue gas emission control wastes from coal combustion; and

c. are necessarily associated with the production of

energy, such as boiler cleaning solutions, boiler blowdown, demineralizer regenerant, pyrites, and cooling tower blowdown.

B. Exemptions. Rules 6 MCAR SS 4.9480-4.9481 do not apply to the owner or operator of the following types of units:

1. an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility, which treats hazardous waste, if the treatment meets the criteria of 6 MCAR S 4.9129; or

2. an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility for which the director has terminated eligibility for a permit-by-rule.

6 MCAR S 4.9481 General facility standards.

A. Identification number. The owner or operator shall not treat or store a hazardous waste in an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility without having received an identification number. An owner or operator who has not received an identification number may obtain one using agency forms.

B. Security. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock into or onto the elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility unless:

1. physical contact with the waste contained in the unit or facility will not injure unknowing or unauthorized persons or livestock which may enter the unit or facility; and

2. disturbance of the waste or equipment by the unknowing or unauthorized entry of persons or livestock into or onto the unit or facility will not cause a violation of the requirements of 6 MCAR SS 4.9480-4.9481.

C. Inspection requirements. Inspection requirements are as follows:

1. The owner or operator shall inspect the elementary neutralization unit, pretreatment unit, wastewater treatment

unit, or combustion waste facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to unauthorized release of hazardous waste to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. The owner or operator shall develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment, such as tank walls and pumps, that are important to preventing environmental or human health hazards. The owner or operator shall keep this schedule at the facility. The schedule must identify the types of problems, such as malfunctions, or deterioration, which are to be looked for during the inspection, such as inoperative pump, leaking fitting, and heavy corrosion.

3. The frequency of inspection may vary for the items on the schedule. It should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if any deterioration or malfunction or operator error goes undetected between inspections.

4. The owner or operator shall remedy any deterioration or malfunction of equipment or structures detected in an inspection. This must be done on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

5. The owner or operator shall record inspections in an inspection log and shall keep these records for at least three years from the date of inspection. These records must include the date and time of each inspection, the name of the inspector, a recording of the observations made, and the date and nature of any repairs or other remedial actions taken as a result of inspection observations.

D. Operating requirements. Operating requirements are as follows:

1. The owner or operator of an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility shall ensure that the treatment process conducted in the unit or facility does not:

a. generate extreme heat or pressure, fire or explosion, or violent reaction unless the process is permitted to handle these types of reactions;

b. produce uncontrolled toxic mists, fumes, or gases in sufficient quantities to threaten human health;

c. produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;

d. damage the structural integrity of the tank or equipment containing the waste; or

e. through (like means) threaten human health or the environment.

2. Hazardous wastes or treatment reagents must not be placed in an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility if they could cause the unit or facility or any of its equipment to rupture, abnormally corrode, or otherwise fail before the end of its intended life.

3. An elementary neutralization unit, pretreatment unit, or wastewater treatment unit must be constructed of sturdy leakproof material and must be designed, constructed, and operated so as to prevent hazardous waste from being spilled or leaked into or on any land or water during the operating life of the unit.

E. Manifest system, record keeping, and reporting. The owner or operator of an elementary neutralization unit, pretreatment unit, or wastewater treatment unit shall comply with the following requirements with respect to hazardous wastes he receives from off-site sources: 6 MCAR S 4.9292, Manifest system; 6 MCAR S 4.9293, Manifest discrepancies; 6 MCAR S 4.9294 B. and C.1.-3., Operating record; and 6 MCAR S 4.9296 B. and C.,

Required reports.

Within 15 days after any spill or leakage of hazardous waste from an elementary neutralization unit, pretreatment unit, wastewater treatment unit, or combustion waste facility, the owner or operator of the unit or facility shall submit a written report to the director which contains the following information:

a. name, address, and telephone number of the owner or operator;

b. name, address, and telephone number of the facility;

c. date, time, and nature of the incident;

d. name and quantity of material involved;

e. the extent of injuries, if any;

f. an assessment of actual or potential hazards to human health or the environment, where this is applicable; and

g. estimated quantity and disposition of recovered material that resulted from the incident.

F. Closure. At closure, the owner or operator of an elementary neutralization unit, pretreatment unit, or wastewater treatment unit shall remove all hazardous waste and hazardous waste residues from the unit.

At closure, the owner or operator of a combustion waste facility shall analyze the waste present in the facility in accordance with 6 MCAR SS 4.9128-4.9137 and shall submit the waste analysis results and proposed closure methods to the director. Based on the waste analysis and proposed closure methods, the agency shall determine which closure standards from 6 MCAR SS 4.9280-4.9322, if any, apply to the facility.

G. Treated wastes. Treated waste generated by an elementary neutralization unit, pretreatment unit, or wastewater treatment unit is subject to regulation under 6 MCAR SS 4.9128-4.9222.

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Rules as Adopted

Chapter Eight:

County Regulation of Hazardous Waste Management

6 MCAR S 4.9559 Purpose; applicability.
6 MCAR S 4.9560 Agency overview of county hazardous waste programs.

Chapter Eight:

County Regulation of Hazardous Waste Management

6 MCAR S 4.9559 Purpose; applicability.

Rules 6 MCAR SS 4.9559 and 4.9560 establish procedures for the agency's overview of county hazardous waste programs. Rule 6 MCAR S 4.9560 B.1. applies to counties which seek agency approval of a hazardous waste ordinance. All other portions of 6 MCAR S 4.9560 apply to counties having a hazardous waste ordinance approved by the agency.

6 MCAR S 4.9560 Agency overview of county hazardous waste programs.

A. Overview. The director shall overview actions taken by counties under hazardous waste programs approved by the agency. This overview shall consist of the review, approval, denial, suspension, modification, and reversal of county actions. County actions include adoption or amendment of regulations and ordinances, and the issuance, denial, suspension, modification, imposition of conditions upon, or revocation of county hazardous waste permits or licenses.

B. County ordinances.

1. A county that seeks agency approval of a hazardous waste ordinance under Minnesota Statutes, section 400.161 or a metropolitan county which seeks agency approval of a hazardous waste ordinance under Minnesota Statutes, section 473.811, subdivision 5b, shall submit a copy of the ordinance to the agency. The director shall, within 30 days of receiving the ordinance, advise the county in writing whether the ordinance is

approved or suspended. If the director suspends a county ordinance, the director shall follow the procedure described in 2. The director shall approve a county ordinance that embodies and is consistent with the standards and requirements set forth in 6 MCAR SS 4.9100-4.9560.

2. The director may suspend a previously approved county ordinance or relevant portion thereof if that ordinance has been modified and is determined by the director to be inconsistent with the state hazardous waste rules. Upon suspension by the director, the matter must be placed on the agenda of the next month's regularly scheduled meeting of the agency board. The agency shall notify the county in writing of its decision to approve, suspend, modify, or deny the ordinance.

3. A county having a hazardous waste ordinance approved in writing by the agency, shall revise the county ordinance within 120 days of any agency revision to 6 MCAR SS 4.9100-4.9560. The county revision must embody and be consistent with the agency's revisions to 6 MCAR SS 4.9100-4.9560, and must be submitted to the agency for its review and approval according to the procedure in 1.

C. Effect of agency approval of county ordinance. If a county has adopted a hazardous waste ordinance that is approved in writing by the agency:

1. Each generator who produces a hazardous waste within the county shall submit a disclosure and annual reports to the county as required by the county ordinance in lieu of submission to the agency unless specifically requested in writing by the director to submit a copy of the disclosure or annual report to the director; and

2. All persons shall comply with all other requirements of 6 MCAR SS 4.9100-4.9560, the agency's permitting procedures, and all requirements of the county ordinance.

D. County actions.

1. A county with a hazardous waste ordinance approved in writing by the agency shall submit to the agency a written notification of all hazardous waste licenses or permits approved

by the county during the previous month. The notification shall be submitted to the agency by the fifteenth day of each month. Upon the request of the director, the county shall provide the agency with a copy of all the information that it considered in reaching its decision.

2. The director shall within 15 days of receiving the notification, advise the county in writing of the decision to approve, suspend, or request additional information on the licenses or permits. The director may suspend any hazardous waste license or permit approved and issued by the county. Upon suspension, the procedure described in B.2. must be followed.

3. A county shall submit to the director, upon request, a copy of any disclosure, manifest, annual report, exception report, or other document that has been submitted to the county in lieu of submission to the agency pursuant to C.

4. A county with a hazardous waste ordinance approved by the agency shall submit to the agency a yearly summary of hazardous waste management in the county. The yearly summary shall be submitted by March 1 for the year that ended on the previous December 31. The summary shall contain:

a. the name and identification numbers assigned by the county to each generator in the county;

b. the total number of hazardous waste shipments;

c. the total quantities shipped for each type of hazardous waste;

d. the identification numbers and names of the transporters used;

e. facilities at which the waste was stored, processed, or disposed;

f. number of spills and accidents; and

g. any other information requested by the director <u>that pertains to the county's hazardous waste program which was approved by the agency</u>.

Repealer. Rules 6 MCAR SS 4.9004; 4.9006 I.; 4.9008; and 4.9010, are repealed. Appendices A, B, C, D, E, F, G, H, I, and

J, as published in 2 State Register 549-615, September 19, 1977, are repealed.

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED
JUN 21 1984
Joan Anderson
Secretary of State
10:30 A.M.

APPROVED AS TO FORM AND LEGALITY
June 19 1984
HUBERT H. HUMPHREY, III
ATTORNEY GENERAL
BY Martha J Cassidy
SPECIAL ASSISTANT ATTORNEY GENERAL