

Minnesota Attorney General: Administrative Rules Proceedings

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STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Amendment to Rules Governing the Management of Hazardous Waste (6 MCAR §§ 4.9001 - 4.9005 and 4.9008 - 4.9010 to be Renumbered as 6 MCAR §§ 4.9100 - 4.9560)

STATEMENT OF NEED AND REASONABLENESS

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I. INTRODUCTION

The subject of this proceeding is the revision of eight existing rules of the Minnesota Pollution Control Agency (hereinafter "Agency" or "MPCA") governing generators of hazardous waste, the management, identification, and transportation of hazardous waste, hazardous waste treatment, storage and disposal facilities, and the operation of county hazardous waste programs, 6 MCAR §§ 4.9001 - 4.9005 and 4.9008 - 4.9010 (to be renumbered as 6 MCAR §§ 4.9100 - 4.9560). These rules are proposed for amendment pursuant to the Agency's authority under Minn. Stat. § 116.07, subd. 4 (1982 as amended by 1983 Minn. Laws, ch. 373, § 44) and Minn. Stat. § 116.07, subd. 4b (1982).

Rulemaking on the proposed rules was authorized on September 27, 1983. The proposed amendments to the hazardous waste rules were divided into two packages for purposes of rulemaking. The proposed rules to the sections governing owners and operators of hazardous waste treatment, storage and disposal facilities were the subject of one proceeding. The proposed amendments to the rules relating to definitions, the identification and classification of hazardous waste, the standards applicable to generators and transporters of hazardous waste and the operation of county hazardous waste programs were the subject of a separate rulemaking proceeding.

At the same time it authorized the initiation of rulemaking, the Agency found that the proposed amendment of the rules was non-controversial in nature and directed that the rulemaking proceedings be conducted in accordance with statutory provisions governing the adoption of noncontroversial rules, Minn. Stat. §§ 14.21 - 14.28 (1982). A Notice of Intent to Adopt rules Without a Public Hearing for each set of proposed amendments was mailed to all individual and organizations on the Agency mailing list and was published in the State Register on October 24, 1983 (8 S.R. 732 and 811). In response to these notices the Agency received more than seven requests for a hearing on each set of amendments. Therefore, pursuant to Minn. Stat. § 14.25 (1982), the provisions of Minn. Stat. §§ 14.13 - 14.20 are applicable to these proceedings.

In addition to the hearing requests the Agency received numerous comments on both sets of proposed amendments. On December 20, 1983, the Agency amended the proposed amendments to incorporte some of the changes suggested by the comments and to make other clarifying, grammatical and technical changes. At that meeting the Agency also authorized a consolidated rulemaking proceeding with respect to the proposed amendments.

A hearing on the consolidated amendments has been scheduled for 10:00 a.m. on February 6, 1984. A Notice of Hearing was mailed to all individuals and organizations on the Agency's mailing list on December 29, 1983 and published in the January 2, 1984

State Register (8 S.R. 1576). In accordance with the requirements of Minn. Stat. § 14.14 (1982) and 9 MCAR § 2.104 this Statement of Need and Reasonableness was prepared and completed 25 days prior to the commencement of the public hearing on the proposed amendments to the hazardous waste rules.

This Statement is divided into several parts. Part II. provides an overview of the proposed amendments. Part III. provides a discussion of the legal and historical background to the Agency's hazardous waste rules and the proposed amendments thereto. Part IV. contains the Agency's explanation of the need for the proposed revisions. Part V. contains the Agency's explanation, by chapter, of the reasonableness of the proposed revisions. Pursuant to the requirements of Minn. Laws 1983, ch. 188, entitled "Small Business considerations in Rulemaking," Part VI. documents how the Agency has considered the methods for reducing the impact of the proposed amendments on small businesses. Part VIII. contains a list of the exhibits relied on by the Agency to support the proposed amendments. The exhibits are available for review at the Agency's offices at 1935 West County Road B-2, Roseville, Minnesota 55113

II. OVERVIEW OF THE PROPOSED AMENDMENTS

The Agency is proposing to amend the existing hazardous waste rules in several respects. The existing rules have sections relating to the identification and classification of hazardous waste, to the standards applicable to generators and transporters of hazardous

waste and to the requirements for owners and operators of hazardous waste facilities. The proposed rules which are the subject of this proceeding make amendments to the sections relating to definitions, the identification and classification of hazardous waste, the standards applicable to generators and transporters of hazardous waste and hazardous waste treatment, storage and disposal facilities and the operation of county hazardous waste proceedings.

The revised rules have been divided into nine chapters. Rules 6 MCAR §§ 4.9100 - 4.9104 in Chapter One address the general provisions of the rules. These provisions include the definitions applicable to the hazardous waste rules, procedural matters relating to variances and to petitions to delist a waste or to utilize an alternative testing method, and methods of obtaining material referenced in the rules.

Chapter Two, 6 MCAR §§ 4.9128 - 4.9137, establishes the criteria for determining whether a waste is hazardous and identifies specific wastes and waste streams which are hazardous. The provisions relating to the identification of hazardous waste utilize criteria for classifying wastes due to characteristics and the lists of hazardous waste found in the EPA regulations. These rules also set forth the standards for the management of mixtures of hazardous and nonhazardous wastes, for the management of wastes which are to be beneficially used, reused, recycled or reclaimed and for the management of residues of hazardous waste in empty containers and inner liners.

The standards applicable to generators of hazardous waste are contained in Chapter Three, 6 MCAR §§ 4.9200 - 4.9222. Pursuant to these provisions a generator is required to evaluate his wastes to determine if they are hazardous, file a disclosure and management plan with the Agency for each hazardous waste produced, and obtain an identification number. These rules also provide the requirements applicable to generators with regard to the use of manifests, accumlation of hazardous waste and record keeping. The special requirements applicable to small quantity generators are also set forth in this chapter.

Rules 6 MCAR §§ 4.9250 - 4.92599, Chapter Four, set forth the standards applicable to transporters of hazardous waste.

The standards governing the operation of hazardous waste facilities are set forth in Chapters Five, Six, and Seven. Chapter Seven, 6 MCAR §§ 4.9480 and 4.9481, provides operational standards for elementary neutralization units, pretreatment units, wastewater treatment units and combustion waste facilities. All other hazardous waste facilities are governed by Chapters Five and Six. Chapter Five, 6 MCAR §§ 4.9280 - 4.9316, establishes permanent requirements applicable to owners and operators of facilities which treat, store, or dispose of hazardous waste. These rules set forth requirements relating to the location of hazardous waste facilities, emergency procedures including personnel training and

contingency plans, record keeping requirements, closure requirements, and financial requirements as well as operational requirements for various types of facilities. Chapter Six, 6 MCAR §§ 4.9380 - 4.9422, establishes interim status standards for hazardous waste facilities which cover the same general areas as the permanent requirements. The interim status standards apply to existing facilities until final disposition of the owner or operator's permit application is made.

Chapter Eight, 6 MCAR §§ 4.9559 - 4.9560, establishes procedures for the Agency's overview of county hazardous waste programs.

III. The Legal and Historical Background to the Hazardous Waste Rules and the Proposed Amendments Thereto

In 1974, the Minnesota Legislature directed the Agency to develop a state management plan and regulatory system for hazardous waste. 1974 Minn. Laws, ch. 346. Minn Stat. § 116.07, subds. 2 and 4 (1976), provide that the Agency shall adopt standards for the identification, labeling, classification, storage, collection, treatment and disposal of hazardous waste and the location of hazardous waste facilities. 1/ Pursuant to this authority the Agency adopted 6 MCAR §§ 4.9001 - 4.9010 which became effective in July, 1979.

1/ Minn. Stat. § 116.07, subd. 4, was amended by 1983 Minn. Laws, ch. 373 § 44 to explicitly provide that the Agency's authority to adopt rules also applies to generators of hazardous waste.

Minn. Rules 6 MCAR §§ 4.9001 - 4.9010 provide a cradle to grave regulatory system which governs the identification, labeling, classification, storage, collection, transportation, and disposal of hazardous wastes, the location of hazardous waste facilities and the operation of county hazardous waste programs. Specifically these rules provide a system for determining whether a waste is hazardous by use of a series of chemical characterisitics. A generator is required to determine if any of his wastes are hazardous and, if they are, to develop a management plan for those wastes. The generator must file a disclosure with the Agency identifying the hazardous wastes which he produces and the management plan for those wastes. The rules provide a tracking system for hazardous waste shipments by use of a manifest. The manifest is prepared by the generator and follows the shipment until its final treatment or disposal. Generators are required to utilize only licensed transporters and permitted facilities for the storage, transportation, treatment, and disposal of hazardous waste. The rules also provide standards for the storage and transportation of hazardous waste and general standards for hazardous waste facilities.

During the same period that the State was developing its program, the management of hazardous wastes was also being reviewed at the federal level. The Resource Conservation and Recovery Act of 1976 (hereinafter "RCRA") was the first comprehensive federal effort to deal with the problems of hazardous waste. 42 U.S.C.

§§ 6901 et seq. Subtitle C directed the United States Environmental Protection Agency (hereinafter "EPA") to promulgate regulations to protect human health and the environment from the improper management of hazardous waste. EPA promulgated the basic regulations for the hazardous waste program on May 19, 1980 at 45 F.R. 33066-33588. These regulations have been codified as 40 C.F.R. Parts 260-265. Although somewhat different in approach, these regulations set up a managment system similar to that in Minnesota's rules.

The relationship between the state and federal hazardous waste programs is complex. When Congress passed RCRA it invisioned that control of hazardous wastes would be primarily a state responsibility. As such, implementation of the federal program would occur, for the most part, through EPA authorized state hazardous waste programs. Where states did not establish programs or the program did not meet federal standards, the EPA would assume regulatory control.

Section 3006 of RCRA provides that states may receive either final or interim authorization to run the hazardous waste management program. To receive final authorization the state program must be "equivalent" to the federal program, consistent with federal or state programs applicable in other states, and provide adequate enforcement to ensure compliance with RCRA. To qualify for interim authorization, a state must have a substantially equivalent program in existence within 90 days after promulgation of the final federal regulations.

In states that receive authorization, the state hazardous waste program operates in lieu of the federal program. Minnesota has not received either interim or final authorization. Therefore, at the present time both the state and federal programs are operative in Minnesota.

In June, 1980, the Minnesota Association of Commerce and Industry (hereinafter "MACI") requested the Legislative Commission to Review Administrative Rules (hereinafter "LCRAR") to review the state rules from two standpoints. LCRAR was requested to address the validity of the rules in terms of the manner in which they were adopted and to address the reasonableness of the rules in light of the adoption of less stringent rules by EPA. Representative Jim Pehler also requested the LCRAR to review the reasonableness of the state rules.

At a meeting held on June 16, 1980, the LCRAR voted to undertake an indepth review of the reasonableness of the rules. A hearing on the rules was subsequently held on August 19, 1980. In the testimony presented by Mr. Ted Shields, representing MACI, a formal request was made for the LCRAR to suspend the state hazardous waste rules and let the federal program for regulating hazardous waste be the operative one in Minnesota. MACI did not dispute the need to properly manage hazardous waste, but felt it could be done in an adequate and less costly way under the federal program. In general, the LCRAR denied MACI's petition to suspend the state rules, but recommended

that the Agency reduce duplicative efforts and continue to seek interim and final authorization from EPA to manage the hazardous waste program in Minnesota.

The Agency had recognized prior to the LCRAR's review that certain areas within the state rules could and should be revised to reduce some of the duplicative paperwork being created by the two programs. The LCRAR's recommendation coupled with the Agency's prior recognition of areas within the rules which could be changed to reduce duplicative paperwork, resulted in minor revisions to the Agency's hazardous waste rules which became effective on April 6, 1981.

At the same time, Agency staff began working on the more substantive amendments to the hazardous waste rules which were necessary before the Agency could receive EPA authorization for the hazardous waste program. As part of the revision of these rules the Agency staff engaged in an extensive public participation process. The first step in the effort was the compilation of a mailing list of interested parties. An initial letter and response card was mailed to appoximately 4000 individuals or companies. This response card allowed each person to indicate which rules or portions of rules he or she was interested in. The staff received 850 responses to the initial mailing and these, along with subsequent requests, comprise the mailing list. In addition, Notices of Intent to Solicit Outside Opinion in Revisions to the Hazardous Waste Rules were published in the State Register.

On August 20, 1981, copies of the second draft of the rules, or portions if requested, were mailed to everyone on the mailing list along with a request that written comments be submitted by September 25, 1981. Public meetings to discuss the proposed rules were held on September 8, 10, 15 and 16, 1981. In addition to these open meetings several groups requested meetings to discuss specific issues. Based on the comments received as a result of these mailings and meetings, additional revisions were made to the draft rules.

The Agency Board's Committee on Hazardous and Toxic Materials considered the proposed revisions at its meeting on November 30, 1981. At that time it became apparent that several issues were still unresolved. The committee asked industry representatives and Agency staff to attempt to resolve the outstanding issues. Subsequent committee hearings were held on January 15 and 20 and February 10 and 17, 1982. Following the February 17, 1982 committee meeting all interested parties appeared to be in agreement on the proposed revisions.

At its meeting on March 9, 1982, the Agency Board approved the proposed revisions and authorized the Director to initiate the noncontroversial rulemaking process for adoption of the revisions to the hazardous waste rules. The proposed rules consisted of nine chapters: 1. Definitions; 2. Identification and Listing of Hazardous Waste; 3. Generator Standards; 4. Transporter Standards;

5. Facility Standards; 6. Interim Status Standards; 7. Standards for Specific Types of Facilities; 8. Temporary Land Disposal Facility Standards; and 9. County Programs. Because of the length of the rules and the need to have them put on the Revisor of Statute's computer, the rules were not published in the State Register until June 7, 1982. In response to this publication the Agency received numerous comments and requests for a hearing.

In 1982, the Minnesota Legislature amended Minn. Stat. § 116.07, subd. 4b, to require the Agency to adopt rules requiring hazardous waste facilities to have contingency plans in case of emergencies and requiring facilities to have the financial ability to assure that closure would occur in accordance with the rules and permit conditions. 1982 Minn. Laws, Ch. 569, § 19.

Between March, 1982, when the Agency authorized the initiation of rulemaking, and June 7, 1982, when the rules were published in the State Register, EPA made several amendments to its regulations which affected the Agency's proposed rules. In addition, on July 26, 1982, EPA published its final land disposal regulations. The EPA amendments meant that substantive changes were needed in several portions of the Agency's proposed rules if those rules were to be equivalent to the federal regulations. In light of these amendments, the issues raised by the comments and hearing requests, and the many nonsubstantive amendments which were needed to correct typographical and cross-referencing errors, the Agency decided to revise the proposed rules rather than go

to hearing on rules which would have to be amended as soon as they were adopted. Therefore, the proposed rules were withdrawn.

III. NEED FOR THE PROPOSED AMENDMENTS TO THE HAZARDOUS WASTE RULES

Minn. Stat. § 14.23 (1982) requires an agency to make an affirmative presentation of facts establishing the need for and reasonableness of the rules or amendments proposed. In general terms this means that an agency must set forth the reasons for its proposal and the reasons must not be arbitrary or capricious. However, to the extent that need and reasonableness are separate, need has come to mean that a problem exists that requires administrative attention and reasonableness means that the solution proposed by the agency is a proper one.

Need is a broad test that does not easily lend itself to an evaluation of each proposed revision. In this broad sense the need for revisions to Minnesota's hazardous waste rules arises from three sources: A) the operation of two hazardous waste programs in the state and the authorization process adopted by EPA; B) the requirements of Minn. Stat. § 116.07, subd. 4b; and C) the need to clarify the intent of certain provisions of the existing rules and to reformat and renumber the rules to conform to the requirements of the Legislative Revisor's office.

A. EPA Authorization Process

As discussed in Part II. supra. Congress in adopting RCRA provided for eventual state control of the hazardous waste program

and set up the mechanism for EPA to grant both interim and final authorization to operate the program. Congress, in establishing the requirement of "substantial equivalence" for interim authorization, intended that this type of authorization be granted in a relatively liberal manner so as not to disrupt state activities and to encourage continued state efforts in reaching the goal of final authorization.

A precondition to applying for interim authorization is that the state must have "in existence a hazardous waste program pursuant to state law" within 90 days after promulgation of the EPA hazardous waste regulations. 42 U.S.C. § 6926(c). EPA has interpreted the word "program" to mean enabling legislation only. 45 F.R. 33387 (May 19, 1980). Although only enabling legislation is required to meet the 90-day cut off, EPA requires an entire (legislation and regulations) program to be in place prior to granting both interim and final authorization.

One of the most frequently discussed issues by EPA in development of the state program regulations was to what extent state programs should be required to be duplicates of the federal program. EPA has interpreted the requirements of equivalence and substantial equivalence to mean that the federal regulations are minimum standards which the states must meet. 40 C.F.R. § 123.12(i)(1); see also 42 U.S.C. § 6929. Thus, the states are allowed to establish stricter standards as

long as they are consistent with the federal program. Minnesota's existing rules are more stringent in some respects than the EPA regulations but less stringent in other respects.

The federal program was implemented in two phases. Phase I regulations (primarily those relating to the identification of hazardous wastes and generator and transporter standards) were issued on May 19, 1980. Portions of the Phase II regulations were issued in 1981, with the final portion (land disposal facility standards) issued on July 26, 1982. Interim authorization corresponds to this phasing. A state must receive both phases of authorization to operate the program for the two-year period allowed by statute for interim authorization.

Final authorization, which may be applied for at any time following the promulgation of the second phase of the federal program, requires that the state program must be equivalent and consistent with the federal program. EPA has defined equivalent to mean equal to in effect. In terms of consistency, EPA's goal is to achieve an integrated national program which requires that final state programs do not conflict with each other. A final state program must include equivalent and consistent standards for generators, transporters, and owners and operators of treatment, storage, and disposal facilities. 45 F.R. 33395 (May 19, 1980). Additionally, the program should include provisions for permitting and enforcement.

In September, 1980, the Agency submitted a draft application to the Region V Office of EPA for interim authorization to run the hazardous waste program in Minnesota. EPA subsequently sent back a very detailed reply noting numerous areas in which they felt the state program was not substantially equivalent to the federal program. Their concerns centered around the identification and listing of hazardous waste, interim status standards for facilities, county involvement in administering the program, the manifest system, and compliance monitoring and enforcement. As a result, it was clear that interim authorization could not be obtained until major revisions were made to the state rules. The revisions to the state rules which were effective in April, 1981 corrected some minor deficiencies, but were not sufficient for the state to receive interim authorization. One purpose of the proposed amendments which are the subject of this proceeding is to comply with the federal requirements for authorization.

Both the state and federal rules are presently operating within Minnesota. This situation is not beneficial since two programs must be enforced by the Agency, industry must comply with two different sets of rules regarding hazardous waste, and the public is paying for the maintenance of two similar programs.

Upon completion of the revisions to the state hazardous waste rules, the Agency will apply for final authorization. Therefore, the state program must include equivalent requirements for the identification and listing of hazardous wastes, generator, transporter, and facility standards.

B. Requirements of Minn. Stat. § 116.07, Subd. 4b

The Minnesota Legislature has mandated that the Agency promulgate rules for hazardous waste facilities which require that the owners or operators of a facility 1) have contingency plans for emergencies, 2) establish a mechanism to assure that money to cover closure and post-closure costs is available, and 3) maintain liability insurance during the operating life of the facility. 1982 Minn. Laws, ch. 569, § 19. While the existing rules have provisions requiring written emergency procedures and setting forth closure requirements, these provisions are not adequate to comply with the requirements of 1982 Minn. Laws, ch. 569, § 19. The proposed amendments comply with these requirements.

C. Clarification and Reorganization

During the four years that the existing state hazardous waste rules have been in effect the need to clarify the intent of certain provisions has become apparent. In addition there is a need to reformat and renumber the rules to conform to the requirements of the Legislative Revisor's office. This has resulted in a complete reorganization of the existing rules. A chart showing where the provisions of the existing rules appear in the new rules is attached as Appendix A.

The Agency believes that these facts establish the need for the proposed revisions to the hazardous waste rules. The

discussion in the rest of this Statement is focused on the reasonableness of the proposed amendments.

IV. REASONABLENESS OF THE PROPOSED AMENDMENTS

A. Introduction

The Agency is required to make an affirmative presentation of facts establishing the reasonableness of the rules or amendments proposed. Minn. Stat. § 14.23 (1982). Reasonableness is the opposite of arbitrariness and caprice and means that there is a rational basis for the Agency's action.

In developing a hazardous waste program sufficient to qualify for EPA authorization, the Agency considered various alternatives. Perhaps the most obvious alternative is the adoption of the federal regulations with only minor amendments to adapt them to Minnesota statutory requirements. This alternative was rejected because the Agency believes the federal regulations have several significant weaknesses. For example, under the federal program non-listed hazardous waste being reused or recycled is exempted from regulation. As a result EPA will not know these wastes even exist much less have assurance that they are being properly managed. Another example is the small quantity exemption. Under the EPA regulations small quantities, up to 1000 kilograms a month, are exempted from reporting and management

requirements. As a result these hazardous wastes could be disposed of legally in a sanitary landfill intended only for solid waste.

Because of these and other gaps of coverage and lack of information and control in other areas, the Agency rejected the alternative of merely adopting the federal regulations verbatim. Instead the Agency elected to use those portions of the federal regulation which were stronger or more comprehensive than the current state rules such as the facility requirements and to retain the strong points of the existing state rules. The Agency believes that this is a reasonable approach to revising the hazardous waste rules.

As part of the revision of the hazardous waste rules the Agency engaged in an extensive public participation process. The initial portions of that process were discussed at pages 11-13 supra. Following the decision to withdraw the amendments which were published on June 7, 1982, the Agency reviewed the federal land disposal rules and other EPA amendments to determine if the proposals were adequate or if stricter standards might be needed in some areas. The Agency also worked with the persons who had submitted comments and hearing requests on the July 7, 1982 proposed rules to resolve the problems that had been identified. In December 1982, the Agency notified persons on the mailing list that copies of the draft land disposal facility rules were available and solicited comments on those rules.

Through the Waste Management Board (hereinafter "WMB"), the Agency contacted the Local Project Review Committees established for the sites selected by the WMB for proposed hazardous waste disposal facilities of the proposed amendments to the hazardous waste rules. Agency staff then met with the Local Project Review Committees from Aitkin and Carver Counties to discuss the proposed rules. Copies of the proposed rules were also provided to EPA. EPA staff provided numerous comments on the draft rules and these comments have been incorporated into these proposed revisions.

The Agency staff presented the revised amendments to the hazardous waste rules to the Agency Board's Committee on Hazardous and Toxic Materials on June 8, July 12 and 27, and August 16, 1983. Representatives of various industry groups and members of the public participated in these meetings. Based on the result of these meetings, the Agency was not aware of any significant unresolved issues with respect to the revised amendments.

At its meeting on September 27, 1983, the Agency Board approved the proposed revisions and authorized the Director to initiate the noncontroversial rulemaking process for adoption of the amendments to the hazardous waste rules. At that time the proposed amendments to the hazardous waste rules were divided into two packages for purposes of rulemaking. Chapters 1-4 and 8 (Definitions, Identification, Generator Standards, Transporter Standards and County Programs) which are

substantively similar to the provisions of Chapters 1-4 and 9 which were published in the State Register on June 7, 1982 were in one package. Chapters 5-7 (Facility Standards, Interim Status Standards and Standards for Specific Types of Facilities) which replaced Chapters 5-8 of the June 7, 1982 proposed rules were proposed as a separate package.

The proposed amendments were published in the October 24, 1983 State Register. 2/ In response to the Notice of Intent to Adopt Rules Without a Public Hearing the Agency received numerous comments and more than seven requests for a hearing on both sets of rules. The Agency amended portions of the proposed rules in response to the comments at its December 20, 1983 meeting and authorized the ocnsolidation of the two packages of rules.

The following discussion addresses the reasonableness of the proposed amendments on a chapter by chapter basis.

2/ The proposed amendments to the rules governing generators of hazardous waste, the identification, transportation and management of hazardous waste, and county hazardous waste programs, 6 MCAR §§ 4.9001 - 4.9003, 4.9005 and 4.9008 - 4.9010, renumbered as 6 MCAR §§ 4.9100 - 4.9259 and 4.9559 - 4.9560, were published at 8 S.R. 732 (October 24, 1983) as corrected in the Errata published at 8 S.R. 1086 (November 7, 1983) and 8 S.R. 1238 (November 21, 1983). The proposed amendments to the rules governing hazardous waste treatment, storage and disposal facilities, 6 MCAR § 4.9004, renumbered as 6 MCAR §§ 4.9280 - 4.9481, were published at 8 S.R. 811 (October 24, 1983) as corrected in the Errata published at 8 S.R. 1086 (November 7, 1983) and 8 S.R. 1086 (November 7, 1983.

B. Chapter One: Definitions, Variances, References, Petitions, and Other Standards, 6 MCAR §§ 4.9100 - 4.9104

Chapter One contains the general provisions of the hazardous waste rules. These provisions are necessary in order to provide persons subject to the rules with the definitions of the terms used throughout the rules as well as other information relating to the administration of the hazardous waste program.

6 MCAR § 4.9100

6 MCAR § 4.9100 contains the definitions of key words and phrases used throughout the hazardous waste rules. Definitions of terms used only once, or only in conjunction with a single rule, are defined in the rule in which they are used. Many of the definitions in the proposed rules are renumbered provisions of 6 MCAR § 4.9001 B., the definitions section of the existing hazardous waste rules. Certain provisions of the existing rules (even though shown as deleted) have been moved from the definitions section to other provisions of the proposed amendments. Certain provisions of the existing definitions have been proposed for repeal because the terms are not used in the proposed rules. Other provisions have been amended to conform to statutory changes or to the definitions of the terms used in the federal regulations. A chart which shows the existing definitions, whether they have been renumbered, amended or deleted and where they appear in the proposed rules, is included in Appendix C.

The new definitions are necessary to define terms included in the amendments which are not used in the existing rules. These definitions basically incorporate the language used in the definitions section of the EPA regulations, 40 C.F.R. Part 260. The rationale for the language used in the definitions is contained in several EPA background documents. The Agency is relying on those background documents, which are listed in Part VIII. A list of the proposed definitions, their source and the EPA background documents containing the supporting rationale is contained in Appendix C.

This rule contains seven definitions which do not come from either 6 MCAR § 4.9001 B. or 40 C.F.R. §§ 260.10(a) and 261.2. The definition of "control equipment" is taken from the definitions section of the Agency's air quality rules, APC 2(a)(7). "Independent registered engineer" is used in Chapters 5 and 6 and means a registered engineer who is not an employee of the facility owner or operator. The definition of the term "petroleum-derived waste oil" was adopted from EPA's January 19, 1981 report to Congress addressing the need to regulate such wastes under the RCRA regulations. This definition is necessary because the proposed rules exempt from coverage by these rules petroleum-derived waste oils which do not contain a listed waste and which are being beneficially used, reused, recycled or reclaimed. "Pretreatment unit" is used extensively in Chapter 7. EPA uses, but does not define, pretreatment unit. The Agency, however, believes it is

necessary to define this term so there is no dispute as to its meaning. The definition of "seasonal high water table" is needed because the water table is not static but will fluctuate depending on precipitation. It is necessary to establish the highest point in the water table in order to correctly design a land treatment facility unsaturated zone monitoring program and to comply with the locational requirements for disposal facilities. The definition of "state" is self-evident. The definition of "surficial karst feature" is intended to describe an opening at the land surface which could allow the introduction of contaminants to the ground water or the collapse of shallow subsurface cavities which could damage a facility liner or foundation. It is reasonable to include this definition because surficial karst features are prominant in southeastern Minnesota and are a major limitation in siting hazardous waste facilities.

In the amendments which it adopted on December 20, 1983, the Agency Board corrected an erroneous cross-reference in the definition of pretreatment unit, 6 MCAR § 4.9100 SSS., and reordered the language in the definition of spill, 6 MCAR § 4.9100 FFFF., to clarify the meaning. No substantive changes were made.

6 MCAR § 4.9101

6 MCAR § 4.9101 is existing rule 6 MCAR § 4.9001 F. amended to restrict the issuance of variances to situations where the variance would not result in non-compliance with the EPA hazardous

waste regulations. In order for Minnesota to receive authorization from EPA to operate the state hazardous waste program in lieu of the federal program, the state program must be at least as stringent as the federal program. EPA staff have informed the Agency that EPA will not grant variances to its regulations and that for the Agency to grant variances would make the state program less stringent. Therefore, it is reasonable to add a provision which clarifies which types of variances will be issued.

6 MCAR § 4.9102

6 MCAR § 4.9102 contains a list of documents referred to in 6 MCAR §§ 4.9100 - 4.9560 and the addresses where these documents may be obtained. It is reasonable to include this information so that persons regulated by these rules may obtain necessary information.

6 MCAR § 4.9103

6 MCAR § 4.9103 is renumbered rule 6 MCAR § 4.9001 G. No substantive amendment has been made to this provision.

6 MCAR § 4.9104

6 MCAR § 4.9104 A. sets forth the procedure whereby a generator or the owner or operator of a hazardous waste facility may petition the Director for permission to use a testing or analytical method other than those described in 6 MCAR §§ 4.9128 - 4.9137, 4.9280 - 4.9322 and 4.9380 - 4.9422 and also sets forth

the factors to be considered by the Director in making her decision. The language of this rule has been taken from 40 C.F.R. § 260.21. This provision is necessary because it is not possible to set forth in these rules every conceivable acceptable testing and analytical method nor would it be reasonable to amend the rules whenever a new test was developed. As long as a testing or analytical method can determine, with at least the same degree of reliability as the method set forth in these rules, whether a waste is hazardous, the person doing the testing should be able to use the test method of his choosing. This rule allows that option.

6 MCAR § 4.9104 B. sets forth the procedure whereby a generator may petition to have a waste which would otherwise be treated as hazardous excluded from coverage by these rules. Many of the wastes or waste streams listed as hazardous under 6 MCAR § 4.9134 are listed because the waste streams produced from the manufacturing process are as a general rule hazardous. This rule provides a generator with the opportunity to demonstrate that, because his process differs in some degree from the normal process or for some other documented reason, the waste produced at his facility is not a hazardous waste. The purpose of these rules is to regulate the management of wastes which are hazardous. Therefore it is reasonable to include a procedure whereby wastes which are generally hazardous but which can be demonstrated not to be

hazardous in a specific case can be excluded from coverage by these rules. The language of this rule has been adopted from 40 C.F.R. § 260.22 3/ and is discussed at 45 F.R. 33070 and 33116 - 33117 (May 19, 1980). The Agency is relying on this discussion as support for this provision.

Rules 6 MCAR §§ 4.9001 C., D. and E. are repealed. Rule 6 MCAR § 4.9001 C. contains a list of abbreviations used in the existing hazardous waste rules. The revised rules do not contain these abbreviations. Rule 6 MCAR § 4.9001 D. is a list of the documents contained in the appendices of the existing rules. The revised rules do not contain any appendices. Minn. Stat. § 645.20 now covers the provisions for severability presently found in 6 MCAR § 4.9001 E. Since the provisions of these rules are no longer needed, it is reasonable to repeal them.

C. Chapter Two: Identification and Listing of Hazardous Waste, 6 MCAR §§ 4.9128 - 4.9137

The proposed rules in Chapter Two establish the criteria for determining whether a waste is hazardous, identify waste streams

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3/ The language of many of the proposed amendments is taken from the corresponding EPA regulation. The EPA regulations have been codified at 40 Code of Federal Regulations (C.F.R.) Parts 260 - 266. Unless indicated otherwise, the regulation referenced as the source of the language of any proposed amendment is the EPA regulation, either interim final or final, as amended through April 1, 1983.

and waste constituents which are hazardous and govern the management of hazardous waste by use, reuse, recycling and reclamation and the management of residues of hazardous waste in empty containers and liners. This chapter contains provisions from existing hazardous waste rules 6 MCAR §§ 4.9001 B. and 4.9002. In addition this chapter incorporates the EPA regulations governing the identification and listing of hazardous waste which are found at 40 C.F.R. Part 261. As support for the reasonableness of the federal regulations incorporated in 6 MCAR §§ 4.9128 - 4.9137. The Agency is relying on the background documents prepared by EPA when EPA promulgated Part 261. These documents are listed in Part VIII.

The provisions of existing rule 6 MCAR § 4.9002 B. are incorporated into proposed rule 6 MCAR § 4.9132 and are discussed beginning at p. 54 <u>infra</u>.

<u>6 MCAR § 4.9128</u>

Rule 6 MCAR § 4.9128 establishes the criteria for determining when mixtures of hazardous and nonhazardous waste are considered to be hazardous waste and regulated by these rules and also lists certain types of wastes which are not considered to be hazardous waste and are excluded from regulation under these rules.

In general, when a hazardous waste is mixed with a nonhazardous waste the resulting mixture must be handled as a

hazardous waste unless it meets the criteria set forth in 6 MCAR § 4.9128 B. This provision is necessary to prevent generators from evading the hazardous waste rules simply by commingling listed hazardous wastes with nonhazardous wastes and because many wastes remain hazardous even after admixture or dilution. A rule making all mixtures of hazardous and nonhazardous waste subject to the provisions of the hazardous waste rules would be too broad however, since mixing some types of hazardous waste with nonhazardous waste can render the hazardous waste nonhazardous. The Agency has incorporated in § 4.9128 the provisions of 40 C.F.R. § 261.3 relating to mixtures, with certain exceptions. The background material supporting the EPA regulation was published at 46 F.R. 56582 - 56589 (November 17, 1981).

In developing these amendments, the Agency did not agree with EPA that dilution of all characteristic hazardous wastes into nonhazardous wastes should be permitted. While dilution of some characteristic hazardous wastes results in wastes which do not pose a substantial hazard to human health or the environment, dilution is not an acceptable management method for toxic wastes. The dilution of wastes containing toxic or EP Toxic contituents does not remove these constituents. This waste material may be reconcentrated by bioaccumulation and, if placed in a sanitary landfill, may be leached and thus may cause ground water contamination.

The Agency also disagrees with the wording of the federal regulation on wastewater mixtures. Wastewater mixtures are covered by 6 MCAR § 4.9128. The Agency agrees that it is reasonable to exempt a mixture of large volumes of wastewater and the relatively small amounts of listed hazardous wastes which are introduced into the wastewater as a result of normal manufacturing operations or on-site laboratory operations. In addition, limiting the exemption to wastewater mixtures managed in a wastewater treatment system whose discharge is subject to regulation under either Section 402 or 307(b) of the Clean Water Act will help to prevent indiscriminate discharge of wastes into wastewater treatment systems because to do so could jeopardize the generator's ability to comply with its Clean Water Act discharge requirements. The Agency does not, however, believe that the language of the federal regulation is sufficiently clear and have reworded the provisions relating to wastewater mixtures to explicitly provide that the hazardous waste must be discharged into the wastewater stream as a result of normal manufacturing operations for the exemption to be applicable.

Rule 6 MCAR § 4.9128 C. lists wastes which may be stored, labeled, transported, treated, processed and disposed of without complying with the provisions of the hazardous waste rules. This list combines existing exemptions from 6 MCAR § 4.9002 with the exemptions from 40 C.F.R. § 261.4.

Subparagraphs C.1., C.2., C.3., C.5., C.7. and C.10. are renumbered provisions of existing rule 6 MCAR § 4.9002 C. with minor clarifying amendments. Subparagraph C.1., which exempts normal refuse from households, has been expanded to clarify what is meant by normal refuse and what constitutes a household. The provisions of existing rule 6 MCAR § 4.9002 C.5. have also been incorporated into subparagraph C.1. Subparagraph C.2. is a combination of the provisions of existing rule 6 MCAR § 4.9002 C.2. and C.7. and the corresponding federal exemption, 40 C.F.R. § 261.4(a)(1)(ii). Subparagraphs C.3. and C.5. are unchanged.

Subparagraph C.4. exempts mining overburden returned to the mine site and is identical to the exemption found at 40 C.F.R. § 262.4(b)(3). This exemption is directed to strip mining operations and subsequent reclamation of the site. Reclamation of surface mines will commonly involve the return to the mine site of waste overburden that has been removed to gain access to the ore deposit. Reclamation is not solid waste disposal and overburden intended to be returned to the mine site is not discarded within the meaning of the applicable legislative authority. The Agency is relying on EPA's expertise in support of this exclusion which is discussed at 45 F.R. 33099 - 33101 (May 19, 1980). This exemption is reasonable because there is no reason to believe that, in general, moving overburden aside and returning it to the mine site should cause health or environmental problems.

Subparagraph C.6. exempts boiler wastes and ash produced by electric power utilities and is based on the exemption found at 40 C.F.R. § 261.4(b)(4). The EPA regulation states that this exemption applies only if the ash is produced from fuel that was primarily fossil fuel. The Agency felt that "primarily" should be defined and has chosen 51 percent or more fossil fuel as meeting the intent of the term "primarily". In addition, the revised rule limits the other 49 percent to fuel that is not hazardous waste. The reason for this limitation is that the hazardous waste may not be completely destroyed when burned and the hazardous component(s) or hazardous decomposition products could end up in the ash. It is reasonable to have this restriction because it prevents the possibility of unknowingly producing an ash that is hazardous.

Subparagraph C.7. is existing rule 6 MCAR § 4.9002 C.8. but with the exemption for wastes discharged pursuant to a State Disposal System permit deleted. EPA regulations exempt wastes discharged pursuant to a National Pollutant Discharge Elimination System (hereinafter "NPDES") permit but not wastes discharged pursuant to only a state permit. If the Agency were to adopt an exemption not contained in the EPA regulations, the Agency rules would be less stringent and therefore not equivalent to the federal program. Since the existing exemption is too broad, the Agency is narrowing the exemption to correspond with 40 C.F.R. § 261.4(a)(2).

Subparagraph C.8. exempts wastes associated with drilling for fossil fuels and geothermal energy and is identical to the

exemption found at 40 C.F.R. § 261.4(b)(5). The Agency has included this exemption based on EPA's inclusion of this exemption and is relying on EPA's expertise as support for the exemption.

Subparagraph C.9. exempts wastes from the extraction, benefication and processing of ores and minerals and is substantially identical to to 40 C.F.R. § 261.4(b)(7). As originally drafted, subparagraph C.9. was identical to the federal regulation and exempted solid waste from the extraction etc. of ores. During the comment period the Agency received a comment from T. W. Harries representing the Eveleth Taconite Company and the Eveleth Expansion Company that the exemption as drafted did not cover the same waste as the EPA regulations. Under the federal program hazardous waste is a subset of solid waste. Under the state program the terms are mutually exclusive. By exempting solid waste the state exemption was narrower than the federal exemption. This was not the Agency's intent. Therefore, at its December 20, 1983 meeting the Agency Board amended this subparagraph to delete the word "solid" so that the state exemption would cover the same wastes as the federal exemption. The Agency is relying on EPA's expertise as support for this exemption. The basis for this exemption is discussed at 45 F.R. 76618 - 76618 (November 19, 1980).

Subparagraph C.10. continues the exemption for wastes resulting from spills presently found at 6 MCAR § 4.9002 C.12. The language has been amended, however, to clarify that the exemption applies only as an immediate response to an emergency and that the waste must ultimately be sent to a permitted hazardous waste facility.

Subparagraph C.11. defines conditions for exempting trivalent chromium wastes and is identical to 40 C.F.R. § 261.4(b)(6)(i). This exemption is directed to tanning wastes but can be applied to any other chromium waste that meets the same conditions. This exemption is reasonable because trivalent chromium, if not converted to hexavalent chromium in a manufacturing process, is non-hazardous. The Agency is relying on EPA's expertise as support for this exemption. The basis for the exemption is discussed at 45 F.R. 72035 - 72037 (October 30, 1980).

Subparagraph C.12. exempts hazardous wastes that are formed in product or raw material storage tanks, transport vehicles, pipelines or process units and is identical to 40 C.F.R. § 261.4(c). When these wastes are removed, or upon expiration of 90 days after the containing unit ceases to be used for the product or raw material, the wastes become hazardous wastes. This provision is reasonable because these units are designed to hold valuable products or raw materials and are capable of holding, and are typically operated to hold, the hazardous wastes which are generated in them until the wastes are purposefully removed. As a result, any risks to human health or the environment posed by these wastes prior to removal are very low and are only incidental to the risks posed by the product or raw material with which they are associated. A more detailed discussion of the basis for this exemption is found at 45 F.R. 72024 - 72026 (October 30, 1980) and 45 F.R. 80286 - 80286 (December 4, 1980).

Subparagraph C.13. exempts petroleum-derived waste oils from regulation under the hazardous waste rules. The exemption applies only to waste oils which do not contain a listed hazardous waste and which are being beneficially used, reused, recycled or reclaimed. Existing rule 6 MCAR § 4.9002 B.3. lists used crankcase oil and petroleum wastes as hazardous wastes and the definition of petroleum wastes limits such wastes to wastes from petroleum refinery operations. Most of the petroleum wastes regulated under the exisitng rules which are actually hazardous are regulated under the proposed rules under the toxicity characteristic or are listed in proposed rule 6 MCAR § 4.9134. The remaining petroleum wastes and used crankcase oil are regulated under the proposed rules only if they are or if they contain listed wastes. The Agency believes it is reasonable at this time to regulate only those waste oils which are likely to cause environmental harm. The waste oils exempted pursuant to this subparagraph have an economic value and a sound recycling market exists for these materials. Therefore the likelihood that mismanagement of these wastes would cause environmental problems is significantly reduced.

The Agency has received numerous comments with respect to the waste oil exemption. These suggestions range from a proposal to make all waste oil hazardous to the proposal that no waste oil should be regulated as a hazardous waste. The Agency is currently

participating in a national waste oil study being conducted by EPA. This study includes sampling and analyses of waste oil generated in Minnesota. When the results of this study are available the Agency can better evaluate what level of regulation is appropriate for waste oil. To regulate all waste oil as hazardous waste at this time would place burden on the thousands of service stations and small businesses which handle crankcase or cutting oils out of proportion with the extent of the known hazard. The Agency believes that the proposed exemption, which continues the regulation under the hazardous waste rules of waste oil which does present an environmental problem, is a reasonable approach at this time.

Subparagraph C.14. conditionally exempts waste samples and other samples collected for the purpose of monitoring or testing and is identical to 40 C.F.R. § 261.4(d). Pursuant to this exemption, samples are excluded from the generator and transporter requirements when shipped from the generator or any other person who collects the sample to a laboratory, or vice versa, provided that certain packaging and labeling requirements are met, and from the storage requirements until the decision is made to discard the sample. In addition this provision clarifies that testing of samples does not require a treatment permit. The Agency agrees with EPA that subjecting test samples to the full coverage of the rules is more regulation than is necessary to protect human health and the environment. EPA's information indicates that samples collected for analytical or characterization purposes are

usually shipped in quantities under a gallon in size. Economic incentives exist to insure that the purposes of the generator and transporter requirements (safe transport and delivery to an appropriate destination) are achieved without subjecting the samples to the full set of requirements. In addition, United States Department of Transportation (hereinafter "U.S. DOT") and United States Postal System (hereinafter "USPS") regulations apply to many sample shipments. Where U.S. DOT or USPS regulations do not apply, this provision sets forth the applicable requirements. A more detailed explanation of the basis for this exemption is set forth at 46 F.R. 47426.- 47429 (September 25, 1981).

Subparagraph C.15. exempts scrap metal which is not toxic and not listed in 6 MCAR § 4.9134 and which is to be reused or recycled from regulation under these rules. This exemption is narrower than the exemption for scrap metal in the existing rules. Under existing rules 6 MCAR §§ 4.9001 B.34 and 4.9002 C.3., scrap metal is included within the definition of rubbish and all rubbish is excluded from regulation under the hazardous waste program. This broad exemption was less stringent than the federal requirement and has therefore been revised. The exemption does not apply to scrap metal which is air pollution control equipment dust or is not in a solid form since such wastes pose a toxic hazard when improperly managed. However, solid scrap metal which is not toxic and which is to be beneficially regused or recycled does not pose such a hazard.

Existing rules 6 MCAR § 4.9002 C.4., C.9., C.10. and C.11. have been repealed. Subparagraph C.4. excluded asbestos in taconite wastes from the definition of hazardous waste. Subparagraph C.9., which exempted municipal sewage sludge, was based on the statutory definition of hazardous waste found at Minn. Stat. § 116.06, subd. 13. 1983 Minn. Laws, ch. 373, § 43 repeals the sewage sludge exclusion in the definition of hazardous waste. The EPA does not exclude either asbestos in taconite tailings or sewage sludge from coverage by its regulations. See 40 C.F.R. § 261.4. Repealing these exclusions does not mean that asbestos in taconite tailings or sewage sludge is a hazardous waste. Rather it puts these wastes in the same category as most other wastes, thereby requiring generators to evaluate the waste to determine if it is hazardous. Retention of these exemptions would make the Agency's rules less stringent than the EPA regulations and could jeopardize the Agency's ability to obtain EPA authorization for the hazardous waste program. Subparagraph C.10., which exempts certain radioactive waste, is unnecessary because the exemption provided therein is contained in the statutory definition of hazardous waste found at Minn. Stat. § 116.06, subd. 13. Subparagraph C.11. is no longer necessary because pesticide wastes are covered by other provisions of the proposed rules, see e.g. 6 MCAR § 4.9134. Therefore, it is reasonable to repeal these four subparagraphs.

6 MCAR § 4.9129

Rule 6 MCAR § 4.9129 governs the management of hazardous waste by use, reuse, recycling and reclamation. The existing state rules exempt a generator's on-site resource recovery facility from the requirement of having a hazardous waste facility permit. The proposed rule eliminates that exemption, but has been written to encourage beneficial use, reuse, or legitimate recycling, or reclamation by providing specific paperwork exemptions and management requirements based upon the hazardous properties of the waste and the methods of use, reuse, and recycling.

The EPA regulation on use, reuse, recycling, and reclamation, 40 C.F.R. § 261.6, exempts from regulation all hazardous wastes which are not sludge, do not contain listed wastes, and are not in themselves listed wastes. The generators, transporters, and facilities are fully exempt from notifications, reports, facility standards, and permits. Hazardous wastes which are sludges, or are listed wastes or contain listed wastes are regulated by the generator and transporter standards, the notification requirements, the general facility standards, and permit requirements for storage facilities only.

All hazardous wastes, regardless of their end use, may pose significant health and environmental hazards. Excluding completely

from regulation wastes that are to be reused, recycled or reclaimed would create a major regulatory loophole. Although a hazardous waste may be used, reused, recycled, or reclaimed, it still poses a potential problem for human health and the environment if the wrong method of use, reuse, recycling, or reclamation is selected for the hazardous waste in question. Moreover, recycling markets fluctuate widely in their demand so a waste may fall in and out of the regulatory system and a waste originally intended for reuse may ultimately be disposed of instead. Therefore, the Agency believes that minimal requirements governing the management of wastes which will be beneficially reused are necessary to protect the public health and the environment.

Paragraph A. of 6 MCAR § 4.9129 covers applicability. It is reasonable to include this provision so that persons covered by these rules can be informed of the subject covered without having to read the entire rule.

Subparagraph B.1. applies to the same hazardous wastes as 40 C.F.R. § 261.6 (a)(1) and (2). However, the Agency did not adopt EPA's complete exemption of these wastes from regulation. Under this proposed rule a generator of a hazardous waste which is not a sludge, and is neither listed in 6 MCAR § 4.9134 nor toxic pursuant to 6 MCAR § 4.9132 F., is required to: 1) evaluate the waste to ensure that it qualifies for the exemption, 6 MCAR §§ 4.9205 - 4.9208; 2) submit a disclosure, an annual report and keep records, 6 MCAR §§ 4.9211, 4.9217 - 4.9220; 3) manifest

the waste when it is transported, 6 MCAR §§ 4.9212 - 4.9213; 4) properly manage the hazardous waste, 6 MCAR §§ 4.9215; 5) comply with the outdoor storage requirements for generators, 6 MCAR § 4.9216; and 6) comply with other selected storage requirements based on the method of storage, 6 MCAR §§ 4.9317, 4.9318 and 4.9415. It is reasonable to require manifests, a disclosure, recordkeeping, an annual report, waste evaluation and proper management from generators of wastes that may be recycled to ensure that a specific hazardous waste will be used, reused, recycled, or reclaimed by methods that will not jeopardize human health or the environment. These requirements will not be a significant burden for generators and will not impede beneficial recycling.

It is necessary for a generator to evaluate his waste to determine its characteristics and whether it is hazardous, regardless of whether it is to be used, re-used, recycled or reclaimed or otherwise handled. A legitimate recycling operation would not accept a generator's hazardous waste without a chemical evaluation, in order to protect its personnel, equipment and permits. Proper management includes utilizing transporters and facilities which have valid identification numbers and reporting and recovering all spills.

The disclosure contains a list of all hazardous wastes generated, the chemical composition of the waste, the tests used

to identify the hazardous properties and a management plan for each waste that is hazardous. The disclosure is a one-time requirement which provides the Agency with a means of knowing what the waste is, the names of the transporter and recycling facility, the rules with which the generator must comply, and information for the Waste Management Board regarding the types and quantities of wastes which are or may be recycled for facility planning purposes. The annual report is the mechanism which notifies the Agency, on an annual basis, of changes in quantities and management, and therefore, the rules with which the generator must comply. If the method of management does not change, the generator will only have to sign a certification to that effect. The Agency believes that the availability of the broader data gathered from disclosures and annual reports will, as an additional benefit, enhance the exchange of information regarding the viability of using, reusing, recycling or reclaiming similar hazardous wastes. The data will allow generators of similar hazardous wastes to know of potential use, reuse, recycling and reclamation options which are currently available.

Subparagraph B.1.d. establishes requirements for outdoor storage of hazardous waste which is to be reused or recycled. Subparagraphs B.1.f. - g. establish the requirements for the storage of such hazardous waste in surface impoundments, waste piles and tanks. These provisions are necessary to prevent

environmentally-unsound storage methods. Specifically the rules referenced in subparagraph B.1.d. require that hazardous wastes stored outdoors be placed on a curbed surface which is impervious to the waste being stored in order to protect surface and ground water; that shading be provided for ignitable wastes to prevent excessive heat generation and subsequent ignition and pressure increases and container failures; and that the storage area be protected from unauthorized access and inadvertant damage from vehicles or equipment.

The surface impoundment requirements, selected provisions of proposed rules 6 MCAR § 4.9317, address conditions for containment, closure, and ignitable, reactive and incompatible wastes. The containment provision requires the owner or operator to prevent overtopping, thus preventing spillages which could contaminate surface or ground water. The closure provision requires the owner or operator to remove or decontaminate the hazardous waste and other materials and to close the surface impoundment as a storage facility. Since the wastes are being stored prior to recycling, there would be no reason or need to leave the wastes in the impoundment for disposal. It is therefore reasonable to treat the surface impoundment as a storage facility rather than a disposal facility. Also, since the facility has not been through the permitting process and the arrangements necessary for post-closure care will not have been made, it is reasonable to require removal

or decontamination of hazardous waste and other materials at closure. Special requirements for the management of ignitable, reactive and incompatible wastes require the owner or operator to either treat the wastes so that they no longer exhibit these characteristics or manage the wastes to prevent ignition or reaction. Such requirements are necessary and reasonable to prevent adverse effects on human health and contamination of the environment due to wastes igniting or reacting.

The waste pile requirements, selected provisions of proposed rule 6 MCAR § 4.9318, address conditions for run-on control, run-off management, wind dispersal control, closure and ignitable, reactive and incompatible wastes. The run-on control, run-off management and wind dispersal control provisions are reasonable since they require the owner or operator to manage the waste pile to prevent any discharge of hazardous waste, thus protecting human health and the environment. The closure requirement and special requirements for ignitable, reactive and incompatible wastes for waste piles are similar to those for surface impoundments and are considered reasonable and necessary for the same reasons given in the previous paragraph. Therefore, they will not be discussed again here.

The storage requirements for tanks, selected provisions of proposed rule 6 MCAR § 4.9415, address conditions for general operation, inspections, closure and ignitable, reactive and incompatible wastes. The general operating requirements are

reasonable since they require the owner or operator to operate the facility in a manner which prevents spills, leaks and overflows of hazardous waste, thus protecting human health and the environment. The inspection requirements are reasonable since they are used as preventative measures to help avert the release of hazardous waste that would affect public health and the environment due to malfunctions or deterioration of equipment. The closure requirement and special requirements for ignitable, reactive and incompatible wastes for tanks are similar to those for surface impoundments and are considered reasonable and necessary for the same reasons as discussed previously. Therefore they will not be discussed again here.

Additional requirements are imposed on the outdoor storage of EP toxic wastes in tanks, surface impoundments and waste piles. These requirements include all the generator, transporter, facility and interim status standards. These provisions also require owners or operators who store EP toxic wastes outdoors for subsequent reuse or recycling to obtain Agency permits for outdoor storage facilities and to comply with all standards. Thus, EP toxic wastes stored outdoors prior to reuse or recycling are subject to the same requirements as hazardous wastes which are not to be recycled or reused.

As stated above, the recycling market fluctuates widely. EP toxic wastes have a high potential for leaching hazardous constituents into the soil and ground water. The Agency is

dealing with several situations where waste which was originally intended for recycling has been stored in an uncontrolled manner for extended periods of time causing soil and ground water contamination. In one situation lead plates from batteries have been stored in an uncontrolled waste pile for over 10 years. This has resulted in soil contaminated with lead, the discharge of several tons of lead into the city sewer and violations of the air quality standards. In another situation the uncontrolled outdoor storage of EP toxic wastes has resulted in a pH of 1.0 in soils as deep as 17 feet under the waste pile, soils contaminated with lead and arsenic, and the discharge of acid runoff into storm and sanitary sewers causing damage. Because of the high potential of these wastes to leach and the fact that the fluctuating recycling market can lead to extended storage of these wastes, it is reasonable to impose these requirements on the outdoor storage of EP toxic wastes and to regulate them to the same extent as hazardous wastes which are not being reused.

Subparagraph B.2. exempts spent pickle liquor that is reused in wastewater treament at a facility holding a NPDES permit from all but the evaluation, disclosure, manifest, annual reporting, proper management and outdoor storage requirements of the hazardous waste rules. The waste exempted by this subparagraph is the same waste exempted by 40 C.F.R. § 261.6(a)(3)(i) from the EPA hazardous waste regulations. Spent pickle liquor is generated in

the pickling of iron and steel products prior to the application of a final surface coating or finish. The resulting waste liquor is highly corrosive and also is contaminated with toxic metals. Spent pickle liquor is often used beneficially in wastewater treatment as a phosphorous precipitant and as a sludge conditioner. In adopting the spent pickle liquor exemption the Agency is relying on EPA's investigation and expertise. The basis for the EPA exemption is set forth at 46 F.R. 44970 - 44973 (September 8, 1981). EPA exempts this waste from all regulation. However, because of the highly corrosive nature of this waste (EPA research indicates a pH of <1) the Agency believes that it should not be exempt from all regulation. The proposed rule would subject spent pickle liquor to the same requirements, except for the specific storage requirements, that are discussed on pp. 44-45, supra. with respect to the wastes exempted by Subparagraph B.

As originally proposed 6 MCAR § 4.9129 B.1. and B.2. allowed spent pickle liquor reused at a wastewater treatment facility and wastes that are hazardous due to characteristics other than toxicity that were to be beneficially reused or recycled to be transported without a manifest. The Agency received numerous comments objecting to this exception. Under the existing hazardous waste rules all hazzrdous waste regardless of its desgination must be manifested. Although the proposed exemption

covered only a small portion of the hazardous wastes which are reused or recycled, the commenters recommended that all wastes be manifested so that the wastes could be tracked and so that the manifests could be used as an auditing system to verify that the wastes were actually shipped to and received by the recycling facility. The Agency has received no indication that the use of manifests for wastes which are to be reused or recycled has proved unduly burdensome especially since the U.S. DOT requires shipping papers or bills of lading. Therefore, the Agency decided to retain the existing system requiring that all wastes be manifested during transportation and, at its December 20, 1983 meeting, the Agency Board amended the rule accordingly. At the same time the Agency also amended subparagraphs B.1. and B.2. to add certain requirements such as recordkeeping and the county programs which had been inadvertently omitted from the original version to the requirements applicable to wastes covered by these subparagraphs.

Subparagraphs B.3.- B.5. apply to the same wastes as 40 C.F.R. Part 261.6(b). as well as to wastes which are toxic pursuant to 6 MCAR § 4.9132 and listed wastes which are only ignitable and are to be burned for heat recovery. These paragraphs require generators of such wastes to comply with all of the generator, transporter, and facility requirements except for certain facility standards and permits. The storage of such waste is subject to the hazardous waste facility permit procedures. The Agency

believes, based on experiences gained by working with the existing program, that subparagraphs B.3.- B.5. will encourage the beneficial use, reuse, recycling, and reclamation of these wastes while protecting human health and the environment from mismanagement.

The intent of paragraphs B.3. - B.5. is two-fold. First, wastes listed in 6 MCAR § 4.9134, sludges and wastes which are toxic pursuant to 6 MCAR § 4.9132 F. which are not to be burned, and wastes listed in 6 MCAR § 4.9134 for ignitability only and which are to be burned for heat recovery are subject to the same standards EPA imposes on sludges and listed wastes. The Agency believes the EPA standards are acceptable for regulating the four types of wastes listed in subparagraphs B.3. and B.4. and the corresponding methods of use, reuse, recycling and reclamation.

The Agency however, concluded that more stringent requirements must be in place for sludges, wastes listed in 6 MCAR § 4.9134 for characteristics other than ignitability, and wastes which are toxic pursuant to 6 MCAR § 4.9132 F. which are to be burned for heat recovery. Subparagraph B.5. is reasonable because it recognizes that, depending upon the type of hazardous waste, burning for heat recovery is a potentially harmful method of use and reuse. The Agency believes that 40 C.F.R. § 261.6 does not sufficiently regulate burning because it exempts facilities which incinerate listed and toxic hazardous wastes from the technical facility standards for such operations. The burning of such wastes may emit compounds not regulated by the Clean Air Act. Therefore,

subparagraph B.5. requires that, in addition to the requirements imposed in subparagraphs B.3. and B.4., the facility must also have an air quality permit and comply with the technical standards for the thermal treatment of hazardous waste provided in 6 MCAR §§ 4.9280-4.9422.

The Agency determined that the burning facility could be adequately regulated under an Air Quality Permit in contrast to a more burdensome and costly Hazardous Waste Facility Permit upon the condition that the facility meet the 99.99% destruction/removal standards prescribed in the thermal treatment performance standards contained in proposed rule 6 MCAR § 4.9321. This standard would better address the emissions of organic compounds and heavy metals than the current Air Quality rules or the EPA regulations. The Agency believes this approach is a reasonable approach to prevent damage to human health and the environment while promoting incineration of hazardous waste for its heat value.

Paragraph C. applies to out-of-state generators and recognizes the unique situation of those out-of-state companies who want their wastes to be used, reused, recycled or reclaimed by methods other than burning in Minnesota. The Agency believes it is reasonable to encourage out-of-state companies to have their wastes managed in such a way by not subjecting them to Minnesota's hazardous waste disclosure and annual reporting requirements since they are subject to either the hazardous waste program in the company's home state or to the EPA regulations.

In summary, 6 MCAR § 4.9129 closely corresponds to 40 C.F.R. § 261.6. However, the outdoor storage of EP toxic wastes and the burning of listed wastes, sludges, and toxics in boilers and heat recovery incinerators is more fully regulated in order to prevent human health and environmental damage. This rule is reasonable since it promotes beneficial use, reuse, recycling, and reclamation of hazardous wastes, while recognizing that exemptions from regulation must be based upon the type of hazardous waste and the method of use, reuse, recycling, or reclamation.

6 MCAR § 4.9130

6 MCAR § 4.9130 sets forth the standards applicable to empty containers. This rule defines when a container or inner liner is empty and exempts the hazardous waste remaining in an empty container or inner liner from regulation under the hazardous waste rules. This rule is taken from 40 C.F.R. § 261.7. The Agency is relying on the EPA background information relating to empty containers as support for this rule. This information is set forth at 45 F.R. 78524 - 78529 (November 25, 1980) and 47 F.R. 36092 - 36097 (August 18, 1982).

6 MCAR § 4.9002 D. - H.

The provisions of existing rule 6 MCAR § 4.9002 D.-H. are incorporated into proposed rules 6 MCAR § 4.9132, 4.9205 - 4.9209 and are discussed in connection with those rules.

6 MCAR § 4.9131

6 MCAR § 4.9131 lists the criteria the Agency will use to list a waste as hazardous. This rule is referenced in 6 MCAR § 4.9104 B. as the criteria to be used by a generator in petitioning to delist his particular waste. The provisions of paragraphs A. - C. have been adopted from 40 C.F.R. § 261.11. 6 MCAR § 4.9131 D. provides for the Director's recommendation that a specific generator's waste be declared hazardous. This rule is renumbered existing rule 6 MCAR § 4.9002 H.2. The rule is reasonable because the criteria are based on studies and data concerning hazardous factors of chemicals, and incidents where a waste or chemical has caused substantial harm to human health or the environment when improperly managed. The Agency is relying on the EPA background document on criteria for listing hazardous waste listed in Part VIII. as support for this rule.

6 MCAR § 4.9132

6 MCAR § 4.9132 defines the characteristics which make a waste hazardous. A waste which is not specifically excluded from regulation is a hazardous waste if it exhibits any of the characteristics identified in this rule. The existing hazardous waste rules identify the following characteristic for determining if a waste is hazardous: flammable, oxidative, explosive, corrosive,

irritative, bioconcentrative, toxic and carcinogenic. See 6 MCAR § 4.9002 B. In these proposed rules, these characteristics have been incorporated into the hazardous waste characteristics utilized in the EPA regulations.

Paragraph A. is informational and self-explanatory. Paragraph B. defines ignitability and is identical to 40 C.F.R. § 261.21(a)(1),(2),(3) and (b). In the existing rules the characteristic of ignitability comes under the criteria of flammability set forth in 6 MCAR §§ 4.9001 B.10. and 4.9002 E.4. The provisions of the revised rule are substantially the same as the existing rules with the exception of the flash point temperature. Minnesota's existing flammability standard is a flash point of less than 200°F. This value was adopted from the original federal standards. EPA has subsequently chosen 140°F as its cut-off temperature. An examination of U.S. DOT's list of hazardous materials shows only two materials with flash points above EPA's standard of 140°F and in both cases the flash points were only slightly above the 140°F temperature. It is reasonable therefore to lower the flash point temperature from 200°F to 140°F to correspond with EPA's value, because doing so does not introduce any substantial increase in potential exposure to hazardous waste. The Agency is relying on the background material on ignitability utilized by EPA in promulgating its ignitability standard as support for adopting a 140° flash point standard. The documents relied upon are listed in Part VIII.

Paragraph C. defines oxidizers. Oxidizers are included in the EPA ignitability characteristic. The provisions of subparagraphs C.1.a. and C.2. are identical to 40 C.F.R. § 261.21(a)(4) and (b). The provisions of subparagraph C.1.b. are taken from existing rule 6 MCAR § 4.9001 B.28. The Agency has chosen to list this category separately to emphasize that oxidizers and ignitables are not compatible wastes. Inorganic oxidizers are not ignitable; they are suppliers of oxygen and will react with ignitable wastes. Organic oxidizers may be ignitable under some conditions, but the emphasis should be on the oxidizing property because it is the source of the most likely hazard. It is reasonable to make this distinction, because it helps to protect the public and neither enlarges nor diminishes the present state rule nor the EPA regulation.

Certain provisions of Minnesota's present flammability rules are no longer needed and are being deleted. 6 MCAR § 4.9002 E.4. relates to a miscible mixture having a flash point greater-than 200°F and containing components with different volatilities and flash points. The rule requires a second test following the evaporation of a sample at ambient temperature and pressure to 90 percent of its orginal volume or for four hours, whichever comes first. Thus, if the more volatile component has the higher flash point the waste could be determined to be hazardous on the second test. In discussions with people knowledgeable in the field,

Agency staff have been informed that the occasions where miscible liquids will have decreasing flash points following evaporation are very few and that the requirement for a second test does not serve any useful purpose. It is, therefore, reasonable to delete this provision. 6 MCAR § 4.9001 B.10.a.(1) concerns a mixture of which 99% is a component with a flash point greater than 200°F. This rule is less restrictive than the EPA regulation since a mixture with a flash point below 140°F would not be a hazardous waste if the conditions of this rule are met. Mixtures are governed by proposed rule 6 MCAR § 4.9128. Therefore, because mixtures are covered elsewhere and because the present rule is less stringent than the EPA regulation, it is reasonable to drop the present rule.

Existing rule 6 MCAR § 4.9001 B.10.a.(2) applies to a waste with a flash point between 100-200°F but which will not support combustion. This rule has been dropped because, while the property of supporting combustion will contribute to a waste's hazardous effects, the flash point is the criterion measured. The flash is the principle hazard because the flash may set fire to materials other than the waste itself, including burning a person exposed to the burning (flashing) vapors. Including the property of supporting combustion could add another test procedure, a fire point test, to determine the temperature needed to sustain combustion. The present rule does not define "supporting combustion". Fire points are

usually only a few degrees above the flash point, therefore flash points provide better protection. The flash point is widely used by other agencies as a hazard characteristic. Thus, it is reasonable to drop an apparently less stringent rule when actually no significant change in coverage will result.

Paragraph D. defines corrosivity. The Agency is proposing to adopt the corrosivity provisions from 40 C.F.R. § 262.22 rather than retain the provisions of existing rules 6 MCAR §§ 4.9001 B.5. and 4.9002 E.6. Since the pH test is only an indicator and not a direct measure of corrosivity and some wastes with extreme pH limits do not corrode eye tissue, the Agency believes that more recent data and experience with the existing rule justifies the amendment of the current pH limits of 3.0 and 12.0. In raising the alkaline pH level from 12.0 to 12.5 and lowering the acidic pH level from 3.0 to 2.0 the Agency is relying on the EPA background documents on corrosivity. In addition Economics Laboratories and MACI submitted scientific literature which also supports lowering the acidic pH level from 3.0 to 2.0. These documents are listed in Part VIII.

In addition, the adoption of the federal pH limits creates greater consistency with the federal program, thereby reducing the current problems with the interstate shipment of wastes which are only hazardous in Minnesota. Finally, the Agency has gained significant working experience in terms of corrosive wastes through the disclosure program. It has become evident that the

majority of wastes which are considered corrosive by either the existing state or federal programs are either neutralized and discharged to a wastewater treatment system or shipped to a facility which will beneficially use, reuse, recycle or reclaim the waste.

In summary, the Agency believes the proposed adoption of the federal corrosivity characteristic in lieu of existing state parameters creates greater consistency between the state and federal programs, reduces unnecessary confusion among the regulated community and continues to protect public health and the environment.

Paragraph E. defines reactivity and is identical to 40 C.F.R. § 261.23. The characteristic of reactivity replaces the explosive category of the existing rules. The EPA regulation regulates sulfides and cyanides which are not now regulated by the state rules. In order to obtain authorization, the state rules must be at least as stringent as the federal rules and it is therefore necessary to add the characteristic of reactivity. Even without this requirement, it is reasonable to classify wastes which are normally unstable and readily undergo violent change without deteriorating, which react violently with water, which form potentially explosive mixtures with water, which generate toxic gases when mixed with water, or which will generate toxic gases when exposed to pH's between 2 and 12.5 as hazardous because such

wastes pose a real threat to human health and the environment. In adopting the characteristic of reactivity, the Agency has relied on the background documents or reactivity prepared by EPA in promulgating 40 C.F.R. § 261.23. This material is listed in Part VIII.

Paragraph F. defines toxicity and is taken from existing rules 6 MCAR §§ 4.9001 B.24. and 25. and 4.9002 E.5. The Agency has retained the existing state rule on toxicity because many wastes are hazardous only because of toxicity, and unless these wastes are already included in the listed hazardous wastes they will not be controlled under other rules. This rule is especially needed to cover new and currently unlisted wastes which are toxic.

There are four types of toxicity in the existing rule. Only aquatic toxicity has been dropped from the proposed revisions. It is reasonable to drop the aquatic toxicity criteria from the hazardous waste rules because wastes which are hazardous because of aquatic toxicity are covered by other programs which provide that (1) liquids cannot be put in sanitary landfills (solid waste program, solid waste rules), (2) wastes cannot be dumped on land without a permit (solid waste program), (3) wastes cannot be discharged into surface waters (surface water and/or NPDES program) and (4) wastes discharged to a municipal sewer are subject to sewer authority and pretreatment rules and, indirectly, the NPDES programs.

Paragraph G. defines Extraction Procedure (EP) toxicity and is based on existing rules 6 MCAR § 4.9002 B.2. and E.2. Proposed subparagraphs G.1. and G.2. are identical to 40 C.F.R. § 261.24. EP toxicity tests evaluate a waste in terms of the amount of a pollutant that is extracted and that can therefore be expected to be present in the leachate from the waste. The concentration is then compared with drinking water standards and, if more than 100 times the standard, the waste is defined as hazardous. This is based on the assumption that if the waste is mismanaged, for example by disposal in a permitted municipal landfill, the leachate would be diluted 100 times before it reaches a drinking water well. If any component exceeds 100 times its drinking water standard, the waste is a pollutant and a hazardous waste. In existing rule 6 MCAR § 4.9002 B.2, List 2, the emphasis is on bioconcentration and both drinking water standards (100X) and surface water standards (10,000X) were used. The use of surface water standards to set bioconcentrative standards involves the aquatic environment. This standard has been deleted because, as discussed above, other programs control those wastes.

Exhibit 6 MCAR § 4.9132 G.3-1 is taken from Table 1 of 40 C.F.R. Part 261 and includes many of the compounds found in existing rule 6 MCAR § 4.9002 B.2. Those wastes listed in 6 MCAR § 4.9002 B.2. but not listed in Exhibit 3-1 are covered elsewhere

in the proposed rules. Aldrin, Chlordane, DDT, Endrin and Heptachlor which are listed in the existing rule are now included as listed wastes in proposed rule 6 MCAR § 4.9134 D.5. and D.6. PCB wastes are covered in the revised rules at 6 MCAR § 4.9134 E. Mirex is not a listed waste but is hazardous by the toxicity test. It is reasonable to adopt the EPA list without including all of the components presently found in 6 MCAR § 4.9002 B.2., List 2, since these omitted wastes are covered elsewhere.

The Agency has relied on EPA's background documents on EP Toxicity in proposing to adopt 6 MCAR § 4.9132 G. These documents are listed in Part VIII.

6 MCAR § 4.9133

Rule 6 MCAR § 4.9133 sets forth a procedure whereby wastes which fail the toxicity characteristics may be exempted from regulation if the generator can demonstrate that the waste for which the exemption is sought does not pose a hazard to public health or the environment. The procedure is similar to the delisting procedure set forth in 6 MCAR § 4.9104 B. The factors to be considered in determining whether a waste should be exempt are the same as the criteria set forth in rule 6 MCAR § 4.9131 A.3. for listing wastes as toxic. It is reasonable to use the same factors since if the generator can show that the waste does not

meet the criteria which would cause it to be listed as a toxic hazardous waste, it is unlikely that the waste will present a hazard to human health or environment even though it had failed one of the characteristic tests.

6 MCAR § 4.9134

Rule 6 MCAR § 4.9134 contains lists of wastes which are hazardous wastes. There are four lists: Paragraph B. lists hazardous wastes from non-specific sources; Paragraph C. lists hazardous wastes from specific sources; Paragraph D. contains two lists of hazardous wastes from discarded commercial products, off-specification species, containers and spill residues. The provisions of 6 MCAR § 4.9134 A.-D. and the lists of wastes contained therein are identical to the provisions of 40 C.F.R. §§ 261.30, 261.31, 261.32 and 261.33.

EPA has made a determination that the wastes listed in paragraphs B., C. and D. are hazardous based on the criteria for listing hazardous waste set forth at 40 C.F.R. 261.11 (a)(1) and (3). These criteria are the same criteria that are contained in proposed rule 6 MCAR § 4.9131 A.1. and A.3. In adopting these lists the Agency has relied on the extensive research and background material gathered by EPA in promulgating the provisions of 40 C.F.R. Part 261. The documents set forth a summary of EPA's basis for listing each identified waste stream; a brief

description of the industry or industries generating the waste stream; a description of the manufacturing process which generates the waste and identification of waste composition, constituent concentrations and annual quantity generated; a discussion of waste management methods; and a summary of the adverse health effects of each of the waste constituents of concern. These documents are listed in Part VIII. Because of the extensive work done by EPA in adopting these lists, it is reasonable to adopt these lists in the same form as promulgated by EPA.

6 MCAR § 4.9134 E. governs the managment of PCB wastes. This rule is intended to clarify the interaction of the existing Certificate of Exemption Rules for PCB's, 6 MCAR § 4.8038, with the hazardous waste rules. PCB wastes are covered by existing rule 6 MCAR § 4.9002 B. The hazardous waste rules as revised bring PCB's and PCB items into the hazardous waste management system only at the point where the PCB waste is going to be managed for disposal. The Certificate of Exemption rules cover the use, reuse and storage of PCB's and PCB items.

Coverage of PCB wastes has been expanded from wastes containing 500 parts per million PCB in the present rule to wastes containing 50 parts per million PCB in the proposed rule. This is reasonable because 50 parts per million is equivalent to the coverage of the federal system. This rule exempts PCB wastes from the 90-day accumulation time limit since the federal

regulations do not place a time limit on their storage. In addition, the storage of PCB wastes is exempt from the hazardous waste storage facility permit process and most of the hazardous waste storage facility standards. The Agency believes this approach is reasonable since the storage of PCB wastes is subject to 1) the federal storage requirements of 40 C.F.R. § 761.65; 2) the marking and labelling requirements which are placed on all hazardous wastes; and 3) the personnel training, contingency planning and emergency procedure standards required of all generators and hazardous waste facilities. As a result, the storage practices will be sufficient to protect the public health and environment.

The proposed rule also clarifies the manifesting requirements for PCB shipments by requiring a manifest for all PCB waste shipments except those shipments between the owner's premises via the owner's own vehicle. This clarification is intended to require the manifest between the generator and the receiving facility, but not between a site where the PCB contaminated item is being withdrawn from service and the generator's site if the generator is using his own vehicles to transport the waste.

The proposed rule also addresses high efficiency boilers which burn PCB wastes having PCB concentrations below 500 parts per million. This type of facility is exempt from the hazardous waste permitting procedures, the accumulation time limits, and most of

the standards for hazardous waste facilities. Under the proposed rule the facility would be subject to general facility standards and the air emissions are subject to an Air Quality permit under existing Agency rules. The Agency believes that this approach to high efficiency boilers will properly regulate the storage of PCB wastes in a manner which will ensure safe handling and the use of sound containers and tanks. Further, the Agency does not perceive a need to alter the regulation of the facilitiy's air emissions from the existing air quality program to the hazardous waste program.

In summary, the Agency believes the proposed PCB waste rule clarifies the interaction of the existing Certificate of Exemption program and the hazardous waste rules. The approach taken has been designed to regulate PCB wastes when they are intended for disposal and is sufficiently stringent to protect public health and the environment.

6 MCAR § 4.9135

Rule 6 MCAR § 4.9135 assigns a hazardous waste number to small amounts of unrelated chemicals as described in 6 MCAR § 4.9211 D. Rule 6 MCAR § 4.9211 D. permits a person who produces a waste from a laboratory or pilot plant that is a mixture of small amounts of unrelated chemicals to declare the waste hazardous and avoid having to test the mixture. Since existing state and federal

rules require the waste's hazardous waste number to be listed on the manifest when the waste is shipped, it is reasonable to assign such a number to a collection of small amounts of wastes which will usually be a variety of characteristic hazardous wastes and listed hazardous wastes.

6 MCAR §§ 4.9136 and 4.9137

6 MCAR §§ 4.9136 and 4.9137 list the constituents which caused wastes to be listed as hazardous in rule 6 MCAR § 4.9134. These rules are identical to Appendix VII and Appendix VIII of 40 C.F.R. Part 261. It is reasonable to include these lists so that generators will know the constituent which caused their waste to be listed and will therefore be able to determine if the waste produced at their facility may qualify for an exemption pursuant to 6 MCAR § 4.9104 B.

Chapter Two contains provisions from existing rule 6 MCAR § 4.9002. However not all of the language of rule 6 MCAR § 4.9002 is being retained. The provisions of 6 MCAR § 4.9002 B.1., 3. and 5. have been deleted. These provisions list certain wastes that are hazardous. The wastes which are listed in these rules are covered in proposed rules 6 MCAR §§ 4.9132, 4.9134 and 4.9135. Therefore, 6 MCAR § 4.9002 B.1., 3. and 5. are no longer needed and it is reasonable to repeal these provisions.

The provisions of 6 MCAR § 4.9002 D. have been renumbered as 6 MCAR §§ 4.9205 and 4.9206 and are found in Chapter 3. The

provisions of 6 MCAR § 4.9002 E. have either been repealed as unnecessary or have been included in proposed rule 6 MCAR § 4.9132. The provisions of 6 MCAR § 4.9002 G. have been renumbered as 6 MCAR §§ 4.9207 and 4.9208.

Rule 6 MCAR § 4.9002 H.1. has been deleted. It is reasonable to delete this paragraph because it is substantively the same as Minn. Stat. § 116.091 and it is unnecessary to have this provision included in both the statutes and the rules. Rule 6 MCAR § 4.9002 H.2. and H.3. has been renumbered as 6 MCAR §§ 4.9131 D. and 4.9209.

D. Chapter Three: Standards Applicable to Generators of Hazardous Waste, 6 MCAR §§ 4.9200 - 4.9222

The proposed rules in Chapter Three set forth the requirements applicable to generators of hazardous waste. This chapter contains provisions from existing hazardous waste rules 6 MCAR §§ 4.9002 D.-H., 4.9003, and 4.9008. In addition this chapter incorporates the EPA regulations applicable to generators which are found at 40 C.F.R. Part 262. In adopting the federal regulations the Agency is relying on the background documents prepared by EPA when it promulgated Part 262. These documents are listed in Part VIII.

6 MCAR § 4.9200

Proposed rule 6 MCAR § 4.9200 lists the classes of persons to whom the generator standards are applicable. The rule incorporates the provisions of 40 C.F.R. §§ 262.10(a) and (f) and 263.10(c). It is reasonable to have a rule on applicability so that persons will know if they are covered by the provisions of Chapter Three without reading the entire chapter. In addition to generators, the rule requires transporters who either act as importers or who mix hazardous wastes of different shipping descriptions and facility operators who initiate shipments of hazardous waste to comply with the generator standards. This provision is reasonable since under these circumstances transporters and operators are fulfilling the role of generators and producing hazardous wastes which require proper management.

6 MCAR § 4.9201

6 MCAR § 4.9201 is renumbered existing rule 6 MCAR § 4.9003 B. This rule requires persons producing hazardous waste to have financial resources adequate to insure proper management as prescribed by 6 MCAR § 4.9100-4.9560 and the hazardous waste facility permit procedures.

6 MCAR § 4.9202

6 MCAR § 4.9202 exempts the generator who treats, stores, or disposes of hazardous waste on-site from certain generator

requirements such as manifesting shipments and pretransport provisions. This rule incorporates the provisions of 40 C.F.R. § 262.10(b) into the state rules with the additional requirement that the generator submit a hazardous waste disclosure. Since the waste never leaves the site, it is reasonable to exempt the generator from irrelevant requirements. However, the rule requires the generator to submit a disclosure and comply with all applicable technical facility standards and the permit procedures. As a result, the generators' activities will be fully known by the Agency and properly regulated to protect human health and the environment.

6 MCAR § 4.9203

6 MCAR § 4.9203 is identical to 40 C.F.R. § 262.10(c) and applies to persons who import hazardous waste into Minnesota from a source outside the United States. It is reasonable to regulate an importer of hazardous waste as a generator in order to insure that the waste is properly managed. The absence of this rule would allow a hazardous waste generated in another country to enter the state without there being a domestic generator who would be responsible for proper management.

6 MCAR § 4.9204

6 MCAR § 4.9204 is identical 40 C.F.R. § 262.10(d). This rule exempts farmers from the requirements of 6 MCAR

§§ 4.9100-4.9221 and 4.9223-4.9560 and the hazardous waste facility permit procedures. However, farmers are required to comply with 6 MCAR § 4.9222, which requires the triple rinsing of waste pesticide containers and the proper disposal of the waste on-site. This rule is reasonable since it adequately regulates waste pesticides generated by farmers in such a way as to protect human health and the environment while not placing unnecessary administrative, technical, and financial burdens upon farmers.

6 MCAR § 4.9205

6 MCAR § 4.9205 governs the evaluation of waste by a generator. This rule incorporates the existing requirements of 6 MCAR § 4.9002 D. and the provisions of 40 C.F.R. § 262.11. Paragraph A. is renumbered existing rule 6 MCAR § 4.9002 D.1. This paragraph requires a generator to evaluate his waste to determine whether it is hazardous as defined in 6 MCAR §§ 4.9128-4.9137. This is reasonable since a generator would not know whether his waste is subject to the hazardous waste rules without such an evaluation.

Paragraph B. incorporates the provisions of 40 C.F.R. § 262.11(b) and (c). This paragraph sets forth the method by which and the criteria for which a waste is to be evaluated. In addition it permits a generator to use his knowledge of the waste or published literature in lieu of testing for the evaluation if

such knowledge or literature is adequate. The requirements of this paragraph are substantially the same as the requirements of existing rule 6 MCAR § 4.9002 D. However, it is reasonable to adopt the federal language to account for other amendments to these rules.

Paragraph C. is identical to 40 C.F.R. § 261.3(c)(2). This paragraph provides that a waste originating from a hazardous waste treatment, storage, or disposal facility is a hazardous waste if it meets the criteria of 6 MCAR §§ 4.9128-4.9137. It is reasonable to require that the hazardous waste originating from hazardous waste processsing facilities be regulated under the hazardous waste rules in order to ensure proper management of the waste.

6 MCAR § 4.9206

6 MCAR § 4.9206 governs the timing of waste evaluation and is renumbered existing rule 6 MCAR § 4.9002 D.2., D.3., and D.4. This rule has merely been renumbered and no substantive change has been made. 4/

4/ Although underlined, the language in this rule is existing language and not new language. As originally drafted, the Agency indicated at the appropriate place in Chapter Two that rule 6 MCAR § 4.9002 D.2., D.3., and D.4. had been renumbered as 6 MCAR § 4.9206 and inserted the language at its proposed new location. The Revisor of Statute's office disagreed with this method of drafting. Except for those instances where the provisions of an existing rule appeared in the same order in the proposed rule as they did in the existing rule, the Revisor has shown the existing language as

6 MCAR §§ 4.9207 and 4.9208

Rules 6 MCAR §§ 4.9207 and 4.9208 relate to the submission of evaluation reports following a request by the Director that a generator evaluate his wastes. These rules are renumbered from existing rule 6 MCAR § 4.9002 G. Industry representatives commented that the Director should not be limited to allowing only a 90-day extension period for the submission of the evaluation results. The type of tests to be conducted and workloads upon testing laboratories may prevent compliance with the 90-day extension. Therefore, the Director should be allowed to grant time extensions as needed. The Agency believed this was reasonable and modified the rule by deleting the 90-day limit.

The Agency also agreed with industry comments that a person evaluating a waste for the characteristic EP toxicity should be allowed to submit soft data in lieu of actual testing of the waste when the data is sufficient to determine whether the waste displays this characteristic. The Agency allows generators to use

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(Footnote No. 4 continued from page 72)

stricken at the place where it originally appeared and underlined as new language at the place where it appears in the proposed rule. The Revisor's office indicated that in spite of the strikeouts and underlining, rules that are merely being moved and renumbered are to be treated as existing language. Therefore for all rules, or paragraphs thereof, where this occurred the Agency is providing only a brief description of the rule, the existing rule number and a statment that the rule has been renumbered with no substantive change.

their knowledge of a waste in light of the processes and materials for which it is generated used as a tool for hazardous waste evaluation pursuant to proposed rule 6 MCAR § 4.9205 B.2.b. Therefore, it is reasonable to allow a generator to submit soft data when requested by the Director to submit information on the evaluation of whether a waste displays the characteristic of EP toxicity. In addition to these changes, the rule has been modified to conform to other amendments to the hazardous waste rules. However, these amendments make no substantive changes to the existing rule.

6 MCAR § 4.9209

6 MCAR § 4.9209 provides the Director with the authority to recommend that a specific generator's waste be classified as hazardous based upon the criteria of 6 MCAR § 4.9131 D. This rule is renumbered from existing rule 6 MCAR § 4.9002 H.2. and H.3. The rule has merely been renumbered and no substantive changes have been made.

6 MCAR § 4.9210

6 MCAR § 4.9210 sets forth the special requirements applicable to generators of small quantities of hazardous waste. The existing hazardous waste rules do not have any exemption for small quantity generators of hazardous waste. It is the Agency's belief, based on experience gained by working with the

existing hazardous waste program, that hazardous waste from small quantity generators presents significant risk and should be managed in an acceptable manner. The Agency does not believe that wastes should be exempted from regulation based only on the amount generated.

EPA exempts hazardous wastes from small quantity generators from nearly all regulation. Under the federal regulations small quantity generators do not have to notify EPA of the hazardous wastes produced, manifest shipments, properly label or mark the wastes, file annual reports, or comply with facility standards or permit procedures. In addition, the federal regulations allow small quantity generators to dispose of their hazardous waste in a sanitary landfill. The hazardous waste of a small quantity generator poses the same hazard to public health and the environment as the hazardous wastes of a large generator if improperly managed. Therefore, the Agency believes it is not reasonable to permit disposal of hazardous wastes, even in small quantities, in sanitary landfills. In addition, the Agency believes that a small quantity generator should be required to manifest wastes and to file a disclosure and an annual report.

Paragraph A. incorporates the provisions of 40 C.F.R. § 261.5(a) and (e), which establish the quantities of hazardous waste which a person may generate on a monthly basis and still qualify for the small quantity exemption. This rule establishes different exclusion levels based on the degree of hazard of the

waste. The Agency believes that it is reasonable to adopt the generation levels established by EPA and is relying on the background documents on small quantity generators prepared by EPA as support for this paragraph. Those documents are listed in Part VIII.

Paragraph B. exempts a small quantity generator from certain requirements of the hazardous waste rules if he complies with the provisions of this rule. Paragraph C. specifies that a small quantity generator loses the exemptions if, in any calendar month, the generator produces quantities of hazardous waste in excess of those monthly generation limits which define a small quantity generator. Paragraph D. incorporates provisions from 40 C.F.R. § 261.5(f) and allows a small quantity generator to accumulate hazardous waste on-site up to the small quantity monthly generation limits. If a small quantity generator accumulates quantities in excess of the quantity limits, the waste must be managed as though under full regulation, although the generator would not permanently lose his small quantity generator status.

Paragraph E. specifies the management requirements with which small quantity generators must comply. Subparagraph E.1. requires small quantity generators to evaluate their wastes to determine whether they are hazardous. This subparagraph corresponds to 40 C.F.R. § 261.5(g)(1). It is reasonable to require a small quantity generator to determine the hazardous characteristics of his waste since these characteristics determine the quantity limit under which the small quantity generator may operate.

Subparagraphs E.2. and E.6. require a small quantity generator to submit a hazardous waste disclosure and meet various recordkeeping and reporting requirements. These requirements are reasonable because they provides the Agency with a mechanism to approve, modify or reject the small quantity generator's proposed method of management for each hazardous waste produced and to ensure that wastes considered to be non-hazardous by the generator are non-hazardous. Further, the disclosure and annual report requirement for small quantity generators allows the Agency to gather information regarding the types and quantities of hazardous waste produced by small quantity generators on an annual basis. This information may be combined with the same data gathered for large generators and ultimately yield statewide figures necessary for planning the number, size and types of hazardous waste facilities required for Minnesota.

Subparagraph E.4. requires small quantity generators to use only licensed or permitted transporters and hazardous waste facilities. This subparagraph also requires that the person in control of the waste must notify the Agency as soon as possible about a spill and that small quantity generators must recover spilled hazardous waste as rapidly as possible. Both requirements help to ensure that hazardous waste is managed in a manner that does not harm human health and the environment and do not impose any undue burden on small quantity generators.

Subparagraph E.5. requires small quantity generators to comply with certain minimum outdoor storage requirements. These requirements are intended to prevent inadvertent contact with the waste, loss of the waste if the containers should fail and the buildup of heat and pressure in containers of ignitable wastes. These requirements are necessary to ensure the proper outdoor management of small quantities of hazardous waste.

40 C.F.R. § 261.5 exempts small quantity generators from the manifest requirements of the federal regulations. The existing state rules require small quantity generators to manifest their waste. As originally proposed, paragraph E. substituted a log of hazardous waste shipments for the manifest for small quantity generators. During the comment period following publication of the proposed rules, the Agency received numerous comments, particularly from metropolitan area county officials, that the requirement that small quantity generators manifest their waste should be retained. These comments indicated that a substantial portion of the waste in the metropolitan area is generated by small quantity generators. Without manifests to assure that the waste is being properly handled, much of this waste could be improperly disposed of. For the manifest system to work most effectively as a tracking and auditing system, it is necessary for the Agency to receive manifests on all shipments of hazardous waste. Small quantity generators will not be shipping hazardous waste often because they generate only small quantities

each month. Since either a shipping paper or bill of lading would need to accompany the shipment anyway, and since a manifest can be used in lieu of a shipping paper, the requirement that a manifest be used should not be unduly burdensome. Therefore, the Agency has amended the proposal rules to retain the existing requirement that small quantity generators use shipping papers.

Subparagraph E.7. provides the small quantity generator with those options for disposal or use, reuse, recycling or reclamation which are environmentally sound. This subparagraph corresponds to 40 C.F.R. § 261.5(g). However, the federal provision which allows hazardous waste disposal in a sanitary landfill has not been included because it is environmentally unsound and therefore unreasonable. In adopting its regulation EPA estimated that only 1% of the nation's hazardous waste would qualify for the small quantity generator exemption and the sanitary landfill disposal option. However, estimates for Minnesota indicate that between 10% and 25% of the hazardous waste generated would be eligible for the small quantity generator exemption. Therefore, subparagraph E.7. allows only storage, treatment or disposal at a facility with a hazardous waste facility permit or the benefical use, reuse, recycling, or reclamation of the waste at a facility which is in compliance with 6 MCAR § 4.9129. In addition, the Agency concurred with public comments that it is reasonable to allow a small quantity generator to send his waste to another site belonging to the same owner for

consolidation if the other site is in compliance with the hazardous waste rules and incorporated such a provision into this rule.

Subparagraph E.8. is informational and notifies the small quantity generator that the applicable provisions of the U.S. DOT regulations also apply.

Paragraph F. incorporates the provisions of 40 C.F.R. § 261.5(h) and allows a small quantity generator to mix hazardous waste with nonhazardous waste in accordance with 6 MCAR § 4.9128 B. This is reasonable since it provides the small quantity generator with the same mixture provisons as a fully regulated generator.

In summary, Rule 6 MCAR § 4.9210 requires that hazardous waste from small quantity generators must be managed in a more controlled manner than the requirements of 40 C.F.R. § 261.5. The rule recognizes that the hazardous wastes produced by small quantity generators may potentially cause the same environmental problems as the hazardous wastes produced by large quantity generators if they are mismanaged. The approach taken in 6 MCAR § 4.9210 is reasonable since it enables tracking and ensures proper management of hazardous waste to protect human health and the environment.

6 MCAR § 4.9211

6 MCAR § 4.9211 is renumbered existing rule 6 MCAR § 4.9003 C. through F. The existing rule has been modified by the

inclusion and exclusion of specific administrative requirements based upon comments received from the public. Existing paragraph C., which has been renumbered as 6 MCAR § 4.9211 A., has been modified by eliminating the portion which addressed used crankcase oil. This modification is necessary because used crankcase oil is exempted from the provisions of these rules by 6 MCAR § 4.9128. Although a sentence specifying that a disclosure must contain a management plan for each waste produced has been added, this has always been a requirement (see 6 MCAR § 4.9003 D.1.i.) and this modification merely clarifies the existing rule.

Paragraph B. is renumbered existing rule 6 MCAR § 4.9003 F. and contains no substantive change.

Paragraph C. is renumbered existing rule 6 MCAR § 4.9003 D. The rule sets forth the required content of the disclosure. Several of the provisions of the existing rule have been reordered and some of the language has been modified to make the rule conform to other amendments to the hazardous waste rules and to make the rule more understandable. The proposed rule is substantively unchanged from the existing rule except for repealing the past management plan provision. The past management plan was designed to gather information regarding a generator's hazardous waste management during the preceding year. Since generator disclosures have now been on file for a significant period of time, the Agency already has this information. Therefore, it is reasonable to repeal the past management requirement.

Paragraph D. is renumbered existing rule 6 MCAR § 4.9003 D.2. This rule has been modified to make this provision conform to other amendments to these rules and to clarify the intent of the rule in order to gain more accurate information. There has been no substantive amendment to this provision.

Paragraph E. is identical to existing rule 6 MCAR § 4.9003 D.3. and has only been renumbered.

Paragraph F. is existing rule 6 MCAR § 4.9003 E.1. This provision has been amended to require the generator to submit the disclosure or any needed amendments thereto within 90 days of the effective date of the amended hazardous waste rules, if hazardous waste is being produced on that date. The present rule allows one year. Since a generator is already out of compliance with 6 MCAR § 4.9003 E. if he is currently producing a hazardous waste and has not yet filed a disclosure, 90 days is a reasonable amount of time for generators to submit disclosures or amended disclosures in light of the hazardous waste rule revisions.

Paragraph G. is renumbered existing rule 6 MCAR § 4.9003 E.2. The rule has been modified by replacing the requirement that an out-of-state generator who wants to ship waste into Minnesota for treatment or disposal must submit a complete disclosure with a requirement for submission of a written notification providing more limited information. This provision applies only to waste being shipped to a Minnesota facility by an out-of-state

generator. The purpose of the notification is to allow a determination by the Agency of whether the waste being shipped may properly be handled by the receiving facility. A hazardous waste disclosure, which contains information on all waste produced by a generator regardless of whether it is hazardous, provides more information than is needed for this determination. By proposing this modification the paperwork burden on out-of-state generators is reduced while the Agency's ability to ensure proper hazardous waste management is maintained. The only other substantive changes in the rule are the reduction of the time periods for filing a disclosure for a new hazardous waste from 90 to 75 days and for treating or transporting a hazardous waste after submission of a disclosure from 30 to 15 days. The modified time periods provide adequate time for the generator to prepare the disclosure and for the Agency staff to review the disclosure and still allow the processing of the paper work to be speeded up.

Rule 6 MCAR § 4.9003 E.3. has been replaced by proposed rule 6 MCAR § 4.9218 which requires a generator to submit an annual report to the Agency Director. Rule 6 MCAR § 4.9003 F. has been renumbered as 6 MCAR § 4.9211 B. Rule 6 MCAR § 4.9003 G. has been replaced by 6 MCAR § 4.9212 A. and it is therefore reasonable to repeal this unneeded provision.

Paragraph H. is a new provision which places into the rules an ongoing administrative policy of approving, requesting additional information, or requiring modification of hazardous waste disclosures. The Agency's experience with the existing disclosure program indicates that additional information had to be requested for a majority of the disclosures reviewed to date because the information supplied was incomplete. This additional information has demonstrated that wastes reported to be nonhazardous were indeed hazardous, or that the generator's method of management was incomplete or not established at all. Therefore, the disclosure approval process is needed and is a reasonable approach to protect human health and the environment as well as help generators comply with the rules. Because this is an existing administrative practice, it will not place any additional burden on the regulated community.

Paragraph I. directs the generator to inform the Agency of any hazardous waste management changes in the next annual report following the submission of the disclosure. This provision is reasonable because the purpose of the generator annual report is to maintain the currency of the Agency's information regarding quantities and management of hazardous waste.

Paragraph J. sets forth requirements for the one-time disposal of hazardous waste. The Agency recognizes that applying all of the hazardous waste rules to one-time only generators is unnecessary and would be unduly burdensome.

Paragraph J. is designed to apply those requirements necessary to ensure proper management of the waste while exempting the generator from such requirements as contingency planning and annual reporting. This approach is reasonable since it provides a partial exemption from regulation and thus relieves the one-time generator of unnecessary paperwork while still protecting human health and the environment.

6 MCAR §§ 4.9212 and 4.9213

Proposed rules 6 MCAR §§ 4.9212 and 4.9213 relate to the preparation and use of manifests. These rules are based on the provisions of 40 C.F.R. §§ 262.20 - 262.23 and existing rule 6 MCAR § 4.9008 C. and E. The rationale behind the federal regulations is set forth at 43 F.R. 58971 - 58974 (December 18, 1978) and 45 F.R. 12728 - 12730 (February 26, 1980). The existing hazardous waste rules contain provisions on the preparation and use of shipping papers. Under the EPA regulations the shipping paper is called a manifest. The Agency is adopting the federal terminology and the document that is referred to as a shipping paper in the existing rules is referred to as a manifest in the proposed rules. The requirements of the proposed rules are substantively the same as the requirements of the existing state rules. However the proposed rules have been reworded to adopt, whenever possible, the federal language. Shipments of hazardous waste frequently travel across state borders. If each state had

unique manifest requirements, multiple versions of these shipping papers would be required. Now that EPA has established a national manifest system it is reasonable to have a nationally acceptable and uniform manifest system. Therefore, it is reasonable to adopt the EPA regulations.

6 MCAR § 4.9212 sets forth the general requirements for a manifest. Paragraphs A., B., C. and D. are essentially the same as 40 C.F.R. §§ 262.20(a), (b), (c). and (d) with the addition of a requirement that the manifest may also designate a reuse/recycle facility. Paragraph E. merely defines a permitted facility. This provision is consistent with the definition of permitted facility used elsewhere in these rules and in the EPA regulations.

Paragraph F. applies to wastes which are classified as hazardous in Minnesota but not in the state to which the waste is being sent. The Agency cannot control the types of wastes accepted at an out-of-state facility. Therefore, it is reasonable to require the generator to ensure that the facility is permitted to accept the "Minnesota specific" hazardous waste by the appropriate state agency. This will help ensure that the Minnesota generator's waste is not being mismanaged in another state.

Paragraphs G. and H. are renumbered existing rule 6 MCAR § 4.9008 C.3. and require the same information as 40 C.F.R. § 262.21. Paragraph G. has been reworded to adopt the federal language. Paragraph H. has merely been renumbered.

Paragraph I. is based on 40 C.F.R. § 262.22 and 6 MCAR § 4.9008 C.2. The paragraph has been reworded but there is no substantive change. This provision is reasonable since it will ensure that the manifest has enough copies for all parties involved including the two copies to be returned to the Agency by the generator and receiving facility.

Rule 6 MCAR 4.9213 A. is identical to 40 C.F.R. § 262.23(a) and (b) with an additional requirement that the generator send a copy of the manifest to the Agency. The requirement that a copy of the manifest be sent to the Agency is taken from existing rule 6 MCAR § 4.9008 E. Rules 6 MCAR § 4.9213 B. and C. are identical to 40 C.F.R. § 262.23(c) and (d) respectively with the additional requirement that a copy of the manifest must also be sent to the Agency. These paragraphs were designed to allow the manifest to be transmitted in such a way as to not affect normal operations followed by water or rail transporters, yet still allow the Agency to track the shipment. Therefore, this rule is reasonable because it takes into account specific situations according to the mode of transport, while protecting human health and the environment.

Paragraph D. is renumbered existing rule 6 MCAR § 4.9008 E.3. Operators of in-state facilities are required by proposed rules 6 MCAR §§ 4.9292 and 4.9392 to send a copy of the manifest, signed by the transporter, to the Director within ten days of the facility's acceptance of the shipment. Since the Agency cannot

directly require an out-of-state facility to comply with this requirement, Paragraph D. has been retained. The existing 35-day requirement for the return of the manifest was increased to 40 days upon the recommendation of industry representatives. Since the five day increase will not create any problems in the tracking of hazardous waste shipments, it is reasonable to honor this request.

Paragraph E. is renumbered existing state rule 6 MCAR § 4.9008 E.5. This provision is identical to the existing rule and is merely renumbered.

6 MCAR § 4.9214

6 MCAR § 4.9214 is identical to 40 C.F.R. §§ 262.30 - 262.33, and also incorporates existing rule 6 MCAR § 4.9003 H.1. and H.3. as amended to correspond to the federal language. Because hazardous waste moves in interstate commerce, it is reasonable to have uniform national requirements for packaging and labeling. This can be accomplished, at least in Minnesota, if the Agency adopts the EPA regulations. It is reasonable to delete 6 MCAR §§ 4.9003 H.2. and I. since, with the adoption of the EPA language, they are duplicative. The packaging, labeling, marking, and placarding requirements of this rule are reasonable since they fulfill U.S. DOT requirements for the transportation of hazardous waste. Paragraph E. is reasonable since generators often load

hazardous waste into transport vehicles in lieu of the transporters. Therefore, the generator should be required to comply with the same loading requirements that are placed on transporters who load hazardous waste on transport vehicles.

6 MCAR § 4.9215

6 MCAR § 4.9215 A. requires the generator to ensure that the transporters and facilities he uses have identification numbers. This requirement ensures that the transporter and facility have notified EPA and the Agency of their existence and are, therefore, being regulated by the hazardous waste program. This requirement is reasonable to ensure that generators use transporters or facilities which manage hazardous waste in a manner which is not threatening human health and the environment. 6 MCAR § 4.9215 B. and C. are renumbered existing rules 6 MCAR § 4.9010 A. and B. with only minor modifications. These paragraphs require the person in control of a hazardous waste to notify the Agency of any hazardous waste spill and require the generator to take the necessary action to recover the spilled material. 6 MCAR § 4.9215 D. and E. are renumbered existing rule 6 MCAR § 4.9003 J.

6 MCAR § 4.9216

6 MCAR § 4.9216 is based on 40 C.F.R. § 262.34 and replaces existing rule 6 MCAR § 4.9004 I. The basis for this rule is discussed at 47 F.R. 1248 - 1251 (January 11, 1982) and documents

referred to therein. This provision allows generators to accumulate hazardous waste on-site or receive hazardous waste from off-site as provided in proposed rule 6 MCAR § 4.9210 E.7.e., without requiring a Hazardous Waste Storage Facility Permit, provided the generator complies with certain requirements designed to protect human health and the environment. The proposed rule is substantially identical to 40 C.F.R. § 262.34, with the exception of additional requirements which relate to outdoor storage.

The current Agency rules provide extensive requirements for outdoor storage. The Agency reviewed these requirements and determined that proposed subparagraphs A.5. through A.7., which relate to outdoor storage, are a reasonable approach to prevent: 1) sudden ignition of ignitable wastes, container failure or explosion due to excessive heat and subsequent pressure build-up which may occur in direct sunlight; 2) the storage of wastes containing free liquids on permeable surfaces or surfaces which may be rendered permeable if the waste were to spill; and 3) potential tampering with the waste or the containment system by not restricting access to the area specifically used for storage.

Existing rule 6 MCAR § 4.9004 I. places a 5,000 gallon storage capacity limit on storage without a hazardous waste facility permit. Industry representatives commented that this rule is difficult to apply to storage in containers and has a significant effect on storage in tanks and rail cars, which usually have a storage capacity exceeding 5,000 gallons. The Agency concurred

with industry's comments and the 5,000 gallon limit has been eliminated. The Agency believes that 6 MCAR § 4.9216 fulfills the EPA requirements for accumulation of wastes on-site without a permit and adequately protects human health and the environment.

6 MCAR § 4.9217 is identical to 40 C.F.R. § 262.40 with the exception that the proposed rules require that the generator must also keep a copy of the disclosure. Existing rule 6 MCAR § 4.9008 E.4. requires that a generator maintain copies of the manifest which have been signed by the transporter for a period of five years while the proposed rule requires that copies be kept for three years. At the public meetings the Agency received comments that records kept pursuant to the Agency's five year retention requirement were the only records of this type which had to be retained beyond three years and that this created records management problems. The Agency is adopting the EPA requirement that records must be kept for the duration of an enforcement proceeding and therefore the EPA three year retention period is sufficient to ensure that manifests are kept for an adequate period for review. The federal regulation is more comprehensive than the existing state rules. Since the state rules must be at least as stringent as the federal rules in order to obtain authorization, it is reasonable to adopt the federal regulation.

6 MCAR § 4.9218

6 MCAR § 4.9218 requires generators to submit annual reports.

This rule replaces existing rule 6 MCAR § 4.9003 E.3., which requires a generator to resubmit a disclosure on an annual basis. As originally promulgated 40 C.F.R. § 262.41 required generators to file annual reports. The Agency reviewed the two approaches and considered the federal and state requirements to be essentially identical in terms of the information required. Therefore, to avoid duplicative paperwork requirements for generators, the Agency decided to adopt the annual reporting requirement of EPA and repeal the disclosure resubmission requirement. EPA has now amended 40 C.F.R. § 262.41 and replaced the annual report with a biennial survey. The Agency, however, believes that the information provided by the annual report allows Agency staff to ascertain that hazardous waste is being handled properly. It also provides information on the total amount of hazardous waste produced annually in Minnesota and aids in planning the number, size and types of hazardous waste facilities required for Minnesota. The annual report does not place any additional burden on generators since existing rule 6 MCAR § 4.9003 E.3. requires the annual submission of disclosures. In fact, because it actually requires less information, substitution of an annual report for an annual disclosure will reduce the paperwork burden on generators.

6 MCAR § 4.9219

6 MCAR § 4.9219 is identical 40 C.F.R. § 262.42 and requires

generators to file exception reports. This provision, coupled with the Agency's computer tracking system, will notify the Agency of hazardous waste shipments which have not arrived at their designated facilities. As a result, Agency staff may investigate the situation and attempt to locate the shipment and identify the circumstances that prevented delivery. This provision is a method of ensuring that transporters deliver shipments of hazardous waste to the facility designated by the generator and that shipments do not get "lost" in transit. The existing rules do not require the filing of exception reports. Since the state rules must be at least as stringent as the federal rules, this rule is necessary for authorization. For purposes of uniformity, it is reasonable to adopt the federal regulation.

6 MCAR § 4.9220

6 MCAR § 4.9220 is identical 40 C.F.R. § 262.43. The provision provides the Director with the authority to require additional reports if the Director believes the generator is producing hazardous wastes which have not been disclosed or are not being managed according to the disclosure statements. This rule is necessary for authorization. For purposes of uniformity, it is reasonable to adopt the federal regulation.

6 MCAR § 4.9221

6 MCAR § 4.9221 is identical to 40 C.F.R. § 262.50. The

existing rules do not have any special provisions relating to international shipments and this rule is therefore necessary for authorization. It is reasonable to adopt the federal regulation to provide uniformity in an area affecting international commerce.

6 MCAR § 4.9222

6 MCAR § 4.9222 is identical to 40 C.F.R. § 262.51. This rule provides a reasonable approach to the unique situation of spent pesticide containers generated by farmers. The Agency does not believe it is reasonable to require farmers to comply with facility standards and permits if they properly triple rinse pesticide containers and dispose of the rinsate on-site according to the application methods provided on the container label. This rule reasonably addresses the special needs of farmers who have spent pesticide containers while adequately protecting human health and the environment.

E. Chapter Four: Standards Applicable to Transporters of Hazardous Waste, 6 MCAR §§ 4.9250 - 4.9259

The proposed rules in Chapter Four set forth the standards applicable to transporters of hazardous wastes. Since transportation of hazardous waste frequently occurs across state boundaries, it is unreasonable to have differing provisions apply in each state. It is therefore reasonable for the state to adopt the EPA and U.S. DOT regulations governing the transportation of hazardous waste.

6 MCAR § 4.9250

6 MCAR § 4.9250 describes those transporters who are subject to the requirements of 6 MCAR §§ 4.9250-4.9259. It is the equivalent of 40 C.F.R. § 263.10(a) and (b) as applied to the State of Minnesota's jurisdiction and is required for Minnesota to obtain authorization from EPA. Paragraph B is renumbered existing rule 6 MCAR § 4.9008 F.1. and 3. The provision has been modified for purposes of clarity but no substantive amendments have been made.

6 MCAR § 4.9251

6 MCAR § 4.9251 is identical to 40 C.F.R. § 263.10(c). It requires a transporter to comply with 6 MCAR §§ 4.9200-4.9222, Standards Applicable to Generators of Hazardous Waste, if the transporter imports hazardous waste into Minnesota from a foreign country or mixes hazardous waste of different U.S. DOT shipping descriptions into a single container, thereby creating a new hazardous waste with different chemical properties. Since the transporter has taken on the function of a generator when he does this, it is reasonable to require him to comply with the generator standards.

6 MCAR § 4.9252

6 MCAR § 4.9252 is renumbered existing rule 6 MCAR § 4.9005 G. No substantive changes have been made in this rule.

6 MCAR § 4.9253

6 MCAR § 4.9253 is identical to 40 C.F.R. § 263.12. It exempts transporters from complying with facility standards and hazardous waste facility permit procedures for storage if the manifested shipments remain at the transfer facility for ten days or less. For purposes of uniformity it is reasonable to adopt the federal regulation.

6 MCAR § 4.9254 replaces existing rule 6 MCAR § 4.9005 B. and C. and addresses the transportation of hazardous waste. Existing rule 6 MCAR § 4.9005 addressed several specific aspects of transportation. The 1983 Minnesota Legislature adopted by reference the U.S. DOT regulations on the transportation of hazardous materials. 1983 Minn. Laws Ch. 371 § 22 to be codified as Minn. Stat. § 221.033. The U.S. DOT regulations provide a comprehensive set of requirements covering all aspects of hazardous materials transportation. The Agency received comments from MN DOT that by including only a portion of the applicable U.S. DOT provisions some people might believe that only these included provisions applied. Since all the U.S. DOT provisions are applicable, the Agency believes it is preferable to drop the specific provisions from the hazardous waste rules and instead incorporate the MNDOT and U.S. DOT provisions.

Rule 6 MCAR § 4.9005 D.2. has been deleted because this problem is covered by new provisions added elsewhere in these rules. See e.g. 6 MCAR § 4.9257 B. Rule 6 MCAR § 4.9005 E. has

been replaced by proposed rule 6 MCAR § 4.9259 which covers the same subject. It is therefore reasonable to delete these unnecessary provisions.

6 MCAR § 4.9255

6 MCAR § 4.9255 incorporates provisions from existing rule 6 MCAR § 4.9008 and from 40 C.F.R. § 263.20. This rule provides general requirements on the use of a manifest by a transporter. The general provisions require that the transporter sign and date the manifest and give the generator a copy which acknowledges acceptance of the shipment as required by 40 C.F.R. § 263.20(b) and existing rule 6 MCAR § 4.9008 E.1. The transporter is also required under this rule to ensure that the manifest accompanies the hazardous waste shipment in an accessible location. The transporter may not accept a shipment of hazardous waste from a generator unless it is accompanied by a manifest signed by the generator. This is required in 40 C.F.R. § 263.20(a) and existing rule 6 MCAR § 4.9008 B. and E.1.

If a transporter consolidates or commingles shipments of hazardous waste, the driver should be aware of the potential hazards this activity creates, such as fires and explosion. As a result, existing rule 6 MCAR § 4.9008 D. was retained and requires the transporter to prepare a supplemental cover sheet to the manifest which provides the driver and emergency response personnel with procedures for spills and other emergencies.

6 MCAR § 4.9256

6 MCAR § 4.9256 describes the activities transporters must follow in the handling of the manifest. The chronology of activities are designed to the specific modes of transportation in order to avoid upsetting normal methods of operation. The proposed rule is identical to 40 C.F.R. § 263.20(d), (e), (f), and (g). Paragraph A. corresponds to existing rule 6 MCAR § 4.9008 E.1. and E.2. The Agency has adopted the federal language because the EPA regulation is better designed to account for differences in the methods of transportation than the existing state rule and accomplishes the same result while not upsetting or confusing normal methods of operation.

6 MCAR § 4.9257

6 MCAR § 4.9257 incorporates the provisions of 40 C.F.R. § 263.21 with existing rule 6 MCAR § 4.9005 D.2. It is reasonable to include a provision which tells the transporter what to do if the facility refuses to accept the shipment. The Agency has adopted the EPA regulation as a result of several comments received from representatives of industry and experience gained while working with the existing state program.

The existing state rule requires the transporter to return the waste to the generator if not accepted within 48 hours after

delivery. It is not infrequent for a minor discrepancy to exist between the shipment which is being delivered and the information on the manifest. As a result, the facility may take samples of the waste for testing to ensure that they can properly treat or dispose of the material. If the waste is significantly different from that which is listed on the manifest, the generator and facility may have to develop a new contract. These activities may require a period exceeding 48 hours. Since most of Minnesota's hazardous waste is shipped out-of-state, the transportation distances are significant and if the waste must be returned, it is once again subject to the chances of a spill or accident during transit. The EPA regulation would allow the generator and facility owner or operator to come to a satisfactory agreement whereby the facility owner or operator would sign the manifest and accept the waste.

If an unmanifested shipment were to arrive at a permitted facility, the Agency believes it is better for the facility to accept the waste and notify the generator of such a shipment than to reject the shipment. The acceptance of the shipment by the facility operator would allow the generator an opportunity to determine an adequate method of disposal and avoid unnecessary transportation. For these reasons it is reasonable to adopt 40 C.F.R. § 263.21(b) and repeal 6 MCAR § 4.9005 D.2.

6 MCAR § 4.9258

6 MCAR § 4.9258 is identical to 40 C.F.R. § 263.22. Existing rule 6 MCAR § 4.9008 E.4. requires that transporters retain copies of the manifest for a five-year period while the federal rule requires only a three-year retention period. At the public meetings the Agency received comments that records kept pursuant to the Agency's five-year retention requirement were the only records of this type which had to be retained beyond three years and that this created records management problems. Rules affecting transportation of hazardous waste impact interstate commerce. The Agency is adopting the EPA requirement that records must be kept for the duration of an enforcement proceeding. This will ensure that the Agency has the access to records after three years in such cases. Therefore, it is reasonable to change the current five-year retention period to the federal three-year period for purposes of consistency.

6 MCAR § 4.9259

6 MCAR § 4.9259 incorporates the provisions of existing rules 6 MCAR §§ 4.9005 E. and 4.9010 with the provisions of 40 C.F.R. § 263.30. This rule sets forth the actions to be taken in the event of an accidental discharge of hazardous waste during transportation.

Paragraph A. is renumbered rule 6 MCAR § 4.9005 E.5. with only minor changes in language taken from 40 C.F.R. § 263.30(a). These changes require the transporter to take immediate action to protect human health and the environment if a spill occurs during transit. This may be reasonably accomplished by notifying local authorities and diking around the discharge to prevent the waste from spreading into other areas. There is no other substantive change in this rule.

Paragraph B. is identical to 40 C.F.R. § 263.30(b). This paragraph provides federal, state, and local authorities responsible for emergency responses with the ability to authorize the removal of a spilled hazardous waste by a transporter who does not have an EPA identification number or manifest. This provision is reasonable since it allows a spill which threatens human health or the environment to be cleaned up as rapidly as possible without the administrative delays which might occur while a manifest is prepared and a transporter with an identification number found.

Paragraph C. incorporates the provisions of 40 C.F.R. § 263.30(c) and 6 MCAR §§ 4.9010 A. and 4.9005 E.3. Subparagraphs C.2. and C.4. are reasonable since they are required by federal regulations. Subparagraph C.1. is reasonable since it requires the transporter to notify the Agency's spill response unit which

can then determine whether the spill requires Agency personnel for supervision of clean-up operations. Subparagraph C.3. is merely renumbered rule 6 MCAR § 4.9005 E.3. without any substantive modification.

Paragraph D. is renumbered existing rule 6 MCAR § 4.9010 B. This provision, which requires the transporter to clean up the spilled waste and any contaminated materials which resulted from the spill in order to protect human health and the environment, contains no substantive change from the existing rule.

Paragraph E. is taken from 40 C.F.R. § 263.30(c) and (d). Subparagraph E.3. is existing rule 6 MCAR § 4.9005 E.2. This provision requires the transporter to provide a copy of the incident report to the Agency within 15 days of the incident. This will allow the Agency to have a record of the spill and provide the Agency with information needed for monitoring the spill site after the incident, if necessary. The transporter is also required to note on, or attach to, the manifest information on the amount spilled, the location of the site, and the agency (or agencies) responsible for overseeing clean-up operations. This is required in existing rule 6 MCAR § 4.9005 E.2. The existing rule has been modified to delete the requirement that the transporter include information regarding the amount of waste recovered and the place of its disposition. It is reasonable to delete the requirement that the transporter provide this

information because a transporter may not know the information since he may leave the scene once an emergency response unit arrives.

Paragraph F. is renumbered existing rule 6 MCAR § 4.9005 F. The provision has been modified to clarify that hazardous waste may be taken to those facilities which accept hazardous waste but are specifically exempt from obtaining a hazardous waste facility permit. There is no substantive change in this provision.

6 MCAR § 4.9005 G. and H.

Rule 6 MCAR § 4.9005 G. has been renumbered as 6 MCAR § 4.9252. Rule 6 MCAR § 4.9005 H. has been deleted. Crankcase oil is exempt from regulation pursuant to proposed rule 6 MCAR § 4.9128 and since this rule is no longer necessary it is reasonable to delete rule 6 MCAR § 4.9005 H.

F. Chapter Five: Facility Standards, 6 MCAR §§ 4.9280 - 4.9322

Chapter Five contains the requirements for the design and operation of new hazardous waste facilities and existing facilities applying for a permit. The chapter is divided into two types of rules. Rules 6 MCAR §§ 4.9280 through 4.9314 are general standards applying to all treatment, storage, and disposal facilities. These rules include requirements on safety plans, personnel training, records, ground water protection, closure and

post-closure care and financial assurance for corrective action, closure and post-closure care. Rules 6 MCAR §§ 4.9315 through 4.9322 establish specific standards for containers, tanks, surface impoundments, waste piles, landfills, land treatment facilities and thermal treatment facilities. The rules in Chapter Five replace existing rule 6 MCAR § 4.9004.

The proposed rules governing facility standards are based on EPA's standards for owners and operators of hazardous waste treatment, storage and disposal facilities which are set forth in 40 C.F.R. Part 264. With respect to facilities other than land disposal facilities 5/, EPA initially utilized the best engineering judgment approach to hazardous waste permitting. Essentially the best engineering judgment approach relies on basic performance standards and a set of relevant technical factors that relate to those performance standards. When EPA originally proposed its facility standards, EPA relied primarily on facility design and operation standards in an effort to provide specific requirements which could be easily understood and interpreted by permit applicants and permit writers alike, and which could be easily enforced. EPA also attempted to incorporate some flexibility into these standards in an effort to not discourage new technology and to recognize that different design and

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5/ Land disposal facilities include waste piles, surface impoundments, landfills and land treatment units.

operation requirements might be necessary for certain locations and some types of wastes. Based on public comments received following publication of its proposed regulations, EPA revised its approach to allow greater flexibility by expanding the use of operation performance standards. The EPA regulations however still meet EPA's goal of understandable and enforceable regulations.

EPA originally proposed technical standards for permitting land disposal facilities which set uniform design requirements subject to opportunities for variances when alternative designs could achieve equivalent environmental protection. See 43 F.R. 58982 - 58991 (December 18, 1978). Based on comments criticizing this proposal as not sufficiently flexible, EPA reproposed technical standards for permitting land disposal facilities which adopted a site-specific risk-assessment approach. See 46 F.R. 11126 - 11151 (February 5, 1981). This approach would have required the evaluation of the potential risks to human health and the environment posed by a particular facility's location, design, construction and operation. In addition to Federal Register notices on this subject, EPA held numerous public hearings, meetings and symposia to assist it to develop appropriate land dispoal standards. The various proposals and meetings addressed many different options for regulating land disposal of hazardous waste.

The rules governing land disposal set forth in Chapter Five are based on the regulations published by EPA on July 26, 1982 at

47 F.R. 32274 - 32369. These rules consist primarily of two groups of performance standards. One set consists of design and operating standards separately tailored for each of the four types of land disposal facilities. The other group establishes a single set of ground water monitoring and response requirements applicable to each of these units.

Because of the detailed work done by EPA in developing its regulations and the need to develop state rules which are at least as stringent as the EPA regulations, the Agency decided to incorporate whenever possible the language and concepts of the EPA regulations into the state rules. The Agency believes that in most instances it is reasonable to rely on EPA's expertise and extensive research in this area. As stated above the Agency has adopted, with certain modifications which will be discussed infra., EPA's regulations governing facility standards. Since we are adopting EPA's regulations the Agency is relying on the extensive background documents prepared by EPA as support for these rules. A complete discussion of the EPA approach is set forth at 45 F.R. 33154 - 33285 (May 19, 1980), 46 F.R. 2802 - 2897 (January 12, 1981) and 47 F.R. 32274 - 32369 (July 26, 1982) and in the background documents for facility standards. The EPA background documents supporting the provisions contained in 40 C.F.R. Part 264 are listed in Part VIII.

6 MCAR § 4.9280

6 MCAR § 4.9280 contains information on the general applicability of these rules. This rule explains who is subject to the provisions of Chapter Five and the circumstances under which a person or facility is excluded from coverage or subject to only limited provisions of these rules. This rule also explains the relationship between the interim status standards contained in Chapter Six and the final facility standards contained in this chapter. It is reasonable to provide this information and to place this rule at the beginning of Chapter Five so that facility owners or operators will know if they are required to meet the standards contained in Chapter Five before proceeding into the remaining text of the chapter. The wording for this rule was taken almost entirely from 40 C.F.R. §§ 264.1 and 264.3.

Paragraph A. states the general applicability of the rules in Chapter Five, which is to all owners and operators of facilities that treat, store, or dispose of hazardous waste (hereinafter "TSDF's") except as otherwise specifically provided. This paragraph further states that the requirements of Chapter Five apply to publicly owned treatment works (hereinafter "POTW's") and to persons disposing of hazardous waste by means of ocean disposal 6/

6/ Even though there is no ocean bordering Minnesota, the provisions of these rules relating to ocean disposal are federal requirements and must be included for the agency to receive EPA authorization.

only to the extent that they are included in a permit-by-rule granted under the Agency's permitting procedures. Both ocean disposal and POTW's are extensively regulated and subject to permitting under other state or federal programs. Compliance with permits issued pursuant to the federal Marine Protection, Research and Sanctuaries Act or the National Pollutant Discharge Elimination System (herinafter "NPDES") provides the necessary human health and environmental protection. Therefore it is reasonable to limit the applicability of the Chapter Five rules to these facilities to avoid duplicative regulation. The federal provision requiring underground injection systems to meet the facility standards has not been included since state law has banned the construction of such systems in Minnesota.

Paragraph B. puts owners and operators of TSDF's on notice that they must comply with the Chapter Six rules, rather than the Chapter Five rules, if they have qualified for interim status and final administrative disposition of their permit application has not been made.

Paragraph C. exempts certain persons and TSDF's from the requirements of Chapter Five. Several of these exemptions (subparagraphs C.1., C.2, C.3., C.8., and C.10.) are restatements of exemptions set forth in Chapters Two, Three and Four and are included to avoid confusion. The facilities which are exempted pursuant to subparagraphs C.4., C.5. and C.7. are subject to the

permit-by-rule provisions of Chapter Seven. The basis for the exemption for POTW's set forth in subparagraph C.6. is the same as for the exemption for POTW's contained in paragraph A. The exemption for totally enclosed treatment works, subparagraph C.4., is discussed at 45 F.R. 33176 - 33177 (May 19, 1980). The exemption regarding elementary neutralization and wastewater treatment units, subparagraph C.5., was rewritten to include pretreatment units. However, the exemption applies to facilities which handle only hazardous waste generated by the owner or operator of the unit. This provision was inserted in order to be consistent with Agency policy to track hazardous waste from cradle-to-grave. It is reasonable to retain pretreatment, elementary neutralization, and wastewater treatment units within the regulated community should the facility accept waste from off-site since the potential for mismanagement is increased.

Additionally, an exemption was included in subparagraph C.7. for energy production facilities handling wastes produced in conjunction with the combustion of fossil fuels. The Agency, after reviewing EPA's exemption and the current management techniques for these wastes, decided that these facilities can be adequately regulated through a permit-by-rule. This provision lists the conditions under which a facility may qualify for regulation under a permit-by-rule and Chapter Seven lists the specific facility standards which are applicable to these facilities. This is a reasonable approach in regulating these

facilities since the required provisions will ensure that the basic facility standards needed to protect human health and the environment are applied while reducing expenditures needed to retrofit these facilities to comply with the entirety of Chapter Five.

Subparagraph C.9. exempts persons who add absorbent materials to waste in containers or add waste to drums containing adsorbent material in order to solidify or reduce the free liquid content of their containerized wastes. The exemption is limited to these practices when employed at the time hazardous wastes are first placed in containers. These practices are treatment because they are methods designed to change the physical character of hazardous waste so as to render the waste less hazardous to dispose. Without this exemption persons who employ these practices must have a permit and must comply with the relevant portions of this chapter. This exemption is based on the corresponding exemption in 40 C.F.R. § 264.1 (g)(10) and is discussed at 47 F.R. 8304 - 8306 (February 25, 1982).

6 MCAR § 4.9281

Rule 6 MCAR § 4.9281 contains the general standards applicable to owners and operators of all hazardous waste facilities. This rule includes requirements for facility identification numbers, notices, security and inspections. This

rule was adopted from the EPA hazardous waste regulations, 40 C.F.R. §§ 264.10 - 264.12, 264.14 and 264.15, because current state rules do not cover these areas in the detail needed for authorization. These EPA regulations are discussed at 45 F.R. 33179 - 33186 (May 19, 1980).

Paragraph A. relates to applicability and is self-explanatory. Paragraph B. requires owners and operators of TSDF's to obtain identification numbers. The facility identification number is required for tracking purposes to follow hazardous waste from generation to its final disposition.

Paragraph C. identifies the occasions when the Agency must be notified by the facility owner or operator concerning the delivery of hazardous waste at a facility. Later rules explain in more detail the information required in each notice. Subparagraph C.1. requires the owner or operator to notify EPA and the Agency Director at least four weeks prior to receipt of a shipment of hazardous waste from a foreign source. This requirement is reasonable in view of EPA's responsibility to oversee the transportation and management of hazardous waste imported to the United States. Subparagraph C.2. is taken from existing rule 6 MCAR § 4.9004 C.2.c.

Subparagraph C.3. requires the owner or operator of an off-site TSDF to inform the generator in writing that the facility has the appropriate permit(s) for, and will accept, the generator's waste. Generators are required to send their

hazardous wastes only to a facility with the appropriate permit(s) or interim status. A written certification will assure generators that this requirement is satisfied and also avoid the potential problem of a generator designating a facility which has not agreed to accept the waste. Subparagraph C.4. requires the owner or operator of a TSDF to notify the new owner or operator of the applicability of the hazardous waste rules before transferring ownership or operation. This requirement is included to minimize the possibility that an unsuspecting buyer may purchase a facility not knowing that this purchase entails having to comply with these rules.

The security requirements set forth in paragraph D. are intended to prevent unauthorized persons or livestock from entering a hazardous waste facility and injuring themselves and/or causing a violation of the requirements of this chapter. Existing rule 6 MCAR § 4.9004 C.1.e. sets forth only a general requirement for controlling access to a facility. To accomplish the intended objective, the proposed rule includes general, but more detailed, performance requirements on signs, means to control access at the gate, a barrier surrounding the active portion of the facility and a 24-hour surveillance system. The proposed rule also establishes the conditions for an exemption if it can be demonstrated that unknowing or unauthorized entry will not result in injury to people, livestock or the environment. Because these conditions are rarely concurrently satisfied, the Agency does not expect

that many sites will be exempt from the security requirements.

Paragraph E. sets forth general inspection requirements for owners and operators of TSDF's. The inspection standards provided in this rule are used as preventative measures to help avert the release of hazardous wastes that would affect public health and the environment due to malfunctions or deterioration of equipment. EPA originally proposed a regulation specifying seven parts or aspects of a facility which owners or operators were required to inspect daily for specific signs of deterioration or malfunction. EPA received many comments on the proposed regulation which indicated that the required inspections were either not applicable to all facility types or would be impossible to implement, that the list could not include all of the possible items which should be inspected, and, that since in many cases the rate of deterioration is very slow, daily inspections are unnecessary. Based on these comments EPA rewrote its regulation to require the owner or operator to develop and follow a facility specific inspection schedule based on the facility's critical processes, equipment, structures, the potential for failure and the rate of any deterioration processes which may lead to failure. However, since all owners and operators are not equally knowledgeable, EPA has retained specific minimum inspection requirements. The rule also requires that a report be made of all inspections. The Agency believes the EPA inspection provisions are reasonable and has therefore incorporated the provisions of 40 C.F.R. § 264.15 into Chapter Five as paragraph E. of 6 MCAR § 4.9281.

6 MCAR § 4.9282

Rule 6 MCAR § 4.9282 sets forth the training requirements for persons involved in the management of hazardous waste. This rule is intended to reduce the potential for mistakes which might threaten human health or the environment by ensuring that facility personnel have the requisite skills and knowledge to perform their tasks in a competent manner. This rule was excerpted from 40 C.F.R. § 264.16 since the state's existing rules did not specifically cover personnel training.

The requirements of this rule are written as general performance standards to allow personnel training programs to be directed towards each specific facility's process or management technique. This is reasonable since, due to the variability in types of facilities, a rule cannot be expected to define a training program that would be appropriate for all types of facilities. The rule as proposed allows for supervised on-the-job training as well as classroom instruction to be included as part of any training program. However, the content, schedule and techniques to be used in the on-the-job training program must be described in the training records maintained at the facility and will be subject to approval during the permitting process.

The objectives of the Agency's hazardous waste rules include the prevention of an environmental or public health hazard due to the mismanagement of hazardous wastes and, therefore, it is

reasonable to provide a mechanism to review for and prevent such occurrences. By requiring the owner or operator of a TSDF to maintain training records, the Agency will be able to evaluate the training received and eliminate areas of potential mismanagement due to insufficient training. Additionally, as training makes employees aware of potential hazards, the Agency anticipates that training will increase the caution with which employees handle hazardous waste.

6 MCAR § 4.9283

Rule 6 MCAR § 4.9283 sets forth the general requirements for handling ignitable, reactive or incompatible wastes and is based on 40 C.F.R. § 264.17 and is discussed at 45 F.R. 33182 - 33183 (May 19, 1980). These general standards are intended to insure that several undesirable results are avoided when ignitable or reactive wastes are handled or incompatible wastes are mixed. Extreme heat or pressure, fires or explosions, violent reactions, and damage to the structural integrity of the device or facility containing the waste are clearly undesirable because of the likelihood that they will cause or lead to injury or death of facility personnel, and the spread of hazardous wastes into the environment. The production of uncontrolled flammable fumes or gases in sufficient quantities to pose the risk of fire or explosion is undesirable for similar reasons. Therefore the rule

prohibits the creation of uncontrolled toxic dusts, mists, fumes and gases in sufficient quantities to threaten human health. Because the possible undesirable results from the mixing or handling of wastes may be enormously varied, the rule prohibits the creation of conditions like those mentioned above which threaten human health and the environment.

Paragraph A. requires TSDF owners or operators to take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. Paragraph B. requires the owner or operator to treat, store or dispose of ignitable, reactive or incompatible waste so that it does not ignite or explode, emit toxic gases, damage the containment structure or through like means threaten human health and the environment. Paragraph C. requires owners and operators to document their compliance with this rule. This documentation can take the form of references to scientific and engineering literature or data derived from experience with similar waste using similar equipment under similar conditions. Requiring documentation will insure that the necessary research work is carried out and make clear how determinations are made.

This Agency has the responsiblity to prevent damage to human health or the environment due to the leakage of hazardous waste. Therefore, the Agency believes that the requirements for the separation of wastes which if mixed might endanger facility personnel or cause hazardous waste to be discharged to the air,

land, or waters of the state, are not only reasonable but crucial. During the public meetings held by Agency staff concerns were expressed that the language of the rule could be interpreted as a blanket denial on mixing ignitable, reactive, or incompatible wastes. The public felt the prohibition on mixing incompatible wastes would preclude management techniques presently considered accepted. As a result subparagraph B.1. was reworded to allow the mixing of wastes that generate excess heat, pressure, fire, etc. if the person doing the mixing is capable of handling any reaction which might occur and the process is permitted by the Agency.

6 MCAR § 4.9284

Rule 6 MCAR § 4.9284 sets forth the general requirements a facility owner or operator must meet when analyzing hazardous waste received for treatment, storage, or disposal and is based on 40 C.F.R. § 264.13.

Paragraph A. requires a facility owner or operator to obtain a detailed chemical and physical analysis of a representative sample of the waste before it is treated, stored or disposed and sets forth what must be included in the analysis and when it must be repeated. Paragraph B. requires the owner or operator to develop and follow a written waste analysis plan which describes the procedures which will be used to determine the identity of incoming wastes and also sets forth specific factors which must be included in the plan.

The purpose of the proposed waste analysis standards is to insure that owners or operators possess sufficient information on the properties of the wastes which they manage to be able to treat, store or dispose of the waste in a manner which will not pose a threat to human health or the environment. The requirement that owners and operators develop and maintain a waste analysis plan will allow owners and operators to tailor their waste analysis procedures to the type of wastes and techniques which the facility uses to manage these wastes while also providing the Agency with a review mechanism which will encourage owners or operators to conduct thorough analyses of the wastes which they manage.

6 MCAR § 4.9285

Rule 6 MCAR § 4.9285 sets forth standards governing the location of hazardous waste facilities. The hazard which a TSDF presents to human health and the environment may be increased by locating the facility in certain areas. The location standards are designed to reduce these additional risks. Proposed rule 6 MCAR § 4.9285 incorporates provisions from 40 C.F.R. § 264.18 and existing rule 6 MCAR § 4.9004 B. The federal locational standards are discussed at 47 F.R. 32290 - 32291 (July 26, 1982) and other publications cited therein. The federal provision prohibiting the location of a TSDF within 200 feet of a fault which has had displacement in Holocene time has not been included

since Minnesota does not contain such a fault. See Comment to 40 C.F.R. § 264.18(a) and 40 C.F.R. Part 264, Appendix VI.

Paragraph A. governs the location of TSDF's in a floodplain and is taken from 40 C.F.R. § 264.18(b). The primary concern with respect to facilities located in a floodplain involves waste washing out or being carried in flood waters from the active portion of a faclity, thereby exposing surface water, ground water, aquatic life, soils and human health to potential contamination through direct contact with the waste. Existing rule 6 MCAR § 4.9004 B.1. prohibits the location of a TSDF in a 100-year floodplain. 40 C.F.R. § 264.18(b) and proposed rule 6 MCAR § 4.9285 A. allow for the placement of a facility within the 100-year floodplain, but only after the owner or operator has demonstrated that the technologies used at the facility will prevent the washout of hazardous waste or that, in the event of a flood, the waste could and would be removed to a safe area before flood waters reached the facility. Various technologies have been developed to deal with flooding problems. These techniques have been in common use and treatment of hydraulic conditions is within the knowledge of qualified engineers.

The Agency recognizes that some existing facilities were located in 100-year floodplains before existing rule 6 MCAR § 4.9004 B.1. applied to them and consequently the preferred option of not locating in a 100-year floodplain is not available. The option of removing waste to a safe location may not be viable

for many existing facilities. Retrofitting may also not be feasible or practicable because of inadequate landspace or structural capacity to construct new or elevate existing walls or dikes. Therefore EPA promulgated, and the Agency is proposing in subparagraph A.2., an exemption defining narrow circumstances in which such existing facilities may continue to be located in a 100-year floodplain. To qualify for this exemption the owner or operator must demonstrate that a washout would cause no adverse effects on human health or the environment. The factors which must be considered are listed in subparagraph A.2. These factors address the principal adverse health and environmental effects that can potentially result from flood washout such as the contamination of river sediments and floodplain soils caused by sedimentation of washed-out hazardous constituents as and after the floodwaters recede. Therefore, it is reasonable to adopt the EPA regulation permitting TSDF's to be located within a floodplain providing the safeguards set forth in the rule are met.

Paragraph B. is renumbered existing rule 6 MCAR § 4.9004 B. However, subparagraph B.1. has been modified to delete floodplains since they are now governed by paragraph A. and subparagraph B.2. has been modified by the addition of the factors which the Agency will consider in determining if the site is unsuitable. It is reasonable to include the factors which the Agency will consider so that the regulated public will know what topographic, geologic and hydrologic features are significant. The factors listed

relate to the presence of surface and ground water at or near the site and the natural ability of the site to protect these resources. Since accidents could result in the leakage of hazardous waste into the environment it is reasonable to limit the construction of hazardous waste facilities to those areas presenting reasonably safe conditions from a geological or hydrological point of view.

6 MCAR § 4.9286

Rule 6 MCAR § 4.9286 contains the general safety requirements for all facilities handling hazardous waste. The provisions of this rule are taken from 40 C.F.R. §§ 264.30 through 264.35. This rule sets forth the safety equipment, such as fire extinguishers and internal communications equipment or alarm systems, which a facility must have, requires periodic testing of the equipment and requires sufficient aisle space and access to communication or alarm systems to allow immediate notification and access in case of an emergency. This rule is reasonable because the standards presented in this rule constitute the design, operation, and equipment requirements needed to minimize the possiblity of serious environmental or public health hazards due to fires, explosions, or unplanned releases of hazardous waste.

6 MCAR § 4.9287

Rule 6 MCAR § 4.9287 sets forth requirements on arrangements with local authorities for emergencies. This rule is taken from

40 C.F.R. § 264.37. It is reasonable to require that facility owners or operators meet with the local authorities who might respond to an emergency at the facility because police, fire departments, and emergency response teams need to be aware of the facility layout and the properties of any hazardous waste they might encounter so that proper precautions can be taken against personal injury and proper equipment for responding to the emergency can be included in response vehicles.

6 MCAR § 4.9288

Rule 6 MCAR § 4.9288 requires each hazardous waste management facility to have a contingency plan to minimize the potential hazards from fires, explosions, and other conditions which could lead to the release of hazardous wastes. The contingency plan must describe actions to be taken by facility personnel in response to fires, explosions, or other emergency conditions and must include the name of the facility's emergency coordinator, a list of the facility's emergency equipment, and the description of arrangements made with local agencies or departments which may have to respond to an emergency at the facility. Copies of the plan must be kept at the facility and sent to the agencies that would respond in an emergency.

The provisions of this rule have been taken from 40 C.F.R. §§ 264.50 - 264.54 since the current coverage of this topic under state rules is not as complete as the federal language.

Presently, the state rules have contingency provisions divided among three rules. This rule has collected these provisions in a central location for clarification and ease of use. The requirement of a contingency plan for all facilities is reasonable since the development of such plans will minimize hazards to human health and the environment in the event of fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste to air, soil or surface water by increasing facility personnel's awareness of the types of emergencies which might occur at the facility and minimizing response times to such occurrences because proper response procedures have been clearly delineated.

6 MCAR § 4.9289

Rule 6 MCAR § 4.9289 outlines the procedures to be followed during an emergency, requires each facility to have an emergency coordinator, and identifies the basic functions expected of the coordinator during any emergency. These duties include notification of appropriate state and local authorities and assessing the possible hazards that might result from the release of wastes at the facility. This rule is taken from 40 C.F.R. §§ 264.55 and 264.56. It is reasonable to require each facility to have one person in charge during an emergency with the responsibilty and authority to direct response measures. This will assure that proper and timely actions will be taken in an

emergency, thereby minimizing the hazards which might occur during such situations. It is also reasonable to set forth the procedures to be followed so that all necessary steps will be taken to insure that the harm to persons and the environment is minimized as much as possible.

6 MCAR § 4.9290

Rule 6 MCAR § 4.9290 sets forth the proper procedures to be followed after an emergency for decontamination of equipment, and disposal of contaminated soil or water and recovered waste. This rule is taken from 40 C.F.R. § 264.56. The rule provides that all recovered materials must be treated as a hazardous waste unless it can be demonstrated that the material is not hazardous. The Agency believes that, given the nature of hazardous wastes handled at a facility, it is reasonable to assume that residual materials from an emergency should be considered a hazardous waste unless proven otherwise and should, therefore, meet the applicable rules for their disposal. It is also reasonable to require that the Agency be notified when cleanup procedures have been completed so that the Agency is aware of the conditions at the facility.

6 MCAR § 4.9291

Rule 6 MCAR § 4.9291 requires hazardous waste facilities initiating a shipment of hazardous waste from their facility to meet the generator requirements of 6 MCAR §§ 4.9200 - 4.9222. This

rule is taken from 40 C.F.R § 264.71(c). Since the owner or operator of the facility by initiating the shipment of a hazardous waste is performing a function usually performed by the generator, it is reasonable to consider the facility owner or operator as a generator and thus require compliance with all applicable requirements.

6 MCAR § 4.9292

Rule 6 MCAR § 4.9292 contains the requirements for both on-site and off-site facilities regarding the manifests accompanying a shipment of hazardous waste. The manifest is used to track hazardous waste from its origin with the generator, through its trip with the transporter, to its disposition at the designated facility for treatment, storage or disposal. This rule is taken from 40 C.F.R. § 264.71 and specifies that the facility owner or operator must sign, date, and return a copy of the manifest to the generator and the Agency within 10 days after delivery. Owners and operators must also note any discrepancies in the type or quantity of waste received. These requirements form the last steps in the information loop initiated in the manifest requirement for generators. Requiring the return of the manifest to the generator provides assurance that the waste has, in fact, arrived at the designated facility. Requiring that a copy be sent to the Agency is also reasonable since it will close the

information loop and will minimize the possibility for illegal or improper disposal of wastes and thereby protect human health and the environment.

Existing rule 6 MCAR § 4.9008 E.1. requires the facility operator to return a copy of the manifest to the generator and the Director within five working days after obtaining possession. 40 C.F.R. § 264.71 specifies that a copy of the manifest be returned to the generator within 30 days of delivery. The Agency believes that it is important to be notified as soon as possible that a waste shipment has reached its intended destination. Therefore, the Agency determined not to increase the time for returning manifests from the current five working days to 30 days. However, based on comments that some additional time would be helpful, the Agency has determined increase the time period from five working days to ten days.

6 MCAR § 4.9293

Rule 6 MCAR § 4.9293 sets forth the procedures facility owners or operators must follow concerning manifest discrepancies. Discrepancies are divided into two types, significant and minor, with different procedures required depending on the type of discrepancy. This rule also provides the mechanism for resolving discrepancies prior to notifying the Agency. The language for this rule was taken from 40 C.F.R. § 264.72 for significant

discrepancies and from existing rule 6 MCAR § 4.9004 C.2. for minor discrepancies.

It is important that the waste received at a facility be the type named on the manifest to ensure proper management of the waste. Mislabeling containers or shipping inappropriate wastes may result in damage to facility equipment or personnel and leakage of hazardous wastes to the environment. Discrepancies may also indicate that "midnight dumping" or a spill has occurred. Discrepancy reporting will help ensure that the regulated community complies with the hazardous waste rules by providing the Agency with information needed to monitor the accuracy of manifests. The proposed discrepancy reporting system does not cause an unnecessary burden for the facility owner or operator since only unresolved significant discrepancies are reported to the Agency. All other discrepancies and their resolution are noted on the manifest.

6 MCAR § 4.9294

Rule 6 MCAR § 4.9294 requires that all facility owners and operators to maintain an operating record and specifies the information to be included in the record. The information required in the operating record was taken from 40 C.F.R. § 264.73 and does not include any information which is not needed to properly manage the incoming hazardous waste. Adequate

recordkeeping is an integral part of facility operations and is needed to ensure prompt, proper and effective responses to emergency situations by providing facility owners and operators, and local authorities with information which allows them to accurately assess any hazard posed to human health and the environment and to respond accordingly. This recordkeeping activity will also help to ensure the proper closure of a facility as well as helping to ensure that the regulated community complies with the hazardous waste rules by providing the Agency with sufficient information to monitor facility operations.

6 MCAR § 4.9295

Rule 6 MCAR § 4.9295 contains the requirements applicable to both on-site and off-site facilities for the retention and disposition of records and is taken from 40 C.F.R. § 264.74(b) and (c). This rule is reasonable because the information contained in the records maintained at a facility (operating, personnel training, etc.) are needed for the Agency to adequately assess the facility's operating procedures and determine whether any mismanagement may have occurred. This rule also requires the owner or operator to send a copy of the records indicating waste disposal locations and quantities to the Agency and the local land authority upon closure of the facility. This provision is reasonable to ensure that future uses of the land will be

compatible with the waste which was disposed and the disposal methods used.

6 MCAR § 4.9296

6 MCAR § 4.9296 requires the facility owner or operator to submit an annual report and an unmanifested waste reports to the Agency and lists the information to be contained in each report. The rule also requires the facility owner or operator to report to the Director as required by other provisions of Chapter 5. Except for the requirement on filing an annual report, the provisions in this rule are taken from 40 C.F.R. §§ 264.76 and 264.77. The information requirements for the annual report are taken from 40 C.F.R. § 264.75.

This rule is reasonable because the Agency is responsible for tracking hazardous waste within the State of Minnesota and, therefore, needs specific information on what happens to the waste at each facility in addition to knowing that it was properly transported to the facility. The Agency uses a computer tracking system to match manifests received from a facility against the reports submitted for quantity and types of waste received at the facility. The information obtained from these reports and the tracking system will also be used to monitor generators who routinely fail to properly manifest their hazardous waste and facilities who routinely accept wastes that are not

manifested or listed in their permit. These types of occurrences could result in improper management of hazardous wastes which could potentially harm human health and the environment.

EPA originally required facility owners and operators to submit annual reports. See 45 F.R. 33189 - 33190 (May 19, 1980). However, following an evaluation of its information needs, in response to public comments and in an attempt to reduce the paperwork burden, EPA changed this requirement to a biennial report. See 48 F.R. 3978 - 3981 (January 28, 1983). The Agency has decided, based on a review of its information needs, to retain the annual report requirement. Annual reports provide the Agency with more up-to-date information which is needed to verify facility compliance with the terms of its permit. In addition, the information regarding hazardous wastes will be used to ensure ground water monitoring systems have been established for the correct parameters and provide adequate protection against the contamination of ground water.

6 MCAR § 4.9297

Proposed rule 6 MCAR § 4.9297 establishes ground water monitoring and response requirements for facilities which treat, store or dispose of hazardous waste in surface impoundments, waste piles, land treatment units or landfills. These ground water protection requirements establish a three-stage program to detect, evaluate, and, if necessary, correct ground water contamination

during the active life, including the closure period, of a unit plus a compliance period established in the permit. The proposed rule is based on the ground water monitoring and response requirements found at 40 C.F.R. Part 264, Subpart F. However, as discussed in more detail below, the Agency does not believe that EPA's requirements are sufficiently stringent in all areas. Therefore 6 MCAR § 4.9297 does not incorporate the provisions of Subpart F verbatim. The EPA regulations are discussed at 47 F.R. 32283 - 32288 and 32291 - 32312 (July 26, 1982) and in the background documents on ground water monitoring listed in Part VIII. and, except for those portions which are not applicable, the Agency is relying on those documents as support for this rule.

Paragraph A. provides information on the applicability of 6 MCAR § 4.9297 and is based on 40 C.F.R. § 264.90. This paragraph provides that the rule is applicable to new and existing surface impoundments, land treatment units, waste piles and landfills that manage hazardous waste. This paragraph also incorporates three exemptions. First, the general exemptions in 6 MCAR § 4.9280 apply to the requirements of this rule as well. Second, waste piles which are totally enclosed or which are underlain by a liner which may be periodically inspected are exempted. This exclusion is based on the ability to detect when the liner has failed and on the premise that because of the facility's construction, operation or waste type the possibility of leachate

generation has been reduced to such a degree that ground-water contamination is unlikely. Third, land treatment units may be exempted from monitoring during the post-closure care period if the owner or operator can demonstrate that the hazardous constituents in the waste have been effectively treated.

Paragraph A. also allows the Agency to impose any or all of the conditions of 6 MCAR § 4.9297 on the owner or operator of a facility that treats or stores hazardous waste in tanks or containers. This provision is not included in 40 C.F.R. § 264.90. It has been added because in some geologic settings in Minnesota ground water could be seriously affected if wastes from these facilities were released. Also, ground water monitoring may be needed to supplement the engineering standards required for tanks and containers.

Two exemptions provided by 40 C.F.R. § 264.90 have not been incorporated into this rule. First, EPA exempts double-lined surface impoundments, waste piles and landfills. The reason given by EPA for the exemption is that the double liner involves an ongoing method for detecting whether the unit's liner has failed. The Agency does not agree with EPA's assessment of the absolute ability of a double-lined facility to prevent hazardous constituents from entering the ground water. Ground water is a precious resource. The purpose of the ground water monitoring requirements is to detect any release of hazardous constituents as early as

possible so that corrective action can be taken. Therefore, the Agency does not believe it is reasonable to exclude facilities from the requirements of the rule merely because they have double liners. Second, EPA exempts facilities from the requirements of this rule if it can be demonstrated that there is no potential for the migration of liquid from the facility to the uppermost aquifer. This exclusion was designed for facilities located in hydrogeologic settings that would prevent leachate migration to ground water for very long periods. It is not reasonable to include this exemption because the climatic and geologic conditions in Minnesota would preclude the necessary finding.

Paragraph A. also establishes the duration of the requirements of 6 MCAR § 4.9297. The requirements apply to all covered facilities during their active life, including the closure period. Following closure, the requirements apply during the post-closure care period if the owner or operator is conducting a detection monitoring program and during the compliance period if the owner or operator is conducting a compliance monitoring or corrective action program. When the compliance period ends before the end of the post-closure care period, the detection monitoring program must be reinstated for the remainder of the post-closure care period under the permit. It is reasonable to require the facility owner or operator to take all reasonable steps to assure ground water potection. The completion of a corrective action or a compliance monitoring program does not mean

that significant contamination will never appear below a facility. Since hazardous constituents move at different speeds through soils and may be released at different times, contamination could appear several years after a facility has closed or after an initial plume of contamination had been detected and cleaned up. Requiring a detection monitoring program throughout the post closure care period is necessary to determine whether such delayed contamination appears. The owners or operators of facilities from which all waste and contaminated materials are removed at closure may discontinue monitoring after closure. Since the source of potential ground water contamination has been removed, there is no reason to require continued ground water monitoring if no contamination has occurred up to that time.

6 MCAR § 4.9297 B. provides the relationship between the presence and location of hazardous constituents in the ground water and the level of response which is required. At a minimum all covered facilities must have a detection monitoring program. This is to ensure that any leakage from the facility is detected. When a statistically significant increase of hazardous constituents is detected, the level of ground water monitoring is increased from detection to compliance monitoring. The compliance monitoring program better defines the magnitude and extent of the possible ground water contamination and also provides a means for determining if the ground water protection standard is exceeded.

If this standard is exceeded, then a corrective action program must be implemented.

Subparagraphs B.2. - B.4. provide that permits for regulated facilities must include a detection monitoring program, a compliance monitoring program, and a corrective action plan. This differs from the provisions of 40 C.F.R. § 264.91(b) which requires the establishment of only one program (i.e. a detection monitoring program) in the permit and does not require a compliance monitoring plan or corrective action plan until contamination is detected.

The Agency reviewed EPA's rationale for requiring only one program in the permit and have concluded that not including the specifics of all three programs created the potential for serious environmental harm. Inclusion of the compliance monitoring program and the corrective action plan in the permit avoids the delays inherent in developing such a program and amending the facility permit to include it after contamination has been determined. A corrective action plan addresses the measures which are necessary to meet the requirements of 6 MCAR § 4.9297 M.2., M.4. and M.5. to remove or treat in place the hazardous constituents which exceed their concentration limits. The corrective action plan must address the ground water monitoring which is necessary to demonstrate the effectiveness of the corrective action program. As part of the corrective action plan, estimates of the time and costs necessary to implement the plan

must be provided. It is reasonable to require these figures because they are necessary in order to arrive at a cost for corrective action. This cost will be used in establishing the amount of financial assurance which the owner or operator must provide in order to ensure that he has access to sufficient financial resources to initiate and complete the corrective action program. Inclusion of the corrective action plan in the permit also allows both the Agency and the owner and operator to ensure that corrective action is feasible prior to permitting.

Paragraph C., which is based on 40 C.F.R. § 264.93 and is discussed at 47 F.R. 32295 (July 26, 1982), describes the ground water protection standard which is established as part of the permit. This standard is based on the data collected pursuant to 6 MCAR § 4.9297 J. and K. and provides a predetermined performance standard for the facility. The performance standard is 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.

Paragraph D. is based on 40 C.F.R. § 264.93 (a) and requires the Agency to specify in the facility permit the hazardous constituents to which the ground water protection standard applies. Hazardous constituents which the Agency may specify are either those constituents listed in 6 MCAR § 4.9137 or are constituents contained in wastes that meet criteria established in 6 MCAR § 4.9132 F. for toxicity and which may reasonably be expected to contribute to the toxicity. The inclusion of

constituents of wastes which have a toxic characteristic is not contained in the federal regulations. This provision is necessary because toxicity is a characteristic of a waste which can make it hazardous under Minnesota's rules but not under those of the EPA. It is possible that a waste may have toxic characteristics but is not be listed in 6 MCAR § 4.9137, so it is reasonable to include all potentially hazardous constituents in the rule.

Paragraph E. is based on 40 C.F.R. § 264.93(b) and provides the Agency with a mechanism for excluding constituents from the list of hazardous constituents specified in the facility permit if it can be shown that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. By allowing this exclusion, constituents which can be proven to be non-harmful at the concentrations that the facility may produce can be excluded by the Agency, while constituents which do pose a substantial threat to human health or the environment will be included in the facility permit. In order to provide a basis for the Agency's determination, Paragraph E. lists the factors relating to possible effects on ground water and surface water which must be considered. The rationale utilized by EPA when adopting 40 C.F.R. § 264.93 is set forth at 47 F.R. 32295 - 32297 (July 26, 1982).

Paragraph F. is based on 40 C.F.R. § 264.94(a) and sets forth the criteria that the Agency will use to establish concentration limits for hazardous constituents in the facility permit. For

most constituents the concentration limit is the background level of that constituent in ground water when the limit is established. This is a conservative approach which is consistent with current Agency rules, specifically 6 MCAR § 4.8022. The use of non-degradation standards for constituents for which little information on environmental risk exists is reasonable because it avoids potential problems which could occur if poorly documented numerical criteria are specified. However, paragraph F. also requires that for constituents for which the EPA has established national interim primary drinking water standards, these standards should be the concentration limits; provided that the background levels of the constituents are below their primary drinking water standards as set forth in exhibit 6 MCAR § 4.9297 F.2.-1.

The Agency received comments suggesting that the background level of a constituent in ground water should be the concentration limit for all hazardous constituents, including the fourteen hazardous constituents for which primary drinking water standards have been established. The use of the primary drinking water standards as ground water concentration limits is reasonable because these standards are well documented and have been established to ensure that human health is protected. The basis for EPA's use of drinking water standards is discussed in the background documents listed in Part VIII.

The use of primary drinking water standards as concentration limits does not preclude ground water being cleaned up beyond these standards during corrective action. In the event that ground water became contaminated, it is unlikely that a statistically significant increase would occur only for hazardous constituents for which primary drinking water standards have been established. Corrective action would include either treatment or removal of the contaminated groundwater. In the course of corrective action to reduce the concentration of hazardous constituents to background levels the concentration of hazardous constituents which have primary drinking water standards likely would also be reduced.

Paragraph G. is taken from 40 C.F.R. § 264.94(b) and provides that the Agency will establish an alternate concentration limit 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. This is the same standard which the Agency uses when considering whether to exclude a hazardous constituent from the facility permit. As does paragraph E., paragraph G. lists the factors relating to ground water and surface water which the Agency must use when establishing an alternate concentration limit. The rationale utilized by EPA when adopting 40 C.F.R. § 264.94 is discussed at 47 F.R. 32297 - 32299 (July 26, 1982).

Paragraph H. is based on 40 C.F.R. § 264.95 and is discussed at 47 F.R. 32299 (July 26, 1982). This paragraph establishes the point of compliance at which the ground water protection standard of paragraph C. must be met. 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 the 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. This designation of the point of compliance allows monitoring to occur close to the wastes yet it maintains the integrity of containment structures which could be adversely affected by the installation of monitoring devices. Locating the point of compliance at the edge of the waste management area ensures that corrective action can be taken soon after contamination occurs and will be more easily and economically accomplished as the area of contamination should still be relatively small.

Paragraph H. provides that the Agency may establish a single point of compliance for facilities with more than one regulated unit if the owner or operator demonstrates that ground water contamination will be detected from all units in a timely manner. In all other cases, the Agency shall establish a point of

compliance for each unit. This part of the rule differs somewhat from the corresponding federal regulation. 40 C.F.R. § 264.95 allows one compliance point for all multi-unit facilities instead of allowing one compliance point only under certain conditions as established in the Agency's proposed rule. If several separate units in a single facility have a single point of compliance prior to detection, contamination of large areas of ground water could occur. Additional time could be lost in attempting to determine which unit was leaking. Under this approach the Agency has the flexibility to require only a single point of compliance for units which are adjacent to, or close to, one another and for which multiple monitoring systems would be redundant. This approach avoids the problem caused by a multi-unit facility contaminating significant amounts of ground water prior to detection of contamination by a single ground water monitoring system around the perimeter of the facility.

Paragraph I. is based on 40 C.F.R. § 264.96 and establishes the duration of the compliance period. 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 rationale behind a compliance period equal to the active life of a waste management area is discussed at 47 F.R. 32299 - 32300 (July 26, 1982).

This definition of the compliance period is based on a simplified model of leachate generation which assumes that the

earliest statistically significant increase in a monitoring parameter or hazardous constitutent represents the leading edge of a plume. Furthermore, the duration of the plume should be roughly equal to the facility's active life which is the period of time during which the waste is exposed to precipitation. Thus, the compliance period is designed to approximately equal the life of a plume. However, if the owner or operator is engaged in a corrective action program at the time the compliance period ends, the compliance period is extended until the owner or operator can demonstrate that the ground water protection standard of paragraph C. has not been exceeded for a period of five consecutive years. It is reasonable to require that the compliance period be extended until corrective action is complete as this ensures that the ground water quality will be restored and that an adequate monitoring system will exist to document compliance with the ground water standard. Five consecutive years of not exceeding the ground water protection standard are required before the compliance period is terminated. This is in contrast to the period of three consecutive years which EPA has adopted to "provide a reasonable margin of safety in determining whether a plume of contamination has been removed." The use of five years in lieu of three years increases this "margin of safety" and is still within a range which is reasonable.

Paragraph J. describes the general ground water monitoring

requirements for facilities and is based on the provisions of 40 C.F.R. § 264.97. The rationale for the EPA regulations is set forth at 47 F.R. 32300 - 32304 (July 26, 1982). Subparagraph J.1. describes the ground water monitoring system itself. It requires that the ground water monitoring system be capable of providing data on the background quality of ground water and be likely to detect contamination from the regulated unit. Subparagraph J.2. provides that a facility with more than one regulated unit may have a single ground water monitoring system if the owner or operator demonstrates that the system allows for timely detection of ground water contamination. This would be the case if the facility had a single point of compliance. This subparagraph differs from the corresponding provision of 40 C.F.R. § 264.97 which requires only a single ground water monitoring system at multiple unit facilities. As discussed with respect to paragraph H. above, where regulated units are separate, large volumes of ground water potentially could be contaminated prior to detection by a single peripheral ground water monitoring system. Therefore, the Agency believes ground water is more adequately protected if the general requirement is for separate ground water monitoring systems for each regulated unit.

Subparagraph J.3. describes the requirements for the construction and installation of ground water monitoring wells. Well construction and installation must be in accordance with 7 MCAR §§ 1.210-1.224, the Minnesota Department of Health Water Well

Construction Code. This is reasonable because improperly installed and constructed wells can provide conduits for the migration of contaminants as well as yielding spurious ground water quality data. Subparagraphs J.4. and J.5. require that a consistent protocol for sampling, handling and analyzing ground water samples be established. These procedures are needed in order to provide high quality analytical results and to allow valid comparison of analytical results obtained at different times.

Subparagraph J.6. requires at least an annual determination of the flow rates of the ground water being monitored. Ground water flow directions must be determined at least quarterly. These requirements provide data to be used to determine the extent of contamination in the event of leakage from the unit. Because it is possible for the directions of ground water flow to change, quarterly determinations are important to ensure that data from the upgradient and downgradient monitoring wells are still relevant.

Subparagraph J.7. establishes the procedures to be followed to determine background ground water quality. It requires that background ground water quality be established for each hazardous constituent which may reasonably be expected to be in or derived from the wastes to be managed at the facility. This may in some cases result in establishing background values for more hazardous constituents than would result under 40 C.F.R. § 264.97(g)

which only requires that the ground water monitoring program establish background ground water quality for each of the hazardous constituents or monitoring parameters specified in the permit. However, the Agency believes that it is preferable to require that background values be established for each hazardous constituent which is likely to be in or derived from the wastes managed at a facility.

Background values which are established at the outset are more indicative of actual conditions than those established after a facility receives waste. Establishing background values prior to receiving waste allows data from downgradient wells to be used in establishing these background values. These wells sample ground water quality at the point of compliance at a time when it has not been affected by the facility. Thus, the quality of background ground water in the absence of a facility is documented. By establishing these background values at the outset, the owner and operator is informed of what the ground water protection standard will be for those hazardous constituents which the facility will receive or generate. Establishing the background values for likely hazardous constituents when the permit is issued also avoids the delays which are inherent in establishing background values during the detection monitoring program. If a ground water protection standard already exists for these hazardous constituents, corrective action can be expedited.

Subparagraph J.7. also provides that the Agency may require background data to be collected on nonhazardous chemical components and physical properties related to ground water quality. This is necessary because nonhazardous parameters from the hazardous wastes received at a facility may affect ground water quality. The natural chemistry of the ground water may also provide information about the ground water system as a whole which will affect the design and operation of the monitoring system. The information on ground water quality required in the specific hydrogeologic reports, 6 MCAR §§ 4.9317 B., 4.9318 B., and 4.9320 B., may fulfill part of this need.

Unlike the corresponding EPA regulation, subparagraph J.7. permits the Agency to also require more than a single background ground water monitoring system for facilities which are underlain by multiple soil or rock formations if these formations have significant hydraulic or compositional differences. In many areas of Minnesota the saturated zone includes several types of formations. Because of their different compositions and hydraulic properties the chemistry of ground water contained in these different formations varies. Therefore, if background ground water quality is established by using samples from a single system, which has wells in different formations, spurious results may be obtained. A background value established in this manner will be an average of values from ground waters with varying chemistry. This may make the determination of whether the

ground water protection standard has been violated less certain when a sample from a single well is compared with the background value. For this reason it is reasonable to allow the Agency the flexibility to require more than one background ground water quality system in such instances.

Subparagraph J.7. further provides that background ground water quality at new facilities will be based on data from at least quarterly sampling one year prior to operation. The chemistry of ground water may vary substantially over time. A major source of variation can be seasonal fluctuations related to changes in precipitation and infiltration. As discussed at 47 F.R. 32301 (July 26, 1982) by sampling the ground water for a year, seasonal variations in ground water quality can be included in the background data. For existing facilities and for facilities in a compliance monitoring program, the samples collected for background ground water quality must, to the extent feasible, account for seasonal fluctuations in ground water quality.

Background ground water quality is more difficult to establish at existing facilities where it is possible that the water quality may already be affected by leakage from the facility. It is therefore reasonable for these rules to provide standards for establishing background ground water quality under such conditions. Paragraph J. requires that sampling be conducted at wells which are upgradient from the existing facility. However, under certain hydrologic conditions, better data can be obtained

from wells which are not upgradient and it is reasonable to allow the sampling of downgradient wells if it can be shown that accurate data can be obtained.

Subparagraphs J.7.-J.9. concern methods of sampling and statistical analysis. It is reasonable to require that these procedures be followed as they are necessary to ensure that sufficient ground water samples are taken and that they are evaluated by appropriate statistical methods. The Agency is relying on the EPA's expertise in adopting these procedures. The rationale for using these procedures is set forth at 47 F.R. 32302 -32304 (July 26, 1982).

Subparagraph J.10. sets out the information related to the ground water monitoring program which the owner or operator must provide to the Agency. It is reasonable for the Agency to have the field data, analytical data, and statistical calculations used to establish and comply with the various ground water protection activities under paragraphs J.-M. so that the Agency may perform its own review and analysis of these data and calculations. In addition, the public may wish to have access to this information and it will be made available to them by the Agency.

Paragraph K. sets forth the responsibilities of an owner or operator in establishing a detection monitoring program. The monitoring parameters and hazardous constituents in the facility permit are determined after considering a variety of factors

including the types and quantity of the wastes, the characteristics of these wastes in the environment, their detectability in ground water, and their background concentrations in the ground water. In general, these factors will determine the suitability of each parameter or hazardous constituent for ground water monitoring. This paragraph is based on the provisions of 40 C.F.R. § 264.98 and is discussed in more detail at 47 F.R. 32304 - 32308 (July 26, 1982).

Specifically, paragraph K. requires that the ground water monitoring system which is installed meet the requirements of subparagraphs J.1.b.-c., J.2., and J.3. The reasonableness of these requirements, which ensure that representative ground water samples will be collected, has been discussed previously. The owner or operator must also establish a background value for each monitoring parameter or hazardous constituent which is likely to be in or derived from the wastes managed at the facility. As discussed above, early establishment of background values has two major advantages: some delays which are inherent in initiating a compliance monitoring program can be avoided, and in most instances the background values can be established at downgradient wells in lieu of upgradient wells.

Paragraph K. requires that either these background values or the procedures to be used to calculate them must be specified in a facility permit. The intent of the rules is to establish

background values prior to the issuance of a permit whenever it is feasible. However, in some instances the quality and the reliability of the background values will not be lessened if they are established after the facility permit is issued. For example, this may be the case for new facilities which will not receive waste immediately after permitting because of the time required for site preparation. This may also be the case for some existing facilities where upgradient wells are to be used for background sampling. Allowing background values to be established in accordance with procedures in the facility permit is reasonable because valid background values can still be obtained in these cases.

Paragraph K. requires owners or operators of double lined surface impoundments, landfills, and waste piles, and land treatment units to determine ground water quality at each monitoring well at the compliance point for each parameter or constituent established under subparagraph K.1. at least semi-annually during the active life of a regulated unit, including the closure period, and the post-closure care period. With the exception of land treatment units, EPA does not require owners or operators of these facilities to monitor ground water. EPA based its decision to not require ground water monitoring for these facilities on its belief that such facilities contain a leak detection system to detect whether a unit's upper liner has failed. Although the leak detection

system is an integral part of the facility's ground water protection program, there are several reasons to also require ground water monitoring from the very outset. The use of two liners and an intervening leak or liquid detection system is a relatively recent development in the design of hazardous waste facilities. Therefore, it is not yet certain under what conditions, if any, this system would fail to detect liquid between the liners. In addition, by initially establishing a ground water monitoring system, background ground water quality can be established in wells located at the point of compliance and delays, which are inherent in initiating a ground water program, can be avoided. These advantages are further discussed with respect to paragraph J.

Subparagraphs K.4.-K.5. provide a two phased approach to detection monitoring. If the unit has a double liner which is not leaking, a basic monitoring program must be conducted at least semi-annually. However, this monitoring program must be increased if there is evidence that an upper liner is leaking, that hazardous constituents are leaving the treatment zone, or if the unit has only a single liner. Under these conditions, the rule requires at least quarterly determinations of ground water quality for all hazardous constituents which are reasonably expected to be in or derived from the waste contained in the unit, rather than the semi-annual sampling for only the monitoring parameters.

The owner or operator must determine whether there is a statistically significant increase over background for every parameter in the permit every time ground water quality is determined. Subparagraph K.7. requires the reporting of the results of this analysis, within the period specified in the permit. The federal regulation requires that the data be submitted within a reasonable time. It is reasonable to expect the owner or operator to identify the average time required to analyze samples in advance of obtaining a permit. This information will be used during the permitting process to determine the reporting period in the permit.

If it is determined as a result of sampling that there has been a statistically significant increase, the owner or operator must notify the Agency and begin a series of actions to determine the extent of contamination and to correct the problem if necessary. The owner or operator must immediately sample the ground water at all the monitoring wells, have the samples analyzed for all possible hazardous constituents and determine background values for all hazardous constituents. Because an increase in one of the detection monitoring parameters indicates a strong possibility of liner failure or treatment zone breakthrough, it is reasonable to require that the ground water be analyzed for all hazardous constituents. If the unit is leaking, such analyses should not only detect hazardous constituents which are known to have been accepted at the unit, and also those which may have been illegally or

inadvertantly accepted. In addition, detection of hazardous constituents which are not permitted at a facility may suggest an alternative source of contamination. For these reasons, the proposed rule requires a complete ground water analysis for all hazardous constituents, rather than merely the ones which are known to be accepted at the facility.

With this data, it must then be determined whether there has been any increase in any constituent at the compliance point. If a statistically significant increase is detected, compliance monitoring must begin. Increases in hazardous constituents in the ground water signal the need for an accelerated ground water monitoring program because of the increased potential for contaminant migration. The preliminary compliance monitoring program may be revised as appropriate based on the information available. Such permit revisions are reasonable because they will be based on the most current data which accurately reflects the conditions which exist regarding the contamination.

Subparagraph K.9. allows the owner or operator to demonstrate that the contamination is derived from a source other than the regulated unit. Although the owner or operator may make such a demonstration, it is not reasonable to allow the implementation of compliance monitoring to be delayed until the actual contamination source is detected. The owner or operator must proceed with the necessary compliance monitoring while the demonstration is being conducted. The compliance monitoring requirements are not unreasonably

burdensome, and the need for a rapid response to contamination is extremely important. The proposed rule allows the owner or operator seven days to notify the Agency of his or her intent to make the determination and 90 days for conducting the actual demonstration. Ninety days provides adequate time to conduct extensive analyses but still provides a definite end date. If an alternate source cannot be discovered within 90 days, it is not reasonable to assume that more time will permit its discovery. However, a shorter period is not necessarily more reasonable because compliance monitoring and corrective actions will still be underway and unaffected by the concurrent demonstration to prove another source of the contamination.

Paragraph L. establishes the requirements for a compliance monitoring program and is based on 40 C.F.R. § 264.99. The basis for the EPA regulations is set forth at 47 F.R. 32308 - 32310 (July 26, 1982). Once it is determined that there are hazardous constituents in the ground water, the owner or operator must implement a compliance monitoring program.

Subparagraph L.1. requires an owner or operator to monitor the ground water to determine whether regulated units are in compliance with the ground water protection standards of paragraph C. The compliance monitoring program differs from detection monitoring by requiring more frequent sampling for increased parameters. This is reasonable, as compliance monitoring occurs when the ground water is believed to be contaminated. Subparagraph L.1. also

provides that the Agency shall specify in the facility permit a list of the hazardous constituents, concentration limits for each of these hazardous constituents, the compliance point and the compliance period. Inclusion of these items in the facility permit enables the owner or operator, the public, local units of government, regulators, and other interested parties to be aware from the outset of the requirements which the facility must meet.

Subparagraph L.2. requires that ground water monitoring systems which are installed at facilities must comply with subparagraphs J.1.b. and c., J.2., and J.3. These sections describe the requirements which ground water monitoring systems must meet with respect to their location and installation. As discussed above, these requirements are necessary for ground water monitoring systems to yield meaningful ground water samples. Thus it is reasonable that any ground water monitoring system installed at a facility meet these requirements.

Subparagraph L.3. sets out how a concentration limit specified in a facility permit will be established where it is based on background ground water quality. Background ground water sampling must be in accordance with the provisions of subparagraph J.7. Subparagraph L.4. requires the owner or operator to determine the concentration of hazardous constituents in ground water at each monitoring well at the compliance point at least quarterly during the compliance period. The more frequent sampling is appropriate as a compliance monitoring program is only initiated after a sta-

tistically significant increase of a hazardous constituent has been detected in the ground water which provides a reasonable basis for assuming that leakage and contamination have occurred.

Subparagraph L.5. requires the owner or operator to analyze samples from all monitoring wells at the compliance point for all constituents listed in 6 MCAR § 4.9137 at least annually. This is necessary in order to determine whether additional hazardous constituents are present in the monitoring wells. If additional hazardous constituents are detected, their concentrations must be reported to the Director. The Agency will then modify the facility permit to include concentration limits for those additional hazardous constituents which are detected. Subparagraphs L.6. and L.7. establish the sampling and analytical techniques and the statistical procedures to be used during compliance monitoring.

Subparagraph L.8. provides that if the owner or operator determines that a ground water protection standard is being exceeded at any monitoring well at the point of compliance, he or she must notify the Agency in writing within seven days and indicate which concentration limits have been exceeded. The owner or operator must then 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 paragraph M., within 90 days.

This time frame for implementing corrective action is different from that in 40 C.F.R. § 264.99. The federal regulations require the owner or operator to submit an application for permit modification to establish a corrective action program within 180 days, or within 90 days if an engineering feasibility study has been previously submitted. Under the federal approach a significant delay could occur between the detection of a violation of a ground water protection standard and the implementation of a corrective action program. To remedy this, 6 MCAR § 4.9297 B.4. requires the owner or operator to submit a corrective action plan as part of the facility permit application. The Agency will review and approve this plan prior to the issuance of the facility permit. This enables the owner or operator to initiate the corrective action program after concentration limits have been exceeded rather than only being able to propose a course of action. In most cases it is likely that some modifications to the approved corrective action plan will be necessary due to specific details of a release of hazardous constituents which cannot be predicted when the corrective action plan is approved. Therefore the owner or operator must submit an application to modify the permit within 90 days to meet the requirements of paragraph M. These shorter time frames are reasonable because the program has already been approved.

Subparagraph L.8. also requires that the owner or operator submit a detailed description of the corrective actions that will

achieve compliance with the ground water protection standard and a plan for a ground water monitoring program which will demonstrate the effectiveness of the corrective action program. This requirement is reasonable for without such a ground water monitoring program the effectiveness of the corrective action cannot be evaluated.

Subparagraph L.8. further requires the owner or operator to cease accepting wastes at the facility if the concentration limits in the permit are being exceeded at any monitoring well at the property line. To evaluate if this is occurring, the ground water monitoring program must be capable of demonstrating compliance with the concentration limits in the permit in the ground water at the downgradient portion of the property line of the facility. It is reasonable to require that a facility stop accepting wastes if hazardous constituents from the wastes have migrated off the facility's property. Once the concentration of hazardous constituents beyond the property line exceeds the concentration limits in the permit, the quality of the ground water for the adjacent property has been impaired. The addition of wastes to a facility which has already affected ground water under adjacent property is not appropriate, since acceptance of additional wastes might aggravate the contamination. However, if the owner or operator can demonstrate that specific individual units within a facility have not violated the ground water protection standard at the property line, the owner or operator may

resume accepting wastes at those units for which a demonstration can be made following Agency approval of the demonstration. This provision is reasonable for multiple unit facilities; otherwise individual units which are not violating the ground water protection standard might be prohibited from accepting wastes. If this occurred, then units in multiple unit facilities would be subject to more stringent requirements than single unit facilities.

Subparagraph L.9. provides the owner or operator with the opportunity to demonstrate that a source other than a regulated unit caused the increase above the ground water protection standard or to demonstrate that the increase resulted from error in sampling, analysis, or evaluation. It is reasonable to allow the owner or operator an opportunity to make this demonstration. If an increase is not caused by a regulated unit, then the owner or operator should not be required to implement a corrective action program which is designed for the regulated unit. If an increase above the ground water protection standard does exist but is not caused by a regulated unit it is also important to have this information so the Agency can attempt to locate the source of the contamination. However, since any violation of the ground water protection standard is potentially serious and corrective action must be initiated as soon as practical, the owner or operator must continue to monitor in accordance with the compliance monitoring program and initiate the corrective action program in

the time specified, even if the owner or operator plans to attempt to make a demonstration that a regulated unit is not the cause of the violation.

Paragraph M. establishes the corrective action program and is based on the provisions of 40 C.F.R. § 264.100. The rationale for that regulation is discussed at 47 F.R. 32310 - 32312 (July 26, 1982). The goal of the corrective action program is to bring the regulated unit into compliance with the ground water protection standard. The owner or operator must 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. Measures which only prevent migration of hazardous constituents in the ground water for some period of time simply defer adverse ground water effects until some later time. Therefore, measures which only modify the gradient of the ground water or create barriers to ground water movement, such as slurry walls, do not, by themselves, constitute an adequate corrective action program. Such measures can, however, be used in conjunction with other measures, such as ground water withdrawal, to fulfill the requirements of this paragraph.

Subparagraph M.3. requires the owner or operator to begin corrective action within one week after the ground water protection standard is exceeded, unless the permit provides an

alternate period. While it is unlikely that a comprehensive corrective action program can be implemented in such a short time, it is expected that the corrective action can be initiated and planning to implement the remainder of the program can be underway within a week. It is reasonable to require that corrective action be started expeditiously as the risk to human health and the environment is likely to increase with time.

Subparagraph M.4. requires the owner or operator to establish and implement a ground water monitoring program to demonstrate the effectiveness of the corrective action program. The ground water monitoring program must also include the establishment and monitoring of ground water monitoring wells at the downgradient portion of the facility property line. These ground water monitoring programs are necessary and reasonable to assess the scope of the corrective action which is required. However, it is likely that the owner or operator will need to install wells in addition to those installed as part of the compliance monitoring program to document the extent of the ground water which has been contaminated. The installation of the ground water monitoring wells at the downgradient portion of the property line is necessary to determine if the facility can continue to accept wastes as provided in subparagraph L.8.

Subparagraph M.5. requires the owner or operator to conduct a corrective action program to remove or treat in place any hazardous constituents that exceed concentration limits in ground water that

has passed the compliance point. This requirement differs from 40 C.F.R. § 264.100 which limits the corrective action to removing or treating in place the hazardous constituents in excess of the concentration limits between the compliance point and the property line. Under the federal regulation corrective action for ground water downgradient of the property line would have to be addressed under other programs. The Agency believes that there are several problems with this approach. Because a separate procedure for dealing with ground water downgradient of the property line would have to be established, it could lead to significant delays in implementing corrective action even though the responsible party is known and has already committed resources to corrective action within the property boundaries. A delay in implementing corrective action downgradient of the property line could allow the volume of the ground water which exceeds the concentration limits to increase. The leading edge of a plume of ground water contaminants will be the first portion to move beyond the property line and will be the first to encounter downgradient water supply wells if they are present. Thus, by imposing an artificial division on a hydrogeologic problem, the correction of that problem may be delayed and complicated. The risk to human health and the environment is also likely to increase. Addressing the corrective action program as a whole and requiring it to extend beyond the property boundary, if necessary, is more reasonable.

Subparagraph M.5. also requires that corrective action measures be initiated and completed within a reasonable period of

time considering the extent of contamination. This requirement is obviously necessary and reasonable in order to minimize the risk to human health and the environment. If corrective action is not initiated or completed within a reasonable period of time considering the extent of contamination, the owner or operator must cease accepting wastes at the facility. It is not reasonable to continue to allow wastes to be accepted at a facility if the owner or operator has not implemented or completed corrective action within a reasonable period of time. This is because based on past corrective action, or lack thereof, there will be no assurance that if hazardous constituents from these new wastes enter the ground water that corrective action will be initiated and completed within a reasonable period of time.

Subparagraph M.6. requires the owner or operator to continue corrective action measures during the compliance period to the extent necessary to ensure that a ground water protection standard is not exceeded at any monitoring well. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the ground water protection standard at all monitoring wells. This is necessary to avoid the cessation of corrective action simply because the compliance period has ended. 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 it can be demonstrated, based on data from the ground water monitoring program under subparagraph M.4., that the ground water protection standard has not been exceeded for a period of five consecutive years at any monitoring well. As outlined under the discussion of paragraph I., five years during which the ground water standard is not exceeded is a reasonable period of time to require before corrective action can be terminated.

6 MCAR § 4.9298

Rule 6 MCAR § 4.9298 contains the standards applicable to the closure of all TSDF's. The specific language of this rule has been taken from 40 C.F.R. §§ 264.110-112 since existing rules 6 MCAR §§ 4.9004 D. and E. do not cover closure activities in the detail required by EPA for authorization. The Agency is relying on the EPA background documents on closure listed in Part VIII. as support for this rule and 6 MCAR § 4.9299. The objective of this rule is to ensure that all hazardous waste facilities close in the manner necessary to protect human health and the environment, control, minimize, or eliminate the escape of pollutants and minimize the need for post closure maintenance. To accomplish this objective, it is necessary that facility owners and operators plan in advance of closure the manner in which they will dispose of any remaining hazardous waste and decontaminate any equipment used in the process. Therefore,

facility owners and operators are required to submit a closure plan as part of the permit application.

It is reasonable to require a closure plan for facilities which handle hazardous waste because preplanning is essential in estimating the type and quantity of waste which must be disposed of at the time of closure. Without adequate planning, containers may be left at facilities for long periods of time thereby increasing the chances for contamination of the surrounding area due to rusting drums, insufficient cover, and improper disposal of wastes. The closure plan serves as an impetus to such planning and also provides the Agency with an opportunity to prevent any damage to human health or the environment which might occur from facilities which did not plan ahead for the inventories of waste which would be present at closure and how disposal of these wastes should take place.

6 MCAR § 4.9299

Proposed rule 6 MCAR § 4.9299 establishes the time limit for completion of closure activities at a facility and the procedures for extension of this time limit. This rule is taken from 40 C.F.R. §§ 264.113 - 264.115 and requires that all hazardous waste must be treated, disposed of or removed from the site within 90 days after receiving the last volume of hazardous waste and that closure activities must be completed within 180 days. It is reasonable to place time constraints on the completion of closure activities

since the longer a facility is left unattended with no apparent problems the less urgent proper closure appears thereby increasing the possibility of damage to human health or the environment due to the general deterioration of the facility and the containment areas. The proposed rule includes provisions for extending the closure time if the facility owner or operator demonstrates a reasonable justification as to why closure activities will take longer than the allotted 90 or 180 days. This rule is reasonable since it provides measures to prevent damage to human health and the environment from unnecessary delays in closure yet allows for a reasonable degree of flexibility in conducting closure activities.

6 MCAR § 4.9299 also contains a provision permitting closure to be ordered by the Director if the owner or operator fails to keep the applicable financial assurance in effect. This provision has been added to clarify that closure may occur prior to the expected date if such non-compliance occurs, and is consistent with the provisions of the rules on financial assurance. This provision is reasonable since it puts the owner or operator on notice that non-compliance with applicable financial assurance provisions could result in closure of the facility. If closure was not ordered when such non-compliance occurs, the financial assurance mechanism would fail to have any meaning and the funds necessary for closure would no longer be available. Since this could lead to damage to human health and the environment from facilities which

are not closed in a timely manner due to lack of funds, it is reasonable to include such a provision in this rule regarding closure activities.

6 MCAR § 4.9300

Rule 6 MCAR § 4.9300 contains the requirements for post-closure care of hazardous waste land disposal facilities and certain waste piles and surface impoundments, and is based on 40 C.F.R. § 264.118. The Agency is relying on the EPA background documents on post-closure care listed in Part VIII. as support for this rule and 6 MCAR § 4.9301. The rule requires the submittal of a post-closure plan which includes the monitoring and maintenance practices for each facility necessary to detect and minimize any potential harm to human health and the environment from contamination of the surrounding air, land, or waters. The closure of a facility does not immediately eliminate the possiblity of damage from contamination as it is virtually impossible to immediately render all hazardous wastes nonhazardous in land treatment facilities, and disposal facilities may deteriorate over time. Therefore, post-closure monitoring and maintenance is imperative to detect and prevent any possible situations which could harm human health and the environment. Since some storage or treatment waste piles and surface impoundments have the potential to become disposal facilities at closure if not all of the hazardous wastes

and contaminated materials can be removed, it is reasonable to require a post-closure plan to address this possibility.

6 MCAR § 4.9301

Rule 6 MCAR § 4.9301 sets forth the time period for post-closure care and limits the use of a facility's property during this time. This rule is taken from 40 C.F.R. § 264.117. This rule is reasonable since if no time limit were placed on the post-closure care period, an owner or operator could be confused as to whether he is required to monitor indefinitely or not at all. In specifying the time period of 30 years, the Agency is relying on the work done by EPA. However, the staff believes that a breach in the containment system should be detectable in this period. An allowance has been made for lengthening or shortening the post-closure care based on technical documentation that conditions warrant such a change from the prescribed time frame. Limiting the post-closure use of property is needed to protect the integrity of the existing containment system and prevent the release of hazardous waste into the environment. This requirement does not prevent all uses of the property, but rather limits the use to that which will not disturb any hazardous waste remaining on-site after closure.

6 MCAR § 4.9302

Rule 6 MCAR § 4.9302, which is taken from 40 C.F.R. § 264.119, requires that local land authorities be notified by the

facility owner or operator of all closure activities which occurred at a facility and provided with a survey plat of the site indicating the location and dimension of disposal areas. This is a reasonable requirement since the local authorities with jurisdiction over land use must know the type, how much, and where any hazardous waste has been disposed in order to ensure that all future activities on the property are compatible with site conditions. Additionally, should remedial actions be necessary, the survey plat would provide the responsible party with locations of the waste.

6 MCAR § 4.9303

Rule 6 MCAR § 4.9303 requires that the deed to any property where hazardous waste has been disposed of include a notation to that effect. This requirement is taken from 40 C.F.R. § 264.120. It is necessary for new owners to know what has occurred on the property, what type of waste remains, and the land use limitations in effect so that a new owner does not unwittingly use the property in a way which could endanger human health and the environment. The most appropriate method to guarantee this notification is the deed since it is routinely reviewed during any change of ownership.

6 MCAR § 4.9304 - 4.9314

Rules 6 MCAR §§ 4.9304 through 4.9314 establish financial requirements for owners and operators of hazardous waste

facilities. Financial responsibility requirements are necessary and desirable to assure (1) that funds will be available for proper closure of facilities that treat, store, or dispose of hazardous waste, for post-closure care of hazardous waste disposal sites and for corrective action for surface impoundments, waste piles, land treatment units, and landfills; and (2) that a pool of funds will be available during the operating life of a facility from which third parties can seek compensation for injuries to people and property resulting from operation of the facilities.

The need for assurance of financial responsibility for closure, post-closure care and corrective action is indicated by the many instances of environmental damage resulting from abandonment of hazardous waste facilities and other failures by owners and operators to provide adequately for closure, post-closure care and corrective action. The likelihood of such failure is increased by the fact that the economic value of the facility is either at a minimum or nonexistent when closure and post-closure care are expected to commence, or once corrective action becomes necessary. For most disposal facilities, post-closure care must extend for 30 years beyond the operating life of the facility. Since corrective action could be required at various times during the active life and during the post-closure care period or beyond, it is necessary to establish sufficient funds early in the facility's life. Most likely, a significant number of owners and operators will lack the ability to provide for adequate closure, post-closure

care and corrective action unless effective requirements for financial assurance are established.

The need for assurance that a pool of funds will be available from which third parties can seek compensation is indicated by the numerous instances in which third parties have suffered personal injury and property damages caused by the operation of hazardous waste management facilities. Consequently a requirement that owners and operators must secure liability coverage which covers both personal injuries and property damage from their facilities has been established. Moreover, the inherent risks associated with hazardous waste indicate that such a requirement is desirable.

The requirements in rules 6 MCAR §§ 4.9304 - 4.9308 and 4.9311 - 4.9314 are based on EPA's regulations found in 40 C.F.R. §§ 264.140 - 264.151. A discussion on the reasonableness of these regulations is given in the EPA Background Documents on Parts 264 and 265, Subpart H, Financial Requirements, which are referenced in Part VIII., and at 46 F.R. 2821 - 2829 (January 12, 1981), 47 F.R. 15032 - 15074 (April 7, 1982) and 47 F.R. 16544 - 16544 (April 16, 1982). Since EPA has done a substantial amount of work developing the financial requirements and ensuring that the requirements are consistent with current practices in the financial community, it is reasonable to utilize these requirements as a basis for the state requirements.

6 MCAR § 4.9304

Rule 6 MCAR § 4.9304 contains provisions on the applicability of the financial responsibility rules and definitions of terms used in these rules. These provisions are taken from 40 C.F.R. §§ 264.140 and 264.141 and are self explanatory.

6 MCAR § 4.9305

Rule 6 MCAR § 4.9305 requires the facility owner or operator to have a written estimate of the cost of closing the facility, to update the estimate whenever changes in the closure plan affect the cost of closure and to adjust the cost estimate annually for inflation. This rule is taken from 40 C.F.R. § 264.142.

6 MCAR § 4.9306

Rule 6 MCAR § 4.9306 sets forth the methods which may be used by an owner or operator to ensure that funds will be available for closure. This rule permits the use of trust funds, surety bonds, letters of credit, insurance, a financial test and a corporate guarantee to satisfy the financial assurance requirements and sets forth requirements governing the establishment of the mechanism chosen and the manner or formula in which any payments must be made. The rule permits the owner or operator to satisfy

the requirements by using more than one financial mechanism for one facility or one financial mechanism for multiple facilities. This rule is taken from 40 C.F.R. § 264.143.

6 MCAR § 4.9307

Rule 6 MCAR § 4.9307 requires the owner or operator of a facility to have a written estimate of the annual cost of post-closure care of the facility and to revise that cost estimate in the same manner that the closure cost estimate is revised. This rule is based on 40 C.F.R. § 264.144.

6 MCAR § 4.9308

Rule 6 MCAR § 4.9308 requires the owner or operator to establish financial assurance for post-closure care of the facility. The methods that may be used are the same as the methods which may be used to provide financial assurance for closure. The provisions of this rule are taken from 40 C.F.R. § 264.145.

6 MCAR § 4.9309 and 4.9310

Rules 6 MCAR §§ 4.9309 and 4.9310 require the owners or operators of surface impoundments, waste piles, land treatment units, and landfills to demonstrate financial responsibility for corrective action. Although EPA has indicated that such financial

assurance may be necessary, EPA has not as yet adopted such a requirement. See 47 F.R. 32279 - 32280 (July 26, 1982). The Agency, however, has decided not to wait for EPA to adopt a regulation and has proposed financial assurance requirements for corrective action based on the financial assurance requirements for closure and post-closure care.

At facilities where all other ground water protection measures have failed and hazardous constituents have entered the ground water, corrective action measures are the key means for protecting human health and the environment. It is therefore essential that the owner or operator be able to perform corrective action if and when it is needed. Corrective action can be expensive. It may involve pumping and treating large volumes of contaminated ground water over a long period of time. In addition, as discussed above, under certain circumstances facilities undergoing corrective action may be required to stop taking waste. This means that at a time when a facility is undertaking a major expense, it may have its income cut off or substantially reduced. Under such circumstances some facility owners or operators may be unwilling or financially unable to undertake corrective action. Financial responsibility requirements for corrective action will assure that money will be available when needed to conduct necessary corrective action measures.

The report entitled "Comments of the Environmental Defense Fund and The Cram and Forster Insurance Companies on Financial Assurance Requirements for Corrective Action", November 22, 1982, supports the Agency's position that financial assurance for corrective action is necessary and is best required during the facility's life as a permit condition. Such a requirement encourages the facility owner or operator to site and design the facility in a manner which would minimize the cost of corrective action and the cost of providing financial assurance for corrective action. This report, which is listed in Part VIII, is being relied on by the Agency as additional support for 6 MCAR §§ 4.9309 and 4.9310.

In recent years both Minnesota and the federal government adopted "Superfund" legislation to provide government funding to clean up past hazardous waste disposal sites for which no other source of clean up funds is available. The intent of RCRA and the regulations adopted pursuant thereto and of 6 MCAR §§ 4.9100 - 4.9560 is to regulate new and existing hazardous waste disposal facilities so that they do not become problem sites for which no clean up funds other than "Superfund funds" are available. Design and operating requirements are not foolproof. A substantial portion of Minnesota's population relies on ground water as its drinking water supply. To assure that corrective action will occur should ground water at a hazardous waste disposal facility

become contaminated, it would be unreasonable for the Agency not to require owners and operators to provide financial assurance for corrective action before the facility begins accepting waste.

The requirements for demonstrating financial responsbility for corrective action are identical to those for demonstrating financial responsibility for closure and post closure care. Specifically 6 MCAR § 4.9309 requires the owner or operator of a facility to have a written estimate of the cost of performing corrective action so that the amount that the financial mechanism must cover will be known, to adjust the cost estimate annually for inflation and whenever changes in the corrective action plan increase the cost of corrective action.

Rule 6 MCAR § 4.9310 specifically requires the owner or operator to provide financial assurance for corrective action using any of the financial mechanisms which may be used to demonstrate financial assurance for closure and post closure care.

Some concerns have been raised regarding the provisions for corrective action insurance. It has been suggested that the provisions of 6 MCAR § 4.9310 E. regarding insurance be deleted since corrective action insurance is not currently offered and may not be offered in the future due to the lack of data on cost and frequency of corrective action. Although such coverage may not currently exist, the Agency staff has decided to include the insurance option so that if an owner or operator does obtain such

coverage the Agency would be able to accept it as proof of financial assurance without having to amend the hazardous waste rules. By including the insurance option, the Agency has not required the insurance industry to provide such coverage but rather has set forth the conditions such coverage must met if it is to satisfy the corrective action financial assurance requirements.

Concerns have also been raised with respect to the provisions regarding cancellation and the point at which corrective action must begin. It has been suggested that the insurer should have the option of cancelling corrective action insurance. The Agency recognizes the insurer's need to limit liabiliy and risk by maintaining the right to cancel or terminate insurance policies, particularly in cases where the insured has committed an act of default as set forth in the insurance contract. However, the Agency is concerned that coverage be maintained for a facility as long as it required under the rules, even if corrective action has become necessary. Therefore, the cancellation provisions of closure and post-closure insurance have been included in corrective action insurance. The Agency believes that if such provisions were acceptable to the insurance industry with regard to post-closure, they should also be acceptable regarding corrective action. Since the post-closure period could be extended beyond the 30-year limit, the uncertainties of post-closure would be comparable to

to those of corrective action.

The point at which corrective action must begin is specified in 6 MCAR § 4.9297. The specific measures for corrective action will be specified in the permit. Corrective action begins once a ground water protection standard is violated at a facility. To assure that an actual violation has occurred, ground water monitoring wells are resampled after a violation is observed. If the violation is verified in the second sample, then corrective action begins. The ground water monitoring program requirements are set up to maximize detection of actual increases in ground water monitoring paramerters while also accounting for normal variations in groundwater which are not due to a release at the facility. Although the actual frequency of corrective action cannot be specified, the rule does clearly specify under what conditions corrective action is to begin. Although there are many uncertainties associated with corrective action, siting and design decisions will greatly influence the need for corrective action. Accordingly the cost of providing financial assurance for corrective action, be it for insurance or some other mechanism, will encourage facility owners or operators to make decisions which serve to minimize this cost as well as the cost of corrective action.

6 MCAR § 4.9311

Rule 6 MCAR § 4.9311 is taken from 40 C.F.R. § 264.146 and permits the facility owner or operator to use the same financial

mechanism to provide financial assurance for both closure and post-closure care for one or more facilities. The Agency has expanded the federal regulation to allow the same financial mechanism to be used for closure, post-closure care and corrective action. This provision allows facility owners and operators to combine financial mechanisms so long as the amount(s) available are not reduced.

6 MCAR § 4.9312

Rule 6 MCAR § 4.9312 sets forth the general liability requirements for owners or operators of TSDFs. The provisions of this rule are taken from 40 C.F.R. § 264.147. This rule includes a requirement that all facility owners or operators obtain liability coverage for sudden accidents amounting to $1 million per occurrence with a $2 million annual aggregate. 6 MCAR § 4.9312 includes a requirement that owners or operators of surface impoundments, landfills and land treatment facilities obtain liability coverage for non-sudden accidents amounting to $3 million per occurrence with a $6 million annual aggregate. For existing facilities the requirements for non-sudden liability coverage are being phased in over a 30 month period. 6 MCAR § 4.9312 permits the use of liability insurance, a financial test, or both to satisfy the liability coverage requirements and sets forth requirements governing the establishment of the mechanism

chosen. A variance procedure has been included to allow owners or operators to demonstrate that the levels of required coverage are not consistent with the degree and duration of risks at their facilities and to seek an adjusted level of coverage. A provision allowing the Agency to increase the level of required coverage if the degree and duration of risks at a facility or group of facilities warrants a higher level of coverage has also been included.

6 MCAR § 4.9313

Rule 6 MCAR § 4.9313 is taken from 40 C.F.R. § 264.148 and sets forth what must be done by the owner or operator when the institution issuing a trust fund, bond, letter of credit or insurance policy goes bankrupt or is otherwise incapcitated. The rule provides that the owner or operator is required to obtain other financial assurance or liability coverage within 60 days.

6 MCAR § 4.9314

Rule 6 MCAR § 4.9314 sets forth the wording of the trust agreements, surety bonds, letters of credit, certificates of insurance, letters from chief financial officers, corporate guarantees and liability endorsements which may be used to satisfy the requirements of 6 MCAR §§ 4.9306, 4.9308, 4.9310 and 4.9312. These documents were developed by EPA and are identical

to the documents set forth at 40 C.F.R. § 264.151, except that provisions for corrective action have been added.

The remaining rules in Chapter Five set forth standards applicable to specific types of hazardous waste facilities. These rules govern the storage, treatment and disposal of hazardous waste in containers, tanks, surface impoundments, waste piles, land treatment units, landfills and thermal treatment facilities.

6 MCAR § 4.9315

6 MCAR § 4.9315 contains the standards applicable to owners and operators of facilities storing hazardous waste in containers. The standards include provisions for the condition of containers, the management and inspection of containers, a containment system, and the compatibility of hazardous waste with a container and other wastes. The requirements for management of containers are a hybrid of existing state rules 6 MCAR § 4.9004 C.3. and C.4. and federal regulations 40 C.F.R. §§ 264.170 - 264.178.

Drums and other containers provide an inexpensive means for generators of hazardous wastes to accumulate and store the wastes in a form which will be easy and relatively inexpensive to carry away. All too frequently, generators and others storing hazardous waste drums have simply put them somewhere out of sight, without any further concern about what would eventually happen to the wastes. The drums eventually weather and corrode, releasing their

contents. Dumps of decaying drums have seriously contaminated surface water and ground water; have emitted fumes which have killed vegetation and nauseated and sickened persons breathing those fumes; and have burned or exploded injuring facility personnel and sending clouds of toxic smoke and fumes over adjacent areas.

The most elementary and straightforward precautions will frequently eliminate these problems. This rule generally requires nothing more than simple good practices in the management of containers of hazardous waste and a level of care commensurate with the hazardous nature of the wastes being stored. Specifically, containers are required to be sturdy, leak-proof, and made or lined with materials compatible with the waste to be stored. Wastes in containers not meeting these requirements must be recontainerized. Containers must be kept closed and managed so they do not rupture or leak. The purpose of this requirement is to minimize emissions of volatile wastes, to help protect ignitable or reactive wastes from sources of ignition or reaction, to help prevent spills, and to reduce the potential for mixing of incompatible wastes and direct contact of facility personnel with wastes.

The existing MPCA requirement, 6 MCAR § 4.9004 C.3.e.(4), that containers which when exposed to sunlight or moisture may create a hazardous condition must be kept in a covered area has

been retained. Weekly inspection of container storage areas for leaks and deterioration of containers is also required. Since corrosion of containers and the development of leaks is usually a slow process, weekly inspections should be adequate. Facilities storing hazardous waste with free liquid must also have a containment system capable of collecting and holding spills to prevent the contamination of local soils and ground water. Additionally, in order to prevent storage facilities from becoming abandoned disposal sites, specific closure requirements have been included to ensure all hazardous waste is removed and properly managed at the time of closure.

6 MCAR § 4.9315 also sets forth special requirements for ignitable or reactive wastes and for incompatible wastes. Containers of ignitable or reactive wastes must be 15 meters from the facility's property line. This requirement is taken from 40 C.F.R. § 264.176, which is based on the National Fire Protection Association's Flammable and Combustion Code of 1977, and is intended to protect adjacent property from the acute effects of explosions and fires that may occur in facilities that store flammable material. Incompatible wastes must not be placed in the same container, hazardous waste cannot be placed in an unwashed container that previously held an incompatible waste, and containers holding incompatible wastes should be separated or protected from each other and from incompatible wastes stored in open tanks, piles or surface impoundments to prevent mixing of incompatible wastes if containers should leak or break.

The language contained in the existing rule 6 MCAR § 4.9004 C.3.e. concerning the dimension limitations for storage areas have been dropped. The criteria did not allow for the stacking of containers. Storage areas are better regulated under the National Fire Protection Association and local fire codes for the varying types of wastes to be stored.

6 MCAR § 4.9316

6 MCAR § 4.9316 contains the standards for storing or treating hazardous wastes in above and below ground tanks. The standards include design, operation, and containment requirements and are a combination of existing rule 6 MCAR § 4.9004 C.3. and C.4. and EPA regulations 40 C.F.R. §§ 264.190 - 264.199. The best way to minimize potential dangers associated with a system failure is the proper design of tanks and the necessary operating precautions taken to prevent the leakage of hazardous waste into the environment. Therefore, 6 MCAR § 4.9316 provides that both above and below ground tanks must be designed and operated in a manner that provides for the maximum protection against the leakage of hazardous wastes. Adequate methods for the detection of leaks must be provided particularly in the case of an underground tank. Each tank must have appropriate controls to prevent overfilling, must be inspected weekly for deterioration and possible malfunctions, and must be compatible with the waste to be stored

or treated. A containment system must be provided to collect and hold all spills until the waste can be removed and managed in accordance with the hazardous waste rules. At closure, all hazardous waste residues must be removed and all equipment decontaminated. The storage of ignitable or reactive wastes must be in accordance with fire codes and the mixing of incompatible wastes is prohibited.

6 MCAR § 4.9316 is reasonable because the protection of public health and the environment requires the proper design, maintenance, and operation of those facilities handling hazardous waste. The precautions necessary to prevent the inadvertent release of hazardous waste to the environment require proper design (tank material which is structurally sound and compatible with the waste), proper maintenance (weekly inspections to check for deterioration and malfunctioning equipment), and proper operating conditions (the separation of incompatible wastes, the rendering of ignitable and reactive wastes nonhazardous). The requirement for a containment system which is impervious and nonreactive with the waste is reasonable because, if a leak should occur, any impact on the environment or human health is minimized by keeping the waste in a confined area and as an easily recoverable material. Preventing incompatible wastes from being mixed and controlling the manner in which ignitable wastes are stored not only protects the environment and public health from air emissions due to explosions, fires, and other damage

causing reactions, but also prevents the leakage of hazardous waste onto the land or into the waters of the state.

6 MCAR § 4.9317

Rule 6 MCAR § 4.9317 contains the design and operating standards for surface impoundments which are used to store, treat or dispose of hazardous waste. Surface impoundments are designed to hold liquid wastes and wastes containing free liquids. Leakage to ground water generally poses the most serious threat to human health and the environment from impoundments, but air emissions from volatile wastes and surface water contamination as a result of overtopping the impoundment or dike failure can also be serious problems. Therefore, in utilizing surface impoundments as a treatment, storage or disposal facility, precautions must be taken to prevent the leakage of hazardous waste through the liner(s) of the impoundment into the surrounding soil and waters and the dispersal of hazardous waste through air emissions. The design and operating standards are of two types: the first set of standards requires sound operating practices, the second set of standards establish environmentally protective design and construction features. The rule is based on the corresponding EPA regulations on surface impoundments, 40 C.F.R. §§ 264.220 - 264.230. However, some significant changes to the federal regulations have been made; these will be pointed out in the following paragraphs.

6 MCAR § 4.9317 A. states that the rule applies to owners and operators of surface impoundments used to store, treat, or dispose of hazardous waste unless otherwise exempted in 6 MCAR § 4.9280 and is identical to 40 C.F.R. § 264.220. No distinction is made between new and existing impoundments. The Agency believes that existing facilities should not be "grandfathered" in because such facilities pose more of an environmental risk than new, well-designed facilities.

Paragraph B. sets forth the locational requirements for surface impoundments and requires that information regarding the facility's hydrogeologic setting be provided by the owner or operator. This section does not have a counterpart in the federal regulations. However, Minnesota's hydrogeology is sufficiently complex that such standards are necessary to avoid constructing a surface impoundment in an environmentally unsafe location. Detailed information about the hydrogeologic setting is necessary to determine its sensitivity to potential leakage or accidental discharges from a facility and to lay the foundation for predicting the feasibility and effectiveness of corrective action should ground water be contaminated by the facility.

Subparagraph B.1. prohibits locating surface impoundments in areas characterized by surficial karst features. "Surficial karst features are defined in 6 MCAR § 4.9100 as "features formed in soluble bedrock and which have surficial expressions or are

shallow enough to potentially affect the integrity of an overlying facility." Areas where surficial karst features are present are subject to surface collapse and sink holes caused by dissolution of the underlying rock. In addition, because of the underground solution cavities which are present in karst areas, monitoring and corrective action would be extremely difficult. Therefore, it is reasonable to prohibit the location of surface impoundments in such areas because of the potential for liner failure due to collapse caused by dissolution of the underlying rock.

Subparagraph B.2. requires the owner or operator of a proposed or existing facility to submit a hydrogeologic report about the site of a surface impoundment. The purpose of such a report is to evaluate the facility's potential effects on subsoils, surface water, and ground water. The proposed rule lists the type of information necessary in the report. Although the federal regulations do not have a corresponding requirement, the Agency believes it is important to know the potential effects which may result from the construction and operation of a facility at a specific location. Before a permit can be issued, the applicant must assure the Agency that successful corrective action can be conducted if necessary. This can only be accomplished by requiring extensive hydrogeologic data on the site to be submitted prior to permit issuance. Without a good understanding of the hydrogeology of the site, no one involved (the owner or operator,

the Agency or the public) in the permitting process will have the information necessary to make sound decisions.

Subparagraph B.3. requires that a surface impoundment be located so that its entire containment system (i.e., dikes and liners) is entirely above the seasonal high water table. This provision differs somewhat from the corresponding federal regulations. 40 C.F.R. § 264.222 requires only double-lined surface impoundments to be located entirely above the seasonal high water table. As discussed below, 6 MCAR § 4.9317 requires all impoundments in Minnesota to have a double liner system. Therefore, this difference should have no impact.

Paragraph C. establishes the design and operating requirements for surface impoundments and corresponds to the provisions of 40 C.F.R. § 264.221. The goal of these requirements is to assure that an impoundment is designed and operated to prevent the migration of hazardous constituents from the impoundment during its active life. The ground water protection standards established in 6 MCAR § 4.9297 are intended to result in detection, evaluation and, if necessary, correction of ground water contamination. The design and operating standards established in this rule and in the corresponding rules on waste piles, land treatment units and landfills, are intended to minimize the possibility of contamination. Thus, these two sets of standards are complementary, not duplicative. The design and operating requirements established in this paragraph are performance standards.

Therefore, the owner or operator must decide how the standards will be met and submit an appropriate proposal in the permit application. Subparagraph C.6. requires that the Agency permit issued for the facility include the design and operating practices necessary to meet the performance standards of paragraph C. This approach allows flexibility in the design of the facility and the operating practices so long as the standards are met. There are four major design and operating requirements established in 6 MCAR § 4.9317 C.: 1) a double liner and a leak detection, collection and removal system; 2) the prevention of overtopping; 3) measures to ensure the structural stability of the dikes; and 4) emergency emptying procedures. Each of these items contributes to the protection of surface and ground water by minimizing the likelihood that wastes will migrate from the impoundment. In addition 6 MCAR § 4.9317 requires that a plan be submitted to address the treatment and disposal of leachate which may be removed from the impoundment.

Subparagraph C.1. provides that all surface impoundments must have a double liner system and a leak detection system. The liner system must consist of two liners and be designed to prevent the migration of waste out of the impoundment during the active life (including closure) of the facility. This requirement differs from the federal regulation which permits the use of single liners for surface impoundments. The Agency does not believe that a single liner provides adequate protection for the ground water.

Without the second liner and the leak detection system between the liners, a liner leak would only be detected when the ground water monitoring program determines that ground water is contaminated. At that time the owner or operator would have to implement the corrective action program for the ground water. Corrective action should be considered as the last step in ground water protection. A double liner and leak detection system will provide a warning that the liner closest to the waste is leaking before the ground water becomes contaminated. The Agency believes that it is more reasonable to provide safeguards, such as double liners and leak detection, which give the owner warning of the malfunctioning of the containment devices, than merely to respond to such malfunctions only after the ground water is contaminated and the problem has spread to the point where difficult and expensive solutions are necessary.

40 C.F.R. § 264.221 provides an exemption from the ground water monitoring requirements for those surface impoundments which have double liners and leak detection systems. The Agency's proposed rules do not allow any exemptions from the ground water monitoring requirements (contained in 6 MCAR § 4.9297) for double-lined systems. While having a double liner and leak detection system should, in most cases, provide indications of liner failure before a ground water contamination problem develops, there may be cases where both liners in the liner system have been breached although no leak has been detected. Therefore, the Agency does not

believe it is reasonable to neglect monitoring the ground water and rely only on the leak detection system to uncover problems with the liner system. The proposed rule requires ground water monitoring even though double liners and leak detection systems are required for surface impoundments.

The federal regulations also allow an exemption from the liner requirements if the owner or operator can demonstrate that alternate design and operating practices will prevent the migration of hazardous constituents from the facility. Because of Minnesota's hydrologic setting, it is unlikely that such a demonstration can be made. In the unlikely event that such a facility is proposed, the owner or operator can use the MPCA variance procedures to apply for a variance from the liner requirements. It is more reasonable to use the general provisions than to incorporate a variance option into each rule.

The liners are to be designed to prevent migration of waste constituents from the impoundment during the facility's active life. This time period requirement is identical to the corresponding EPA provision. The Agency adopted the EPA provision because at closure other provisions of the rule serve to make the role of the liner system less important or totally unimportant. The owner or operator has the option of closing his facility by either removing all waste, liners and other contaminated containment system components, and contaminated subsoils, or by leaving

the waste in place, solidifying and stabilizing the waste, and covering it with an impermeable cap. Under the first option, the liner obviously is no longer needed. Under the second option, the cap will minimize the amount of liquid which will contact the waste and thus minimize the amount of leachate formed. The liner, while still in place, will not play the primary role in the minimization of leachate migrating from the site. Therefore, it is reasonable to adopt the EPA requirement that the liner be designed to function through the time of facility closure.

The method of anticipated closure of an impoundment will determine the type of liners that may be used. For impoundments that are to be closed with waste left in-place, at least one of the liners must be constructed of materials that prevent waste constituents from penetrating the liner. This essentially means that one liner must be constructed of synthetic materials. The other liner of such a system can be constructed of materials that allow waste constituents to migrate into the liner but do not allow wastes to migrate out of the liner into surrounding soil. For an impoundment that will be closed by removal of all waste, liners and other contaminated containment system components, and contaminated subsoils, each liner may be constructed of penetrable materials such as clay. In either case, each liner must be designed and constructed to prevent the migration of waste constituents to the underlying subsoil or drainage layer. This

requirement will ensure that if the top liner is flawed, an effective second liner which has been designed to prevent waste migration for the active life of the facility will be in-place.

The remaining performance standards for liners apply to all liners and are identical to the federal regulation. These standards will ensure that liners will stand up to stresses that will be encountered during construction and operation. Such stresses include pressure gradients, hydrogeologic forces, climatic conditions, stresses due to operation of construction equipment, and effects of contact with waste. The requirements include a base for the liner which will withstand pressure gradients so that the liner is not damaged due to settling, compression, or uplift. All soils that may be contacted by waste are required to be covered by the liner system. These requirements are discussed in the EPA background documents on surface impoundments and land disposal facilities listed in Part VIII.

Subparagraph C.2. requires a surface impoundment to be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations. This provision is identical to 40 C.F.R. § 264.221(c). The importance of preventing overtopping is obvious. Except for hazardous waste constituents which leave an impoundment by leaks through the impoundment's liner system, the only other route of migration is over the dikes. This route of escape can be eliminated by careful

design and planning; therefore it is reasonable to require that it be eliminated.

Subparagraph C.3. requires that the dikes of a surface impoundment be designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. This provision is essentially identical to 40 C.F.R. § 264.221(d) although a definition of massive failure has been added. The dikes must be designed so that they will not fail even if the liner system fails to prevent leakage through the sidewalls. The liner is not assumed to be non-leaking for the purposes of making such a demonstration.

Subparagraph C.4. requires the owner or operator of a surface impoundment to have an emergency system for emptying the wastes from an impoundment. This provision has no specific counterpart in the federal regulations. However, such a system is implicitly required by 40 C.F.R. § 264.227. Normally this provision would be fulfilled by the use of an emergency impoundment or tank. It is reasonable to provide such an emergency backup system so that there is some place available for the wastes in the impoundment should a leak be detected. It has been placed in the design and operating requirements because it must be addressed at the time of permit issuance (specifically in the contingency plan) rather than when needed in an emergency situation. The provision alerts the owner or operator of the fact that he may need to perform extensive construction activities in addition to those required for the main surface impoundment.

Paragraph D. of rule 6 MCAR § 4.9317 is taken from 40 C.F.R. § 264.222(b) and sets forth the options available to an owner or operator if liquids are detected in the leak detection, collection, and removal system. The options are to: 1) remove accumulated liquids, repair the leaking liner, and obtain a certification that the leak has been repaired; or 2) remove accumulated liquids from the leak detection system and begin increased ground water monitoring as specified in 6 MCAR § 4.9297 K.5. Under the second option, the owner or operator must also continue to remove accumulated liquids from the leak detection, collection, and removal system during the active life and post-closure care period of the impoundment. This second option will be available only in cases of minor leaks because a major leak will result in a noticeable lowering of the liquid level in the impoundment and will necessitate removing the impoundment from service in accordance with paragraph F. Accumulation of liquid in the system is an indication that the liner system is not functioning as designed. The liner system is the main defense against migration of waste constituents through the bottom of the impoundment. Therefore, all efforts must be made to ensure the integrity of the liner system.

The first response option to the accumulation of liquid in a detection system includes repair of any leaking liner. This is obviously a reasonable response since repair would result in the liner meeting all the specifications in the original permit.

The second response option, consisting of removing all accumulated liquid (for the duration of the active life and post-closure care period) and intensifying ground water monitoring is reasonable for minor leaks of the top liner. In this case the bottom liner will prevent migration of liquids through the impoundment bottom and will aid in the collection of liquids which pass through the top liner. Since the bottom liner will have been designed to prevent waste constituents from passing through it during the active life of the impoundment, it will provide protection of the ground water.

Paragraph E. establishes the requirements for monitoring and inspection of a surface impoundment. This section is based on the provisions of 40 C.F.R. § 264.226. Liners and covers must be inspected during and immediately after construction to detect and remedy any defects which could result in increases of liquids passing through the liners or covers. Liner inspection is very important. Properly constructed or installed liners should prevent any migration of wastes for many years. Improperly constructed liners, however, can result in migration of wastes almost immediately after they are first placed in the unit. 6 MCAR § 4.9317 E. also requires inspections of the impoundment weekly and after storms to detect any conditions which may indicate that waste constituents have left the impoundment or that the potential exists for such an event. These inspections are not very expensive or time consuming; thus such inspections of these important features are reasonable. These inspection provisions

are important to ensure that the impoundment is maintained in a condition necessary to function as designed.

Subparagraphs E.3. and E.4. require a qualified engineer to certify dike integrity and that liners and leak detection, collection and removal systems meet design specifications prior to permit issuance, after periods during which the impoundment was out of service for at least six months, and after activities (such as dredging) which may affect the condition of these impoundment components. The dike certification requirement is identical to the corresponding federal regulation and is necessary to ensure that the dikes will function as designed. The recertification is necessary to assure that no changes to the dike, such as erosion during the shut-down period, have impaired its structural integrity. The six month period is based on EPA's judgment that significant changes may occur during a period of that length and is discussed at 47 F.R. 32319 - 32320 (July 26, 1982). The certification of the liner and leak detection, collection, and removal systems has been added to the proposed rules because it is necessary to be certain that these systems also function as designed. During the period that the impoundment is not in service, as much damage to the liner may occur as to the dikes. It would therefore be irresponsible not to reinspect the liner before placing hazardous waste into the impoundment.

Paragraph F. addresses when a surface impoundment must be removed from service, how the impoundment must be removed from

service, and what happens if the impoundment is not returned to service. With the exception of the minor changes discussed below, this section is identical to 40 C.F.R. § 264.227. Obviously, requirements which prescribe the responses to emergency conditions are necessary to minimize potential hazards to human health or the environment. The emergency conditions to which responses are required include drops in the liquid level not known to be caused by flows into or out of the impoundment and leaks through the dikes. The federal regulation includes the word "suddenly" in the provision that addresses a drop in an impoundment. Non-sudden drops can also be an indication of liner failure and should also be a cause for removing an impoundment from service. Since these conditions indicate a migration of waste constituents from the facility, either through the bottom or through the dikes, it is reasonable to require that the impoundment be removed from service until these conditions are eliminated.

Subparagraph F.2. sets forth the steps to be taken when it has been determined that a surface impoundment must be removed from service. This subparagraph is slightly different from the corresponding federal provision in that it provides that the impoundment be emptied if the leak cannot be stopped immediately by other means. The word "immediately" was added because other language in this provision requires that the leak be stopped immediately. The Agency believes that the rules should make clear

that emptying the impoundment is a necessary emergency response and must be performed when other required measures fail to prevent migration of waste constituents from the impoundment. Also included in this section is a requirement that is not in the federal regulation that the owner or operator provide a written report to the Agency regarding any situation which necessitates removal from service of the impoundment. This report must present information about the problem and the efforts that were taken to remedy the problem. This is a reasonable requirement because the Agency must be fully apprised of situations which have resulted in or may result in migration of hazardous waste constituents from an impoundment.

Subparagraph F.3. requires that the contingency plan for the impoundment include procedures for removing an impoundment from service. This provision is identical to 40 C.F.R. § 264.277(c). Subparagraph F.4. establishes the requirements for returning a surface impoundment to service after it has been removed from service. These provisions are the same as those in the EPA regulation and require that the dike's structural integrity be recertified and the liner repaired if necessary. If the impoundment is not returned to service, subparagraph F.5. requires that the impoundment be closed. This provision is identical to that in EPA's regulation and is necessary to assure that failed impoundments are not left with hazardous waste in them for an unnecessary period of time.

Paragraph G. establishes the requirements for closure and post-closure care of a surface impoundment. With one exception, which is discussed below, the requirements of this paragraph are the same as those of 40 C.F.R. § 264.228. This paragraph provides two basic closure options, depending on the type of liners installed. The first alternative is to remove all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate. This option, since it includes removal of the liner system if contaminated, is appropriate for all surface impoundments regardless of liner type. The second alternative is to leave the waste in place, eliminate free liquids, stabilize the remaining waste to a bearing capacity sufficient to support final cover, provide a final cover and conduct post-closure monitoring and maintenance. This option is limited to surface impoundments that have at least one liner that does not allow penetration of waste constituents into the liner. Liners that allow wastes to migrate into them may, after closure, allow waste constituents to pass through them, since they are only required to be designed to prevent such pass-through during the active life and closure period of the facility. Therefore, the distinction between the two closure options based on liner type is necessary to minimize the potential migration of hazardous waste constituents from the impoundment after closure.

The closure option of removal of wastes and contaminated structures, equipment and subsoils ensures that no potential for waste constituent migration from the facility will exist after closure. If this option is chosen, ground water monitoring can be stopped after it is demonstrated that all contamination has been removed. This is reasonable because the facility has ceased to be a potential source of ground water contamination. The second closure option, with wastes remaining in-place, is also a reasonable approach when steps are taken to ensure that leachate formation and migration from the impoundment are minimized.

Subparagraphs G.3. and G.4. apply to surface impoundments which do not have liner systems meeting the liner requirements of 6 MCAR § 4.9317 C.1. These would be existing impoundments which become regulated by these rules but do not qualify for a permit. If the owner or operator of this type of surface impoundment plans to close the impoundment by removal of the wastes and contaminated structures, equipment and subsoils, he must include in his closure plan both the measures necessary to perform this closure option and a contingent closure plan to perform closure with the wastes left in-place. He must also prepare a contingent post-closure care plan. This is a reasonable approach since it is uncertain whether the nonconforming liner system is sufficient to prevent contamination of subsoils; therefore the owner or operator must be prepared to provide adequate closure if he is unable to remove all contaminated subsoils as planned.

Subparagraph G.4. requires that the owner or operator of an impoundment closing pursuant to subparagraph G.3. include costs for the contingent closure and post-closure care plans as well as for the intended closure plan in his cost estimate for closure and post-closure care. The federal regulation requires only that the estimate address only the contingent closure and post-closure care plans. Since the owner or operator must first perform the requirements of his intended closure plan and only implement the contingent plans if he discovers that he cannot remove all contaminated subsoil, it is not reasonable to omit the contingent plan costs from the closure cost estimate. Therefore the proposed rules require that this cost be included for purposes of determining the amount of financial assurance necessary for closure activities.

Subparagraph G.5. establishes the procedure to be followed if liquids are detected in the leak detection, collection and removal system during the post-closure care period. The owner or operator must notify the Agency within seven days of the detection, implement increased ground water monitoring in accordance with 6 MCAR § 4.9297 K.5. and remove accumulated liquids from the leak detection, collection and removal system. This requirement is a reasonable response to a leak discovered after closure of the impoundent. Since a final cover has been applied to the facility, it would be unreasonable to require that

the leaking liner be repaired. After closure the cover is viewed as the major liquid management feature of the impoundment and its integrity should not be jeopardized for the sake of repairing a less important component of the liquids management system. However, since one of the liners of the double liner system is obviously no longer functioning as designed, it is reasonable to increase the frequency of ground water monitoring.

Paragraph H. is identical to 40 C.F.R. § 264.229 and prohibits the placement of ignitable or reactive wastes into a surface impoundment unless specified conditions are met. Paragraph I. requires that incompatible wastes or incompatible wastes and materials not be placed into the same impoundment unless precautions are taken to prevent adverse effects and is identical to 40 C.F.R. § 264.230. The rationale for these provisions is discussed in the EPA documents on ignitable, reactive and incompatible wastes listed in Part VIII.

6 MCAR § 4.9318

Rule 6 MCAR § 4.9318 contains the design and operating standards which must be met by an owner or operator of a facility which stores or treats hazardous waste in piles. Waste piles may not be used to intentionally dispose of hazardous waste. Piles used for disposal instead of storage or treatment are regulated as landfills. This rule is based on the provisions of 40 C.F.R. §§ 264.250 - 264.258.

Using waste piles as a method for hazardous waste treatment and storage provides a mechanism for the introduction of potentially harmful hazardous waste components into the environment. The potential hazards from waste piles include wind dispersal of the waste, leachate formation and run-off, and fires and explosions from mixing incompatible wastes.

Paragraph A. provides that the rule applies to owners and operators of waste piles used to treat or store hazardous waste unless they are otherwise exempted by 6 MCAR § 4.9280 or by one of the exemptions allowed in this paragraph.

Dry waste piles that are located inside or under a structure that provides protection from precipitation, run-on and wind dispersal are exempted from portions of this rule. For example, the owner or operator need not comply with the prohibition on the location of a pile in an area characterized by karst features. This requirement is meant to prevent the establishment of a pile in an area that may cause a failure of the pile's liquids management features. If no leachate can be formed, there is no need to prohibit such a location. Similarly the owner or operator is exempt from the hydrogeologic report requirement of sub-paragraph B.2. because one purpose of such a report is to predict the fate of leachate which migrates from the pile and from the requirement to monitor ground water, because leachate which could enter the ground water will not be generated.

Paragraph B. sets forth the locational requirement for a waste pile and for the study of a site's hydrogeologic suitability. These locational requirements are the same as those for a surface impoundment and are discussed in connection with 6 MCAR § 4.9317 B. The rationale for these requirements is also the same. Therefore, this provision will not be discussed again here.

Paragraph C. establishes the design and operating requirements for a waste pile and corresponds to the provisions of 40 C.F.R. § 264.251. These requirements are necessary to assure that a waste pile is designed and operated to prevent the migration of hazardous constituents from the pile during its active life. The design and operating requirements established in this paragraph are performance standards. Therefore the owner or operator must decide how the standards will be met and submit his proposal in his permit application. The Agency permit issued for the facility must include the design and operating practices necessary to meet the performance standards. This allows flexibility in the design of the facility and the operating practices as long as the standards are met.

There are six major design and operating requirements established by 6 MCAR § 4.9318 C.: 1) a liner; 2) a leachate collection and removal system; 3) a run-on control system;

4) a run-off management system; 5) emergency emptying procedures; and 6) wind dispersal control measures. Each of these items contributes to the protection of surface and ground water by minimizing the likelihood of wastes migrating from the pile.

Subparagraphs C.1. and C.2. provide that waste piles must have liners and leachate collection and removal systems above the liners. These subparagraphs are identical to 40 C.F.R. § 264.251(a). The Agency is relying on the background documents on waste piles and on land disposal facilities prepared by EPA and listed in Part VIII. as support for these requirements. The liner must be designed, constructed, and installed to prevent any migration of wastes out of the pile and into the adjacent soils during the active life including the closure period of the facility. To reduce pressure head on the liner, the rule requires that the system be designed, constructed, maintained and operated so that the leachate depth on the liner never exceeds one foot.

The leachate collection system must be constructed of materials which are chemically resistant to the wastes managed in the pile and to the leachate which is expected to be generated and must be 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 pile. The system must be designed and operated to function without clogging through the scheduled closure of the pile. These requirements are merely common-sense provisions and are necessary to ensure that

the leachate collection and removal system can perform its intended function through the lifetime of the pile.

Unlike the rules which cover surface impoundments and landfills, double liner systems are not required for waste piles. Waste piles do not pose as great a potential for leachate migration from the pile as do surface impoundments or landfills. Since a pile would normally be above-ground and is, by definition, an accumulation of solid, nonflowing hazardous waste, it is quite easy to ensure that standing liquids do not accumulate on the liner. Collection of leachate and run-off from the pile is relatively simple. Even if a single liner failed, the amount of leachate that could migrate through the liner would be relatively small, and the head of liquids which would provide the driving force for subsoil penetration would be minimal. For these reasons, it was determined that double liners for waste piles could not be justified.

EPA provides an exemption from the ground water monitoring requirements for those waste piles which have double liners and leak detection systems. The Agency's proposed rules do not provide any exemptions from the ground water monitoring requirements (contained in 6 MCAR § 4.9297) for double-lined systems. While having a double liner and leak detection system should, in most cases, provide indications of liner failure before a ground water contamination problem develops, there may be cases

where both liners have been breached although no leak has been detected. The Agency believes it is preferable not to rely only on the leak detection system to uncover problems with the liner system. Therefore, the proposed rule requires ground water monitoring for double-lined waste piles, albeit at reduced frequencies and for a reduced list of parameters compared to the requirements for single-lined piles.

The federal regulations also allow an exemption from the liner and leachate collection and removal system requirements if the owner or operator can demonstrate that alternative design and operating practices will prevent the migration of hazardous constituents from the facility. Because of Minnesota's hydrologic setting it is unlikely that such a demonstration can be made. In the unlikely event that such a facility is proposed, the proposer can use the general Agency variance procedures to apply for a variance from these requirements. Therefore the Agency has not included a corresponding provision in these rules.

Subparagraphs C.3.-C.5. contain specific requirements regarding run-on and run-off. Except as noted below the requirements are identical to the provisions of 40 C.F.R. § 264.251(c) - (e). These provisions require that a run-on control system be designed, constructed, operated and maintained to prevent flow onto the active portion of the pile during the peak discharge from at least a 100-year storm. This provision is more stringent than the federal regulation which has a design standard of a 25-year storm.

As discussed at 47 F.R. 32323 (July 26, 1982), the EPA is concerned that in some situations designing to accommodate only a 25-year storm is inadequate. By decreasing the frequency of the storm event for which a facility must be designed, the probability that the design capacity of the system will be exceeded during the active life of the facility is decreased. For example, a waste pile with a 20-year active life which is designed to prevent run-on from a 25-year storm has greater than a 50-percent chance that its design capacity will be exceeded one or more times during its active life. 7/ In contrast, if the same waste pile is designed to prevent run-on from a 100-year storm, there is less than a 20-percent chance that its design capacity will be exceeded one or more times during its active life. The increase in protection to the waste pile from run-on will increase the cost of run-on protection. EPA estimates that use of a 25-year storm instead of a 100-year storm may increase the cost of run-on protection from 7 to 25 percent. See 47 F.R. 32323 (July 26, 1982). Run-on from a storm will increase the potential for leachate generation which in turn creates a greater threat to ground and surface water. Water is a valuable resource that is difficult and expensive to clean once it becomes contaminated. To provide sufficient protection to the valuable resource the Agency believes it is reason able to require this design standard.

7/ The supporting calculations are set forth in Appendix B. See also Hydrology Guide to Minnesota which is listed in Part VIII., for further support for the use of a 100-year storm requirement instead of the 25-year storm.

Subparagraph C.4. requires that a run-off management system be designed, constructed, operated and maintained, to collect and control at least the water volume resulting from a 24-hour, 100-year storm. This provision is also more stringent than the federal standard of a 25-year storm. The rationale for this requirement is the same as that for requiring protection from run-on from 100-year storms in lieu of 25-year storms.

Subparagraph C.5. requires that collection and holding facilities which are parts of the run-on or run-off management system be emptied or managed expeditously after storms to maintain system capacities. The final design and operating standard of paragraph C. addresses the control of wind dispersal of particulate matter from the pile. This requirement is identical to the corresponding federal requirement and is necessary not only to control the dispersal of hazardous particulates in the air but also to prevent surface water contamination due to entry of particulate matter.

Paragraph D. of 6 MCAR § 4.9318 provides that waste piles with double liner systems are subject to less intensive ground water monitoring requirements than piles with single liners. Both the frequency of monitoring and the number of monitoring parameters may be reduced. In a double-lined waste pile, the liner system will incorporate a leak detection system which will be monitored so that a leak of the upper liner can be promptly detected. Since the bottom liner and leak detection system act as

a backup to the top liner, it is reasonable to reduce ground water monitoring requirements for a double-lined system. However, the Agency believes it is preferable not to totally eliminate ground water monitoring requirements for double-lined systems. Regardless of the care taken in designing, constructing, and maintaining leak detection systems, leaks may go undetected. If the bottom liner should also fail, contaminants could reach the ground water. Therefore, it is reasonable to require a nominal ground water monitoring system even for a double-lined facility.

The leak detection and removal system required for a double-lined facility must be designed, constructed, maintained and operated to detect, collect and remove any migration of liquids into the space between the liners. Thus, should the top liner fail, this system will be able to continue operation as a leachate collection and removal system. One of the options an owner or operator has if liquids are detected between the liners is to continue operation of the pile as if it just had a single liner. Therefore it is reasonable to require that the leak detection, collection and removal system can function as a leachate collection and removal system does for a single-lined pile.

Paragraph E. is identical to 40 C.F.R. § 264.253 and exempts waste piles with inspectable lines from all the ground water monitoring requirements of 6 MCAR § 4.9297. To qualify for the exemption, the waste pile must be underlain with a liner meeting all requirements of paragraph C. and which is inspected

periodically for deterioration, cracks or other conditions that may result in leaks. The liner must also be of sufficient strength and thickness to prevent damage caused by equipment which is used to remove the waste in order to inspect the liner. The frequency of inspection will be based on the potential for the liner to crack or otherwise deteriorate under the conditions of operation. This exemption relies on inspections of the liner to assure that the liner is intact and is not allowing leachate to migrate through the liner. This inspection procedure obviates any need to monitor ground water. This exemption is discussed in greater detail at 47 F.R. 32323 (July 26, 1983). If conditions are noted during an inspection which indicate that leakage may be occurring or that a leak may develop, the owner or operator must respond accordingly. He must repair the condition of concern and obtain a certification from a qualified engineer that the liner has been repaired and leakage will not occur. He may also choose to stop inspecting the liner if he implements a ground water monitoring program.

Paragraph F. establishes requirements for inspections of liner systems before and after installation and is based on the provisions of 40 C.F.R. § 264.254. This section is similar to the corresponding provisions in 6 MCAR § 4.9317, surface impoundments. It requires inspections of liners during and immediately after construction to detect (and remedy) any defects which could result in increases of liquids passing through the liners. It also

requires inspections of the waste pile weekly and after storms to detect any conditions which may indicate that waste constituents have left the pile or that the potential exists for such an event. These requirements were discussed in more detail with respect to surface impoundments. See pp. 197-198, supra. Therefore, that discussion will not be repeated here.

The requirements for closure and post-closure care of a waste pile are contained in paragraph G. With the exception noted below this paragraph is the same as 40 C.F.R. § 264.258. A waste pile must be closed by removal (and adequate disposal) of wastes, waste residues, contaminated containment system components and contaminated subsoils. No option for closure with wastes in-place exists. If an owner or operator wishes to close a pile with wastes in-place, he is really operating a landfill, and must comply with the landfill requirements (6 MCAR § 4.9320) which address the long-term minimization of migration of waste constituents from the facility. The waste pile requirements are only intended to prevent such migration during the active life of this pile, after which time the potential for migration has been eliminated due to waste removal. Post-closure care for a waste pile will normally not be necessary because the pile will not exist after closure. However, subparagraph G.2. provides that, if all contaminated subsoils cannot be removed at closure, the owner or operator must then perform closure and post-closure care according to the landfill closure requirements.

This section differs slightly from the federal regulations in that the cost estimate for closure and post-closure care must include both the normal costs of waste removal and the costs for closing according to the landfill rule and providing post-closure care. The federal regulation requires that this cost estimate include only costs for closing as a landfill and post-closure care. Since the owner or operator must, in any event, first attempt removal of wastes and contaminated materials, it is preferable to include the costs for these actions as well.

Paragraph H. prohibits the placement of ignitable or reactive wastes in a waste pile unless specified conditions are met. Paragraph I. requires that incompatible wastes or incompatible wastes and materials not be placed into the same waste pile unless precautions are taken to prevent adverse effects. These paragraphs are identical to the provisions of 40 C.F.R. §§ 264.256 and 264.257 and, therefore, will not be discussed here.

6 MCAR § 4.9319

Rule 6 MCAR § 4.9319 establishes the design and operating requirements for land treatment units. The provisions of this rule are based on the EPA regulations for land treatment units, 40 C.F.R. §§ 264.270 - 264.282. The Agency is relying on the EPA background documents on land treatment units and on land disposal facilities listed in Part VIII. as support for this rule. Any differences between the provisions of the Agency's pro-

posed rule and the corresponding EPA regulations are noted below. Land treatment involves the application of waste on the soil surface or the incorporation of waste into the upper layers of the soil in order to degrade, transform or immobilize hazardous constituents present in hazardous waste. Unlike surface impoundments or landfills which rely on impervious liners, land treatment relies on the dynamic physical, chemical and biological processes occurring in the soil to break down or immobilize the hazardous constituents.

Because land treatment depends upon soil and waste interactions to break down or immobilize the hazardous constituents, it is especially important that the units be carefully operated. The key operational aspects include maintenance of proper soil pH to optimize microbial action and metal immobilization, careful management of waste application rates to prevent exceeding the soil's treatment capacity, and control of surface water run-off to prevent untreated hazardous waste from leaving the facility. The regulatory goal is to minimize the uncontrolled migration of hazardous constituents into the environment. This is accomplished by using a defined layer of the surface and subsurface soils to treat the hazardous constituents in the leachate passing through the system. This treatment process achieves the same general objectives as the liquid management strategy used at other types of land disposal facilities in that it acts to prevent hazardous constituents from entering the environment.

Paragraph A. is identical to 40 C.F.R. § 264.270 and provides that the provisions of this rule apply to owners and operators of new and existing land treatment units.

The requirements for a treatment program are established in Paragraph B. The provisions of paragraph B. are the same as those of 40 C.F.R. § 264.271. The rationale is discussed in detail in the background documents on land treatment prepared by EPA. There are three principal elements of the treatment program that will be specified in the facility permit. First, the permit will specify the wastes that may be handled at the facility. Second, the land treatment program will include a set of design and operating measures that are necessary to maximize degradation, transformation and immobilization of hazardous waste constituents. Third, the treatment program must include an unsaturated zone monitoring plan.

The maximum treatment zone depth and the minimum separation to ground water are also specified in this paragraph. The five foot treatment zone depth corresponds to the depth of maximum microbial activity, oxygen, and organic matter concentration. Oxygen levels and organic matter decrease with soil depth so that microbial activity, which depends on a food and oxygen supply, also decreases with soil depth. Below a depth of five feet, the microbial population may be unable to significantly treat waste materials. Also, the conditions for the adsorption and complexation of metals are less than optimum where oxygen and organic matter are limited.

The required three foot separation between the bottom of the treatment zone and the seasonal high water table is necessary to provide a buffer area to accommodate unforeseen seasonal water table fluctuations and to allow for the installation and use of unsaturated zone monitoring devices. The unsaturated zone monitoring program requires that soil pore liquid be sampled from the area below the treatment zone but above the water table. A three foot separation is reasonable to provide the necessary assurance that the monitoring devices are actually sampling soil and soil pore liquid characteristics and are not affected by ground water, and also to provide an additional attenuation zone in the event that constituents have left the treatment zone.

The first step in the establishment of a land treatment program is to conduct a treatment demonstration. Paragraph C. establishes the requirements for such a demonstration. A demonstration is the most reliable method to determine what waste material can be treated, degraded or immobilized in the soil and is also used to set the waste management practices that will be incorporated into the permit so that no adverse health or environmental effects will occur. The demonstration must occur before the facility can be operated. The requirements of this paragraph are taken from 40 C.F.R. § 264.272.

Because some waste materials have been land treated for many years and some have never been land treated, a great deal of variability exists regarding the amount and quality of the

research data available. In some cases, most of the necessary information must be generated for the demonstration because there is very little previous research data available. Other waste materials have been extensively researched and, in the case of existing facilities, may have operational data which proves the effectiveness of land treatment. Because such a wide range exists, the rule provides several options for conducting the demonstration. A literature review and a short field test may be required for some waste demonstrations whereas other wastes must be extensively tested in the laboratory before field tests can be safely conducted.

The rule requires that all demonstrations include field testi This is more stringent than the federal regulation which only includes field testing as an option. Because so much variability in the physical conditions of land treatment units exists, and because the waste is placed directly on or into the soils with no liner between the waste and ground water, it is essential to require a field test even if extensive data already exists. Field tests will typically be conducted on a small scale or under carefully controlled conditions, so there will be a much lower potential for adverse human health or environmental effects. It is therefore reasonable to require a low risk demonstration prior to the implementation of the actual full scale project.

The design and operating requirements for a land treatment unit are established in 6 MCAR § 4.9319 D. The most reasonable approach is to provide a general framework for unit design and operation which will provide maximum flexibility. Because of the great variability which exists in waste materials and soil conditions, it is impossible to specify in the rule the details of the actual design and operation of the unit. The principal design and management measures are those that are required as part of the land treatment program and are established as a result of the demonstration. In addition, there are other general design and operating requirements applicable to land treatment units that are analogous to those required at other types of land disposal units. For example, the rule requires that the facility have effective run-on and run-off control. Except for the requirements of subparagraphs D.3. and D.4., the provisions of paragraph D. are based on the requirements of 40 C.F.R. § 262.273.

Subparagraphs D.2.-D.6., address run-off management requirements for land treatment units and require that run-off from the treatment zone be minimized. Subparagraph D.4. requires that containment structures be available to collect the run-off resulting from a 24 hour, 100 year-storm. Subparagraph D.6. requires that the containment structures be expeditiously emptied so that they are always operational. Subparagraph D.3. addresses

the prevention of flow onto the treatment zone during peak discharges from a 100-year storm. Uncontrolled applications of water may increase the erosion losses of hazardous constituents and may also increase the leaching of hazardous constituents from the treatment zone. A certain amount of moisture from rainfall is inevitable and is necessary for maintaining microbial activity and vegetation. However, it is reasonable to restrict the amount of moisture to that which cannot be avoided, and to divert as much water as possible in order to maintain more control over treatment zone conditions. The rationale for requiring management for a 100-year storm instead of for a 25-year storm as required in the federal regulation is discussed in connection with 6 MCAR § 4.9318 C.3., pp. 209-210, supra., waste piles, and will not be repeated here.

Subparagraph D.7. requires that wind dispersal from the land treatment unit be controlled to prevent the loss of hazardous constituents from the treatment zone.

Paragraph E. of 6 MCAR § 4.9319 addresses food chain crop production on a land treatment unit and corresponds to 40 C.F.R. § 264.276. The major concern with food chain crop production is the potential for toxic substances to adhere to, or be taken up by, the plant and in turn be consumed by humans or animals. The federal regulation permits the growth of food-chain crops on land treatment units if the owner or operator demonstrates that

hazardous constituents will not occur in greater concentrations in or on the crop grown in the unit than in or on the same crop grown on untreated soils under similar conditions in the same region. The proposed Agency rule is more restrictive and prohibits crop production when toxic wastes are being treated, but allow it when wastes are treated which are hazardous but not toxic. Such wastes may have characteristics of ignitability, reactivity, corrosivity and oxidativity, which may be hazardous to handle, but which will not be transferred to humans through the food chain. EPA does not distinguish between toxic and non-toxic hazardous waste and allows food chain crop production on a land treatment unit that receives any kind of hazardous waste if it can be demonstrated that no substantial risk to human health exists.

The goal of land treatment is to treat wastes in the soil rather than to contain wastes as in a landfill. If successful, it is reasonable to allow the land to be returned to food chain crop production after the wastes have been sufficiently treated. Treatment can be either the breakdown of waste constituents until they are no longer a health hazard or the immobilization of waste constituents within the soil so that they are not transported from the site. The rule provides a procedure for returning a unit to production after the active life.

Certain wastes, such as metal waste, will not be transformed or degraded but are instead immobilized in the treatment zone.

Heavy metals are a concern because they can adhere to or be taken up by plants which, when consumed by humans or food chain animals, may cause adverse health effects. Cadmium is the metal of greatest concern because under acidic soil conditions, plants are able to take up high levels without exhibiting any adverse effects. When these plants are consumed, the cadmium accumulates in the liver and kidneys and can eventually cause damage to these organs. Toxic metals, such as mercury or lead may also be a concern if they enter the food chain in a toxic form. However, the potential for transport of metals into the food chain is diminished when conditions encourage immobilization in the soil.

The federal regulation establishes certain levels for cadmium application based on the soil pH and cation exchange capacity and on whether it is an annual or cumulative rate. They also provide a phased schedule through 1987 for reducing the annual application rates. 6 MCAR § 4.9319 E. does not allow all these cadmium application options but instead addresses cadmium application in a more simplified manner. The annual cadmium application rates in the federal regulations are intended to prevent excessive crop uptake during the time when the cadmium is most available, during the initial year following application. However, because 6 MCAR § 4.9319 E. does not allow food chain crop production during the active life of the unit, it is unnecessary to include this annual rate, as only the cumulative rate will affect the food chain crops grown after closure. Also, because the annual rate is not

relevant, there is no need for the rules to include the federal phased schedule for reducing annual cadmium application rates.

The federal regulations provide for various cumulative cadmium limits based on the soil pH. If the pH is less than 6.5, only 5 kg/ha of cadmium can be applied over the life of the unit. If the pH is more than 6.5, higher rates of cumulative cadmium application are allowed, the actual rate being based on the soil cation exchange capacity. This rule differs in the approach to cumulative cadmium rates, yet the ultimate effect is equivalent to the federal regulation. While the federal regulation requires a demonstration of safety for all hazardous constituents except cadmium, and establishes certain levels for cadmium application, the Agency's proposed rule extends the demonstration of safety requirement to cadmium application and also provides application limits as established in the federal regulation. However, the rule does not have any pH restrictions while the federal regulation requires that the correct pH be maintained whenever food chain crops are grown.

The federal regulation allows for cumulative cadmium applications of 5, 10 and 20 kg/ha if the pH is at least 6.5 whenever food chain crops are grown. In Minnesota it is not always possible to determine what the background pH of the soil was because farming practices can greatly alter the natural

soil pH. Because background levels cannot be determined, it is not possible to predict that the pH will remain at a certain level after closure of the unit. It is not reasonable to allow waste application at a certain rate on the assumption that the pH will always be maintained at the correct level. For this reason, the rule does not specifically address soil pH but instead requires a demonstration that the hazardous constituents will not present a significant health risk. It is expected that when cadmium wastes are applied, the demonstration will necessarily address soil background pH or operational procedures to prevent adverse food chain effects.

A demonstration is required if food chain crops will be grown during the active life of a land treatment unit even though the wastes applied are not toxic. A demonstration is also required when food chain crop production begins after the active life of a unit which has received toxic waste. This demonstration must be developed according to the same criteria as the demonstration required for establishing the feasibility of land treatment. The demonstration must be scientifically designed and must include a showing that hazardous constituents are not in food portions of the crop in greater concentrations than in similar crops in the area. Because there is such a wide range of land treatment options, this is a reasonable requirement to provide assurance that the food chain will not be affected and should not present an unreasonable burden to the owner or operator.

6 MCAR § 4.9319 F. requires an unsaturated zone monitoring program. This is in addition to the ground water monitoring which is required under 6 MCAR § 4.9297. An unsaturated zone monitoring program is necessary to provide feedback on the success of the treatment in the treatment zone. This information can be used to adjust the operating conditions at the unit in order to maximize degradation, transformation and immobilization of hazardous constituents in the treatment zone. The conditions at a land treatment unit are very different from those at a landfill, a surface impoundment or a waste pile. No liner exists between the treatment zone and the underlying soil, and the primary objective is not waste containment, but treatment through waste degradation or immobilization. Detection of waste constituents below the treatment zone does not necessarily mean that the system has failed, it may only indicate that certain conditions are causing unacceptable treatment. Because various aspects of land treatment operations can be altered, early detection of leakage can signal the need to change certain practices to improve treatment.

The unsaturated zone monitoring program requirements are very similar to the ground water monitoring requirements discussed in 6 MCAR § 4.9297. As in ground water monitoring, the monitoring parameters must be established in the facility permit and these parameters must be capable of indicating waste movement. It is not necessary to monitor for all constituents of the waste;

however the indicator parameters must be the constituents which are the most difficult to treat and therefore the most likely to leach from the treatment zone. It is reasonable to provide an alternative to monitoring all waste constituents in order to minimize expenses if it can be shown that such monitoring will provide an acceptable level of surveillance.

Subparagraphs F.2. and F.3. establish basic unsaturated zone monitoring requirements so that the data obtained will provide a useful indication of treatment effectiveness. It is reasonable to include requirements for determining background soil pore liquid and soil characteristics in order to establish a reliable standard for comparison with future monitoring data. Unlike the federal regulation this rule specifies certain time periods for conducting analyses and reporting information to the Director. A two-week time period is reasonable because it represents a balance between adequate time to conduct analyses and the need for a rapid response to leakage from the unit. The rule recognizes that in some cases it may not be possible to conduct analyses within two weeks and in those cases, prior approval may be obtained to extend the reporting period.

When it is determined that there is an increase in hazardous constituents below the treatment zone, the owner or operator must report the determination to the Director within seven days. The owner or operator is given ninety days to submit an application for permit modification to revise the operating practices at the facility to correct the conditions which caused the problem.

The ground water monitoring requirements of 6 MCAR § 4.9297 apply to land treatment units, so that if contamination reaches the ground water monitoring wells, the owner or operator must comply with all the compliance monitoring and corrective actions required by the rules.

Subparagraph F.8. provides a mechanism for the owner or operator to show that the increase in hazardous constituents is from an error in sampling and analysis or that the hazardous constituents are derived from another source. It is reasonable to allow such a showing and to provide adequate time to make the determination and prepare an application if permit modifications are necessary. However, it is important that the rule specifies that the showing does not relieve the owner or operator of the need to proceed with actions to correct the situation and, if necessary, apply for permit modifications as if the unit were the actual source of contamination. The showing is in addition to, not in lieu of, the necessary notification and modifications to correct treatment zone problems.

Paragraph G. is based on 40 C.F.R. § 264.279 and establishes recordkeeping requirements for owners and operators of land treatment facilities. This rule requires that information on the waste applied, management procedures and monitoring results be maintained for the unit.

The closure and post-closure requirements for land treatment units are established in paragraph H. Closure begins within ninety days of the last waste application to a unit. The waste

material may not be completely treated in that time, so the rule requires that the owner or operator continue operation to ensure that waste treatment continues. The rule also requires that all measures be continued to prevent the loss of hazardous constituents from the unit and to monitor the unsaturated zone. Except as noted below, this rule is based on the provisions of 40 C.F.R. § 264.280.

The federal regulation allows the termination of soil pore liquid monitoring 90 days after the last waste application. The Agency's proposed rule does not allow this termination because this limit is not necessarily applicable to all types of waste under all conditions. It is possible that waste applied in the winter will not even begin to be degraded until after 90 days. It is preferable to require that the monitoring continue through the closure and post-closure care period and then provide for a variance or a reduction of the post-closure care period as provided in 6 MCAR § 4.9300. The post-closure care period can be reduced if it is found that the reduced period is sufficient to protect human health and the environment. It may be shown that no soil pore liquid monitoring is necessary after a certain period of time and so may be discontinued. It is preferable to make such changes through case by case evaluation rather than as the result of an inflexible time limit.

The rule requires that the design and operating requirements be observed through the closure period. These requirements also

apply through the post-closure period unless the level of hazardous constituents in the treatment zone is not above background levels. It is reasonable to require post-closure care if hazardous constituents remain in the soil and are subject to possible leaching or erosional loss. It is also reasonable to provide an option for discontinuing post-closure care if the hazardous constituents are no longer present. It is expected that land treatment will frequently be used to break down and degrade organic waste compounds so that no hazardous materials will remain. When the soil level of hazardous constituents has returned to background levels, it is reasonable to discontinue hazardous waste management practices.

Paragraph I. addresses ignitable or reactive wastes, which may not be land treated unless the material is immediately incorporated so that it no longer exhibits ignitable or reactive characteristics and the specified precautions are taken to prevent undesirable reactions. This provision is identical to 40 C.F.R. § 264.281. Paragraph J. addresses the land treatment of incompatible wastes and is identical to 40 C.F.R. § 264.282. Such treatment is prohibited unless the necessary precautions are taken to prevent undesirable reactions. These restrictions are reasonable because of the potential for adverse health and environmental effects as a result of waste reactions. The Agency is relying on the EPA background documents on ignitable, reactive

and incompatible wastes listed in Part VIII. as support for these provisions.

6 MCAR § 4.9320

Rule 6 MCAR § 4.9320 establishes the design and operating requirements for landfills which are used for the disposal of hazardous waste. The requirements of this rule address the necessary measures to prevent the movement of hazardous constituents from the disposal facility to ground water and the surrounding area. This rule is based on 40 C.F.R. §§ 264.300 - 264.316 although certain changes have been made which will be discussed below. The Agency is relying on the EPA background documents on landfills and on land disposal facilities listed in Part VIII. as support for this rule.

Paragraph A. is identical to 40 C.F.R. § 264.300 and addresses the applicability of the landfill rule. Paragraph B. contains the locational standards for hazardous waste landfills. These standards are necessary to eliminate unsuitable areas from consideration and to specify the type of information that must be obtained in order to adequately evaluate the suitability of the site. The locational standards for landfills are the same as those for surface impoundments and waste piles. These requirements are discussed in connection with proposed rule 6 MCAR § 4.9317 B., see pp. 187-189, supra., and that discussion will not be repeated here.

6 MCAR § 4.9320 C. establishes the design and operating requirements which provide the performance standards for the landfill liners and leachate collection and removal systems. 40 C.F.R. § 264.301 requires a minimum of one liner which does not allow wastes to pass into it. The Agency's proposed rule is more stringent in that in all cases a second liner is required. The rule requires double liners with a leak detection, collection and removal system between them and a leachate collection and removal system above the upper liner. A double liner system, while more expensive, is the preferable design for a landifll because it provides a back-up in the event of the failure of a liner and also enables the detection of leaks before they leave the system. A liner system may be a combination of an impermeable membrane and compacted soil, or may be two impermeable liners of either the same or different materials. Both liners must be capable of meeting performance standards established in the rule and be chemically and physically capable of containing the wastes being landfilled. The Agency's rationale for rejecting the single liner approach is discussed in connection with proposed rule 6 MCAR § 4.9317 C., see pp. 190-194, supra., will not be repeated here.

A leachate collection and removal system is required to prevent the accumulation of leachate or liquid on the upper liner. If leachate accumulates, it could exert a hydrostatic force on the liner and present a serious environmental concern if a leak

develops and the leachate escapes. Like the liner system, it is essential that the collection and removal system be constructed of acceptable materials to withstand the chemical and physical forces in the landfill. It is also important that the system be capable of operating without clogging because replacement or repair will be a practical impossibility after waste and cover material are in place.

The leachate collection and removal system must be designed and contructed so that it will continue to function through the scheduled post-closure period. 40 C.F.R. § 264.301 only requires that this system operate through the closure period. Although the active life and closure period will be the time when maximum leachate is generated, the potential for liquid accumulation and subsequent leakage continues following closure and the system should be designed to remove continued leachate production. To allow otherwise increases the potential for ground water to become contaminated if a leak develops in the liner system.

Additional design considerations addressed in the rule are necessary to prevent the transport of waste material from the landfill and to minimize leachate production. The proposed rule requires that each cell be appropriately sized to minimize the amount of liquid entering the cell due to precipitation and that the run-on of rainfall and snowmelt water into the active area must be prevented so that the excess liquids do not generate

leachate. The run-off of water and erosion by wind must also be controlled so that hazardous constituents are not transported from the landfill area. Leachate is generated by liquids coming into contact with waste materials. Minimizing the amount of liquids which come into contact with the waste material should in turn reduce the amount of leachate which is generated. It is therefore reasonable to require these design and operating measures to reduce the amount of leachate which could escape and enter the ground water should the liner and leachate collection system fail. The rationale for using a 100-year storm event instead of the 25-year storm utilized by EPA has been discussed in connection with 6 MCAR § 4.9318 C., see pp. 209-210, supra., and will not be repeated here.

Paragraph D. is taken from 40 C.F.R. § 264.302(b) and (c). and establishes the procedure to be followed if a leak is detected. If liquid is detected between liners, it must be removed and the Agency Director must be informed. If possible, the liner may be repaired or replaced and a certification that the leak has been stopped must be obtained. In this case, the landfill has been returned to design standards and can continue to be monitored as a double-lined unit. If it is not possible or feasible to repair the liner, the rule provides a second option. The landfill can be operated as a single-lined unit with the leak detection system between the liners now serving as the leachate collection system. If only one liner remains to contain wastes,

the ground water monitoring program must be increased beyond the original requirements because of the increased risk that an undetected leak in the remaining liner will occur which may contaminate ground water.

As is also the case with surface impoundments and waste piles, the federal regulations provide an exemption from the specified liner requirements if the owner or operator can demonstrate that an alternative design and operating procedure will prevent the migration of hazardous constituents to ground water at any future time. No such exemption is provided in these rules. It is extremely unlikely that a system without liners could be designed which would provide acceptable protection to Minnesota's ground waters. As discussed in connection with 6 MCAR § 4.9317 C. at p. 193, supra., if such a system could be designed, it is more reasonable to allow its use through a variance than to include a special provision in the rule.

The federal regulation also provides an exemption from all ground water monitoring requirements if the landfill has a double liner and leak-detection system. A similar exemption is also provided for double-lined surface impoundments and waste piles. Without a ground water monitoring program, contamination could go undetected until it reaches a drinking water well. It is therefore preferable to require a ground water monitoring program for all landfills, no matter how a landfill is designed, to provide

additional assurance of safety. As discussed in connection with 6 MCAR § 4.9317 C., see pp. 191-192, supra., the Agency does not believe such an exemption provides sufficient protection for the environment. That discussion will not be repeated here.

Paragraph E. requires that the liners be inspected during and immediately after installation to ensure they are not damaged or improperly installed and are capable of containing the wastes in the future without failure. The installation of the liners must be certified by a qualified engineer to ensure that the liner was installed according to the approval specifications. Paragraph E. also requires that the mechanisms to control leachate generation and pollutant dispersal be inspected on a weekly basis. The requirements of this paragraph are identical to those of 40 C.F.R. § 264.303. 6 MCAR § 4.9320 F. requires that a landfill must be surveyed and accurate records maintained. This paragraph is identical to 40 C.F.R. § 264.309. It may also be necessary to excavate material at some future date so that it is important to maintain a record to locate wastes in the disposal area to aid retrieval.

6 MCAR § 4.9320 G. establishes the closure and post-closure care requirements for landfills. These requirements are taken from 40 C.F.R. § 264.310. At final closure, or when each cell is closed, a suitable cover must be applied over the filled area. A suitable cover is one which will provide long-term minimization of

the movement of liquids into the landfill with a minimum of maintenance. It is important to prevent liquids from entering the landfill to minimize contact between the waste materials and water and to reduce the amount of leachate which must be collected and removed. It is reasonable to require that the cover have a permeability less than or equal to the permeability of the bottom liner in order to avoid a buildup of liquid in the closed landfill. Because the rule requires at least one liner which will not allow wastes to pass into it, the cover liner must include a material similar to the least permeable bottom liner.

After the cover is in place and closure is complete, post-closure care begins. It is reasonable to require that the leachate collection and leak detection system be routinely maintained and monitored to remove leachate as it is generated. The actual frequency of monitoring must be determined on a case by case basis as each landfill will require different procedures that may change over time. The requirements to prevent erosion of the final cover and to protect and maintain the surveyed benchmarks are reasonable because of the importance of maintaining the integrity of the cover. Erosion of the soil over the cover may expose the cover to ultraviolet radiation and weathering. As the materials deposited in the landfill break down and settle, the cover material may also settle. It is important to regularly survey the closed landfill to ensure that the cover has not subsided to the extent that it is under strain or that water accumulates in low areas.

If liquids are detected in the leak detection system during the post-closure care period, they must be removed and the Agency must be notified. Because the presence of liquids may indicate that the upper liner has failed, it is assumed that the landfill has become a single-lined unit and the ground water monitoring requirements are increased. The increased monitoring requirements are discussed in connection with 6 MCAR § 4.9297 K. at pp. 150-154, supra.

Paragraphs H. and I. are taken from 40 C.F.R. §§ 264.312 and 264.313 and establish special requirements for ignitable, reactive, and incompatible wastes. It is reasonable to require special treatment for wastes that may generate fumes, explosions, or fire so that they do not present a safety hazard or damage the integrity of the landfill liner system. The rule requires that such wastes either be treated so that they no longer exhibit ignitable, reactive, or incompatible characteristics, or be handled so that no adverse reactions occur.

6 MCAR § 4.9320 J. differs from the federal regulations governing the disposal of liquid wastes. 40 C.F.R. § 264.314 allows bulk or non-containerized liquid to be landfilled if the landfill has a liner and a leachate collection system. Paragraph J. does not allow disposal of bulk liquids in landfills. Wastes must be treated so that no free liquids are present prior to landfilling. The Agency does not believe it is appropriate to allow liquids to be deposited in a landfill when the design and operation standards are intended to minimize the production of leachate

and the potential for leachate migration. Bulk liquids will reduce the absorptive capacity of the landfill. Placement of bulk liquids into a landfill will only add to the formation of leachate. Eventually, most of this liquid would reach the leachate collection and removal system and would have to be removed, treated, and disposed of outside of the landfill. It is preferable to require that bulk liquids be treated before being landfilled so that no free moisture exists or to require sufficient absorptive capacity to accommodate the liquid (such as in laboratory packs). Very small containers of liquid do not present a serious leachate production concern and are, therefore, allowed in a landfill.

40 C.F.R. § 264.314 also allows the disposal in landfills of liquid bearing containers designed for a use other than storage. The EPA regulation would allow the disposal of batteries or transformers which contain liquid. It is likely that such containers will eventually break down and the liquid will be released. The Agency's proposed rule does not allow disposal of such containers unless the liquid is drained before disposal.

Paragraph K. establishes the requirements for disposing of containers in a landfill. This paragraph is taken from 40 C.F.R. § 264.315 and provides that containers must be either 90 percent full or crushed, shredded or similarly reduced in volume before burial in the landfill. It is important that containers be either

full of waste, crushed, or shredded so that voids do not occur in the fill area after disintegration of the container. If empty containers are deposited in the landfill and subsequently decay, the void will be filled with overlying material, eventually causing subsidence of the final cover material. Such subsidence may damage the cover liner and create conditions of ponded water above the landfill.

6 MCAR § 4.9320 L. addresses the disposal of liquid wastes in overpack drums, or laboratory packs and is based on 40 C.F.R. § 264.316. The rule allows liquid wastes to be disposed of in a landfill if they are placed in a container which can provide absorptive capacity for all the liquid in the event that the container should be damaged.

6 MCAR § 4.9321

Rule 6 MCAR § 4.9321 establishes the specific facility requirements for owners and operators of facilities that thermally treat hazardous waste. This rule requires owners and operators of thermal treatment facilities to meet a number of performance standards coupled with various operating requirements most of which are intended to insure that the performance criteria are continually met. These requirements are based on EPA's incinerator regulations set forth in 40 C.F.R. §§ 264.340 - 264.351. In adopting its regulations EPA prepared extensive background documents justifying the reasonableness of its requirements. That information is contained in the discussion at 46 F.R. 7666

(January 23, 1981), 47 F.R. 27520 (June 24, 1982) and in the other background documents on incinerators and thermal treatment listed in Part VIII. The Agency is relying on these documents as support for this rule.

Although EPA's regulations apply only to incinerators, the provisions of this rule apply to all thermal treatment facilities that treat hazardous waste. The Agency believes that in order to protect human health and the environment thermal treatment facilities that choose to treat hazardous wastes should be capable of achieving as effective treatment as incinerators that burn hazardous waste, and should therefore be subject to the same standards. Facilities that cannot meet these standards should not be used to treat hazardous wastes.

If there are no facility standards for thermal treatment facilities, no hazardous waste facility permits could be issued to such facilities. Under this situation thermal treatment facilities other than incinerators would either continue to operate under interim status standards indefinitely without being subject to emission limitations or treatment efficiencies which incinerators would be required to meet or would be required to cease operations. Even if the Agency chose to issue permits to such facilities, there would be no standards on which to base permit conditions. In either case, this would serve to encourage thermal treatment of hazardous wastes by facilities that are not

capable of achieving as effective treatment as incinerators. This is not acceptable. If and when EPA issues specific facility standards for thermal treatment facilities other than incinerators, the Agency will review those standards and make any appropriate amendments. Until then, the requirements of this rule should apply to all thermal treatment facilities unless otherwise exempted.

Paragraph A. establishes the applicability of this rule. This paragraph incorporates the exemptions based on the type of waste being burned found in 40 C.F.R. § 264.340. The Agency, however, did not agree with EPA that the exemptions should be mandatory but instead incorporates the decision into the permitting process.

This rule also contains a provision allowing the Agency Director to reduce the requirements a thermal treatment facility whose primary purpose is energy production has to meet. After reviewing the waste management procedures employed at energy production facilities, the Agency has determined that such facilities can be adequately regulated under a reduced set of requirements. Energy production facilities will often burn hazardous waste in conjunction with large quantities of traditional fuels such as coal, oil or gas. These hazardous wastes serve as fuel supplements because of their BTU content. Generally the amount of waste burned is insignificant compared to the amounts of regular fuel being consumed. Frequently burning is

the best management technique for the waste being burned. The facility must submit information to the Director justifying the operation of the facility under reduced requirements. If the Director finds that the facility would not endanger human health or the environment under such conditions, the Director may reduce the requirements accordingly. This rule is reasonable since the primary purpose of the hazardous waste rules is to protect human health and the environment, and if this can be accomplished with reduced requirements and without causing excessive capital expenditures, the intent of the rules will be met.

Paragraph B. is based on 40 C.F.R. § 264.341 and requires the owner or operator to perform an analysis of the waste to be burned. Required waste analysis takes two forms. First on an on-going basis the operator must ensure that waste feed to the incinerator does not deviate from that defined in the permit. The permit will be written to specify wastes which the facility has demonstrated its ability to treat adequately. Thus, for waste feeds not specified in the permit, there is no assurance that the required performance standards can be met, especially in the absence of defined operating conditions. As a result, the rule requires facility operators to analyze waste feeds to ensure that the facility remains within the term of its permit. A second form of waste analysis is required as part of each permit application and trial burn plan. In these cases the applicant must describe

certain physical properties of the waste feed and must analyze the waste sufficiently to identify any hazardous organic constituents listed in 6 MCAR § 4.9137. A comprehensive analysis of the hazardous organic constituents of a waste as it is to be thermally treated is necessary to identify the waste components to which the performance standards will apply. However, for new facilities this is limited to waste analysis information available to owners or operators.

Paragraph C. addresses the designation of Principal Organic Hazardous Constituents (hereinafter "POHCs") and is taken from 40 C.F.R. § 264.342. Waste feed mixtures will be specified for the permit. For each identified waste feed the permit will specify the POHCs which must be destroyed or removed. Selecting specific POHCs avoids the necessity for measuring compliance against perhaps dozens of constituents that may be present in a given waste in insignificant quantities, or that are easily destroyed relative to other constituents present. The POHCs which will most likely be designated are those that are most difficult to destroy, and/or those present in large quantities or high concentrations. This will generally ensure that less stable hazardous organic constituents are also destroyed.

Paragraph D. sets forth the performance standards which thermal treatment facilities must met. These are taken from 40 C.F.R. § 264.343. Subparagraph D.1. requires that a destruction and remo-

val efficiency of 99.99% be achieved for each POHC designated. EPA's research indicates that this standard is currently attainable by the existing technology of high quality commercial hazardous waste incineration and that for typical waste feed rates, most organic wastes will present no significant health hazard when treated to a 99.99% destruction and removal efficiency.

Subparagraph D.2. sets forth a two-fold stack emission limitation for hydrogen chloride. A facility may emit either 1.8 kilograms per hour or one percent of the hydrogen chloride in the stack gas prior to entering any pollution control equipment. This approach is reasonable since it is a base emission level which most facilities could meet, but requires facilities not able to meet that level to reduce emissions by removing 99% of the hydrogen chloride through the use of pollution control equipment. Since a 99% removal rate represents currently achievable technology, this is a reasonable requirement. This performance standard is further discussed at 47 F.R. 27526 - 27527 (June 24, 1982).

Subparagraph D.3. establishes a particulate matter emission limit. This limit is taken from 40 C.F.R. § 264.343(c) and is discussed at 47 F.R. 27526 (June 24, 1982). The rationale for limiting particulate matter is that particulates from hazardous waste combustion can absorb hazardous constituents onto their surface or may themselves be hazardous.

Paragraph E. contains provisions regarding thermal treatment facility permits and is taken from 40 C.F.R. § 264.344. The rationale behind these provisions is discussed at 47 F.R. 27522. (June 24, 1982). Paragraph F. sets forth the operating requirements for thermal treatment facilities and is based on 40 C.F.R. § 264.345. The basis for these requirements is discussed at 46 F.R. 7666 - 7677 (January 23, 1981) and 47 F.R. 27520 - 27531 (June 24, 1982). The Agency has added two provisions relating to operating requirements necessary for compliance with federal and state air quality rules and statutes. These provisions are contained in subparagraphs E.1. and E.2.f. This will help clarify that thermal treatment facilities may also be subject to other rules relating to air quality and that the operating requirements may need to be specified so that compliance with all applicable standards is achieved.

Paragraph G. specifies the monitoring, reporting, and inspection requirements and is based on 40 C.F.R. § 264.347. These requirements are discussed at 46 F.R. 7666, 7670 and 7674 (January 21, 1981) and 47 F.R. 27527 27529 (June 24, 1982). A provision referencing the requirements of federal and state rules has been added to subparagraph 1.c. The Agency has also added provisions regarding oxygen and carbon dioxide monitoring to subparagraphs G.1.a. and G.1.b.

The Agency has determined that carbon monoxide monitoring is not sufficient to assure that a thermal treatment facility is

operating properly. Therefore additional monitoring requirements have been established. Due to equilibrium considerations, carbon monoxide concentrations may not be a reliable indicator of destruction efficiency. Also, although carbon monoxide monitoring may indicate whether the thermal treatment facility is operating according to the permit conditions, these monitors are not infallible and are subject to inaccuracies. If the carbon monoxide monitor were to fail or begin to register inaccurate readings, there would be no way for the operator to know if the thermal treatment facility is actually operating properly. Since the facility is treating hazardous waste and improper operation could have severe consequences such as the emission of hazardous constituents or an explosion at the facility, it is reasonable to require some redundancy in emission monitoring. By monitoring for oxygen and carbon dixoide in addition to carbon monoxide, the Agency and the public are assured that any improper operation can be detected quickly and corrected by the operator. Also, the use of three monitors provides additional information regarding compliance or noncompliance with permit conditions.

Thermal treatment facility owners and operators are required to do a trial burn to show compliance with the performance standards and to obtain a permit. However, once a permit is issued the facility is assumed to be in compliance with the performance standards if it is in compliance with the operating conditions of the

permit. Since it is not feasible to require continuous emission monitoring for hazardous constituents, continuous emission monitoring of indicators is required. The permit would contain limitations for oxygen, carbon dioxide, and carbon monoxide. Continuous monitoring would then indicate whether the facility was in compliance with the permit conditions.

Oxygen monitoring will indicate whether an explosion hazard is developing, and sufficient oxygen is present to fully combust the hazardous waste. If the oxygen level is too low in the primary chamber and the carbon monoxide concentration is high, when oxygen is added in the secondary chamber, an explosion could result due to the rapid oxidation of the carbon monoxide. If insufficient oxygen is present, the hazardous wastes will not be completely combusted causing the generation and possible emission of volatile organic compounds, carbon monoxide and soot. This is an indication that the thermal treatment facility is not operating properly and that corrections to operating procedures, such as a reduction in waste feed, must be made quickly. Therefore, it is reasonable to require oxygen monitoring, so that the operator will be alerted to the development of such situations and can make the necessary corrections quickly.

Carbon dioxide monitoring provides additional information which can be used in determining combusion efficiency. Based on flow rate, and carbon monoxide, oxygen and carbon dioxide

concentrations, it can be determined whether the facility is exceeding the design capacity. If the design capacity, which is included in the permit, is exceeded, the combustion and destruction efficiencies decline. Since the performance standards include a destruction and removal efficiency limit, it is necessary that the combustion efficiency not decline below acceptable limits. If it does, then the facility may not be in compliance with the destruction and removal efficiency standard. A rise in both carbon monoxide and carbon dioxide levels beyond those specified in the permit would indicate that the efficiency has declined and that corrective measures, such as a reduction in waste feed rate or an increase in temperature, should be taken by the operator. In order for the operator to be aware of this situation and to correct it quickly, carbon dioxide monitoring is necessary and reasonable.

Paragraph H. specifies the closure requirements for thermal treatment facilities and is taken from 40 C.F.R. § 264.351. Paragraph I. sets forth the requirements for the open burning of waste explosives. This is taken from 40 C.F.R. § 265.382. Although EPA covers open burning of waste explosives under interim status only, the Agency has decided to include these provisions under the facility standards as well as under the interim status standards. If there are no facility standards for opern burning of waste explosives, no hazardous waste facility permits could be

issued. Under this situation open burning of waste explosives would either continue indefinitely under interim status standards or would cease. Even if the Agency chose to issue permits to such facilities, there would be no standards on which to base permit conditions. If and when EPA issues specific facility standards for open burning of waste explosives the Agency will review those standards and make any appropriate amentments. The actual provisions are the same as EPA's and are discussed in the background documents on open burning listed in Part VIII. and at 45 F.R. 33217 (May 19, 1980).

6 MCAR § 4.9322 describes Cochran's approximation to the Behrens-Fisher Student's t-test and is taken from 40 C.F.R. Part 264 Appendix IV verbatim. This approximation method is used to determine whether a statistically significant change has occurred under the ground water monitoring program of 6 MCAR § 4.9297. The basis for the use of this methods discussed at 47 F.R. 32302 (July 26, 1982).

G. Chapter Six: Interim Status Standards, 6 MCAR §§ 4.9380 - 4.9422

Chapter Six contains the requirements that apply to owners and operators of existing hazardous waste facilities who have obtained interim status. Like Chapter Five, Chapter Six is also divided into two types of rules. Rules 6 MCAR §§ 4.9380 through 4.9413 are general standards applying to all treatment, storage,

and disposal facilities, while rules 6 MCAR §§ 4.9414 through 4.9422 deal with specific facility standards. The proposed rules establishing interim status standards are taken, with only minor modifications, from the EPA regulations establishing interim status standards which are set forth in 40 C.F.R. Part 265. Section 3005(e) of RCRA specifies that if the owner or operator of a facility which is in existence on November 19, 1980 notifies EPA, as required by Section 3010 of RCRA, and properly applies for a permit, the facility owner or operator is to "be treated as having been issued such permit." EPA refers to such an owner or operator as one who has "interim status". In keeping with the intent of Congress that hazardous waste management be regulated by national standards as quickly as possible, EPA promulgated minimum requirements, the Part 265 interim status standards, with which facilities must comply during this interim period.

The interim status procedure recognizes that it will take a considerable period of time for EPA to act on all facility permit applications. Accordingly, for facility owners or operators who notified EPA and applied for a permit, the EPA interim status period extends from the date the initial RCRA Section 3001 through 3005 regulations took effect to the date final administrative action on the permit application is taken. Interim status therefore permits a smooth transition to full regulation of TSDF's

under new standards by allowing owners and operators of existing facilities to continue to operate them until decisions on their permit applications are made while still ensuring that minimum environmental standards are met.

As with EPA it will take several years for the Agency to process permit applications for all the hazardous waste facilities in the state. Further, it is beyond the capability of hazardous waste facility owners and operators to comply with all of the requirements of the proposed Chapter Five rules between the date these rules are promulgated and their effective date. While it is reasonable to allow existing facilities to continue to operate until a final determination is made on their permit application, Minn. Stat. § 116.081, subd. 1, requires all hazardous waste facilities to have a permit.

Interim status gives owners and operators what is, in effect, a permit-by-rule and allows owners and operators to be treated as having been issued a permit until final administrative disposition is made of their permit application. Thus, interim status both satisfies the mandate of Minn. Stat. § 116.081, subd. 1, and relieves the owner or operator of a hazardous waste facility of the possibility of being prosecuted for operating without a permit. However, in allowing continued operation it is also reasonable to require facilities to comply with basic facility standards to ensure protection of human health and the environment during the interim period.

As discussed at 45 F.R. 33159 - 33160 (May 19, 1980), EPA utlized three basic criteria as guidelines for deciding which standards should apply during interim status:

(1) Only those standards that can be met in a straightforward manner without need for substantial interpretation by, or negotiation with, EPA would apply during this interim period;

(2) Only those standards that do not require substantial capital expenditures would apply during this interim period; and

(3) Only those standards for which compliance can be achieved within the period between the date the regulations are promulgated and the date they become effective would apply during the interim period.

However, these criteria were utilized only as guidelines, and EPA included requirements in the interim status standards that are exceptions to these guidelines, requirements that EPA determined were of unusual importance and would provide benefits from early implementation in excess of the disadvantages. Two examples of such requirements are the closure and post-closure care regulations and the ground water monitoring provisions. Improper facility closure and abandonment has historically been a major cause of human health impacts and environmental damage. Therefore no facility should be permitted to close during interim status without being properly closed. Similarly, ground water monitoring requirements are necessary in order to know whether an existing facility may already have contaminated ground water.

The Agency agrees with the EPA approach and is utilizing EPA's regulations as a basis for the state rules. Accordingly, facility owners or operators who have federal interim status and owners or operators of an existing facility who have filed a permit application with the Agency within 90 days of the effective date of these rules shall be subject to the provisions of Chapter Six during this interim period.

The format of Chapter Six is the same as the format of Chapter Five. In addition both chapters contain many of the same provisions. The rationale for including these provisions is also the same. In discussing the reasonableness of the Chapter Six rules reference will be made to the corresponding rule in Chapter Five, if one exists, and a discussion of the reasonableness of provisions contained in both chapters will not be repeated. A discussion of the reasonableness of interim status standards and of the standards themselves is contained in the EPA Background Documents on Part 265 which are listed in Part VIII.

6 MCAR § 4.9380 and 4.9381

Rules 6 MCAR §§ 4.9380 and 4.9381 establish which facilities are governed by interim status. The provisions of these rules are based on 40 C.F.R. §§ 265.1. Paragraph A. sets forth general information and the effective dates of certain provisions in this

chapter. Existing facilities that were not required to obtain federal interim status but are required to obtain state interim status are exempted from the ground water monitoring and certain related requirements for a period of one year. The financial responsibility requirements do not take effect for 90 days to enable TSDF owners or operators to obtain the necessary financial assurance. This is reasonable since these facilities have not been covered by the federal ground water monitoring and financial assurance requirements and need time to develop a monitoring program, to install the necessary equipment and to obtain the financial assurance. Paragraph B. defines an existing hazardous waste facility as one in existence on, or under construction on, the effective date of these rules.

Paragraph C. sets forth the facilities that do not need to comply with the provisions of Chapter Six. All of the exemptions listed in this rule are also listed in 6 MCAR § 4.9280 C. and will therefore not be discussed here. The federal exemptions for ocean disposal, underground injection, and state permitted facilities have been dropped. This deletion is reasonable since ocean disposal is not applicable to Minnesota, Agency rule WPC 22 prohibits underground injection facilities, and the state, not EPA, will be issuing permits under this program. The exemption for facilities receiving small quantity generator wastes has also been dropped. This is reasonable since the state requires small quan-

tity generators who dispose of their wastes in Minnesota to dispose of their wastes at a facility which is permitted to handle hazardous waste.

6 MCAR § 4.9382

Rule 6 MCAR § 4.9382 establishes basic facility standards and is based on 40 C.F.R. §§ 265.10 - 265.12, 265.14 and 265.15. This rule sets total requirements on identification numbers, notices, security and inspections. The general facility requirements set forth in this rule, except for paragraph F, are substantively the same as the general facility standards set forth in 6 MCAR § 4.9281. As with all the requirements which appear in substantively the same language in both Chapter Five and Chapter Six, the only differences relate to the inclusion of permitting requirements in 6 MCAR § 4.9281. A discussion on the reasonableness of paragraph A. - E. of this rule is contained in the discussion on 6 MCAR § 4.9281 at pp. 112-114, supra., and in the EPA background documents on general facility standards listed in Part VIII. and will not be repeated here.

Paragraph F. relates to facilities which are located in a 100-year floodplain. Under current state rules a facility is prohibited from being located in a floodplain. However, since the proposed rule 6 MCAR § 4.9285 will permit the location of a facility in a 100-year floodplain if the necessary safeguards are

met and since existing facilities may be already located in floodplains, the Agency considers it to be reasonable to allow existing facilities which are located in a 100-year floodplain to continue to operate provided the facility can be operated in a manner which ensures that hazardous wastes are not released to the environment.

6 MCAR § 4.9383

Rule 6 MCAR § 4.9383 sets forth the training requirements for persons involved in the management of hazardous waste. This rule is intended to ensure that facility personnel have the requisite skills and knowledge to perform their tasks in a competent manner. The requirements of this rule are written as general performance standards to allow personnel training programs to be directed towards each specific facility's process or management technique. This rule was excerpted from 40 C.F.R. § 265.16 since the state's existing rules did not specifically cover personnel training. The provisions of this rule are substantively identical to the requirements of proposed rule 6 MCAR § 4.9282. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9282 at pp. 114-115, supra., and in the EPA background documents on personnel training listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9384

Rule 6 MCAR § 4.9384 sets forth the precautions to be

taken by all facility owners or operators and generators to prevent accidental ignition or reaction of ignitable or reactive waste or the mixing of incompatible wastes. This rule is taken from 40 C.F.R. § 265.17 and is substantively identical to proposed rule 6 MCAR § 4.9283. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9283 at pp. 115-117, supra., and in the EPA background documents on ignitable, reactive and incompatible wastes listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9385

Rule 6 MCAR § 4.9385 contains the requirements a facility must meet when analyzing hazardous waste received for treatment, storage, or disposal. The contents of this rule include when and how often a waste analysis must be completed, what constitutes a waste analysis, and the development of a waste analysis plan. This rule is based on 40 C.F.R. § 265.13 and is substantively identical to proposed rule 6 MCAR § 4.9284. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9284 at pp. 117-118, supra., and in the EPA background documents on waste analysis listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9386

Rule 6 MCAR § 4.9386 contains the general safety requirements for all facilities handling hazardous waste. The standards pre-

sented in this rule constitute the design, operation, and equipment requirements needed to minimize the possiblity of serious environmental or public health hazards due to fires, explosions, or unplanned releases of hazardous waste. The contents of this rule are based on 40 C.F.R. §§ 265.30 - 265.35 and are substantively identical to proposed rule 6 MCAR § 4.9286. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9286 at p. 121, supra., and in the EPA background documents on interim status standards on preparedness and prevention listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9387

Rule 6 MCAR § 4.9387 sets forth the requirements for facility owners or operators concerning arrangements with local authorities for emergencies. The provisions of this rule are based on 40 C.F.R. § 265.37 and are substantively identical to proposed rule 6 MCAR § 4.9287. The reasonableness of this requirement is discussed in connection with 6 MCAR § 4.9287 at pp. 121-122, supra., and in the EPA background documents on preparedness and prevention listed in Part VIII. and will not be discussed here.

6 MCAR § 4.9388

Rule 6 MCAR § 4.9388 requires each hazardous waste management facility to have a contingency plan to minimize the potential hazards from fires, explosions, and other conditions leading to the release of hazardous wastes. The contingency plan must

describe actions to be taken by facility personnel in response to fires, explosions, or other emergency conditions. Items to be covered include the name of the facility's emergency coordinator, a list of the facility's emergency equipment, and the description of arrangements made with the local agencies or departments which may respond to an emergency at the facility. Copies of the plan must be kept at the facility and sent to the agencies that would become involved in an emergency. The provisions of this rule have been taken from 40 C.F.R. §§ 265.50 - 265.54. This rule is substantively identical to proposed rule 6 MCAR § 4.9288. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9288 at pp. 121-123, supra., and in the EPA background documents on contingency plans listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9389

Rule 6 MCAR § 4.9389 outlines the procedures to be followed during the emergency, requires each facility to have an emergency coordinator and identifies the basic functions expected of the coordinator during any emergency. These duties include notification of local authorities and assessment of the possible hazards that might result from the release of wastes at the facility. This rule is based on 40 C.F.R. §§ 265.55 - 265.56 (a) - (f) and is substantively identical to proposed rule 6 MCAR § 4.9289. The

reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9289 at pp. 123-124, supra., and in the EPA background documents on preparedness and prevention and contingency plans listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9390

Rule 6 MCAR § 4.9390 indicates the proper procedures to be followed after an emergency for decontamination of equipment, disposal of contaminated soil or water, and recovered waste. This rule is based on 40 C.F.R. § 265.56 (g) - (j) and is substantively identical to proposed rule 6 MCAR § 4.9290. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9290 at p. 124, supra., and in the EPA background documents on preparedness and prevention and contingency plans listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9391

Rule 6 MCAR § 4.9391 requires hazardous waste facilities initiating shipments of hazardous waste from their facility to meet the generator requirements of Chapter Three. This rule is based on 40 C.F.R. § 265.71 (a) and is substantively identical to proposed rule 6 MCAR § 4.9291. The reasonableness of this requirement is discussed in connection with 6 MCAR § 4.9291 at pp. 124-125, supra., and will not be repeated here.

6 MCAR § 4.9392 - 4.9396

Rules 6 MCAR §§ 4.9392 through 4.9396 establish manifest system operation, recordkeeping, and reporting requirements for owners and operators of TSDFs. These rules are based on 40 C.F.R. 265.70 through 265.77 and are substantively identical to proposed rules 6 MCAR §§ 4.9292 through 4.9296. The reasonableness of these requirements is discussed in connection with 6 MCAR §§ 4.9292 - 4.9296 at pp. 125-130, supra., and in the EPA background documents on the manifest system, recordkeeping and reporting listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9397 and 4.9398

Rules 6 MCAR §§ 4.9397 and 4.9398 establish certain ground water monitoring requirements for owners and operators of TSDFs. These rules are based on 40 C.F.R. §§ 265.90 - 265.94. For the most part the Agency is proposing to adopt the EPA regulations verbatim. The areas of difference are discussed below. In adopting the EPA language the Agency is relying on the background work done by EPA in adopting its regulations. A discussion on the reasonableness of these regulations is contained in the EPA Background Document on Part 265, Subpart F, Ground-Water Monitoring, which is listed in Part VIII.

Ground water monitoring is needed to identify sites that are

violating the human health and environmental standards by causing ground water contamination and to trigger appropriate action against those sites. The Agency believes that ground water monitoring is appropriate at facilities where hazardous waste is purposely placed onto or into the land. Therefore, proposed rule 6 MCAR § 4.9397 requires the owner or operator of a hazardous waste surface impoundment, landfill or land treatment facility who is seeking interim status to implement a ground water monitoring system capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility.

It is unnecessary to require above-ground storage tanks or incinerators to have ground-water monitoring systems because leakage of hazardous waste into the ground can be detected visually at such facilities. The monitoring program seeks to detect contamination in the uppermost aquifer because that will be the first ground water to be affected by a leaking disposal facility.

Rule 6 MCAR § 4.9397 allows a lesser degree of ground water monitoring in those circumstances where an owner or operator can demonstrate that there is a low potential for hazardous waste constitutents to migrate to water supply wells or surface water via the uppermost aquifer. A complete waiver of monitoring is available under specified circumstances to surface impoundments used to neutralize corrosive wastes and is also available when the

owner or operator can demonstrate that there will be no potential for migration to water supply wells or surface water. An owner or operator who wishes to install a lesser degree of monitoring must document the justification for such an approach and must have the documentation certified by a qualified geologist or geotechnical engineer. Because of the expense involved in designing and installing a ground water monitoring system, it is reasonable to permit a lesser degree of monitoring when it can be established that allowing such lesser monitoring will not harm human health or the environment.

Paragraph D. of proposed rule 6 MCAR § 4.9397 requires the facility owner or operator to drill a sufficient number of wells, both upgradient and downgradient to characterize the potential contamination of ground water quality caused by his hazardous waste facility and provides general criteria for their placement and construction. While a minimum number of wells is required, ultimately the burden is on the owner or operator to develop the monitoring system necessary to accurately characterize the aquifer and detect migration.

The proposed rule also sets forth sampling and analysis requirements. The rule requires monitoring for three sets of parameters that each serve a separate purpose. The first set reflects the aquifer's suitability as a drinking water supply. While the Agency is concerned about ground water protection for a

variety of purposes, use of ground water as a drinking water source is of particular concern. The purpose of this initial sampling for drinking water parameters is to identify facilities that may be severely degrading present and future drinking water supplies. The second set of parameters includes those generally recognized as useful for characterizing ground water quality. These contaminants are ubiquitous in the environment and are often used to characterize a ground water supply's suitability for a variety of purposes. Information on these parameters will be useful in any assessment of ground water contamination that follows the determination that the facility is leaking. The third set of parameters consists of four indicators that will be used to determine if a facility is leaking. The four indicators reflect changes in the organic and inorganic makeup of ground water. A statistically significant change in these indicators between the initial background concentration or value and those from downgradient wells suggests that organic or inorganic substances are being introduced into the aquifer by the facility.

The Agency has added a provision in 6 MCAR § 4.9397 F.2.d. which allows the Director to designate waste-specific parameters for which the ground water samples must also be analyzed. The ground-water monitoring system is intended to determine if contamination of ground water by waste or waste constituents has occurred. If there are specific waste constituents which cannot be detected in

the ground water by analysis of the parameters designated in 6 MCAR § 4.9397 F.2., the ground water must be analyzed for a parameter which can detect the waste constituent in order for the system to comply with its intended purpose. Therefore, it is reasonable for the Director to designate such waste-specific parameters if and when needed.

The Agency requires quarterly sampling and analysis under 6 MCAR § 4.9397 F.4.b. rather than semi-annual sampling and analysis as required in 40 C.F.R. § 265.92 (d). Currently, permitted sanitary landfills are required to sample and analyze ground water monitoring wells quarterly. The potential for adverse effects on ground water quality due to hazardous waste land management facilities is equal to if not greater than that due to sanitary landfills. Therefore, it is reasonable to require sampling and analysis frequencies equal to those for sanitary landfills. Also, due to the climatic changes in Minnesota, it is necessary to sample and analyze ground water at least once during each of the four seasons of the year to obtain representative results. This is due to the fluctuations in ground water flow and depth caused by varying weather conditions. Since the monitoring results given in the annual report will be used in determining facility performance, quarterly results provide a more accurate basis for making that determination than do semi-annual results. This is important to both the Agency and the facility because enforcement actions

could begin based on the performance determination. Since a series of several values may be needed to accurately determine whether a trend of ground water contamination is developing, quarterly results will provide that information over a shorter period of time than semi-annual results. The sooner it can be established that contamination is occurring, the sooner remedial actions can be taken to minimize the extent and degree of contamination. Therefore, it is reasonable to require quarterly sampling and analysis of ground water.

Paragraphs G. and H. establish reporting and record keeping requirements. The facility owner or operator is required to retain the ground water data for the active life of the site and for the duration of the post-closure care period. The Agency believes that the actual monitoring data may provide useful information in determining the type and extent of ground water contamination.

6 MCAR § 4.9398

Rule 6 MCAR § 4.9398 requires the owner or operator to prepare an outline of a ground water quality assessment program to be used in the event sampling establishes any suspected discharge from the facility. Upon detecting any suspected discharge from the facility, the owner or operator is required to notify the Agency and develop and submit a plan for assessing the

quality of the ground water. The owner or operator must then implement this plan and determine as quickly as technically possible the rate and extent of migration and concentration of hazardous waste and hazardous waste constituents in the ground water.

6 MCAR § 4.9399

Rule 6 MCAR § 4.9399 contains the standards applicable to the closure of hazardous waste facilities under interim status. The objective of this rule is to require facilities to close in the manner necessary to protect human health and the environment. The Agency feels that to accomplish this objective, it is necessary that facilities plan in advance of closure the manner in which they will dispose of any remaining hazardous waste and decontaminate any equipment used in the process. The requirements of this rule are substantively identical to the requirements of proposed rule 6 MCAR § 4.9298. The specific language of this rule has been taken from the 40 C.F.R. §§ 265.110 - 265.112, as present state rules do not cover closure activities in the detail required by EPA for interim authorization. A discussion of the reasonableness of these requirements is contained in the discussion of 6 MCAR § 4.9298 at pp. 164-165, supra., and in the EPA background documents on closure listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9400

Rule 6 MCAR § 4.9400 establishes the acceptable time allowance for completion of closure activities at a facility, the procedures for extension of this time limit and the requirements for equipment decontamination and certification of closure. The provisions of this rule are based on 40 C.F.R. § 265.113 - 265.115 and are substantively equivalent to proposed rule 6 MCAR § 4.9299. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9299 at pp. 165-167, supra., and in the EPA background documents on closure listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9401

Rule 6 MCAR § 4.9401 contains the requirements for post-closure care of hazardous waste disposal facilities and requires the owner or operator to develop a post-closure plan. The post-closure plan establishes the monitoring and maintenance practices for each facility which are necessary to detect and minimize any potential harm to human health and the environment from contaimination of the surrounding air, land, or waters. This rule is based on 40 C.F.R. § 265.118 and is substantively identical to proposed rule 6 MCAR § 4.9300. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9300 at pp. 167-168, supra., and in the EPA background documents on post-closure care listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9402

Rule 6 MCAR § 4.9402 establishes the time period for post-closure care and the use of a facility's property during this time. This rule is based on 40 C.F.R. § 265.117 and is substantively identical to proposed rule 6 MCAR § 4.9301. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9301 at p. 168, supra., and in the EPA background documents on post-closure care listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9403

Rule 6 MCAR § 4.9403 requires that local land authorities be notified of all closure activities which occurred at any hazardous waste facility and be provided with a survey plat of the site indicating the location and dimension of disposal areas. This rule is based on 40 C.F.R. § 265.119 and is substantively identical to proposed rule 6 MCAR § 4.9302. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9302 at pp. 168-169, supra., and in the EPA background documents on closure and post-closure care listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9404

Rule 6 MCAR § 4.9404 requires that the deed to any property

where hazardous waste has been disposed include a notation to that effect. This rule is based on 40 C.F.R. § 265.120 and is substantively identical to proposed rule 6 MCAR § 4.9303. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9303 at p. 169, supra., and in the EPA background documents on closure and post-closure care listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9405 - 4.9413

Rules 6 MCAR §§ 4.9405 through 4.9413 establish the financial requirements for owners and operators of existing hazardous waste facilities seeking interim status. These requirements constitute a major portion of the interim status standards and are essential in assuring protection of human health and the environment from potential adverse effects due to improper closure or lack of post-closure care resulting from an owner or operator not having adequate financial resources. This is particularly true for existing facilities, since it is more likely that existing facilities have not been properly managed in the past due to the lack of facility standards and regulation. Financial requirements are needed to assure that sufficient funds are available for proper closure and post-closure care of existing hazardous waste facilities. Owners and operators of existing facilities should be preparing now for the cost of closure and

post-closure care, since facilities generate revenue during their operating life not after closure. If the funds are not established during the operating life of the facility, sufficient funds for closure and post-closure care will not be available when the facility closes.

Rules 6 MCAR §§ 4.9405 -4.9413 are based on 40 C.F.R. §§ 265.140 - 265.151 and are substantively equivalent to proposed rules 6 MCAR §§ 4.9304 - 4.9308 and 4.9311 - 4.9314. Since EPA has done a substantial amount of work in developing the financial requirements and ensuring that the requirements are consistent with current practices in the financial community, it is reasonable to utilize these requirements as a basis for the state requirements. A discussion of the rationale for the financial requirements is contained in the EPA Background Documents on Parts 264 and 265, Subpart H, Financial Requirements, which are listed in Part VIII. and is also contained in the discussions on proposed rules 6 MCAR §§ 4.9304 - 4.9308 and 4.9311 - 4.9314 at pp. 169-181, supra. Therefore this discussion will not be repeated here.

The remaining rules in Chapter Six set forth interim status standards applicable to specific types of hazardous waste facilities. These rules govern the storage, treatment or disposal

of hazardous waste in containers, tanks, surface impoundments, piles, and landfills, and land treatment, thermal treatment and chemical, physical and biological treatment facilities.

The rules in Chapter Six specifying facility standards contain essentially the same requirements as the rules in Chapter Five for new facilities of these types. However, the Chapter Six rules do not include the design or containment requirements found in the Chapter Five rules. This is a reasonable approach since the purpose of interim status standards is to maintain proper operating conditions at an existing facility to prevent the mismanagement of hazardous waste until the facility is permitted. Existing facilities will be upgraded based on a compliance schedule included in the facility permit and will be required to meet the design and containment requirements specified in Chapter Five at the end of this schedule.

6 MCAR § 4.9414

Rule 6 MCAR § 4.9414 establishes standards for existing facilities that store hazardous waste in containers. This rule includes provisions relating to applicability, the condition of the containers, the compatibility of the waste with the container, the management of containers, inspections, incompatible, ignitable and reactive wastes and closure. Paragraphs A.-F. of this rule are based on 40 C.F.R. §§ 265.170 - 265.175 and 265.177.

Paragraph H., which relates to proper facility closure, is not contained in the EPA regulations. It is reasonable to include provisions governing the closure of existing container storage facilities because it is as likely that this type of facility will close during the interim period as it is that any other type of facility will close and just as necessary that closure be accomplished in a manner that adequately protects human health and the environment. Rule 6 MCAR § 4.9414 is substantively equivalent to proposed rule 6 MCAR § 4.9315 except that paragraphs E. and F. of 6 MCAR § 4.9315, to the extent that they relate to containment systems, are not included in the interim status standards. The reasonableness of the requirements of 6 MCAR § 4.9414 is discussed in connection with 6 MCAR § 4.9315 at pp. 181-185, supra., and in the EPA background documents on containers listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9415

Rule 6 MCAR § 4.9415 establishes standards for existing facilities that use tanks to store or treat hazardous waste. This rule includes provisions on applicability, general operating requirements, waste analyses and trial tests, inspections, closure, ignitable or reactive wastes and incompatible wastes and is based on 40 C.F.R. §§ 265.190 - 265.197. The general operating requirements and the provisions relating to inspections, closure,

ignitable, reactive and incompatible waste are substantively equivalent to the provisions of 6 MCAR § 4.9316. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9316 at pp. 184-186, supra., and in the EPA background documents on tanks listed in Part VIII. and will not be repeated here.

Proposed Paragraph C. sets forth requirements for waste analysis and trial tests which are in addition to the waste analyses requirements of 6 MCAR § 4.9385. This provision is taken from 40 C.F.R. § 265.193. The purpose of this requirement is to prevent accidents and haphazard experimentation with new wastes or new treatment techniques when chemical treatment of large batches of waste is involved. Put another way, these requirements ensure that the operator knows not only the characteristics of the waste involved, but how that waste will behave in a treatment process, or how a new treatment process will affect the wastes and the facility. Haphazard experimentation or treatment of waste without trial tests may cause corrosion of containment devices, fires, explosions, and other problems associated with ignitable, reactive, or incompatible wastes. Trial tests, or documented information on similar wastes under similar treatment processes and similar operating conditions, should bring to light unanticipated problems before large batches of waste are treated.

6 MCAR § 4.9416

Rule 6 MCAR § 4.9416 establishes standards for existing facilities using surface impoundments to treat, store or dispose of hazardous waste. This rule contains provision on applicability, general operating requirements, the containment system, waste analyses and trial tests, inspections, closure and post-closure, ignitable, reactive wastes and incompatible wastes. The provisions of this rule are taken from 40 C.F.R. §§ 265.220 - 265.230. The provisions relating to inspections, closure if all waste is removed, ignitable, reactive and incompatible wastes and the general operating requirements, except as they relate to freeboard and containment systems which are discussed below, are substantially equivalent to the corresponding provisions of 6 MCAR § 4.9317. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9317 at pp. 186-204, supra., and in the background documents on surface impoundments listed in Part VIII. and will not be repeated here.

Paragraph B. requires existing surface impoundments to have a minimum of two feet of freeboard. It is accepted engineering practice to design surface impoundments with sufficient freeboard to protect against overtopping by waves or precipitation, and most surface impoundments already have two feet of freeboard. As a result, an interim status freeboard requirement will not typically

require large capital outlays by owners or operators. For those facilities which do not meet the minimum freeboard requirements, the minimum freeboard can be established in a short period of time by such means as reducing the quantity of waste or adding additional height to the dikes.

Paragraph C. requires all earthen dikes to have a protective cover to minimize erosion and to preserve the structural integrity of the dike. The dikes are the main component of the primary containment system of a surface impoundment, which prevents the discharge of wastes onto land and surface water. Unprotected dikes have a greater potential for leaking or failing, thereby producing a hazard to human health and the environment. Providing dike protection is not difficult to do and will not require large capitol outlays by owners or operators. Therefore, considering the benefit of reduced potential for dike leakage and failure, it is reasonable to require protective cover for dikes.

Paragraph D. contains additional provisions for waste analyses and trial tests. These provisions are essentially the same as those contained in proposed rule 6 MCAR § 4.9415 C. for tanks. The reasonableness of these requirements is discussed in connection with that provision at p. 275, supra., and will not be repeated here.

Paragraph F. establishes requirements for closure and post-closure care of a surface impoundment. These differ from the provisions of 6 MCAR § 4.9317 G. in that Paragraph F. provides for

not removing all the impoundment materials at closure even if there is not a double liner system in place and permits the owner or operator to elect to close the impoundment as a landfill. However, if an impoundment is to be closed as a landfill, the waste that remains must be capable of supporting a final cover. This approach provides flexibility for closure requirements and allows the waste to be left in place. By requiring that the impoundment is closed in accordance with the landfill closure requirements if the waste is left in place, human health and the environment will be adequately protected.

6 MCAR § 4.9417

Rule 6 MCAR § 4.9417 establishes standards for existing facilities that treat or store wastes in waste piles. This rule contains provisions on applicability, protection from wind, waste analysis, containment, ignitable, reactive and incompatible wastes, closure and post closure care. The provisions in this rule are based on 40 C.F.R. §§ 265.250 - 265.258.

Paragraph C. sets forth waste analyses requirements and is identical to 40 C.F.R. § 265.252. The reasonableness of waste analysis requirements for interim status facilities is discussed in connection with Rule 6 MCAR § 4.9415 at p. 275, supra., and in the EPA background documents on waste analysis listed in Part VIII. and will not be repeated here. The provisions relating

to wind protection, containment, ignitable, reactive and incompatible wastes, and closure and post closure care are substantially equivalent to the corresponding provisions of 6 MCAR § 4.9318 except to the extent that § 4.9318 contains design requirements. The reasonableness of these requirements is discussed in connection with 6 MCAR § 4.9318 at pp. 204-215, supra., and in the EPA background documents on waste piles listed in Part VIII. and will not be repeated here.

Paragraph D. establishes provisions regarding containment based on 40 C.F.R. § 265.253. The owner or operator is required to minimize leachate generation and contaminated material discharges by either underlying the pile with a base and controlling run-on and run-off, or protecting the pile from precipitation, run-on and free liquids. This is a reasonable approach since the intent of this requirement can be satisfied by either method and the owner or operator is allowed to choose the method most applicable to the facility. It is reasonable to require containment since an uncontained pile of hazardous waste possesses a high potential for contaminating surrounding land and surface water due to discharges of waste and contaminated run-off, and contaminating ground water due to leachate generation. Such contamination would pose a hazard to human health and the environment.

Paragraph G. establishes provisions for closure and post-closure care based on 40 C.F.R. § 265.258. The owner or operator

is required to remove or decontaminate all wastes, residues, and contaminated materials at closure. If this is not possible the owner or operator must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements for landfills (6 MCAR § 4.9420 D.). Since a waste pile is used for treatment or storage under this rule, it is reasonable to require removal or decontamination of waste, residues, and materials at closure as is required of other storage or treatment facilities (surface impoundments, tanks and containers). If, however, after making a reasonable effort, it is found that this is impracticable, the facility becomes a disposal facility, and therefore it is reasonable to subject the facility to the closure and post-closure care requirements for landfills.

6 MCAR § 4.9418 and 4.9419

Rules 6 MCAR §§ 4.9418 and 4.9419 establish standards for existing land treatment facilities. Rule 6 MCAR § 4.9418 contains provisions on applicability, general operating requirements, waste analysis, monitoring, recordkeeping, closure and post-closure, ignitable, reactive and incompatible wastes. Rule 6 MCAR § 4.9419 contains additional requirements for land treatment facilities growing food-chain crops. These rules were taken verbatim from 40 C.F.R. §§ 265.270 - 265.282.

A land treatment facility is a facility, or part of a facility, at which hazardous waste is applied onto or incorporated into the soil surface. It is important to regulate certain aspects of land treatment during interim status because this is a disposal option that presents high potential risks in the absence of certain operational controls. These risks arise from the fact that land treatment involves the direct application of hazardous wastes to the land surface. Typically this occurs in the absence of the type of liner systems associated with landfills or surface impoundments. Unless this practice is carefully defined and regulated, irresponsible parties may try to characterize indiscriminate dumping of waste as land treatment. In addition, since land treatment facilities may be used to grow food-chain crops, the Agency is concerned about the potential for hazardous waste constituents to enter the human food chain. Since under certain conditions crops may be grown on such sites during interim status, it is important to address this concern during the interim status period.

Operators of land treatment facilities generally apply the waste in thin layers and use common farming practices such as tilling, contouring, and erosion control techniques. They may also add nitrogen and phosphorus fertilizers to enhance microbial degradation of the waste. The general objective of land treatment is the microbial degradation of organic waste constituents. As

discussed above, there are certain inherent risks with this practice that make careful regulation necessary. The Agency believes that the only legitimate purpose for the land treatment of hazardous waste is to treat the waste to reduce its hazardous properties. This reduction occurs through biological degradation or chemical reactions in the soil that alter the chemical state of the waste. Although soil has the capacity to effectively filter and dilute waste, these physical mechanisms provide little or no reduction in hazard if they do not alter the chemical state of the waste. Consequently, the use of the soil solely as a filtration or dilution medium is not considered appropriate for land treatment.

To insure that land treatment is used only where appropriate, Paragraph B. specifies that hazardous wastes must not be placed in or on land treatment facilities unless biological degradation or chemical reactions in the soil will make the waste less hazardous. Paragraph B. also requires the owner or operator to design, construct, operate and maintain a run-on control system to prevent flow onto the active portions of the facility, and a run-off management system to collect and control run-off. Such controls are necessary because this disposal option involves the placement of hazardous waste on, or barely under, the surface of the land. Such a technique presents a substantial risk that hazardous waste or hazardous waste constituents will be carried off the site by

surface water runoff. Paragraph B also requires that the wind dispersal of particulate matter be controlled.

Paragraph C. establishes waste analyses requirements in addition to the general requirements imposed by 6 MCAR § 4.9385. Paragraph D. requires the owner or operator to establish the basic monitoring system needed to accurately determine whether the complex processes involved in land treatment are, in fact, occurring, and whether contaminants are migrating from the zone of incorporation to the ground water. The rule requires a combination of soil core and soil-pore water monitoring. This monitoring provides the basis for a mass balance analysis of the unsaturated zone to determine whether the treatment process is meeting the treatment objective. Using the monitoring data as feedback on the performance of a site, an owner or operator can more effectively manipulate operating variables in order to optimize the performance of the site.

Paragraph E. requires owners and operators to keep operating records that include the application dates, and the application rates of each waste placed in the facility. Such recordkeeping is needed to allow the owner or operator and the Agency to evaluate the facility's compliance with the other requirements of this rule. Paragraph F. establishes closure and post-closure requirements and requires the owner or operator to develop and implement a facility closure plan and a post-closure care plan.

Paragraphs G. and H. establish special requirements for

ignitable or reactive wastes and for incompatible wastes. The rule requires the owner or operator to incorporate ignitable or reactive wastes into the soil in such a manner that the resulting waste, mixture, or dissolution of material no longer exhibits ignitable or reactive characteristics. Incompatible waste may not be placed in the same land treatment area unless the land treatment process complies with 6 MCAR § 4.9384 B. The reasonableness of special requirements for these types of wastes is discussed in connection with 6 MCAR §§ 4.9283 at pp. 115-117, supra., and in the EPA background documents on land treatment units listed in Part VIII. and will not be repeated here.

6 MCAR § 4.9419

Rule 6 MCAR § 4.9419 establishes additional requirements if food-chain crops are to be grown at the facility. This rule is identical to 40 C.F.R. § 265.276. The reasonableness of these requirements is discussed at 45 F.R. 33208 (May 19, 1980).

6 MCAR § 4.9420

Rule 6 MCAR § 4.9420 establishes standards for existing landfills used for disposal of hazardous waste. This rule has been adopted directly from 40 C.F.R. § 265.300 - 265.316. Landfilling has historically been the preferred means of disposing of hazardous waste. Until the last decade, some people have acted

as though, once buried, hazardous wastes would cause no more difficulties. Experience has demonstrated the severe human health and environmental impacts which may result from improper landfilling. The problems which hazardous waste landfills have presented can be divided into two broad classes, which these rules attempt to address.

The first class of problems includes fires, explosions, production of toxic fumes, and similar problems resulting from the improper management of ignitable, reactive and incompatible wastes. Methods for dealing with these problems are generally available and can be implemented in the interim status standards without substantial capital expenditures. These methods include the analysis of wastes to provide enough information for their proper management, as required by 6 MCAR § 4.9385; the controlled mixing of incompatible wastes or their segregation into separate landfill cells as required by paragraph F.; and the landfilling of ignitable or reactive wastes only when they are rendered not ignitable or reactive as required by paragraph E. If the waste in the landfill is subject to wind dispersal, the landfill must be managed so that such dispersal is controlled.

The second class of problems relates to the contamination of surface and ground waters. Measures are available which will help reduce the formation of leachate in currently operating landfills. The measures incorporated into these rules are the requirements in paragraph B. on the control of surface water run-on to prevent

flow onto the active face of the landfill to reduce the water available for leachate formation and the collection of rainwater and other runoff from the landfill to control surface water contamination; the requirements in paragraph G. on the treatment of any liquid wastes or semi-solid wastes so that they do not contain free liquids (except for lab-packs); the requirements in paragraph D. for proper closure (including a cover) and post-closure care to control erosion and the infiltration of rainwater; and the requirements in Paragraph H. on crushing or shredding most landfilled containers so that they cannot later collapse and lead to subsidence and cracking of the cover.

Paragraph I. establishes special requirements for the disposal of lab packs which minimize the contribution of liquids from these wastes to landfill leachate. These requirements are further discussed at 46 F.R. 56592 (November 17, 1981).

As indicated above, the language in this rule is taken from the EPA regulations contained in 40 C.F.R., Part 265, Subpart N. In adopting its regulations EPA prepared extensive background documents justifying the reasonableness of its regulations and the Agency is relying on those documents as support for this rule. That information is contained in the discussion at 45 F.R. 33209 - 33215 (May 19, 1980) and in the EPA background documents on landfills listed in Part VIII.

6 MCAR § 4.9421

Rule 6 MCAR § 4.9421 establishes the specific facility requirements for owners and operators of existing facilities which thermally treat hazardous waste. This rule contains provisions on applicability, waste analysis, general operating requirements, monitoring and inspections, closure and open burning. These requirements are based on 40 C.F.R. §§ 265.340 - 265.382. The provisions for incinerators and thermal treatment facilities have been combined to apply to all thermal treatment facilities including incinerators. The reasonableness of the Agency's approach to the regulation of thermal treatment facilities is discussed in connection with proposed rule 6 MCAR § 4.9321, at pp. 240-249, supra. The provisions are based on EPA's regulations and the Agency is relying on the background documents prepared by EPA to support these requirements. This information is contained in the background documents on incinerators and thermal treatment facilities listed in Part VIII. and at 45 F.R. 33215 - 33217 (May 19, 1980).

6 MCAR § 4.9422

Rule 6 MCAR § 4.9422 establishes standards for existing facilities using chemical, physical or biological methods to treat hazardous wastes. This rule contains provisions on applicability,

general operating requirements, waste analysis and trial tests, inspections, closure, ignitable, reactive and incompatible wastes. The language for this rule was taken from 40 C.F.R. §§ 265.400 - 265.406. No comparable rule exists in Chapter Five.

Because there are many different types of possible processes, and because the processes are frequently waste specific, no attempt has been made to develop detailed rules for any particular type of process or equipment. The primary concern of these rules is the safe containment of hazardous waste, hazardous waste constituents, and treatment byproducts through waste analysis, inspections, special attention to the handling of ignitable, reactive or incompatible wastes, and proper closure. In these respects most chemical, physical, and biological treatment operations present the same problems and require essentially the same solutions as tanks. The equipment is typically stationary and fairly large, and the materials used and the problems encountered in that part of the equipment which contains the waste are not dissimilar from the materials used and the problems encountered in constructing tanks. Therefore the tank rules and this rule on chemical, physical and bioloical treatment are essentially identical and the rationale for this rule and the one on tanks is the same. This rationale is set forth in the discussion of rules 6 MCAR §§ 4.9316 and 4.9415 at pp. 184-186 and 274-275, supra., and in the EPA background documents on chemical, physical and biological treatment facilities listed in Part VIII. and will not be repeated here.

H. Chapter Seven: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities, 6 MCAR §§ 4.9480 and 4.9481

Chapter Seven consists of those rules which apply to owners and operators of elementary neutralization units, pretreatment units, wastewater treatment units and combustion waste facilities if the facility only treats hazardous waste generated by the owner or operator of the unit or facility. These rules establish facility standards which apply in lieu of the standards established in Chapters Five and Six. This chapter has been developed based on EPA's proposed regulations, 40 C.F.R. Part 266, and the Agency's experience with the hazardous waste program and the pretreatment program.

Facilities that treat hazardous waste influents or generate, treat or store hazardous waste do pose a potential hazard to human health and the environment. Hazardous wastes or constituents thereof may leak or spill from these facilities unless they are properly designed and constructed and are periodically inspected to prevent such occurrences. Persons or livestock may injure themselves if entry into these facilities is not controlled. These facilities may generate toxic mists, fumes, gases, extreme heat or pressure or cause a fire, explosion or violent reaction if improperly managed. Additionally, hazardous wastes left in these

facilities may cause harm if not removed when the facilities are closed.

In addition to being regulated under the state and federal hazardous waste programs, the facilities covered by these rules are regulated under other federal and state regulatory programs. The Agency received a comment from H. B. Fuller regarding the regulation of elementary neutralization units and pretreatment units that discharge to a POTW which has an Agency-approved pretreatment program. H. B. Fuller indicated that regulation under the POTW's pretreatment program would be sufficient and that the Agency should not be directly involved in regulating the unit by establishing discharge standards and monitoring and reporting requirements. The Agency agrees that the pretreatment program does regulate elementary neutralization units and pretreatment units which discharge to a POTW. The Agency believes, however that the focus of those programs is different and that, because of the potential of these facilities to cause environmental harm, regulation under the hazardous waste program is essential and not merely duplicative.

It has also been suggested that the Agency should regulate discharges from NPDES facilities and pretreatment units in a consistent manner rather than exempting NPDES discharges while regulating indirect discharges to POTW's. Although direct discharges from NPDES facilities may pose a risk to the environment,

the Agency believes that the NPDES program is better able to regulate direct discharges since that program was specifically established to do so. The NPDES program is implemented by the Agency through the issuance of permits to discharging facilities. These permits address effludent constituents based on the constituents contained in the influent. Toxicity is assessed through the use of bioassays which are done on samples of effluent. The Agency directly regulated NPDES facilities. The indirect discharges of pretreatment facilities are not directly regulated by the Agency through the pretreatment program. Rather, the receiving POTW regulates the dischargers through a program which is subject to Agency review. Currently the pretreatment program is not well established and is not adequate to address the potential environmental problems that may be raised by the discharging of hazardous waste. Therefore the Agency believes that it is appropriate to regulate such indirect discharges under the hazardous waste program. Since generators who discharge to a POTW without pretreating the waste are required to evaluate their wastes, file a disclosure and have their management plan approved, it is reasonable to subject generators who do pretreat their wastes to the same requirements. Therefore, all wastes discharged to a POTW are subject to the provisions of the hazardous waste rules.

At the same time the Agency believes that because these facilities are regulated under other programs, regulation of the potential hazards posed by these facilities can be accomplished through application of a limited set of special requirements applied through a permit-by-rule. These requirements, which are set forth in 6 MCAR § 4.9481, can be adequately defined in a rule and sufficiently understood and implemented by the regulated community so as to avoid the necessity of individually issued permits. The Agency is convinced that, without sacrificing environmental protection, this permit-by-rule approach will save the regulated community the significant costs involved in applying for an individual permit and will save the Agency significant resources that would be required to issue individual permits. Under this approach, eligible facilities would be deemed to have a hazardous waste permit if they comply with the requirements established in 6 MCAR § 4.9481.

Elementary neutralization units utilize simple and well-understood neutralization processes and treat wastes which are hazardous due solely to corrosivity. Corrosive wastes are readily and easily neutralized and rendered nonhazardous. The resulting nonhazardous waste usually can be discharged to a sewer. Generally, neutralization does not require extensive treatment procedures and the potential for error or facility failure is not great. Also, due to the waste's characteristic, corrosivity, the waste's potential for persistent adverse effects is minimal.

Because elementary neutralization units which treat only waste generated by the units owner or operator possess a lower potential for waste mismanagement and uncontrolled releases of hazardous waste which could cause adverse effects on human health and the environment, the facilities do not need to be subject to full regulation under Chapters Five and Six.

Pretreatment units and wastewater treatment units are regulated under the Clean Water Act, 42 U.S.C. § 1251 et seq., and Agency pretreatment and NPDES programs. These facilities are typically designed and operated to prevent unregulated releases of contaminants into the environment. The discharge from a pretreatment unit generally is diluted in the sewer system, and receives additional treatment by the receiving POTW prior to discharge to the environment. This limits the pretreatment unit's potential for direct discharge of hazardous waste to the environment. The discharge from a pretreatment unit is considered a waste and is subject to regulation under Chapters Two and Three, in addition to regulation under the pretreatment program.

Wastewater treatment units are directly regulated by the NPDES program. Wastewater treatment unit point discharges are exempt from regulation under the hazardous waste program, but are regulated by an NPDES permit. However, the unit itself and wastes such as sludges are subject to regulation under this program. Since wastewater treatment units and pretreatment units are regulated by other Agency programs, and because wastewater

treatment units and pretreatment units which treat only wastes generated by the units owner or operator possess a lower potential for waste mismanagement and uncontrolled releases of hazardous waste to the environment than other hazardous waste treatment facilities, it is reasonable not to subject them to full regulation under Chapters Five and Six.

Combustion waste facilities are also regulated under the provisions of this chapter. Fly ash, bottom ash, slag waste and flue gas emission control waste generated from the combustion of fossil fuels are exempt from regulation under 6 MCAR § 4.9128 C.6. The exemption in 6 MCAR § 4.9128 C.6. is based on the exemption in 40 C.F.R. § 261.4(b)(4).

EPA is currently conducting a study of utility solid waste and the environmental effects of disposal of these wastes. However, until such time as the study is completed, EPA has interpreted the fly ash exemption to also include wastes produced in conjunction with the combustion of fossil fuels which are necessarily associated with the production of energy and are co-treated or co-disposed with the wastes listed in 40 C.F.R. § 261.4(b)(4). This interpretation is contained in EPA memorandum on the Regulation of Utility Waste, dated February 8, 1981 which is listed in Part VIII. The Agency, after reviewing the federal exemption and interpretation, and the current management techniques for these wastes, does not agree with EPA that these wastes should be exempt because of this waste's potential for

adversely affecting human health and the environment if improperly managed. The Agency does agree that energy production facilities handling hazardous wastes produced in conjunction with the combustion of fossil fuels should not be subject to full regulation under Chapters Five and Six while the study is being conducted and has determined that permit-by-rule is sufficient. Once EPA has completed their study and issued a final determination regarding such facilities, the Agency will review the documents and consider amending the rule accordingly.

This provision for regulation by permit-by-rule is limited to energy production facilities that manage hazardous wastes, which are generated on-site by coal combustion, by mixing the waste with and co-disposing or co-treating it with fly ash, bottom ash, boiler slag or flue gas emission control waste. Many of these hazardous wastes, such as boiler cleaning solutions, are generated on an infrequent basis. Due to the large volume of fly ash and other combustion wastes generated, the relative volume of hazardous waste in the total mixture is small. The resulting waste is non-hazardous and has a low potential for adverse effects on human health and the environment. If these facilities were not exempted from the facility standards of Chapters Five and Six, most facilities would need to be retro-fitted and new treatment facilities would need to be designed and constructed. These management practices have been in use for many years. The Agency

is unaware of any significant environmental or human health problems caused by these practices. Therefore, the Agency believes that the result of regulating these facilities under Chapters Five and Six would be to significantly increase facility costs while not necessarily providing any significant environmental benefit. Therefore, it is reasonable to regulate these facilities under a permit-by-rule until facts are developed which indicate that this is not a reasonable approach.

The Agency has limited the application of this permit-by-rule to units or facilities that treat only the wastes generated by the owner or operator of the unit or facility. Facilities that receive hazardous waste from other generators possess a higher potential for causing adverse effects on the environment and human health because the operator lacks control over the generation and content of the wastes to be treated. Facilities that receive wastes from generators other than the facility owner or operator require regulation on waste analysis, acceptability of waste for treatment by the unit, effectiveness of treatment, and specific operating requirements based on the type of unit and the types of waste. Since this chapter does not contain the requirements necessary to effectively regulate facilities which treat other generator's wastes, such as waste analysis and specific operating requirements, it is reasonable to regulate these facilities through Chapters Five and Six rather than this chapter.

6 MCAR § 4.9481

Rule 6 MCAR § 4.9481 contains basic facility standards for elementary neutralization units, pretreatment units, wastewater treatment units and combustion waste facilities.

Paragraph A. requires the owner or operator of an eligible facility to obtain an identification number. This requirement is intended to provide the Agency with a listing of the hazardous waste treatment and storage facilities that are covered by the provisions of this chapter.

Paragraph B. requires the owner or operator of an eligible facility to prevent the unknowing entry and minimize the possibility of unauthorized entry of persons or livestock onto the eligible facility. This requirement is intended to prevent or minimize the harm to people or livestock that could result from direct contact with hazardous wastes. It is also intended to reduce the possibility of tampering with the treatment processes and thereby causing spills, process upsets, or damage to the treatment equipment. The Agency has not mandated any specific security requirements in order to provide flexibility and avoid imposing requirements which might be inappropriate for the many varied settings in which eligible facilities are found. The proposed provision, therefore, is expressed as a performance standard, and the method of compliance with the standard is left to the reasonable judgment of the owner or operator of an eligible facility.

Paragraph C. requires the owner or operator of an eligible facility to periodically inspect the unit or facility for malfunctions, deterioration and any other condition that is or could cause leaks, spills or other unauthorized releases of hazardous waste to the environment. The owner or operator must also develop and maintain a written inspection plan and record those inspections in an inspection log. Finally, the owner or operator must immediately remedy any deterioration or malfunction of equipment or structures. The intent of these requirements is to prevent or minimize leaks, spills or other unauthorized releases of hazardous wastes. To avoid inflexible requirements, and because an inspection plan that is tailored to the type of facility is more likely to reduce the situations that will result in unauthorized releases, the design of the inspection plan is left to the reasonable judgment of the owner or operator.

Paragraph D. requires the owner or operator of an eligible facility to ensure that the treatment of hazardous waste in the facility is conductd so that it does not cause conditions such as the generation of extreme heat or pressure; fire; explosions; violent reactions; toxic fumes, mists or gases; conditions that damage the structural integrity or equipment of the facility or unit; or conditions that otherwise threaten human health or the environment. The intent of this provisions is to prevent hazards that can result from the management of ignitable, reactive, corrosive and incompatible wastes.

Paragraph E. requires the owner or operator of an eligible facility to complete the manifests for hazardous wastes the owner or operator receives from off-site sources and to investigate and report manifest discrepancies and unmanifested shipments. The owner or operator must also maintain an operating record, submit an annual report with respect to hazardous wastes received from off-site sources, and report spills. These provisions ensure that the manifest and reporting system remains intact for hazardous wastes transported to off-site treatment facilities and provide the Agency with knowledge of situations which may cause substantial hazard to human health or the environment so that the Agency can take appropriate action.

Paragraph F. requires owners or operators of eligible facilities to remove all hazardous wastes and hazardous waste residues from the facility at closure. The closure requirement is reasonable because it ensures that hazardous waste is not left in units which are not in operation and are, therefore, not being safely managed. However, since combustion waste facilities contain waste mixtures which may no longer be hazardous, it is reasonable to require that the waste from these facilities be analyzed and to allow the Director to determine which closure requirements apply.

Paragraph G. provides that the treated wastes are subject to regulation under Chapters Two and Three. This requirement is reasonable because the management of these wastes should be based on their characteristics and on whether they are hazardous or nonhazardous wastes. This requirement ensures proper management.

H. Chapter Eight: County Regulation of Hazardous Waste Management, 6 MCAR §§ 4.9559 and 4.9560

The proposed rules in Chapter Eight set forth the procedures for the Agency's oversight of county hazardous waste programs. This chapter contains provisions from existing hazardous waste rule 6 MCAR § 4.9009.

6 MCAR § 4.9559

Rule 6 MCAR § 4.9559 is informational and provides the reader with the applicability of specific subparagraphs within 6 MCAR § 4.9560. Although the language is different it serves the same function as existing rule 6 MCAR § 4.9009 A.

6 MCAR § 4.9560

Rule 6 MCAR § 4.9560 sets forth the procedures used by the Agency in its overview of county hazardous waste programs. Paragraph A. outlines the scope of the Agency's overview authority as set forth in Minn. Stat. §§ 400.161 and 473.811, subd. 5b.

Paragraph B. is renumbered existing rule 6 MCAR § 4.9009 B. This rule has been amended to incorporate the amendments to §§ 400.161 and 473.811, subd. 5b., contained in 1981 Minn. Laws, ch. 352 §§ 30 and 47. The amendments also incorporate a delegation of authority from the Agency to the Agency Director which has been in effect for several years. Because the Agency

only meets once a month and the agenda is established 10 days before the meeting, it is impossible in many cases for the Agency to act on county ordinances within the proscribed statutory period. Since the Director conducts the day to day operations of the Agency, it is reasonable for the Director to perform this function if the ordinance is to be approved and to suspend an ordinance to enable consideration by the Agency if rejection appears appropriate. This paragraph also provides the procedure the Agency shall follow for the suspension of a previously-approved county ordinance or portion of an ordinance.

Paragraph C. is renumbered existing rule 6 MCAR § 4.9009 C. The language contained in C.1. has been amended for the purposes of clarity and to be consistent with the terminology used in 6 MCAR §§ 4.9100 - 4.9481. Subparagraph C.2. of the existing rule has been deleted. As a result copies of manifests (shipping papers) are no longer submitted to the county in lieu of the Agency. Instead, all manifests will be sent to the Director as required by 6 MCAR § 4.9213. This change was necessary to assure EPA that the state hazardous waste program will be equivalent to the federal program with respect to manifest distribution. Existing rule 6 MCAR § 4.9009 C.3. has been renumbered as 6 MCAR § 4.9560 C.2. and incorporates minor changes in language for the purposes of clarity and to be consistent with terminology used in 6 MCAR §§ 4.9100 - 4.9481.

Paragraph D. is existing rule 6 MCAR § 4.9009 D. The language contained in this paragraph has been amended in order to be consistent with Minn. Stat. §§ 400.161 and 473.811, subd. 5b., and for the purposes of clarity.

I. Repealers

Rules 6 MCAR §§ 4.9004, 4.9006 I., 4.9008 and 4.9010 and the Appendices to the existing rules are being repealed.

Rule 6 MCAR § 4.9004 governs the location, operation and closure of a hazardous waste facility. This subject is addressed by the proposed rules in Chapter Five. The proposed rules are more comprehensive than the existing rules and retaining the existing rules would be redundant.

Rule 6 MCAR § 4.9006 I. sets forth the persons and/or facilities which are not required to have a hazardous waste facility permit. These exemptions are now covered by proposed rules 6 MCAR §§ 4.9128 C., 4.9129 and 4.9280. Retaining the existing rule would be redundant.

Rule 6 MCAR § 4.9008 governs the use of hazardous waste shipping papers. The provisions of this rule are now contained in proposed rules 6 MCAR §§ 4.9212, 4,9213, 4.9255, 4.9256 and 4.9257 and retaining this rule would be redundant.

Rule 6 MCAR § 4.9010 covers spillages and leakages of hazardous waste. The provisions of this rule are now contained in

proposed rule 6 MCAR § 4.9259 and in the proposed rules in Chapters Five and Six. Retaining this rule would also be redundant.

Because the provisions of these rules are covered in the proposed rules, the existing rules are no longer needed. It is therefore reasonable to repeal these rules.

VI. CONSIDERATION OF SMALL BUSINESS

Minn. Laws 1983, ch. 188 (to be codified as Minn. Stat. § 14.115) requires state agencies, when proposing amendments to existing rules which may affect small businesses, to consider the following methods for reducing the impact of the rule on small businesses:

(a) the establishment of less stringent compliance or reporting requirements for small businesses;

(b) the establishment of less stringent schedules or deadlines for compliance or reporting;

(c) the consolidation or simplification of compliance or reporting requirements for small businesses;

(d) the establishment of performance standards for small businesses to replace design or operational standards required in the rule; and

(e) the exemption of small businesses from any or all requirements of the rule.

The act requires agencies to incorporate into proposed amendments any of these methods that it finds to be feasible, unless doing so would be contrary to the statutory objectives that are the basis of the proposed rulemaking.

In drafting the proposed amendments to the hazardous waste rules, the Agency did give consideration to small businesses. The rules as revised provide consideration for small business consistent with items (b), (d) and (e) above. Where possible, Chapters Five and Six provide performance standards for facilities which can be applied on a site specific basis. Because the rules do not specify the actual design and operational details, it is possible for small businesses to develop facilities which are appropriate to their size and needs. For example, 6 MCAR § 4.9281 D. of the proposed rules requires security measures to prevent the unknowing or unauthorized entry of the facility. However, the actual security measures will depend on the type of facility and may be much less extensive for a small business than for a large commercial facility.

The proposed rules also provide for a complete exemption from the facility requirements if all hazardous waste is removed from the site within 90 days. This exemption is especially relevant to small businesses which may only store hazardous wases prior to shipment to a disposal facility. The rule provides for such storage without obtaining a permit in order to minimize the burden

on those generators which are only storing wastes for short periods and are not maintaining actual storage facilities.

A phased schedule is provided in 6 MCAR § 4.9312 B. to lessen the burden on small businesses which must obtain liability insurance. Small businesses which must obtain insurance are granted a longer period of time after the effective date of the rule to obtain the necessary insurance than are large businesses. The actual time allowance is based on the annual sales or revenues of the owner or operator and allow small businesses up to 30 months after the effective date of the rules to obtain insurance.

The Agency actively sought input from the regulated community during the drafting of the proposed amendments to the hazardous waste rules. This activity is discussed at pp. 12-13, 21-23. Many comments were received during this process and the rules were redrafted to take many of those comments into account.

However, the objective of Minn. Stat. ch. 116 is to protect the public health and welfare and the environment from the adverse effects which will result when hazardous waste is mismanaged. Therefore, except for the limited exemptions provided for small quantity generators, applying less stringent requirements to the hazardous waste generated by small businesses, irrespective of quantity, would be contrary to the Agency's mandate.

The Agency believes that the proposed amendments to the hazardous waste rules address the concerns of small business to the maximum extent possible without acting contrary to the statutory goal of environmental protection.

VII. CONCLUSION

The Agency staff has, in this document and its exhibits, made its presentation of facts establishing the need for and reasonableness of the proposed amendments to the hazardous waste rules, 6 MCAR §§ 4.9100 - 4.9560. This document constitutes the Agency's Statement of Need and Reasonableness for the proposed amendments to the hazardous waste rules.

Part VIII. LIST OF EXHIBITS

In compiling the proposed amendments to the hazardous waste rules, the Agency relied on documents prepared by EPA to explain the reasoning and supportive data used in developing EPA's hazardous waste regulations and on the information published in the Federal Register in conjunction with the publication of the EPA regulations. The following documents were utilized by Agency staff in developing these rules and are relied on by the Agency as further support for the reasonableness of a 6 MCAR §§ 4.9100 - 4.9560. The documents are listed by chapter and some documents may be listed in connection with more than one chapter. These documents are available for review at the Agency's office at 1935 West County Road B-2, Roseville, Minnesota 55113.

MPCA EX. NO.	TITLE
	A. General
1	U.S.E.P.A. Background Document: Regulatory Analysis, April 30, 1980
	B. Chapter One
2	U.S.E.P.A. Background Document: Definitions and Provisions of Confidentiality (Part 260) April, 1980

MPCA EX. NO.	TITLE		
3	Federal Register:		
	45 F.R. 33066	May 19, 1980	40 C.F.R. §§ 260.1 - 260.22 Hazardous Waste Management System
4	45 F.R. 72024	October 30, 1980	40 C.F.R. § 260.10 Definitions: Generator and Transport Vehicle, Vessel
5	45 F.R. 76618	November 19, 1980	40 C.F.R. § 260.10 Definitions: Spills
6	46 F.R. 2344	January 9, 1981	40 C.F.R. § 260.10 Definitions: Existing Portion
7	47 F.R. 32289	July 26, 1982	40 C.F.R. § 260.10 Definitions: Certification, Existing Portion, Hazardous Waste Constituent, Treatment Zone, Uppermost Aquifer

C. Chapter Two

8	U.S.E.P.A. Background Document: Criteria for Identifying Characteristics of Hazardous Waste (§ 261.10); Criteria for Listing Hazardous Waste (§ 261.11); Petitions to Amend Part 261 to Exclude a Waste Produced at a Particular Facility (§ 260.22) April 30, 1980
9	U.S.E.P.A. Background Document: Characteristic of Corrosivity (Part 261.22) May 2, 1980
10	U.S.E.P.A. Background Document: Characteristic of Ignitability (Part 261.21) May 2, 1980
11	U.S.E.P.A. Background Document: Characteristic of Reactivity (Part 261.23) May 2, 1980
12	U.S.E.P.A. Background Document: EP Toxicity Characteristic (Part 261.24) May 2, 1980

MPCA EX. NO.	TITLE
13	U.S.E.P.A. Background Document: Listing of Hazardous Waste; Finalization of May 19, 1980 Hazardous Waste List (Parts 261.31 and 261.32), November 14, 1980
14	U.S.E.P.A. Background Document: Listing of Hazardous Waste: Finalization of July 16, 1980 Hazardous Waste List (Parts 261.31 and 261.32), January 12, 1981
15	Appendix A - Health and Environmental Profiles, October 30, 1980
16	Appendix B - Fate and Transport of Hazardous Constituents, May 2, 1980
17	U.S.E.P.A. Background Document: Hazardous Waste from Discarding of Commercial Chemical Products and the Containers and Spill Residues Thereof (Part 261.33) April 30, 1980
18	U.S.E.P.A. Background Document: Degree of Hazard, April, 1980
19	Letter from Economics Laboratory dated July 30, 1982 with attachment: Ocular Irritancy Responses to Various pHs of Acids and Bases With and Without Irrigation, Toxicology 23(1982) pp. 281-291
20	Letter from Minnesota Association of Commerce and Industry dated December 31, 1982 with attachment: - Ocular Irritancy Responses to Various pHs of Acids and Bases With and Without Irrigation; Toxicology 23(1982) pp. 281-291 - A Systematic Comparison of Chemically Induced Eye Injury in the Albino Rabbit and Rhesus Monkey; W.R. Green, et al. - Evaluation of the Cutaneous-Irritation Potential of 56 Compounds, Fd.; Chem. Tox. Vol. 20 pp. 563-572, 1982
21	U.S.E.P.A. Report to Congress; Listing Waste Oil as a Hazardous Waste, Excerpt pages 1-3, 1981

Federal Register:

3	45 F.R. 33084 May 19, 1980	40 C.F.R. §§ 261.1 - 261.33 Identification and Listing of Hazardous Waste

MPCA EX. NO.			TITLE
22	45 F.R. 47832	July 16, 1980	40 C.F.R. §§ 261-31 - 261.32 Identification and Listing of Hazardous Waste: Specific and Nonspecific Sources
23	45 F.R. 72035	October 30, 1980	40 C.F.R. §§ 261.4 Exclusions; 40 C.F.R. § 261.32 Waste Streams
4	45 F.R. 72024	October 30, 1980	40 C.F.R. § 261.4 Exclusions: Wastes Generated in Storage Tanks, Transport Vehicle, Vessel or Manufacturing Unit.
24	45 F.R. 74884	November 12, 1980	40 C.F.R. §§ 261.30 - 261.32 Identification and Listing of Hazardous Waste
5	45 F.R. 76618	November 19, 1980	40 C.F.R. § 261.4 Exclusions: Mining Waste and Cement Kiln Dust; and § 261.5 Small Quantity Generators
25	45 F.R. 78524	November 25, 1980	40 C.F.R. §§ 261.7 Empty Containers, and 261.33 Container Residues
26	45 F.R. 80286	December 4, 1980	40 C.F.R. § 261.4 Exclusions: Wastes Generated in Storage Tanks, Transport Vehicle, Vessel or Manufacturing Unit
27	46 F.R. 4614	January 16, 1981	40 C.F.R. §§ 261.31 Identification and Listing of Hazardous Waste: Nonspecific Sources
28	46 F.R. 44969	September 8, 1981	40 C.F.R. § 261.6 Reuse, Recycle

MPCA EX. NO.	TITLE		
29	46 F.R. 47426	September 25, 1981	40 C.F.R. § 261.4 Exclusions: Samples
30	46 F.R. 56582	November 17, 1981	40 C.F.R. § 261.3 Definitions Hazardous Waste
31	47 F.R. 36092	August 18, 1982	40 C.F.R. § 261.7 Empty Containers

D. Chapter Three

32	U.S.E.P.A. Background Document: Special Requirements for Hazardous Waste Generated by Small Quantity Generators (Part 261.5) April 28, 1980		
	Federal Register:		
33	43 F.R. 58971	December 18, 1978	40 C.F.R. Part 250, Subpart B. renumbered as 40 C.F.R. Part 262: Generator Standards
34	45 F.R. 12724	February 26, 1980	40 C.F.R. §§ 262.10 - 262.51 Generator Standards
3	45 F.R. 33084	May 19, 1980	40 C.F.R. Part 261 Identification and Listing of Hazardous Waste
3	45 F.R. 33140	May 19, 1980	40 C.F.R. §§ 261.10 - 262.51 Generator Standards
5	45 F.R. 76618	November 19, 1980	40 C.F.R. § 261.5 Small Quantity Generators
25	45 F.R. 78524	November 25, 1980	40 C.F.R. § 262.51 Farmers: Triple Rinsing
35	47 F.R. 1248	January 11, 1982	40 C.F.R. § 262.34 Accumulation Time

MPCA EX. NO.	TITLE		
	E. Chapter Four		
	Federal Register:		
3	45 F.R. 33150	May 19, 1980	40 C.F.R. §§ 263.10 - 263.31 Transporter Standards
36	45 F.R. 86966	December 31, 1980	40 C.F.R. § 263.12 Transfer Facility Requirements
37	45 F.R. 86970	December 31, 1980	40 C.F.R. §§ 263.20 & 263.2 Transportation Standards: Rail and Bulk Shipments
	F. Chapters Five and Six		
38	U.S.E.P.A. Background Document: General Facility Standards: General Waste Analysis and Interim Status Standards for General Waste Analysis (Parts 264.13 and 265.13) December 30, 1980		
39	U.S.E.P.A. Background Document: General Facility Standards: Standards of Security (Part 264.14); Interim Status Standards for Security (Part 265.14) April 29, 1980		
40	U.S.E.P.A. Background Document: General Facility Standards: Standards for Personnel Training (Part 264.16); Interim Status Standards for Personnel Training (Part 265.16) April 29, 1980		
41	U.S.E.P.A. Background Document: General Facility Standards for Location of Facilities (Part 264.18) December 30, 1980		
42	U.S.E.P.A. Background Document: General Facility Standards: Preparedness and Prevention; Contingency Plan Emergency Procedures, April, 1980		
43	U.S.E.P.A. Background Document: General Facility Standards: Manifest System, Recordkeeping, and Reporting (Part 264 and Part 265) April, 1980		

MPCA EX. NO.	TITLE
44	U.S.E.P.A. Background Document: Groundwater Monitoring (Part 265) May 2, 1980
45	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Ground Water Protection Standard (Part 264 Subpart F) July 31, 1981
46	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Ground Water and Air Emission Monitoring (Part 264 Subpart F) July 31, 1981
47	U.S.E.P.A. Background Document: Interim Status Standards and General Status Standards for Closure and Post-Closure Care (Parts 264 and 265 Subpart G) December 31, 1980
48	U.S.E.P.A. Background Document: Interim Status Financial Requirements (Part 265) April 25, 1980
49	U.S.E.P.A. Background Document: Parts 264 and 265, Subpart H. Financial Requirements, Final Regulations, December 31, 1980
50	U.S.E.P.A. Background Document: Interim Status Standards for the Use and Management of Containers (Part 265); Interim Status Standards for Waste Piles (Part 265) April, 1980
51	U.S.E.P.A. Background Document: Interim Status Standards for Tanks (Part 265); Interim Status Standards for Chemical, Physical and Biological Treatment (Part 265) April 29, 1980
52	U.S.E.P.A. Background Document: Interim Status Standards for Land Treatment Facilities (Part 265) April 30, 1980
53	U.S.E.P.A. Background Document: Interim Status Standards for Landfills (Part 265) May 2, 1980
54	U.S.E.P.A. Background Document: Interim Status Standards for Hazardous Waste Incineration (Part 265) April, 1980
55	U.S.E.P.A. Background Document: Interim Status Standards for Hazardous Waste Facilities for Thermal Treatment Processes Other than Incineration and Open Burning (Part 265) April, 1980

MPCA EX. NO.	TITLE
56	U.S.E.P.A. Background Document: Standards for Inspection (Part 264.15); Interim Status Standards for Inspection (Part 265.15) April, 1980
57	U.S.E.P.A. Background Document: Section 265.220 Final Interim Status Standards for Surface Impoundments, April 28, 1980
58	U.S.E.P.A. General Issues Concerning Interim Status Standards, April, 1980
59	U.S.E.P.A. Background Document: Incineration Standards (Parts 264 and 265) December, 1980
60	U.S.E.P.A. Background Document: Parts 264 and 265 Subpart H. Interim Final Regulations on Closure and Post-Closure Insurance November 2, 1981
61	U.S.E.P.A. Background Document: Parts 264 and 265 Subpart H. Financial Requirements, Financial Test and Municipal Revenue Test Financial Assurance for Closure and Post-Closure Care, including Appendices A and B, November 30, 1981
62	U.S.E.P.A. Background Document: Parts 264 and 265 Subpart H. Financial Requirements, Financial Test for Liability Coverage, including Appendix, April 9, 1982
63	U.S.E.P.A. Background Document: Incineration Standards: Parts 264 and 265, Subpart O, June 1982
64	U.S.E.P.A. Background Document: Preliminary Cost Analysis for Part 264 Interim Final Standards for Tanks (Subparts G, H, J) February 1981
65	U.S.E.P.A. Background Document: Preliminary Cost Analysis for Part 264 Interim Final Standards for Waste Piles (Subparts G, H, L) February 1981
66	U.S.E.P.A. Background Document: Interim Status and General Standards for Tanks: Interim Status Standards for Chemical, Physical, and Biological Treatment (Subparts J and December 30, 1980
67	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Overview July 31, 1981

MPCA EX. NO.	TITLE
68	U.S.E.P.A. Background Document: General Comments on Storage; Standards for the Use and Management of Containers; Standards for Waste Piles (Subparts I and L) December 30, 1980
69	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Waste Piles (Subpart L) July 31, 1981
70	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Surface Impoundments (Subpart K) July 31, 1981
71	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Land Treatment (Subpart M) July 31, 1981
72	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Performance Standards for Land Disposal Facilities (Subpart M and N) July 31, 1981
73	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Landfills (Subpart N) July 31, 1981
74	U.S.E.P.A. Background Document: Interim Status Standards for Landfills; Special Requirements for Ignitable or Reactive Wastes (Subpart N, Part 265.312) February 20, 1981
75	U.S.E.P.A. Background Document: Proposed Additions to Standards for Hazardous Waste Incineration (Part 264.34 Subpart O) January 1981
76	U.S.E.P.A. Background Document: Permitting of Land Disposal Facilities; Information Requirements for Permitting Discharges July 31, 1981
77	U.S.E.P.A. National interim primary drinking water regulations, Excerpt pages 51-64, 69-80, 103-119, 1976
78	Hydrology Guide for Minnesota - Getting the Most Out of Your Raindrop, U.S. Agriculture Department, Soil Conservation Services, St. Paul, MN

MPCA EX. NO.	TITLE		
79	Comments of the Environmental Defense Fund and The Crum and Forster Insurance Companies on Financial Assurance Requirements for Corrective Action. November 22, 1982		
	Federal Register:		
3	45 F.R. 33154	May 19, 1980	40 C.F.R. Parts 264-265 Facility Standards
80	45 F.R. 66816	October 8, 1980	40 C.F.R. Part 264 Facility Standards: Ground Water Protection
81	45 F.R. 76630	November 19, 1980	Eligibility for Interim Status
82	45 F.R. 82964	December 17, 1980	40 C.F.R. Part 264 and 265 Availability of Information
36	45 F.R. 86966	December 31, 1980	40 C.F.R. §§ 264.71 and 265.71
83	46 F.R. 2802	January 12, 1981	40 C.F.R. Parts 264 and 265 Facility Standards: General
84	46 F.R. 7666	January 23, 1981	40 C.F.R. Parts 264 and 265 Facility Standards: Incinerators
85	46 F.R. 1126	February 5, 1981	40 C.F.R. Parts 264 and 265 Land Disposal Facilities
86	46 F.R. 38314	May 26, 1981	40 C.F.R. Parts 264 and 265 Land Disposal Facilities
87	46 F.R. 33502	June 29, 1981	40 C.F.R. Part 265 Interim Status Standards

MPCA EX. NO.	TITLE		
88	46 F.R. 55110	November 6, 1981	40 C.F.R. Parts 264 and 265 Container and Waste Pile Standards
30	46 F.R. 56592	November 17, 1981	40 C.F.R. § 265.316 Disposal of Lab-Packs
89	47 F.R. 8304	February 25, 1982	40 C.F.R. § 264.1 Exemption: Absorbents
90	47 F.R. 15032	April 7, 1982	40 C.F.R. Parts 264 and 265; Financial Assurance
91	47 F.R. 16544	April 16, 1982	40 C.F.R. Parts 264 and 265 Liability Requirements
92	47 F.R. 27520	June 24, 1982	40 C.F.R. Parts 264 and 265 Incinerator Standards
93	47 F.R. 32274	July 26, 1982	40 C.F.R. Parts 264 and 265 Facility Standards: Ground Water and Land Disposal Facilities

Chapter Seven

Federal Register:

94	45 F.R. 76074	November 17, 1980	Elementary Neutralization Unit and Wastewater Treatment Units
95	45 F.R. 76076	November 17, 1980	Elementary Neutralization Unit and Wastewater Treatment Units

96 U.S.E.P.A. Memorandum on EPA Regulation of Utility Waste, February 8, 1981 with attached letter to Paul Emler Jr. from N. Dietrick dated January 13, 1981

MPCA EX. NO.	TITLE
97	Comments Received in Response to the March 30, 1981 and June 15, 1981 Notices of Intent to Solicit Outside Opinion
	A. April 17, 1981 letter from Minnesota/Wisconsin Power Suppliers
	B. April 17, 1981 letter from Otter Tail Power
	C. April 29, 1981 letter from 3M
	D. July 7, 1981 letter from G. Robert Johnson
	E. September 8, 1981 letter from NSP
	F. September 8, 1981 letter from Union Scrap & Metal Co.
	G. September 9, 1981 letter from Otter Tail Power
	H. September 15, 1981 letter from Fabri-Tek
	I. September 16, 1981 letter from Buckbee-Mears Co.
	J. September 22, 1981 letter from Otter Tail Power
	K. September 23, 1981 letter from United States Steel Corp.
	L. September 23, 1981 letter from Sierra Club
	M. September 24, 1981 letter from American Crystal Sugar Co.
	N. September 25, 1981 letter from Minn. Automobile Dealers Assoc.
	O. September 29, 1981 letter from University of Minnesota
	P. September 28, 1981 letter from H. B. Fuller Co.
	Q. September 30, 1981 letter from Northwest Petroleum Assoc.
	R. September 30, 1981 letter from Minnesota Service Station Assoc.

MPCA
EX. NO. TITLE

(Exhibit 97 continued)

S. October 6, 1981 letter from Burlington Northern

T. October 7, 1981 letter from Economics Laboratory

U. November 16, 1981 letter from Sierra Club

V. November 20, 1981 letter from University of Minnesota

W. December, 1981 letter from Buckbee-Mears Co.

X. December 29, 1981 letter from Popham, Haik, Schnobrich, Kaufman & Doty

Y. December 28, 1981 letter from Minnesota/Wisconsin Power Suppliers

Z. December 29, 1981 letter from Minnesota Railroads Assoc.

AA. December 29, 1981 letter from MACI

BB. January 11, 1982 letter from Anoka County

CC. January 14, 1982 letter from Hennepin County

DD. January 25, 1982 comments of Izaak Walton League

EE. February 1, 1982 letter from Kleer-Flo Co.

FF. February 18, 1982 letter from Popham, Haik, Schnobrich, Kaufman & Doty

98 Comments Received in Response to the Notice to Solicit Outside Opinion Published in the December 20, 1982 State Register:

A. January 18, 1983 memorandum from Gary L. Englund, Dept. of Health

B. January 24, 1983 memorandum from Gilbert Gabanski, Dept. of Natural Resources (DNR)

C. February 14, 1983 memorandum from Tom Balcom, DNR

D. March 22, 1983 letter from Nicollet County

MPCA EX. NO.	TITLE

(Exhibit 98 continued)

E. April 7, 1983 letter from Earl Gran

F. April 8, 1983 letter from Robert Brewster

G. April 22, 1983 memorandum from Tom Balcom, DNR

H. April 28, 1983 memorandum from Michael Convery, Dept. of Health

I. May 31, 1983 letter from McCombs-Knutson Associates, Inc.

MPCA EX. NO.	TITLE
99	Comments and Hearing Requests Received in Response to the Notice of Intent to Adopt Rules Without a Public Hearing Published in October 24, 1983 State Register

A. October 31, 1983 letter from Terence H. Cooper

B. November 2, 1983 letter from Thomas A. Fait

C. November 3, 1983 letter from Metropolitan Inter-County Association

D. November 8, 1983 letter from G. W. Harries

E. November 14, 1983 memorandum from Betsy Parker MN DOT

F. November 15, 1983 letter from Imperial, Inc.

G. November 15, 1983 letter from MACI

H. November 15, 1983 comments from the National Association of Recycling Industries, Inc.

I. November 18, 1983 letter from Robert S. Burk

J. November 22, 1983 letter from Land O'Lakes, Inc.

K. November 22, 1983 letter from Atwater McMillian, Inc.

L. November 22, 1983 letter from McLaughlin Gormley King Co.

MPCA
EX. NO. TITLE

(Exhibit 99 continued)

M. November 23, 1983 letter from MN DOT

N. November 23, 1983 letter from Minnesota Petroleum Council

O. November 23, 1983 letter from NSP

P. November 23, 1983 letter from Minnesota Plant Food and Chemical Association

Q. November 23, 1983 letter from Ramsey County

R. November 25, 1983 letter from The Outdoors Committee

S. November 9, 1983 letter from 3M

T. December 5, 1983 letter from Dakota County

U. December 6, 1983 letter from Burlington Northern

HEARING REQUESTS

V. Two Petitions for Hearing, each with 20 signatures

W. Two Petitions from Mel Davis dated November 10, 1983

X. November 14, 1983 letter from H. B. Fuller Company

Y. November 15, 1983 letter from the Carver County LPRC

Z. November 15, 1983 letter from the Marshall County LPRC

AA. November 17, 1983 letter from Richard J. Eischens

BB. November 17, 1983 letter from Anoka County

CC. November 21, 1983 letter from Scott County

DD. November 21, 1983 letter from David W. Hanson

MPCA
EX. NO. TITLE

(Exhibit 99 continued)

EE. November 21, 1983 letter from Richard C. Nash

FF. November 21, 1983 letter from Richard R. Koehn

GG. November 21, 1983 letter from Carver County

HH. November 22, 1983 letter from H. B. Fuller Company

II. November 22, 1983 letter from William Masberg

JJ. November 22, 1983 letter from Minnesota Hospital Association

KK. November 22, 1983 letter from Scott County

LL. Seven letters dated November 22, 1983 from the Hennepin County Commissioners

MM. Five letters dated November 22, 1983 from the Hennepin County Department of Environment and Energy

NN. November 22, 1983 letter from the Hennepin County Bureau of Public Service

OO. November 23, 1983 letter from Metalcasters of Minnesota

PP. November 23, 1983 letter from MACI

QQ. Three letters dated November 23, 1983 from Stolpestad, Brown and Smith

RR. November 23, 1983 letter from Popham, Haik, Schnobrich, Kaufman & Doty, Ltd.

SS. December 5, 1983 letter from the Private Property Rights Alliance

TT. Undated letter from DeAnn Croatt

Dated: January 12, 1984

for Jay M. Heffern

SANDRA S. GARDEBRING
Executive Director
Minnesota Pollution Control Agency

APPENDIX A

RELATIONSHIP OF EXISTING RULES TO PROPOSED RULES

Existing Rule Number	Proposed Rule Number
6 MCAR § 4.9001 General Applicability, Definitions, Abbreviations, Incorporations, Severability, and Variances	Chapter One
6 MCAR § 4.9001 A.	Repealed
6 MCAR § 4.9001 B.	6 MCAR § 4.9100
6 MCAR § 4.9001 C.	Repealed
6 MCAR § 4.9001 D.	Repealed
6 MCAR § 4.9001 E.	Repealed
6 MCAR § 4.9001 F.	6 MCAR § 4.9101
6 MCAR § 4.9001 G.	6 MCAR § 4.9103
6 MCAR § 4.9002 Classification Evaluation and Certification of Waste	Chapter Two and Three
6 MCAR § 4.9002 A.	6 MCAR § 4.9128 A.
6 MCAR § 4.9002 B.1.	Repealed
6 MCAR § 4.9002 B.2.	Exhibit 6 MCAR § 4.9132 G.-1
6 MCAR § 4.9002 B.3.	Replaced by 6 MCAR § 4.9132 A.
6 MCAR § 4.9002 B.4.	Replaced by 6 MCAR § 4.9211 D.
6 MCAR § 4.9002 B.5.	Replaced by 6 MCAR § 4.9131 D.
6 MCAR § 4.9002 C.	6 MCAR § 4.9128 C.
6 MCAR § 4.9002 D.	6 MCAR § 4.9205 and 4.9206
6 MCAR § 4.9002 E.	6 MCAR § 4.9132
6 MCAR § 4.9002 F.	Replaced by 6 MCAR § 4.9211 A.
6 MCAR § 4.9002 G.	6 MCAR §§ 4.9207 and 4.9208
6 MCAR § 4.9002 H.1.	Repealed
6 MCAR § 4.9002 H.2.	6 MCAR § 4.9131 D.
6 MCAR § 4.9002 H.3.	6 MCAR § 4.9209
6 MCAR § 4.9003 Generation of Hazardous Waste	Chapter Three
6 MCAR § 4.9003 A.	Repealed
6 MCAR § 4.9003 B.	6 MCAR § 4.9201
6 MCAR § 4.9003 C.	6 MCAR § 4.9211 A.
6 MCAR § 4.9003 D.	6 MCAR § 4.9211 C., D., & E.
6 MCAR § 4.9003 E.1.	6 MCAR § 4.9211 F.
6 MCAR § 4.9003 E.2.	6 MCAR § 4.9211 G.
6 MCAR § 4.9003 E.3.	Repealed
6 MCAR § 4.9003 F.	6 MCAR § 4.9211 B.
6 MCAR § 4.9003 G.	Replaced by 6 MCAR § 4.9212 A.
6 MCAR § 4.9003 H.	6 MCAR § 4.9214
6 MCAR § 4.9003 I.	Repealed
6 MCAR § 4.9003 J.	6 MCAR § 4.9215 D. & E.

6 MCAR § 4.9004 Location, Operation and Closure of a Hazardous Waste Facility	Repealed and Replaced by Chapters Five, Six and Seven
6 MCAR § 4.9005 Transportation of Hazardous Waste	Chapter Four
6 MCAR § 4.9005 A.	Repealed
6 MCAR § 4.9005 B.	6 MCAR § 4.9254 A.
6 MCAR § 4.9005 C.1.	Repealed
6 MCAR § 4.9005 C.2.-3.	6 MCAR § 4.9254 B.1. and B.2.
6 MCAR § 4.9005 D.1.	6 MCAR 4.9554 B.3.
6 MCAR § 4.9005 D.2.	Repealed and Replaced by 6 MCAR § 4.9257
6 MCAR § 4.9005 E.	6 MCAR § 4.9259
6 MCAR § 4.9005 F.	6 MCAR § 4.9259 F.
6 MCAR § 4.9005 G.	6 MCAR § 4.9252
6 MCAR § 4.9005 H.	Repealed
6 MCAR § 4.9006 I. Hazardous Waste Facility Permit Program Exceptions	Repealed and Replaced by 6 MCAR §§ 4.9128 C., 4.9129 and 4.9280
6 MCAR § 4.9008 Hazardous Waste Shipping Papers	Repealed and Replaced by Chapters Three and Four
6 MCAR § 4.9008 A.	Repealed
6 MCAR § 4.9008 B.	Repealed and Replaced by 6 MCAR § 4.9255
6 MCAR § 4.9008 C.	6 MCAR § 4.9212
6 MCAR § 4.9008 D.	Repealed
6 MCAR § 4.9008 E.1.and 2.	6 MCAR §§ 4.9213 - 4.9255, 4.9256 and 4.9292
6 MCAR § 4.9008 E.3.	6 MCAR § 4.9213 D.
6 MCAR § 4.9008 E.4.	6 MCAR § 4.9217 and 4.9259
6 MCAR § 4.9008 E.5.	6 MCAR § 4.9213 E.
6 MCAR § 4.9008 E.6.	Repealed
6 MCAR § 4.9008 F.1.and 3.	6 MCAR § 4.9250 B.
6 MCAR § 4.9008 F.2.	Repealed
6 MCAR § 4.9008 G.	Repealed
6 MCAR § 4.9008 H.	Repealed
6 MCAR § 4.9008 I.	Repealed
6 MCAR § 4.9009 County Regulation of Hazardous Waste Management	Chapter Eight

6 MCAR § 4.9009 A.	Repealed and Replaced by 6 MCAR § 4.9559
6 MCAR § 4.9009 B.	6 MCAR § 4.9560 B.
6 MCAR § 4.9009 C.	6 MCAR § 4.9560 C.
6 MCAR § 4.9009 D.	6 MCAR § 4.9560 D.
6 MCAR § 4.9010 Spillages and Leakages of Hazardous Waste	Repealed and Replaced by Chapter Four
6 MCAR § 4.9010 A.	6 MCAR §§ 4.9215 B. and 4.9259 C.
6 MCAR § 4.9010 B.	6 MCAR §§ 4.9215 C. and 4.9259 D.
6 MCAR § 4.9010 C.	Repealed

Appendix B

Probability of Facility Design Being Exceeded One or More Times During the Active Life of the Facility

Facility's Active Life (Years)	25 Year Event	50 Year Event	100 Year Event
1	.04	.02	.01
5	.18	.10	.05
10	.34	.18	.10
20	.56	.33	.18
30	.71	.45	.26
50	.87	.64	.39

J_1 or more = $1 - (1 - p)^{N}$*

Where:

J_1 or more = probability of the facility design being exceeded one or more times during the active life of the facility

p = average probability of occurrence

N = active life of facility in years

*From: Linsley, Ray Jr., M. Kohler, and J. Paulus, 1975, Hydrology for Engineers, McGraw-Hill Book Company, New York, Page 350.

APPENDIX C

PROPOSED DEFINITIONS: 6 MCAR § 4.9100

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
A. Act	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
B. Active Portion	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
C. Agency	6 MCAR § 4.9001 B.1.	
D. Aquifer	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart F - Ground Water Monitoring and 47 F.R. 32274 at 32349, and 32289
E. Authorized Representative	40 C.F.R. § 260.10(a)	45 F.R. 12722
F. Certification	40 C.F.R. § 260.10(a)	47 F.R. 32274 at 32349 and 32289
G. Chemical Composition	6 MCAR § 4.9001 B.2.	
H. Closed Portion	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart G - Interim Status Standards for Closure and Post-Closure
I. Confined Aquifer	40 C.F.R. § 260.10(a)	40 C.F.R. Part 122 Subpart A - Definitions and General Program Requirements
J. Container	6 MCAR § 4.9001 B.4. and 40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart I - Interim Status Standards for the Use and Management of Containers
K. Contingency Plan	40 C.F.R. § 260.10(a)	40 C.F.R. Parts 264/265 Subpart D - Contingency Plan and Emergency Procedures
L. Control Equipment	6 MCAR § 4.0002 A.7. (APC 2(a)(7))	
M. Demolition Debris	6 MCAR § 4.9001 B.6.	

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
N. Designated Facility	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart B - Definitions and Provisions for Confidentiality
O. Dike	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart K - Interim Status Standards for Surface Impoundments
P. Director	6 MCAR § 4.9001 B.7.	
Q. Discarded	40 C.F.R. § 261.2	45 F.R. 33084 at 33090 and 40 C.F.R. Part 261 Subpart A - Definitions and General Program Requirements
R. Disposal	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B- Definitions and Provisions for Confidentiality
S. Disposal Facility	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B- Definitions and Provisions for Confidentiality
T. Elementary Neutralization Unit	40 C.F.R. § 260.10(a)	45 F.R. 76074 and 76076
U. Equivalent Method	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
V. Existing Portion	40 C.F.R. § 260.10(a)	47 F.R. 32274 at 32349 and 32290
W. Facility	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
X. Flash Point	6 MCAR § 4.9001 B.11.	
Y. Food Chain Crops	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart M - Interim Status Standards for Land Treatment Facilities
Z. Formation		46 F.R. 11126 at 11150
AA. Freeboard	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
BB. Free Liquids	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
CC. Garbage	6 MCAR § 4.9001 B.13.	
DD. Generator	6 MCAR § 4.9001 B.14. and 40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
EE. Ground Water or Underground Water	6 MCAR § 4.8022	
FF. Hazardous Waste	6 MCAR § 4.9001 B.17. and Minn. Stat. § 116.06, subd. 13.	
GG. Hazardous Waste Constituent	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
HH. Hazardous Waste Incinerator	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart O - Interim Status Standards for Hazardous Waste Incinerators
II. Hazardous Waste Management	6 MCAR § 4.9001 B.19.	
JJ. Hazardous Waste Number	40 C.F.R. § 260.10(a)	40 C.F.R. Part 261 Subpart D - Lists of Hazardous Wastes
KK. Identification Number	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
LL. In Operation	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
MM. Inactive Portion	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
NN. Incompatible Wastes	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
OO. Independent Registered Engineer	New Definition	
PP. Individual Generation Site	40 C.F.R. § 260.10(a)	40 C.F.R. Part 261 Subpart B - Criteria for Identifying Characteristics of Hazardous Wastes
QQ. Injection Well	40 C.F.R. § 260.10(a)	40 C.F.R. Part 122 Subpart A - Definitions and General Program Requirements
RR. Inner Liner	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart J - Interim Status Standards for Tanks
SS. Interim Status	6 MCAR § 4.9381 and 42 U.S.C. § 6925	
TT. International Shipment	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart B - Definitions and Provisions for Confidentiality
UU. Land Treatment Facility	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart M - Interim Status Standards for Land Treatment Facilities
VV. Landfill	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
WW. Landfill Cell	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
XX. Leachate	6 MCAR § 4.9001 B.22. and 40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
YY. Liner	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
ZZ. Manifest	6 MCAR § 4.9001 B.23. and 40 C.F.R. § 260.10(a)	45 F.R. 12722 at 12723 and 40 C.F.R. Part 260 Subpart B - Definitions and provisions for Confidentiality
AAA. Manifest Document Number	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
BBB. Manufacturing or Mining By-Products	40 C.F.R. § 261.2	45 F.R. 32274 at 33084 and 33093 and 40 C.F.R. Part 261 Subpart A - Definitions and General Program Requirements
CCC. Median Lethal Concentration	6 MCAR § 4.9001 B.24.	
DDD. Median Lethal Dose	6 MCAR § 4.9001 B.25.	
EEE. Mining Overburden Returned to the Mine site	40 C.F.R. § 260.10(a)	40 C.F.R. Part 261 Subpart A - Identification and Listing of Hazardous Waste - General
FFF. Movement	40 C.F.R. § 260.10(a)	45 F.R. 33066
GGG. On-site	40 C.F.R. § 260.10(a)	45 F.R. 12722 at 12723
HHH. Open Burning	6 MCAR § 4.9001 B.27. and 40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart P - Interim Status Standards for Hazardous Waste Facilities for Thermal Treatment Processes Other Than Incineration and for Open Burning
III. Operator	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
JJJ. Other Waste Material	40 C.F.R. § 261.2	45 F.R. 33084 and 40 C.F.R. Part 261 Subpart A - Definitions and General Program Requirements

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
KKK. Owner	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
LLL. Partial Closure	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart G - Interim Status Standards for Closure and Post-Closure Care
MMM. Person	6 MCAR § 4.9001 B.29. and Minn. Stat. § 116.06, subd. 8	
NNN. Personnel	40 C.F.R. § 260.10(a)	40 C.F.R. Parts 264/265 Subpart B - General Facility Standards
OOO. Pesticide	6 MCAR § 4.9001 B.30.	
PPP. Petroleum Derived Waste Oil	New Definition	
QQQ. Pile	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart L - Interim Status Standards for Waste Piles
RRR. Point Source	Minn. Stat. § 115.03 subd. 15 and 40 C.F.R. § 260.10(a)	
SSS. Pretreatment Unit	New Definition	
TTT. Publicly Owned Treatment Works	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
UUU. Representative Sample	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
VVV. Resource Recovery	6 MCAR § 4.9001 B.31.	

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
WWW. Rubbish	6 MCAR § 4.9001 B.34.	
XXX. Run-Off	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
YYY. Run-On	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart N - Interim Status Standards for Landfills
ZZZ. Saturated Zone	6 MCAR § 4.9001 B.36. and 40 C.F.R. § 260.10(a)	
AAAA. Seasonal High Water Table	New Definition	
BBBB. Sewage	6 MCAR § 4.9001 B.37.	
CCCC. Sewer System	6 MCAR § 4.9001 B.38.	
DDDD. Shoreland	6 MCAR § 4.9001 B.39.	
EEEE. Sludge	Minn. Stat. § 116.06 subd. 9 i.	
FFFF. Spill	40 C.F.R. § 260.10(a)	40 C.F.R. Part 263 Subpart C - Hazardous Waste Discharges
GGGG. State	New Definition	
HHHH. Storage	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart I - Interim Status Standards for Use and Management of Containers
IIII. Surface Impoundment	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart K - Interim Status Standards for Surface Impoundments
JJJJ. Surficial Karst Features	New Definition	

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
KKKK. Tank	6 MCAR § 4.9001 B.40. and 40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart J - Interim Status Standards for Tanks
LLLL. Thermal Treatment	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart P - Interim Status Standards for Hazardous Waste Facilities for Thermal Treatment Processes Other Than Incineration and for Open Burning
MMMM. Totally Enclosed Treatment Facility	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart J - Interim Status Standards for Tanks
NNNN. Transfer Facility	40 C.F.R. § 260.10(a)	45 F.R. 86966 at 86968
OOOO. Transportation	40 C.F.R. § 260.10(a)	45 F.R. 12722 and 40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
PPPP. Transport Vehicle	40 C.F.R. § 260.10(a)	45 F.R. 72024 at 72028
QQQQ. Transporter	40 C.F.R. § 260.10(a)	40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
RRRR. Treatment	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart J - Interim Status Standards for Tanks
SSSS. Treatment Zone	40 C.F.R. § 260.10(a)	47 F.R. 32274 at 32349 and 32290
TTTT. Unsaturated Zone	40 C.F.R. § 260.10(a)	40 C.F.R. Part 265 Subpart F - Ground Water Monitoring
UUUU. Uppermost Aquifer	40 C.F.R. § 260.10(a)	47 F.R. 32274 at 32349 and 32290

Definition	Source	Federal Background Document or Preamble in Which the Term is Discussed
VVVV.Vessel	40 C.F.R. § 260.10(a)	45 F.R. 72024
WWWW.Waste	6 MCAR § 4.9001 B.42.	
XXXX.Wastewater Treatment Unit	40 C.F.R. § 260.10(a)	45 F.R. 76074 and 76076
YYYY.Water Bulk Shipment	40 C.F.R. § 260.10(a)	45 F.R. 12722 at 12723 and 40 C.F.R. Part 260 Subpart B - Definitions and Provisions for Confidentiality
ZZZZ.Waters of the State	6 MCAR § 4.9001 B.43.	
AAAAA.Water Table	6 MCAR § 4.9001 B.44.	
BBBBB.Well	40 C.F.R. § 260.10(a)	40 C.F.R. Part 122 Subpart A - Definitions and General Program Requirements
CCCCC.Wetland	6 MCAR § 4.9001 B.45.	

4 MCAR § 1.9441 Responsibility of insurer, agent, or agency.

A. System of control required. Every insurer, agent, or agency shall establish and at all times maintain a system of control over the content, form, and method of advertisements and representations, oral and written, concerning its policies. All advertisements and represntations, whether written or oral, regardless of by whom written, created, designed, or presented, shall be the responsibility of the insurer whose policies are so advertised or represented.

B. Prior approval by insurer. An insurer shall require its agents or agencies and any other person or agency preparing advertisements naming the insurer or its products to submit proposed advertisements to it for approval prior to use.

4 MCAR § 1.9442 Penalty.

Violations of 4 MCAR §§ 1.9420-1.9441 subject the violator to the penalties described in Minnesota Statutes, chapters 60A and 62A.

Pollution Control Agency
Solid and Hazardous Waste Division

Proposed Amendments to Rules Governing the Management of Hazardous Waste (6 MCAR §§ 4.9001-4.9005 and 4.9008-4.9010 to be Renumbered as 6 MCAR §§ 4.9100-4.9560)

Notice of Hearing

The Minnesota Pollution Control Agency (Agency) issued two notices, both entitled "Notice of Intent to Amend Rules Without A Public Hearing", concerning the above-entitled rule amendments. State Register, Volume 8, Number 17, pages 732 and 811 (October 24, 1983). The proposed amendments were divided into two sets:

(1) proposed amendments to the rules governing generators of hazardous waste, the identification, transportation and management of hazardous waste, and county hazardous waste programs, 6 MCAR § 4.9001-4.9003, 4.9008-4.9010, renumbered as 6 MCAR § 4.9100-4.9259 and 4.9559-4.9560, published at 8 S.R. 732 (October 24, 1983) as corrected in the Errata published at 8 S.R. 1086 (November 7, 1983) and 8 S.R. 1238, (November 21, 1983); and,

(2) proposed amendments to the rules governing hazardous waste treatment, storage and disposal facilities, 6 MCAR § 4.9004, renumbered as 6 MCAR §§ 4.9280-4.9481, published at 8 S.R. 811 (October 24, 1983) as corrected in the Errata published at 8 S.R. 1084 (November 7, 1983) and 8 S.R. 1238 (November 21, 1983).

The Notice provided that if, during the comment period, seven or more persons requested that the Agency conduct a public hearing, the Agency would conduct a hearing. During the comment period on the two sets of hazardous waste rules described above, the Agency received more than seven requests for public hearing. Therefore, the Agency has scheduled a combined public hearing on both sets of proposals as described below.

Please take notice, therefore, that a public hearing concerning the proposed amendments to the rules governing the management of hazardous waste will be held in the Board Room of the Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota, on Monday, February 6, 1984, commencing at 10:00 a.m. and continuing on subsequent days at the same location until all interested persons have had an opportunity to be heard. An evening session will be held on Wednesday, February 8, 1984, at 7:00 p.m. at the same location.

The hearing will be conducted by Mr. Allan W. Klein, Hearing Examiner, Office of Administrative Hearings, 400 Summit Bank Building, 310 South Fourth Avenue, Minneapolis, Minnesota 55415, telephone (612) 341-7609, a hearing examiner appointed by the Chief Hearing Examiner of the State of Minnesota.

Please also note, that during the comment period following publication of the Notice of Intent to Amend Rules Without a Public Hearing, the Agency received numerous comments on both sets of proposed amendments. On December 20, 1983, at its Board meeting, the Agency revised its proposed amendments to incorporate some of the changes suggested by the comments and to make other clarifying, grammatical or technical changes. The following rules, or portions thereof were amended as published below: 6 MCAR §§ 4.9100 SSS. and FFFF., 4.9102 H, 4.9104 B.1., 4.9128 B.6.c, and C.9. and 15., 4.9129 B.1. and 2., 4.9132 D.1. and F.4., 4.9134 E., 4.9215 A. and B., 4.9216 A.1. and 5., 4.9217 B., 4.9254, 4.9255 A., 4.9289 F., 4.9296 C., and C.7., 4.9297 A.1., K.7. and L.7., 4.9302, 4.9307 D., 4.9308 A.12., D.10., and E.6., 4.9310 A.2., B.9. and F.4., 4.9314 A.1., 4.9317 C.3. and E.4., 4.9318 A., 4.9321 D.1., 4.9389 F., 4.9396 C. and C.7., 4.9401 C., 4.9403, 4.9409 A.4., 4.9411 E.8. and 4.9560 B.2. and 3. Spelling errors and an erroneous cross-reference were corrected in Exhibits 6 MCAR §§ 4.9132 G.3. -1., 4.9134 C.2., D.5.-3. and D.6.-4., 4.9137-1, 4.9297 F.2.-1. and 4.9314 F.7. A copy of these revisions may be obtained by

contacting Steven A. Reed at the address and telephone listed below. The proposed amendments, with the revisions listed above, will be the subject of the hearing scheduled in this notice.

The proposed amendments which are the subject of this hearing address the following:

Rules 6 MCAR § 4.9100-4.9104, Chapter One, address the general provisions of the Rules. These provisions include the definitions applicable to the hazardous waste rules, procedural matters relating to variances and to petitions to delist a waste or to utilize an alternative testing method, and methods of obtaining material referenced in the rules.

Chapter Two, 6 MCAR § 4.9128-4.9137, establishes the criteria for determining whether a waste is hazardous and identifies specific wastes and waste streams which are hazardous. The existing criteria for classifying wastes due to characteristics have been modified to include provisions from the U.S. Environmental Protection Agency's (EPA) characteristics. The lists of hazardous waste in the existing hazardous waste rules have been replaced by the lists of hazardous waste found in the EPA regulations. These rules also sets forth standards for the management of mixtures of hazardous and nonhazardous wastes, for the management of wastes which are to be beneficially used, reused, recycled or reclaimed and for the management of residues of hazardous waste in empty containers and liners.

The standards applicable to generators of hazardous waste are contained in Chapter Three, 6 MCAR § 4.9200-4.9222. Pursuant to these provisions a generator is required to evaluate his wastes to determine if they are hazardous, file a disclosure and management plan with the Agency for each hazardous waste produced, and obtain an identification number. These rules also provide the requirements applicable to generators with regard to the use of manifests, accumulation of hazardous waste and record keeping. The special requirements applicable to small quantity generators are also set forth in this chapter.

Rules 6 MCAR § 4.9250-4.9259, Chapter Four, set forth the standards applicable to transporters of hazardous wate. The provisions of this chapter are substantially the same as the transporter provisions of the existing hazardous waste rules.

The standards governing the operation of hazardous waste facilities are set forth in Chapters Five, Six, and Seven. Rules 6 MCAR §§ 4.9280-4.9316, Chapter Five, establish permanent requirements applicable to owners and operators of facilities which treat, store, or dispose of hazardous waste. These rules set forth requirements relating to the location of hazardous waste facilities, emergency procedures including personnel training and contingency plans, record keeping, ground water monitoring programs, closure, post-closure and financial responsibility, and operational and design requirements for various types of facilities.

Rules 6 MCAR §§ 4.9380-4.9422, Chapter Six, establish interim status standards for hazardous waste facilities which cover the same general areas as the permanent requirements. The interim status standards apply to existing facilities until final disposition of the owner or operator's permit application is made. Chapter Seven, 6 MCAR §§ 4.9480 and 4.9481, provides operational standards for elementary neutralization units, pretreatment units, wastewater treatment units and combusion waste facilities.

Chapter Eight, 6 MCAR §§ 4.9559-4.9560, establishes procedures for the Agency's overview of county hazardous waste programs.

Authority for adoption of these rules is contained in Minn. Stat. § 116.07, subds. 4 and 4b (1982 as amended by Minn. Laws 1983, ch. 373). The proposed amendments may be modified as the result of the hearing process. Therefore, if you are affected in any manner by the proposed rules, you are urged to participate in the hearing process.

One free copy of the proposed rules may be obtained by contacting Steven A. Reed, Division of Solid and Hazardous Waste, Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota 55113, telephone (612) 296-7786.

Notice is hereby given that 25 days prior to the hearing, a statement of need and reasonableness will be available for review at the Agency offices and at the Office of Administrative Hearings. This statement of need and reasonableness will include a summary of all the evidence and argument which the Agency anticipates presenting at the hearing justifying the need for and reasonableness of the proposed rule amendments. Copies of the statement of need and reasonableness may be obtained from the Office of Administrative Hearings at a minimal charge. The Agency intends to present only a short summary of the statement of need and reasonableness at the hearing but will answer questions raised by interested persons.

Following the Agency's presentation at the hearing, all interested or affected persons will have an opportunity to ask questions and make comments. Statements may be made orally and written material may be submitted. In addition, whether or not an appearance is made at the hearing, written statements or material may be submitted to Allan W. Klein, Hearing Examiner,

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

at the address and telephone listed above either before the hearing or within five working days after the close of the hearing. The hearing examiner may, at the hearing, order that the record be kept open for a longer period not to exceed 20 calendar days.

In the interests of efficiency, the Agency requests that written materials be submitted to Steven A. Reed, at the address and telephone listed above, prior to the hearing, preferably by January 20, 1984. Failure to submit material in advance of the hearing will not affect a person's right to appear at the hearing. All comments and hearing requests received by the Agency in response to the Notices of Intent to Adopt Rules Without a Public Hearing published in the State Register on October 24,1983, will be submitted to the hearing examiner for inclusion in the record.

The rule hearing procedure is governed by Minn. Stat. §§ 14.05-14.20 and by 9 MCAR §§ 2.101-2.113 (Minnesota Code of Agency Rules). If you have any questions about the procedure, call or write the hearing examiner.

You are hereby advised, pursuant to Minn. Laws 1983, ch. 188, Small Business Consideration in Rulemaking, that the proposed rule amendments may have an impact on some small businesses that generate hazardous waste. The nature of any impact on small business is dependent upon the amount of hazardous waste the business generates. The amendments being proposed which may affect small businesses include, but are not limited to, the following:

1. The reuse, recycling, or reclamation of certain types of hazardous wastes are not required to comply with all facility standards, thus reducing the financial impact on small businesses which reuse, recycle, or reclaim hazardous waste.

2. Less burdensome testing and evaluation requirements for a generator's hazardous waste are proposed. Thus, the financial impact on small businesses may be lessened.

3. Facility standards are more stringent which may increase the cost of waste storage and disposal and may therefore have a greater financial impact on small businesses.

More detailed information concerning the nature of the impact of these changes upon small businesses is set forth in the Agency's statement of need and reasonableness.

NOTICE: Any person may request notification of the date on which the hearing examiner's report will be available after which date the Agency may not take any final action on the rules for a period of five working days. Any person may request notification of the date on which the hearing record has been submitted to the Attorney General by the Agency. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the hearing examiner (in the case of the hearing examiner's report), or to Steven Reed (in the case of the Agency's submission to the Attorney General).

Please be advised that Minn. Stat. ch. 10A requires each lobbyist to register with the State Ethical Practices Board within five days after he or she commences lobbying. A lobbyist is defined in Minn. Stat. § 10A.01 (1982) as any individual:

(a) Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

(b) Who spends more than $250, not including his own traveling expenses and membership dues, in any year for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

The statute provides certain exceptions. Questions should be directed to the Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone (612) 296-5615.

Sandra S. Gardebring
Executive Director

Amendments to Rules as Proposed

Except for the following rules, or portions thereof, the rules as proposed are the rules published at State Register, Volume 8, Number 17, pages 734-811, and 813-958, (October 24, 1983) and corrected at State Register Volume 8, Number 19, pages 1084-1086, (November 7, 1983) and State Register, Volume 8, Number 21, page 1238, (November 21, 1983). The rules, or portions thereof, published below, are amendments to the rules as proposed published at 8 S.R. 734-958. Underlining indicates additions to the rules as originally proposed. ~~Strike outs~~ indicate deletions from the rules as originally proposed.

Chapter One: Definitions, References, Petitions and Other Standards

6 MCAR § 4.9100 Definitions.

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

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

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 ~~into or on any land or water~~.

6 MCAR § 4.9102 Availability of references.

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

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 ~~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;

6 MCAR § 4.9104 Petitions.

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 §§ 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 ~~listed under~~ 6 MCAR § 4.9131 A.2., that it also does not meet the criteria ~~criterion~~ of 6 MCAR § 4.9131 A.3. A waste which is so excluded may still, however, be a hazardous waste by operation of 6 MCAR § 4.9132.

Chapter Two: Identification and Listing of Hazardous Waste

6 MCAR § 4.9128 Classification of certain wastes.

B. Mixtures of hazardous and nonhazardous wastes.

6. Except as otherwise provided in 1., 2., or 4., the following sewered mixtures of nonhazardous wastes and hazardous wastes listed in 6 MCAR § 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.-b. [Unchanged.]

c. heat exchanger bundle cleaning sludge from the petroleum refining industry, hazardous waste No. K050 as listed in 6 MCAR § 4.9134 ~~4.9136~~;

d.-e. [Unchanged.]

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

9. ~~solid~~ 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;

15. scrap metal which is not hazardous because of a hazardous characteristic other than toxicity, is not a waste listed in 6 MCAR § 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 § 4.9129 Management of waste by use, reuse, recycling, and reclamation.

B. Requirements. A hazardous waste that is to be beneficially used, reused, or legitimately recycled or reclaimed is exempt from 6 MCAR §§ 4.9200-4.9560, and the agency's permitting requirements, except as specified in 1.-5.

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

a. 6 MCAR §§ 4.9205-4.9208;

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b. 6 MCAR §§ 4.9211-4.9213;

c. 6 MCAR § 4.9215;

d. 6 MCAR § 4.9216 A.5.-7.;

e. 6 MCAR §§ 4.9217-4.9221 ~~4.9218~~;

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

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

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

i. 6 MCAR §§ 4.9559-4.9560; and

j. ~~i.~~ A hazardous waste that is EP toxic according to 6 MCAR § 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 §§ 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 Pollutant 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 §§ 4.9205-4.9208; 4.9211-4.9213; 4.9215; 4.9216 A.5.-6.; ~~and~~ ~~4.9218~~ 4.9217-4.9221; and 4.9559-4.9560.

3.-5. [Unchanged.]

6 MCAR § 4.9132 Characteristics of hazardous waste.

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 Solid Waste, Physical/Chemical Methods issued by the United States Environmental Protection Agency, publication number SW 846 (1980) also described in Methods for Chemical Analysis of Water and Waste issued by the Environmental Monitoring and Support Laboratory ~~United States Environmental Protection Agency~~, publication number 600/7-79-020 (March 1979), or an equivalent test method approved by the director ~~agency~~ under the procedures set forth in 6 MCAR § 4.9104 A. ~~4.9131 A.~~; or

b. [Unchanged.]

F. Toxicity

4. A waste that exhibits the characteristics of toxicity, but is not listed as a hazardous waste in 6 MCAR § 4.9134, has the hazardous waste number MN01 ~~M001~~.

Exhibit 6 MCAR § 4.9132 G.3.-1.

Unchanged except DO15 is corrected as follows:

DO15 Toxaphene ($C_{10}H_{10}Cl_8$ ~~$C_{10}H_{10}Cl_8$~~, Technical chlorinated camphene, 67-69 percent chlorine)

6 MCAR § 4.9134 Lists of hazardous waste.

Exhibit 6 MCAR § 4.9134 C.-2

Unchanged except KO47 is corrected as follows:

KO47 Pink/red water from operations involving 2,4,6-trinitro-toluene (TNT)

Exhibit 6 MCAR § 4.9134 D.-5.-3

Unchanged except PO16 is corrected as follows:

PO16 Methane, oxybis (chloro)-

Exhibit 6 MCAR § 4.9134 D.6.-4

Unchanged except U093 and U166 are corrected as follows:

U093 Benzenamine, N,N'-dimethyl-4-~~(phenylazo)~~-

U166 1,4-~~,~~-Naphthoquinone

E. PCB wastes

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 §§ 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 ~~part 761.42~~ (1983); and

b. [Unchanged.]

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 ~~761.10~~ (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 §§ 4.9216 and 4.9280-4.9422 for storage and treatment of those wastes, except for the following requirements:

a. 6 MCAR §§ 4.9315-4.9316;

b. 6 MCAR §§ 4.9382-4.9383;

c. 6 MCAR §§ 4.9385-4.9396; and

d. 6 MCAR §§ 4.9399-4.9400.

6. Hazardous waste number. PCB wastes have the hazardous waste number of MN03 ~~M003~~.

6 MCAR § 4.9135 Small amounts of unrelated chemicals.

A collection of small amounts of unrelated chemicals as described in 6 MCAR § 4.9211 D. has the hazardous waste number of MN02 ~~M002~~.

Exhibit 6 MCAR § 4.9137-1

Unchanged except for the following corrections:

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)

~~Pryidine~~ Pyridine

Chapter Three: Standards Applicable to Generators of Hazardous Waste

6 MCAR § 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.~~G.~~ if, in a calendar month, he generates less than:

1.-3. [Unchanged.]

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

1. 6 MCAR §§ 4.9205-4.9208;

2. 6 MCAR §§ 4.9211 except 6 MCAR§ 4.9211 C.7.;

3. 6 MCAR §§ 4.9212-4.9213;

4. 6 MCAR § 4.9215;

~~5.~~ 6 MCAR § 4.9216 A.5.-7.;

~~6.~~ 6 MCAR §§ 4.9217-4.9221 ~~4.9218~~; and

~~6. Maintain a written log on site with the following information for any hazardous waste shipment from the small quantity generator's site to a site specified in 7.a.-c.:~~

~~a. the name and EPA identification number for each transporter involved in the shipment;~~

~~b. the name and EPA identification number for the site receiving the hazardous waste;~~

~~c. the type and quantity of each hazardous waste included in the shipment;~~

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~~d. the date the shipment left the small quantity generator's site; and~~

7. [Unchanged.]

8. Transport hazardous waste in accordance with all applicable requirements of Minnesota Statutes, section 221.203 and Code of Federal Regulations, title 49, parts 171 through 179 (1983).

6 MCAR § 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 ~~unless exempt from regulation pursuant to 6 MCAR § 4.9210 or 4.9129~~.

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 § 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 §§ 4.9200-4.9560.

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

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

2. the state agency with a hazardous waste program authorized by the Environmental Protection Agency pursuant to Code of Federal Regulations, title 40, part ~~123~~ 271 (1983); or

6 MCAR § 4.9214 Pretransport requirements.

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 § 4.9254 ~~A~~.

6 MCAR § 4.9215 Proper hazardous waste management.

A. Relinquishing control. A generator shall not relinquish control of a hazardous waste if a transporter, or treatment, storage, or disposal facility not exempt under 6 MCAR §§ 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 ~~123~~ 271 (1983); or

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

B. Spills; duty to report. Any person in control of ~~who generates~~ 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 persons shall use, ~~when applicable,~~ the agency's 24-hour telephone number, 612/296-7373.

6 MCAR § 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 § 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 §§ 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 ~~123~~ 271 (1983); or

5. outdoor storage areas are protected from unauthorized access and inadvertent damage from vehicles or equipment ~~distinctly fenced to restrict access~~;

6 MCAR § 4.9217 Record keeping.

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

Chapter Four: Standards Applicable to Transporters of Hazardous Waste

6 MCAR § 4.9254 Transportation of hazardous waste.

Hazardous waste shall be transported in accordance with all applicable requirements of Minnesota Statutes, section 221.203 and Code of Federal Regulations, title 49, parts 171 through 179 (1983).

~~A. Loading of hazardous wastes. No person shall load or unload hazardous waste onto or from any motor vehicle, railroad car, barge, airplane, or other vehicle except in accordance with the following requirements:~~

~~1. all containers of hazardous waste shall be loaded so that they are reasonably secured against movement within the vehicle by which the hazardous waste is being transported;~~

~~2. tank vehicles shall be attended during the loading or unloading of a hazardous waste as described in Code of Federal Regulations, title 49, section 177.834(i)(1983);~~

~~3. no tools or equipment likely to damage the effectiveness of the closure of any container or adversely affect the ability of a container to contain a hazardous waste shall be used for loading or unloading hazardous waste;~~

~~4. a transporter may not transport a container of hazardous waste in the same transport vehicle with material that is marked as or known to be foodstuff, feed, or other edible material intended for consumption or use by humans or animals;~~

~~5. hazardous waste shall not be loaded in the same vehicle with incompatible wastes or other materials with which it is incompatible in accordance with Code of Federal Regulations, title 49, section 177.848 (1983);~~

~~6. broken or leaking containers of hazardous waste shall not be loaded or offered for transportation;~~

~~7. no container or tank containing hazardous waste shall be loaded on a vehicle unless the container or tank is properly labeled and marked as required by 6 MCAR § 4.9214;~~

~~8. no cargo tank or cargo tank compartment shall be loaded with hazardous waste unless it has been tested, inspected, and maintained in accordance with Code of Federal Regulations, title 49, section 177.824 (1983) to insure that there is no unintentional release or leakage of waste during transportation;~~

~~9. no hazardous waste shall be loaded beyond the rated capacity of the cargo tank; and~~

~~10. no cargo tank shall be loaded unless it is properly placarded as required by 6 MCAR § 4.9214.~~

~~B. General provisions.~~

~~1. The transporter shall comply with all applicable requirements of 6 MCAR §§ 4.9255-4.9259 relating to manifests.~~

~~2. The transporter shall replace any labels required by 6 MCAR § 4.9214 if they are destroyed, lost, or detached.~~

~~3. Any person who transports hazardous waste shall deliver the hazardous waste to its final destination without undue delay after loading of the hazardous waste.~~

6 MCAR § 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 §§ 4.9200-4.9222 ~~unless the generator is exempt from the manifest requirements under 6 MCAR §§ 4.9210 or 4.9129~~.

Chapter Five: Facility Standards

6 MCAR § 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.-2. [Unchanged.]

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 ~~or facility buildings or equipment from the active portion of the facility~~ 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.

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6 MCAR § 4.9289 Emergency procedures.

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.~~F.~~ 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. ~~G.~~ 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 § 4.9296 Required reports.

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 ~~and if the waste is not excluded from the manifest requirements by 6 MCAR § 4.9210~~, 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.-6. [Unchanged.]

7. A brief explanation of why the waste was unmanifested, if known. ~~When a facility receives unmanifested hazardous waste, the owner or operator shall obtain from each generator a certification that the waste qualifies for exclusion. otherwise, the owner or operator shall file an unmanifested waste report for the hazardous waste movement.~~

8. [Unchanged.]

6 MCAR § 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, part 264, ~~as amended through June 30,~~ (1983). A waste or a waste constituent migrating beyond the waste management area under H. ~~H.2.~~ is assumed to originate from a regulated unit unless the director finds that the waste or waste constituent originated from another source.

Exhibit 6 MCAR § 4.9297 F.2-1

Unchanged except as follows:

Toxaphene (C_{10}-C_{10}-Cl_8, ~~C H Cl~~ Technical chlorinated camphene, 67-69 percent chlorine)

K. Detection monitoring program. An owner or operator required to establish a detection monitoring program under this rule shall perform the following:

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 ~~two weeks after completion of sampling, unless a different analysis period is~~ established in the permit.

L. Compliance monitoring program. An owner or operator required to establish a compliance monitoring program under this rule shall perform the following:

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 the 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 ~~two weeks after completion of sampling unless the permit provides a different analysis period~~.

6 MCAR § 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 surveying 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, ~~part~~ section 264.119~~, as amended through June 30~~ (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 § 4.9307 Cost estimate for post-closure care.

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 § 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:

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 ~~agency~~ specifies in writing.

D. Post-closure letter of credit. The following apply to post-closure letters 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 ~~agency~~ 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.

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E. Post-closure insurance. The following apply to post-closure insurance:

6. The owner or operator shall maintain the policy in full force and effect until the director ~~agency~~ consents to termination of the policy by the owner or operator as specified in 11.

6 MCAR § 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:

2. The wording of the trust agreement must be identical to the wording specified in Exhibit 6 MCAR § 4.9314 A.1.-1 and the trust agreement must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR § 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.

B. Surety bond guaranteeing payment into corrective action trust fund. The following apply to surety bonds that guarantee payment into corrective action trust funds:

9. The owner or operator may cancel the bond if the director has given prior written consent based on the director's ~~its~~ receipt of evidence of alternate financial assurance as specified in this rule.

F. Financial test and corporate guarantees for corrective action. The financial test and corporate guarantee for corrective action is as follows:

4. The phrase "current corrective action~~, closure, and post-closure~~ cost estimate~~s~~" as used in 1.-3. refers to the cost estimate~~s~~ 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 § 4.9314 F.7.

6 MCAR § 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 § 4.9306 A., 4.9308 A., 4.9310 A., 4.9407 A., or ~~4.9410 A.~~ 4.9409 A. must be worded as specified in Exhibit 6 MCAR § 4.9314 A.-1.-1, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

Exhibit 6 MCAR § 4.9314 F.-7

Unchanged except for the following correction.

2. This firm guarantees, through the corporate guarantee specified in 6 MCAR §§ 4.9304-4.9314 and 4.9405-4.9413 ~~4.9313~~, 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: _____ .

6 MCAR § 4.9317 Surface impoundments.

C. Design and operating requirements. Design and operating requirements are as follows:

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.

E. Monitoring and inspection. Monitoring and inspection requirements are as follows:

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.

6 MCAR § 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 § 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 § 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 § 4.9297 if:

1.-4. [Unchanged.]

6 MCAR § 4.9321 Thermal treatment.

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:

$$DRE = \frac{(Win - Wout)}{Win} \times 100\%$$

~~DRE = (Win = Wout) / Win × 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.

Chapter Six: Interim Status Standards.

6 MCAR § 4.9389 Emergency procedures.

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.~~F.~~ 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.~~G.~~ 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 § 4.9396 Required reports.

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 ~~and if the waste is not excluded from the manifest requirement by 6 MCAR § 4.9210,~~ 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.-6. [Unchanged.]

7. A brief explanation of why the waste was unmanifested, if known~~. When a facility receives unmanifested hazardous waste, the owner or operator shall obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the owner or operator shall file an unmanifested waste report for the hazardous waste movement~~.

8. [Unchanged.]

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

6 MCAR § 4.9401 Post-closure

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 ~~alternation~~ 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 § 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 § 4.9409 Financial assurance for post-closure.

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:

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 §§ 4.9405-4.9413, or over the remaining operating life of the facility as estimated in the ~~post~~-closure plan, whichever period is shorter. The first payment must be made within 90 days of the effective date of 6 MCAR §§ 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.

6 MCAR § 4.9411 Liability requirements.

E. Financial test for liability coverage.

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 ~~covered~~ 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.

Chapter Eight: County Regulation
of Hazardous Waste Management

6 MCAR § 4.9560 Agency overview of county hazardous waste programs.

B. County ordinances.

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 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 §§ 4.9100-4.9560 ~~or the agency's permitting procedures~~. The county revision must embody and be consistent with the agency's revisions to 6 MCAR §§ 4.9100-4.9560 ~~and the agency's permitting procedures~~, and must be submitted to the agency for its review and approval according to the procedure in 1.

Department of Public Welfare
Social Services Bureau

Proposed Amendment of the Department of Public Welfare's Rule Governing Adoption (12 MCAR § 2.200)

A public hearing concerning the above entitled matter will be held in Conference Room A, Fourth Floor Centennial Office Building, 658 Cedar, St. Paul, Minnesota on February 7, 1984 commencing at 9:00 a.m. and continuing until all interested persons have an opportunity to be heard. The proposed rule may be modified as a result of the hearing process. Therefore, if you are affected in any manner by the proposed rule, you are urged to participate in the rule hearing process.

Following the agency's presentations at the hearing, all interested or affected persons will have an opportunity to ask questions and make comments. Statements may be made orally and written material may be submitted. In addition, whether or not an appearance is made at the hearing, written statements or material may be submitted to George Beck, Hearing Examiner, Office of Administrative Hearings, 400 Summit Bank Building, 310 South Fourth Avenue, Minneapolis, Minnesota, 55415, telephone 612/341-7601 either before the hearing or within five working days after the public hearing ends. The hearing examiner may, at the hearing, order that the record be kept open for a longer period not to exceed 20 calendar days. The rule hearing procedure is governed by Minnesota Statutes 14.01-14.56, and by 9 MCAR §§ 2.101-2.112 (Minnesota Code of Agency Rules). If you have any questions about the procedure, call or write the hearing examiner.

Notice is hereby given that 25 days prior to the hearing, a Statement of Need and Reasonableness will be available for review at the agency and at the Office of Administrative Hearings. This Statement of Need and Reasonableness will include a summary of all the evidence and argument which the agency anticipates presenting at the hearing justifying both the need for and the reasonableness of the proposed rule or rules. Copies of the Statement of Need and Reasonableness may be obtained from the Office of Administrative Hearings at a minimal charge.

Rule 12 MCAR § 2.200 governs the Minnesota Department of Public Welfare adoption program. The goal of the Minnesota adoption program is to ensure for each child, who is free to be legally adopted in the state, a suitable adoptive home and agency services supportive of his integration into the new family.

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SUPREME COURT

Decisions Filed Wednesday, October 19, 1983

Compiled by Wayne O. Tschimperle, Clerk

C1-83-1284 Michael Escobedo, Petitioner, v. The Honorable Allen Oliesky, Judge of District Court, Respondent.

Juvenile who is certified for prosecution as an adult and then convicted is entitled to credit against his sentence for time spent in the juvenile detention center awaiting certification for prosecution as an adult.

Remanded. Amdahl, C.J.

Decisions Filed Friday, October 28, 1983

C7-83-429, C7-83-432 Patricia Ann (Kelly) Leahy, Respondent, v. St. Mary's Hospital and Fidelity and Casualty Company of New York.

Minn. Stat. § 176.101, subd. 3(45) (1957), in effect when the employee sustained a work-related back injury, governs her entitlement to retraining benefits. Minn. Stat. § 176.102, subd. 11 (1982), governs the duration and amount of the benefits.

Affirmed in part, reversed in part, and remanded. Simonett, J.

C4-83-209 In Re the Marriage of: Sandra R. Gordon, Petitioner, v. Stephen D. Gordon, Respondent.

1. The presumption in favor of the custodial parent's removal decision extends to cases of joint legal custody.

2. The county court properly granted the motion of the custodial parent to remove the parties' minor children from this jurisdiction.

Reversed and remanded. Wahl, J.

Dissenting, Peterson, J., Yetka, J., and Scott, J.

C4-81-1100 In the Matter of the Petition for Disciplinary Action against Walter D. Weyhrich, a Minnesota lawyer.

1. A lawyer's gross neglect of client affairs, failure to communicate with clients and essentially abandoning the handling of client affairs, failure to make scheduled court appearances without excuse, conducting bad faith litigation, and failure to cooperate with the Lawyers Professional Responsibility Board warrant disbarment.

2. A claim of mitigation warranting a lesser sanction than disbarment because of psychological disability must be established by clear and convincing evidence.

Disbarred. Per Curiam.

Errata

At S.R. 813 (October 24, 1983) the Minnesota Pollution Control Agency published proposed amendments to the rules governing hazardous waste treatment, storage and disposal facilities. Please make the following corrections.

S.R. 813, line 49 of 4.9322: "Behrens" not "Behrns"

S.R. 814, line 1: "Chapter" not "Chatper"

S.R. 814, line 2 of 4.9280 B.: "lieu" not "leu"

S.R. 814, line 1 of 4.9280 C.7.: "combustion" not "combusiton"

S.R. 815, line 1 of 4.9281 D.: "possibility" not "possiblity"

S.R. 815, line 8 of 4.9281 D.2.: "Unauthorized" not "unauthorized"

S.R. 821, line 2 of 4.9289 D.: "explosion" not "exploision"

S.R. 821, line 1 of 4.9289 E.: "facility has had" not "facility had had"

S.R. 827, line 12 of Exhibit 4.9297 F.2.-1: "octahydro-1, 4-endo," not "octahydro-a, 4-endro,"

S.R. 827, line 18 of Exhibit 4.9297 F.2.-1.: "2,4,5-Trichlorophenoxypropionic acid" not "2,4,5-Trichlorophenoxy-propinoic acid"

S.R. 833, line 2 of 4.9297 L.8.: "point of compliance" not "point or compliance"

S.R. 833, line 2 of 4.9297 L.9.: "other" not "~~other~~"

S.R. 837, line 1 of 4.9301 A.3.: "period" not "priod"

S.R. 839, line 2 of 4.9304 B.3.: "which, consistent" not "which consistent"

S.R. 839, line 3 of 4.9305 A.: "4.9317 G." not "4.9317 F."

S.R. 851, line 4 of 4.9308 D.7.: "post-closure cost" not "post-closure"

S.R. 854, line 2 of 4.9308 F.13.: "owner" not "owners"

S.R. 857, line 4 of 4.9310 B.3.: "bond;" not "bonds;"

S.R. 859, line 3 of 4.9310 D.9.: "date, the" not "date. The"

S.R. 863, line 1 of 4.9312 B.4.a.: "$10,000,000 or more" not "$10,000,000 ro more"

S.R. 866, line 2 of Exhibit 6 MCAR § 4.9314 A.1.-1. Section 6.: "between principal and income" not "between policies and income"

S.R. 866, line 3 of Exhibit 6 MCAR § 4.9314 A.1.-1. Section 7.b.: "by the Trustee" not "by the Trustees"

S.R. 869, line 1: "that it was so affixed by order of the Board of Directors of said" not "that it was so affixed to the instrument is the corporate seal; that it was so affixed by order of the Board of Directors of said"

S.R. 870, line 39: "Bond premium: $_____" not "Bond premium: _____"

S.R. 875, Exhibit 6 MCAR § 4.9314 F.-7., Alternative II 2., 3., and 4: delete $.

S.R. 875, Exhibit 6 MCAR § 4.9314 F.-7., Alternative II 5.: "*5." not "5."

S.R. 878, line 2 of Exhibit 6 MCAR § 4.9314 G.8. Part B., Alternative II 1.: "above)" not "above"

S.R. 878, Exhibit 6 MCAR § 4.9314 G.8. Part B., Alternative II 4., 5., and 6.: delete $.

S.R. 879, line 3 of Exhibit 6 MCAR § 4.9314 H.-9.: "the state of" not "the state or"

S.R. 881, line 2 of 4.9314 J.: "worded" not "worked"

S.R. 902, line 4 of 4.4321 D.1.: "Win-Wout" not "Win=Wout"

S.R. 904, line 1 of 4.9321 F.6.: "waste feed" not "waste fee"

S.R. 905, line 7 of Exhibit 4.9322-1.:

" $\bar{x} = \dfrac{X_1 + X_2 \ldots X_n}{n}$ " not " $\bar{x} = \dfrac{X_1 + X_2 \ldots Xn}{\quad}$ "

S.R. 905, line 10 of Exhibit 4.9322-1.: "S^2" not S_2"

S.R. 905, line 17 of Exhibit 4.9322-1.:

" $t^* = \dfrac{Xm - X_B}{\sqrt{\dfrac{S_m^2}{n_m} + \dfrac{S_B^2}{n_B}}}$ " not " $t^* = \dfrac{X_m - \bar{X}_B}{\sqrt{\dfrac{S_m^2}{n_m} + \dfrac{S_B^2}{n_B}}}$ "

S.R. 905, line 39 of Exhibit 4.9322-1.: "If t* is less than t_c" not "If t* is equal to or larger than t_c"

S.R. 909, line 2 of 4.9382 E.: "for malfunctions" not "or malfunctions"

S.R. 909, line 2 of 4.9382 E.3.: "deterioration or" not "deterioration of"

S.R. 912, line 2 of 4.9386 B.: "release to" not "release of"

S.R. 917, line 1 of 4.9394 D.: "4.9382 E." not "4.9381 E."

S.R. 919, line 2 of 4.9397 E.1.: "4.9398 D.3." not "4.9398 D.2."

S.R. 919, line 4 of 4.9397 F.1.: "chain of custody" not "chain on custody"

S.R. 946, line 1 of 4.9415 D.: "where possible" not "where present"

SUPREME COURT

At 8 S.R. 734, (October 24, 1983) The Minnesota Pollution Control Agency published proposed amendments to the rules governing generators of, and the identification, transportation and management of hazardous waste. Please make the following corrections.

S.R. 748, line 2 of 4.9128 B.6.b.: "o-dichlorobenzene" not "o-dichloro-benzene"

S.R. 764, line 25, P033: "Chlorine cyanide" not "Chlorine Cyanide"

S.R. 764, line 39, P040: "O,O-Diethyl O-pyrazinyl phosphorothioate" not "O,O-Diethyl 0-pyrazinyl phosphorothioate"

S.R. 765, line 31, P060: "endo-dimethanonaphthalene" not "endo-dimethano-naphthalene"

S.R. 766, line 9, P059: "4,7-Methano-1H-indene, 1,4,5,6,7,8,8-hep-tachloro-3a,4,7,7a-tetrahydro-" not "4,7-Methano-1H-indene, 1,4,5,6,7,8,8-hep-tachloro-3a,4,7,7a-tetrahydro-"

S.R. 766, line 38, P047: "Phenol" not Pheonl"

S.R. 766, line 39, P020: "Phenol" not "Pheonl"

S.R. 767, line 9, P089: "Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester" not "Phosphorothioic acid, O,O-diethyl O-(p-ni-trophenyl) ester"

S.R. 768, line 36, U187: "Acetamide, N-(4-ethoxyphenyl)" not "Acetamide, N-(r-ethoxyphenyl)"

S.R. 777, line 15, U111: "N-Nitrosodi-N-propylamine" not "N-Nitrosodi-n-propylamine"

S.R. 780, line 7, U235: "Tris (2,3-dibromopropyl) phosphate" not "Tris (2,3-dibromopropy) phosphate"

S.R. 781, line 23, K001: "benz(a)-anthracene" not "benz (a) anthracene"

S.R. 781, line 25, K002: "Hexavalent chromium" not "Hexavelant chromium"

S.R. 783, line 10, K073: "Tetrachloroethylene" not "tetrachloro-ethylene"

S.R. 789, line 36: "Selenious acid" not "Seleious acid"

S.R. 789, line 37: "Selenium" not "Seleium"

S.R. 794, line 1 of 4.9210 E.7.a: "accept" not "accpt"

S.R. 796, line 1 of 4.9211 C.8.b.: "identification" not "identificatoin"

S.R. 810, line 3 of 4.9560 B.3.: "revision to 6 MCAR . . ." not "revision ty 6 MCAR . . ."

Errata

At 8 *State Register* 734 (October 24, 1983) the Minnesota Pollution Control Agency published proposed amendments to the rules governing generators of and the identification, transportation and management of hazardous waste. Please make the following corrections.

S.R. 737, line 1, F.F. "Minnesota" not "Minneuta"

S.R. 750, line 1 of 4.9128 C.13. "to be beneficially" not "to beneficially"

S.R. 752, line 1 of 4.9130 D. "Empty" not "Emply"

S.R. 763, line 3 of 4.9134 D.3. "4.9130 C." not "4.9310 C."

S.R. 766, line 9, P059. "4, 7-Methano-1H-indene, 1, 4, 5, 6, 7, 8, 8-heptachloro-3a, 4, 7, 7a-tetrahydro-" not "4, 7-Methano-1H-indene, 1, 4, 5, 6, 7, 8, 8-hep-tachloro-3a, 4, 7, 7a-tetrahydro"

S.R. 795, line 2 of 4.9211 C.7. "being" not "baing"

S.R. 801, line 3 of 4.9216 A.2. "4.9415 C." not "4.9415 C.)"

At *State Register* 813, (October 24, 1983) The Minnesota Pollution Control Agency published proposed amendments to the rules governing hazardous waste treatment, storage and disposal facilities. Please make the following corrections.

S.R. 885, line 1 of 4.9317 B.2.a. "geologic" not "geologica"

S.R. 905, line 17 of Exhibit 4.9322-1.:

" $\frac{X_m - \bar{X}_B}{\sqrt{\frac{S_m^2}{n_m} \quad \frac{S_B^2}{n_B}}}$ " not " $t^* = \frac{X_m - \bar{X}_B}{\sqrt{\frac{S_m^2 + S_B^2}{n_m \quad n_B}}}$ "

S.R. 915, line 1 of 4.9392 A. "facilities" not "facilties"

S.R. 917, line 1 of 4.9394 C.7. "4.9382 E. not "4.9381 E."

S.R. 947, line 1 of 4.9416 G.2. "solely" not "soley"

S.R. 957, line 1 of 4.9481 B.2. "disturbance of the waste or equipment by the unknowing or unauthorized entry of persons or livestock" not "disturbance of the waste or livestock"

STATE CONTRACTS

Pursuant to the provisions of Minn. Stat. § 16.098, subd. 3, an agency must make reasonable effort to publicize the availability of any consultant services contract or professional and technical services contract which has an estimated cost of over $2,000.

Department of Administration procedures require that notice of any consultant services contract or professional and technical services contract which has an estimated cost of over $10,000 be printed in the *State Register*. These procedures also require that the following information be included in the notice: name of contact person, agency name and address, description of project and tasks, cost estimate, and final submission date of completed contract proposal.

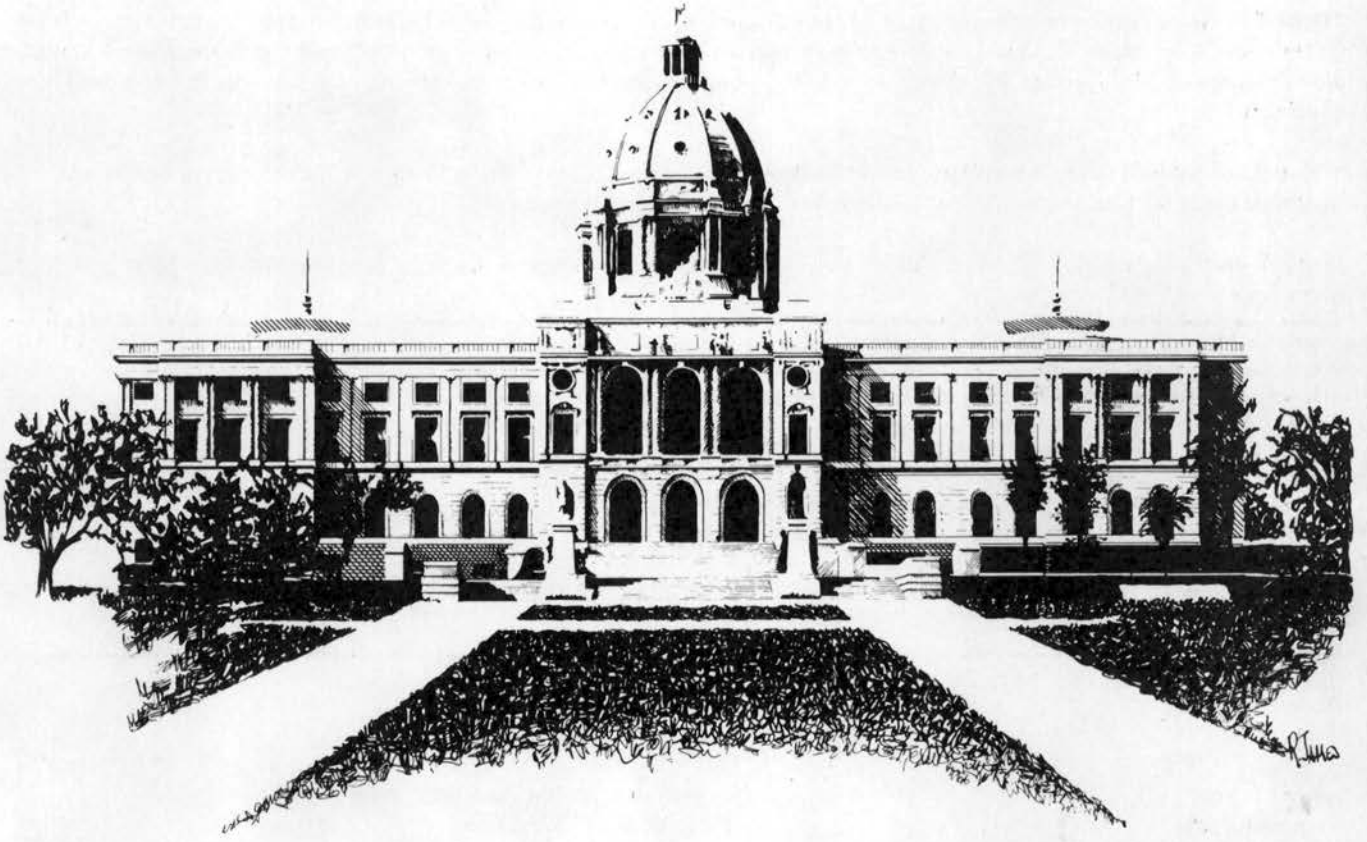
Department of Economic Security

Request for Proposals for Energy Conservation/Education Curriculum and Program

Notice is hereby given that the Department of Economic Security, through its Weatherization Program, requests proposals from qualified bidders to develop an energy conservation education program for low-income persons served by the Minnesota Weatherization Program. The successful bidder will train weatherization program home energy auditors who will, in turn, train

STATE REGISTER

STATE OF MINNESOTA



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October 24, 1983

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STATE REGISTER

Printing Schedule for Agencies

Issue Number	*Submission deadline for Executive Orders, Adopted Rules and **Proposed Rules	*Submission deadline for State Contract Notices and other **Official Notices	Issue Date
	SCHEDULE FOR VOLUME 8		
18	Monday Oct 17	Monday Oct 24	Monday Oct 31
19	Monday Oct 24	Monday Oct 31	Monday Nov 7
20	Monday Oct 31	Monday Nov 7	Monday Nov 14
21	Monday Nov 7	Monday Nov 14	Monday Nov 21

*Deadline extensions may be possible at the editor's discretion; however, none will be made beyond the second Wednesday (12 calendar days) preceding the issue date for rules, proposed rules and executive orders, or beyond the Wednesday (5 calendar days) preceding the issue date for official notices. Requests for deadline extensions should be made only in valid emergency situations.

**Notices of public hearings on proposed rules and notices of intent to adopt rules without a public hearing are published in the Proposed Rules section and must be submitted two weeks prior to the issue date.

Instructions for submission of documents may be obtained from the Office of the State Register, 506 Rice Street, St. Paul, Minnesota 55103, (612) 296-0930.

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The *State Register* is the official publication of the State of Minnesota, containing executive orders of the governor, proposed and adopted rules of state agencies, and official notices to the public. Judicial notice shall be taken of material published in the *State Register*.

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NOTICE

How to Follow State Agency Rulemaking Action in the *State Register*

State agencies must publish notice of their rulemaking action in the *State Register*. If an agency seeks outside opinion before promulgating new rules or rule amendments, it must publish a NOTICE OF INTENT TO SOLICIT OUTSIDE OPINION. Such notices are published in the OFFICIAL NOTICES section. Proposed rules and adopted rules are published in separate sections of the magazine.

The PROPOSED RULES section contains:

- Calendar of Public Hearings on Proposed Rules.
- Proposed new rules (including Notice of Hearing and/or Notice of Intent to Adopt Rules without A Hearing).
- Proposed amendments to rules already in existence in the Minnesota Code of Agency Rules (MCAR).
- Proposed temporary rules.

The ADOPTED RULES section contains:

- Notice of adoption of new rules and rule amendments (those which were adopted without change from the proposed version previously published).
- Adopted amendments to new rules or rule amendments (changes made since the proposed version was published).
- Notice of adoption of temporary rules.
- Adopted amendments to temporary rules (changes made since the proposed version was published).

ALL ADOPTED RULES and ADOPTED AMENDMENTS TO EXISTING RULES published in the *State Register* and filed with the Secretary of State before September 15, 1982, are published in the *Minnesota Code of Agency Rules 1982 Reprint*. ADOPTED RULES and ADOPTED AMENDMENTS TO EXISTING RULES filed after September 15, 1982, will be included in a new publication, *Minnesota Rules*, scheduled for publication in spring of 1984. In the MCAR AMENDMENT AND ADDITIONS listing below, the rules published in the *MCAR 1982 Reprint* are identified with an asterisk. Proposed and adopted TEMPORARY RULES appear in the *State Register* but are not published in the *1982 Reprint* due to the short-term nature of their legal effectiveness.

The *State Register* publishes partial and cumulative listings of rule action in the MCAR AMENDMENTS AND ADDITIONS list on the following schedule:

Issues 1-13, inclusive
Issues 14-25, inclusive
Issue 26, cumulative for 1-26
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Issue 39, cumulative for 1-39
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EXECUTIVE ORDERS

Executive Order No. 83-38

Providing for the Establishment of a Governor's Council on a Quality Environment and Resource Recycling; Amending Executive Order No. 83-18

I, RUDY PERPICH, GOVERNOR OF THE STATE OF MINNESOTA, by virtue of the authority vested in me by the Constitution and the applicable statutes, do hereby issue this Executive Order:

WHEREAS, Minnesotans take pride in their state and have an active concern for maintaining and improving its ecological and economic environment; and

WHEREAS, it is recognized that quality environment and a genuine commitment to sound resource utilization will provide a more favorable climate for business enterprise in the state; and

WHEREAS, there is an increasing awareness on the part of individuals and organizations of the need to take greater responsibility for their environment; and

WHEREAS, an organized program of resource recycling and community revitalization would greatly enhance efforts already underway that emphasize our quality of life; and

WHEREAS, efforts to facilitate and encourage public and private initiatives in these areas are both promising and beneficial;

NOW, THEREFORE, I order:

1. The establishment of the Governor's Council on a Quality Environment, pursuant to Minnesota Statutes § 15.0593 and other applicable state statutes.

a. The Council shall be composed of fifteen members appointed by the Governor who shall be experienced or interested in resource recycling, community revitalization, or any other activities compatible with the aims of this Executive Order.

b. The chairperson of the Council shall be appointed by the Governor from among the members.

c. The Commissioners of Agriculture, Education, Natural Resources, Transportation, Energy and Economic Development, and State Planning, and the Executive Director of the Pollution Control Agency, or their designees, are hereby instructed to work with the Council to accomplish its aims set forth below.

d. Members of the Council shall not receive per diem, but may be reimbursed for travel and other ordinary and necessary expenses.

2. The appointment of an Executive Director, to serve at the pleasure of the Governor, to coordinate the activities of this Council.

3. The Council is charged as follows:

a. To identify and find ways to coordinate and make more effective existing and proposed programs for recycling.

b. To identify and find ways to coordinate and make more effective existing and proposed programs for community revitalization.

c. To identify and find ways to coordinate and make more effective existing and proposed programs of public information and awareness in these areas.

d. Where necessary to meet identified needs in these areas, to recommend additional programs to augment those already existing or proposed.

e. To coordinate and encourage efforts in both the public and private sector to plant trees, for aesthetic enjoyment and for economic benefit, by maintaining and increasing the urban forest.

f. To plan, organize, coordinate and direct a Keep Minnesota Beautiful Program, and to recommend steps to make this program a continuing effort.

g. To report its accomplishments and recommendations to the Governor and Legislature on or before February 1, 1984.

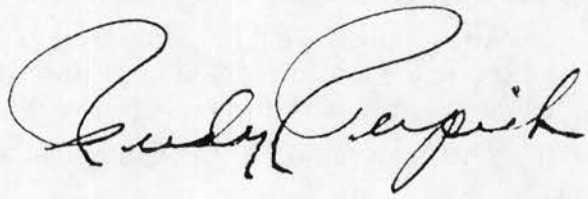
4. The Council is authorized to solicit, receive and disburse, on behalf of the state, funds to further the purposes for which it is established. These funds shall be transferred to the State Planning Agency's Gift Fund Account and/or Seminar Account.

5. The chairperson may, subject to approval by the Council, appoint advisory committees composed of individuals who have interest or expertise to assist it in its work. Such appointees shall receive no reimbursement.

6. The Council may, subject to the availability of funds, contract with such individuals and organizations as may be able to assist in carrying out the duties of the Council.

Pursuant to Minnesota Statutes 1982, Section 4.035, this Order shall be effective 15 days after publication in the *State Register* and filing with the Secretary of State and shall remain in effect until it is rescinded by proper authority or it expires in accordance with Section 4.035, Subdivision 3.

IN TESTIMONY WHEREOF, I hereunto set my hand this 28th day of September, 1983.



Executive Order No. 83-39

Establishing an Inter-Agency Peat Task Force; Amending Executive Order No. 83-21

I, RUDY PERPICH, GOVERNOR OF THE STATE OF MINNESOTA, by virtue of the authority vested in me by the Constitution and the applicable statutes, do hereby issue this Executive Order:

WHEREAS, the State of Minnesota contains six (6) million acres of peat; the largest peatland acreage in the lower forty-eight states; and

WHEREAS, options for the development of peatlands include a multiplicity of uses; and

WHEREAS, there is a need for the coordination of resource and economic development among state agencies; and

WHEREAS, the development of a peat industry is needed to enhance the economic well-being of Minnesota; and

WHEREAS, the effective management of Minnesota's peatlands requires that environmental issues be addressed in development proposals; and

WHEREAS, it is desirable that the state assume a position of strong leadership in peat development issues;

NOW, THEREFORE, I order:

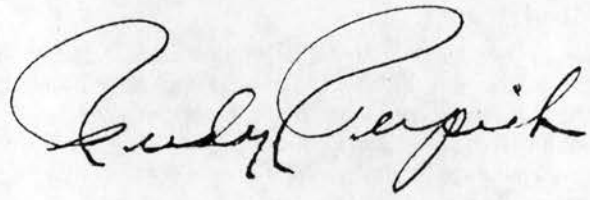
1. The establishment of an inter-agency task force to determine priorities for peat research and development; and further, that this inter-agency task force implement and carry out peat-related activities through the appropriate member agencies.

2. The members of said task force shall be the Commissioners of the Departments of Natural Resources, Agriculture, Commerce, and Energy and Economic Development; the Directors of the Pollution Control Agency and the Iron Range Resources and Rehabilitation Board, a representative of the Governor's Office, and four (4) public members.

3. The member commissioners may appoint technical advisory committees to provide the task force with information and support for task force decision-making.

Pursuant to Minnesota Statutes 1982, Section 4.035, this Order shall be effective 15 days after publication in the *State Register* and filing with the Secretary of State and shall remain in effect until it is rescinded by proper authority or it expires in accordance with Section 4.035, Subdivision 3.

IN TESTIMONY WHEREOF, I hereunto set my hand this 28th day of September, 1983.



PROPOSED RULES

Pursuant to Minn. Stat. of 1980, §§ 14.21, an agency may propose to adopt, amend, suspend or repeal rules without first holding a public hearing, as long as the agency determines that the rules will be noncontroversial in nature. The agency must first publish a notice of intent to adopt rules without a public hearing, together with the proposed rules, in the *State Register*. The notice must advise the public:

1. that they have 30 days in which to submit comment on the proposed rules;
2. that no public hearing will be held unless seven or more persons make a written request for a hearing within the 30-day comment period;
3. of the manner in which persons shall request a hearing on the proposed rules;

and

4. that the rule may be modified if modifications are supported by the data and views submitted.

If, during the 30-day comment period, seven or more persons submit to the agency a written request for a hearing of the proposed rules, the agency must proceed under the provisions of §§ 14.13-14.20 which state that if an agency decides to hold a public hearing, it must publish in the *State Register* a notice of its intent to do so. This notice must appear at least 30 days prior to the date set for the hearing, along with the full text of the proposed rules. (If the agency has followed the provisions of subd. 4h and has already published the proposed rules, a citation to the prior publication may be substituted for republication.)

Pursuant to Minn. Stat. § 14.29, when a statute, federal law or court order to adopt, suspend or repeal a rule does not allow time for the usual rulemaking process, temporary rules may be proposed. Proposed temporary rules are published in the *State Register*, and for at least 20 days thereafter, interested persons may submit data and views in writing to the proposing agency.

Department of Labor and Industry Prevailing Wage Division

Proposed Amendments to Rules Relating to the Establishment of Prevailing Wages

Notice of Hearing

Notice is hereby given that a public hearing in the above-entitled matter will be held, pursuant to Minnesota Statutes section 14.14, subdivision 1, in Room 83 of the State Office Building, Saint Paul, Minnesota on Friday, December 2, 1983 commencing at 8:30 a.m. and continuing until all persons or representatives of associations or other interested groups have had an opportunity to be heard concerning adoption of the proposed amendments captioned above by submitting either oral or written data, statements or arguments. Statements or briefs may be submitted without appearing at the hearing. The hearing attendance is estimated at 100 and is expected to last one day.

The Commissioner of Labor and Industry has been provided the statutory authority to promulgate rules governing the establishment of prevailing wages of laborers, workers and mechanics engaged in state projects. The intent of the proposed amendments to the rules are:

to allow the Department to collect data from a time frame more reasonable to the time of the survey;

to expand the sources of information from whom data may be collected;

to provide options to the formula for determining the prevailing rates for classes of labor including the right, in some cases, to certify a collectively bargained rate as the prevailing rate.

The promulgation of these rules is authorized by Minnesota Statutes § 175.171, subdivision 2, and requisites of Minnesota Statute § 14.06.

One (1) free copy of the Proposed Amendments may be obtained by contacting:

Don Jackman, Director
Division of Prevailing Wage
Department of Labor and Industry
444 Lafayette Road
St. Paul, Minnesota 55101

Additional copies will be available at the door on the date of the hearing.

Notice is also hereby given that twenty-five (25) days prior to the hearing a statement of need and reasonableness will be available for review at the address given above of the Department of Labor and Industry and at the Office of Administrative Hearings. The statement of need and reasonableness will include a summary of all of the evidence and argument which the department anticipates presenting at the hearing justifying both the need for and the reasonableness of the proposed amendments. Copies of the statement of need and reasonableness may be obtained from the Office of Administrative Hearings at a minimal charge.

The proposed amendments are subject to change as a result of the rule hearing process. The Department of Labor and

Industry strongly urges those who are potentially affected by these proposed amendments to participate in the rule hearing process.

All interested or affected persons will have an opportunity to participate concerning the adoption of the proposed amendments. Statements may be made orally and written material may be submitted at the hearing. The Department of Labor and Industry hereby requests those submitting written statements to provide a copy of said materials to the department address given previously, if possible. In addition, whether or not an appearance is made at the hearing, written statements or material may be submitted by mail to Peter Erickson, Hearing Examiner, Office of Administrative Hearings, 400 Summit Bank Building, 310 South Fourth Avenue, Minneapolis, Minnesota 55415, telephone (612) 341-7606, either before the hearing or within five (5) working days after the close of the hearing. If so ordered by the hearing examiner, the hearing record may remain open and such materials may be submitted for a period longer than five (5) working days but not exceeding twenty (20) calendar days after the close of the hearing. All such statements and materials will be entered into and become a part of the record for this proceeding. The rule hearing procedure is governed by Minnesota Statutes §§ 14.13 to 14.20 as well as by 9 MCAR §§ 2.101 to 2.112 (Minnesota Code of Agency Rules). If you have any questions about this procedure, call or write the hearing examiner.

Any person may request notification of the date on which the hearing examiner's report will be available, after which date the Department of Labor and Industry may not take any final action on the rules for a period of five (5) working days. Any person may request notification of the date on which the hearing record has been submitted (or resubmitted) to the Attorney General by the Department of Labor and Industry. If you desire to be so notified, you may so indicate at the hearing. After the hearing, you may request notification by sending a written request to the hearing examiner (in the case of the hearing examiner's report) or department (in the case of the department's submission or resubmission to the Attorney General). It is not anticipated that adoption of the proposed amendments will result in the expenditures of public monies by local bodies of government to implement the rules for the two years immediately following its adoption within the meaning of Minnesota Statute § 14.11.

Please be advised that Minnesota Statutes, chapter 10A requires each lobbyist to register with the State Ethical Practices Board within five (5) days after he or she commences lobbying. A lobbyist is defined in Minnesota Statutes, section 10A.01, subdivision 11 as any individual:

1. Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250.00, but not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

2. Who spends more than $250.00, not including his own traveling expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with the public officials.

The statute provides certain exception. Questions should be directed to the Ethical Practices Board, 41 State Office Building, Saint Paul, Minnesota 55155, telephone (612) 296-5615.

Dated this 10th Day of October, 1983

Steve Keefe
Commissioner of Labor and Industry

Rules as Proposed

8 MCAR § 1.8003 Prevailing wage determinations.

A. Highway and heavy construction. The department shall, at least once each calendar year, determine and certify prevailing wage rates applicable to state projects which are similar in nature to highway and heavy construction projects.

B. Commercial type construction. The department shall, upon the request of any state agency that is contemplating the advertisement for bids on a state project which is similar in nature to commercial construction projects, determine and certify prevailing wage rates applicable to said state project if a certification has not been made within the ~~twelve month~~ 6-month period prior to the request.

C. Information required for certification request. Minnesota Statutes, section 177.43, subdivision 4, provides that the prevailing wage rates, prevailing hours of labor, and hourly basic rates of pay for all trades and occupations required in any contemplated project shall be ascertained before the state asks for bids. A request to establish prevailing wage rates, prevailing

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hours of labor, and hourly basic rates of pay for all trades and occupations required in the contemplated project must be sent to the department and shall include the :

1. Popular or descriptive name of project;

1. Project number;

3. Exact location of project by county and city, village, or township;

4. Estimated costs of the total construction contracts to be awarded;

5. Anticipated date for soliciting or advertising for bids;

6. Anticipated date for awarding of contracts;

7. Proposed date for commencement of work on project;

8. Estimated date of completion of project;

9. General description of the type of facility and facilities which will constitute the completed contracts. For example, two-story brick and concrete building about 200 feet by 400 feet with concrete floor, wood roof deck on wood laminated beams, and includes plumbing, heating, and electrical work. Outside work includes excavating, blacktopping, grading, sidewalks, fencing, driveways, parking areas, and miscellaneous areas;

10. Desired date of receipt of prevailing wage rate schedule; and

11. Statement as to whether the federal government or any of its agencies will furnish by loan or grant any part of the funds used in this contract or prescribe a schedule of prevailing wage rates.

The department must be notified about ensuing projects as far in advance as possible. A request to determine or ascertain prevailing wage rates, prevailing hours of labor, and hourly basic rates of pay for all trades and occupations required on any contemplated project must be made between 50 and 60 days before soliciting bids.

D. Residential type construction. Prevailing wage rates applicable to state projects which are similar in nature to residential construction projects will be made upon request of a governmental official involved in the bidding process for a state project who desires such rates for insertion in a specific contract proposal.

~~D.~~ E. Survey data; recent. Each wage survey shall be based upon work performed in the 12 months preceding ~~calendar year~~ the date the survey is commenced and the resulting wage determinations will be certified following the close of the survey.

~~E.~~ F. Survey procedure. Except as provided in ~~subpart F herein~~ G., all prevailing wage determinations shall be based upon the survey procedures contained in these rules.

~~F.~~ G. Public hearing. The department shall, pursuant to Minnesota Statutes, sections 177.43, subdivision 4, and 177.44, subdivision 3, conduct public hearings when necessary to determine county wage rate determinations. Such hearings shall be conducted within the county for which wage rates are being determined and shall be conducted as contested cases by a hearing examiner from the ~~State~~ Office of ~~Hearing Examiners~~ Administrative Hearings.

8 MCAR § 1.8004 Basis for each determination.

A. County and labor class basis. Individual prevailing wage rates shall be made on a county by county basis and each prevailing wage rate shall be based upon work performed solely within the applicable class of labor.

B. Labor classes. For each county ~~survey~~ surveyed, the department shall issue wage determinations for ~~all classes of labor commonly or customarily used in similar construction projects.~~:

~~1. Where work has been performed in a class of labor in the county during the time period of the survey, the wage determination for that class of labor shall be based solely upon that work.~~

~~2. Where work was performed in any other classes of labor in two or more of the Minnesota counties physically adjacent to the county being surveyed, the department shall consider those classes of labor as ones which are customarily or commonly used in construction projects and determine wage rates for those classes in accordance with paragraphs 4 and 5 herein.~~

~~3. Where no work was performed in a class of labor either in the county being surveyed or in two or more of the adjacent Minnesota counties, no wage rate will be determined for that class of labor.~~

~~4. In looking to adjacent counties for determining additional classes of labor for which prevailing wage rates should be made, only those adjacent Minnesota counties for which surveys are either in progress or for which wage rates have been determined by survey within the preceding 12 months shall be utilized.~~

~~5. In determining a wage rate for a class of labor based upon work performed in adjacent counties, all workers in the class of labor in all the adjacent counties shall be totaled and the wage rate shall be based upon the wage rate paid to the largest number as determined in accordance with these rules.~~

1. highway and heavy construction projects for all classes of labor commonly or customarily used in those construction projects; and

2. state projects other than highway and heavy construction for all classes of labor expected to be used in the contemplated project for which the prevailing wage rate is being determined.

C. Projects to be surveyed, criteria. From information on file and submitted by interested persons, the department shall select projects of a character similar to the project for which the prevailing wage rate is being determined. The selections shall be made from projects on which construction work was done in the 12 months preceding the survey and which are located in the county in which the contemplated project is located, or, if necessary, from adjacent counties.

1. If two or more projects of a character similar to the project contemplated have been performed in the county in which the project is to be located, and if this group of projects provides wage rate data for the major classes of labor to be used in the project for which the prevailing wage is being determined, the wage determination for those classes of labor shall be based solely upon that work.

2. Where classes of labor expected to be utilized in the contemplated project for which the prevailing wage determination is being made are not all represented in the projects in 1., but work was performed in those classes of labor in two or more projects in any county physically adjacent to the county being surveyed, the department shall establish the wage determination for those classes of labor based solely upon those adjacent county projects.

3. Where no work was performed in a class of labor either in the county being surveyed or in any adjacent Minnesota county, no wage rate will be determined for that class of labor.

4. In determining a wage rate for a class of labor based upon work performed in adjacent counties, all workers in a class of labor in all adjacent counties shall be totaled and the wage rates shall be based upon the wage rate paid to the largest number as determined in accordance with 8 MCAR §§ 1.8003-1.8007.

~~C.~~ D. Frequency of determination. Following certification of wage rates for a county, no wage rates for additional classifications of labor shall be made for that county until such time that a subsequent survey of the county ~~demonstrates utilization of those additional classes of labor~~ is required pursuant to Minnesota Statutes, section 177.43, subdivision 4 or 177.44, subdivision 4.

8 MCAR § 1.8006 Survey procedures.

A. Scope. The purpose of each county survey is to develop a data base upon which to determine prevailing wage rates ~~which are reasonably comparable to those~~ for those classes of labor expected to be used on contemplated state projects based upon wage rates paid to the same classes of labor on similar projects in the area. In establishing the data, the ~~following~~ procedural steps in B.-H. shall be taken ~~in each wage survey:~~.

~~1. For each survey,~~ B. Wage reports. The department shall ~~identify contractors who performed projects during the previous calendar year~~ regularly request from contractors, contractor organizations, labor organizations, and any other interested persons, on forms available from or approved by the department, reports of construction wage rates paid by contractors on various types of projects. The reports must be kept on file by the department according to the county in which the project for which the report is received was performed. The reports must list the name and address of the contractor, the name of the project, the location of the project, a description of the project, a description of the work performed on the project, the dollar cost of the project, the names of employees who worked on the project, together with the class of labor for each employee, the wage rate paid each employee on the project, and the hourly cost of fringe benefits for health and welfare, pension, vacation,

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and apprenticeship or training for each employee. The forms shall be signed and dated by the organization or individual providing the information attesting that the information provided is true and correct.

~~2. For the purpose of identifying contractors who performed work on projects in each county,~~ C. Union wage reports. The department shall also keep ~~and maintain a mailing list of governmental officials, district, county and city engineers, city clerks, administrators and zoning officials and those contractor associations and labor organizations who have requested to be on the mailing list~~ local union wage and employment reports, on forms provided or approved by the department. The reports must set forth the classes of labor, trade, or occupation covered, the effective date of the contract, wage and fringe benefits paid under the contract, the duration of the contract, the dates of all adjustments to wages and fringe benefits together with the amount of the adjustments on each date, the geographic area where the contract is effective, the number of members employed within the geographic area covered by the contract, the type of projects covered by the contract, and a list of all contractors or employer associations signatory to the contract. The local union wage reports are to be signed and dated by a representative from the local union attesting that the information provided is true and correct.

~~3.~~ D. Mailing lists. The department shall also keep and maintain ~~lists of contractors for each county which lists shall be kept updated through applicable telephone directories, trade publications and through previous wage survey contacts. Any contractor may request that its name be added to any county list~~ a mailing list of governmental officials, district, county, and city engineers, city clerks, administrators, and zoning officials for each county. The department shall also keep and maintain a mailing list of contractors, contractor associations, labor organizations, and other individuals who have requested to be on a mailing list to be notified when any county survey is about to be taken.

~~4.~~ E. Notification of survey. Upon initiation of a wage survey, the department ~~will issue a form request for project identification to those entities referred to in paragraph 2, above. The request shall indicate the nature of the projects and the time period for which information is requested, and shall request the government official to identify contractors and their addresses who performed work during the survey time period. Such forms shall be completed and returned to the department within 33 days~~ must notify the county engineer and all city engineers, city clerks, administrators, and zoning officials in the county to be surveyed, and all contractor associations, labor organizations, and other individuals who have requested to be notified when a survey for any county is about to be taken. The notice will request that interested individuals submit reports on forms available from or approved by the department concerning construction performed in the county during the preceding 12 months. The notice shall state that all reports of construction in the county must be returned to the department no later than 33 days following the date upon which the notice of the survey is mailed by the department. Information not timely received by the department shall not be used in establishing the prevailing wage rate for any class of labor. All reports of construction in a county which do not report the names of workers, classes of labor, wage rates and fringe benefits paid, description of the project, type of construction and location of the project must not be used in making wage determinations. Any unsigned or incomplete forms received prior to the final date for receipt of the forms shall be returned to the individual, contractor, or labor organization, to the extent the individual, contractor, or labor organization can be identified, with a request that the form be properly completed. If that form is not received by the department within 15 days from the date it is returned by mail to the individual, contractor, or labor organization, it shall be excluded from the survey. In no event shall information on unsigned reports of construction in the county be utilized in making wage determinations. All reports must be signed and dated by the organization or individual making the report attesting that the information provided is true and correct.

~~5. The department shall send to all those contractors identified as having performed work in the county through the forms returned from those entities referred to in paragraph 2, above, and to all those contractors whose names appear on the applicable county lists compiled under paragraph 3, above, a request for project information and a request for the identification of sub-contractors who worked on those projects. Enclosed with the request shall be copies of the department's Contractor Reporting Form.~~

~~a. For each project upon which the contractor performed work within the county during the time period of the survey, the contractor shall complete a separate Contractor Reporting Form and provide the following information:~~

~~(1) description of project;~~

~~(2) dollar cost of the project;~~

~~(3) list of the employees who worked on the project;~~

~~(4) class of labor for each employee;~~

~~(5) wage rate paid each employee on the project and the hourly cost of fringe benefit for H & W, Pension, Vacation, Training for each employee.~~

~~b. All Contractor Reporting Forms and forms identifying sub-contractors who worked on the projects shall be~~

~~signed and dated by the contractor or its representative attesting that the information provided is a true and correct summary of the information contained in the contractor's payroll and business records.~~

~~c. The Contractor Reporting Forms and forms identifying sub-contractors shall be returned to the department within 30 days following the receipt of the request for information.~~

~~d. Information which is not received by the department within 33 days following the date upon which the request was mailed by the department shall not be used in making determinations.~~

~~e. Contractor Reporting Forms which do not report the names or workers, classes of labor, wage rates paid, description of project, type of construction and location of project will not be utilized in making wage determinations. Any unsigned or incomplete forms which are received within the 33 day time period shall be returned to the contractor with a request that the form be properly completed. If that form is not returned to the department within 15 days from the date of mailing, it shall be excluded from the survey. In no event shall information on unsigned Contractor Reporting Forms be utilized in making determinations.~~

~~6. Upon learning the identification of sub-contractors who performed work on projects within the county, the department shall proceed with the procedures provided in paragraph 5, above, and the sub-constractors so contacted shall be subject to the same requirements provided under paragraph 5.~~

~~7. In addition to the mail procedures described in paragraph 5, above, the department shall make on-site visits to the offices of contractors or governmental representatives for the purposes of collecting project data and for auditing payrolls when necessary for the determination of prevailing wage rates.~~

~~a. Information so collected, either through a review of the contractor's payrolls or copies of payrolls provided by contractors to government offices, will be utilized in making determinations provided that such information is compiled on an Investigator's Project Worksheet and is signed by the investigator who compiled the information.~~

F. Reports, attestations. Reports of construction wage rates and local union wage and employment reports shall specify that the individual signing the report attests that the information on the report is true and correct. The form shall specify that willful falsification of any information on the report may result in civil or criminal prosecution.

G. On-site visits. In addition to receiving and compiling the information described in B.-F., the department shall make on-site visits to the offices of contractors or governmental representatives for the purposes of collecting project data and for auditing payrolls when necessary for the determination of prevailing wage rates.

~~8.~~ H. County abstract. The number of workers in each class of labor and their respective wage rates shall be determined and reflected on a ~~"~~county abstract~~"~~.

8 MCAR § 1.8007 Determining the largest number of workers and prevailing wage rate.

A. Policy. Each wage rate determination shall be based upon the actual wage rates paid to the largest number of workers within each labor classification reported in the survey.

B. Procedure. For purposes of determining the largest number of workers, each worker within a class of labor and his total hourly rate paid shall be tabulated.

1. Total hourly rate includes the hourly rate plus the hourly contribution for all wage and fringe benefits.

2. The largest number of workers with identical rates of pay within each classification shall determine the specific prevailing wage rate.

3. When determining the prevailing wage rate and there is an equal number of workers (which represent the greatest number of workers) with differing hourly wage rates, the prevailing wage rate shall be the highest wage rate paid to those workers.

Example:

~~4~~ four workers @ at ~~$7.00~~ $7 per hour

~~4~~ four workers @ at ~~$8.00~~ $8 per hour

~~2~~ two workers @ at $8.50 per hour

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The prevailing wage rate will be determined as ~~$8.00~~ $8 per hour.

4. Where a worker performs work on more than one project within the county, he shall be counted only once in the class of labor and at the wage rate paid on the most recent project within the time period of the survey.

C. Collectively bargained rate. If the prevailing wage rate determined for any given class of labor represents a collectively bargained rate, then the comparable current collectively bargained rate for the class of labor in the county where the project covered by the prevailing wage determination is located shall be the prevailing wage rate.

D. Noncollectively bargained rate. If the prevailing wage rate determined represents a rate other than a collectively bargained rate for any given class of labor, the rate so determined shall be the prevailing wage rate.

E. Change in rate due to contractual changes. If the prevailing wage rate for any given class of labor represents a collectively bargained rate, and the collectively bargained rate for that class of labor will change during the 12 months immediately following the date upon which the wage rate is determined according to the terms of the collective bargaining contract by which the rate is established, the department shall certify that the rate for that class of labor shall also change accordingly on the effective date of the change pursuant to the collective bargaining contract.

Department of Public Safety
Liquor Control Division

Proposed Rules Governing Liquor Control, Delivery and Transportation, Vehicle Permits

Notice of Intent to Adopt Rules without a Public Hearing

Notice is hereby given that the State Department of Public Safety is proposing to adopt the above entitled rules without a public hearing. The Commissioner of Public Safety has determined that the proposed adoption of these rules will be noncontroversial in nature and has elected to follow procedures set forth in Minn. Stat. sections 14.21 through 14.28.

Persons interested in these rules shall have 30 days to submit comments on the proposed rules. The proposed rules may be modified prior to final adoption if modifications are supported by the data and views submitted to the Department of Public Safety and do not result in a substantial change in the proposed language.

Unless seven or more persons submit written requests for a public hearing on the proposed rules within the 30-day comment period, a public hearing will not be held. The written request must be specific on which rule(s) a hearing is desired. Identification of the particular objection, the suggested modifications, and the reasons or data relied upon to support the suggested modifications are desired. In the event a public hearing is required, the department will proceed according to the provisions of Minn. Stat. sections 14.13 through 14.20.

Persons who wish to submit comments or a written request for a public hearing, or persons who wish to receive a copy of this notice and/or a copy of the proposed rules, should address their correspondence to the address below and include the name of the rulemaking:

Diane Dybevik
Department of Public Safety
211 Transportation Building
St. Paul, MN 55155

The department's authority to adopt the proposed rules is contained in Minnesota Statutes section 299A.02 and chapter 340. A statement of need and reasonableness that describes the need for and reasonableness of each provision of the proposed rules and identifies the data and information relied upon to support the proposed rules has been prepared and is available from the Department of Public Safety upon request.

Upon adoption of the final rules without a public hearing, the proposed rules, this notice, the statement of need and reasonableness, all written comments received, and the final rules as adopted will be delivered to the Attorney General for review as to form and legality, including the issue of substantial change. Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the final rules as proposed for adoption, should submit a written request to the above address.

Please be advised that Minn. Stat. chapter 10A requires each lobbyist to register with the State Ethical Practices Board within five days after he or she commences lobbying. Minn. Stat. section 10A.01, subdivision 11 defines a lobbyist as any individual:

(a) engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or (b) who spends more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials. The statute provides certain exceptions. Questions should be directed to the Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone (612) 296-5615.

The department estimates that there will be no cost to local public bodies in the state to implement the rules for the two years immediately following their adoption, within the meaning of Minnesota Statutes section 14.11, subdivision 1.

A copy of the proposed rules is attached to this notice.

Paul J. Tschida
Commissioner of Public Safety

Rules as Proposed

11 MCAR § 1.8025 Regulatory permits and fees.

Any person engaged in the purchase, sale, or use for any purpose other than personal consumption of intoxicating alcoholic beverages or ethyl alcohol, ~~or any vehicle used to transport intoxicating alcoholic beverages or ethyl alcohol~~ shall obtain the appropriate regulatory permit and identification card from the commissioner as provided in this rule. The ~~regulatory~~ fee for each permit, other than one issued to a state or federal agency, is ~~$5.00~~ $12 and shall be submitted together with the appropriate application form provided by the commissioner. ~~All~~ Identification cards and permits shall ~~expire on December 31st of the year~~ be issued for a period coinciding with that of the appropriate state or municipal license and are not transferable. In instances where there is no annual license period, cards and permits shall expire one year after the date of issuance. The authority to engage in the purchase, sale, or use ~~or transport~~ granted by the card or permit ~~in this section~~ may be revoked by the commissioner upon evidence of a violation by the holder of such a card or permit of any of the provisions of Minnesota Statutes ~~ch.~~, chapter 340, or any rule of the commissioner made pursuant to law.

In order to coordinate the expiration date of permits and cards with that of the appropriate state or municipal license, permits and cards issued in January 1984 in conjunction with state or municipal licenses expiring prior to July 1, 1984, shall be issued for a term extending until the expiration date of the license in 1985. Permits and cards issued in January 1984 in conjunction with state or municipal licenses expiring after June 30, 1984, shall be issued for a term extending until the expiration date of the license in 1984. The fee for cards and permits issued during January 1984 for periods of more or less than one year shall be prorated at $1 per month. Subsequent renewals shall be for a 12-month period.

A.-C. [Unchanged.]

D. ~~Vehicle permit. All common carriers other than railroads, their motor affiliates, or public water transportation carriers, transporting into or within the state of Minnesota, distilled spirits, wine, or malt beverages containing more than 3.2 percent of alcohol by weight shall apply to the commissioner on Form No. 38 for vehicle permits for each vehicle used in the transportation thereof. Such permit shall be issued only to common carriers licensed by the Minnesota Department of Public Service and to Minnesota manufacturers, winers, brewers, wholesale distributors, retail "off-sale" dealers licensed to sell intoxicating liquor, and other qualified persons, PROVIDED that no permits are required for trailers. Intoxicating liquor transported in any manner other than specified herein shall be confiscated and surrendered to the commissioner for final disposition~~ State or federal agency permits. Permits for state or federal agencies shall be issued without charge.

E. [Unchanged.]

11 MCAR § 1.8058 Delivery.

Licensed or authorized "off-sale" retail liquor dealers and no other class of dealers may make deliveries of intoxicating liquor from their stores to the residence of a purchaser or other location, provided however, that such delivery shall be made only to a person ~~eighteen~~ 18 or more years of age; and provided further, that such delivery shall not be made to beer taverns or other public or private place in violation of law or ordinance.

A.-C. [Unchanged.]

D. ~~Delivery vehicle permits required. See 11 MCAR Section 1.8025 D.~~

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~~E.~~ Open stock deliveries prohibited. Only alcoholic beverages ordered and packed at the store for delivery shall be carried in the delivery vehicle.

11 MCAR § 1.8084 Transportation.

Only common carriers or duly licensed Minnesota manufacturers or wholesale distributors shall transport distilled spirits, wine, ethyl alcohol, or malt beverages into this state.

~~A. All common carriers except railroads, their motor affiliates and public water transportation carriers, shall obtain a permit as provided in 11 MCAR Section 1.8025 D., for each vehicle used to transport alcoholic beverages in Minnesota.~~

Minnesota Pollution Control Agency
Solid and Hazardous Waste Division

Proposed Amendment of Rules Governing Generators of, and the Identification, Transportation and Management of, Hazardous Waste (6 MCAR §§ 4.9001-4.9003, 4.9005, 4.9008-4.9010, Renumbered as 6 MCAR §§ 4.9100-4.9259 and 4.9559-4.9560)

Notice of Intent to Adopt Rules without a Public Hearing

Notice is hereby given that the Minnesota Pollution Control Agency (hereinafter "agency") proposes to adopt amendments to the rules governing generators of, and the identification, transportation and management of hazardous waste without a public hearing. The agency has determined that the proposed amendment of these rules will be noncontroversial in nature and has elected to follow the procedure set forth in Minn. Stat. §§ 14.21-14.28 (1982).

In addition to the amendments to the rules described herein, the agency is also proposing amendments to the rules governing hazardous waste treatment, storage, and disposal facilities. These proposed amendments appear elsewhere in the October 24, 1983 *State Register*.

Persons interested in these rules shall have until November 25, 1983, to submit comments on the proposed rules. The proposed rules may be modified if the modifications are supported by the data and views submitted to the agency and do not result in a substantial change in the proposed language.

Unless seven or more persons submit written requests for a public hearing on the proposed amendments by November 25, 1983, a public hearing will not be held. In the event a public hearing is required, the agency will proceed according to the provisions of Minn. Stat. §§ 14.13-14.20 (1982). The agency asks that requests for a public hearing identify the particular objection and suggest appropriate modifications to the proposed rules and the reasons or data relied on to support the suggested modifications.

Persons who wish to submit comments or a written request for a public hearing should submit such comments or request to:

Steven A. Reed
Division of Solid and Hazardous Waste
Minnesota Pollution Control Agency
1935 West County Road B-2
Roseville, Minnesota 55113
Telephone: (612) 296-7786

Authority for adoption of these rules is contained in Minn. Stat. § 116.07, subds. 4 and 4b. Additionally, a statement of need and reasonableness that describes the need for and reasonableness of each provision of the proposed amendments and that identifies the data and information relied upon to support the proposed amendments, has been prepared and is available upon request. It is also available for review in the Minnesota Pollution Control Agency Office in Roseville and in each of the Minnesota Pollution Control Agency Regional Offices:

Duluth Regional Office
Duluth Government Services Center
Room 704
320 West 2nd Street
Telephone: (218) 723-4660

Detroit Lakes Regional Office
116 East Front Street
Telephone: (218) 847-1519

Rochester Regional Office
1200 South Broadway, Suite 140
Telephone: (507) 285-7343

Marshall Regional Office
Box 286, 1104 East College Drive
Telephone: (507) 537-7146

Brainerd Regional Office
304 East River Road, Suite 3
Telephone: (218) 828-2492

Upon adoption of the final rules without a public hearing, the proposed rules, this notice, the statement of need and reasonableness, all written comments received and the final rules as adopted will be delivered to the Attorney General for review as to form and legality, including the issue of substantial change. Persons who wish to be advised of the submission of this material to the Attorney General or who wish to receive a copy of the final rules should submit a written statement of such request to Mr. Reed.

The amendments proposed for adoption relate to the management, identification, labeling, classification, and transportation of hazardous waste, and the operation of county hazardous waste programs. The revised rules have been divided into five chapters.

Rules 6 MCAR §§ 4.9100-4.9104, Chapter One, address the general provisions of the rules. These provisions include the definitions applicable to the hazardous waste rules, procedural matters relating to variances and to petitions to delist a waste or to utilize an alternative testing method, and methods of obtaining material referenced in the rules.

Chapter Two, 6 MCAR §§ 4.9128-4.9137, establishes the criteria for determining whether a waste is hazardous and identifies specific wastes and waste streams which are hazardous. The existing criteria for classifying wastes due to characteristics have been modified to include provisions from the U.S. Environmental Protection Agency's (EPA's) characteristics. The lists of hazardous waste in the existing hazardous waste rules have been replaced by the lists of hazardous waste found in the EPA regulations. These rules also set forth standards for the management of mixtures of hazardous and nonhazardous wastes, for the management of wastes which are to be beneficially used, reused, recycled or reclaimed and for the management of residues of hazardous waste in empty containers and liners.

The standards applicable to generators of hazardous waste are contained in Chapter Three, 6 MCAR §§ 4.9200-4.9222. Pursuant to these provisions a generator is required to evaluate his wastes to determine if they are hazardous, file a disclosure and management plan with the agency for each hazardous waste produced, and obtain an identification number. These rules also provide the requirements applicable to generators with regard to the use of manifests, accumulation of hazardous waste and record keeping. The special requirements applicable to small quantity generators are also set forth in this chapter.

Rules 6 MCAR §§ 4.9250-4.9259, Chapter Four, set forth the standards applicable to transporters of hazardous waste. The provisions of this chapter are substantially the same as the transporter provisions of the existing hazardous waste rules.

Chapter Eight, 6 MCAR §§ 4.9559-4.9560, establishes procedures for the agency's overview of county hazardous waste programs.

You are hereby advised, pursuant to Minn. Laws 1983, ch. 188, Small Business Considerations in Rulemaking, that the proposed rule amendments may have an impact on some small businesses which generate hazardous wastes. The nature of any impact on a small business is dependent upon the amount of hazardous waste the business generates. The changes being proposed in the amendments to the rule which may affect small businesses include the following:

1. An exemption from manifest requirements if certain waste generation limits are not exceeded. Small quantity generators are in some instances small businesses and will be relieved of some paperwork requirements.

2. The reuse, recycling, or reclamation of certain types of hazardous wastes are not required to comply with all facility standards, thus reducing the financial impact on small businesses which reuse, recycle, or reclaim hazardous wastes.

3. Less burdensome testing and evaluation requirements for a generator's hazardous wastes thus, the financial impact on small businesses will be lessened.

4. Facility standards are more stringent which may increase the cost of waste storage and disposal and may therefore have a greater financial impact on small businesses.

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More detailed information concerning the nature of the impact of these changes upon small businesses is set forth in the agency's statement of need and reasonableness.

Copies of the notice and the proposed rules are available for review in the Minnesota Pollution Control Agency Office in Roseville and each of the Minnesota Pollution Control Agency Regional Offices and may be obtained by contacting Mr. Reed.

Sandra S. Gardebring
Executive Director

Rules as Proposed

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

6 MCAR § 4.9100 Definitions.
6 MCAR § 4.9101 Variances.
6 MCAR § 4.9102 Availability of references.
6 MCAR § 4.9103 Other standards.
6 MCAR § 4.9104 Petitions.

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

~~6 MCAR § 4.9001 General applicability, definitions, abbreviations, incorporations, severability, and variances.~~

~~A. General applicability. The provisions of these rules govern the identification, classification, storage, labeling, transportation, treatment, processing and disposal of hazardous waste by any person and the issuance of permits for the construction, operation and closure of a hazardous waste facility for the protection of the environment.~~

~~B.~~ 6 MCAR § 4.9100 Definitions.

As used in ~~these hazardous waste rules~~ 6 MCAR §§ 4.9100-4.9560 the following words shall have the meanings ~~defined herein:~~ 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 §§ 4.9100-4.9560.

~~1.~~ 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.

~~2.~~ G. Chemical composition. "Chemical composition~~:~~" means any of the following:

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

~~b.~~ 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

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

~~3. Components of the waste: chemical elements, chemical compounds and ions that constitute the waste and those that may form during the management of the waste from chemical reactions among the components or as biological products of microbial action.~~

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.

~~4.~~ J. Container. "Container~~:~~" means any ~~packaging or containment unit, excluding portable tanks and storage tanks~~ portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

~~5. Corrosive material: a material that has any one of the following properties:~~

~~a. a pH that is greater than 12 or less than 3 for an aqueous material;~~

~~b. the ability to cause a visible destruction or irreversible alteration of skin tissues at the site of contact following an exposure period of four hours or less when tested by the technique described in 16 C.F.R. § 1500.41 (1977);~~

~~c. a corrosion rate of 0.250 inch per year or more on Society of Automotive Engineers' 1020 Steel when tested in accordance with the minimum requirements described in the National Association of Corrosive Engineers' Standard TM 01-69, at a test temperature of 130 degrees F (54.4 degrees C).~~

K. Contingency plan. "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.

~~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 § 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.

~~7.~~ 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 § 4.9132 D., or are listed in 6 MCAR § 4.9134 only for this reason; and

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

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

~~8. Explosive material: a material that has the property either to evolve large volumes of gas that are dissipated in a shock wave or to heat the surrounding air so as to cause a high pressure gas that is dissipated in a shock wave. Explosive materials include, but are not limited to, explosives as defined in 49 C.F.R. § 173.50 (1976) and compressed gases as defined in 49 C.F.R § 173.300 (1976).~~

~~9. Facility operator: any person who owns, leases, operates, controls, supervises, closes, or abandons a hazardous waste facility.~~

~~10. Flammable material: any material that:~~

~~a. has a flash point below 200 degrees F (93.3 degrees C), except the following:~~

~~(1) a material comprised of miscible components having one or more components with a flash point of 200 degrees F (93.3 degrees C), or higher, that make up at least 99% of the total volume of the mixture;~~

~~(2) a material that has a flash point greater than 100 degrees F (37.8 degrees C) and that when heated to 200 degrees F (93.3 degrees C) will not support combustion beyond the flash;~~

~~(3) an explosive material; or~~

~~b. may ignite without application of a flame or spark including, but not limited to, nitro cellulose, certain metal hydrides, alkali metals, some oily fabrics, some processed metals and acidic anhydrides.~~

~~c. is capable of spontaneously producing temperatures in excess of 200 degrees F (93.3 degrees C).~~

~~11.~~ X. Flash point. "Flash point~~:~~" means the minimum temperature at which a material gives off vapor ~~within a test vessel~~ in sufficient concentration to form an ignitable mixture with air near the surface of the material when in contact with a spark or flame.

~~12. Floodplain: as defined in Minn. Stat. § 104.02 subd. 3.~~

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.

~~13.~~ CC. Garbage. "Garbage~~:~~" means discarded material resulting from the handling, processing, storage, preparation, serving, and consumption of food.

~~14.~~ DD. Generator. "Generator~~:~~ ~~a~~" means any person ~~who~~, by site, whose act or process produces a hazardous waste ~~within the State of Minnesota or a person who produces a hazardous waste outside the State of Minnesota that is transported to a hazardous waste facility within the State of Minnesota~~ identified or listed in 6 MCAR §§ 4.9128-4.9137, or whose act first causes a hazardous waste to become subject to regulation.

~~15.~~ EE. Ground water or underground water. "Ground water~~:~~ ~~the water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined or perched conditions, in near surface unconsolidated sediment or regolith, or in rock formations deeper underground. The term groundwater shall be synonymous with underground water~~" or "underground water" has the meaning given in 6 MCAR § 4.8022.

~~16. Hazardous property: any property of a waste that requires the waste to be classified as a hazardous waste.~~

~~17.~~ FF. Hazardous waste. "Hazardous waste~~: as defined~~" has the meaning given in Minneuota Statutes, section 116.06, subdivision 13.

~~18. Hazardous waste facility: real or personal property that is used or is constructed to be used for the management of hazardous waste including, but not limited to the following:~~

~~a. Hazardous waste containerized storage facility: a hazardous waste facility that is designed or operated for the on-site storage of hazardous waste that is in containers, portable tanks or storage tanks.~~

~~b. Hazardous waste noncontainerized storage facility: a hazardous waste facility that is designed or operated for the storage of hazardous waste in lagoons, basins, ponds, vaults or similar bulk storage other than containers or tanks.~~

~~c. Hazardous waste transfer station: a hazardous waste facility that receives wastes from one or more generators and is designed or operated for the purpose of intermediate storage of wastes prior to transportation of the waste to another hazardous waste facility.~~

~~d. Hazardous waste processing facility: a hazardous waste facility that is designed and operated to modify the chemical composition or chemical, physical, or biological properties of a hazardous waste by means such as incineration, reclamation, distillation, precipitation or other similar processes.~~

~~e. Hazardous waste land disposal facility: a hazardous waste facility that is designed or operated for the purpose of disposing of, or storing for a period greater than one year, hazardous waste in the subsurface of the land.~~

~~f. Hazardous waste land treatment facility: a hazardous waste facility that is designed or operated for the purpose of utilizing the surface of the land as the medium by which biological, physical or chemical processes can provide treatment of hazardous waste.~~

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

~~19.~~ 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 ~~ultimate~~ processing ~~or~~, treatment, recovery, and disposal of the waste by approved methods in accordance with ~~these regulations~~ 6 MCAR §§ 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 § 4.9134 and to each characteristic identified in 6 MCAR § 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 §§ 4.9100-4.9560.

~~20.~~ NN. Incompatible wastes. "Incompatible wastes~~: wastes that when in contact with each other pose a threat to human health and safety that does not exist when they are separate, including, but not limited to, wastes that pursuant to 49 C.F.R. § 177.848 (1976) cannot be stored or transported together.~~" 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.

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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 § 4.9381.

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

~~21. Irritative material: a noncorrosive material which has the property to cause a local reversible injury to a biological membrane at the site of contact as determined by either of the following:~~

~~a. Practical experience with the waste where short term exposures have caused first-degree burns and where long term exposure may cause second-degree burns;~~

~~b. Skin irritation of an empirical score of five or more as determined pursuant to 16 C.F.R § 1500.41 (1977).~~

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.

~~22.~~ XX. Leachate. "Leachate~~: a~~" means any liquid ~~that is released from. or~~ including any suspended components in the liquid, that has percolated through~~, a waste as a result of conditions that arise during storage, land disposal, or land treatment~~ 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.

~~23.~~ ZZ. Manifest. "Manifest~~:~~" means the shipping ~~papers used in transporting hazardous waste~~ document originated and signed by the generator which contains the information required by 6 MCAR § 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.

~~24.~~ CCC. Median lethal concentration. "Median lethal concentration ~~(LC 50):~~" means the calculated concentration at which a material kills 50~~%~~ percent of a group of test animals within a specified time.

~~a. Aquatic LC 50: the LC 50 determined by a test in which the specified time is 96 hours, the test animals are at least 10 fathead minnows, and the route of administration follows accepted static or flow through bioassay techniques.~~

~~b. Inhalation LC 50: the LC 50 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.~~

~~25.~~ DDD. Median lethal dose. "Median lethal dose ~~(LD 50):~~" means the calculated dose at which a material kills 50~~%~~ percent of a group of test animals within a specified time.

~~a. Oral LD 50: the LD 50 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 LD 50: the LD 50 determined by a test in which the specified time is 14 days, 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.~~

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.

~~26. On-site management: the handling of a hazardous waste after generation without transporting such hazardous waste by public thoroughfare.~~

~~27.~~ HHH. Open burning. "Open burning~~:~~" means the ~~burning of any matter whereby the resultant combustion products are emitted directly to the atmosphere without passing through an adequate stack, duct or chimney.~~ 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.

~~28. Oxidative material: any material with the property to readily supply 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.~~

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 §§ 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.

~~29.~~ MMM. Person. "Person~~:~~ ~~as defined~~" has the meaning given in Minnesota Statutes, section 116.06, subdivision 8.

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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 §§ 4.9100-4.9560.

~~30.~~ 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.

~~31. Petroleum waste: an oily waste generated by petroleum storage, petroleum refining and petroleum refinery products storage.~~

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

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

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.

~~32.~~ VVV. Resource recovery. "Resource recovery~~: as defined~~ " has the meaning given in Minnesota Statutes, section ~~473.121 subd. 31c~~ 115A.03, subdivision 27.

~~33. Routine waste management: the total system for the handling of a waste by one of the following methods:~~

~~a. storage, collection, and removal of waste from public or private property, its transportation to intermediate or final disposal facilities, and its ultimate disposal at a sanitary landfill permitted by the agency.~~

~~b. Discharge into a sewer system and subsequent treatment at a wastewater treatment works operated pursuant to a National Pollutant Discharge Elimination System Permit or State Disposal Permit.~~

~~c. discharge into the atmosphere as an air contaminant or emission emitted pursuant to an emission facility operating permit.~~

~~d. a wastewater discharge pursuant to a national pollutant discharge elimination system permit or a state disposal system permit.~~

~~34.~~ WWW. Rubbish. "Rubbish~~:~~" means discarded paper, cardboard, ~~scrap metal,~~ 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.

~~35. Sanitary landfill: a land disposal site employing an engineered method of disposing of solid waste on land in a manner that minimizes environmental hazards by spreading the solid waste in thin layers, compacting the solid waste to the smallest practical volume, and applying cover material at the end of each operating day, or at intervals as may be required by the agency.~~

~~36.~~ ZZZ. Saturated zone or zone of saturation. "Saturated zone~~:~~" or "zone of saturation" means that part of the earth's crust in which all ~~the~~ voids~~,~~ ~~large and small,~~ are ~~ideally~~ filled with water ~~under pressure greater than atmospheric~~.

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

~~37.~~ BBBB. Sewage. "Sewage~~: as defined~~" has the meaning given in Minnesota Statutes, section 115.01, subdivision 2.

~~38.~~ CCCC. Sewer system. "Sewer system~~: as defined~~" has the meaning given in Minnesota Statutes, section 115.01, subdivision 6.

~~39.~~ DDDD. Shoreland. "Shoreland~~: as defined~~" 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 of hazardous wastes or materials which, when spilled, become hazardous wastes into or on any land or water.

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. 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.

~~40.~~ KKKK. Tank. "Tank~~: any packaging or containment unit having a capacity of 100 gallons or greater that is used to confine and hold a material. Tanks that are anchored, fixed or attached to one location are storage tanks, and those that are not are portable tanks~~" 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.

~~41. Toxic material: a material with any one of the following properties:~~

~~a. An oral LD 50 less than 500 milligrams of material per kilogram of body weight of test animal.~~

~~b. A dermal LD 50 less than 1000 milligrams of mateial per kilogram of body weight of test animal.~~

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~~c. An inhalation LC 50 (when the material or a component is in a form that may be inhaled) less than:~~

~~(1) 2000 milligrams of material as dust or mist per cubic meter of air, or~~

~~(2) 100 parts per million of material as gas or vapor.~~

~~d. An aquatic LC 50 less than 100 milligrams of material per liter of water.~~

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 transporation 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.

~~42.~~ WWWW. Waste. "Waste~~:~~" means any discarded material including, but not limited to, solids, semisolids, sludges, liquids, gases, and their vapors, mists, or dusts.

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

~~43.~~ ZZZZ. Waters of the state. "Waters of the state~~:~~ ~~as defined~~" has the meaning given in Minnesota Statutes, section 115.01, subdivision 9.

~~44.~~ 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.

~~45.~~ CCCCC. Wetland. "Wetland~~:~~ ~~a natural marsh where water stands near, at or above the soil surface during a significant portion of most years, and which is eligible for classification as an inland fresh water wetland type 3, 4 or 5 under~~

~~U.S. Department of Interior classifications~~" has the meaning given to "wetlands" in Minnesota Statutes, section 105.37, subdivision 15.

~~C. Abbreviations. The abbreviations used in these hazardous waste regulations have the following meanings:~~

~~1. A.S.T.M.: American Society for Testing and Materials.~~

~~2. C.F.R.: Code of Federal Regulations.~~

~~3. EPA: U.S. Environmental Protection Agency.~~

~~4. LC 50: median lethal concentration.~~

~~5. LD 50: median lethal dose.~~

~~6. NPDES: National Pollutant Discharge Elimination System.~~

~~D. Incorporations. The following are contained in the indicated appendices at the end of this rule and are hereby incorporated and made a part of these rules and shall apply as indicated within these rules:~~

~~1. ASTM D3243-76 (Appendix A).~~

~~2. ASTM D56-70 (Appendix B).~~

~~3. ASTM D3278-73 (Appendix C).~~

~~4. ASTM D93-73 (Appendix D).~~

~~5. ASTM D2487-69 (Appendix E).~~

~~6. ASTM D2488-69 (Appendix F).~~

~~7. National Association of Corrision Engineers' Standard TM-01-69 (Appendix G).~~

~~8. 10 C.F.R. § 20.301 (1977) (Appendix H).~~

~~9. 16 C.F.R. § 1500.41 (1977) (Appendix I).~~

~~10. 49 C.F.R. § 173.50, 173.300, 177.824 and 177.848 (1976) (Appendix J).~~

~~11. United States Department of Interior inland fresh water wetland types 3, 4, and 5 (Appendix K).~~

~~12. EP Toxicity Text (Appendix L).~~

~~13. 49 C.F.R. §§ 172.202 and 172.203 (1979) (Appendix M).~~

~~E. Severability. If any provision of these rules or the application thereof to any person or circumstance is held to be invalid, such invalidity shall not affect other provisions of these rules that can be given effect without the invalid provision or application. To this end, the provision of all rules and the various applications thereof are declared to be severable.~~

~~F.~~ 6 MCAR § 4.9101 Variances. Any person ~~may apply~~ who applies for a variance from any requirement of ~~these hazardous waste rules~~ 6 MCAR §§ 4.9100 to 4.9560 shall comply with 6 MCAR § 4.3007. ~~Such variance shall be applied for and~~ An application for a variance must be acted upon by the agency ~~in accordance with Minn. Stat. §~~ according to Minnesota Statutes, section 116.07 ~~subd.~~, subdivision 5 and ~~other applicable statutes and rules~~ 6 MCAR § 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 § 4.9102 Availability of references.

The documents referred to in 6 MCAR §§ 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;

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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 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;

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 Solid Waste, Physical/Chemical Methods, publication number SW 846, 1980, 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

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.

~~C.~~ 6 MCAR § 4.9103 Other standards

Nothing in ~~these hazardous waste rules~~ 6 MCAR §§ 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 ~~these hazardous waste rules~~ 6 MCAR §§ 4.9100-4.9560 conflict with any such laws, statutes, rules, standards, or ordinances, the more stringent shall apply. Nothing in ~~these rules~~ 6 MCAR §§ 4.9100-4.9560 shall be construed to require any person to comply with any portion of ~~these rules~~ 6 MCAR §§ 4.9100-4.9560 if that portion should at any time be preempted by federal law.

6 MCAR § 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 §§ 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 §§ 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 §§ 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 §§ 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 listed under 6 MCAR § 4.9131 A.2., that it also does not meet the criterion of 6 MCAR § 4.9131 A.3. A waste which is so excluded may still, however, be a hazardous waste by operation of 6 MCAR § 4.9132.

2. These procedures may also be used to petition the agency to exclude from 6 MCAR § 4.9205 B.1. or C. a waste which is described in those rules and is either a waste listed in 6 MCAR § 4.9134, contains a waste listed in 6 MCAR § 4.9134, or is derived from a waste listed in 6 MCAR § 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 § 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 § 4.9134, the petitioner must show that demonstration samples of the waste do not exhibit a relevant characteristic defined in 6 MCAR § 4.9132 using any applicable test methods prescribed in 6 MCAR § 4.9132.

5. If the waste is listed with code "T" in 6 MCAR § 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 § 4.9131 A.3. when considering the factors in 6 MCAR § 4.9131 A.3.a.-k.

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

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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.

Rules as Proposed

Chapter Two: Identification and Listing of Hazardous Waste

6 MCAR § 4.9128 Classification of certain wastes.
6 MCAR § 4.9129 Management of waste by use, reuse, recycling, and reclamation.
6 MCAR § 4.9130 Residues of hazardous waste in empty containers and empty liners.
6 MCAR § 4.9131 Criteria for listing hazardous waste.
6 MCAR § 4.9132 Characteristics of hazardous waste.
6 MCAR § 4.9133 Exemption from classification as hazardous due to toxicity.
6 MCAR § 4.9134 Lists of hazardous wastes.
6 MCAR § 4.9135 Small amounts of unrelated chemicals.
6 MCAR § 4.9136 Basis for listing hazardous waste.
6 MCAR § 4.9137 Hazardous constituents.

Chapter Two: Identification and Listing of Hazardous Waste

~~6 MCAR § 4.9002~~ 6 MCAR § 4.9128 Classification~~, evaluation and certification~~ of ~~waste~~ certain wastes.

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

B. ~~Hazardous wastes~~ Mixtures of hazardous and nonhazardous wastes. ~~The following wastes are hazardous wastes:~~

~~1. A waste that contains a component specified in List 1 is a hazardous waste if the concentration of that component in the waste exceeds the concentration listed.~~

~~List 1~~

~~Component~~	~~Concentration (ppm)~~
~~2 Acetylaminofluorene (2 AAF)~~	~~1000~~
~~4 Aminodiphenyl (4 ADP)~~	~~100~~
~~Arsenic and its Compounds~~	~~500~~
~~Benzene~~	~~100~~
~~Benzidine~~	~~100~~
~~Beryllium and its Compounds~~	~~20~~
~~Cadmium and its Compounds~~	~~500~~
~~Carbon Tetrachloride~~	~~100~~
~~Chloroform~~	~~100~~
~~bis (Chloromethyl) ether (BCME)~~	~~100~~
~~Chloromethyl methyl ether (CMME~~	~~100~~
~~Chromium and its Compounds (VI)~~	~~1000~~
~~3,3 Dichlorobenzidine (DCB)~~	~~1000~~
~~4 Dimethylaminoazobenzene (DAB)~~	~~1000~~
~~Ethyleneimine (EI)~~	~~1000~~
~~Lead and its Compounds~~	~~600~~
~~4,4 Methylene bis 2 Chloroaniline (MOCA)~~	~~100~~

a Naphthylamine (1 NA)	1000
b Naphthylamine (2 NA)	100
Nickel and its Compounds	10,000
4 Nitrobiphenyl (4 NBP)	100
n Nitrosodimethylamine (DMN)	1000
Polychlorinated biphenyl (PCB)	500
b Propiolactone (BPL)	1000
Vinyl Chloride (VCM)	100

2. A waste which contains a component specified in List 2 is a hazardous waste unless leachate from that waste does not contain that component at a concentration in excess of that specified in List 2.

List 2

Component	Concentration (ppm)
Aldrin	0.03
Arsenic and its Compounds	5.0
Cadmium and its Compounds	1.0
Chlordane	0.1
Chromium and its Compounds	5.0
DDT	0.01
Endrin	0.02
Heptachlor	0.01
Lead and its Compounds	3.0
Mercury and its Compounds	0.2
Methoxychlor	0.3
Mirex	0.01
Polychlorinated biphenyl (PCB)	0.01
Toxaphene	0.05

3. Any of the following wastes:

a. An explosive material.

b. A flammable material.

c. An irritative material.

d. A corrosive material.

e. An oxidative material.

f. A toxic material.

g. Used crankcase oil.

h. Petroleum waste.

4. A waste that is a mixture of small amounts of unrelated chemicals such that the description of any sample or set of samples is not representative of the total waste. Examples are discarded chemicals from a chemistry laboratory, wastes from pilot plant chemical reactions and discarded prescription drugs.

5. Any other waste that is not a hazardous waste under any provision in 6 MCAR § 4.9002 B.1.-4., but that the agency determines pursuant to 6 MCAR § 4.9002 H.2. cannot be handled by routine waste management techniques because it poses a substantial present or potential hazard to human health or other living organisms.

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 § 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 § 4.9132.

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2. A mixture is a hazardous waste if it is a mixture of nonhazardous waste and any waste listed in 6 MCAR § 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 § 4.9132, or has been excluded from regulation pursuant to 6 MCAR § 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 § 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 § 4.9132 unless the resulting mixture has been excluded from regulation pursuant to 6 MCAR § 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 § 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 § 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 § 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 § 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 § 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 § 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 § 4.9134: methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichloro-benzene, 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 § 4.9136;

d. a discarded commercial chemical product, or chemical intermediate listed in 6 MCAR § 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 § 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 treatment facility is a publicly owned wastewater treatment facility.

C. Exempt wastes. The following wastes may be stored, labeled, transported, treated, processed, and disposed of without complying with the requirements of ~~these rules~~ 6 MCAR §§ 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. ~~asbestos in taconite wastes.~~

~~5. Septic tank sludge from households.~~ mining overburden returned to the mine site;

~~6.~~ 5. an air contaminant or emission emitted pursuant to an emission facility operating permit~~.~~;

~~7. Any composite wastewater that is formed in a sewer system by the combination of two or more individual wastes that have been discharged into the sewer system. This exemption does not include any of the individual wastes which form the composite wastewater.~~

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;

~~8.~~ 7. wastes discharged pursuant to ~~an NPDES~~ a national pollutant discharge elimination system permit ~~or a State Disposal System Permit.~~;

~~9. Municipal sewage sludge.~~

~~10. Radioactive waste that is produced pursuant to a permit issued under 10 C.F.R. Parts 30, 40 and 70 (1976) and that is disposed of in compliance with 10 C.F.R. Section 20.301 (1976).~~

~~11. A waste pesticide that is not in List 1 or List 2 or an unrinsed pesticide container that contained a pesticide that is not in List 1 or List 2.~~

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

9. solid 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;

~~12. The director shall exempt.~~ 10. wastes resulting from spills ~~from all or any provision of these rules~~ 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 § 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

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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 § 4.9134 and are to 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.

6 MCAR § 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 §§ 4.9200-4.9560, and the agency's permitting requirements, except as specified in 1.-5.

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

a. 6 MCAR §§ 4.9205-4.9208;

b. 6 MCAR § 4.9211;

c. 6 MCAR § 4.9215;

d. 6 MCAR § 4.9216 A.5.-7.;

e. 6 MCAR § 4.9218;

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

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

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

i. A hazardous waste that is EP toxic according to 6 MCAR § 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 §§ 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 §§ 4.9205-4.9208; 4.9211; 4.9215; 4.9216 A.5.-6.; and 4.9218.

3. A hazardous waste that is a sludge, or is or contains a waste listed in 6 MCAR § 4.9134, or is or contains a waste that is toxic under 6 MCAR § 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 §§ 4.9200-4.9318;

b. 6 MCAR §§ 4.9380-4.9417; and

c. 6 MCAR §§ 4.9559-4.9560.

4. A hazardous waste listed in 6 MCAR § 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 §§ 4.9200-4.9318;

b. 6 MCAR §§ 4.9380-4.9417; and

c. 6 MCAR §§ 4.9559-4.9560.

5. A hazardous waste that is a sludge, or is or contains a waste listed in 6 MCAR § 4.9134 for reasons other than ignitability, or is or contains a waste that is toxic under 6 MCAR § 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 §§ 4.9200-4.9318;

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

c. 6 MCAR §§ 4.9380-4.9417;

d. 6 MCAR § 4.9421;

e. 6 MCAR §§ 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 §§ 4.9211 and 4.9218.

6 MCAR § 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 §§ 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 §§ 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 § 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

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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 § 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. Emply 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.

~~D. Evaluation of wastes.~~

~~1. Any person who produces any 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, and which waste is not an exempt waste under subsection C, shall evaluate the waste to determine if it is hazardous. The person evaluating the waste shall compare the properties of the waste with the criteria for a hazardous waste in subsection B and determine whether the waste is hazardous, in accordance with the procedures set forth in this rule.~~

~~2. The person shall 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.~~

~~3. This evaluation shall 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 shall also evaluate the waste resulting from the mingling or combining.~~

~~4. A person who produces two or more wastes that are similar or are from similar processes such that one waste is representative of the other wastes may use one evaluation for all such wastes.~~

~~E. Comparison of properties.~~

~~1. General. Any person evaluating a waste shall obtain such data as are necessary to determine whether the waste has any hazardous properties at any time during its management. The data may be obtained from the literature, from experience with the waste or from other sources, but if data are not available, then actual tests of a sample of the waste shall be conducted.~~

~~2. List 1 and List 2 components. Whenever the person evaluating a waste knows or suspects that any of the components in List 1 or List 2 is in the waste, the person shall conduct a quantitative analysis to determine the concentration of each component in List 1 that is known or suspected to be in the waste and the EP Toxicity Test for each component in List 2 that is known or suspected to be in the waste with the following exceptions:~~

~~a. A waste known to contain a component of List 1 in excess of the concentration listed in List 1 need not be analyzed for that component.~~

~~b. A waste which is a hazardous waste because it contains a component of List 1 in excess of the concentration listed in List 1 need not be tested for that component in a List 2 test.~~

~~3. Other hazardous properties.~~

~~a. A person evaluating a waste shall determine whether the waste has any of the properties of an explosive material, a flammable material, an irritative material, a corrosive material, an oxidative material, and a toxic material. However, once the person determines that a waste has one of the properties of one of the classes of hazardous wastes described above, the person need not determine whether it has any of the other properties of the same class. For example, if a waste is a hazardous waste because of its oral LD50, the dermal LD50 need not be determined, but the waste must be evaluated to determine whether it is also explosive, flammable, irritative, corrosive or oxidative.~~

~~b. Generators of wastes comprised of small amounts of unrelated chemicals such that a description of any sample or set of samples is not representative of the total waste, generators of petroleum waste and generators of used crankcase oil need not evaluate such wastes to determine whether they have any of the properties of an explosive material, a flammable material, an irritative material, a corrosive material, an oxidative material and a toxic material. Such generators are also not required for~~

such wastes to conduct a quantitative analysis to determine the concentration of each component in List 1 that is known or suspected to be in the waste nor a leachate test for each component in List 2 that is known or suspected to be in the waste.

4. Testing for flammable properties. Whenever the flash point of a waste is to be determined, one of the following test procedures shall be used. The test chosen shall be appropriate for the characteristics of the waste that is tested.

a. Standard Method of Test for Flash Point by Tag Closed Tester (ASTM D56-70).

b. Standard Method of Test for Flash Point of Aviation Turbine Fuels by Setaflash Closed Tester (ASTM D3243-76).

c. Standard Methods of Test for Flash Point of Liquids by Setaflash Closed Tester (ASTM D3278-73).

d. Standard Method of Test for Flash Point by Pensky-Martens Closed Tester (ASTM D93-73) or alternate tests authorized in this standard.

For any waste-containing components with different volatilities and flash points and having a flash point higher than 200F (93.3C) according to the test procedure employed, a second test shall be conducted on a sample of the liquid portion of the material that remains after evaporation in an open beaker (or similar container), under ambient pressure and temperature (20 to 25 C) conditions, to 90 percent of original volume or for a period of four hours, whichever occurs first, with the lower flash point of the two tests being the flash point of the material.

5. Testing for toxic properties. Any person who is determined whether a waste is a toxic material may elect to use the following modification to the LC50 and LD050 test procedures if the actual LC50 or LD50 is unknown:

a. A single dosage or exposure level equivalent to the maximum dosage or exposure level in 6 MCAR § 4.9001 B.40. which establishes that a material is a toxic material shall be administered to a test population of ten animals. The animals shall be the kind specified in the LC50 and LD50 test procedures. The animals are then observed for a period of 14 days or 96 hours whichever is applicable. If five or more of the test animals die, the waste shall be classified as a toxic material. If three or four of the test animals die, then either the waste shall be classified as a toxic material or additional dosage or exposure levels shall be tested and the actual LD50 or LC50 determined. If less than three of the ten test animals die, then the waste shall not be classified as a toxic material.

6. Testing for corrosive properties. Any person testing for corrosive properties may elect to use the following procedure for a nonaqueous waste: the person may prepare an aqueous solution that contains equal parts of the waste and water and test it for pH. If the pH of the solution is greater than 12 or less than 3, the person may classify the waste as a corrosive waste in lieu of evaluating the waste for the criteria indicated by 6 MCAR § 4.9001 B.5. If the person elects not to classify the nonaqueous waste as a corrosive waste or if the pH of the solution is not greater than 12 or less than 3, additional evaluation to determine corrosivity must be performed.

7. Sample collection. In the event the person evaluating the waste must conduct tests to determine the properties of the waste, the person shall collect a representative sample of the waste. In an attempt to collect a sample at the time when the properties being measured pose the greater hazard, the person shall consider the following variations in the waste composition and their causes in collecting a sample for evaluation:

a. Variations in the process by which the waste is produced.

b. Variations in chemical composition and physical state.

c. Any other variations indicated by past experience with the waste or similar wastes.

F. Results of evaluation. If the person evaluating the waste determines that the waste has any properties of a hazardous waste, the person shall file a disclosure with the agency and manage the waste in accordance with the requirements of these rules.

G. Submission of evaluation results.

1. The director may request at any time that a person producing a waste submit the results of the evaluation of the waste to the agency. Upon such request by the director, setting forth the reasons therefore, the person shall submit the following information:

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

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

c. The concentration of each component in List 1 that is known or suspected to be in the waste and the concentration in the leachate of each component in List 2 that is known or suspected to be in the waste. If the component is not detected in the waste or in the leachate, the level of detectability of the testing method used shall be reported.

d. The results of the evaluation to determine whether the waste has any of the properties of an explosive material, a flammable material, an irritative material, a corrosive material, an oxidative material, and a toxic material and the source of the data or information relied upon.

e. In the event any tests were conducted to evaluate the waste, the person shall submit the following:

(1) The sampling procedure and the reasons for determining that the sample is representative of the waste.

(2) The results of all tests conducted.

(3) A discussion of the accuracy and precision of any tests conducted.

2. 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 thirty (30) days after the request, the waste shall be managed as a hazardous waste and the person who produces the waste shall be considered a generator until the agency has determined whether the waste is hazardous or not.

3. If the director determines that the results of the evaluation are not adquate to determine whether or not 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 agency within thirty (30) days of the request, the waste shall be managed as a hazardous waste and the person who produces the waste shall be considered a generator until the agency has determined whether the waste is hazardous or not. The director may grant up to an additional ninety (90) days where the person demonstrates such extension to be necessary.

H. Agency determination that a waste is hazardous.

1. The agency or any member, employee, or agent thereof, when authorized by it, may enter upon the property of the person who produces any waste to take samples of the waste and may conduct tests, analyses and evaluations to determine whether the waste is a hazardous waste. The results of the tests, analyses, and evaluations shall be made available, upon request, to the person.

2. The director may recommend to the agency that a waste be classified as a hazardous waste because it has one or more of the properties of a hazardous waste or because the waste cannot be handled by routine waste management techniques because it poses a substantial or potential hazard to human health or other living organisms. The director shall notify the person producing the waste in writing of the recommendation and the person shall have at least thirty (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 Minn. Stat. §§ 15.0418 et seq. upon request of the person producing the waste.

3. In the event the director recommends that a waste be classified as a hazardous waste, the waste shall be managed as a hazardous waste and the person who produces the waste shall be considered a 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; ppovided, 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 such recommendation by the director shall be considered by the agency on an expeditious basis.

Rules as Proposed (all new material)

6 MCAR § 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 § 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 § 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.

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 § 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 § 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 § 4.9209 shall be followed.

6 MCAR § 4.9132 Characteristics of hazardous waste.

A. In general. A waste which is not excluded from regulation as a hazardous waste under 6 MCAR § 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 § 4.9104 A.;

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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 § 4.9104 A.

2. A waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in 6 MCAR § 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 § 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 Solid Waste, Physical/Chemical Methods issued by the United States Environmental Protection Agency, publication number SW 846 (1980) also described in Methods for Chemical Analysis of Water and Waste issued by the United States Environmental Protection Agency, publication number 600/7-79-020 (March 1979), or an equivalent test method approved by the agency under the procedures set forth in 6 MCAR § 4.9131 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 Solid Waste, Physical/Chemical Methods, issued by the United States Environmental Protection Agency, publication number SW 846 (1980) or an equivalent test method approved by the director under the procedures set forth in 6 MCAR § 4.9104 A.

2. A waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in 6 MCAR § 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 § 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 § 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 one hour.

4. A waste that exhibits the characteristics of toxicity, but is not listed as a hazardous waste in 6 MCAR § 4.9134, has the hazardous waste number M001.

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 § 4.9104 A., the extract from a representative sample of the waste contains any of the contaminants listed in Exhibit 6 MCAR § 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 § 4.9134, has the hazardous waste number specified in Exhibit 6 MCAR § 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 § 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 § 4.9132 G.3-1, the waste is not a hazardous waste because of the subject constituent.

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Exhibit 6 MCAR § 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 ($C_{10}H_{10}C1_3$, 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 § 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 § 4.9132 F.1. and 2. may be exempted from regulation under 6 MCAR §§ 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 §§ 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 constituent 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.

6 MCAR § 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 § 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 § 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 §§ 4.9200-4.9222 and certain record keeping and reporting requirements under 6 MCAR §§ 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 § 4.9134 B.-1.

Exhibit 6 MCAR § 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 non-halogenated 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)

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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 § 4.9134 C.-2.

Exhibit 6 MCAR § 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 acrylonitrile	(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 of aniline	(T)
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 cyclopentadiene in the production of chlordane	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane	(T)
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)

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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 wastewater containing explosives	(R)
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 trinitrotoluene (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 § 4.9310 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 § 4.9134 D.5.-3, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in 6 MCAR § 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 § 4.9134 D.5.-3.

Exhibit 6 MCAR § 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	

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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)ehtyl]-
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 0-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-dimethano- naphthalene	
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	

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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	Pheonl, 2,4-dinitro-6-methyl-, and salts	
P020	Pheonl, 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-ni-trophenyl) 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
P016	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

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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 § 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 § 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 § 4.9134 D.6.-4.

Exhibit 6 MCAR § 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-(r-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	

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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	

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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)

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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-	

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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	
U225	Methane, tribromo-	
U044	Methane, trichloro-	
U121	Methane, trichlorofluoro-	
U123	Methanoic acid	
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-	

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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	

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U121	Trichloromonofluoromethane	
U230	2,4,5-Trichlorophenol	
U231	2,4,6-Tricholorophenol	
U232	2,4,5-Tricholorophenoxyacetic acid	
U234	sym-Trinitrobenzene	(R,T)
U182	1,3,5-Trioxane, 2,4,6-trimethyl-	
U235	Tris (2,3-dibromopropy) 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 § 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 §§ 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, part 761.42 (1983); and

b. the requirements of 6 MCAR § 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 761.10 (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 §§ 4.9216 and 4.9280-4.9422 for storage and treatment of those wastes, except for the following requirements:

a. 6 MCAR §§ 4.9315-4.9316;

b. 6 MCAR §§ 4.9382-4.9383;

c. 6 MCAR §§ 4.9385-4.9396; and

d. 6 MCAR §§ 4.9399-4.9400.

6. Hazardous waste number. PCB wastes have the hazardous waste number of M003.

6 MCAR § 4.9135 Small amounts of unrelated chemicals.

A collection of small amounts of unrelated chemicals as described in 6 MCAR § 4.9211 D. has the hazardous waste number of M002.

6 MCAR § 4.9136 Basis for listing hazardous wastes.

Exhibit 6 MCAR § 4.9136-1 lists the constituents which caused the agency to list wastes as hazardous in 6 MCAR § 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 § 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	Hexavelant 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

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K017	Epichlorohydrin, chloroethers [bis (chloromethyl) ether and bis (2-chloroethyl) ethers], trichloropropane, dichloropropanols
K018	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene
K019	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride
K020	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride
K021	Antimony, carbon tetrachloride, chloroform
K022	Phenol, tars (polycyclic aromatic hydrocarbons)
K023	Phthalic anhydride, maleic anhydride
K024	Phthalic anhydride, 1,4-naphthoquinone
K025	Meta-dinitrobenzene, 2,4-dinitrotoluene
K026	Paraldehyde, pyridines, 2-picoline
K027	Toluene diisocyanate, toluene-2, 4-diamine
K028	1,1,1-trichloroethane, vinyl chloride
K029	1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform
K030	Hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride
K031	Arsenic
K032	Hexachlorocyclopentadiene
K033	Hexachlorocyclopentadiene
K034	Hexachlorocyclopentadiene
K035	Creosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(a)anthracene, dibenzo(a)anthracene, acenaphthalene
K036	Toluene, phosphorodithioic and phosphorothioic acid esters
K037	Toluene, phosphorodithioic and phosphorothioic acid esters
K038	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K039	Phosphorodithioic and phosphorothioic acid esters
K040	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
K041	Toxaphene
K042	Hexachlorobenzene, ortho-dichlorobenzene
K043	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol
K044	N.A.
K045	N.A.
K046	Lead
K047	N.A.
K048	Hexavalent chromium, lead
K049	Hexavalent chromium, lead

K050	Hexavalent chromium
K051	Hexavalent chromium, lead
K052	Lead
K060	Cyanide, naphthalene, phenolic compounds, arsenic
K061	Hexavalent chromium, lead, cadmium
K062	Hexavalent chromium, lead
K069	Hexavalent chromium, lead, cadmium
K071	Mercury
K073	Chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloro-ethylene, dichloroethylene, 1,1,2,2-tetrachloroethane
K083	Aniline, diphenylamine, nitrobenzene, phenylenediamine
K084	Arsenic
K085	Benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorcbenzene, 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, nitrobenzene, phenylenediamine
K105	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol
K106	Mercury

6 MCAR § 4.9137 Hazardous constituents.

Exhibit 6 MCAR § 4.9137-1 lists hazardous constituents.

Exhibit 6 MCAR § 4.9137-1
Hazardous Constituents

Acetonitrile
Acetophenone
3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
2-Acetylaminofluorene
Acetyl chloride
1-Acetyl-2-thiourea

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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
Aramite
Arsenic and compounds not otherwise specified in this list
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Auramine
Azaserine
Barium and compounds not otherwise specified in this list
Barium cyanide
Benz[c]acridine
Benz[a]anthracene
Benzene
Benzenearsonic acid
Benzene, dichloromethyl-
Benzenethiol
Benzidine
Benzo[b]fluoranthene
Benzo[j]fluoranthene
Benzo[a]pyrene
p-Benzoquinone
Benzotrichloride
Benzyl chloride
Beryllium and compounds not otherwise specified in this list
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether
N,N-Bis(2-chloroethyl)-2-naphthylamine
Bis(2-chloroisopropyl) ether
Bis(chloromethyl) ether
Bis(2-ethylhexyl) phthalate
Bromoacetone
Bromomethane
4-Bromophenyl phenyl ether
Brucine
2-Butanone peroxide
Butyl benzyl phthalate
2-sec-Butyl-4,6-dinitrophenol (DNBP)
Cadmium and compounds not otherwise specified in this list
Calcium chromate
Calcium cyanide
Carbon disulfide
Carbon oxyfluoride
Chloral
Chlorambucil

Chlordane (alpha and gamma isomers)
Chlorinated benzenes not otherwise specified in this list
Chlorinated ethane not otherwise specified in this list
Chlorinated fluorocarbons not otherwise specified in this list
Chlorinated naphthalene not otherwise specified in this list
Chlorinated phenol not otherwise specified in this list
Chloroacetaldehyde
Chloroalkyl ethers not otherwise specified in this list
p-Chloroaniline
Chlorobenzene
Chlorobenzilate
p-Chloro-m-cresol
1-Chloro-2,3-epoxybutane
1-Chloro-2,3-epoxypropane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
Chloromethyl methyl ether
2-Chloronaphthalene
2-Chlorophenol
1-(o-Chlorophenyl)thiourea
3-Chloropropionitrile
Chromium and compounds not otherwise specified in this list
Chrysene
Citrus red No. 2
Coal Tars
Copper cyanide
Creosote
Cresols
Crotonaldehyde
Cyanides (soluble salts and complexes) not otherwise specified in this list
Cyanogen
Cyanogen bromide
Cyanogen chloride
Cycasin
2-Cyclohexyl-4,6-dinitrophenol
Cyclophosphamide
Daunomycin
DDD (1,1-(2,2-dichloroethylidene)-bis-4-chlorobenzene)
DDE (Ethylene, 1,1-dichloro-2,2-bis(4-chlorophenyl)-)
DDT (1,1'-(2,2,2-trichloroethylidene)-bis-4-chlorobenzene)
Diallate
Dibenz[a,h]acridine
Dibenz[a,j]acridine
Dibenz[a,h]anthracene
7H-Dibenzo[c,g]carbazole
Dibenzo[a,e]pyrene
Dibenzo[a,h]pyrene
Dibenzo[a,i]pyrene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane

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Dibromomethane
Di-n-butyl phthalate
o-Dichlorobenzene
m-Dichlorobenzene
p-Dichlorobenzene
Dichlorobenzene not otherwise specified in this list
3,3'-Dichlorobenzidine
1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
trans-1,2-Dichloroethene
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
Dimethyl sulfate
Dinitrobenzene not otherwise specified in this list
4,6-Dinitro-o-cresol and salts
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
1,4-Dioxane
Diphenylamine

1,2-Diphenylhydrazine
Di-n-propylnitrosamine
Disulfoton
2,4-Dithiobiuret
Endosulfan
Endrin and metabolites
Ethyl carbamate
Ethyl cyanide
Ethylenebisdithiocarbamic acid, salts and esters
Ethyleneimine
Ethylene oxide
Ethylenethiourea
Ethyl methacrylate
Ethyl methanesulfonate
Fluoranthene
Fluorine
2-Fluoroacetamide
Fluoroacetic acid, sodium salt
Formaldehyde
Formic acid
Glycidylaldehyde
Halomethane not otherwise specified in this list
Heptachlor
Heptachlor epoxide (alpha, beta, and gamma isomers)
Hexachlorobenzene
Hexachlorobutadiene
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

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Maleic hydrazide
Malononitrile
Melphalan
Mercury fulminate
Mercury and compounds not otherwise specified in this list
Methacrylonitrile
Methanethiol
Methapyrilene
Methomyl
Methoxychlor
2-Methylaziridine
3-Methylcholanthrene
Methyl chlorocarbonate
4,4'-Methylene-bis-(2-chloroaniline)
Methyl ethyl ketone (MEK)
Methyl hydrazine
2-Methyllactonitrile
Methyl methacrylate
Methyl methanesulfonate
2-Methyl-2-(methylthio)propionaldehyde-o-(methylcarbonyl) oxime
N-Methyl-N'-nitro-N-nitrosoguanidine
Methyl parathion
Methylthiouracil
Mustard gas
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
1-Naphthyl-2-thiourea
Nickel and compounds not otherwise specified in this list
Nickel carbonyl
Nickel cyanide
Nicotine and salts
Nitric oxide
p-Nitroaniline
Nitrobenzene
Nitrogen dioxide
Nitrogen mustard and hydrochloride salt
Nitrogen mustard N-oxide and hydrochloride salt
Nitroglycerine
4-Nitrophenol
4-Nitroquinoline-1-oxide
Nitrosamine not otherwise specified in this list
N-Nitrosodi-N-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
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
Pryidine
Reserpine
Recorcinol
Saccharin and salts
Safrole
Seleious acid
Seleium 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

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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
Thallium (I) carbonate
Thallium (I) chloride
Thallium (I) nitrate
Thallium selenide
Thallium (I) sulfate
Thioacetamide
Thiosemicarbazide
Thiourea
Thiuram
Toluene
Toluenediamine
o-Toluidine hydrochloride
Tolylene diisocyanate
Toxaphene
Tribromomethane
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichloromethanethiol
Trichloromonofluoromethane
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)
Trichloropropane not otherwise specified in this list
1,2,3-Trichloropropane
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene
Tris(1-azridinyl)phosphine sulfide
Tris(2,3-dibromopropyl) phosphate
Trypan blue
Uracil mustard
Vanadic acid, ammonium salt
Vanadium pentoxide
Vinyl chloride
Zinc cyanide
Zinc phosphide

Rules as Proposed

Chapter Three: Standards Applicable to Generators of Hazardous Waste

6 MCAR § 4.9200 Applicability of generator standards.

6 MCAR § 4.9201 Financial responsibility of hazardous waste generators.

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

6 MCAR § 4.9203 Importers of hazardous waste.

6 MCAR § 4.9204 Farmers; pesticides.

6 MCAR § 4.9205 Evaluation of wastes.

6 MCAR § 4.9206 Timing of waste evaluation.

6 MCAR § 4.9207 Evaluation reports to the director.

6 MCAR § 4.9208 Additional evaluations ordered by the director.

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

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

6 MCAR § 4.9211 Disclosure preparation and generator identification numbers.

6 MCAR § 4.9212 Manifest document; general requirements.

6 MCAR § 4.9213 Use of the manifest.

6 MCAR § 4.9214 Pretransport requirements.

6 MCAR § 4.9215 Proper hazardous waste management.

6 MCAR § 4.9216 Accumulation of hazardous waste.

6 MCAR § 4.9217 Record keeping.

6 MCAR § 4.9218 Annual reporting.

6 MCAR § 4.9219 Exception reporting.

6 MCAR § 4.9220 Additional reporting.

6 MCAR § 4.9221 International shipments; special conditions.

6 MCAR § 4.9222 Farmers; special conditions.

Chapter Three: Standards Applicable to Generators of Hazardous Waste

~~6 MCAR § 4.9003 Generation of hazardous waste.~~

~~A. Applicability. This rule prescribes the duties of a generator.~~

6 MCAR § 4.9200 Applicability of generator standards.

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

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

C. Applicability to owners or operators of hazardous waste facilities. Rules 6 MCAR §§ 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.

~~B. Production of a hazardous waste.~~ 6 MCAR § 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 § 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:

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

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

3. 6 MCAR § 4.9211 for submitting a disclosure;

4. 6 MCAR § 4.9216 for accumulation time;

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

6. 6 MCAR § 4.9220 for additional reporting; and

7. if applicable, 6 MCAR § 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 §§ 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 §§ 4.9280-4.9560 and the agency's permitting procedures.

6 MCAR § 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 §§ 4.9200-4.9222.

6 MCAR § 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 § 4.9222 is not required with respect to those pesticides, to comply with other standards in 6 MCAR §§ 4.9200-4.9222 or to comply with 6 MCAR §§ 4.9280-4.9560, or to obtain a hazardous waste facility permit.

6 MCAR § 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 § 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 § 4.9134; or

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

a. testing the waste according to the methods set forth in 6 MCAR § 4.9132 or according to an equivalent method approved by the director pursuant to 6 MCAR § 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 § 4.9134.

6 MCAR § 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 § 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 § 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 § 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 § 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.

6 MCAR § 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 § 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 § 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.-G. if, in a calendar month, he generates less than:

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

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3. a total of 100 kilograms of any residue or contaminated soil, water, or other debris resulting from the cleanup of the 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 § 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 § 4.9134 D.5.

B. Exemption. A small quantity generator's hazardous wastes are not subject to the requirements of 6 MCAR §§ 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 §§ 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 §§ 4.9100-4.9560 but does not lose the small quantity generator status. The time period of 6 MCAR § 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 §§ 4.9205-4.9208;

2. 6 MCAR § 4.9211 except 6 MCAR § 4.9211 C.7.;

3. 6 MCAR § 4.9215;

4. 6 MCAR § 4.9216 A.5.-7.;

5. 6 MCAR § 4.9218;

6. Maintain a written log on-site with the following information for any hazardous waste shipment from the small quantity generators site to a site specified in 7.a.-e.:

a. the name and EPA identification number for each transporter involved in the shipment;

b. the name and EPA identification number for the site receiving the hazardous waste;

c. the type and quantity of each hazardous waste included in the shipment;

d. the date the shipment left the small quantity generator's site; 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 accpt hazardous waste under the agency's permitting procedures; or

b. in interim status under 6 MCAR §§ 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 § 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 §§ 4.9200-4.9560 and the waste is ultimately managed according to a.-d.

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 § 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 § 4.9128 B.

~~C. Preparation of a~~ 6 MCAR § 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~~,~~ ~~except used crankcase oil that is collected by a transporter registered pursuant to 6 MCAR Section 4.9005 G.~~ 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.

~~D. Contents~~ C. Content of ~~a~~ disclosure.

~~1.~~ Each ~~generator in his~~ disclosure ~~shall~~ must include the following information:

~~a. The type of waste~~ 1. a list of all hazardous wastes generated, their corresponding hazardous waste numbers from 6 MCAR §§ 4.9132 and 4.9134 and the source or process from which ~~it is~~ 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;

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

~~c.~~ 4. the concentration of each component in ~~List 1~~ Exhibit 6 MCAR § 4.9132 G.3.-1 that is known or suspected to be ~~in the waste and the concentration~~ in the leachate of ~~each component in List 2 that is known or suspected to be in~~ the waste~~. If the component is not detected in the waste or in the leachate, the level of detectability of the testing method used shall be reported.~~ 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;

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

~~e.~~ 6. in the event any tests were conducted to evaluate the waste, ~~the following information shall be included in the disclosure:~~

~~(1) The sampling procedure and the reasons for determining that the sample is representative of the waste.~~

~~(2)~~ the results of all tests conducted~~.~~;

~~(3) A discussion of the accuracy and precision of any tests conducted.~~

~~f. A list of special handling procedures, labels and safety equipment necessary for safe handling and storage of the hazardous waste.~~

~~g. The name, address, telephone numbers and title of the individual at the generator's facility responsible for arranging for the management of the hazardous waste.~~

~~h.~~ 7. a copy of ~~procedures for personnel to follow in the case of spills of the hazardous waste.~~ the contingency plan prepared pursuant to 6 MCAR § 4.9216 A.8. and a certification stating that the contingency plan is baing maintained for currency of information on-site and is available for staff review;

~~i. A summary of the following relating to the management of the hazardous waste for the year preceding the filing of the disclosure or for the period since the last disclosure was filed if that filing was more than one year ago:~~

~~(1) The amount of the hazardous waste produced.~~

~~(2) The names and identification numbers of the transporters utilized.~~

~~(3) The names of the hazardous waste facilities utilized, 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.~~

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~~(c) The name of the waste water treatment works to which a sewered hazardous waste was discharged.~~

~~(d) The NPDES or State Disposal Permit number for discharges to sewers other than a municipal sewer system.~~

~~(4) A summary taken from the shipping papers and other records of the generator of the amounts spilled, amounts recovered and any resultant environmental or health damages from spills of the hazardous waste.~~

~~j.~~ 8. ~~A prediction of the following relating to the management of the hazardous waste for the year immediately following the filing of the disclosure~~ the following information relating to the management of the hazardous waste:

~~(1)~~ a. the estimated amounts to be produced~~.~~ in a one year period;

~~(2)~~ b. the names and identificatoin numbers of the transporters to be used~~.~~;

~~(3)~~ 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;

~~(4)~~ f. the names of the hazardous waste facilities to be involved in the management of the hazardous waste, 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~~.~~, or

~~(b)~~ 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.

~~k. A list of all nonexempt wastes of the generator that have been determined by the generator to be nonhazardous wastes. The list shall include the type of waste and the sources or process from which the waste was produced. Examples of the information required are (1) salt solution from water softening, and (2) wash water from potato processing.~~

~~1. Any other information that the generator deems important.~~

~~2. Generators of wastes that are comprised of small amounts of unrelated chemicals such that are a description of any sample or set of samples is not representative of the total waste, generators of petroleum waste and generators of used crankcase oil are not required to include in the disclosures for those wastes the items listed in subparts b, c, d and e above, but these generators shall identify those components in List 1 or List 2 in 6 MCAR § 4.9002 B. that the generator knows or suspects are in the waste.~~

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).

~~3.~~ E. Prohibition. No person shall make a false statement in a disclosure. The disclosure shall be submitted under oath.

~~E.~~ F. Submission of a disclosure to the ~~agency.~~ director;

~~1.~~ 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 ~~regulations~~ rules take effect shall submit a disclosure to the ~~agency~~ director within ~~one year~~ 90 days after the effective date of ~~these regulations. A generator who has produced a hazardous waste in the past and who anticipates producing that hazardous waste in the future may elect to file a disclosure on that hazardous waste under this provision. In such event, the generator shall not be required to file a disclosure under 6 MCAR Section 4.9003 E.2. for that waste~~ 6 MCAR §§ 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.

~~2.~~ G. ~~New hazardous wastes~~ Submission of a disclosure to the director; new hazardous waste.

~~a.~~ ~~Any~~ 1. A generator who produces a hazardous waste in the state of Minnesota that is not being produced on the day these hazardous waste ~~regulations~~ rules take effect shall submit a disclosure to the ~~agency~~ director within ~~ninety (90)~~ 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 ~~thirty (30)~~ 15 days after the disclosure is ~~filed with~~ submitted to the ~~agency~~ director.

~~b. Any generator who produces a hazardous waste outside the State of Minnesota that is not being transported to a hazardous waste facility within the State of Minnesota on the day these regulations take effect~~ 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 ~~file~~ submit a ~~disclosure with~~ written notification to the ~~agency before the hazardous waste is transported to a hazardous waste facility within the State of Minnesota~~ director. The hazardous waste shall not be transported to a hazardous waste facility within the state of Minnesota until at least ~~thirty (30)~~ 15 days after the ~~disclosure~~ written notification is ~~filed with~~ submitted to the ~~agency~~ director. The notification must include the following:

a. the type of hazardous waste and the corresponding hazardous waste number from 6 MCAR §§ 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 § 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.

~~3. Annual resubmission of a disclosure.~~

~~a. After submitting its first disclosure, each generator who is required to submit a disclosure pursuant to subparagraph 1 shall submit a subsequent disclosure according to the following schedule if any hazardous waste has been produced or managed since the first disclosure.~~

~~FIRST LETTER IN NAME OF GENERATOR~~	~~MONTH OF SUBMISSION (The disclosure shall be made the first time the indicated month occurs after the regulations have been in effect for a period of two years.)~~
~~L-N~~	~~January~~
~~A-C~~	~~March~~
~~D-G~~	~~May~~
~~T-Z~~	~~July~~
~~O-S~~	~~September~~
~~H-K~~	~~November~~

~~Each such generator shall submit a new disclosure within ten (10) days of the anniversary date of the second disclosure if any hazardous waste has been produced or managed in the preceeding year.~~

~~b. Any generator who is required to file a disclosure pursuant to subparagraph 2, shall submit a new disclosure within ten (10) days of the anniversary date of the first disclosure.~~

~~c. In submitting a new disclosure for a hazardous waste, the generator need not repeat any information required in a disclosure that has not changed from the previous disclosure, but may merely indicate that the information is the same.~~

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~~d. Any generator who does not submit a disclosure because the hazardous waste was not produced or transported during the preceding period or year shall inform the agency of such fact and shall comply with the requirements for submitting a disclosure for a new hazardous waste in the event a hazardous waste is again produced or transported.~~

~~F. Identification number. Prior to transportation or disposal of any hazardous waste a generator shall obtain a generator identification number from EPA.~~

~~G. Preparation of hazardous waste shipping papers. Each generator shall prepare hazardous waste shipping papers for each hazardous waste in accordance with 6 MCAR § 4.9008.~~

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 § 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 §§ 4.9100-4.9560 except 6 MCAR §§ 4.9200 C., 4.9202, 4.9203, 4.9216, and 4.9218. This kind of hazardous waste generator is excempt from 6 MCAR § 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 § 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 unless exempt from regulation pursuant to 6 MCAR § 4.9210 or 4.9129.

B. Designation of facility. A generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest.

C. Alternate facility. A generator may also designate on the manifest one alternate facility which is permitted to handle the waste 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 123 (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 §§ 4.9213, 4.9292 B.4., and 4.9392 B.4.

6 MCAR § 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 § 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

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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.

~~H. Preparation of hazardous waste labels~~ 6 MCAR § 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. ~~Each generator shall~~ 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

~~attach a hazardous waste label to~~ 2. mark each container ~~and portable tank containing hazardous waste in accordance with the applicable U.S. Department of Transportation regulations on hazardous materials under 49 C.F.R. Part 172 (1979). In addition,~~ of 110 gallons or less used in such transportation with the following words and information ~~shall be displayed~~ 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 .....

~~d. EPA Identification Number .....~~

~~e. Accumulation start date .....~~

~~2. The container or portable tank shall be labeled and marked in a manner that is suitable for interstate commerce.~~

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.

~~I. Containers and tanks. Each generator shall put hazardous waste only into containers or tanks that comply with the requirements of 6 MCAR § 4.9004 for storage of hazardous waste in containers and tanks at hazardous waste facilities.~~

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 § 4.9254 A.

6 MCAR § 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 §§ 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 123 (1983); or

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

B. Spills; duty to report. 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 immediately notify the agency if the hazardous waste may cause pollution of the air, land, or waters of the state. The person shall use, when applicable, 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.

~~J. Proper~~ 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 ~~this rule~~ 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 damages or alleviate any pollution caused by the mismanagement of the hazardous waste.

6 MCAR § 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 § 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 §§ 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 123 (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 § 4.9214 A. and are managed in accordance with 6 MCAR § 4.9414 D.-F.; or in tanks provided the generator complies with the requirements of 6 MCAR § 4.9415 except 6 MCAR § 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 § 4.9214 B. and C.;

5. outdoor storage areas are distinctly fenced to restrict access;

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 §§ 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 §§ 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.

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6 MCAR § 4.9217 Record keeping.

A. Manifests. A generator must keep a copy of each manifest signed in accordance with 6 MCAR § 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 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 §§ 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.

6 MCAR § 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

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 §§ 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 § 4.9211 H.

6 MCAR § 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 § 4.9220 Additional reporting.

The director, as he deems necessary, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in 6 MCAR §§ 4.9128-4.9137.

6 MCAR § 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 §§ 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 §§ 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 § 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 §§ 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 § 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.

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Rules as Proposed

Chapter Four:
Standards Applicable to Transporters of Hazardous Waste

6 MCAR § 4.9250 Applicability and exemptions.

6 MCAR § 4.9251 Applicability of generator requirements.

6 MCAR § 4.9252 Identification numbers.

6 MCAR § 4.9253 Transfer facility requirements.

6 MCAR § 4.9254 Transportation of hazardous waste.

6 MCAR § 4.9255 The manifest system; general requirements.

6 MCAR § 4.9256 Use of the manifest.

6 MCAR § 4.9257 Compliance with the manifest.

6 MCAR § 4.9258 Record keeping.

6 MCAR § 4.9259 Hazardous waste discharges.

Chapter Four:
Standards Applicable to Transporters of Hazardous Waste

6 MCAR § 4.9250 Applicability and exemptions.

A. Applicability. The provisions of 6 MCAR §§ 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 §§ 4.9200-4.9222. Rule 6 MCAR § 4.9259 applies to the transportation of all hazardous waste within the state of Minnesota.

B. Exemptions. The provisions of 6 MCAR §§ 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 § 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 § 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 § 4.9253 Transfer facility requirements.

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

6 MCAR § ~~4.9005~~ 4.9254 Transportation of hazardous waste.

A. ~~Applicability. This rule establishes criteria for the loading and transportation of hazardous waste by any person to insure that hazardous wastes are loaded and transported in a manner which minimizes risks to human health and the environment.~~

~~B.~~ Loading of hazardous wastes. No person shall load or unload hazardous waste onto or from any motor vehicle, railroad car, barge, airplane, or other vehicle except in accordance with the following requirements:

1. all containers of hazardous waste shall be loaded so that they are reasonably secured against movement within the vehicle by which the hazardous waste is being transported~~.~~;

2. tank vehicles shall ~~not be left unattended~~ be attended during the loading or unloading of a hazardous waste~~.~~ as described in Code of Federal Regulations, title 49, section 177.834(i) (1983);

3. no tools or equipment likely to damage the effectiveness of the closure of any container or adversely affect the ability of a container to contain a hazardous waste shall be used for loading or unloading hazardous waste~~.~~;

4. ~~Hazardous waste and food or fiber intended for human or animal consumption or use shall not be loaded in the same vehicle.~~ a transporter may not transport a container of hazardous waste in the same transport vehicle with material that is marked as or known to be foodstuff, feed, or other edible material intended for consumption or use by humans or animals;

5. hazardous waste shall not be loaded in the same vehicle with incompatible wastes or other materials with which it is incompatible~~.~~ in accordance with Code of Federal Regulations, title 49, section 177.848 (1983);

6. broken or leaking containers of hazardous waste ~~or containers with an outside surface that is contaminated with hazardous waste~~ shall not be loaded or offered for transportation~~.~~;

7. no container or tank containing hazardous waste shall be loaded on a vehicle unless the container or tank is properly labeled and marked as required by 6 MCAR § ~~4.9003.~~ 4.9214;

8. no cargo tank or cargo tank compartment shall be loaded with hazardous waste unless it has been tested, inspected, and maintained in accordance with Code of Federal Regulations, title 49, section 177.824 (1983) to insure that there is no unintentional release or leakage of waste during transportation ~~and unless it fulfills the applicable requirements set forth in 49 C.F.R. § 177.824 (1976). The person loading the tank or compartment shall be considered to have complied with this provision if the person owning or leasing the cargo tank certifies that all requirements of this provision have been meet.~~;

9. no hazardous waste ~~of a type or volume that is beyond the capability of the cargo tank~~ shall be loaded ~~in~~ beyond the rated capacity of the cargo tank~~.~~; and

10. no cargo tank shall be loaded unless it is properly ~~labeled~~ placarded as required by 6 MCAR § ~~4.9003~~ 4.9214.

~~11. The hazardous wastes of two or more generators shall not be commingled unless such commingling is indicated on the shipping papers of all of the generators.~~

~~12. The hazardous waste shall be given to a transporter as soon as possible after loading.~~

~~C. Transportation of hazardous waste.~~

~~1. The operator of a vehicle transporting hazardous waste shall maintain possession of the hazardous waste shipping papers during transportation as follows:~~

~~a. When the vehicle is a motor vehicle and the driver is at the vehicle's controls the shipping papers shall be either:~~

~~(1) Within his immediate reach while he is restrained by the lap belt, or~~

~~(2) Readily visible to a person entering the driver's compartment or in a folder that is mounted to the inside of the door on the driver's side of the vehicle.~~

~~b. When the vehicle is a motor vehicle and the driver is not at the vehicle's controls, the shipping papers shall be displayed as follows:~~

~~(1) In a holder that is mounted to the inside of the door on the driver's side of the vehicle, or~~

~~(2) On the driver's seat in the vehicle.~~

~~c. When the vehicle is a train, a member of the crew shall maintain the shipping papers in the caboose.~~

~~d. When the vehicle is other than a motor vehicle or train, the operator of the vehicle shall maintain the shipping papers in an accessible location determined by the operator.~~

~~e. If, pursuant to the provisions of 6 MCAR § 4.9008 G., a vehicle operator does not have a copy of the shipping~~

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~~papers in his possession, as required by this section, then the transporter shall maintain the spill information given to him by the generator pursuant to 6 MCAR § 4.9008 G. in such a manner that the information will be available to the vehicle operator as soon as he requests it, or in such other manner that is approved in writing by the agency.~~

B. General provisions.

~~2.~~ 1. The transporter shall comply with all applicable requirements of 6 MCAR §§ ~~4.9008~~ 4.9255-4.9259 relating to ~~shipping papers~~ manifests.

~~3.~~ 2. The transporter shall replace any labels required by 6 MCAR § ~~4.9003~~ 4.9214 if they are destroyed, lost, or detached.

~~D. Time in transit.~~

~~1.~~ 3. Any person who transports hazardous waste shall deliver the hazardous waste to its final destination ~~as soon as possible~~ without undue delay after loading of the hazardous waste.

~~2. In the event that a shipment of hazardous waste is not accepted by the facility operator within 48 hours after arrival at the destination or in the event the facility operator does not sign the hazardous waste shipping papers, the transporter shall immediately return the shipment of hazardous waste to the generator and the generator shall accept it and pay for the return transportation. If the wastes of two or more generators have been commingled as provided in 6 MCAR § 4.9005 B.11., each generator shall accept a portion of the hazardous waste equal to the generator's contribution to the total volume of waste.~~

~~E. Spills in transit. These provisions shall apply to all spills of hazardous wastes while in transit within the State of Minnesota.~~

~~1. Any transporter who has a spill or leak of hazardous waste during transit shall comply with the provisions of 6 MCAR § 4.9010.~~

~~2. In the case of a spill or leakage of hazardous waste during transit, the amount spilled, the amount recovered, the location of the spill site and the disposition of the spilled wastes and any contaminated material shall be noted on or attached to the hazardous waste shipping papers by the transporter.~~

~~3. The transporter shall notify the generator as soon as possible of any spill or leak during transit.~~

~~4. The generator shall maintain a written summary of all spills and leaks that occur during transit for a period of five years.~~

~~5. If during the course of transportation, a container is discovered to be broken or leaking, the transporter shall remove the container to the nearest safe location and isolate it pending proper disposition in the safest and most expeditious manner possible. 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 that the transporter is willing to bear the costs of. Nothing in this provision is, however, intended to restrict or enlarge or affect in any way any liability the generator may have to repackage, pack and clean up the waste.~~

6 MCAR § 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 §§ 4.9200-4.9222 unless the generator is exempt from the manifest requirements under 6 MCAR § 4.9210 or 4.9129.

B. Prior to acceptance of shipment. Before tranporting 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 § 4.9256.

6 MCAR § 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 § 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 § 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 § 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 § 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 § 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;

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

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

6 MCAR § 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 § 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 § 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 § 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.

6 MCAR § 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 over 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 photocoy 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 §§ 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.

~~G. Registration of hazardous waste transporters. Any person who transports hazardous waste that originates or terminates in Minnesota shall obtain an identification number from EPA prior to transporting the hazardous waste.~~

~~H. Transportation of used crankcase oil. A transporter of used crankcase oil shall maintain a log that shows the source and disposition of all used crankcase oil. Upon the written request of the director, the transporter shall submit any information from the log that the director requests. The transporter shall retain all information for a period of two years.~~

Rules as Proposed

Chapter Eight:
County Regulation of Hazardous Waste Management

6 MCAR § 4.9559 Purpose; applicability.

6 MCAR § 4.9560 Agency overview of county hazardous waste programs.

~~6 MCAR § 4.9009.~~

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Chapter Eight:
County Regulation of Hazardous Waste Management.

~~A.~~ 6 MCAR § 4.9559 Purpose; applicability. ~~This rule establishes procedures for submission of documents in the event the county ordinance is approved by the agency. Issuing, denying, modifying, imposing conditions upon, or revoking hazardous waste generator licenses or permits, and county hazardous waste rules, shall be subject to review, denial, suspension and reversal by the agency~~ Rules 6 MCAR §§ 4.9559 and 4.9560 establish procedures for the agency's overview of county hazardous waste programs. Rule 6 MCAR § 4.9560 B.1. applies to counties which seek agency approval of a hazardous waste ordinance. All other portions of 6 MCAR § 4.9560 apply to counties having a hazardous waste ordinance approved by the agency.

6 MCAR § 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. ~~Review of~~ 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 ~~agency~~ 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 ~~agency~~ director shall approve a county ordinance that embodies and is consistent with the standards and requirements set forth in ~~these hazardous waste rules~~ 6 MCAR §§ 4.9100-4.9560.

2. ~~If a metropolitan county submits a county hazardous waste ordinance to the agency for approval pursuant to Minn. Stat. § 473.811, subd. 5, the procedure established in subparagraph 1 of paragraph D for agency review of county hazardous waste licenses and permits shall be followed. Any action by the agency pursuant to such submission for agency review of the county ordinance shall not be deemed to be agency approval of such ordinance unless such approval is explicit and is in writing~~ The director may suspend a previously approved county ordinance 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 of its decision to approve, suspend, modify, or deny the ordinance.

3. ~~For the purposes of this rule a metropolitan county is any one of the following counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington~~ 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 ty 6 MCAR §§ 4.9100-4.9560 or the agency's permitting procedures. The county revision must embody and be consistent with the agency's revisions to 6 MCAR §§ 4.9100-4.9560 and the agency's permitting procedures, 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. ~~In the event that~~ 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 ~~not be required to~~ submit a disclosure and annual reports to the ~~agency for that waste~~ county as required by the county ordinance in lieu of submission to the agency unless specifically requested in writing by the director to ~~do so.~~ submit a copy of the disclosure or annual report to the director; and

2. ~~Each generator shall submit the required copies of the hazardous waste shipping papers to the county as required by the county ordinance for each shipment of hazardous waste that is transported.~~

~~3.~~ All persons shall comply with all other requirements of ~~these regulations~~ 6 MCAR §§ 4.9100-4.9560, the agency's permitting procedures, and all requirements of the county ordinance.

D. ~~Duties of counties~~ 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 ~~generator~~ licenses or permits approved ~~or reviewed~~ by the county during the previous month. The notification shall be submitted to the agency ~~on~~ 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. ~~The agency shall place the matter on the agenda of the next regularly scheduled meeting of the agency, which will be on the fourth Tuesday of the month. The agency may amend, modify, suspend, or reverse the action of the county. The action of the agency in reviewing the county decision to grant the license or permit shall not affect the agency's consideration of a Hazardous Waste Facility Permit for the same facility under these rules.~~

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.

~~3.~~ 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 ~~pursuant to 6 MCAR § 9.4005 G.~~ 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.

Repealer. Rules 6 MCAR §§ 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.

Minnesota Pollution Control Agency
Solid and Hazardous Waste Division

Proposed Amendment of Rules Governing Hazardous Waste Treatment, Storage, and Disposal Facilities (6 MCAR § 4.9004, Renumbered as 6 MCAR §§ 4.9280-4.9481)

Notice of Intent to Adopt Rules without a Public Hearing

Notice is hereby given that the Minnesota Pollution Control Agency (hereinafter "agency") proposes to adopt amendments to the rules governing hazardous waste treatment, storage, and disposal facilities without a public hearing. The agency has determined that the proposed amendment of these rules will be noncontroversial in nature and has elected to follow the procedure set forth in Minn. Stat. §§ 14.21-14.28 (1982).

In addition to the amendments to the rules described herein, the agency is also proposing amendments to the rules governing definitions, generators of, and the identification, transportation and management of hazardous waste. These proposed amendments appear elsewhere in the October 24, 1983 *State Register*.

Persons interested in these rules shall have until November 25, 1983 to submit comments on the proposed rules. The proposed rules may be modified if the modifications are supported by the data and views submitted to the agency and do not result in a substantial change in the proposed language.

Unless seven or more persons submit written requests for a public hearing on the proposed amendments by November 25, 1983 a public hearing will not be held. In the event a public hearing is required, the agency will proceed according to the

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provisions of Minn. Stat. §§ 14.13-14.20 (1982). The agency asks that requests for a public hearing identify the particular objection and suggest appropriate modifications to the proposed rules and the reasons or data relied on to support the suggested modifications.

Persons who wish to submit comments or a written request for a public hearing should submit such comments or request to:

Steven A. Reed
Division of Solid and Hazardous Waste
Minnesota Pollution Control Agency
1935 West County Road B-2
Roseville, Minnesota 55113
Telephone: (612) 296-7786

Authority for adoption of these rules is contained in Minn. Stat. § 116.07, subds. 4 and 4b. Additionally, a statement of need and reasonableness that describes the need for and reasonableness of each provision of the proposed amendments and that identifies the data and information relied upon to support the proposed amendments, has been prepared and is available upon request. It is also available for review in the Minnesota Pollution Control Agency Office in Roseville and in each of the Minnesota Pollution Control Agency Regional Offices:

Duluth Regional Office
Duluth Government Services Center
Room 704
320 West 2nd Street
Telephone: (218) 723-4660

Detroit Lakes Regional Office
116 East Front Street
Telephone: (218) 847-1519

Rochester Regional Office
1200 South Broadway, Suite 140
Telephone: (507) 285-7343

Marshall Regional Office
Box 286, 1104 East College Drive
Telephone: (507) 537-7146

Brainerd Regional Office
304 East River Road, Suite 3
Telephone: (218) 828-2492

Upon adoption of the final rules without a public hearing, the proposed rules, this notice, the statement of need and reasonableness, all written comments received and the final rules as adopted will be delivered to the Attorney General for review as to form and legality, including the issue of substantial change. Persons who wish to be advised of the submission of this material to the Attorney General or who wish to receive a copy of the final rules should submit a written statement of such request to Mr. Reed.

The amendments proposed for adoption relate to the storage, treatment, and disposal of hazardous waste and the location and operation of hazardous waste facilities. The revised rules have been divided into three chapters.

The standards governing the operation of hazardous waste facilities are set forth in Chapters Five, Six, and Seven. Chapter Seven, 6 MCAR §§ 4.9480 and 4.9481, provides operational standards for elementary neutralization units, pretreatment units, wastewater treatment units and combustion waste facilities. All other hazardous waste facilities are governed by Chapters Five and Six.

Rules 6 MCAR §§ 4.9280-4.9322, Chapter Five, establish permanent requirements applicable to owners and operators of facilities which treat, store, or dispose of hazardous waste. These rules set forth requirements relating to the location of hazardous waste facilities, emergency procedures including personnel training and contingency plans, record keeping requirements, closure requirements, and financial requirements as well as operational and design requirements for various types of facilities.

Rules 6 MCAR §§ 4.9380-4.9422, Chapter Six, establish interim status standards for hazardous waste facilities which cover the same general areas as the permanent requirements. The interim status standards apply to existing facilities until final disposition of the owner or operator's permit application is made.

You are hereby advised, pursuant to Minn. Laws 1983, ch. 188, Small Business Considerations in Rulemaking, that the proposed rule amendments may have an impact on some small businesses which generate hazardous wastes. The nature of any impact on a small business is dependent upon the amount of hazardous waste the business generates. The changes being proposed in the amendments to the rule which may affect small businesses include more stringent facility standards which may increase the cost of waste storage and disposal.

More detailed information concerning the nature of the impact of these changes upon small businesses is set forth in the agency's statement of need and reasonableness.

Copies of the notice and the proposed rules are available for review in the Minnesota Pollution Control Agency Office in Roseville and each of the Minnesota Pollution Control Agency Regional Offices and may be obtained by contacting Mr. Reed.

Sandra S. Gardebring
Executive Director

Rules as Proposed (all new material)

Chapter Five: Facility Standards

6 MCAR § 4.9280 Facilities governed by facility standards.
6 MCAR § 4.9281 General facility standards.
6 MCAR § 4.9282 Personnel training.
6 MCAR § 4.9283 General requirements for ignitable, reactive, or incompatible waste.
6 MCAR § 4.9284 Waste analysis requirements.
6 MCAR § 4.9285 Location standards.
6 MCAR § 4.9286 Preparedness and prevention.
6 MCAR § 4.9287 Arrangements with local authorities for emergencies.
6 MCAR § 4.9288 Contingency plan.
6 MCAR § 4.9289 Emergency procedures.
6 MCAR § 4.9290 Post-emergency requirements.
6 MCAR § 4.9291 Facility shipping requirements.
6 MCAR § 4.9292 Manifest system.
6 MCAR § 4.9293 Manifest discrepancies.
6 MCAR § 4.9294 Operating record.
6 MCAR § 4.9295 Retention and disposition of records.
6 MCAR § 4.9296 Required reports.
6 MCAR § 4.9297 Ground water protection.
6 MCAR § 4.9298 Closure.
6 MCAR § 4.9299 Closure activities.
6 MCAR § 4.9300 Post-closure.
6 MCAR § 4.9301 Post-closure care and use of property.
6 MCAR § 4.9302 Notice to local land authority.
6 MCAR § 4.9303 Notice in deed to property.
6 MCAR § 4.9304 Financial requirements.
6 MCAR § 4.9305 Cost estimate for facility closure.
6 MCAR § 4.9306 Financial assurance for facility closure.
6 MCAR § 4.9307 Cost estimate for post-closure care.
6 MCAR § 4.9308 Financial assurance for post-closure care.
6 MCAR § 4.9309 Cost estimate for corrective action.
6 MCAR § 4.9310 Financial assurance for corrective action.
6 MCAR § 4.9311 Use of a mechanism for financial assurance of corrective action, closure, and post-closure care.
6 MCAR § 4.9312 Liability requirements.
6 MCAR § 4.9313 Incapacity of owners or operators, guarantors, or financial institutions.
6 MCAR § 4.9314 Wording of the instruments.
6 MCAR § 4.9315 Use and management of containers.
6 MCAR § 4.9316 Tanks.
6 MCAR § 4.9317 Surface impoundments.
6 MCAR § 4.9318 Waste piles.
6 MCAR § 4.9319 Land treatment.
6 MCAR § 4.9320 Landfills.
6 MCAR § 4.9321 Thermal treatment.
6 MCAR § 4.9322 Cochran's approximation to the Behrns-Fisher Students' t-test.

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Chatper Five: Facility Standards

6 MCAR § 4.9280 Facilities governed by facility standards.

A. General requirements. Rules 6 MCAR §§ 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 §§ 4.9128-4.9222.

Rules 6 MCAR §§ 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 §§ 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 Sanctuaries 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 §§ 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 § 4.9381 shall comply with 6 MCAR §§ 4.9380-4.9422 in leu of the rules in 6 MCAR §§ 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 §§ 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 §§ 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 § 4.9129 B.1. or 2. except to the extent that 6 MCAR § 4.9129 B.1.i., 3., 4., or 5, provides otherwise and 6 MCAR § 4.9216 A.5.-7. is complied with;

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

3. a farmer disposing of waste pesticides from his own use in compliance with 6 MCAR §§ 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 §§ 4.9280-4.9322 are included in a permit-by-rule;

7. the owner or operator of that portion of a combusiton 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 § 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 §§ 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 §§ 4.9280-4.9322 who must comply with all applicable requirements of 6 MCAR §§ 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 §§ 4.9280-4.9322 and the agency's permitting procedures for those activities.

6 MCAR § 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 § 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 §§ 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 possiblity 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 §§ 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.

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.

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.

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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 §§ 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 § 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 §§ 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.

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 § 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 §§ 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 § 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 §§ 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 §§ 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

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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 §§ 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 § 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 or facility buildings or equipment from the active portion of the facility 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 § 4.0001.

6 MCAR § 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 § 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, incuding 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 § 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;

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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 § 4.9288 Contingency plan.

A. Scope. The provisions of B.-F., 6 MCAR §§ 4.9287, 4.9289, and 4.9290 apply to owners and operators of all hazardous waste facilities except as otherwise provided in 6 MCAR § 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 § 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 §§ 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 § 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 § 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 exploision. 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 had 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. 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.

G. 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 § 4.9290 Post-emergency requirements.

A. Cleanup. Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of

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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 §§ 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 § 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 §§ 4.9200-4.9222.

6 MCAR § 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 § 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 § 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 § 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 § 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 § 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 § 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 § 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 § 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.

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 applicable:

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 § 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 § 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 §§ 4.9283, 4.9284, and 4.9321 B.

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6. Summary reports and details of all incidents that require implementing the contingency plan as specified in 6 MCAR § 4.9290.

7. Records and results of inspections as required by 6 MCAR § 4.9281 E.

8. Monitoring, testing, or analytical data where required by 6 MCAR §§ 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 § 4.9281 C.3.

10. All closure cost estimates under 6 MCAR § 4.9305 and, for disposal facilities, all post-closure cost estimates under 6 MCAR § 4.9307.

6 MCAR § 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 § 4.9280 provides otherwise.

B. Retention of records. The retention period for all records required under 6 MCAR §§ 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.

C. Disposition of records. A copy of records of waste disposal locations and quantities under 6 MCAR § 4.9294 C. must be submitted to the director and the local land authority upon closure of the facility.

6 MCAR § 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 § 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 § 4.9305 and, for disposal facilities, the most recent post-closure cost estimates under 6 MCAR § 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 and if the waste is not excluded from the manifest requirement by 6 MCAR § 4.9210, 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. When a facility receives unmanifested hazardous

waste, the owner or operator shall obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the owner or operator shall file an unmanifested waste report for the hazardous waste movement.

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 § 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 § 4.9289;

2. facility closures as specified in 6 MCAR § 4.9299 D.; and

3. as otherwise required by 6 MCAR §§ 4.9297, and 4.9317-4.9320.

6 MCAR § 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, part 264, as amended through June 30, 1983. A waste or a waste constituent migrating beyond the waste management area under H.2. 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 § 4.9280;

b. he or she designs and operates a waste pile in compliance with 6 MCAR § 4.9318 A. or 4.9318 E.; or

c. the director finds, under 6 MCAR § 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 § 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.

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 § 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:

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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 § 4.9137, or constituents which are not listed in 6 MCAR § 4.9137, but which are contained in wastes that meet criteria established in 6 MCAR § 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 constitutents; 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 § 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 § 4.9297 F.2.-1.; or

3. must not exceed an alternate limit established by the agency under G.

Exhibit 6 MCAR § 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-a, 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-H-Cl, 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-propinoic 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;

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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 §§ 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

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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 § 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 two weeks after completion of sampling, unless a different analysis period is 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:

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(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 § 4.9297 F.2.-1 and the difference between the respective** concentration limit in Exhibit 6 MCAR § 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 two weeks after completion of sampling unless the permit provides a different analysis period.

8. If the owner or operator determines that the ground water protection standard is being exceeded at any monitoring well at the point or 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

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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 § 4.9298 Closure.

A. Scope. Except as 6 MCAR § 4.9280 provides otherwise, the provisions of B.-E. and 6 MCAR § 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 § 4.9299, and the applicable closure requirements of 6 MCAR §§ 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 § 4.9299, and the applicable closure requirements of 6 MCAR §§ 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 § 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

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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 § 4.9300 Post-closure.

A. Scope. Except as otherwise provided in 6 MCAR § 4.9280, the provisions of B., C., and 6 MCAR §§ 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 §§ 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 §§ 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 §§ 4.9317-4.9320, and the function of the facility monitoring equipment according to the requirements of 6 MCAR §§ 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 § 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 §§ 4.9297 and 4.9317-4.9320, and the maintenance of monitoring and waste containment systems, according to the requirements of 6 MCAR §§ 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 priod 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 § 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 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, part 264.119, as amended through June 30, 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 § 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 § 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

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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 §§ 4.9100-4.9560.

6 MCAR § 4.9304 Financial requirements.

A. Scope. Rules 6 MCAR §§ 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 § 4.9280 C.

Rules 6 MCAR §§ 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 §§ 4.9317 G. and 4.9318 G.

Rules 6 MCAR § 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 §§ 4.9304-4.9314.

B. Definitions. The following definitions apply:

1. When used in 6 MCAR §§ 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 § 4.9298.

b. "Corrective action plan" means the plan for corrective action prepared in accordance with 6 MCAR §§ 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 § 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 § 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 § 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 §§ 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 § 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 §§ 4.9298 and 4.9299 and applicable closure requirements in 6 MCAR §§ 4.9315 I., 4.9316 F., 4.9317 F., 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 § 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 § 4.9314 A.1.-1 and must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR § 4.9314 A.2.-2. Schedule A of

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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:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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 § 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 § 4.9407 A. The amount of each payment must be determined by this formula:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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 § 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 § 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 § 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 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

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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 § 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 § 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:

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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 § 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.

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 § 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 § 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

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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 § 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 § 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 §§ 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 § 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 adjusted in accordance with B., the latest adjusted post-closure cost estimate.

6 MCAR § 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 opeartor 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 § 4.9314 A.1.-1 and the trust agreement must be accompanied by a formal certification of acknowledgment as shown in Exhibit 6 MCAR § 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:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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.

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b. If an owner or operator establishes a trust fund as specified in 6 MCAR § 4.9410 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 § 4.9410 A. The amount of each payment must be determined by this formula:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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 § 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 § 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 alternate 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 agency 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 § 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

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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 § 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 § 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 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 agency 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

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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 § 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 agency 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 § 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 § 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.,

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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 owners 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 § 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 § 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 §§ 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 facility: 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 § 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 § 4.9314 A.1.-1 and the trust agreement must be accompanied by a formal certification of acknowledgment as shown in 6 MCAR § 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:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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.

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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.

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 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 § 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 bonds; 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.

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 its 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 § 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:

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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 § 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 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 § 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

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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 at 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 of 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, 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 § 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 § 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 § 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

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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 § 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 § 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 §§ 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 § 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 § 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR § 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 § 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR § 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 §§ 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 ro more, six months after the effective date of 6 MCAR §§ 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 §§ 4.9100-4.9560;

c. for all other owners or operators, 30 months after the effective date of 6 MCAR §§ 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 §§ 4.9100-4.9560, whichever is later.

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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 driector 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 § 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 § 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 §§ 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 § 4.9314 G.-8 to cover both forms of financial responsibility; a separate letter as specified in Exhibit 6 MCAR § 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 § 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 §§ 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 §§ 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 § 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 § 4.9306 A., 4.9308 A., 4.9310 A., or 4.9410 A. must be worded as specified in Exhibit 6 MCAR § 4.9314 A. 1.-1, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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,

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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 policies 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 Trustees. 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 securites 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,

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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 § 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 § 4.9314 A.2.-2 is an example of the certification of acknowlegment, which must accompany the trust agreement for a trust fund as specified in 6 MCAR § 4.9306 A., 4.9308 A., 4.9310 A., 4.9407 A., or 4.9409 A.

EXHIBIT 6 MCAR § 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 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 § 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 § 4.9314 B.-3, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 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,

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Or, if the Principal shall provide alternate financial assurance, as specified in 6 MCAR §§ 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 § 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 § 4.9306 C., 4.9308 C., or 4.9310 C. must be worded as specified in Exhibit 6 MCAR § 4.9314 C.-4, except that the instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 §§ 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 §§ 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 §§ 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

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of 6 MCAR §§ 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 §§ 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 § 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 § 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 § 4.9314 D.-5, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 § 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 §§ 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 § 4.9314 E.-6, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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: _____

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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 §§ 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 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 § 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 § 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 § 4.9314 F.-7, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 §§ 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 §§ 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 §§ 4.9304-4.9314 and 4.9405-4.9313, 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 §§ 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 §§ 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?	_____	_____

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I hereby certify that the wording of this letter is identical to the wording specified in Exhibit 6 MCAR § 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 § 4.9312 F. or 4.9411 F. must be worded as specified in Exhibit 6 MCAR § 4.9314 G.-8, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 §§ 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 §§ 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 §§ 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 §§ 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 § 4.9312 F.2. or 4.9411 F.2. are used. Fill in Alternative II if the criteria of 6 MCAR § 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 §§ 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 § 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 § 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 § 4.9407 E.3. or 4.9409 E.3. and 4.9411 E.3. are used.]

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

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 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 § 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 § 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 § 4.9314 H.-9, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 or [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 §§ 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 §§ 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 §§ 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 §§ 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 §§ 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 §§ 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 §§ 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 §§ 4.9280-4.9322 or 4.9380-4.9422.

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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 §§ 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 §§ 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 § 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 § 4.9312 or 4.9411 must be worked as specified in Exhibit 6 MCAR § 4.9314 I.-10, except that instruction in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 § 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 § 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 § 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 § 4.9312 or 4.9411 must be worked as specified in Exhibit 6 MCAR § 4.9314 J.-11, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

EXHIBIT 6 MCAR § 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 § 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 § 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 § 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 § 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 § 4.9280 provides otherwise. Under 6 MCAR §§ 4.9130 and 4.9134 D.3., if a hazardous waste is

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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 § 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 § 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 1.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 §§ 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR §§ 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 § 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 § 4.9284, the waste analysis plan must include analyses needed to comply with these special requirements. Rule 6 MCAR § 4.9283 C. also requires waste analyses, trial tests, or other documentation to ensure compliance with 6 MCAR § 4.9283 B. As required by 6 MCAR § 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 §§ 4.9200-4.9560.

6 MCAR § 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 § 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

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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 § 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 §§ 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 § 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 1.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 §§ 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR §§ 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 §§ 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 § 4.9132 B. and E., and compliance with 6 MCAR § 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 § 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 § 4.9283 A. Rule 6 MCAR § 4.9283 C. also requires waste analysis, trial tests, or other documentation to ensure compliance with 6 MCAR § 4.9283 B. As required by 6 MCAR § 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 § 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 § 4.9283 B. is maintained. As required by 6 MCAR § 4.9284, the waste analysis plan must include analyses needed to comply with these special requirements for incompatible wastes. Rule 6 MCAR § 4.9283 C. also requires waste analyses, trial tests, or other documentation to ensure compliance with 6 MCAR § 4.9283 B. As required by 6 MCAR § 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 § 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 § 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 geologica 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;

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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 § 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 betwen 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. 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 § 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 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;

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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 § 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 §§ 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 §§ 4.9300-4.9303, including maintenance and monitoring throughout the post-closure care period specified in the permit under 6 MCAR § 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 § 4.9297; and

d. prevent run-on and run-off from eroding or 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 § 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 § 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 §§ 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 § 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 § 4.9132 B. and E., and compliance with 6 MCAR § 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 § 4.9283 B. is maintained.

6 MCAR § 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 § 4.9280 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 § 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 § 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 § 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.

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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 § 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 § 4.9297 K.5. and other applicable requirements of 6 MCAR § 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 § 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 § 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 § 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 §§ 4.9128-4.9137.

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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 § 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 § 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 § 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 §§ 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 § 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 § 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 § 4.9283 B.

6 MCAR § 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 § 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 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;

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

d. provide for acceptable statistical analysis.

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.

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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 § 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 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 hazarous 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

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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 § 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 § 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 § 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 § 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.

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 § 4.9283 B. is maintained.

6 MCAR § 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 § 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;

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j. if a ground water monitoring system which complies with 6 MCAR § 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. begin to comply with the monitoring requirements of 6 MCAR § 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 § 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 §§ 4.9299-4.9302 including maintenance and monitoring throughout the post-closure care period specified in the permit under 6 MCAR § 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;

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d. maintain and monitor the ground water monitoring systems and comply with all other applicable requirements of 6 MCAR § 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 § 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 §§ 4.9132 B. and E., and compliance with 6 MCAR § 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 § 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 § 4.9283 B.

4. Incompatible wastes, as defined in 6 MCAR § 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 § 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 § 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 §§ 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 § 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 § 4.9134 only because it is ignitable, corrosive, or both;

b. listed as a hazardous waste in 6 MCAR § 4.9134 only because it is reactive for characteristics other than those listed in 6 MCAR § 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 § 4.9132; or

d. a hazardous waste only because it possesses any of the reactivity characteristics described by 6 MCAR § 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 § 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

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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 § 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:

$$\frac{\text{DRE} = (\text{Win} = \text{Wout})}{\text{Win}} \times 100\%$$

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:

$$\text{Pc} = \text{Pm} \times \frac{14}{21 - \text{Y}}$$

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 agnecy'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

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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 fee, 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 § 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 §§ 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 § 4.9321 I.-1 and in a manner that does not threaten human health or the environment.

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

Exhibit 6 MCAR § 4.9322-1 describes Cochran's approximation to the Behrens-Fisher Students' t-test. Exhibit 6 MCAR § 4.9322-2 presents the standard t-tables at the 0.05 level of significance.

Exhibit 6 MCAR § 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 ($X_1, X_2, \ldots . X_n$) the mean is calculated by:

$$\bar{X} = \frac{X_1 + X_2 \ldots . + X_n}{}$$

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:

$$t^* = \frac{X_m - \bar{X}_B}{\sqrt{\frac{s_m^2}{n_m} + \frac{s_B^2}{n_B}}}$$

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:

$$W_B = \frac{s_B^2}{n_B} \text{ and } W_M = \frac{s_m^2}{n_m}$$

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 equal to or larger than t_c, then conclude that most likely there has not been a change in this specific parameter.

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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^* has 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 § 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

Rules as Proposed (all new material)

Chapter Six: Interim Status Standards.

6 MCAR § 4.9380 Facilities governed by interim status.
6 MCAR § 4.9381 Qualifications for obtaining interim status.
6 MCAR § 4.9382 General facility standards.
6 MCAR § 4.9383 Personnel training.
6 MCAR § 4.9384 General requirements for ignitable, reactive, or incompatible waste.
6 MCAR § 4.9385 Waste analysis requirements.
6 MCAR § 4.9386 Preparedness and prevention.
6 MCAR § 4.9387 Arrangements with local authorities for emergencies.
6 MCAR § 4.9388 Contingency plan.
6 MCAR § 4.9389 Emergency procedures.
6 MCAR § 4.9390 Post-emergency requirements.

[1]Adopted from Table III of Statistical Tables for Biological, Agricultural, and Medical Research (1947, R.A. Fisher and F. Yates).

6 MCAR § 4.9391 Facility shipment requirements.
6 MCAR § 4.9392 Manifest system.
6 MCAR § 4.9393 Manifest discrepancies.
6 MCAR § 4.9394 Operating record.
6 MCAR § 4.9395 Retention and disposition of records.
6 MCAR § 4.9396 Required reports.
6 MCAR § 4.9397 Ground water monitoring.
6 MCAR § 4.9398 Ground water quality assessment program.
6 MCAR § 4.9399 Closure.
6 MCAR § 4.9400 Closure activities.
6 MCAR § 4.9401 Post-closure.
6 MCAR § 4.9402 Post-closure care and use of property.
6 MCAR § 4.9403 Notice to local land authority.
6 MCAR § 4.9404 Notice in deed to property.
6 MCAR § 4.9405 Financial requirements.
6 MCAR § 4.9406 Cost estimate for facility closure.
6 MCAR § 4.9407 Financial assurance for facility closure.
6 MCAR § 4.9408 Cost estimate for post-closure care.
6 MCAR § 4.9409 Financial assurance for post-closure care.
6 MCAR § 4.9410 Use of a mechanism for financial assurance of both closure and post-closure care.
6 MCAR § 4.9411 Liability requirements.
6 MCAR § 4.9412 Incapacity of owners, operators, guarantors, or financial institutions.
6 MCAR § 4.9413 Wording of the instruments.
6 MCAR § 4.9414 Use and management of containers.
6 MCAR § 4.9415 Tanks.
6 MCAR § 4.9416 Surface impoundments.
6 MCAR § 4.9417 Waste piles.
6 MCAR § 4.9418 Land treatment facilities.
6 MCAR § 4.9419 Additional requirements for land treatment facilities growing food chain crops.
6 MCAR § 4.9420 Landfills.
6 MCAR § 4.9421 Thermal treatment facilities.
6 MCAR § 4.9422 Chemical, physical, and biological treatment facilities.

Chapter Six: Interim Status Standards

6 MCAR § 4.9380 Facilities governed by interim status.

A. General requirements. Rules 6 MCAR § 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 §§ 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 §§ 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 §§ 4.9380-4.9422, and the requirements of 6 MCAR §§ 4.9405-4.9413 become effective 90 days after the effective date of 6 MCAR §§ 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" means a facility which was in operation on or before the effective date of 6 MCAR §§ 4.9100-4.9560, or for which construction

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commenced on or before the effective date of 6 MCAR §§ 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 §§ 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 §§ 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 § 4.9129 B.1., or 2., except to the extent that 6 MCAR § 4.9129 B.3., 4., or 5. provides otherwise and 6 MCAR § 4.9216 A.5.-7. are complied with;

3. a generator accumulating waste on-site in compliance with 6 MCAR § 4.9216, except to the extent the requirements are included in 6 MCAR § 4.9216;

4. a farmer disposing of waste pesticides from his own use in compliance with 6 MCAR § 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 § 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 §§ 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 §§ 4.9380-4.9422 shall comply with all applicable requirements of 6 MCAR §§ 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 §§ 4.9380-4.9422 and the agency's permitting procedures for those activities.

6 MCAR § 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 §§ 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 §§ 4.9380-4.9422 are considered to have federal interim status and are not required to obtain state interim status.

6 MCAR § 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 § 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 §§ 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 §§ 4.9380-4.9422.

2. Unless exempt under 1., a facility must have:

a. a 24-hour surveillance system which continuously 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 or 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 of 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 §§ 4.9414 E., 4.9415 D., 4.9416 E., 4.9421 D., and 4.9422 D.

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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 § 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 §§ 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 assignments 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.

E. Training review. Facility personnel shall take part in an annual review of the intial 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 § 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 §§ 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 § 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 §§ 4.9380-4.9422.

2. The analysis may include data developed under 6 MCAR §§ 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 identify 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:

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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 represenative 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 §§ 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 § 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 § 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 of 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 § 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 § 4.9388 Contingency plan.

A. Scope. Rules 6 MCAR §§ 4.9387-4.9390 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in 6 MCAR § 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 § 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 §§ 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 § 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:

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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 § 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. 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.

G. 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 § 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 §§ 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 § 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 §§ 4.9200-4.9222.

6 MCAR § 4.9392 Manifest system.

A. Scope. This rule applies to owners and operators of both on-site and off-site facilties except as 6 MCAR § 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 § 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 § 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.

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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 § 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 § 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 § 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 § 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 § 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 § 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 § 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 §§ 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 § 4.9388 C.;

7. Records and results of inspections as required by 6 MCAR § 4.9381 E.;

8. Monitoring, testing, or analytical data where required by 6 MCAR §§ 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 §§ 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 costs estimates under 6 MCAR § 4.9406 and, for disposal facilities, all post-closure estimates under 6 MCAR § 4.9408.

6 MCAR § 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 § 4.9380 provides otherwise.

B. Retention of records. The retention period for all records required under 6 MCAR §§ 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.

C. Disposition of records. A copy of records of waste disposal locations and quantities under 6 MCAR § 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 § 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 § .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 § 4.9397 G. where required;

7. the most recent closure cost estimate under 6 MCAR § 4.9406 and for disposal facilities, the most recent post-closure cost estimate under 6 MCAR § 4.9408; and

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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 and if the waste is not excluded from the manifest requirement by 6 MCAR § 4.9210, 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. When a facility receives unmanifested hazardous waste, the owner or operator shall obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the owner or operator shall file an unmanifested waste report for the hazardous waste movement; 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 § 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 § 4.9390 C.;

2. ground water contamination and monitoring data as specified in 6 MCAR §§ 4.9397 F. and G. and 4.9398 F.; and

3. facility closure as specified in 6 MCAR § 4.9399 C.

6 MCAR § 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 § 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 § 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 § 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 § 4.9132 D., or are listed as hazardous wastes in 6 MCAR § 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 § 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 faciluty 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:

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 well 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 §§ 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 §§ 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 § 4.9398 D.2. for an alternate ground water monitoring system;

2. no later than one year after the effective date of 6 MCAR §§ 4.9380-4.9422, initiate the determinations specified in 6 MCAR § 4.9398 D.4.;

3. prepare and submit a written report in accordance with 6 MCAR § 4.9398 D.5;

4. continue to make the determination specified in 6 MCAR § 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 on custody control.

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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 § 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 § 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 § 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 § 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 § 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 § 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 § 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 § 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 § 4.9396 B.

c. As a part of the annual report required under 6 MCAR § 4.9396 B. the owner or operator shall report results of the evaluation of ground water surface elevations under 6 MCAR § 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 § 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 § 4.9396 B.

6 MCAR § 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 § 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 § 4.9397 F.2.c. and determined pursuant to 6 MCAR § 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 § 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 § 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 § 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 § 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:

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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 § 4.9397 F.5. to determine whether the requirements under 6 MCAR § 4.9397 D. for locating the monitoring wells continues to be satisfied. If the evaluation shows that 6 MCAR § 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.

6 MCAR § 4.9399 Closure.

A. Scope. Except as provided otherwise in 6 MCAR § 4.9380, this rule and 6 MCAR § 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 § 4.9400, and the applicable closure requirements of 6 MCAR §§ 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 § 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 § 4.9401 Post-closure.

A. Scope. This rule and 6 MCAR §§ 4.9402-4.9404 apply to the owners and operators of all hazardous waste disposal facilities, except as provided otherwise in 6 MCAR § 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;

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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.

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.

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 alternation 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 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 § 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 § 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 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 § 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

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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 § 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 §§ 4.9100-4.9560.

6 MCAR § 4.9405 Financial requirements.

A. Scope. The requirements of 6 MCAR §§ 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 § 4.9380.

The requirements of 6 MCAR §§ 4.9408-4.9410 apply only to owners and operators of disposal facilities.

The state and the federal government area exempt from the requirements of 6 MCAR §§ 4.9405-4.9413.

B. Definitions. Definitions are as follows:

1. When used in 6 MCAR §§ 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 § 4.9399.

b. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with 6 MCAR § 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 § 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 §§ 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 § 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 § 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 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 § 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 § 4.9314 A.1.-1, and the trust agreement must be accompanied by a formal certification of acknowledgement as shown in Exhibit 6 MCAR § 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

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(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 §§ 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 §§ 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:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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 § 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.

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 follow:

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.

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2. The wording of the letter of credit must be identical to the wording specified in Exhibit 6 MCAR § 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 estimates 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 §§ 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 §§ 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 § 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 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 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

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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 $10,000,00; 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 § 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 § 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 §§ 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 §§ 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 §§ 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 § 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

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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 § 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 §§ 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 § 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 § 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 § 4.9314 A.1.-1, and the trust agreement must be accompanied by a formal certification of acknowledgement, as shown in Exhibit 6 MCAR § 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:

$$\text{next payment} = \frac{\text{CE-CV}}{\text{Y}}$$

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 §§ 4.9405-4.9413, or over the remaining operating life of the facility as estimated in the post-closure plan, whichever period is shorter. The first payment must be made within 90 days of the effective date of 6 MCAR §§ 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.

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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 § 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 § 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 §§ 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 §§ 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

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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 § 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 § 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 § 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 §§ 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 §§ 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 §§ 4.9405-4.9413;

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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 § 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 has 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 § 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 § 4.9407 and 6 MCAR § 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 § 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 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 § 4.9314 I.10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR § 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

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Exhibit 6 MCAR § 4.9314 I.-10. The wording of the certificate of insurance must be identical to the wording specified in Exhibit 6 MCAR § 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 §§ 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 §§ 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 §§ 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 §§ 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 §§ 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 § 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 § 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 §§ 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 § 4.9314 G.-8 to cover both forms of financial responsibility; a separate letter as specified in Exhibit 6 MCAR § 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 §§ 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 §§ 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 §§ 4.9405-4.9413;

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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 covered 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 § 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 §§ 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 §§ 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 § 4.9413 Wording of instruments.

Instruments used to satisfy the requirements of 6 MCAR §§ 4.9405-4.9412, must be worded as specified in 6 MCAR § 4.9314.

6 MCAR § 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 § 4.9380 provides otherwise. Under 6 MCAR §§ 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 § 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. Compatibility 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 § 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 § 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 §§ 4.9200-4.9560.

6 MCAR § 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 § 4.9380 provides otherwise.

B. General operating requirements.

Treatment or storage of hazardous waste in tanks must comply with 6 MCAR § 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 § 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 § 4.9385, the waste analysis plan nust include analyses needed to comply with F. and G. As required by 6 MCAR § 4.9394, the

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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 present:

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 § 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 §§ 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 § 4.9132 B. or E., and compliance with 6 MCAR § 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 § 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 § 4.9384 B. is maintained.

6 MCAR § 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 § 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 § 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 § 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 § 4.9384 B. As required by 6 MCAR § 4.9385, the waste analysis plan must include analyses needed to comply with G. and H. As required by 6 MCAR § 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 § 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 §§ 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 §§ 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 §§ 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 § 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 § 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 §§ 4.9132 B. or E., and 4.9384 B. is followed; or

2. the surface impoundment is used soley 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 § 4.9384 B. is followed.

6 MCAR § 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 § 4.9380 provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under 6 MCAR § 4.9420.

B. Protection from wind. The owner or operator of a pile containing hazardous waste which could be subjected 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 § 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

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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 § 4.9385, the waste analysis plan must include analyses needed to comply with E. and F. As required by 6 MCAR § 4.9384, 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 § 4.9132 B. or E., and the addition complies with 6 MCAR § 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 § 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 § 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 then 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 § 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 § 4.9418 Land treatment.

A. Scope. This rule applies to owners and operators of hazardous waste land treatment facilities, except as 6 MCAR § 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 § 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 § 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 § 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 § 4.9385, the waste analysis plan must include analyses needed to comply with G. and H. As required by 6 MCAR § 4.9384, 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 § 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 § 4.9394.

F. Closure and post-closure. Closure and post-closure requirements are as follows:

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1. In the closure plan under 6 MCAR § 4.9399 and the post-closure plan under 6 MCAR § 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 § 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 §§ 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 § 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 § 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 § 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 §§ 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 § 4.9384 B. is complied with.

6 MCAR § 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 operator 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 § 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 § 4.9419 C.3.-1; and

3. the cumulative application of cadmium from waste does not exceed the levels specified in Exhibit 6 MCAR § 4.9419 C.3.-2.

Exhibit 6 MCAR § 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

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Exhibit 6 MCAR § 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 6.5	Background soil pH less than 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 § 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 § 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 § 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 § 4.9385, the waste analysis plan must include analyses needed to comply with E. and F. As required by 6 MCAR § 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 § 4.9394:

1. a map detailing the exact location and dimensions, including depth, of each cell with respect to permanently surveying 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 § 4.9399 must specify the function and design of the cover. In the post-closure plan under 6 MCAR § 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 § 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 §§ 4.9128-4.9137, it must be managed as a hazardous waste in accordance with all applicable requirements of 6 MCAR §§ 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 §§ 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 § 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:

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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 § 4.9384 B.

4. Incompatible wastes, as defined in 6 MCAR § 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 § 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 § 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 §§ 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 could not reasonably be expected to contain constituents listed in 6 MCAR § 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 § 4.9134 only because it is ignitable, or corrosive, or both;

2. listed as a hazardous waste in 6 MCAR § 4.9134 only because it is reactive for characteristics other than those listed in 6 MCAR § 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 § 4.9132; or

4. a hazardous waste only because it possesses any of the reactivity characteristics described by 6 MCAR § 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 § 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 § 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, auxiliary 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 §§ 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 § 4.9421 F.-1 and in a manner that does not threaten human health or the environment.

Exhibit 6 MCAR § 4.9421 F.-1

Properly 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 § 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 § 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 §§ 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 § 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.

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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 § 4.9385, the waste analysis plan must include analyses needed to comply with F. and G. As required by 6 MCAR § 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 § 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 §§ 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 §§ 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 § 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 § 4.9384 B. is complied with.

Rules as Proposed (all new material)

Chapter Seven: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

6 MCAR § 4.9480 Facilities governed by facility standards.

6 MCAR § 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 § 4.9480 Facilities governed by facility standards.

A. General requirements. Rules 6 MCAR §§ 4.9480-4.9481 apply in lieu of rules 6 MCAR §§ 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 §§ 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 § 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 § 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 livestock into or onto the unit or facility will not cause a violation of the requirements of 6 MCAR §§ 4.9480-4.9481.

C. Inspection requirements. Inspection requirements are as follows:

1. The owner or operator shall inspect the elementary neutralization unit, pretretment 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.

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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 § 4.9292, Manifest system; 6 MCAR § 4.9293, Manifest discrepancies; 6 MCAR § 4.9294 B. and C.1.-3., Operating record; and 6 MCAR § 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 §§ 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 §§ 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 §§ 4.9128-4.9222.

ADOPTED RULES

The adoption of a rule becomes effective after the requirements of Minn. Stat. § 14.13-14.28 have been met and five working days after the rule is published in the *State Register*, unless a later date is required by statutes or specified in the rule.

If an adopted rule is identical to its proposed form as previously published, a notice of adoption and a citation to its previous *State Register* publication will be printed.

If an adopted rule differs from its proposed form, language which has been deleted will be printed with strike outs and new language will be underlined, and the rule's previous *State Register* publication will be cited.

A temporary rule becomes effective upon the approval of the Attorney General as specified in Minn. Stat. § 14.33 and upon the approval of the Revisor of Statutes as specified in § 14.36. Notice of approval by the Attorney General will be published as soon as practicable, and the adopted temporary rule will be published in the manner provided for adopted rules under § 14.18.

Department of Public Welfare
Income Maintenance Bureau

Adopted Temporary Rules Governing Reimbursement Methodology for Hospital Inpatient Care Provided under the Medical Assistance and General Assistance Medical Care Programs

The temporary rules proposed and published at *State Register*, Volume 8, Number 5, pages 150-158, August 1, 1983 (8 S.R. 150) are adopted with the following modifications:

Temporary Rules as Adopted

12 MCAR § 2.05401 [Temporary] General provisions on reimbursement methodology for hospital inpatient care provided under the ~~medicare~~ medical assistance and general assistance medical care programs.

A. Statutory authority, purpose, and applicability.

1. Authority. 12 MCAR §§ 2.05401-2.05403 [Temporary] are enacted under the authority granted the commissioner of public welfare by Laws of Minnesota 1983, chapter 312, article 5, sections 9 and 39. The provisions of 12 MCAR §§ 2.05401-2.05403 [Temporary] are to be read in conjunction with code of Federal Regulations, titles XVIII and XIX and Minnesota Statutes, chapters 256, 256B, and 256D. ~~Any provision of 12 MCAR §§ 2.05401-2.05403 [Temporary] that is inconsistent with any of the provisions of those laws and/or regulations is superseded thereby.~~ The Minnesota Department of Public Welfare, as the state agency responsible for the administration of the medical assistance and general assistance medical care programs may issue instructional bulletins, manual materials, and forms, as necessary, to assist in compliance with these rules.

2. Purpose and applicability. 12 MCAR §§ 2.05401-2.05403 [Temporary] establish a prospective inpatient hospital reimbursement methodology for all hospitals which participate in the medical assistance and/or general assistance medical care programs. ~~This rate methodology promotes cost containment through efficient and economical hospital operation by offering financial incentives without negative effects on patient care.~~

Rules 12 MCAR §§ 2.05401-2.05403 [Temporary] also prescribe a method for implementing the statutory limitation in the growth of rates paid for inpatient hospital care, as found in Minnesota Statutes, section 256.966, as amended by Laws of Minnesota 1983, chapter 312, article 5, sections 6 and 39, as those limits apply to hospitals not yet subject to the prospective rate determination system.

B. Definitions.

3. Allowable base year costs. "Allowable base year costs" means a hospital's total program reimbursable cost as identified in the hospital's base year medicare/medicaid cost report with the following adjustments:

d. using the hospital cost index revise program reimbursable costs, as identified in the medicare/medicaid cost report, adjusted by a., b., and c. for the period between the base year fiscal year end and the first day of the hospital's first fiscal year beginning on or after July 1, 1983.

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16. Rate per admission. "Rate per admission" means ~~the allowable base year costs per program admission, or, subsequent to the initial year,~~ the adjusted base year costs, times the budget year hospital cost index plus budget year pass-through costs per program admission.

C. Determination of allowable base year costs for ~~period beginning July 1, 1983, through July 30, 1987~~ hospital fiscal years beginning on or after July 1, 1983.

2. Allowable base year costs will be calculated as follows, using data from the Health Care Financing Administrator (HCFA) Form 2552 Worksheet, 1981 revision:

(13) Program adjusted reimbursable costs _____
~~(Line 3 plus Line 12, minus Line 7)~~
(Line 3 minus Line 9 plus Line 12)

D. Determination of annual hospital cost index.

~~5. The HCI is subject to legislatively imposed limitations.~~

E. Determination of the payable rate per admission and rate per day.

1. Hospital submission of financial information. For each fiscal year, each hospital must submit a report to the department containing its pass-through costs and admissions data. The report shall include actual data for the prior year and budgeted data for the current and budget years. The report is due 30 days prior to the start of the hospital's next fiscal year. The report shall include the following information:

Category	Prior Year (Actual)	Current Year (Budget)	Budget Year (Budget)
Depreciation			
Rents and leases			
Property taxes, license fees (and other taxes)			
Interest			
Malpractice insurance			
TOTAL PASS-THROUGH COSTS			
"Overall-Program Utilization" PROGRAM PASS-THROUGH COSTS			
Admissions Program PASS-THROUGH COSTS PER ADMISSION			
~~Patient Days PASS-THROUGH COSTS~~			
Patient days PASS-THROUGH COSTS PER PATIENT DAY			

3. Rate per admission. The rate per admission for the budget year shall be calculated as follows:

RATE = [(~~Allowable~~ Adjusted base year costs per program admission multiplied by (budget year hospital cost index.), plus (budget year pass-through costs per program admission)]

~~Subsequent to the initial year, adjusted base year costs is used in the above formula instead of allowable base year costs.~~ In calculating the budget year pass-through costs per program admission, the count of total admissions and the ratio of program admissions to total admissions will be taken from the hospital's base year.

After the end of each budget year, the commissioner shall, upon request of the provider, recalculate the rate per admission and/or the rate per day and the actual ~~values~~ value for program admissions ~~and total admissions~~. The commissioner may subsequently adjust the amounts paid to the hospital. The adjustment may be either a single payment to or from a hospital or an adjustment to a hospital's subsequent year's rate(s).

G. Exceptions to the payment mechanism. Exceptions to the rate per admission shall be granted in the following circumstances:

3. Disproportionate population. The Minnesota prospective hospital payment program system will take into account the situation of hospitals which serve a disproportionate number of low income patients. Hospitals with a disproportionate number of M.A. and/or G.A.M.C. clients shall receive an adjustment to the rate per admission. If the percentage of M.A. and/or G.A.M.C. admissions exceeds 15 percent, a percentage increase to the rate per admission will be calculated as follows:

For: Percentage of total acute care admissions which are Medicaid	Increase in rate per admission
15-20%	¼ of 1% for each percentage point above 15%
21-25%	½ of 1% for each percentage point above 20%
26-30%	¾ of 1% for each percentage point above 25%
31% and above	1% for each percentage point above 30%

For example, if a hospital's ~~medicaid~~ M.A. and/or G.A.M.C. ratio was 23 percent, the rate per admission would be increased by 2.75 percent. This adjustment is made to hospital rates after the application of any statutory limits to the growth in hospital rates or unit costs.

SUPREME COURT

Decisions Filed Friday, October 14, 1983

Compiled by Wayne O. Tschimperle, Clerk

C3-82-1082 State of Minnesota, Respondent, v. John Matilla, Appellant.

Defendant was properly found guilty of the felony offense of theft by swindle over $2,500 and of the misdemeanor offense of filing a false police report, but defendant's sentence for the misdemeanor offense is vacated.

Affirmed as modified.

Wahl, J.

C7-82-1571 Minnesota Chippewa Tribe, *et al.*, Appellants, v. State of Minnesota, Department of Labor and Industry, *et al.*, Respondents, Michael C. Tibbets, Intervenor, Respondent.

Reversed and remanded.

Todd, J.

STATE CONTRACTS

Pursuant to the provisions of Minn. Stat. § 16.098, subd. 3, an agency must make reasonable effort to publicize the availability of any consultant services contract or professional and technical services contract which has an estimated cost of over $2,000.

Department of Administration procedures require that notice of any consultant services contract or professional and technical services contract which has an estimated cost of over $10,000 be printed in the *State Register*. These procedures also require that the following information be included in the notice: name of contact person, agency name and address, description of project and tasks, cost estimate, and final submission date of completed contract proposal.

Minnesota Trade Office
Department of Agriculture

Notice of Request for Proposal for Minnexport Trade Mission Consultant

The Minnesota Trade Office is seeking an individual or organization to work on our Minnexport Program as a Trade Mission Consultant, with the main objective of assuring the success of small businesses participating in this program in securing sales on Trade Missions and a solo Trade Show.

Elements of this task will include initial market research, pre-marketing of the selected small businesses' products or services in the foreign country, and the pre-arranging of appointments for two Trade Missions to Europe and one solo Trade Show for new-to-export companies. Each mission will require approximately 60 appointments with end users.

This project, which will be performed under contract, is outlined in detail in the Request for Proposal (RFP)—"Minnexport Trade Mission Consultant."

The formal RFP may be obtained by writing or calling:

W. Gary Winget, Information Officer
Minnesota Trade Office
Department of Agriculture
90 West Plato Boulevard
St. Paul, MN 55107
(612) 297-4258

The ceiling price for this proposal is $80,000. The deadline for submission of proposals is 4:30 p.m., November 14, 1983.

OFFICIAL NOTICES

Pursuant to the provisions of Minn. Stat. § 15.0412, subd. 6, an agency, in preparing proposed rules, may seek information or opinion from sources outside the agency. Notices of intent to solicit outside opinion must be published in the *State Register* and all interested persons afforded the opportunity to submit data or views on the subject, either orally or in writing.

The *State Register* also publishes other official notices of state agencies, notices of meetings, and matters of public interest.

Department of Agriculture
Soil and Water Conservation Board

Notice of Change in Meeting Place

The Minnesota Soil and Water Conservation Board has changed the date of their November 8, 1983 meeting to November 1, 1983. The meeting will be held in the Department of Agriculture Building, 90 W. Plato Blvd., St. Paul, Minnesota, starting at 9:00 a.m.

The board will resume their regular monthly schedule on December 13, 1983.

Department of Energy and Economic Development

Current and Projected Residential Energy Costs, by Region and State

In fulfillment of Minnesota Statutes, chapter 116H, section 129, subdivision 1, the Deputy Commissioner for Energy, Department of Energy and Economic Development hereby certifies the following current and projected average residential energy prices. Sample surveys of energy utilities and distributors were used to estimate regional average prices for 1982-83 (Table 1). Sampling errors of these surveys are given in Table 1A. Ten year forecasts of residential energy prices are given in Tables 2 and 3.

These prices are to be used with discretion. All numbers are regional or statewide averages, and, therefore, do not take into account differences in tariff structures among individual utilities and distributors, nor advantages that some purchasers obtain through quantity discounts. If the user finds these current levels of prices to be higher or lower than actual unit energy prices, as documented by their most recent energy bill, the forecasts can be adjusted by applying the changes in prices between years provided in Tables 2 and 3 to an appropriate base for that locality.

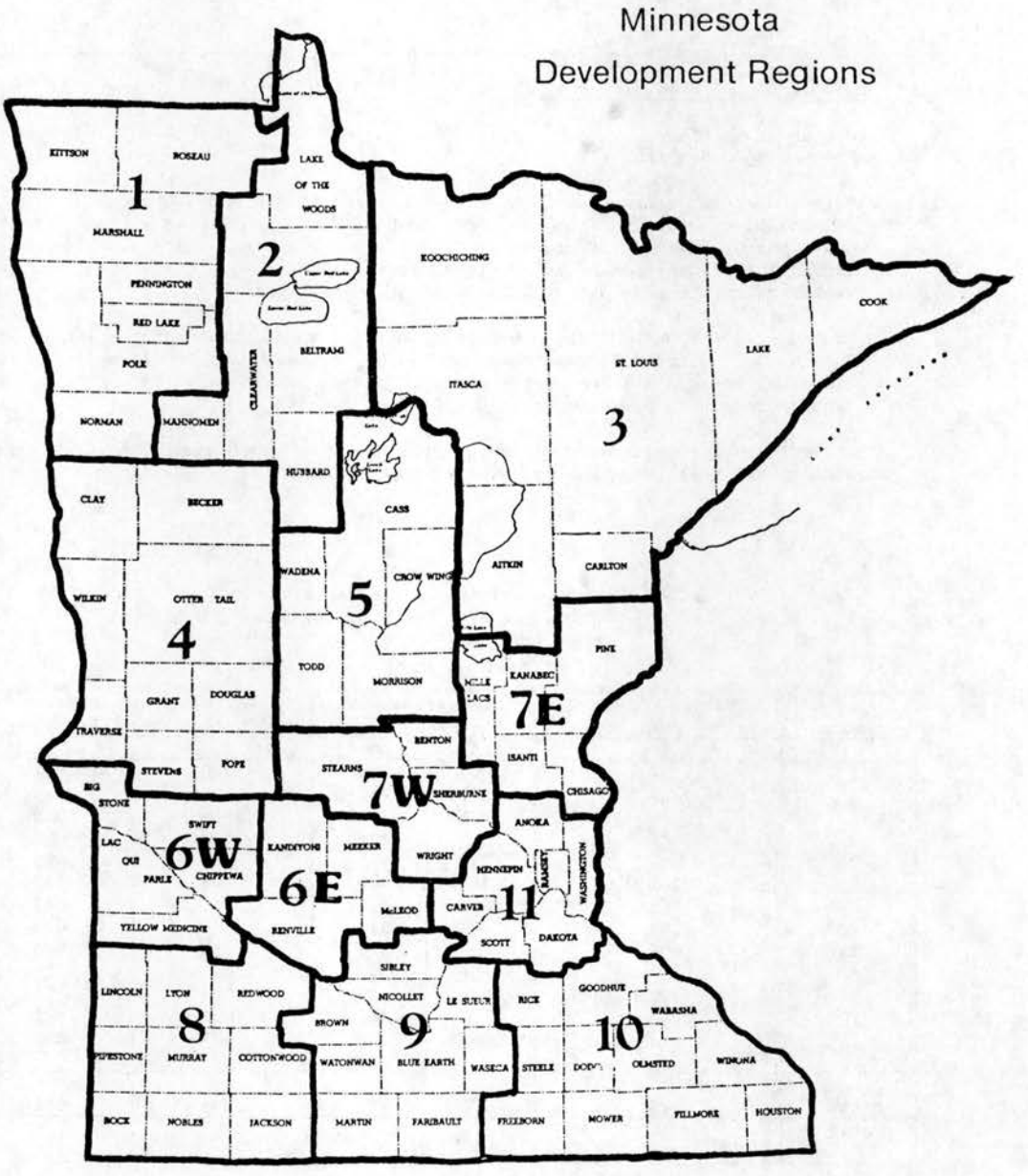

Table 1. Average Residential Energy Prices, by Region and State, Heating Season 1982-1983

Region	Natural Gas[a] $/1000 cubic feet	Electricity[b] ¢/kwh		Fuel Oil[c] $/gallon	Propane[c] $/gallon
		NSH	SH		
1	6.01	5.05	4.18	.96	.75
2	5.91	5.73	4.70	1.03	.79
3	4.91	5.27	5.01	1.06	.82
4	6.16	6.66	5.14	.99	.79
5	5.67	5.86	5.21	.99	.82
6E	5.61	6.15	5.04	.94	.75
6W	4.99	5.90	4.71	.95	.72
7E	4.96	6.62	6.03	1.00	.85
7W	5.36	6.21	5.21	1.01	.80
8	4.91	4.45	3.74	.95	.69
9	5.68	5.99	4.91	.93	.70
10	4.74	6.81	5.58	.95	.74
11	5.54	6.07	5.05	1.04	.82
State	5.36	5.88	5.03	.99	.78

SH = Space Heating
NSH = Non-Spaceheating

a Prices calculated from rate schedules submitted to the Minnesota Public Service Commission and from the Department of Energy, Planning and Development, Energy Division, Residential Fuel Price Survey, Heating Season 1982-1983. The price reported is a weighted average of average summer and average winter prices, including Purchase Gas Adjustments (PGA's).

b Prices calculated from rate schedules submitted to the Minnesota Public Service Commission and from the Department of Energy, Planning and Development, Energy Division, Residential Fuel Price Survey, Heating Season 1982-1983. The price reported includes Purchase Cost Adjustments, (PCA's).

c Prices from the Department of Energy, Planning and Development, Energy Division, Residential Fuel Price Survey, Heating Season 1982-83.

Table 1A. Standard Errors of Sample Prices
Residential Fuel Price Survey
1982-1983 Heating Survey

Region	Natural Gas $/1000 cubic feet	Electricity ¢/kwh		Fuel Oil $/gallon	Propane $/gallon
		NSH	SH		
1	.174	.365	.284	.012	.008
2	.205	.240	.152	.008	.014
3	.055	.528	.394	.010	.013
4	.027	.259	.138	.016	.011
5	.067	.518	.475	.023	.012
6E	.262	.463	.360	.013	.012
6W	.160	.254	.140	.011	.007
7E	.169	.233	.238	.014	.004
7W	.096	.402	.391	.018	.013
8	.131	.338	.353	.015	.013
9	.082	.359	.334	.009	.013
10	.042	.315	.312	.011	.011
11	.072	.383	.362	.013	.012
State	.024	.176	.152	.004	.003
Total No. of Samples	108	130		130	130

Table 2. Projected State Average Residential Prices for Fuel Oil, Propane, Natural Gas, and Electric, Including Inflation, Heating Season 1981-1993

	State Average Prices in Current Dollars											
	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
#2 Fuel Oil a/ $/gallon	1.13	0.99	1.02	1.07	1.15	1.23	1.32	1.42	1.54	1.66	1.79	1.95
Propane b/ $/gallon	0.65	0.78	0.82	0.86	0.92	0.99	1.07	1.16	1.26	1.36	1.48	1.61
Natural Gas c/ $/1000 cubic feet	4.52	5.35	5.62	5.84	6.19	6.63	7.09	7.66	8.27	8.93	9.56	10.23
Electric ¢/kwh d/												
-Spaceheating	4.31	5.03	5.23	5.44	5.66	5.88	6.12	6.36	6.61	6.88	7.15	7.44
-Non-Spaceheating	5.57	5.88	6.12	6.36	6.61	6.88	7.15	7.44	7.74	8.05	8.37	8.70
Inflation-GNP implicit price deflator e/ (Annual Rates)	7.7	5.3	4.6	4.9	5.1	5.1	5.4	5.7	5.8	5.9	6.0	6.1

a/ Assumes stable real oil prices through 1985 with real price growth of 2.8 percent per year beginning in 1986.

b/ Historical relationships between crude oil and LPG in terms of price per million BTU content are continued into the future.

c/ Assuming wellhead price deregulation by 1985 according to the Natural Gas Policy Act of 1978 and deactivation of the indefinite price escalator clauses in existing natural gas contracts.

d/ Electric prices growing at less than the inflation rate due to decreasing investment in additional capacity by the utilities.

e/ Data Resources, Inc., U. S. Long Term Review, Summer 1983 Lexington, Trendlong 0683, p. 1.21; determined for the heating season by taking the average between two calendar years.

Table 3. Projected Residential Electricity Prices
by Region, Including Inflation, 1982-1993

Region	Type of Heating	Actual	Projections ¢/kwh									
		1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
							¢/kwh					
1	Non-Space	5.05	5.25	5.67	5.84	6.01	6.19	6.50	6.83	7.17	7.53	7.91
	Space	4.18	4.35	4.69	4.84	4.98	5.13	5.39	5.66	5.94	6.24	6.55
2	Non-Space	5.73	6.01	6.49	6.69	6.89	7.09	7.38	7.67	8.06	8.46	8.88
	Space	4.70	4.93	5.33	5.49	5.65	5.82	6.05	6.30	6.61	6.94	7.29
3	Non-Space	5.27	5.48	5.70	5.93	6.22	6.47	6.80	7.14	7.35	7.80	8.19
	Space	5.01	5.21	5.42	5.64	5.92	6.15	6.46	6.79	6.99	7.41	7.78
4	Non-Space	6.66	6.93	7.20	7.56	7.87	8.18	8.51	8.85	9.20	9.66	10.05
	Space	5.14	5.35	5.56	5.84	6.07	6.31	6.57	6.83	7.10	7.46	7.76
5	Non-Space	5.86	6.09	6.28	6.53	6.80	7.07	7.35	7.65	7.96	8.19	8.69
	Space	5.21	5.42	5.58	5.80	6.04	6.28	6.53	6.79	7.06	7.27	7.71
6E	Non-Space	6.15	6.40	6.59	6.92	7.20	7.56	7.86	8.18	8.43	8.76	9.20
	Space	5.04	5.24	5.40	5.67	5.90	6.19	6.44	6.70	6.90	7.18	7.53
6W	Non-Space	5.90	6.14	6.38	6.64	6.90	7.25	7.53	7.84	8.15	8.56	8.98
	Space	4.71	4.90	5.09	5.30	5.51	5.79	6.02	6.26	6.51	6.83	7.18
7E	Non-Space	6.62	6.95	7.23	7.45	7.74	8.05	8.38	8.71	8.97	9.33	9.70
	Space	6.03	6.33	6.58	6.78	7.05	7.34	7.63	7.94	8.17	8.50	8.84
7W	Non-Space	6.21	6.46	6.65	6.92	7.19	7.63	7.93	8.25	8.50	8.84	9.19
	Space	5.21	5.42	5.58	5.80	6.04	6.40	6.65	6.92	7.13	7.41	7.71
8	Non-Space	4.45	4.63	4.81	5.05	5.26	5.52	5.74	5.97	6.21	6.52	6.78
	Space	3.74	3.89	4.05	4.25	4.42	4.64	4.83	5.02	5.22	5.48	5.70
9	Non-Space	5.99	6.23	6.42	6.74	7.01	7.36	7.65	7.96	8.28	8.61	8.95
	Space	4.91	5.11	5.26	5.52	5.74	6.03	6.27	6.52	6.78	7.05	7.33
10	Non-Space	6.81	7.08	7.37	7.66	7.97	8.45	8.87	9.23	9.59	10.07	10.57
	Space	5.58	5.80	6.03	6.28	6.53	6.92	7.27	7.56	7.86	8.25	8.66
11	Non-Space	6.07	6.25	6.44	6.70	6.97	7.45	7.68	8.06	8.38	8.72	9.07
	Space	5.05	5.20	5.36	5.57	5.79	6.20	6.39	6.71	6.97	7.25	7.54

Department of Health

Emergency Medical Services Licensure Application

As of October 24, 1983, a complete application was submitted by Altura Ambulance Service, Altura, Minnesota, for an expansion in primary service area to include the City of Rollingstone.

This notice is given pursuant to Minnesota Statutes 1979, section 144.802, which requires in part that the Commissioner of Health shall publish the notice in the *State Register* at the applicant's expense; and in a newspaper in the municipality in which the service will be provided.

Each municipality, county, community health services agency, and any other interested person wishing to comment on this application may submit comments to the State Health Planning Agency, 550 Cedar St., 100 Capitol Square Bldg., St. Paul, MN 55101, before the close of business on November 24, 1983.

After a public hearing has been held, the State Health Planning Agency shall recommend that the Commissioner of Health grant or deny a license or recommend that a modified license be granted. The State Health Planning Agency shall make the recommendations and reasons available to any individual requesting them.

Within 30 days of receipt of the recommendation to the Commissioner of Health, the Commissioner shall grant or deny the license to this applicant.

Emergency Medical Services Licensure Application

As of October 24, 1983, a complete application was submitted by Lewiston Volunteer Ambulance Assn., Lewiston, Minnesota, for an expansion in primary service area to include the City of Stockton.

This notice is given pursuant to Minnesota Statutes 1979, section 144.802, which requires in part that the Commissioner of Health shall publish the notice in the *State Register* at the applicant's expense; and in a newspaper in the municipality in which the service will be provided.

Each municipality, county, community health services agency, and any other interested person wishing to comment on this application may submit comments to the State Health Planning Agency, 550 Cedar St., 100 Capitol Square Bldg., St. Paul, MN 55101, before the close of business on November 24, 1983.

After a public hearing has been held, the State Health Planning Agency shall recommend that the Commissioner of Health grant or deny a license or recommend that a modified license be granted. The State Health Planning Agency shall make the recommendations and reasons available to any individual requesting them.

Within 30 days of receipt of the recommendation to the Commissioner of Health, the Commissioner shall grant or deny the license to this applicant.

State Board of Investment

Notice of Regular Meeting

The State Board of Investment will meet on Wednesday, October 26, 1983 at 8:45 a.m. in Room 118, State Capitol.

Investment Advisory Council

The Investment Advisory Council will meet at 7:30 a.m. on Tuesday, October 25, 1983 in the MEA Building Conference Room, 41 Sherburne, Saint Paul.

Metropolitan Council

Public Hearing on Interim Economic Policies for the Metropolitan Development Framework

The Metropolitan Council will hold a public hearing on Wednesday, Nov. 16, 1983 from 7 to 10 p.m. in the Metropolitan Council Chambers, 300 Metro Square Bldg., 7th and Robert Sts., St. Paul, Minnesota 55101, for the purpose of receiving public comments on the proposed Interim Economic Policies for the Metropolitan Development Framework.

This document when adopted in early 1984 will serve to bring private sector needs and concerns into the regional planning

process on an interim basis. The policies and implementation programs will be fully intergrated into the Development Framework chapter of the Council's *Metropolitan Development Guide* in late 1984.

All interested persons are encouraged to attend the hearing and offer comments on the proposed economic policies material. Persons wishing to speak at the hearing are encouraged to register in advance by contacting the Council's Planning Assistance staff at 291-6421. Those who register first will be scheduled to speak first. Written comments may be submitted until Dec. 1, 1983. Copies of the hearing document are available for public inspection beginning Monday, October 17, 1983 at the following locations:

Metropolitan Council Library
300 Metro Square Building
St. Paul, Minnesota 55101

Minneapolis Public Library
Government Documents Room
300 Nicollet Mall
Minneapolis, Minnesota 55401

St. Paul Public Library
Science and Industry Room
90 West Fourth Street
St. Paul, Minnesota 55102

Anoka County Library—Blaine Branch
707 Highway 10
Blaine, Minnesota 55434

Carver County Library—Burnsville Branch
314 Walnut Street
Chaska, Minnesota 55318

Dakota County Library—Burnsville Branch
1101 W. County Rd. 42
Burnsville, Minnesota 55337

Hennepin County Library—Southdale Branch
7001 York Avenue
Edina, Minnesota 55435

Ramsey County Library—Roseville Branch
2180 N. Hamline Avenue
Roseville, Minnesota 55113

Scott County Library—Shakopee Branch
235 S. Lewis Street
Shakopee, Minnesota 55379

Washington County Library—Park Grove Branch
7520-80th Street S.
Cottage Grove, Minnesota 55106

Questions about the proposed policies should be directed to William Byers of the Council's Comprehensive Planning staff at 291-6322. Copies of the document may be obtained free of charge from the Council's Public Information Office at the above address, telephone 291-6464.

Minnesota Pollution Control Agency

Notice of Public Meeting Regarding Revisions to Minnesota's State Implementation Plan

Notice is hereby given, that on November 22, 1983, the Minnesota Pollution Control Agency (hereinafter referred to as "agency") will hold a regularly scheduled agency meeting in the agency board room, located at 1935 West County Road B-2, Roseville, Minnesota, 55113. The agency is currently scheduled to consider, among other things, a proposed revision to the

State Implementation Plan (hereinafter referred to as "SIP") for the inclusion of the revised state ambient air quality standards. These air quality standards are contained in the state rule 6 MCAR § 4.001 (hereinafter referred to as "APC 1"). This proposal was originally scheduled to be considered on September 27, 1983.

Notice is also hereby given, that the public is invited to attend the agency meeting on November 22, 1983, and to comment at that meeting on the proposed SIP revision. Written comment on the inclusion of APC 1 in the SIP may be submitted prior to the meeting and should be addressed to Douglas M. Benson, Division of Air Quality, Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota, 55113.

The November 22, 1983 agency meeting will be held in the agency board room, at the address noted above and will begin at 9:00 a.m. An agenda for the meeting will be available by November 11, 1983. Questions should be directed to Douglas M. Benson at the address noted above or at 612/296-7743. A copy of the agenda and APC 1 may be obtained from Jeanine Willenbring, also at the address noted above, and at 612/296-7351.

The SIP is designed to attain and maintain the National Ambient Air Quality Standards for criteria air pollutants, as contained in the Clean Air Act, as amended in 1977. The purpose of this SIP revision is to include in the SIP the state air quality standards now in effect as a result of the latest APC 1 amendment. On November 15, 1982, the Minnesota Pollution Control Agency revised the state ambient air quality standards for sulfur dioxide and ozone. The SIP currently refers to the state air quality standards in APC 1 as established on April 13, 1972.

Dated this 10th day of October, 1983.

Sandra S. Gardebring
Executive Director

Pollution Control Agency

Notice of Intent to Solicit Outside Opinion Regarding Amendment of State Water Quality Standards (6 MCAR §§ 4.8014 and 4.8015) and the Classification of Waters of the State (6 MCAR §§ 4.8024 and 4.8025)

Notice is hereby given that the Minnesota Pollution Control Agency (agency) is seeking information and opinions from sources outside the agency to assist in the preparation of proposed amendments to state water quality standards and classifications of waters of the state. The state water quality standards are found in 6 MCAR §§ 4.8014 and 4.8015 and the waters of the state are classified in 6 MCAR §§ 4.8024 and 4.8025.

The agency is considering the following additions or changes to these rules:

a) eliminating the distinction between interstate and intrastate waters of the state by combining 6 MCAR §§ 4.8014 and 4.8015, and 6 MCAR §§ 4.8024 and 4.8025.

b) changing some water use classifications such as, adding several new limited resource value waters (Class 7), reclassifying some waters in the rough fisheries class (Class 2C) to the warmwater game fisheries class (Class 2B), and updating the list of trout streams and lakes (Class 2A).

c) revising the non-degradation provision so that discharges to specific waters of very high quality, unique scientific value, or outstanding wilderness and recreational value will be prohibited or restricted.

d) making minor changes to clarify the rules.

Any person may submit data or views on these possible amendments or on any other provisions of the cited rules. Comments may be submitted in writing or orally. Any written material received in response to this notice will become a part of the rulemaking record generated in this matter.

Written comments and statements may be submitted to Mr. David Maschwitz at the address listed below:

Minnesota Pollution Control Agency
Division of Water Quality
1935 West County Road B-2
Roseville, MN 55113

Oral comments and inquiries may be directed to Mr. Maschwitz during normal business hours at the Agency offices or over the telephone at (612) 296-7238.

Written and oral comments and statements will be accepted until December 2, 1983.

October 13, 1983

Sandra S. Gardebring
Executive Director

Department of Revenue
Corporate Income Tax Division

Department of Energy and Economic Development
Economic Development Division

Notice of Intent to Solicit Outside Opinion Regarding Development of Rules Governing the Operation of the Tax Credit Program for Technology Transfer, Equity Investment and Contribution Credits for "Qualified Small Businesses" and Contributions to "Small Business Assistance Offices" under *Laws of Minnesota* 1983, Chapter 342

Notice is hereby given that the Minnesota Departments of Revenue and Energy and Economic Development are seeking information and opinions from sources outside the agencies in preparation of rules related to the operation of the tax credit program for technology transfer equity investment in "qualified small businesses" and contributions to "small business assistance offices" under *Laws of Minnesota* 1983, chapter 342.

The Department of Revenue is particularly interested in information and opinions regarding the substance and operation of the tax credit program. The promulgation of these rules is authorized by Chapter 342, *Laws of Minnesota* 1983.

The Department of Energy and Economic Development is seeking information and opinions regarding the certification of "qualified small businesses" and "small business assistance offices." The promulgation of these rules is authorized by *Minn. Stat.* § 14.06.

The Department of Revenue and the Department of Energy and Economic Development request information and comments concerning the subject matter of these rules. Interested or affected persons or groups may submit statements of information or comment orally or in writing.

Written statements regarding the substance and operation of the tax credit programs should be directed to the Department of Revenue:

Harriet Sims
Minnesota Department of Revenue
Centennial Office Building
PO Box 4336
St. Paul, Minnesota 55104
(612) 297-4058

Written statements regarding the definition and certification of a "qualified small business" and a "small business assistance office" should be directed to the Department of Energy and Economic Development:

Charles A. Schaffer
Program of Business Information
Minnesota Department of Energy and Economic Development
480 Cedar Street
St. Paul, Minnesota 55101
(612) 296-0617

Oral statements will be received during regular business hours over the telephone at the telephone numbers given above and in person at the above address.

Pursuant to Chapter 188, *Laws of Minnesota* 1983, the concerns and opinions of small businesses are particularly desired since these tax credits specifically involve small businesses. The credits are intended to stimulate the growth and success of small businesses through encouragement of transfer of technology to small businesses, equity investment in small business and contributions to small business assistance offices.

All statements of information and comment shall be accepted until November 30, 1983. All comments received by the

Department of Revenue and the Department of Energy and Economic Development shall become part of the record in the event that rules are promulgated.

October 11, 1983

W. Wesley Cochrane, Deputy Commissioner
Department of Energy & Economic Development

Dorothy McClung, Director
Office of Legal Research
Department of Revenue

Department of Revenue
Property Equalization Division

Notice of Intent to Solicit Outside Opinion Regarding Rules Establishing a New Certificate of Real Estate Value

The Commissioner of Revenue has been directed by Laws 1983, chapter 342, article 2, section 4, to revise the certificate of real estate value to specifically require terms and conditions of financing relating to sales of real estate. The Department has formulated a working draft of a proposed rule outlining new requirements.

We are now seeking information, opinions, or comments on this draft rule. A copy of the draft rule can be obtained by contacting:

Dorothy McClung, Director
Legal Research Division
Department of Revenue
Centennial Office Building
St. Paul, Minnesota 55145

Written information, opinions, or comments will be accepted until November 18, 1983, and should be directed to the address above.

Any written material received shall become part of the background record regarding these rules.

Department of Transportation

Petition of the City of Eveleth for a Variance from State Aid Standards for Design Speed

Notice is hereby given that the City Council of the City of Eveleth made a written request to the Commissioner of Transportation for a variance from minimum design speed standards for the reconstruction of Fayal Avenue from North Court to Park Avenue.

The request is for a variance from 14 MCAR § 1.5032 H.1.d., Rules for State Aid Operations under Minnesota Statute, chapters 161 and 162 (1978) as amended, so as to permit a design speed of 20 miles per hour instead of a required design speed of 30 miles per hour.

Any person may file a written objection to the variance request with the Commissioner of Transportation, Transportation Building, St. Paul, Minnesota 55155.

If a written objection is received within 20 days from the date of this notice in the *State Register*, the variance can be granted only after a contested case hearing has been held on the request.

Dated this 13th day of October, 1983

Richard P. Braun
Commissioner of Transportation

Department of Transportation
Technical Services Division

Appointment and Scheduled Meeting of a State Aid Standards Variance Committee

Notice is hereby given that the Commissioner of Transportation has appointed a State Aid Standards Variance Committee who will conduct a meeting on Tuesday, November 15, 1983, at 9:30 a.m. in Room 410A, State Transportation Building, John Ireland Boulevard, St. Paul, Minnesota.

This notice is given pursuant to Minnesota Statute § 471.705.

The purpose of the open meeting is to investigate and determine recommendation(s) for variances from minimum State Aid roadway standards as governed by 14 MCAR § 1.5032 M.4.b., Rules for State Aid Operations under Minnesota Statute, chapters 161 and 162 (1978), as amended.

The agenda will be limited to these questions:

1. Petition of the City of St. Paul for a variance from Standards for Design Speed on the Sibley-Jackson switchback from English and Jackson to Seventh and Sibley.

2. Petition of the City of Coon Rapids for a variance from Standards for Street Width on Robinson Drive from Hanson Boulevard to 113th Lane.

3. Petition of the City of St. Louis Park for a variance from Standards for Street Width on Louisiana Avenue from Cedar Lake Road to Trunk Highway 12.

4. Petition of the County of Fillmore for a variance from Standards for Design Speed for replacement of bridge #9950 on County Road 104, 0.6 mile North of Trunk Highway 30 in Pilot Mound Township, over Money Creek.

5. Petition of the City of Eveleth for a variance from Standards for Design Speed on Fayal Avenue from North Court to Park Avenue.

The cities and counties listed above are requested to follow the following time schedule when appearing before the Variance Committee:

9:30 A.M. — City of St. Paul
9:50 A.M. — City of Coon Rapids
10:10 A.M. — City of St. Louis Park
10:30 A.M. — Fillmore County
10:50 A.M. — City of Eveleth

Dated this 13th day of October, 1983

Richard P. Braun
Commissioner

Department of Transportation

Amended Order and Notice of Street and Highway Routes Designated and Permitted to Carry the Gross Weights Allowed under Minn. Stat. § 169.825

Order No. 68273

Whereas, the Commissioner of Transportation has made his Order No. 67790 which order has been amended by Orders No. 68172, designating and permitting certain street and highway routes, or segments of those routes, to carry the gross weights allowed under Minnesota Statutes § 169.825, and

Whereas, the Commissioner has determined that the additional following routes, or segment of routes, should be designated to carry the gross weights allowed under Minnesota § 169.825,

IT IS HEREBY ORDERED that Commissioner of Transportation Order No. 67790 is amended this date by adding the following designated streets and highway routes, or segment of routes, as follows:

TRUNK HIGHWAYS

T.H. 19—From Jct. T.H. 52 to Bridge Street in Cannon Falls (effective 5/15).
T.H. 20—From Jct. T.H. 19 to North City Limits Cannon Falls (effective 5/15).
T.H. 91—From Iowa Border to Ellsworth (effective 5/15).

COUNTY ROADS

Freeborn County—C.S.A.H. 46

From Jct. I-90 at Petran, Minnesota easterly approximately 0.4 miles and northerly approximately 0.7 miles on Hayward Township Road to Pillsbury Elevator (effective 5/15).

Dated this 10th day of October 1983.

Richard P. Braun
Commissioner

Water Resources Board

Notice of Special Meetings to Consider an Increase in the Number of Managers of the Lower Minnesota River, Ramsey-Washington Metro, and the Minnehaha Creek Watershed Districts

The Water Resources Board will hold special meetings on November 3, 1983 in Conference Room A of the Capitol Square Building at 550 Cedar Street, St. Paul, Minnesota 55101, for the purpose of receiving input on the issues of whether the number of managers of the Lower Minnesota River, Ramsey-Washington Metro, and Minnehaha Creek Watershed Districts should be increased as authorized by Minnesota Statutes Sections 112.42, Subdivision 3a and 112.37, Subdivision 7. Consideration of the Lower Minnesota River will begin at 10:00 a.m., Ramsey-Washington Metro at 11:00 a.m., and Minnehaha Creek at 1:30 p.m. Persons interested in these issues who do not wish to appear at the meetings are encouraged to submit written recommendations before November 3, 1983 to:

Mel Sinn
Water Resources Board
555 Wabasha Street
Room 206
St. Paul, Minn. 55102
(612) 296-2840

STATE OF MINNESOTA

State Register and Public Documents Division
117 University Avenue
St. Paul, Minnesota 55155

ORDER FORM

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