

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the
Proposed Rules Governing
Aboveground Storage of
Regulated and Other
Liquid Substances, Minn. Rules
Parts 7151.0010 to 7151.0240

STATEMENT OF NEED
AND REASONABLENESS

Minnesota Pollution Control Agency
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I. INTRODUCTION

The subject of this proceeding is the revision of the rules of the Minnesota Pollution Control Agency (hereinafter "Agency") governing the aboveground storage of regulated and other liquid substances.

This Statement of Need and Reasonableness is divided into seven parts. Following this introduction, Part II contains the Agency's explanation of the need for the proposed rules. Part III is a discussion of the reasonableness of the proposed rules. Part IV documents how the Agency has considered the methods of reducing the impact of the proposed rules on small business as required by Minn. Stat. § 14.115 (1990). Part V is a discussion of the economic factors the Agency considered in drafting the proposed rules as required by Minn. Stat. § 116.07, subd. 6 (1990). Part VI sets forth the Agency's conclusion regarding the proposed rules. Part VII contains a list of exhibits relied on by the Agency to support the proposed rules. The exhibits are available for review at the Agency's offices at 520 Lafayette Road North, St. Paul, Minnesota 55155.

The current rules governing aboveground liquid storage are found in Minn. Rules pts. 7100.0010 to 7100.0090 (Exhibit 1). These rules were promulgated in 1964 and have not been changed since that time. The environmental hazards posed by aboveground storage tanks and the inability of soil materials to retard migration of spilled materials is better understood now. As a result, the technology for the storage of substances in aboveground tanks has changed considerably.

The Aboveground Storage Tank Program administered by the Agency has also changed as knowledge of how aboveground storage tanks can cause pollution has increased and as industry and technology has developed, but these changes were never incorporated into the current rules. As Agency staff examined the current rules, it became clear that a great deal of revision would be needed to provide the Agency with aboveground tank rules that would be protective of the environment, reasonable, understandable, and enforceable.

Since the current rules are so old and are written with archaic language, Agency staff decided to repeal the existing rules and start over with new rules. It is important, however, to note that the proposed rules largely follow the format of the current rules and thereby promote important consistency from the old to the new. The Agency is not beginning a new program. A program already exists which has been effective in issuing liquid storage safeguard permits for over 1,000 aboveground storage tanks or sites over the years. In addition, information has been provided to hundreds of tank owners to assist them in the construction of an environmentally safe storage facility. Despite this, Agency staff has been told that there are still significant numbers of tank owners who do not know what standards to follow for storing substances which may pollute the waters of the state.

The Agency's petroleum cleanup program addresses petroleum releases from both underground and aboveground storage tanks. Approximately 20 percent of the leak sites in the petroleum cleanup program involve aboveground storage tanks. The Agency has seen numbers of aboveground storage tank sites where soil, ground water, and surface waters were polluted and/or the public safety was threatened when tank safeguards failed or were absent. The Agency's recently implemented aboveground storage tank notification program has recorded more than 3,000 tank owners who have registered approximately 13,000 tanks over the last 18 months. (See Exhibit 2 - Aboveground Storage Tank Inventory Report). While this is quite a sizable population of tanks, it is still not all of the tanks in Minnesota. There are many aboveground storage tanks which are exempt from the notification requirement (i.e., farm and residential tanks 1,100 gallons and under, heating oil tanks 1,100 gallons and under, and food storage tanks). In addition to the exempt tanks, Agency staff has been told that there are tank owners who have not registered their tanks either because they do not know of the requirement or they just choose not to do so. This information is anecdotal, coming from other tank owners, concerned citizens, and consultants. However, some recent inspections indicate that this is true. Out of 54 sites visited, 14 were not registered. This is 25 percent. See Exhibit 3 - AST Observations.

In any case, it is obvious that the universe of aboveground storage tanks is very large and this regulated community deserves to have rules that are understandable and reasonable. At the same time, other citizens of the state deserve to know that the Minnesota Pollution Control Agency is doing its statutorily mandated job of protecting the waters of the state.

In the case of aboveground liquid storage tanks, it is only through rules that are complete and enforceable that the Agency will have the ability to provide the protection that is expected. Agency staff believes that the proposed rules give the Agency the ability to adequately govern the storage of substances in aboveground tanks which cause pollution to the waters of the state.

The rulemaking process began in April 1990 with the Notice of Intent to Solicit Outside Opinion published in the State Register on April 16 (Exhibit 4). This notice yielded one written comment. This letter is included as Exhibit 5 and is largely concerned with providing exemptions to tank owners who are already being regulated by another governmental program. This comment is reflected in the exemptions provided in the proposed rules.

The proposed rules (Exhibit 6) are the result of the efforts of a workgroup comprised of representatives of industry (both petroleum and chemical, large and small), the Fire Marshal, contractors, manufacturers, engineers, and other regulatory agencies. The list of the participants is Exhibit 7. The workgroup was formed from the responses the Agency received to a letter mailed in April 1990 requesting volunteers. The letter was sent to hundreds of people who had expressed an interest in tank regulations (underground and aboveground). Out of that group, approximately 80 people volunteered to participate in a workgroup. Those 80 people were reduced to 30 because 80 people is clearly too many people for a reasonable and workable group.

Fifteen people was determined to be a manageable group size; small enough to allow adequate discussion yet large enough to allow a good cross section of interests and expertise. These thirty people were then assigned to one of two workgroups of 15 people each. The 30 people were split up so that each group would have a Fire Marshal, at least one representative from large industry, small industry, a petroleum representative group, and the consulting community. People with specific expertise were assigned to the group that would be discussing the item that was in their area (i.e. the corrosion engineer who volunteered was assigned to the group that would be discussing corrosion protection). Each group was assigned four topics to discuss. The two groups began meeting in June of 1990 and met every other week until early September 1990. Then, in October 1990, both groups met together twice more to discuss the first draft of the proposed rules. The minutes of all the meetings are included as Exhibit 8. Following each meeting, the minutes were sent not only to the workgroup members, but to each of the original 80 volunteers. Throughout the process, people called to be added to the list and the list now numbers over 100 people (Exhibit 9). Subsequent drafts have been sent to this list of interested persons and comments have been encouraged.

The response to the proposed rules has been widespread. The last meeting of the workgroup was October 30, 1990. Since that meeting, many of the workgroup members submitted written comments and called to discuss various provisions of the proposed rules which needed clarification or which were viewed as being unreasonable.

In an effort to involve as many groups as possible which may be affected by the proposed rules, a mailing was also sent to 18 different organizations representing the farm community. A list of the groups to whom the letter was sent is included as Exhibit 10. The letter explained that changes to the current rules were being proposed and pointed out how the changes might affect them. A draft of the proposed rules with summary sheets was enclosed for their review. The first letter the Agency sent on October 25, 1990 elicited little response. A follow-up letter was sent on December 12, 1990 by certified mail and a few more responses were received. The written responses are included as Exhibit 11. The responses indicated that the main concern of the farm groups that did respond was that a previously proposed requirement for secondary containment for all tanks over 265 gallons in size was too restrictive and would cause undue financial hardship for the farm community (even though the current rules require secondary containment for all tanks). This provision was subsequently changed to specifically require secondary containment only for tanks over 1,100 gallons in size.

Another concern that arose early on in the process and continues to be a matter of disagreement between the Agency and a portion of the regulated community is the issue of how much time tank owners with existing facilities should have to achieve compliance with the proposed new rules. This has been a difficult issue to resolve because of the fact that state rules (Minn. Rules pt. 7100.0030) have required secondary containment for all tanks for the last 27 years.

In addition to the state rules, federal law (40 CFR Part 112, § 112.3 - Requirements for preparation and implementation of Spill Prevention Control and Countermeasure Plans - Exhibit 12) has required similar safeguards for most aboveground storage tanks for 17 years. The Agency believes that aboveground tanks in Minnesota ought to have, at the very least, the minimum safeguards as required in the current rules. For tank owners that have clearly made an effort to be in compliance with the existing rules by providing some sort of secondary containment, the proposed rules allow from three to eight years from the effective date of the rules to achieve compliance. The amount of time allowed depends on the nature of the safeguards installed and the size of the facility. However, tank owners who are out of compliance with the current rules (absolutely no safeguards) will not be given any special consideration on time. These tank owners must install a secondary containment device immediately.

There are two issues here. One issue is the amount of time allowed to upgrade safeguards for those tank owners with some protection in place. The executive director of the Northwest Petroleum Association (NWPA), which represents a number of the owners of bulk petroleum storage facilities, maintains that the three to five year period (from the effective date of the rules) allotted for this size facility is not enough time. He believes that the economic burden is unmanageable for most of these owners. While he has not put any of his positions in writing as yet, Agency staff has had numerous conversations with him on this issue.

The Agency believes that three to five years is ample time to plan to get this work finished. Granted, it will cost money (see Exhibit 13 - An Economic Report on the Cost of Upgrading An Aboveground Storage Tank Facility), but these requirements should be no surprise to anyone with an aboveground tank. The rulemaking process began over one year ago; it will likely be February 1992 before the proposed rules become effective. There have been numerous communications, both written and oral, with members of the petroleum industry as well as others affected by these proposed rules. Since most tank owners have been aware that change was imminent, the past one to two years could have been used to begin to plan and to save money for the expected expense involved in upgrading an existing facility.

The second issue concerns those tank owners who are totally out of compliance now. The NWPA believes that these people ought to be granted some "grace" time to achieve compliance. The Agency believes that no "grace" time is warranted in these cases. These tanks have been out of compliance for 27 years, and there has been much discussion over the past two to three years about the minimum requirements. The longer these tanks have no protection around them, the greater the potential for releases from the tanks that will adversely affect the environment. In addition, the Agency periodically receives phone calls and letters from tank owners who have spent the money to

comply with the existing rules. These tank owners claim that they are at a competitive disadvantage since they have spent money that their competitors have not spent. They want to know what the MPCA is going to do to rectify this fairness issue. It would not be fair to those who have made the effort and spent the money to be in compliance if tank owners who are totally out of compliance are given an official "grace" time. Exhibit 14 is a letter which illustrates the sentiment of those tank owners who are in compliance and concerned that other tank owners are not.

The comments received to date indicate that these are the areas that are causing major concerns at this time. Of course, the public comment period will let us know if there are other areas of concern. Generally, the comments on the proposed rules have been favorable. Most of the regulated community recognize their responsibility to the environment and know that they will incur some costs in meeting that responsibility.

It is important that these rules become effective as soon as possible so that the Agency can begin its formal education, inspection and enforcement program. The education portion of the program has begun to a limited extent, but everything that the regulated community is told now is subject to change until the proposed rules become law. Many owners are reluctant to invest any money now in the event that significant changes occur between now and the time the proposed rules are final. They are justifiably concerned that they will have to redo what was just done. The Agency needs to provide the regulated community with final rules as soon as possible so that work can begin.

The Agency has the statutory authority to repeal and adopt rules to prevent, control or abate water pollution, including rules prohibiting storage of any liquid substance in a manner that could pollute the waters of the state under Minn. Stat. §115.03, subd. 1(e) (1990).

II. NEED FOR THE PROPOSED RULES

Minn. Stat. ch. 14 (1990) 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 which requires administrative attention and reasonableness means that the solution proposed by an agency is appropriate.

Need is a broad test that does not lend itself to evaluation of each proposed revision. In the broad sense, the need to revise the Agency's rules which govern liquid storage in aboveground tanks has arisen because the current rules were promulgated in 1964 and have not been amended since then. Over the last 27 years, the nature of the liquid storage industry has changed in many ways and the present rules do not reflect these changes.

Further, Agency staff and the public have learned how devastating leaks and spills of chemicals, petroleum and other substances can be to the environment. Because the current rules are so general and provide little in the way of specific guidelines for tank owners, many tank owners have asked Agency staff for guidance as to good aboveground storage tank practices. The current rules do not provide the level of guidance needed. The proposed rules are written in such a way as to provide this guidance.

As a result, it has become clear in recent years that the Minnesota environment would be better served with rules that reflect changes in technology and industry practice that have developed over the years.

In addition to the substantive reasons for amending the current rules, there are housekeeping issues to resolve, such as references in the current rules to nonexistent state entities. The current rules which govern aboveground liquid storage are badly in need of revision.

III. REASONABLENESS OF THE PROPOSED RULES

The Agency is required by Minn. Stat. ch. 14 (1990) to make an affirmative presentation of facts establishing the reasonableness of the proposed rules or amendments. Rules are reasonable if they are not arbitrary or capricious. Reasonableness means that there is a rational basis for the Agency's proposed action. The reasonableness of the proposed rules is discussed below.

A. Reasonableness of the Rules as a Whole

These proposed rules establish a program for the storage of regulated substances and other liquids in aboveground storage tanks. The proposed rules provide technical standards for the safe storage of regulated and other liquid substances and the administrative tools to manage the aboveground storage tank program. The Agency believes that the proposed rules establish a reasonable scheme for providing technical guidance to tank owners in Minnesota while allowing the Agency to ensure that the environment will be protected from releases from aboveground storage tanks.

Tank owners who store certain types of liquids aboveground are subject to the provisions of the proposed rules. Petroleum, chemicals and some food products are examples of the variety of liquids which must be stored in such a way as to provide protection from releases to the waters of the state.

Under Minn. Stat. § 115.03, subd. 1(e) (1990), the Agency has the authority to adopt and revise rules to control water pollution, including rules prohibiting the storage of any liquid substance in a manner that could pollute the waters of the state. The proposed rules are written to provide the Agency with the ability to enforce the provisions designed to protect the waters of the state.

B. Reasonableness of Individual Rules

The following discussion addresses the specific provisions of the proposed rules.

Part 7151.0010 Purpose

This part identifies that the program for aboveground storage of liquid substances which may pollute the waters of the state will be administered under the proposed rules. It is reasonable to begin the proposed rules with a statement of purpose so that it is clear who will be affected by the rules and how they will be affected. It is reasonable that the rules contain requirements for the administration of the program as well as the technical requirements for aboveground liquid storage.

A program needs to have technical requirements to inform the regulated community of the way the Agency will determine whether safeguards installed to prevent and control pollution from an aboveground storage tank are adequate.

At the same time, certain administrative requirements, such as inspections, spill response plans, and record keeping supplement the actual technical requirements in the goal to prevent pollution.

Part 7151.0020 Applicability

This part explains the application of the proposed rules to aboveground storage tanks and systems.

Subpart 1. Scope. This subpart states that the proposed rules apply to all owners and operators of aboveground storage tanks and systems as defined in the definitions, except as provided by the exclusions. This is reasonable because it defines the limits of the program for the regulated community.

Subpart 2. Exclusions. This subpart lists those aboveground storage tank (AST) systems which are excluded from the proposed rules.

Item A. Wastewater treatment AST systems that are a part of a regulated wastewater treatment facility are exempt from the proposed rules to the extent that they are regulated under 33 United States Code, Sections 1317 or 1342. In addition, pretreatment facilities which are regulated under 40 Code of Federal Regulations (CFR) Part 403 (1990) are also exempt from the requirements in the proposed rules. This exemption is reasonable because the inclusion of wastewater treatment and pretreatment AST systems as a part of the group affected by the proposed rules would be duplicative and confusing to the regulated community.

Item B. Equipment or machinery that contains substances for operational purposes are exempt from the proposed rules. It is reasonable to exempt these storage containers because the liquid within the equipment or machinery is an integral part of the operating system and does not constitute storage. Tanks which are integral to the equipment tend to be small with a "built-in" leak detection capability to the extent that the equipment will not operate properly if the tank or supply lines have leaks. Examples may include tanks on electrical generators and pumps.

Item C. A flow-through process tank is exempt from the requirements of

the proposed rules. It is reasonable to exempt flow-through process tanks from the provisions of the proposed rules because the liquid contained in a flow-through process tank is not being stored, it is part of a process. Typically, an active process will be observed or supervised by someone frequently and the likelihood that a release would go undetected and uncontrolled is minimal. If there is a problem, the person or persons controlling the process can take immediate steps to ensure that the released substance is prevented from doing serious damage to the environment.

Item D. AST systems storing hazardous wastes are exempt from these proposed rules because they are regulated under other state (Minn. Rules ch. 7045 (1990)) and federal (40 CFR Part 261 (1990)) laws. This exemption is reasonable because the inclusion of hazardous wastes as a part of the group affected by the proposed rules would be duplicative and confusing to the regulated community.

Item E. An aboveground storage tank which contains a de minimus concentration of regulated substances that the commissioner has determined to be of such a nature that pollution of the waters of the state is not a threat is exempt from the requirements of the proposed rules.

It is reasonable to exempt tanks which contain very low concentrations of regulated substances since they pose little or no threat to the environment. Since there is no one list that quantifies what is de minimus for every chemical that is regulated by this program, it is reasonable for the commissioner to determine which tanks should be exempt from the provisions of the proposed rules. The commissioner's determination will be based on the type of substance being stored, the concentration of the substance and the location of the tank.

Item F. Aboveground storage tank systems for fertilizers and pesticides which are regulated by Department of Agriculture rules (Minn. Rules chs. 1505 and 1510 (1990)) are exempt from the provisions of the proposed rules provided they are in compliance with those rules. It is reasonable to exempt these facilities because inclusion of fertilizer and pesticides that are already in compliance with one set of state rules would be duplicative and confusing to the regulated community. It is also reasonable that facilities which are not in compliance with the Department of Agriculture rules are not exempt from the proposed rules because they have the potential to cause pollution to the waters of the state.

Item G. Aboveground storage tank systems containing substances which are gaseous at atmospheric temperature and pressure are exempt from the provisions of the proposed rules. It is reasonable to exempt these tank systems from these rules because the scope of the proposed rules pertain to water pollution and any release from these tanks would not pose a threat to the waters of the state since the product would be released as a gas even if stored as a liquid under pressure in its container.

Item H. Mobile tanks transporting a substance from one location to another while in transit and which meet the requirements of the state and federal Departments of Transportation are exempt from the provisions of the proposed rules. It is reasonable to exempt mobile tanks because transportation is not storage and also because inclusion of these types of tanks which are already regulated by the Departments of Transportation would be duplicative and confusing to the regulated community. It is reasonable to limit this exclusion to these tanks while in transit to avoid the long term use of transport trailers for storage since they lack proper safeguards for long-term storage.

Item I. A pipeline facility, including gathering lines, regulated under United States Code, title 49, chapter 24 or 29 (1990) is exempt from the proposed rules to the extent that the federal Office of Pipeline Safety (OPS) regulates the facilities. The tanks which are exempt at such pipeline facilities may include tanks where the product is transferred in and out exclusively through the pipeline.

It is reasonable to exempt these tanks from the requirements of the proposed rules because they are already regulated by the OPS and additional requirements would be duplicative and confusing to the regulated community. Tanks at such facilities which are not exempt are those tanks where the product can be loaded and unloaded by means other than a pipeline, such as with trucks and rail cars.

Item J. An aboveground storage tank system located at a site actively pursuing assessment or remediation of existing contamination within the immediate area of the tank is exempt from the proposed rules for a limited time. It is reasonable to exempt these tanks from the provisions of the proposed rules during the time of remediation to provide a way for remediation and storage to occur simultaneously until the point in remediation is reached where safeguards can be properly constructed.

Item K. A surface impoundment, pit, pond, or lagoon is exempt from the provisions of the proposed rules. It is reasonable to exempt structures such as these because they are not within the common understanding of the word tank.

Part 7151.0030 Definitions

This part of the proposed rules sets forth definitions of key words or phrases used within the rules. The definitions are discussed below.

Subpart 1. Scope. This subpart states that the definitions in Minn. Stat. §§ 115C.02 and 116.46 (1990) apply to the terms used in the proposed rules, unless the terms are expressly defined in this part. Because all of these chapters apply to the Minnesota aboveground storage tank program, it is

reasonable to use the same definitions throughout the program in order to achieve consistency within the program.

Subpart 2. Aboveground storage tank system. An "aboveground storage tank system" is one or a combination of containers, vessels, and enclosures, including the structures and appurtenances connected to them, that is used to store or dispense substances, but which is not an underground storage tank as defined in Minn. Stat. § 116.46, subd. 8 (1990). It is reasonable to define the scope of what is included in an "aboveground storage tank system" so that it is clear what is being regulated by these parts. The system is defined as including the connecting structures and appurtenances because even though the substances are stored in the tanks or vessels, the associated pipes and pumps have the potential for failure as well. Contamination of soils is frequently found around the pump areas, and releases from pipes and pipe connections is common.

Subpart 3. Agency. "Agency" is defined in the proposed rules as the Minnesota Pollution Control Agency. Since there are several references to the Minnesota Pollution Control Agency, it is reasonable to shorten this term and include it in the definitions. It is also reasonable to define which agency of the state of Minnesota is responsible for program implementation and enforcement.

Subpart 4. Cathodic protection. "Cathodic protection" is defined as the primary means of preventing corrosion of a metal surface by making that surface the cathode of an electrochemical cell. An aboveground storage tank system can be cathodically protected through the application of either galvanic anodes or impressed current. It is reasonable to define "cathodic protection" because it is the primary method of preventing corrosion in metal tanks and pipes, thereby keeping them from leaking. This definition is the standard definition used in the industry.

Subpart 5. Class 2 water. A "Class 2 water" means all waters of the state which are or may be used for recreational purposes and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety, or welfare. It is reasonable to define "Class 2 water" because there is a restriction in the proposed rules for tanks which are within 500 feet of a "Class 2 water" and it is important for those who are affected by this restriction to know when this restriction applies. The definition of Class 2 water is taken from Minn. Rules pt. 7050.0200 (1990).

Subpart 6. Clay. "Clay" is defined as a soil whose mineral fraction is comprised of a minimum of 40 percent clay, less than 45 percent sand and less than 40 percent silt, consisting of particles less than 0.002 millimeters in equivalent diameter used to construct a secondary containment seal to prevent a release of product from entering the waters of the state. It is reasonable

to define this substance because it has historically been a primary method of sealing a secondary containment area for aboveground storage tanks. It is reasonable to define "clay" in this way because there are many different soil types which are referred to as "clay", not all of which will provide an adequate seal to safeguard against a release to the environment. For example, "pottery clay" will be totally ineffective in providing a seal for the types of substance which are typically stored in aboveground storage tanks. It is important to distinguish the type of "clay" which was likely to have been used in previous construction of secondary containment areas from other types of "clay" which may come to mind for persons reading the proposed rules. Even though "clay" will not be allowed as a material for future construction of secondary containment seals, existing facilities with clay seals will be considered to have met the requirements of the proposed rules under certain circumstances, so it is important to define this term. The definition of "clay" used in the proposed rules was taken from The Nature And Property Of Soils (8th Edition - Copyright 1984), by Nyle C. Brady. Brady is a Professor of Soil Science at the New York State College of Agriculture and Life Science at Cornell University.

Subpart 7. Closure. "Closure" means taking a tank out of service permanently. It is reasonable to define this term because there are requirements in the proposed rules which must be followed if a tank is to be taken out of service permanently. The word "closure" may have different meanings in different circumstances, so the proposed rules need to define what is meant by "closure" in the context of the proposed rules.

Subpart 8. Commissioner. "Commissioner" means the commissioner of the Minnesota Pollution Control Agency. It is reasonable to clarify that "commissioner" is the commissioner of the Minnesota Pollution Control Agency and not any of the other state commissioners. It is the title of the MPCA's chief executive officer. Through the "commissioner", the MPCA is charged with implementing and enforcing the proposed rules.

Subpart 9. Compatible. Two or more substances are "compatible" if they maintain their respective physical and chemical properties upon contact with one another. It is reasonable to define this term because compatibility is an important factor in determining which materials can be used with particular substances to construct the safeguards which are required in the proposed rules.

Subpart 10. Corrosion protection. "Corrosion protection" means a method used to protect a metal tank, piping or other components from corroding. It is reasonable to define this term because "corrosion protection" is a way a tank owner can provide safeguards for a tank that will meet the requirements of the proposed rules. It is important to distinguish "corrosion protection" from cathodic protection. Cathodic protection is a method of "corrosion protection" but is not the only way to protect a tank from corrosion. For instance, there are coatings which, if applied properly, can protect the inside of a tank from corrosion. Cathodic protection is designed to protect the outside of the tank surface from corrosion.

Subpart 11. Declaration of compliance. The "declaration of compliance" is a term used to describe the written assurance that the larger (10,000 gallons or more of total capacity) facilities will be required to submit to the Agency to provide information on the methods that were used to achieve compliance with the proposed rules. It is reasonable to define this term since it is a term used only in this program and it should be made clear what the term means.

Subpart 12. Dike. A "dike" is the wall or embankment that is part of a secondary containment area designed to prevent the horizontal movement of stored substances out of the secondary containment area. It is reasonable to define this term because it is used to establish one of the design requirements for a secondary containment area.

Subpart 13. Electrical equipment. "Electrical equipment" is equipment that contains dielectric fluid necessary for the operation of transformers and buried electrical cable. It is reasonable to define this term because electrical equipment tanks are excluded from the requirements of the proposed rules. See proposed Minn. Rules pt. 7151.0020, subp. 2, item B.

Subpart 14. Flow-through process tank. A "flow-through process tank" forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Not included are tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

It is reasonable to define this term because "flow-through process tanks" are exempt from the requirements of the proposed rules and the regulated community needs to know how such tanks are defined. See proposed Minn. Rules pt. 7151.0020, subp. 2, item C.

Subpart 16. Freeboard. "Freeboard" is the additional dike height required in a secondary containment area to allow for precipitation. It is reasonable to define this term because it is used to establish design standards for a secondary containment area and specific measurements are associated with this term.

Subpart 18. Hydraulic lift tank. "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices. It is reasonable to define this term because these tanks are exempt from the requirements of the proposed rules. See proposed Minn. Rules pt. 7151.0020, subp. 2, item B.

Subpart 19. Impermeable. "Impermeable" means a substance is not allowed to pass through the depth of a sealed secondary containment area for a minimum of seven days. It is reasonable to define this term because the design requirements for a secondary containment area use the word "impermeable" to describe the performance that is required of a secondary containment area. It is reasonable to define "impermeable" in this way because there are very few materials which are absolutely capable of holding a regulated substance with no pass-through of the substance. The ones that are totally impermeable are not reasonable to use as material for construction in most cases. The proposed

rules define "impermeable" as it does, using a seven day standard, because the proposed rules also require visual site inspections on a weekly basis. If the materials used to construct a secondary containment area can hold the stored substance for at least seven days, then the secondary containment device will have done its job, and the stored substance should be removed from the secondary containment area upon discovery before it permeates the seal. The seven day standard is a reasonable amount of time to ensure the proper removal of the released substance.

Subpart 20. Maintenance. "Maintenance" means the normal operational upkeep necessary to prevent an aboveground storage tank system from failing. It is reasonable to define this term because "maintenance" of an aboveground storage tank or system is an important part of assuring that the system does not leak and harm the environment.

Subpart 21. Owner. An "owner" is a person who holds title to, controls or owns an interest in an aboveground storage tank or an aboveground storage tank system. The definition does not include a person who holds an interest in a tank solely for financial security, unless through foreclosure or other related actions the holder of a security interest has taken possession of the tank.

It is reasonable to define this term since the proposed rules establish many responsibilities for "owners" of tanks and it is important to clarify who is responsible for compliance with the proposed rules. This definition was taken from Minn. Stat. § 115C.02, subd. 8 (Petroleum Tank Release Cleanup Act) and provides consistency among the different programs which affect aboveground storage tanks

Subpart 22. Permit. "Permit" means the authorization by the commissioner to construct and operate a liquid storage facility. It is reasonable to define "permit" because proposed Minn. Rules pt. 7001.0020, item H requires a permit to be issued for the construction and operation of a liquid storage facility. "Permit" must be distinguished from "permit-by-rule" since there will be some circumstances (see discussion under part 7151.0150, subp. 3) where "permit-by-rule" will not apply and an individual written "permit" will be required by the commissioner.

Subpart 23. Permit-by-rule. "Permit-by-rule" means that a tank owner is considered to have obtained a permit under proposed Minn. Rules pt. 7151.0030, subp. 20 if the owner is in compliance with the applicable provisions of the proposed rules. It is reasonable to define this term to distinguish it from an individual written permit which may, in some cases, be required. Due to the number of aboveground storage tanks and the similarity of the operation, it is reasonable to allow the owners of these tanks to be "permitted-by-rule" rather than doing a review on each of these sites. Other programs in the Agency have used this method of permitting large numbers of individuals or facilities which

have similar operations which do not involve emissions or discharges.

Subpart 24. Person. "Person" is defined as an individual, partnership, association, public or private corporation, or legal entity, including the United States Government, an interstate commission or other body, the state, or any agency, board, bureau, office, department, or political subdivision of the state, but does not include the Agency. This definition encompasses the definitions in Minn. Stat. chs. 115C and 116 (1990). It is reasonable to define this term to clarify its meaning and provide for program consistency.

Subpart 25. Regulated substance. "Regulated substance" means a hazardous material or petroleum. It is reasonable to define this term because it is used frequently in the proposed rules to identify the types of substances that are subject to certain requirements. The definition helps to distinguish a "regulated substance" from the term substance and provides for program consistency. This definition is taken directly from Minn. Stat. § 116.46, subd. 6 (the statute which requires aboveground tanks to be registered with the Agency), and it is reasonable to use the same definition which is used in the statute to provide program consistency.

Subpart 26. Release. "Release" means a spilling, leaking, emitting, discharging, escaping, leaching or disposing from an aboveground storage tank or system into the environment. This is consistent with the definition of "release" in Minn. Stat. § 116.46 (1990) and ch. 115C (1990). The definition also clarifies that "release" includes spills associated with overfills and transfer operations of a substance as it is put into or discharged from an aboveground storage tank system. Further, "release" does not include discharges or designed venting allowed under other Agency rules or permits.

Subpart 28. Safeguard. "Safeguard" means a device or system or combination of devices or systems designed to detect or prevent the escape or movement of a substance from the place of storage under such conditions that pollution of the waters of the state might result. It is reasonable to define "safeguard" because it is a term used frequently in the proposed rules to describe the general method of pollution prevention that is required for substances stored in aboveground storage tanks.

Subpart 29. Seal. A "seal" is the method or material which makes a secondary containment area or substance transfer area impermeable. It is reasonable to define "seal" because it is used in the design standards for a secondary containment or substance transfer area.

Subpart 30. Secondary containment. "Secondary containment" means a safeguard specifically designed to contain a release from an aboveground storage tank or its appurtenances in order to prevent a release from spreading vertically or horizontally and contaminating the land or water outside the immediate secondary containment area before cleanup occurs. It is reasonable to define "secondary containment" because it is the primary requirement of the proposed rules to prevent and control pollution from the materials stored in an aboveground storage tank. The object of secondary containment is that design and construction is such that, if a tank were to completely fail, and all the contents of that tank were released, the contents of the tank would migrate no farther than the device which was constructed around the tank to contain the contents of the tank. This means that the contents of the tank would not go beyond the secondary containment seal or through the ground into the ground water.

Subpart 31. Site. "Site" means a contiguous tract or parcel of land which includes an aboveground storage tank system, secondary containment and substance transfer areas. A property with tanks storing substances in separate locations on the property will be considered one site if the ownership and operational control of the property is by the same person or persons. It is reasonable to define this term because some of the requirements in the proposed rules are based on site storage capacity rather than on tank capacity.

Subpart 32. Storage. "Storage" means the act of keeping a substance in a tank for a period longer than seven consecutive days. It is reasonable to define "storage" because the purpose of the proposed rules is to regulate storage in aboveground storage tanks. "Storage" is a word that can have many different meanings to many different people, so it is reasonable to narrow the meaning of the word to its usage in the proposed rules. It is reasonable to define "storage" as the act of keeping a substance in a tank for a period of longer than seven days so as to provide a clear distinction between the transportation and in-process use of substances from the longer-term storage of these substances. Regulation of the longer-term storage of these substances is the scope of the proposed rules.

Subpart 33. Substance. "Substance" means a liquid material which might cause pollution of the waters of the state if released into the waters. A substance includes hazardous materials, petroleum, liquid food products and any other liquid which may cause pollution to the waters of the state if released. It is reasonable to define "substance" because it is used frequently in the proposed rules to identify which of the provisions in the proposed rules will apply to which stored material. "Substance" is used as the umbrella term for all types of liquids which may be stored in an aboveground storage tank and which may cause pollution. Some of the provisions apply to all possible substances regulated under the proposed rules, while some of the more stringent provisions apply only to the regulated substances affected by the proposed rules.

Subpart 34. Substance transfer area. "Substance transfer area" means the area in which connections are made for loading or unloading substances into or out of a tank. This includes the area where a truck or rail car makes its transfer connection to an aboveground storage tank system. It is reasonable to define this term because it is one of the safeguards which is required for tanks of a certain size.

Subpart 35. Tank. "Tank" means a device designed to contain an accumulation of substances which is constructed of nonearthen materials, such as concrete, steel, and plastic, which provides structural support and which is located aboveground. A "tank" includes drums, barrels, bladders, and other containers in which a substance is stored. It is reasonable to define "tank" because the proposed rules regulate "tanks". There are many different types of "tanks" and other regulatory programs which govern other types of "tanks". For example, underground storage tanks are regulated under 40 CFR Part 280 (1990) and Minn. Rules ch. 7150 (1991). In addition, it is reasonable to define "tank" because it is a specialized type of "tank" which is being regulated under this program and it is important to be clear about which "tanks" are subject to the provisions of the proposed rules.

Part 7151.0040 Safe Storage

This part requires that all substances in all aboveground storage tanks must be stored safely and securely. Safe storage is defined as a situation which is adequate to prevent and control the escape or movement of a substance into the waters of the state in the event of a failure of a tank or a release of a substance from a tank. This part further provides that owners of tanks with a storage capacity of 1,100 gallons and less need not necessarily meet the specific requirements of proposed Minn. Rules pt. 7151.0080 (Secondary Containment) in order to provide safe storage. It is reasonable to include this provision in the proposed rules so that all tank owners know that even the smaller tanks (1,100 gallons and less) must be situated and operated in a safe manner. Proposed Minn. Rules pt. 7151.0080 establishes that tanks over 1,100 gallons must have secondary containment which meets certain specific design standards. (See discussion under part 7151.0080 for reasonableness.) Rather than just completely ignoring the thousands of tanks which are 1,100 gallons and less in size, Agency staff believes that, at a minimum, a general requirement for safe operation of tanks is appropriate.

While it is impossible to attach a precise definition to what is safe and what is not safe, an example of unsafe storage is a 55 gallon drum which is open and stored on its side. Another example of unsafe storage is a 100 gallon tank which has an obvious hole which is being used to store a regulated substance in it and which is not repaired. An example of safe storage for a small tank might be a tank which is stored upright in an area with little traffic and sits on a concrete pad with a curb. This provision requiring safe

storage for all substances in all tanks sets a tone for the remainder of the proposed rules that common sense is the guide for tank owners in the prevention and control of releases of substances into the environment.

This part also requires that tank storage be secure. Secure storage is storage that provides some level of protection from vandalism, mischief and accidents. This security can be achieved in a variety of ways, including location of tanks, lighting, guards, fences or alarm systems. It is reasonable to include a general provision about security at tank sites because vandalism has been cited as the cause of a number of reported releases (see Exhibit 15 - Evaluation of Aboveground Storage Tank Incident Information). Many tanks are situated in remote areas, making them an easy target for vandals. Some minimal amount of protection is reasonable as a deterrent to vandals who are intent on emptying the contents of a storage tank.

Part 7151.0050 Storage Inside A Building

This part provides guidelines for owners of tanks storing substances inside a building. It requires that tanks with a storage capacity of more than 1,100 gallons inside a building must have safeguards to prevent the contents of the tank from escaping the building into the environment if there is a release.

It is reasonable to use 1,100 gallons as the threshold for establishing requirements to regulate the storage of liquid substances in aboveground tanks inside buildings to be consistent with proposed Minn. Rules pt. 7151.0040. It is further reasonable to require that safeguards be required for tanks inside a building because it is possible for a stored substance to escape a building through many means. It can leave through the door, cracks, floorboards, sewer drains, pipes, or other means. However, if the building is constructed so that there can be no escape of the substance through any means in the event of a release, the building itself can serve as the secondary containment structure for the tank. In that case, the building may be damaged but the environment has been protected. Environmental protection is the primary goal of the Agency.

This part requires that the floor of the building be constructed of materials which are impermeable to and compatible with the substance being stored. It is reasonable to require that the surface that a tank sits on be impermeable to the substance stored so that a release of the substance from the bottom of the tank will be contained on that surface rather than allowed to permeate the floor materials or flow through the materials into the soil and ground water.

This part provides for the situation where there is a drain inside a building and a sealed drainage path carries a discharge or release to a treatment system designed to treat the substance being stored. This type of design is an acceptable means of secondary containment. It is reasonable to allow this as a means of secondary containment because the substance is never introduced into the environment. Secondary containment is necessary to keep any release from entering into the environment and a drain to a treatment system serves that function.

This part allows a tank to sit directly on an earthen (permeable) floor only if the tank is a double-walled tank. It is reasonable to allow this because a double-walled tank provides its own secondary containment in the form of an outer shell or wall next to the primary storage tank. If there is a release in a double-walled tank, the outer wall is designed to catch the release and the released substance should never come into contact with the floor surface.

The last provision in this part provides that owners of tanks inside a building which is designed to prevent the escape of released substance into the environment are subject to proposed Minn. Rules pt. 7151.0120, which requires the preparation of a spill response plan. It is reasonable to require that a spill response plan be prepared for storage inside a building so that if and when a release does occur, the person who discovers the release will be prepared to respond in a proper and timely fashion. Even when a tank is in a building which is designed to prevent the quick escape of the stored substance into the environment, the owner must be prepared to deal with a release in the

event that it happens. Unrecovered released materials are likely to escape the building if not dealt with properly. Lack of preparedness will increase the likelihood that the released substance may enter the environment in some way. Prevention and preparedness are less expensive than cleanup.

Part 7151.0060 Temporary Storage

This part establishes requirements for temporary storage situations.

Subpart 1. Temporary storage design requirements. Temporary storage is defined as storage at one site for a period of more than seven days and less than one year of a regulated substance in a tank with a storage capacity of more than 1,100 gallons. The requirements for temporary storage are somewhat less stringent than those for permanent storage. It is reasonable to treat temporary storage situations differently than permanent storage situations because a temporary situation is less of an environmental hazard simply by virtue of the fact that it will not be there for a prolonged period of time. The most typical temporary storage situation is a construction site. Small fuel storage tanks may be located on the construction site for fueling the vehicles used to do the work. While any tank has the potential for releasing its product, it stands to reason that a tank that is only on site for six months has less of a chance to pollute that site than a tank that is at that site for a number of years.

It is reasonable to define temporary as more than seven days because seven days is the time that is being used to define storage (see discussion of the definition of storage in part 7151.0030, subp. 32) and it provides program consistency. It is reasonable to use one year as the parameter for defining the upward time frame for temporary storage because one year is a short enough period of time to include those tanks which are really only designed to provide storage for a limited amount of time. This time frame must be viewed in the context of environmental hazard. A tank that sits at one site for one year poses less of an environmental threat than a tank that sits at one site for two years. Most actual temporary storage situations are for less than a year.

This subpart requires the owners of a tank being used for temporary storage to label the tank as a temporary storage tank with the name and phone number of the owner of the tank and the date the storage began. It is reasonable to require this information on the outside of the tank so that anyone conducting an inspection of the tank will know immediately that it is a temporary tank and therefore subject to different requirements than a permanent tank. The name and phone number of the owner is necessary in case there is no one on site with whom to discuss any releases or other problems that might be evident. The date storage began at the site is reasonable to require so that it is clear that the tank has been at the site for less than the year which defines a temporary storage situation.

This subpart requires that a temporary tank and its secondary containment area be constructed and maintained so that a release from the tank will be contained in the secondary containment area. It is reasonable to require this because it is the object of the proposed rules to establish standards that will protect the environment from contamination from stored substances that will cause harm to the waters of the state. Whether it is temporary storage or permanent storage, the tank and the secondary containment structure must provide that protection. This subpart also requires that a temporary tank of any size storing a regulated substance within 500 feet of a Class 2 water must have secondary containment. See Part 7151.0080, subp. 2 for discussion of reasonableness. Specifically, a temporary storage tank's secondary containment area must meet one of the standards established in items A - C.

Item A. Item A is the first design option for meeting secondary containment requirements for a temporary storage tank. It requires dike walls adequate to contain 100 percent of the volume of the largest tank in the containment area with six inches of freeboard. The bottom must be sealed with a synthetic liner at least six mils thick, which is compatible with the stored substance and which covers the bottom and sides of the dike and is then covered by an earthen material. It is reasonable for this to be one of the design options because it is a modified version of the secondary containment requirement for permanent tanks. The volume requirement is the same as for permanent tanks (see discussion under part 7151.0080, subp. 6). The materials requirement is not as stringent as with a permanent tank because the temporary tank is going to be at a site for a shorter period of time and the materials for the construction of a secondary containment area do not need to meet the test of time.

A six mil thick liner will provide short-term protection for the ground water and soils under the tank from pollution from releases which might occur. It likely would not be effective over a long period of time because it can rip or degrade with time, but for a short period of time, it will provide the necessary protection. Just as with permanent tanks, the liner material must be compatible with the stored substance. The liner cannot disintegrate upon contact with the stored substance, for example. This would be the case for many chemicals that are stored in aboveground tanks, but is usually not a problem with petroleum products. It is reasonable to require compatibility because the liner should be of a material that will withstand a release and remain intact so as to continue to provide protection to the environment from the substance being stored. It is reasonable to require that the liner be covered by some earthen materials for two reasons. One reason is to protect the liner from weather, punctures and rips and keep it whole. The second reason is that if there is a release from the tank, the earthen materials will absorb it and it avoids the situation of the stored substance pooling on top of the plastic liner. Pooling of the substance increases the chances of failure of the liner and a subsequent escape of the substance into the environment.

Item B. Item B offers the option of using some sort of sealed pan or other container which is big enough to hold 100 percent of the volume of the largest tank with six inches of freeboard. Again, see the discussion under part 7151.0080, subp. 6 for reasonableness of the volume requirement. It is reasonable to allow a sealed pan or other container to serve as a secondary containment device because it offers the same protection that secondary

containment under item A offers with the added benefit of being portable. The pan must be sealed so that none of the seams will allow the stored substance to escape in the event of a spill. There are a number of these types of containers on the market for smaller tanks which are typically the ones used for temporary storage.

Item C. Item C allows a double-walled tank to be used as one of the design options for secondary containment for temporary tanks. See discussion under part 7151.0080, subp. 4, item B for reasonableness.

Subpart 2. Alternative designs for temporary storage. This subpart allows for a design different from the three described in items A - C to be used if it is shown to be capable of preventing a release to the water of the state. It is reasonable to allow for alternative designs because there may be ways of providing the amount of protection deemed necessary that have not been included as options in subpart 1. The aboveground storage tank field is just beginning to be recognized as an area that needs additional innovation in the development of protective devices. While there have been some advances in the technology and the materials available to provide the necessary safeguards, there is still ample room for technical innovation. The Agency would like to encourage new and creative ideas that surface as tank owners work to achieve compliance with the proposed rules.

This subpart requires the commissioner to review an alternative design. It is reasonable to require that an alternative design be reviewed by the commissioner so that the Agency can be assured that a that is different from the ones that are listed in subpart 1 will provide the same level of protection that items A - C provide. Finally, this subpart provides that the commissioner has to approve an alternative design that is proposed if it shown to be capable of protecting the waters of the state against pollution by the stored substance and is equivalent to the criteria in subpart 1. It is reasonable to include this provision so that a person who is proposing an alternative design knows that it will be approved if it meets the criteria in subpart 1. This way, the commissioner cannot act arbitrarily or capriciously in the approval of an alternative design.

Subpart 3. Other requirements. This subpart provides that owners of a tank storing a regulated substance on a temporary basis under subpart 1 do not have to meet the other technical requirements of the proposed rules except for providing a spill response plan. It is reasonable to exempt a temporary storage tank from these requirements, including Substance Transfer Area, Release Detection and Inspections, because of the temporary nature of the storage situation. Those requirements are included for permanent tanks as safeguards over time. Temporary storage is for a limited time and it would be unreasonable to expect the owners of these tanks to fulfill these requirements. However, it is reasonable to expect the owners of temporary tanks to be prepared to deal with a release in the event that one occurs.

The spill response plan requires owners of tanks to include important phone numbers, a procedure for dealing with a spill and the resulting cleanup. It does not cost much to prepare such a plan and it will ensure that some serious problems and costs can be avoided if there is a spill.

Part 7151.0070 Regulated Substances Which Solidify

This part provides that owners of tanks which store more than 1,100 gallons of a regulated substance which solidifies at 60 degrees Fahrenheit and pressure of 14.7 pounds per square inch absolute must meet the volume requirements for secondary containment established in proposed Minn. Rules pt. 7151.0080, subp. 6, but do not have to meet the materials requirement in subpart 7. An example of a regulated substance which will solidify under these conditions is asphalt. It is reasonable to require that a tank, the contents of which will solidify upon release, meet the volume requirements for secondary containment to ensure that the released material will not migrate beyond the walls of the secondary containment area before it solidifies. A large release could potentially cause a released substance which was not contained to move away from the tank and into nearby storm or sanitary sewers. Dike walls should be designed to prevent this.

The materials requirement in proposed Minn. Rules pt. 7151.0080, subp. 7 requires that the materials for a secondary containment area must be impermeable to and compatible with the product being stored. Impermeability is an issue with other regulated substances because the released substance can migrate into the ground and the ground water. With substances that will

solidify under certain atmospheric conditions, the released substance will solidify before it can cause any problems by migrating into the ground and the ground water.

This part exempts owners of tanks under this part from the additional requirements of proposed Minn. Rules pt. 7151.0080 and most of the other technical requirements of the proposed rules. It is reasonable to provide this exemption because tanks which store substances which solidify under the described atmospheric conditions do not pose a threat to the environment in the ways that other regulated substances do. It is only the potential for the substance to travel into an open drain, sewer or waterway before solidification that must be dealt with in the proposed rules. The volume requirement takes care of this concern and the other protections are not necessary. However, owners of tanks under this part must prepare a spill response plan under proposed Minn. Rules pt. 7151.0120 because it is reasonable to expect the owners of such tanks to be prepared to deal with a release in the event that one occurs. The spill response plan requires owners of tanks to include important phone numbers, a procedure for dealing with a spill and the resulting cleanup. It doesn't cost much to prepare such a plan and it will mean that some serious problems and costs can be avoided if there is a spill.

Part 7151.0080 Secondary Containment

Subpart 1. Secondary containment required. Subpart 1 requires that secondary containment be provided for the storage of substances in tanks with a storage capacity greater than 1,100 gallons. It is reasonable to require tanks over 1,100 gallons to have secondary containment because this size tank is large enough for the Agency to be concerned about serious environmental problems from releases from the tank, yet small enough to exempt the smallest size tanks that are typically used on farms and at residences and for heating oil. Because of the large numbers of aboveground storage tanks in Minnesota, (see Exhibit 2 - Aboveground Tank Inventory Report) it is not feasible for the Agency to directly regulate each of these tanks, as the current rules require. The current rules have no cutoff on size of tanks and therefore include every aboveground tank in Minnesota. The Agency has not been able to enforce the rules for each of these tanks due to the sheer volume of tanks to be regulated. It is more reasonable to establish a workable universe of tanks with which to work. It is important to remember that, while tanks 1,100 gallons and under do not have to meet the specific requirements for secondary containment, these tanks are still held to the standard of providing safe and secure storage in proposed Minn. Rules pt. 7151.0040.

Eleven hundred gallons was chosen as the cutoff at which the secondary containment requirements would be required because it is used as the cut-off in Minn. Stat. § 116.48 (1990) to establish exemptions for certain tanks. By using the same number in the proposed rules, confusion in the regulated community can be avoided. In addition, it is reasonable to exempt tanks which

are not required to fulfill the notification requirement from the technical requirements.

Subpart 2. Storage within 500 feet of a Class 2 water. This subpart requires that all tanks which are located within 500 feet of a Class 2 water be provided with secondary containment according to the specifications in subparts 4 to 7. This is the only exception to the provision in subpart 1 that requires specific secondary containment for tanks over 1,100 gallons in capacity. Class 2 waters are defined in Minn. Rules pt. 7050.0020 as all waters of the state which may be used for fishing, fish culture, bathing, or any other recreational purposes, and for which quality control is or may be necessary to protect aquatic or terrestrial life, or the public health, safety, or welfare. Typically, these are the surface waters that are used for fishing, swimming and boating. It is reasonable to require that even small tanks (1,100 gallons and less) be provided with secondary containment because even a small release from a tank right on the shore can cause significant damage to the surface water that it is near. These waters of the state are highly valued resources and the Agency has been statutorily mandated to protect those waters. It is reasonable to require secondary containment for tanks within 500 feet of the identified waters in order to fulfill that mandate. The Agency proposes to use 500 feet as the distance with which to be concerned.

It is reasonable to use this distance because of a computer analysis that was done by U. S. Department of Transportation software program that determined that if an 1,100 gallon tank (the largest size tank that is not required to have secondary containment under subpart 1) ruptured and all the contents of the tank were to be released, that the pool that it would make would extend for 473 feet. See Exhibit 16 for a description of how this program was used. The software program is titled Automated Resource for Chemical Hazard Incident Evaluation (ARCHIE). It was developed to facilitate the task of accident hazard assessment and consequence analysis by the Office of Hazardous Materials Transportation in the U.S. Department of Transportation.

Subpart 3. Interim standards for existing sites. This subpart defines the interim standards which will be in place for existing sites for three years following the effective date of the proposed rules. It is reasonable to have interim standards for three years because three years is the minimum time allowed for tank owners to attain compliance with the provisions of the proposed rules. The proposed interim standards provide that a secondary containment area must be constructed of materials that are reasonably impervious to the stored substance and must be able to contain at least 100 percent of the volume of the largest tank in the secondary containment area. It is reasonable that these be the interim standards because these are the requirements for secondary containment in the current rules (Minn. Rules pt. 7100.0030) which have been in effect since 1964.

Because existing sites are allowed a minimum of three years to attain compliance with the proposed rules, and because the current rules will be repealed at the same time the proposed rules are adopted, an interim standard must be established. It is reasonable to use the existing standard so that those tank owners who are in compliance with the current rules will continue to be in compliance with the proposed rules for the first three years after the adoption of the rules. This allows those tank owners who made a good faith effort to be in compliance and to provide protection for the environment the full three years to prepare a plan for upgrading and financing the upgrade. It does not allow those tanks owners who have not met their obligation to meet the minimal standards of the current rules to continue operation without safeguards during the three year interim period.

Subpart 4. Design. This subpart lists four different ways in which the secondary containment area may be designed in order to meet the requirements of the proposed rules. These four designs are the most common ways that provide proven effective protection of the stored substance from escaping to the environment. Items A - D describe the ways in which a secondary containment area may be designed.

Item A. Item A is probably the most common design for a secondary containment area. The requirements of this part will be met if the tank is situated in an area with continuous sealed impermeable dike walls and a sealed impermeable bottom, including the area directly under the tank. It is reasonable that this be one of the design options because it is easy to construct and it accomplishes the goal of environmental protection. If a tank is sitting in an area lined with an impermeable barrier between the tank and

the earth, the earth will be protected. And if the area has walls to keep any spilled product from going beyond the walls, the environment will be protected.

Item B. Item B allows a tank designed and built with an outer shell and an interstitial space between the tank wall and the outer shell that allows for monitoring (or a double-walled tank) to meet the requirements of this part. It is reasonable to allow a double-walled tank to be one of the design options for secondary containment because the outer wall serves as the secondary containment for the inner storage vessel. If the inner wall fails, the interstitial space will fill with the released product and the outer wall will keep the released product from entering the environment.

Item C. Item C is the third option for secondary containment design. This design allows for sealed drainage to an impoundment pit or treatment system designed to contain and treat the discharged substance. It is reasonable to allow this as a design option because if the substance is released to a sealed drainage path and then treated in some way, the released substance has not entered the environment, which is the goal of secondary containment. While this is not as typical a design as the designs described in items A and B, some of the larger sites have their own holding ponds and treatment systems to deal with releases.

Item D. Item D is the fourth option for secondary containment design. This design allows for a tank to be situated in a sealed vault with vapor monitoring. It is reasonable to allow this as one of the design options because this design protects the environment from a release from entering the environment with the sealed vault. It is reasonable to require vapor monitoring in this design because a vault is a closed situation with no air circulation. The vapor monitoring can help to detect a release by indicating that there is vapor in the air around the tank. If the monitoring shows that substance vapors are present, steps can be taken to deal with the situation from not only an environmental standpoint, but from a fire safety standpoint.

Subpart 5. Alternative designs. This subpart allows for a design different from the four described in items A - D to be used if it can be shown to be capable of preventing a release to the water of the state. It is reasonable to allow for alternative designs because there may be ways of providing the amount of protection deemed necessary that have not been included as options in subpart 4. The aboveground storage tank field is just beginning to be recognized as an area that needs additional innovation in the development of protective devices. While there have been some advances in the technology and the materials available to provide the necessary safeguards, there is still ample room for technical innovation. The Agency would like to encourage any new and creative ideas that surface as tank owners work to achieve compliance with the proposed rules. This subpart requires the commissioner to review an alternative design.

It is reasonable to require that an alternative design be reviewed by the commissioner so that the Agency can be assured that a design that is different from the ones that are listed in subpart 4 will provide the same level of protection that items A - D provide. Finally, this subpart provides that the commissioner has to approve an alternative design that is proposed if it shown to be capable of protecting the waters of the state against pollution by the stored substance and is equivalent to the methods listed in subpart 4. It is reasonable to include this provision so that a person who is proposing an alternative design knows that it will be approved if it meets the criteria in subpart 4. This way, the commissioner cannot act arbitrarily or capriciously in the approval or denial of an alternative design.

Subpart 6. Volume. Subpart 6 requires that a secondary containment area be large enough to contain 100 percent of the volume of the largest tank in the secondary containment area plus an additional six inches of freeboard, or dike height. It is reasonable to require that a secondary containment be large enough to contain the contents of the largest tank so that if the largest tank were to fail, all of the contents of that tank would be held in the secondary containment area. If a smaller tank fails, the volume of the area would be in excess of what would be needed under that circumstance. Six inches of freeboard is required because, according to the state climatologist, the average 25 year 24 hour rainfall is 3.4 inches and snowfall at its highest is eight inches. The Agency determined that six inches of extra volume would be adequate to contain the contents of the largest tank in the area during a major storm.

The other method of volume measurement that was considered was to require that a secondary containment area be large enough to contain 110 percent (or some other percentage) of the contents of the largest tank in the area. It was decided, after lengthy discussion during the workgroup meetings, that it was possible to have a containment area that would contain 110 percent of the contents of the largest tank but, if constructed in a very large space, could have very shallow dikes. This situation would meet the letter of the law but would not be as effective in holding the material in the event of a large release and the resulting wave action of released product. Therefore, the option of requiring a fixed amount of additional dike height was determined to be a more reasonable method of achieving protection for the environment.

This subpart also provides that a double-walled tank must be able to contain 100 percent of the volume of the tank. It is reasonable that a double-walled tank only need contain the contents of the tank and not any additional volume because a double-walled tank is constructed so that it is one unit and there is no possibility for any precipitation to enter the outer shell of the tank. Wave action of released product is not a concern for double-walled tanks.

Subpart 7. Materials. This subpart establishes the materials requirement for secondary containment structures. The proposed rules use a performance standard rather than specifying specific materials which may be used. It is reasonable to use this method because of the variety of substances which are stored in aboveground tanks and the different reactions to those substances that the materials that are available for sealing a secondary containment area might have. The performance standard which is proposed is

that the materials used to construct a secondary containment area must be impermeable to and compatible with the substance being stored and must prevent a release from entering underlying soil, surface waters or the ground water. It is reasonable to require this because it is the secondary containment area which provides the primary pollution prevention safeguard for an aboveground storage tank. Proposed Minn. Rules pt. 7151.0030, subp. 17 defines impermeable to mean that a substance is not allowed to pass through the depth of a sealed secondary containment area for a minimum of seven days. See part 7151.0030, subp. 17 for discussion of reasonableness of the definition. It is reasonable to expect that the materials used to construct a secondary containment safeguard should be able to hold a release for seven days because that is the maximum amount of time that is allowed to elapse between site inspections. Therefore, a release should be discovered before it permeates the secondary containment seal.

The other part of the performance standards for materials used to construct a secondary containment area is the materials must compatible with the substance being stored. It is reasonable to require that the materials be compatible with the substance being stored because many chemicals which are regulated by these proposed regulations are incompatible with materials commonly used for seals.

If the stored chemical is not compatible with the materials used for construction it is possible for a release to cause quick degradation of the materials, thus allowing the released substance to enter the environment. An example of incompatibility of substances and construction materials is hydrochloric acid stored in a secondary containment area constructed of concrete with no additional coating to form a seal. This particular acid will permeate right through the concrete if released and allowed to remain in contact with the concrete for any length of time. The concrete will then provide no protection at all. It was decided to use a performance standard for the materials for construction of a secondary containment area because it would have been very limiting to the regulated community to list materials and specify amounts, depths, thicknesses and other qualifying criteria. There are many different ways in which environmental protection can be accomplished and many different substances that are stored and many different combinations of both methods and materials that can be used. By using a performance standard such as the one that is proposed, tank owners have the opportunity to design safeguards that will work for the unique situation that is theirs.

This subpart also requires that the area of secondary containment which is directly under a tank must be designed and constructed to provide for the detection of a release of a substance before the release permeates the depth of the seal under the tank bottom. It is reasonable to require this because the area which is directly under the tank which is very prone to leaking due to corrosion. Exhibits 15 (Evaluation of Aboveground Storage Tank Incident Information) and 17 (Summary of Aboveground Leak Sites) demonstrate that corrosion on the bottom of a tank is a frequent cause for an aboveground tank

release. If the substance being stored leaks and there is no way to detect this, it may continue to leak for an extended period of time before it is discovered. In some instances, the materials that will be used to construct a secondary containment area will be impermeable as defined in the proposed rules (able to hold a substance for seven days) but may not be totally and absolutely impermeable. Examples of this are concrete and clay, which will be allowed to be used under certain circumstances. A slow leak from a corroded tank bottom may not be detected through the weekly inspections or monthly release detection monitoring, and may slowly permeate the seal. Therefore, it is reasonable that the design of the secondary containment area allow for this problem. Some ways that this can be accomplished are by using an entirely synthetic liner, by placing the tanks on supports above the liner, by placing the tank on some pea rock or small sized gravel, or by cutting sloped grooves or channels in a concrete secondary containment basin under the tank.

This subpart also requires that secondary containment areas which are constructed of synthetic or manufactured materials must be installed and maintained according to the manufacturer's recommendations. It is reasonable to require this because a product is only as effective as its installation. A manufacturer includes these recommendations because, in the development and testing of a product, it is determined that the steps that are being recommended are necessary to get the best performance from the product. If the manufacturer's recommendations are not followed, the potential for failure of the product is increased.

This subpart also requires that a secondary containment area for storage of a regulated substance must not be constructed using natural earth or clay to provide the seal except when it is used as an integral part of a synthetic or

manufactured material. It is reasonable to require this because a large number of secondary containment areas sealed with earthen materials, clay in particular, have been shown to have provided an ineffective seal over time. This has been demonstrated by the numbers of aboveground tank releases that have occurred where the released materials have permeated the depth of the clay "seal" in a very short period of time. There are a number of reasons why this is happening. The freeze/thaw cycle in Minnesota makes it very difficult for clay to maintain its integrity. It cracks easily unless it is kept moist. Any extended period of dryness will increase the likelihood of the clay cracking. And since the clay liner is typically covered by a layer of earth, a crack cannot be detected. Another reason why "clay" liners have probably failed is that the materials which were used were not actually the type of clay that will provide a good, low permeability seal. It would be impossible for the Agency to verify that a seal is being created by the proper type of clay unless the Agency were to review and approve each site prior to installation of the liner and then be on site during the installation of the liner. Clearly, with over 3,000 aboveground tank sites, this is not going to happen. It is more reasonable to prohibit the use of clay as a seal for new sites. Permeability of clay is typically expressed in terms of permeability to water. Many products, particularly organic solvents, have been shown to permeate clay more readily than does water. Clay as a seal for existing sites will be allowed under certain circumstances. See discussion under part 7151.0090.

This subpart provides that natural earth or clay may be used to provide the seal for a secondary containment area for tanks which store substances which are not regulated substances. It is reasonable to allow this because a

material which is not a regulated substance poses less of a threat to the environment if released.

Subpart 8. Maintenance. Subpart 8 requires that a secondary containment area must be properly maintained and free from excessive vegetation, cracks, open seams, open drains, siphons, or other openings. It is reasonable to require this because the seal for a secondary containment area is only effective if it is a continuous seal. If there is a break in the seal caused by any of the listed factors, a release can migrate into the environment through this route.

Subpart 9. Safety for double-walled tanks. Subpart 9 requires that a tank that is designed and built with an outer shell for secondary containment (double-walled tank), and which is located outside of a building, must be protected from damage by its location, a fence, posts, bumper guards or other effective means. It is reasonable to require this because a double-walled tank is not required to have an additional diked safeguard structure and thus, sits out in the open without protection. The purpose of requiring a protective device around the tank is to protect the tank from vehicles driving right into the tank and puncturing the outer wall of the tank. It is the outer wall of the tank which serves the secondary containment function and this subpart requires protection for the outer wall.

Subpart 10. Drainage of storm water. Subpart 10 requires that storm water which collects within the secondary containment area must be removed.

often enough to maintain the available capacity of the secondary containment area at 100 percent of the largest tank in the secondary containment area. It is reasonable to require this because the secondary containment area is designed to be able to hold the entire contents of the largest tank in the area in case the tank were to completely rupture when full. If precipitation is allowed to remain in the secondary containment area beyond the six inches which is called for in the volume requirement (proposed Minn. Rules pt. 7151.0080, subp. 6), then the containment area would not be able to hold the entire contents of the largest tank if it ruptured. A few days of continuous rain can cause a great deal of water to accumulate, especially if the materials used to construct the containment device are as effective as they are expected to be. On the other hand, if it only rained a little bit, removal of the storm water will often be accomplished through evaporation. As long as the available capacity in the containment area is kept at 100 percent of the largest tank in the area, the storm water can be left to evaporate.

This subpart also requires that storm water which collects within the secondary containment area must be controlled by a manually operated pump or siphon, or a gravity drain pipe which has a manually controlled dike valve. It is reasonable to require that storm water which collects in a secondary containment area be removed by these means because these are the safest means of removing water from a sealed containment area. If gravity drains are used, dike valves must be fixed in a closed position. It is reasonable to require

this because the closed position of the valves will ensure the integrity of the seal in the containment area. An open valve means that, in the event of a release, the released materials could go into this drain in an uncontrolled manner, possibly into the environment.

This subpart requires that storm water or other controlled discharges must be uncontaminated and free of sheen before discharge. It is reasonable to require this because contaminated storm water must be disposed of properly.

This subpart provides that if the discharge is governed by conditions established in a National Pollutant Discharge Elimination System Permit (NPDES) the conditions of that permit supersede the provisions of subpart 10. It is reasonable to provide for this because a NPDES permit will have been issued only after the Water Quality Division has reviewed and approved the situation. Any condition that is included in a NPDES permit must be met by the permittee or the permittee runs the risk of penalties associated with a violation of a permit condition. Since there is no permit involved in this program, it is reasonable that conditions which are in a permit issued by the Agency will supersede requirements in the proposed rules.

Part 7151.0090 Existing Sites With A Secondary Containment Area

Using Earth Or Clay

This part describes the ways in which a tank owner with an existing site which has a secondary containment area constructed with earth or clay can keep the existing earth or clay liner and still meet the requirements of the proposed rules.

Subpart 1. Alternative designs. Subpart 1 provides that a secondary containment area which was in operation before the effective date of these

parts, and constructed using earth or clay materials, may continue to be used if compliance with proposed Minn. Rules pt. 7151.0080 is demonstrated in one of two ways. These ways are described in items A and B. It is reasonable to provide methods to allow an existing earth or clay liner to meet the requirements of the proposed rules because there may be some liners made of earth or clay which were properly installed and maintained and which do provide an adequate seal. It would be unreasonable to automatically, without recourse, disallow the use of a good seal because of the many bad seals that have failed. However, it must be shown that a good seal does exist. It is also reasonable to provide methods to allow an existing earth or clay liner to meet the requirements of the proposed rules because, if a good seal does exist, a tank owner should not have to incur the additional expense of an upgrade.

Item A. Item A describes the first alternative method of providing secondary containment for an existing site. A site with a tank in a secondary containment area of adequate volume, with a full earth or clay seal, including the area under the tank, which is a minimum of six inches thick with a permeability to water equal to or less than 1×10^{-7} centimeters per second is considered to be in compliance with the proposed rules. It is reasonable that a secondary containment area which meets those requirements should not be required to do any additional upgrading because the permeability test has shown that a good seal probably does exist. It is reasonable to use six inches as

the depth of clay which is required to provide the seal because it is being used in conjunction with the permeability rate. It is reasonable to use a permeability rate of 1×10^{-7} centimeters per second because this rate shows that the materials are compacted enough to ensure that the seepage rate will only be .0034 inches per day. Or, in other words, a release will migrate .024 inches in seven days. At this rate it will take more than four years for water to permeate the depth of the six inch clay seal. This may sound like a long time, but this is the rate at which water will move through the seal. The types of products that are regulated by this program have chemicals in them that will be subject to faster migration. In addition, one of the more frequent problems with aboveground tanks is the tank bottom leak due to corrosion of the tank bottom. See Exhibits 15 (Evaluation of Aboveground Storage Tank Incident Information) and 17 (Summary of Aboveground Leak Sites). It is often difficult to detect this type of leak because product often will pass vertically through the seal before it travels horizontally to the edge of the tank where it can be seen. Thus, a leak may only show up on the inventory reconciliation or when a contaminated well is found.

Agency staff examined other permeability rates before deciding to use 1×10^{-7} centimeters per second. Using a rate of 1×10^{-6} centimeters per second with a six inch depth of clay, it would take 176 days for water to permeate the depth of the seal. Using a rate of 1×10^{-5} centimeters per

second with a six inch depth of clay, it would take 17.6 days for water to permeate the depth of the seal. Again, many products permeate clay much more readily than does water. Clearly, increasing the permeability rate decreases the protection for the environment significantly. The state of New York did an extensive study on permeability rates and decided to use the rate of 1×10^{-7} centimeters per second in their rules which were promulgated in 1989. It is reasonable to use a rate which is being used in another state with a similar climate as Minnesota's.

This subpart requires that the required thickness and permeability must be demonstrated through testing by an experienced laboratory within two years of the effective date of these parts. At least three random samples must be taken from each secondary containment area. It is reasonable to require this because testing is the only way in which the thickness and permeability parameters can be demonstrated. It is reasonable to require that an experienced laboratory do the testing of the materials because it is a complex scientific analysis and it is only by having experienced labs do the test that the Agency can have an assurance that the required standards are being met.

It is reasonable to allow two years for tank owners to complete the tests because some tank owners have many tanks and secondary containment areas and there are a limited number of firms that will be qualified to do the tests. Weather is another factor. While two years may seem like a long time, there are

about four to six months out of the year that the ground is too hard to take the samples. It is reasonable to provide a deadline that can be met rather than to establish a time frame in which all the tests will not be able to be done.

Item B. Item B describes the second alternative method of providing secondary containment for an existing site. A site with a tank in a secondary containment area of adequate volume, with an impermeable seal around the tank, but with no seal directly under the bottom of the tank will be in compliance if one of the actions described in subitems 1 and 2 is accomplished within three years of the effective date of the rules. It is reasonable to allow this as an option for providing secondary containment because it can provide the ground and the ground water with protection after the tanks were installed. The tank owners may have decided, after the tanks were installed, to install a protective liner in the secondary containment area. Many of the tanks which store petroleum products are field erected tanks which would be difficult to lift in order to install a liner or seal under the tank. It is possible to dismantle the tank, install the liner, and then put the tank back together. However, this practice has been shown to compromise the integrity of the tank.

This is what is thought to have been the problem with the tank in Floreffe, Pennsylvania which collapsed in January 1988 and caused a massive spill (approximately 750,000 gallons) which contaminated the Monongahela River and

created major disruptions in the water supply in that area for many days. Because of the dangers involved in dismantling and reconstructing a field-erected tank, it is reasonable to allow the tank owners to retrofit the tank to provide secondary containment. It is reasonable to expect that a tank be retrofitted within three years of the effective date of the proposed rules because it is consistent with the time which is being allowed for upgrading the secondary containment area. See discussion under part 7151.0190, subp. 2 for reasonableness of three years as the time allowed for attaining compliance with the proposed rules.

Subitem (1) describes the first method which may be used to retrofit a tank instead of installing an impermeable seal under the tank. This method is to install a second tank bottom in the tank above the existing bottom. The two bottoms must have an interstitial space of a minimum of three inches which must be filled with sand or a similar material which will provide support for the bottom of the tank. The interstitial space must be able to be monitored so that if the new bottom were to fail, the release could be detected before it were to permeate or fill the old tank bottom. It is reasonable to require that the interstitial space be at least three inches because it is enough space that monitoring devices can be installed, yet it is not such a large space that the structural integrity of the tank will be affected. Three inches of fill in the interstitial space provides support for the new tank bottom which, in some cases, will be storing millions of gallons of substance. The new bottom would not be able to support the weight of the product if the

space is too big and if the space is not filled with support materials.

Subitem (2) describes the second method which may be used to retrofit a tank instead of installing an impermeable seal under the tank. This method involves providing external corrosion protection and an internal coating in the tank. The internal coating must be of sufficient thickness, density and strength to form a hard impermeable shell which will not crack, soften, or separate from the interior surface of the tanks and which extends up the side of the tank a minimum of 18 inches from the tank bottom. It is reasonable to require external corrosion protection so that the outside of the tank bottom will be less likely to corrode or form holes. Cathodic protection is the most common form of corrosion protection on the external tank bottom. However, there are other methods of protecting a tank from corroding on the outside. Lifting a tank off the ground and putting it on some supports is a relatively simple method of providing corrosion protection for the external tank bottom. It is reasonable to require that, in addition to the external corrosion protection, the internal tank bottom be protected, as well. An internal coating inside the tank will provide the corresponding protection that corrosion protection outside the tank provides.

Subpart 2. Maintaining compliance. This subpart requires a tank owner to test an earth or clay liner in a secondary containment area, which passed the original test, for adequate thickness and permeability every five years in order to maintain compliance with the provisions of proposed Minn. Rules pt. 7151.0080. It is reasonable to require a tank owner to test a liner every five years to make sure that the integrity of the seal has been maintained over that time. Because of the weather fluctuations in Minnesota (freezing and thawing, drought and rain), it is possible for the seal to crack. A test will help to

determine if this has occurred. Five years is a long enough period of time that the testing will not be an economic and administrative burden on the tank owner, but a short enough period of time to detect a problem and repair it before serious environmental damage happens. Also, cracks in the liner may be missed in the initial random testing, but may be found in subsequent retesting.

Subpart 3. Alternative safeguards. This subpart allows for a design which is different from the two described in items A and B to be used if it can be shown to be capable of preventing a release to the water of the state. It is reasonable to allow for alternative designs because there may be ways of providing the amount of protection deemed necessary that have not been included as options in subpart 1. The aboveground storage tank field is just beginning to be recognized as an area that needs additional innovation in the development of protective devices. While there have been some advances in the technology and the materials available to provide the necessary safeguards, there is still ample room for technical innovation. The Agency would like to encourage any new and creative ideas that surface as tank owners work to achieve compliance with the proposed rules.

This subpart requires the commissioner to review an alternative design. It is reasonable to require that an alternative design be reviewed by the commissioner so that the Agency can be assured that a design that is different from the ones that are listed in subpart 1 will provide the same level of protection that items A and B provide.

Finally, this subpart provides that the commissioner has to approve an alternative design that is proposed if it is shown to be capable of protecting the waters of the state against pollution by the stored substance and is equivalent to the criteria in subpart 1. It is reasonable to include this provision so that a person who is proposing an alternative design knows that it will be approved if it meets the criteria in subpart 1. This way, the commissioner cannot act arbitrarily or capriciously in the approval or denial of an alternative design.

Part 7151.0100 Substance Transfer Area

Subpart 1. Substance transfer area required. This subpart requires that tanks with a storage capacity of 10,000 gallons or more of a regulated substance must have a substance transfer area which will effectively contain a release during loading and unloading the regulated substance to and from the tank. It is reasonable to require safeguards at a substance transfer area because releases at the site of the transfer vehicle are common. This is often due to operator error. See Exhibits 15 (Evaluation of Aboveground Storage Tank Incident Information) and 17 (Summary of Aboveground Leak Sites). Substance transfer area safeguards are required to protect the area directly beneath and around the hose connections on the transfer vehicle. The secondary containment area should protect the fill area near the tank. It is reasonable to require safeguards at a substance transfer area for tanks which are 10,000 gallons or more because a tank that stores that amount of a regulated substance is likely to be used frequently, thus requiring more substance to be transferred in and

out of the tank. The more transfers in and out of tanks, the more likely it will be that some of the substance is going to be released. Sites with smaller tanks usually do not use the volume of product that a site which has a 10,000 gallon or larger tank. While releases during transfers can occur even at the smallest tank, it would not be reasonable to require this added safeguard for every site. Ten thousand gallons was determined to be a reasonable size at which to require the substance transfer safeguards because the volume of substances going into and out of the tank will be significantly larger than for tanks which are smaller.

This subpart further provides that a tank into which a regulated substance is loaded or unloaded less often than once a month is not required to have a substance transfer area provided that the owner maintains records of transfers at the site and also conducts substance transfers in a safe manner. It is reasonable to provide for this because the reason for a substance transfer area is to protect the area outside of a secondary containment area from releases during a transfer operation. If transfers occur less than one time per month, the probability of a release is diminished. It is reasonable to require the owner to keep records of how often transfers occur so that the Agency can be assured that an owner who does not provide a substance transfer area for a 10,000 gallon or larger tank is in compliance with the proposed rules. It is reasonable to require that an owner who is not required to provide a substance transfer area because of the infrequent numbers of transfer operations should conduct substance transfers safely because, even though the numbers of transfers may be few, accidents can still happen through carelessness.

This subpart also provides that a substance transfer area is not required where the transfer of the regulated substance is through a pipeline between tanks at one site. It is reasonable to allow an exemption from this requirement for the transfer of substances through a pipeline between tanks because the possibility of transfer accidents happening is minimal in this type of transfer situation. Specifically, there is no breaking of connections, such as disconnecting a hose from a truck, in this type of transfer. Also, there is no chance of an overfill into the transfer vehicle since the substance is being transferred from tank to tank. The tanks are required to have overfill protection by proposed Minn. Rules pt. 7152.0110, subp. 2 and the tanks are to be inside of a secondary containment area as required by proposed Minn. Rules pt. 7151.0080, subp. 1.

Subpart 2. Location. This subpart requires that a substance transfer area must be located in a position to contain a release from all substance transfer connection points. It is reasonable to require this because the purpose of a substance transfer area is to catch releases that may occur during a substance transfer. A secondary containment safeguard is designed to catch releases which may occur near the tank connections, but in many cases, the secondary containment area will not be able to provide the same protection to the area where a truck or rail car or other delivery vehicle will be located during the delivery. The substance transfer area must be located so that a driver of a transfer vehicle may drive right up to the area and position the vehicle's connections over the transfer area to catch any releases which may happen during the transfer.

This subpart provides that a containment device for the substance transfer area may be portable. It is reasonable to allow for a substance transfer area to be portable because, as long as the volume and materials requirements are met, it is not critical that this be a permanent structure. In fact, for many situations, it will be important that the device be portable so that it can be used in more than one place. Some sites have substance transfers which involve trucks and rail cars. It may be easier for the owners of these sites to devise a portable device which can be used in both instances.

Subpart 3. Volume. This subpart requires that the substance transfer area be designed so that it will contain a minimum of the volume of regulated substance which could be pumped during one minute of transfer operation. It is reasonable to establish this as the minimum size for a substance transfer area because if there is a problem during the transfer, it is estimated that it could take up to one minute to shut down the transfer operation. Some of the problems which may occur are a transfer hose rupturing, the transfer connection at the transfer vehicle breaking or an overflow of the transfer vehicle.

Subpart 4. Materials. This subpart establishes the materials requirement for substance transfer structures. This subpart is consistent with the materials requirement in proposed Minn. Rules pt. 7151.0080, subp. 6 for secondary containment areas. The proposed rules use a performance standard rather than specifying specific materials which may be used. It is reasonable to use this method because of the variety of substances which are stored in aboveground tanks and the different reactions to those substances that the materials that are available for sealing a substance transfer area might have.

The performance standard which is proposed is that the materials used to construct a substance transfer area must be impermeable to and compatible with the substance being stored and will prevent a release from entering underlying soil, surface waters or the ground water. It is reasonable to require this because it is the substance transfer area which provides the safeguard during transfers into and out of aboveground storage tanks. Proposed Minn. Rules pt. 7151.0030, subp. 17 defines impermeable to mean that a substance is not allowed to pass through the depth of a sealed secondary containment area for a minimum of seven days. See part 7151.0030, subp. 17 for discussion of reasonableness of the definition. It is reasonable to expect that the materials used to construct substance transfer area safeguards should be able to hold a release for seven days because that is the minimum amount of time that may elapse between site inspections. The other element of the performance standard for materials used to construct substance transfer area safeguards is that the materials must be compatible with the substance being stored. It is reasonable to require that the materials be compatible with the substance being stored because many chemicals which are regulated by these proposed regulations are compatible with few materials because of the acidic properties in the chemical. If the stored chemical is not compatible with the materials used for construction it is possible for a release to cause instant degradation of the materials, thus allowing the released substance to enter the environment. An example of incompatibility of substances and construction materials is hydrochloric acid stored in a secondary containment area constructed of concrete with no additional coating to form a seal. This particular acid will

permeate right through the concrete if released and allowed to remain in contact with the concrete for any length of time. The concrete will then provide no protection at all.

It was decided to use a performance standard for the materials for construction of a substance transfer area because it would have been very limiting to the regulated community to list materials and specify amounts, depths, thicknesses and other qualifying criteria. There are many different ways in which environmental protection can be accomplished; many different substances that are stored; and many different combinations of both methods and materials that can be used. By using a performance standard such as the one that is proposed, tank owners have the opportunity to design safeguards that will work for the unique situation that is theirs.

Subpart 5. Maintenance. Subpart 5 requires that a substance transfer area must be properly maintained and free from excessive vegetation, cracks, open seams, open drains, siphons, or other openings. It is reasonable to require this because the seal for a substance transfer area is only effective if it is a continuous seal. If there is a break in the seal caused by any of the listed factors, a release can migrate into the environment through this gap.

Subpart 6. Monitoring during transfer. This subpart requires that at least one person must be in a position to monitor and terminate the transfer during loading or unloading of a substance to and from a tank. It is

reasonable to require this so that the level of product being transferred will not exceed the amount of storage space available, thus avoiding overfills. The person who is monitoring the transfer should be able to determine how much product is in the tank before the transfer begins and how much capacity the tank has. In addition, the requirement for having a person in a position to monitor and terminate a transfer during loading and unloading is reasonable because, if a problem were to occur with the transfer equipment during the transfer, the person monitoring the transfer can take steps to stop the transfer and fix the problem. In fact, it is a further requirement of this subpart that the person monitoring the substance transfer shall take immediate action to stop the flow of the substance being transferred when the capacity of the tank has been reached or in the event of an equipment failure or emergency. It is reasonable that the person monitoring a transfer take immediate steps to stop the flow when the tank capacity has been reached or in the event of an equipment failure or emergency because stopping the flow under these circumstances will prevent releases from happening or from being a worse problem than if no one were present to monitor the transfer. The volume of the substance transfer area is required to contain one minute of transfer volume and the person who is in a position to monitor the transfer operation must ensure that the operation can be shut down in one minute so that the released substance will be contained in the substance transfer area.

Subpart 7. Drainage of storm water. This subpart requires that storm water which collects within the substance transfer area must be controlled by a manually operated pump or siphon, or a gravity drain pipe which has a manually controlled dike valve. It is reasonable to require that storm water which collects in a substance transfer area be removed by these means because these are the most effective means of removing water from a sealed containment area. A few days of continuous rain can cause a great deal of water to accumulate, especially if the materials used to construct the containment device are as effective as they are expected to be. On the other hand, if it only rained a little bit, removal of the storm water will often be accomplished through evaporation. If gravity drains are used, dike valves must be fixed in a closed position. It is reasonable to require this because the closed position of the valves will ensure the integrity of the seal in the substance transfer area. An open valve means that, in the event of a release, the released materials could go into this drain in an uncontrolled manner, possibly into the environment.

This subpart requires that storm water or other controlled discharges must be uncontaminated and free of sheen before discharge. It is reasonable to require this because contaminated storm water must be disposed of properly.

This subpart provides that if the discharge is governed by conditions established in a National Pollutant Discharge Elimination System Permit (NPDES) the conditions of that permit supersede the provisions of subpart 7. It is reasonable to provide for this because a NPDES permit will have been issued

only after the Water Quality Division has reviewed and approved the situation. Any condition that is included in a NPDES permit must be met by the permittee or the permittee may be subject to penalties associated with a violation of a permit condition. Since there is no permit involved in this program, it is reasonable that conditions which are in a permit issued by the Agency will supersede requirements in the proposed rules.

Subpart 8. Timing of compliance. This subpart requires owners of existing tanks to meet the compliance schedule under part 7151.0190, subp. 2. It is reasonable to include this subpart in this portion of the proposed rules to direct the tank owner to the part of the proposed rules which contains all of the compliance schedules. The specific justification for the reasonableness of the compliance schedule is discussed in part 7151.0190, subp. 2.

Part 7151.0110 Tank and Piping Standards

This part establishes the requirements for the actual storage tank and the related piping.

Subpart 1. Tank and piping design standards. This subpart requires that all new tanks and the related piping must be properly designed and constructed in accordance with one of the industry codes of practice which incorporate performance criteria for tanks and piping listed in the proposed rules. The accepted codes of practice are then cited. It is reasonable to require new tanks and piping to meet one of the accepted codes of practice to ensure that new tanks and piping are being built in a uniform way that meets certain standards which the industry has identified as being the best technology available. It is reasonable to cite the codes of practice in the body of the

proposed rules so the regulated community will know which codes apply to this part of the proposed rules.

Subpart 2. Gauging and overflow protection. Subpart 2 requires that tanks with a capacity of more than 1,100 gallons storing a regulated substance must be equipped with an overflow alarm or a gauge which shows the level of regulated substance in the tank. It is reasonable to require overflow protection because of the frequency of releases due to overfills. Even though overfills are often not reported, they occur frequently. They are typically small and easily contained, but a history of repeated spills and overfills at a tank site can accumulate in volume and cause significant soil and ground water contamination. It is reasonable to require safeguards to protect the environment from this frequent type of release.

This subpart requires overflow alarms, if used, to be visible or audible to the person controlling the substance transfer. It is reasonable to require this so that the person in the best position to prevent an overflow from occurring will have the benefit of the the protective device. The alarm will not do the transfer person any good if it cannot be seen or heard by that person.

This subpart requires that a gauge, if used, must be visible to the person controlling the substance transfer. It is reasonable to require that the gauge be visible to the person doing the transfer so that this person can be aware of the level of the substance in the tank as it is being filled to avoid an overflow. If the gauge does not read in volumetric measurements (e.g. gallons), a calibration chart must be visible to the person controlling the transfer. Again, it is reasonable to require a calibration chart so that the transfer person can be aware of the level of substance in the tank as it is being filled to avoid an overflow.

Subpart 3. Alarm system and automatic shut-off capability. Subpart 3 requires double-walled tanks to be equipped with a high level alarm system or an automatic shutoff capability or they must be constructed to contain an overflow. It is reasonable to require this added method of overflow protection for double-walled tanks because double-walled tanks are designed so that the tank and the secondary containment device are all one unit. They are not required to have an additional protective area around the second wall of the tank. While this is adequate protection for a tank release caused by corrosion of the inner tank, an overflow can easily cause the overflowed substance to end up on unprotected ground. A high level alarm or automatic shutoff ensures that the filling of the tank stops short of its intended capacity.

Subpart 4. Piping. This subpart requires that piping connected to aboveground storage tanks must be located aboveground or, if located underground, must be designed with double walls or corrosion protection. It is

reasonable to require that the tank piping be aboveground so that any problems with the piping will be visible and easily correctable. Typical piping problems are corrosion or loose joints. It is reasonable to require underground piping to be double-walled or to have corrosion protection because these pipes routinely contain product and are in constant contact with the ground, which promotes corrosion. The Agency's Underground Storage Tank Program (Minn. Rules ch. 7150) requires corrosion protection for all underground piping.

Subpart 5. Underground tanks used for aboveground storage. This subpart prohibits tanks which were designed for underground storage from being used as aboveground storage tanks unless approved by the commissioner. It is reasonable to include this prohibition in the proposed rules because an underground storage tank is designed to be inserted into the ground with the ground around it to support the tank. Its welds and seams are different than those for an aboveground tank which is designed to sit above the ground without the external support of surrounding soil. An improperly designed tank has a higher probability of failure than one that is being used for the reason for which it was designed.

This subpart sets up a procedure for obtaining the commissioner's approval for use of an underground storage tank aboveground. The application must include a signed statement from an aboveground storage tank manufacturer that, in its current condition, the underground tank is adequate to be used as an aboveground tank. It is reasonable to require a tank manufacturer to verify that the underground tank is structurally sound enough to be used aboveground because of the different designs for the different purposes. It is reasonable

that this evaluation be of the tank in its current condition because an underground tank corroded after usage is not as strong as the tank had been originally. The commissioner will approve the use of the underground tank to be used aboveground if it is shown to be capable of protecting the water of the state against pollution by the stored substance and the aboveground use is consistent with sound engineering practices. It is reasonable to provide that the commissioner will approve the underground tank for aboveground use if it meet certain standards so that any applicant for this approval will be assured that it will be given if the standards are met.

Subpart 6. Labeling. This subpart requires tanks at a site with a capacity to store more than 1,100 gallons of a regulated substance be clearly labeled with the type of substance and the capacity of the tank. It is reasonable to require the tanks to be labeled so that the person controlling a product transfer can be assured that the proper amount of the proper substance is being transferred and so that this person can make sure that it is being transferred through the appropriate transfer line. Labeling will help to avoid overfills and pumping product into lines which discharge to the ground.

This subpart also requires that sites which do not have personnel at the site 24 hours a day have a clearly visible sign which identifies the name, address and phone number of the facility owner. It is reasonable to require this information at a site so that, in the event of a release or other problem, the facility owner may be contacted in order to implement the spill response plan.

Subpart 7. Tank maintenance. This subpart requires that rust on the tank exterior be minimized through adequate maintenance of the tank exterior. This can usually be accomplished with periodic painting of the tank. It is reasonable to require tank owners to maintain the exterior of the tank to minimize rust so that the tanks will be likely to last longer with fewer tank failures due to rust and corrosion.

This subpart also requires any water which is drawn from the bottom of the tank to be disposed of in accordance with applicable state and federal laws. It is reasonable to require this because, depending on the concentration of the stored substance in this water to be drawn off, it could present disposal hazards. Wastes must be disposed of properly and usually may not be dumped into sewers or left to run off.

Subpart 8. Timing of compliance. This subpart requires owners of existing tanks to meet the compliance schedule under part 7151.0190, subp. 4. It is reasonable to include this subpart in this portion of the proposed rules to direct the tank owner to the part of the proposed rules which contains all of the compliance schedules. The specific justification for the reasonableness of the compliance schedule is discussed in part 7151.0190, subp. 4.

Part 7151.0120 Spill Response Plan

This part requires tank owners to be prepared to quickly and effectively deal with a release from an aboveground tank. The level of preparedness is related to the size of the facility.

Subpart 1. General preparedness. This subpart requires all owners and employees to be prepared to prevent and correct pollution which could result from a release from an aboveground tank. It does not require a specific written plan, but is more of a general overall requirement. It is reasonable to include this requirement in the proposed rules to create an awareness among all tank owners that they must be prepared to deal with a spill if it happens. Owners of very small tanks may not need to have a written plan as required in subparts 2 and 3, but they should know what they will do if the small tank does fail in some way. Preparedness and quick response can prevent a spill from being a bigger problem than it needs to be. Lack of preparedness will likely result in released substances migrating farther than is necessary.

Subpart 2. Spill response plan required. This subpart requires that owners of a site with a storage capacity greater than 1,100 gallons shall prepare and maintain a current written spill response plan which establishes a response procedure to potential releases. It is reasonable to require a written plan so that, in the event of a release, the responsible person can immediately refer to the plan and will not have to waste response time thinking about what must be done or looking up needed information at the time of the release. It is reasonable that it be kept current so that any outside response personnel arriving on the scene can refer to the plan and respond to the current situation. It would be a waste of time to go and inspect a tank that shows up on the plan but which has been removed. It is reasonable to require this for sites with a storage capacity greater than 1,100 gallons because this is the size threshold for many of the other requirements in the proposed rules.

This subpart also requires owners to verify the information included in the plan or to conduct a practice spill response exercise when asked by the commissioner. It is reasonable to require this because it is a way to ensure that the plan is up to date and workable. Often, it is only through a dry run of a procedure that the flaws in the plan are obvious. If this is discovered during an actual emergency, time is lost trying to recover from the mistake made due to the flaw in the plan. This is particularly important for the largest facilities which have massive amounts of storage of many different types of materials, many people who must be contacted, and other processes that must be considered during the initial phases of response and cleanup.

This subpart requires the owner to submit a copy of the spill response plan to the commissioner upon request. It is reasonable to require this since there is no formal permitting or prior review process in this program. However, after a spill has occurred, the Agency may want to look at the current plan to review for ways that it worked and did not work in order for the owner to be better prepared in the event of a subsequent release. Again, some of the very large complex facilities may benefit from the expertise of Agency staff who have responded to many releases and who can look at a response plan with the eye of an outsider coming in to respond to a disaster.

When a review of a spill response plan shows that some modifications are necessary to improve the owner's preparedness to prevent and correct pollution, the commissioner may require that these modifications be included in a revised plan. It is reasonable that the commissioner may require modifications following a review of the plan if contact numbers are wrong, if the site is

described inaccurately, or if it is the commissioner's opinion that some procedure will not accomplish the goal of pollution prevention because it is the Agency's responsibility to see that effective methods of prevention are in place. An inaccurate plan will not work as well as a plan with all the correct information.

The spill response plan must include certain information which is detailed in items A - I. Each item is discussed for the reasonableness of including it in a spill response plan.

Item A. Item A requires the plan to include the name and phone number of the contact person responsible for the site. It is reasonable for this to be included in a response plan so that the first person on the scene of a spill will know who to contact immediately upon discovery of the spill. This is not an item someone should have to spend time looking up at the time of an emergency.

Item B. Item B requires the plan to contain a description of the site, including the size of the tanks, the substance stored, the terrain, and the location of any storm or sanitary sewers which are within 1000 feet of the tanks. It is reasonable to require that a response plan include a description of the site so that the first person on the scene can look at the plan and get a feel for how serious the problem is. If there are no storm drains nearby, it is not as serious an issue as if there is one within 1000 feet of the spill. It is reasonable to establish 1000 feet as the distance for identifying storm

and sanitary sewers because sewers beyond this distance have less of a chance of having the escaped materials flowing into them if a tank fails. The spilled materials will pool around the tank and begin to seep into the ground, thus slowing the flow in one particular direction. One thousand feet is a reasonable distance to require knowledge of potential loss through the sewers. This does not mean that a sewer which is beyond the 1000 feet should be ignored in a plan or not dealt with if the materials escape to the sewer, but it is not required that those drains be identified in the response plan.

It is important to know the size and contents of the tanks so that the response personnel can determine if any hazards may result from any of the contents combining with each other. Similarly, if a tank has only 500 gallons in it, it is not as great a concern as a tank that has 10,000 gallons of product in it. It is important to see a picture or description of the terrain so that the response personnel will know things such as if there are slopes in the land that will carry the product faster than on flat land.

Item C. Item C requires the spill response plan to include information on the safety and environmental threats posed by the stored substance. It is reasonable to require this information because it is important for the response personnel to know this so that any response activities can avoid the threats identified. A Material Safety Data Sheet (MSDS) accompanies chemicals on delivery and it is the information contained in a MSDS that will be helpful to anyone working with the product. For instance, it is important to know whether a person can safely touch the product or if it can be safely mixed with another product. Including this information in a spill response plan will enhance the safety of all the response personnel responding to a spill.

Item D. Item D requires the spill response plan to include phone numbers of emergency response personnel. These numbers must include the local fire department and the Agency spill report telephone number. It is reasonable to require that emergency numbers be included in the spill response plan because the person who must report the emergency should not need to think about who to call and should not have to look those numbers up at the time of the emergency. The response person should only have to look at the plan and follow exactly what it says to do so that it can be done in the most efficient and timely way. Clearly the fire department should be called if there is any danger at all of a fire and, when storing combustible and flammable materials, this is always a strong possibility of fire. The Agency spill reporting number must be included in the plan because of the duty to notify statute (Minn. Stat. § 115.061). The call will be directed to experienced spill responders at the Agency who can assist the owner or caller in determining how to best deal with the situation.

Item E. Item E requires that the spill response plan include the procedures which may be necessary to stop and contain a release, including the person or persons assigned to complete the procedure. It is reasonable to include this information in the spill response plan so that the person responding to the spill will not have to waste time thinking about the best way to deal with the situation.

The plan should give the responder a step by step procedure of what is to happen. The name of the person assigned to do the job is important since that person is the one who is trained to complete the procedure and it makes sense to have the trained person do the job rather than an untrained person guessing about the proper procedures.

Item F. Item F requires that the spill response plan include a list of equipment to be used to stop the release and contain the spilled substance. It is reasonable to require this information in the spill response plan so that the people who are responding to the spill will know what is available for them to use. Examples of equipment to be used are booms, absorbent materials, and pumps. If the plan lists the equipment on site, it is immediately clear what should be used.

Item G. Item G requires that the location of equipment identified in Item F be included in the spill response plan. It is reasonable to require this information so that, if the equipment is needed, the response personnel will know right where to go to get the equipment, thus saving time.

Item H. Item H requires that the spill response plan include information about how the release will actually be cleaned up and how the materials which are used will be disposed of. It is reasonable to include this information in the spill response plan because it is not enough to merely stop and contain the spilled substance. It must then be cleaned up to complete the process.

Including this in the spill response plan ensures that the process will be completed in a way that has been thought about and meets the rules and regulations which apply to cleaning up spilled substances. It is reasonable to require that a procedure to dispose of the contaminated materials be included in the plan so that it is clear that this, too, is part of the clean up process and must be handled in accordance with the applicable rules and regulations.

Item I. Item I requires that the spill response plan include the name, phone number, and qualifications of cleanup personnel capable of cleaning up a spill. It is reasonable to require that this information be included in the spill response plan because a large spill will often require that an environmental firm be hired to handle the cleanup properly. This often requires testing of soils and ground water and not everyone is qualified to do this work. By including this information in the spill response plan, it shows that the issue has already been thought about and researched so that the most qualified person is listed. It may not always be necessary to call in an outside group, but if it is, the decision has already been made who will do the cleanup work. This again, will save some time in getting the spill cleaned up.

Subpart 3. Prevention and response plan required. This subpart requires that owners of a site with a capacity to store more than 100,000 gallons of a regulated substance prepare a Prevention and Response Plan according to Minn. Stat. § 115E.04 (1991). It is reasonable to include this in the proposed rules to alert the owners of the larger facilities that they are subject to a

different regulation for response or contingency planning. The statutory requirements are similar to the requirements in the proposed rules, however there are a few additional requirements in the statute since the facilities are larger and have a greater potential for causing damage to the environment.

Subpart 4. Posting and training. This subpart requires that the plans required in subparts 2 and 3 be kept on the site in an accessible area. It is reasonable to require this because a response plan is useless if it not at the place where the spill occurs. It must also be accessible so that time is not wasted looking for the plan at the time of an emergency.

This subpart also requires that employees shall be trained in the implementation of the required plan. It is reasonable to require that employees be trained because a response plan will not be very effective if the people who are at the site are not familiar with the plan and what the roles of each of the employees might be. The more familiar the employees are with the procedures in the event of a spill, the more quickly and efficiently the problem will be dealt with when it does happen.

Subpart 5. Updating information. This subpart requires that the owner of the site review and update the required response plan every three years or when a change is made to the information contained in the plan, whichever date comes first. It is reasonable to require that the plan be updated so that it is current and describes the site and its operation as it will be if a spill occurs. Clearly, it is reasonable to make changes in the plan as the information changes. An example of this is changed telephone numbers or identified personnel. The plan will not be very useful if it has outdated information in it. A review of the plan every three years makes sense so that

it can reflect new technology or better procedures. It also makes sense to review the plan every three years to remind everyone how the response procedures are supposed to work. Finally, federal rules (40 CFR Part 112) which require a similar plan for most aboveground storage tanks require that the SPCC plan be updated every three years.

Subpart 6. Other contingency plans. This subpart provides that other contingency plans which may be required for other purposes may fulfill the requirement in the proposed rules if the same information is included. It is reasonable to allow another plan to meet this requirement because it is important that there be a plan, not that it be in a particular format. It would be unreasonable to expect a new plan to be prepared if a similar plan has already been prepared to meet other requirements. Some examples of other plans are a federal Spill Prevention Control and Countermeasures Plan, or a plan required under the Resource Conservation and Recovery Act. Also, some of the larger facilities already have a complete facility emergency response plan which covers other emergencies besides spills. These can all serve as the plan that will meet the requirement in the proposed rules and a duplicate plan is not necessary or desirable.

Subpart 7. Timing of compliance. This subpart requires owners of existing tanks to meet the compliance schedule under proposed Minn. Rules pt. 7151.0190, subp. 5. It is reasonable to include this subpart in this portion of the proposed rules to direct the tank owner to the part of the proposed rules which contains all of the compliance schedules. The specific justification for the reasonableness of the compliance schedule is discussed in pt. 7151.0190, subp. 5.

Part 7151.0130 Declaration of Compliance

This part requires owners of certain sized facilities to submit a Declaration of Compliance to the Agency. This document will provide the Agency with an assurance that the owners of these larger facilities are knowledgeable about the rules and have met the requirements of the proposed rules. Since there will not normally be a permit review in this program and it will be impossible for Agency staff to inspect all aboveground tank facilities, it is reasonable to expect that the owners of larger facilities provide some documentation that their facilities comply with the applicable regulations.

Subpart 1. Declaration of compliance required. This subpart establishes that owners of sites with a capacity to store 10,000 gallons or more of a regulated substance or 100,000 gallons or more of a substance that is not regulated shall submit the Declaration of Compliance which includes the information in items A - D. It is reasonable to require this assurance from owners of sites at these sizes because the environmental threat is increased as the size of the storage capacity increases. The releases that happen are likely to be larger than releases at a smaller facility. Sites of these large sizes pose significant risks to the environment, yet there will be no formal permit activity. The Declaration of Compliance provides Agency staff with a quick means to double check the safeguards at a site. Also, larger facilities tend to have multiple tanks, which also increases the chances of a release occurring.

Ten thousand gallons of storage of a regulated substance is a reasonable cut-off because it is small enough so that the Agency has oversight on the facilities that are most likely to have problems, but it is a large enough number that it eliminates the requirement for submittal of paperwork for many hundreds of tank owners with smaller, less risky facilities. It is reasonable to use a higher cut-off for sites which store substances which are not regulated (100,000 gallons) because, while substances which are not regulated have the potential to cause pollution, the danger is less serious than the problems which can be caused by a regulated substance. Regulated substances are more likely to have an effect not only on the environment, but on the people who live in and around the contaminated environment. Regulated substances may cause contamination of surface waters and the ground water, drinking water wells and soil. People can be directly and adversely affected if they are exposed to this contamination. However, a substance which is not regulated (e.g. milk, molasses, beet juice) will not cause physical harm to people. It may, if spilled in massive amounts, affect the surface waters' delicate biological balance and the result may be fish kills. This is a serious environmental issue, but cannot be viewed as serious as contamination of the drinking water supply for an entire community. The Agency recognizes that sites storing substances which are not regulated must be held to similar requirements as those sites which store regulated substances. However, the Agency oversight which will be the result of a tank owner's submittal of a Declaration of Compliance is not necessary for most sites which are storing substances which are not regulated. The 100,000 gallons cut-off for these sites will only include the very largest of these storage facilities.

Item A. Item A requires that owners of existing sites declare that the schedule of compliance for upgrading the secondary containment area has been or will be met. It is reasonable to require the owner to declare that the upgrade has been done on schedule or will be done on schedule so that the owner is on record as being aware that there are deadlines involved with the upgrade of the secondary containment area. This declaration to the Agency that the deadlines have been or will be met is also an assurance to the Agency that owners know their obligations regarding meeting the deadlines and are willing to sign a formal statement to that effect. Due to the large numbers of tanks and tank sites in Minnesota it would be impossible for Agency staff to conduct inspections of all of them to see that the regulations are being followed. This Declaration of Compliance puts the responsibility on the owner of the site to tell the Agency how the requirements of the rules have been met.

Item B. Item B requires owners to declare that the safeguards have been or will be installed according to the requirements in proposed Minn. Rules pts. 7151.0080 to 7151.0100. Subitems 1 - 4 detail the information that is required to show that the safeguards have been or will be installed properly. Even though there will be no formal review process conducted on these documents, it will be possible to determine, with minimal review, if something is being done improperly based on the information that is provided.

Subitem (1) requires that the Declaration of Compliance include the calculations that were used to determine the capacity of the secondary containment and the substance transfer areas. It is reasonable to require this information because if the calculations are inaccurate, then the secondary

containment and the substance transfer area might be too small to adequately contain the stored substance in the largest tank as required in proposed Minn. Rules pt. 7151.0080, subp. 6.

Subitem (2) requires that a description of the materials used to construct and seal the secondary containment and substance transfer area be included in the Declaration of Compliance. It is reasonable to require this information because, if inadequate or improper materials are used, the secondary containment and substance transfer area may not be able to hold any released materials, allowing them to escape to the environment. While Agency staff will not be conducting a formal review on this, it may be immediately obvious if the wrong materials were used to construct these areas. Agency staff can then contact the owner and they can work together to remedy the situation.

Subitem (3) requires that a sketch or diagram of the site and the safeguards be included with the Declaration of Compliance. It is reasonable to require that this be submitted with the Declaration of Compliance so that Agency staff can properly evaluate the volume calculations required in subitem (1). In addition, a sketch or a diagram will aid Agency staff in emergency response if a spill is called in and they can refer to a diagram of where all the tanks and safeguards are at the site. This requirement does not mean that formal engineering blueprints must be submitted. A simple sketch or drawing that shows location and dimensions will be adequate.

Subitem (4) requires that a schedule be included in the Declaration of Compliance if the requirements of proposed Minn. Rules pts. 7151.0080 to 7151.0100 have not yet been met. It is reasonable to require that a schedule be included so that the Agency knows that the upgrade work will be completed in the time frame allowed in the proposed rules. It is possible that some owners will submit the Declaration of Compliance before the work is completed, and the Declaration should show when the work will be completed. If it does not meet the applicable deadlines, Agency staff can work with owners to ensure compliance with the proposed rules. If there are problems with the volume or materials proposed to be used, Agency staff can make sure that the problem is corrected prior to construction if the estimated construction schedule is included.

Item C. Item C requires that the owner declare that a spill response plan or prevention and response plan with the appropriate information was prepared and is accessible at the site. It is reasonable to require the owner to declare this because the spill response plan is a critical part of pollution prevention and the declaration gives the Agency some assurance that the requirement was met. The actual plan does not have to be submitted with the Declaration of Compliance; only a statement that it has been prepared and is available on the site.

Item D. Item D requires that an owner declare that a release detection plan and inspection schedule has been established and that a description of the plan and the schedule be included. It is reasonable to require a description of the release detection plan so that Agency staff can determine how an owner plans to meet the release detection requirements.

Inclusion of this description in the Declaration of Compliance gives the Agency an assurance that a release detection plan has been established and it also gives Agency staff the opportunity to determine if the plan meets the requirements. It is reasonable to include a description of the inspection schedule so that the Agency has assurance that the owner plans to conduct all of the required inspections in the time frames established in the proposed rules.

Item E. Item E requires that an owner who has a site in a 100 year flood plain declare that a flood plan was developed to prevent a release in a flood event. It is reasonable to require this because it makes the owner aware that if a site is in a flood plain, there must be a contingency plan to protect the tanks and the stored substances if there is a major flood.

Subpart 2. Submittal for owners of new tanks or sites. This subpart requires that owners of new tanks or sites submit a Declaration of Compliance to the Agency before storing a substance in a tank. It is reasonable to require that the assurance that the rules and regulations have been met be given to the Agency before storage commences so that if any problems are evident they can be fixed before the tanks begin operation.

This subpart also requires the owner to perform any work necessary to comply with the requirements of the proposed rules if the Declaration of Compliance shows that the requirements have not been satisfied. It is reasonable to require corrective work to be done if the site does not meet the requirements of the proposed rules. It is the responsibility of the owner to know what the requirements are and to take steps to ensure that the

requirements are met. If the Declaration of Compliance shows that the owner has failed to do this, it is reasonable for the Agency to require that the owner fix whatever deficiency is not right. As stated in the beginning of this part, the Aboveground Tank Program will not be issuing formal permits in most cases, and it will not be able to do inspections of every site. As a result, Agency staff may rely on the Declaration of Compliance to provide enough information that staff will be alert to any problems. If any problems are shown as a result of the submittal of the Declaration of Compliance, it is reasonable to expect the owner to correct the problems.

Subpart 3. Timing of compliance. This subpart requires owners of existing tanks to meet the compliance schedule under proposed Minn. Rules pt. 7151.0190, subp. 7. It is reasonable to include this subpart in this portion of the proposed rules to direct the tank owner to the part of the proposed rules which contains all of the compliance schedules. The specific justification for the reasonableness of the compliance schedule is discussed in proposed Minn. Rules pt. 7151.0190, subp. 7.

Subpart 4. Renewal. This subpart requires owners of tanks to renew the Declaration of Compliance whenever any of the information submitted in the original document changes or upon the request of the commissioner. It is reasonable to require that any changes in status be reported to the Agency so that the Declaration of Compliance that is on record at the Agency reflects the most current situation. If the Agency staff ever needs to refer to the document or the attached drawings, it should show any changes from the original submittal so that any decisions made regarding that site will be made with

current information. It is reasonable to require that renewal of the Declaration of Compliance be made upon the commissioner's request to allow the commissioner to periodically update information in lieu of permit reapplications and to double check the accuracy of other notifications required of tank owners.

Part 7151.0140 Notification of Construction Activity

This part requires that owners of certain sites notify the commissioner before any construction activity takes place.

Subpart 1. Notification required. This subpart requires that owners of sites which store 10,000 gallons or more of a regulated substance to notify the commissioner before construction activity takes place. It is reasonable to require this notification for sites of this size in order to be consistent with the requirement for submittal of a Declaration of Compliance. See discussion under part 7151.0130, subp. 1 for reasonableness of size.

This subpart provides that the required notification can be done in writing or by telephone and must be given at least 30 days prior to the construction activity. It is reasonable to require the notice to be given to the Agency 30 days prior to the construction so that Agency staff can plan to be present at the construction site as it occurs.

It is also reasonable to require prior notice for this type of activity so that Agency staff can determine if the construction plans will meet the requirements in the proposed rules. If the site happens to be in a sensitive area, Agency staff may be aware of some special circumstances or problems that may exist in that area. A 30 day notice gives Agency staff and the owner time to make any adjustments that might need to be made before the actual construction begins. It is reasonable to allow the notification to be in writing or by telephone to make the process as simple as possible for both the owner and the Agency. A notification in writing may be made by such methods as a letter, or postcard or facsimile. Notification does not have to be in a formal letter. Agency staff is likely to develop a form that can be filled out to meet this need, but the notification may also be in any of the other formats identified.

This subpart requires that the information in items A - E be included in the notification.

Item A. Item A requires that the notification include the name, address and phone number of the site owner. It is reasonable to require this information so that the Agency knows who the owner of the site is and how to contact the owner, if necessary.

Item B. Item B requires that the notification include the site location if it is different from the owner's address. It is reasonable to require this information so that the Agency will know where the construction activity will be taking place in case Agency staff would like to be on site at the time of the construction.

Item C. Item C requires that the notification include the estimated date of the construction activity. It is reasonable to require this information in case Agency staff would like to be on site at the time of construction.

Item D. Item D requires that the notification include a description of the construction activity which is planned. It is reasonable to require this information so that the Agency knows what types of upgrades are being done or if it is a new site being built. If Agency staff is interested in how tank bottoms are being replaced, it may be that type of construction that staff will concentrate on observing. Observation of certain types of construction activity will allow Agency staff to concentrate on oversight of critical construction activities.

Item E. Item E requires that the notification include the name of the person or persons who will be doing the construction work. It is reasonable to require this information so that Agency staff can be at the construction site of a certain contractor if there have been complaints about that contractor. While there is currently no certification program for aboveground tank contractors, it is important for the contractors to be familiar with the requirements of the proposed rules and to perform the construction work in such a way as to meet those requirements.

Subpart 2. Construction activity. This subpart details the types of construction activity for which notification to the commissioner by tank owners must be given.

Item A. Item A requires that notification be given for installation of a new aboveground tank. It is reasonable to require an owner to notify the Agency that a new tank is being installed so that the Agency can be on the site during construction if it is necessary. Also, the notification of the installation of a new tank prior to the installation gives Agency staff the opportunity to inform the owner about the specific requirements for the work being done.

Item B. Item B requires that notification be given for installation of a new dike liner or sides. It is reasonable to require an owner to notify the Agency that a new dike liner or sides are being installed because dike liners and sides are the most significant pollution prevention devices for an aboveground tank and Agency staff may want to be on site during construction to observe the quality of the materials, the design, and the way the work is done. Also, the notification of the installation of a new dike liner or sides prior to installation gives the Agency the opportunity to inform the owner about the specific requirements for the work being done.

Item C. Item C requires that notification be given for the replacement of a dike liner or sides. It is reasonable to require an owner to notify the Agency that dike liners or sides are being replaced because dike liners and sides are the most significant pollution prevention devices for an aboveground tank and Agency staff may want to be on site during construction to inspect the quality of the materials, the design, and the way the work is done. Also, the notification of the replacement of a dike liner or sides prior to installation

gives the Agency the opportunity to inform the owner about the specific requirements for the work being done.

Item D. Item D requires that notification be given for the replacement of tank bottoms on existing tanks. It is reasonable to require an owner to notify the Agency that a tank bottom is being replaced because the tank bottom is the primary area where aboveground tank leaks occur and Agency staff may want to be on site to inspect the method used to replace the tank bottom. Improper replacement or faulty materials will cause releases to the environment if pollution prevention devices fail later on and it is better to fix the problem at the time of replacement than to have to do it all over again. Agency staff inspections may be able to point out some problems if they occur. Also, the notification of the replacement of tank bottoms prior to replacement gives the Agency the opportunity to inform the owner about the specific requirements for the work being done.

Item E. Item E requires that notification be given for any rework of an existing clay or earth secondary containment liner. It is reasonable to require an owner to notify the Agency that an existing clay or earth liner is being reworked because the proposed rules allow a tank owner to rework a clay or earth liner one time following a failed permeability test. After the one rework, if the liner fails again, it must be replaced. The only way the Agency can know if the owner has exercised the option for the one rework is if the Agency is notified that the procedure is being done. Also, the notification of the rework of a liner prior to the work being done gives the Agency the

opportunity to inform the owner about the specific requirements for the work being done.

Item F. Item F requires that notification be given for the installation of an internal tank coating or liner, or a second bottom on an existing tank. It is reasonable to require an owner to notify the Agency that the internal tank coating or liner is being installed because use of an internal tank coating or liner is one of the ways an existing tank can be modified to meet the secondary containment requirements in the proposed rules. The Agency may want to be on site to observe the installation of such a liner because of the importance of the materials in providing protection for the environment from a release of the stored product. In addition, the notification of the installation prior to installation gives the Agency the opportunity to inform the owner about the specific requirements for the work being done.

Item G. Item G requires that notification be given when an existing tank or tank site is relocated. It is reasonable to require that notification be given for the relocation of a tank or tank site because it is important that, during the relocation, the requirements for secondary containment in the proposed rules be met. The notification of the relocation prior to the relocation gives the Agency the opportunity to inform the owner about the specific requirements for the work being done and to visit the site during the construction for observation.

Item H. Item H requires that notification be given when a substance transfer area is installed or replaced. It is reasonable to require that notification be given for the installation or replacement of a substance transfer area because it is an important structure to prevent pollution from releases of the stored substance during transfer operations. Knowledge of this activity prior to the installation or replacement gives Agency staff the opportunity to inform the owner about the specific requirements for the work being done and to visit the site during construction for observation.

Part 7151.0150 Permits

This part provides for the permitting process for aboveground storage tanks.

Subpart 1. Scope. Subpart 1 makes reference to the Agency's general permit rules and general procedural rules. These rules govern how the Agency Citizen's Board operates, public participation, contested case hearings, variances, and who needs a permit. It is reasonable to include references to other Agency rules in this part so that it is clear that other rules apply to owners of tanks and that the referenced rules all work together.

Subpart 2. Permit required. This subpart requires an owner of a tank to obtain a permit to store liquid substances in an aboveground storage tank. It is reasonable to include this in the proposed rules because it is already required by Minn. Rules pt. 7001.0200, item H. This subpart further states that the owner of a site with an aboveground storage tank is deemed to have

obtained a liquid storage permit without making application for the permit if the tank or site is in compliance with all of the parts of the proposed rules that specifically apply. It is reasonable to establish a permit-by-rule provision in the proposed rules because of the large numbers of aboveground storage sites that are in Minnesota. Many of the sites are very small and have minimal requirements to meet. In addition, a liquid storage facility does not have any emissions or discharges. The stored substance simply sits in the tank and is transferred in and out. As long as adequate safeguards are in place and maintained, the threat to the environment is minimal. If an owner meets the requirements to provide adequate safeguards and meets the prevention requirements, it is not usually necessary for the Agency to conduct a technical review on the site plans. The Agency still reserves the right to inspect any site and to make sure that the safeguards are adequate. The proposed rules provide the owner with an adequate amount of guidance to inform the owner what his or her obligations are. Items A - E simply provide a breakdown or summary of which parts of the proposed rules apply to which tanks and sites. It is reasonable to include this information in this part of the rules so that a tank owner can make sure that the appropriate requirements have been met to achieve "permit-by-rule" status.

Subpart 3. Termination of eligibility for permit-by-rule. This subpart provides that the commissioner may terminate the eligibility of an owner for permit-by-rule status if the commissioner makes any of the findings of fact listed in items A and B. It is reasonable to provide the commissioner with the right to terminate an owner's permit-by-rule status because that status can

only be terminated if the owner has failed to meet the requirements of the rules that apply or if circumstances require the site to be permitted to protect human health or welfare or the environment. If the owner has failed to meet the applicable requirements of the rules, it means that the Agency needs to take a more active and direct approach with the owner. Permit-by-rule status is only for those owners who meet all of the requirements of the rules and whose sites do not pose an exceptional risk to the environment. It is reasonable that the commissioner may require an individual permit under exceptional circumstances because improper construction or storage in a sensitive environmental area could create problems in the future. A permit review by Agency staff will greatly increase the probability that the site will be constructed properly and that hazardous materials will be stored in the safest possible way.

This subpart also provides that permit-by-rule status will be terminated only after notice and opportunity for a contested case hearing or a public informational meeting is given. It is reasonable to provide this notice and opportunity so that the owner whose permit-by-rule status is being terminated has the opportunity to appeal the decision.

This subpart also requires an owner whose eligibility for permit-by-rule status has been terminated to apply for an individual liquid storage permit within 90 days of termination of eligibility or to close the facility. It is reasonable to require an owner whose permit-by-rule status was terminated to apply for an individual permit because the owner has shown, through non-compliance with the provisions of the rules (item A), that Agency oversight

is necessary to ensure that the tanks storing liquids which could cause pollution to the waters of the state are in a properly constructed secondary containment area.

The other compelling reason (item B) for termination of permit-by-rule status is that environmental or safety circumstances calls for increased scrutiny by the Agency in order to protect the public health and the environment. Some examples of sites which may be considered environmentally sensitive and subject to the permitting requirement in order to protect human health or welfare or the environment are situations where a site is located in a sensitive area, such as directly on top of an aquifer that is used to provide drinking water, a karst area, or large amounts of hazardous materials being stored directly next to a riverbank. (These examples are meant to be illustrative of some instances where it may be deemed necessary by the commissioner for a site to be reviewed and approved in a formal permit procedure, however, the examples are not an exhaustive list).

It is reasonable to require that a permit application be submitted within 90 days of termination of the eligibility of permit-by-rule status because 90 days gives the owner adequate time to prepare the application, but it is not such a long time that the environmental risk is significantly increased.

Subpart 4. Application requirements. This subpart details the type of information that is required with a permit application if an owner is required to obtain an individual permit under proposed Minn. Rules pt. 7151.0140, subp. 3.

Item A. Item A requires that the permit application contain the name, address, and phone number of the owner of the site. It is reasonable to require this information so that the Agency staff reviewer knows whose permit application is being reviewed.

Item B. Item B requires the permit application to contain a description of the site. It is reasonable to require that a permit application include a description of the site so that the Agency staff reviewer can get a complete picture of the site geography and terrain. This description should show where the tanks will be in relation to any other natural or artificial structures.

Item C. Item C requires that the capacity of the proposed storage site, including the individual tank capacity, be included in the permit application. It is reasonable and important to know the size and contents of the tanks so that the Agency staff reviewer can determine if the size of the secondary containment area is adequate.

Item D. Item D requires that the permit application include a description of the tanks and the related piping, including the codes of practice used to design and construct the tanks and piping. It is reasonable to include this information in a permit application so that the Agency staff reviewer knows whether an acceptable code of practice was used.

Item E. Item E requires that the permit application include a description of the substance or substances to be stored. It is reasonable to require this information in a permit application so that the Agency staff reviewer can evaluate whether the substances stored are compatible with the materials being used to construct the secondary containment area.

Item F. Item F requires that plans or drawings of the site and the safeguards be included with the permit application. It is reasonable to require that this be submitted with the permit application so that Agency staff reviewer can make sense of the volume calculations required in proposed Item G.

Item G. Item G requires that the permit application include the calculations that were used to determine the capacity of the secondary containment and the substance transfer areas. It is reasonable to require this information because if the calculations are inaccurate, then the secondary containment and the substance transfer area might be too small to adequately contain the stored substance in the largest tank as required in proposed Minn. Rules pt. 7151.0080, subp. 6. If the calculations are inaccurate, the staff reviewer can contact the owner and they can work together to remedy the situation.

Item H. Item H requires that a description of the materials used to construct and seal the secondary containment and substance transfer area be included in the permit application. It is reasonable to require this information because if inadequate or improper materials are proposed to be used then the secondary containment and substance transfer area will not be able to

hold any released materials, allowing them to escape to the environment. If the wrong materials are being proposed to be used to construct these areas, the staff reviewer can then contact the owner and they can work together to remedy the situation.

Item I. Item I requires that the owner submit a spill response plan or prevention and response plan prepared according to proposed Minn. Rules pt. 7151.0120. It is reasonable to require the owner to submit the plan for review because the spill response plan is a critical part of pollution prevention and the submittal gives Agency staff the opportunity to review the plan.

Item J. Item J requires that an owner submit a release detection plan and inspection schedule. It is reasonable to require a description of the release detection plan so that Agency staff knows how an owner plans to meet the release detection requirements. Inclusion of this in the permit application gives the Agency an assurance that a release detection plan has been established and a description of the plan gives Agency staff the opportunity to determine if the plan meets the requirements. It is reasonable to include a description of the inspection schedule so that the Agency has the assurance that the owner plans to conduct all of the required inspections in the time frames established in the proposed rules. Knowing the schedule also gives Agency staff the opportunity to be present at one of the inspections if they know about it ahead of time.

Item K. Item K requires that a schedule showing when compliance with applicable rules will be achieved be included in the permit application. It is reasonable to require that a schedule be included so that the Agency knows that

the upgrade work will be completed in the time frame allowed in the proposed rules.

Item L. Item L requires that an owner with a site in a 100 year flood plain submit a flood plan describing how the owner will prevent a release in a flood event. It is reasonable to require this because it makes the owner aware that if a site is in a flood plain, there must be a contingency plan to protect the tanks and the stored substances from being released if there is a major flood.

Subpart 5. Issuance. This subpart provides that the commissioner shall issue a permit to owners who submit a complete application and who meet the requirements of the proposed rules. It is reasonable to include this provision in the proposed rules so that a permit applicant will be assured that a permit will be issued if the described conditions are met.

Subpart 6. Permit fees. This subpart requires that the owner of a site who is ordered to obtain a permit pay a permit fee. This subpart establishes the permit fee as an amount necessary to cover the actual costs incurred by the Agency for the time and materials necessary to review and act upon a permit application. This means that the owner of a site which is required to obtain a permit will be billed for the number of staff hours it takes to review the permit application, inspect the site, and work with the owner to resolve any problems associated with the application. This cost recovery of staff time includes direct and indirect costs.

This subpart provides that the commissioner will send a written invoice to the owner for the payment due when the permit review is completed. It is reasonable to include this provision so that the owner of the site knows how much is owed to the Agency for the permit and so that there is a written record of the bill, both for the Agency and for the owner. This part requires the invoice to itemize the number of staff hours spent in the permit review, the staff activity performed, and the cost of any materials necessary to perform the review. It is reasonable to require this type of itemization so that the owner knows what is being billed and can decide whether the hours spent on the review are reasonable. There is a disputes procedure if the owner does not agree with the itemization.

This subpart requires that the payment will be due prior to issuance of the permit. It is reasonable to require that the owner pay the Agency before a permit is issued as an incentive for timely payment.

Subpart 7. Modifications to a permit. This subpart requires that the owner of a site which has been issued a permit shall notify the commissioner, in writing, of significant modifications proposed to the tank or tanks, safeguards, or stored substance or substances. It is reasonable to require that the owner notify the commissioner of any changes to the site after a permit has been issued because the permit was issued for particular circumstances which were reviewed and approved. An addition of a tank, or a change in stored substance could mean that the situation that was originally approved is no longer adequate.

This subpart also provides that the commissioner will approve modifications that meet the requirements of the proposed rules. It is reasonable to include this provision so that the owner knows that a modification will be approved if it meets the applicable requirements of the rules. This provision protects the owner from arbitrary decisions on the part of the commissioner and the Agency staff.

Subpart 8. Commissioner ordered permits. This subpart requires that an owner who is ordered by the commissioner to obtain a permit under the proposed rules can not store substances on the site in question until the permit is approved. It is reasonable to require that an owner cease to store substances at a site which the commissioner has determined needs to have a permit until the permit is obtained because it is only after the permit review is completed and the permit issued that the Agency knows that the site in question has met the requirements in the proposed rules, which are designed to protect the environment from contamination.

Subpart 9. Disputes. This subpart provides a tank owner with an appeal process if a decision is made by Agency staff to terminate the eligibility of an owner's permit-by-rule status. The owner can request, in writing, that the commissioner review the decision made by staff. It is reasonable to provide an appeal process for an owner in this situation so that an opportunity is provided for the owner to make his or her position known to the commissioner about the decision. The owner may see things differently than the staff which has made the decision and should have the opportunity to resolve the problem outside of a formal appeal procedure with the Agency Board.

Part 7151.0160 Release Detection

This part requires tank owners to provide monthly tank monitoring for certain tanks.

Subpart 1. Monitoring. Subpart 1 requires monthly tank monitoring for tanks which have the capacity to store greater than 1,100 gallons of a regulated substance. It is reasonable to require monthly monitoring as an early release detection method. If a leak in a tank can be detected through monitoring, the release can be minimized by repairing the tank. If a small leak continues undetected, it could easily turn into a large leak which could have been prevented. It is reasonable to require release detection for tanks storing over 1,100 gallons of a regulated substance because the tank size is consistent with most of the other prevention requirements in the proposed rules and using the same size will avoid confusion among the regulated community.

Subpart 2. Methods. The requirement for monthly tank monitoring may be met by using one or a combination of the methods described in items A - E. Release detection for aboveground tanks is not, by any means, a perfect science. None of the methods described in items A - E will provide absolutely accurate information about the integrity of the tanks. Each method has some positive as well as negative features to it. However, even though it is clear that release detection methods cannot be depended on to be the only way to prevent leaks, release detection will uncover some small leaks and subsequent major leaks will be prevented. Also, release detection in conjunction with inspections and other preventive methods will increase the likelihood that more leaks will be detected than if release detection is not required.

Item A. The method in item A is reconciliation of substance inventory control measurements and daily manual tank gauging measurements. These two activities work together to provide the owner with information about whether the tank may be leaking. Inventory control is like balancing a checkbook. Every month the substance volume is balanced between what is delivered and what is sold from the tank based on daily measurements of tank volume. If the "account" does not balance, the tank may have a leak. This is a reasonable method of release detection because it provides the owner with a method to keep track of inventory, and thus have some reasonable assurance that a leak will be detected if the inventory does not match the daily volume measurements. Furthermore, it is not an expensive method because it does not require special equipment to accomplish the outcome.

Item B. The method in item B is acoustics emissions testing. This is an external non-intrusive leak diagnostic. The idea is that, under the right conditions and with the proper equipment, the sound of a leak can be detected. The technology is relatively new and thus, fairly expensive. It is likely to be used only on large tanks. It is reasonable to include this as one of the approved methods of release detection because some of the larger companies are using this method. They would not be likely to use acoustics emissions testing monthly because of the expense, but it can be used in combination with the other approved methods as long as one of the listed methods is used monthly.

Item C. The method in item C is interstitial monitoring between the storage tank and outer shell around or under the tank can be used for double-walled tanks. The second wall holds released product between the tank

and the second wall long enough for the release to be detected. Monitors are used to check the area between the tank and the second wall for evidence of a release and alert the operator if a release is suspected. Some monitors indicate the physical presence of the released substance, either liquid or gaseous. Others check for a change in condition that indicates a hole in the tank, such as a loss of pressure or a change in the level of an indicator liquid between the walls of a double-walled tank. Monitors can be as simple as a dipstick used at the lowest point of the containment to see if the substance has leaked and pooled there. Monitors can also be automated systems that continuously check for evidence of a release. Secondary containment with interstitial monitoring is a highly reliable, inexpensive system to maintain. Of all the monitoring options, it is probably most likely to provide early detection of a release and thus minimize corrective action costs.

Item D. The method in item D is monitoring vapors in the soil. Vapor monitoring measures vapors from a leaked substance in the soil around the tank to determine if the tank is leaking. Fully automated vapor monitoring systems have permanently installed equipment to continuously gather and analyze vapor samples and respond to a release with a visual or audible alarm. Manually operated vapor monitoring systems range from equipment that immediately analyzes a gathered vapor sample to devices that gather a sample that must be sent to a laboratory for analysis. Manual systems must be used at least once a month to monitor a site. It is reasonable to include this as a method of release detection because this method can be a very sensitive and effective monitoring tool, especially at "virgin" sites where previous contamination by

petroleum hydrocarbons is not a factor. Vapors are often a good precursor of a release, moving ahead of the contaminant plume on the ground water. Early detection of vapors in these external monitors is straightforward, inexpensive and can assist the tank owner in limiting corrective action costs.

Item E. The method in item E is visual inspection of a tank on supports or a tank with channels to gather and channel a substance released from the bottom of the tank. This method will be used only for those tanks which are located off the ground or which are on a channeled, impermeable base. If the surface of the tanks is visually inspected monthly specifically to detect leaks, in conjunction with the general visual inspection that is required weekly, any small leak should be detected before it turns into a major leak. It is reasonable to include this as a method of leak detection because it is inexpensive and, if done diligently, will be an effective method of identifying leaks before they become a major problem.

Subpart 3. Alternative methods. Subpart 3 provides the tank owner with the opportunity to apply to the commissioner for approval of an alternative method for release detection. It is reasonable to provide the mechanism for alternative methods because if there are other ways to accomplish the same goals, the Agency would like to allow a tank owner to use another method. The technology for aboveground tanks is changing and the Agency wants to be able to have a method for encouraging sound innovations as they are developed. The commissioner will approve alternative methods that are shown to be capable of protecting the waters of the state against pollution by the stored substance and the alternative method is shown to be as effective as the methods in subpart 2.

This subpart provides that in determining the effectiveness of the alternative method, the commissioner shall consider the frequency and reliability of the alternative method. It is reasonable that the commissioner should consider the frequency and reliability of the alternative method proposed for release detection to make sure that the alternative method will be done often enough to provide the same amount of prevention insurance that the method in the proposed rules provides and that it is a method that is reliable enough to take the place of the method described in the proposed rules. Reliability can be shown through test results from previous application of the proposed alternative method.

Subpart 4. Records. Subpart 4 requires that records of the monthly monitoring activity be kept on the site for a minimum of three years. It is reasonable to require the owner to keep monitoring records for at least three years so that if a release were to occur, reference can be made to past records to determine if any sign of a potential problem which may have contributed to the release was documented. Historical records are also useful to rule out certain situations as being contributing factors in the cause of a release. Three years is a reasonable amount of time to maintain or keep this type of record. It is a long enough period of time to provide an adequate historical picture and not such a long time as to make it a cumbersome filing burden. The monitoring records must include the information listed in items A - D.

Item A. Item A requires that the monitoring records include the name and qualifications of the person doing the monitoring. It is reasonable to require that this information be included on the records so that if any questions arise regarding a release, it will be clear who is responsible for completion of the monitoring activity.

Item B. Item B requires that the monitoring records include what type of monitoring method or methods were used. It is reasonable that the monitoring record should include a description of the monitoring method or methods used so that a review of the records will show how release detection was accomplished. This is the only way it can be determined in the release detection methods used were adequate and in compliance with the proposed rules.

Item C. Item C requires that the date of the monitoring activity be included in the monitoring records. It is reasonable to require that the date of the monitoring be included on the record so that it can easily be checked that the monitoring was done monthly. The date is also helpful in pinpointing a time when no problems were documented on a record if a release is detected.

Item D. Item D requires that the results of the monitoring activity be documented on the monitoring record. It is reasonable to require that this information be included on the monitoring record so that past results can be checked at some later date if contamination shows up at or near the site.

This subpart requires that owners of tanks must submit the monthly records to the commissioner when requested by the commissioner. It is reasonable to require that the owner submit monthly monitoring records that are requested by the commissioner because the commissioner might need to know what the results

of past monitoring activity were if a contamination problem has shown up at or near a site. It is reasonable to require this in the proposed rules because a person who has information concerning a release is required to furnish to the commissioner any information that person may have or may reasonably obtain that is relevant to the release under Minn. Stat. § 115C.03, subd. 6 (1990). In addition, Agency staff may want to look at the monthly monitoring records when conducting an Agency inspection of the site and the owner's conformance with the regulations.

Subpart 5. Releases. This subpart requires that the owner report a potential release if the monthly monitoring indicates the possibility of a release. It is reasonable to require this in the proposed rules because it is a requirement under Minn. Stat. § 115.061.

This subpart further requires the owner to take steps to stop the release, identify the source of the release and remedy the problem. It is reasonable to require the owner to take these steps because Minn. Stat. § 115.061 (1990) also requires that a responsible person shall recover the released substance or material and take other actions possible to minimize or abate pollution of the waters of the state caused by a release.

Subpart 6. Timing of compliance. This subpart requires owners of existing tanks to meet the compliance schedule under proposed Minn. Rules pt. 7151.0190, subp. 8. It is reasonable to include this subpart in this portion of the proposed rules to direct the tank owner to the part of the proposed

rules which contains all of the compliance schedules. The specific justification for the reasonableness of the compliance schedule is discussed in

Part 7151.0170 Inspections

This part requires that owners of tanks and sites inspect the tanks and sites on a routine basis to prevent releases from the tanks and to be aware of them if they do occur.

Subpart 1. Weekly site inspections. This subpart requires owners of a site that stores greater than 1,100 gallons of total capacity of any substance that will cause pollution to the waters of the state to visually inspect the site at least once a week. It is reasonable to require this for a site of this size to provide consistency among the different parts of the rules. Most of the size cut-offs are at tank or site size of greater than 1,100 gallons. Using the same size threshold for various parts of the rules will help to avoid confusion among the regulated community.

It is reasonable to require that the visual inspection be done weekly because of the definition of impermeable. A secondary containment area must be constructed of materials which are impermeable to the substance being stored. The proposed rules define impermeable to mean that a substance is not allowed to pass through the depth of the sealed secondary containment area for a minimum of seven days. Because the containment area is supposed to be designed to hold a released substance for one week, it is reasonable to expect the owner to check the site once a week to make sure that no substance has been released. The weekly inspection must include the activities listed in items A - C.

Item A. Item A requires that the owner provide for someone to walk through the site to identify cracks or other defects in the secondary containment area or areas and the substance transfer area or areas. It is reasonable to require that the visual inspection include a walk through the safeguard areas because it is the secondary containment and substance transfer areas that are providing the primary protection to the environment from any releases from the tanks. The walk-through inspection should be adequate to identify the obvious cracks in the surface of the areas or any other defects in the seal. As long as the safeguards are maintained and repaired as necessary, it is reasonably certain that the environment will be protected from releases from the tanks.

Item B. Item B requires that the visual inspection include an examination of the exterior surfaces of tanks, valves, pumps and other equipment for cracks, corrosion, releases, and maintenance deficiencies. It is reasonable to require that the visual inspection include a check of these items so that any externally obvious defects in the tank can be identified before the problem is exacerbated and a small amount of corrosion develops into a major hole in the tank. Checking the exterior of the tanks weekly is a form of prevention and can mean avoiding trouble in the future if a problem is caught early.

Item C. Item C requires that a weekly inspection include the identification of situations where poor maintenance, operating practices or malfunctioning equipment may increase the likelihood of a release. It is reasonable to require that a weekly inspection include the observation for and

identification of these types of problems so that the problem which is identified can be corrected before it becomes a more serious issue. An example of poor maintenance might be if there is vegetation growing inside of a secondary containment area. This is an indication of a problem with the material that is being used for the liner. If the vegetation is allowed to continue growing and the underlying problem is not dealt with, the integrity of the liner is diminished more as time goes on. An example of poor operating practices might be failure to properly close a valve after a transfer operation so that the stored substance continues to come out of the valve, resulting in a release. Even if the release is contained in the secondary containment area, the poor operating practice can easily be corrected by being more careful. If the poor operating practice continues, it could result in a major release at some time. An example of malfunctioning equipment might be a pipe with a loose joint. Early identification of this problem can prevent a major loss of product during transfer.

Subpart 2. Monthly site inspections. Subpart 2 requires that the owner of a site with the capacity to store greater than 1,100 gallons of any substance which could cause pollution to the waters of the state must provide for a monthly visual inspection of the items listed in A - C. It is reasonable to require a monthly inspection for the following items because these are items which do not need to be looked at weekly, but are important enough to check monthly to ensure that there are no problems with these items.

Item A. Item A requires that the owner inspect and monitor release detection systems or other monitoring or warning systems which are in place at the site. It is reasonable to require that the owner inspect these devices monthly to make sure the monitoring equipment is in good working order. Whenever actual equipment is involved in doing a job, the potential for equipment failure increases as the complexity of the equipment increases. If the monitoring devices which are in place fail, the potential for a release increases. A monthly inspection of this equipment is a preventive measure to ensure that release detection systems (another environmental prevention measure) are in good repair.

Item B. Item B requires the owner to test any cathodic protection systems to assure that adequate levels of protection are maintained. See discussion under Item A for reasonableness.

Item C. Item C requires the owner to inspect for evidence of uneven settling of a tank. It is reasonable to require this to be checked because uneven settling of the tank could indicate a problem with the foundation on which the tank is sitting. If there is a problem with the foundation, it is likely that there will be a problem with the integrity of the materials which form the seal in the secondary containment area. This item does not mean that a person has to go out with special equipment and do any measuring, but that this must be one of the items that is visually checked or "eyeballed" each month.

Subpart 3. Internal tank inspections. This subpart requires the owner of a tank with a capacity to store greater than 5,000 gallons of a regulated substance to conduct an internal inspection of the tank according to the schedule outlined in items A - C. It is reasonable to require internal tank inspections because a major cause of tank failures is corrosion of the tank bottom. An inspection of the internal part of the tank can show the beginnings of corrosion and corrective action can take place before the corrosion turns into a major hole and resulting release. An internal tank inspection is a preventive measure to minimize the possibility of a tank failure. It is reasonable to require tanks of this size to be internally inspected because a 5,000 gallon tank is the smallest size tank that the tank manufacturers put in a manhole allowing for entry into the tank. It would be very difficult to conduct an internal tank inspection on a smaller tank.

Item A. Item A requires that a tank which meets the minimum requirements for secondary containment be taken out of service and internally inspected every five years. It is reasonable to require that a tank which meets the minimum secondary containment requirements be inspected internally every five years because five years is a long enough period of time for corrosion to have started and a short enough period of time to take the necessary steps to prevent the corrosion from continuing and becoming a hole in the tank. The minimum secondary containment requirements are useful for protecting the environment from releases but they do not provide any corrosion protection for the tanks.

Item B. Item B requires that a tank which meets the minimum secondary containment requirements and which also has cathodic protection and an internal coating on the tank bottom must be taken out of service every ten years for an internal inspection. It is reasonable to allow more time between inspections for a tank that has some corrosion protection than for one that does not have any additional protection. The additional corrosion protection means that corrosion will form and penetrate to the inside of the tank at a much slower rate than if there is no corrosion protection. A ten year interval between inspections will be enough time to inspect the interior tank liner to see how it is holding up and to repair it if necessary.

Item C. Item C provides that a tank which meets the minimum secondary containment requirements and is also situated so that it is possible to detect a release from the surfaces of the tank, including the bottom, does not ever have to be taken out of service for an internal inspection. Also, item C provides that a double-walled tank need not be taken out of service for an internal inspection. It is reasonable to provide for circumstances where a tank need not be internally inspected because if the maximum amount of protection is provided, it should not be necessary to inspect the inside of the tank, at some safety risk. If it is possible to detect a release from all surfaces of the tank, an outside visual inspection should be able to identify if a crack or a hole is forming in the tank. However, if a tank is sitting directly on a surface so that the bottom of the tank cannot be seen, it would be impossible to determine whether the surface of the tank was defective unless the inside of the tank is inspected.

An example of a way that a tank could be situated so that a release can be detected from all surfaces of the tank is a tank which is elevated off the ground and rests on supports. Another example is a tank which rests on a ringwall and the interstitial space inside the ringwall is designed so that a release will be directed out of the sides of the ringwall rather than settling on the floor surface under the tank.

Subpart 4. Internal tank inspection requirements. This subpart details the procedures that must be included in an internal tank inspection. This subpart also requires that the tank inspection be performed by a person with previous tank inspection experience. It is reasonable to require that the tank inspector have inspection experience so that the owner of the tank and the Agency have some assurance that the person doing the inspection will be familiar with the procedures and will know what to be looking for while inside the tank. Getting inside of a tank is a confined space entry issue and should not be done by someone who does not know what they are doing for safety reasons. Items A - E list the procedures to be followed.

Item A. Item A requires that the bottom sediment, sludge, and water must be removed from the tank and disposed of properly. It is reasonable to require that the bottom sediment, sludge and water that remains in the tank once the tank has been emptied be removed and disposed of properly because the tank must be completely empty in order to conduct an adequate inspection of the tank floor. Also, it is possible that the residual material may be classified as a hazardous waste and, if it is, it must be disposed of in accordance with

rules and regulations that govern the disposal of hazardous wastes.

Item B. Item B requires that the interior of the tank must be cleaned. It is reasonable to require that the inside surfaces of the tank be cleaned so that the inspector can see if there are problems with the surfaces of the tank. If it is not cleaned, any cracks or other defects may be masked by the residual material that covers the surfaces of the tank.

Item C. Item C requires that the tank bottom must be visually inspected for corrosion, pitting or other defects or deterioration. It is reasonable to require that this be part of the internal tank inspection procedure because it is the tank bottom that is the most likely surface of the tank to fail. Corrosion and pitting of the tank bottom are the chief problems with tank bottoms and the chief purpose of conducting the internal inspection.

Item D. Item D requires that tanks with internal coatings must be inspected for sign of failure of the coating system such as cracks, bubbles, blisters, peeling, curling or separation. It is reasonable to require that an internal coating system be inspected for signs of failure of the system so that it can be repaired while the tank is out of service. An internal coating which shows signs of failure will not provide the level of protection that it is designed for and must be inspected so that the coating is operating at its maximum effectiveness.

Item E. Item E requires that a tank must be repaired or replaced if excessive corrosion, pitting, and other defects or deterioration are found. It is reasonable to require that if, during the course of the inspection, any problems are found, the problems must be fixed. The purpose of the internal inspection is to prevent releases from faulty tanks. If an inspection reveals that a tank is faulty, it is reasonable to repair or replace the tank so that the tank can provide storage with less chance of a release.

Subpart 5. Alternative methods. Subpart 5 provides the tank owner with the opportunity to apply to the commissioner for approval of an alternative method for internal tank inspections. It is reasonable to provide the mechanism for alternative methods because if there are other ways to accomplish the same goals, the Agency would like to allow a tank owner to use another method. The technology for aboveground tanks is changing and the Agency wants to be able to have a method for recognizing new technology as it is developed. The commissioner will approve alternative methods that are shown to be capable of protecting the waters of the state against pollution by the stored substance and the alternative method is shown to be as effective as the methods in subpart 4.

This subpart also provides that, in determining the effectiveness of the alternative method, the commissioner shall consider the frequency and reliability of the alternative method. It is reasonable that the commissioner should consider the frequency and reliability of the alternative method proposed for internal inspections to make sure that the alternative will be done often enough to provide the same amount of prevention insurance that the

methods in the proposed rules provide and that it is a method that is reliable enough to take the place of the method described in the proposed rules. Reliability can be shown through test results from previous applications of the proposed alternative method.

Subpart 6. Inspection reports. Subpart 6 requires that the weekly and monthly inspections be documented by the inspector and that the written inspection records be kept by the owner of the site for a minimum of three years. It is reasonable to require the owner to keep inspection records for at least three years so that if a release were to occur, reference can be made to the past records to determine if any sign of a potential problem which may have contributed to the release was documented. Historical records are also useful to rule out certain situations as being contributing factors in the cause of a release. Three years is a reasonable amount of time to maintain and keep this type of record. It is a long enough period of time to provide a good historical picture and not such a long time as to make it a cumbersome filing burden.

This subpart also requires that internal tank inspections be documented and that a summary of the results be submitted in writing to the commissioner at the end of the calendar year. It is reasonable to require that owners of tanks submit a summary of the internal tank inspections completed during the year to the commissioner so that Agency staff will have a record of the inspections and can look at the records to see if any problems were found and how they were resolved.

This subpart requires that owners of tanks must submit the weekly, monthly,

or internal inspection reports to the commissioner when requested by the commissioner. It is reasonable to require that the owner submit inspection reports that are requested by the commissioner because the commissioner might need to know what the results of past inspections were if a contamination problem has shown up at or near a site. In addition, Agency staff may want to look at the inspection reports when conducting an Agency inspection of the site and review of the owner's conformance with the regulations.

Part 7151.0180 Closure

This part establishes a procedure for closure of a tank or site.

Subpart 1. Permanent closure notice. This subpart requires that a tank storing a regulated substance must be removed from its site location within one year of discontinuation of use of the tank. It is reasonable to require that an empty tank be removed from a site within one year of closure because it is consistent with the Minnesota Uniform Fire Code (referenced to Sec. 79.113(e) of the National Uniform Fire Code) which requires the same thing. It also ensures against the possible release of any residual hazardous materials that may still be present even though the tank has been "emptied".

This part also provides that a tank owner who wishes to empty a tank and not remove it from the site may do so if the release detection and inspection requirements of the proposed rules are maintained while the tank is empty. This is reasonable because there are instances where, because of fluctuations in supply and demand, a tank owner may not have need of a particular tank for a period of more than one year, but may need to keep it in place if the demand increases. It would be excessively burdensome to remove the tank, dispose of it, and then, when the need arises again, be forced to purchase a new tank. But an empty tank must be maintained in the same manner as a tank in service in order for the removal requirement to be waived. It is reasonable to require the owner of an empty tank to maintain it as though it were full in case there is residual product left in the tank after it has been emptied. By continuing with release detection and inspections, any release from the tank is more likely to be detected and contamination problems may be avoided.

This subpart further provides that a tank owner must inform the commissioner of the permanent closure of a tank or a site within 30 days of closure. It is reasonable to require this because it is already required by Minn. Stat. § 116.48 (1990) and this subpart serves to remind the tank owner that the commissioner must be notified of a change of status of a registered tank. Items A - E describe the information that must be contained on the closure reporting notification. Some of the information is already required by the notification statute (Minn. Stat. § 116.48 (1990)) and some of the information is additional information that the Agency may request in order to be assured that there is no contamination and that proper disposal procedures were followed.

Item A. Item A requires that the site and tank identifying information as originally reported to the Agency be included with the closure notice. It is reasonable to request this so that the tank inventory database will be kept up to date.

Item B. Item B requires that the date of closure be included with the closure notice. It is reasonable to require this information so that the Agency knows at what point the tank was emptied so if any future contamination is discovered, the empty tank can be ruled out as a source of contamination.

Item C. Item C requires a description of how the tank was dismantled and disposed of. It is reasonable to require this information so that the Agency knows whether proper disposal procedures were followed.

Item D. Item D requires a description of how bottom sediment, sludge, and water was disposed of. It is reasonable to require this information so that the Agency know whether proper disposal procedures were followed.

Item E. Item E requires a discussion of how the presence or absence of soil or seal contamination was determined. It is reasonable to require this information so that the Agency knows if there is contamination of the soil or the secondary containment seal and how it was determined. With this information, Agency staff can assist the owner if there is a problem. If there is no problem, it is reasonable to have this documented so that the closed tank can be eliminated as a source of contamination if there is a discovery of a nearby soil or ground water contamination in the future.

Subpart 2. Contamination determination. This subpart requires owners of tanks which are permanently removed to visually inspect the site of the closed

tank for evidence of a release. It is reasonable to require this because Minn. Stat. § 115.061 (1990) requires every person to notify the Agency of a release of a material which could cause pollution to the waters of the state. This subpart serves to remind the regulated community of its duty to notify. It is reasonable to require the tank owner to actually look at the site of the removed tank to see if there is evidence of a release. If there is no visual evidence of a release, no testing is required. However, if there is evidence of a release, such as soil staining, the owner of the closed tank must test the soil or secondary containment seal for contamination. A test may also be requested by the commissioner under this subpart. It is reasonable to require testing to be done if there is any evidence that a release has occurred because it is only through a test that the extent of the contamination can be determined. It is reasonable to include a provision that the commissioner may request that a test be done in case the tank owner does not agree that there is visible evidence of a release.

This subpart requires owners of tanks to report evidence of a release to the commissioner when the release is detected or discovered. It is reasonable to require this because Minn. Stat. § 115.061 (1990) requires that releases of materials which may cause pollution to the waters of the state be reported. The provision in the rules serves to remind the regulated community of its duty to notify.

Subpart 3. Putting a tank back in service. This subpart requires a tank owner to inspect a tank under proposed Minn. Rules pt. 7151.0160, subp. 4 prior to putting the tank back into service if it has been out of service for more than one year. This means that an internal inspection of the tank, including cleaning the tank, must be completed prior to reusing the tank. It is reasonable to require this inspection and cleaning be done because a tank that has been out of service for a lengthy period of time is highly susceptible to corrosion. This will typically occur to the floor of the tank, particularly if any moisture is left in the tank when emptied. The corrosion will cause holes in the floor of the tank and this will show up in an internal inspection. At this time, the tank floor can be repaired, thus preventing a release from occurring during the filling of the tank and the subsequent storage in the tank.

Part 7151.0190 Compliance

This part establishes how much time owners of new tanks and sites and existing tanks and sites will have to achieve compliance with the provisions of the proposed rules. Agency staff decided to put all of the timing requirements in one area of the proposed rules so that it would be easier to look up that particular part of the rules, rather than looking in each part for its particular schedule. Each individual part has a reference to this part to alert tank owners that there is a timing requirement for each part.

Subpart 1. New aboveground storage tank systems. Subpart 1 requires that owners of aboveground storage tank systems which were not in operation on or before the effective date of the proposed rules shall comply with all of the applicable provisions of the proposed rules immediately. It is reasonable to require owners of new sites to meet the standards and requirements set forth in the proposed rules because they are just starting out and it makes sense to do it the right way from the outset rather than backtracking and having to do it over again by some other date. A new site is different from an existing one in that the new site does not have to take tanks out of service to achieve compliance with the proposed rules.

Subpart 2. Timing of compliance for existing sites without a sealed secondary containment area. Subpart 2 requires that tanks which were in operation before the effective date of the proposed rules, which meet the interim design standards established in proposed Minn. Rules pt. 7151.0080, subp. 2 but do not meet the requirements of proposed Minn. Rules pt. 7151.0080, subp. 3 must be in compliance with the design standards established in proposed Minn. Rules pt. 7151.0080, subp. 3 within three years of the effective date of the proposed rules. It is reasonable to allow owners of existing tanks that meet the interim design standards three years to upgrade the existing tanks and sites because three years is enough time to make financial arrangements to pay for the cost of the upgrade and to plan for the days when the tanks will be out of service during the upgrade. However, three years is not such a long time that the increased danger to environment is unacceptable since these sites already have some method of secondary containment since they meet the interim design standards.

This subpart allows an additional two years to attain compliance if one of the conditions in items A - C exists. It is reasonable to allow an additional two years for sites which fall under this category because all three of the conditions cited mean that some additional protection or oversight has been given these sites and an additional two years of operation under these conditions will not pose an unreasonable additional environmental risk. In addition, by allowing some sites an additional two years to attain compliance means that the burden on the contractors to do the upgrading work will be spread out a little bit more.

Item A. Item A provides that a site which has a liquid storage facility permit previously issued by the commissioner will be allowed two additional years to be upgraded. It is reasonable to allow these sites an additional two years because the fact that the site has a permit means that the owner made a good faith effort to be in compliance with the existing rules which require all liquid storage facilities to have a permit. Also, since the site is permitted, it means that the site and its safeguards were reviewed by Agency staff and approved as providing reasonable protection for the environment. Even though the design standards in the proposed rules are somewhat more stringent than those in the existing rules, it is reasonable to assume that an additional two years of waiting to upgrade will not pose an unreasonable risk to the environment.

Item B. Item B provides that sites which have tanks which are elevated off the ground on supports will be allowed an additional two years to be upgraded. It is reasonable to allow an additional two years when tanks are elevated off the ground because a tank which is up off the ground will be easier to inspect for leaks since each surface of the tank can be seen. In addition, a tank which is off the ground is less likely to corrode from the outside than a tank which is in contact with the ground. For these reasons, tanks which are off the ground on supports pose less of an environmental risk than do those which are on the ground and it is reasonable to give the owners of tanks in this situation some extra time to attain compliance.

Item C. Item C provides that an owner who can document that new tank bottoms were installed within the ten year period before the effective date of the proposed rules will be allowed an additional two years to attain compliance with the proposed rules. It is reasonable to allow an additional two years for tanks with new bottoms because the biggest source of aboveground tank leaks is from the tank bottom and a tank bottom that is less than ten years old is less apt to leak than one that is older than ten years.

Subpart 2 also provides that the commissioner shall approve up to an additional three years to attain compliance with proposed Minn. Rules pt. 7151.0080, subp. 3 for sites with a substance storage capacity of 10,000,000 gallons or more upon written application to the commissioner if the owner can demonstrate that it would be physically impossible to complete the required upgrade in the three to five years allowed in the beginning part of this

subpart. It is reasonable to allow more time for these very large facilities because of the number and size of the tanks involved. It would be unreasonable to require the owner of a site with many large tanks to take them all out of service within the shorter three to five year period of time because it could conceivably affect the petroleum supply in the state. Some of these larger sites have up to hundreds of tanks which store up to millions of gallons each.

The commissioner will consider various things in the determination of how much extra time will be allowed for these very large sites to get into compliance. The items that will be considered are number of tanks at the site, availability of contractors to complete the work, availability of materials, total site storage capacity, and the amount of time tanks will be out-of-service. These are all items that are physical factors and out of the control of the owner. If there are not enough contractors available and qualified to do the work, it can't be done. If the materials which are to be used to line the area are out of stock because of the huge quantities needed, the work can't be done. However, economic hardship will not be considered as a factor to allow more time, since no other tank owners will be given this consideration and this is an area that is in the control of the owner.

Subpart 3. Substance transfer area for existing tanks and sites. This subpart requires that owners of existing sites with tanks 10,000 gallons or more in capacity provide a substance transfer area for the site within three years of the effective date of these parts. It is reasonable to allow three years to give the owner time to plan for construction and to arrange for the financing. In addition, this three year time frame fits in with the three years allowed to upgrade the secondary containment area. No additional time is

being allowed because this is a new requirement and many sites have no safeguards at all for the loading and unloading of the stored substances. Releases during substance transfer are very common occurrences and the continual build-up of spilled substances again and again in the same spot means potential contamination for the soils and the ground water underneath that area. The sooner substance transfer safeguards are installed, the sooner the environment will be protected from the frequent overfills and dripping which are common during substance transfer.

Subpart 4. Tank and piping standards for existing tanks and sites. This subpart requires that owners of existing tanks comply with proposed Minn. Rules pt. 7151.0110, subps. 2 and 3 within one year of the effective date of the proposed rules. Subpart 2 requires tanks over 1,100 gallons in capacity to have gauging or overflow protection. It is reasonable to allow one year for the owner to comply with this requirement because it is a new requirement and it gives the owner time to investigate the different options and to purchase and install the necessary equipment. Subpart 3 requires overflow protection for double-walled tanks. It is reasonable to allow one year for the owner to comply with this requirement because it is a new requirement and it gives the owner time to investigate different types of protection and time to purchase and install the necessary equipment.

Proposed Minn. Rules pt. 7151.0110, subp. 4 requires that piping be located aboveground or, if underground, that it be double-walled piping or protected from corrosion. The proposed rules allow three years to attain compliance with this portion of the rules. It is reasonable to allow three years for the owner to comply with this requirement so that it is consistent with the other construction requirements in the rules, such as the secondary containment and substance transfer areas.

Owners of existing tanks must comply with proposed Minn. Rules pt. 7151.0110, subs. 5 to 7 on the effective date of the proposed rules. Subpart 5 requires that underground tanks not be used for use aboveground unless the commissioner has approved the use. It is reasonable that this provision be in effect immediately because it does not require any action or expense on the part of tank owners and because use of underground tanks aboveground has the potential for serious environmental hazards. Subpart 6 requires tanks to be clearly labeled with substance and capacity. Transfer lines must also be labeled. A site which does not have a person at the site 24 hours a day must also have a sign with the name, address and phone number of the owner, with the sign being clearly visible from outside the secondary containment area. It is reasonable to require that this be done immediately because there is minimal time and cost involved in labeling the site and the tanks and doing so could prevent a serious mistake from being made at the time of the substance transfer. Subpart 7 requires the owner to maintain the tanks to minimize rust on the tank exterior. It is reasonable to require this as a preventive measure to prolong the life of the tank. Rust on the tank will eventually turn into areas for a leak to occur if not prevented.

It also requires that water which is drawn from the bottom of the tank be disposed of properly. It is reasonable to require that this provision be in effect immediately because it requires no immediate action or cost to the owner to comply with this provision. It is an ongoing activity.

Subpart 5. Spill response plan for existing sites. This subpart requires that owners who are required to prepare and maintain a spill response plan shall do so within one year of the effective date of these parts. It is reasonable to allow one year for the owner to prepare this plan because this is a new requirement and it may take the owner some time to work out an effective contingency plan, to acquire the appropriate cleanup equipment and to actually develop and refine the plan so that it will work in case of an emergency. However, it is not such a long time that these sites will be without a plan for very much longer. Once the plan is developed, awareness of the potential for releases is heightened and the environment is being better protected than it was before the plan was required.

Subpart 6. Prevention and response plan for existing sites. Owners of sites who are required to prepare a prevention and response plan under Minn. Stat. § 115E.04 (1991) must meet the deadlines imposed by that statute.

Subpart 7. Declaration of compliance for existing sites. Owners of sites who are required to submit a Declaration of Compliance under proposed Minn. Rules pt. 7151.0130 must submit this document within three years of the effective date of the proposed rules. It is reasonable to allow three years for owners to submit this document because it is consistent with the three

years allowed to attain compliance with the provisions which require secondary containment and substance transfer upgrades. An owner who is allowed some additional time to upgrade a secondary containment area must still submit the Declaration of Compliance within three years with a schedule indicating when the work will be completed.

Subpart 8. Release detection for existing sites. This subpart requires that owners who are subject to the release detection requirements must begin the monitoring activity within one year of the effective date of the proposed rules. It is reasonable to allow one year for an owner to begin this activity to give the owners the opportunity to check into the different methods available and to determine which method will be the best for a particular site. It also allows the owner time to purchase and install any additional equipment that will be necessary to begin the monitoring activity.

Part 7151.0200 Inadequate Safeguards

This part provides that if the commissioner finds that a substance is stored on a site without safeguards, or that an existing safeguard does not meet the requirements of proposed Minn. Rules pts. 7151.0080 to 7151.0100, the commissioner may order the owner of the site to remove the stored substance and refrain from further storage until adequate safeguards are installed and may also order the owner to obtain a written permit from the Agency. It is reasonable to include this as a provision in the proposed rules because it is already a provision in the current rules (Minn. Rules pt. 7100.0070). In addition, it is reasonable that the commissioner have the authority to require that a tank owner discontinue the practice of storing a substance in such a way that pollution of the waters of the state will occur upon a release from the

tank. The commissioner of the Agency has been charged, by statute, to prevent and control pollution. If the commissioner becomes aware of a situation where there are no safeguards, or inadequate safeguards, it is the duty of the commissioner to take affirmative steps to see that the situation is remedied. The only way to remedy such an instance is to take the tanks out of service and to put in the required safeguards. Sometimes, tank owners are reluctant to take tanks out of service to perform the required upgrade and it becomes necessary to take the type of action provided for in this part of the proposed rules. It is reasonable that the commissioner may require the owner to obtain a written permit from the Agency in such a situation so that the Agency can be assured that the required safeguards have been installed and that they have been installed according the requirements of the proposed rules.

Part 7151.0210 Notice Concerning Loss and Recovery

This part of the proposed rules requires that a tank owner shall immediately notify the commissioner of a release of a stored substance. It is reasonable to include this in the proposed rules since it is already required by Minn. Stat. § 115.061 (1990) and it is a reminder to tank owners of their duty to notify.

This part also provides that the notice shall be by telephone or other comparable means and shall be made immediately upon discovery of the loss. It is reasonable to include this provision because it is critical that the Agency receive information about a release from a tank as soon as it is discovered so that the Agency determine if there has been environmental damage and can assist the tank owner in the proper cleanup and removal procedures.

This part requires that the notice of release include information about the location and nature of the loss and other pertinent information that is available at the time of the report. It is reasonable to require this information at the time of notification so that Agency staff can make the best judgment about what should be done to ensure proper cleanup and removal of the released substance.

This part allows that if a release is less than 25 gallons and is contained within the secondary containment area, the notification may be accomplished with a letter sent to the commissioner within two weeks of the release event. It is reasonable to include this provision in the proposed rules because a minor release inside of an impermeable containment area does not pose a serious threat to the environment and Agency staff probably does not need to get involved at the time of the release. However, the Agency still needs to know about it to make sure that proper procedures were followed. This type of information also adds to our historical data which is used to analyze the type of releases that occur and the remedy. Furthermore, the statute requires that all releases be reported to the Agency. It may be more convenient for a tank owner to provide a written report later for this type of small release, but it must be reported.

This part also requires the owner of the tank to immediately recover the released substance. It is reasonable to require this in the proposed rules because it is required in Minn. Stat. § 115.061 (1990). The proposed rules serve to remind the tank owner of the responsibility for cleanup of the released substance.

This part requires the tank owner to assess the secondary containment area for damage to the seal after a release. Then, if the seal is damaged, the seal must be repaired to meet the requirements of proposed Minn. Rules pt. 7151.0080 before the tank or tanks in that area may be used again for storage. The methods used to assess and repair the seal must be documented in writing by the owner and must be submitted to the commissioner upon request. It is reasonable to require the tank owner to assess the secondary containment area after a release to make sure that no damage has occurred. It could happen that the substance degrades the integrity of the seal if it remains on the surface for too long. Or, perhaps in the process of removing the released substance, the liner materials were damaged by the equipment being used. In any case, the tank owner needs to make sure that the seal will still hold the stored substance in the event of a subsequent release. It is reasonable to require documentation of the assessment methods and the repair process in case there is a problem in the future. The Agency may need to look at these records to determine if the proper procedures were followed if some contamination is detected in the area of the release at some point after the repairs were made.

Part 7151.0220 Procedural Rules and Appeals

This part of the proposed rules provides that requests for hearings and appeals are governed by other rules and laws. While this right is provided for in other areas of rules and statutes, inclusion of this part in the proposed rules serves to remind the regulated community that there is legal recourse for disputes between the Agency and a tank owner.

Part 7151.0230 Variances

This part of the proposed rules provides that a person may apply for a variance from any requirement of the proposed rules. The variance procedure is established in Minn. Rules pt. 7000.0700. Inclusion of this part in the proposed rules serves to remind the regulated community that there is a procedure for requesting an exemption from any part of the rules.

Part 7151.0240 Incorporation by Reference

This part of the proposed rules lists those documents that are incorporated by reference in the proposed rules. This part is reasonable because it informs those persons affected by the rules that these documents can be found in the State of Minnesota Law Library, as well as providing an address where they can be obtained.

Including a provision for the use of industry codes in the proposed rules is a way to expand the use of and reliance on industry codes in order to provide for a means of improving existing methods or alternative methods of aboveground storage tank system management.

A "nationally recognized organization" means a technical or professional organization that has issued standards formed by the consensus of its members. The organization should ensure consideration of all relevant viewpoints and interests, including those of consumers and existing or potential industry participants, and the resulting standards should be widely accepted and technically sound. Thus, any code developed by an organization should be based on a broad range of technical information, and performance criteria should be central elements of the resulting standards.

Examples of such nationally recognized organizations which have codes and standards referenced in the proposed rules include:

American Petroleum Institute (API)

National Association of Corrosion Engineers (NACE)

National Fire Protection Association (NFPA)

National Leak Prevention Association (NLPA)

Petroleum Equipment Institute (PEI)

Steel Tank Institute (STI)

Underwriters Laboratory (UL)

Western Fire Chiefs Association (WFCA)

IV. SMALL BUSINESS CONSIDERATIONS IN RULEMAKING

Minn. Stat. § 14.115, subd. 2 (1990) requires the Agency, when proposing new rules which may affect small business, to consider the impact of the rules on small business. The Agency must consider specific methods for reducing the impact on small business. The following discussion will show how each of the specific methods was considered and how the proposed rules reflect that consideration.

First, staff considered whether less stringent compliance or reporting requirements could be established for small business. Generally, the proposed rules establish more stringent requirements for those facilities storing the greatest amount of hazardous materials. For instance, facilities which store less than 10,000 gallons of a regulated substance are not required to submit

the Declaration of Compliance required under part 7151.0130. The Declaration of Compliance is one of the few reporting requirements in the proposed rules. Another example is tanks which have a storage capacity of less than 10,000 gallons are not required to have a substance transfer area as a safeguard for loading and unloading. And the most broad based requirement, that of secondary containment, is less stringent in these proposed rules than in the existing rules. The existing rules require all tanks to have secondary containment, whereas the proposed rules only require those tanks with a storage capacity of over 1,100 gallons to specifically have secondary containment. Again, generally, it is the larger sites and tanks which have the most stringent requirements. However, it is possible that a business will meet the definition of small business and have large quantities of hazardous materials stored and conversely, a very large business may have one small tank at its site. In these cases, it would be the small business that would be affected in a more substantial way than would the larger business.

The proposed rules are based on the statutory objective in Minn. Stat. § 115.03, subd. 1(e)(3) (1990), which gives the Agency the power and duty to adopt rules to prevent, control or abate water pollution by "prohibiting the storage of any liquid or solid substance or other pollutant in a manner which does not reasonably assure proper retention against entry into any water of the state that would be likely to pollute any waters of the state." Secondary containment is the best known method of assuring proper retention against entry into the waters of the state. It is not feasible to base that requirement on the size of the business, but rather it must be based on the amount of storage capacity.

Second, Agency staff considered whether less stringent schedules or deadlines for compliance or reporting requirements for small business could be established. The schedules for compliance in the proposed rules are generally the same for all tank owners. The compliance schedule for most of the new provisions in the proposed rules is one year from the effective date of the rules. Considerably more time is allowed to meet the construction requirements associated with upgrading existing secondary containment and substance transfer areas. There is also some additional time allowed for upgrading existing secondary containment devices for those facilities which have some extra protective safeguards installed. However, this is not limited to small business. Further, there is the possibility for additional time for the very large facilities (10,000,000 gallons or more) because, in some cases, it will be physically impossible for them to take all of their tanks out of service and upgrade the site in the basic time frame proposed. This will affect approximately 20 facilities out of the over 3,000 facilities registered with the Agency. It is not feasible to establish less stringent schedules for compliance for small business because there is not a direct correlation between the size of the business and the amount of storage. However, there is a correlation to the amount of storage capacity and the frequency and size of releases to the environment. It is this correlation that influenced the development of the requirements in the proposed rules. It is important to remember that the requirement for secondary containment is not a new requirement. It has been required since 1964 and those who do not have secondary containment are already out of compliance with the law. For those

who are currently in compliance with the secondary containment provision, some upgrading may be required to meet the standards established in the proposed rules. Agency staff believes that the basic three year time frame is an adequate amount of time for the work to be completed. By allowing additional time to achieve compliance, the Agency would not be fulfilling its statutory obligation to protect the waters of the state.

Third, Agency staff considered whether compliance or reporting requirements for small business could be consolidated or simplified. Again, there are few reporting requirements attributable to the proposed rules (Declaration of Compliance, proposed Minn. Rules pt. 7151.0130 and Notification of Construction Activity, proposed Minn. Rules pt. 7151.0140) and those are required only for those facilities which have 10,000 gallons or more of storage capacity for regulated substances.

The same thing applies here regarding the correlation between the size of the business and the amount of storage capacity. A small business may have a large amount of storage capacity and should not receive special consideration because the potential hazard to the environment has nothing to do with the size of the business. The compliance requirements could not really be consolidated or simplified for small business for the same reason. A small business may present a more serious environmental threat based on the amount of storage than a larger business with minimal storage capacity. The compliance requirements in the proposed rules are very distinct requirements which do not lend themselves to consolidation. Each part stands by itself and deals with a different aspect of water pollution prevention. For instance, the requirement for a spill

response plan is a critical part of pollution prevention, yet is completely different from the release detection requirements, which are also designed to prevent releases. The issue of prevention is just as important for small business to address if they are storing a specified amount of hazardous substances. Therefore it is not feasible to meet the statutory obligation of water pollution prevention by consolidating or simplifying the proposed rules for small business.

Fourth, Agency staff considered the establishment of performance standards for small business to replace design or operational standards required in the rules. There are no specific design or operational standards required in the proposed rules. The only area of the proposed rules which addresses design at all is the secondary containment and substance transfer areas. The basic design standard has two components: 1.) a volume requirement; and 2.) a materials requirement.

The volume requirement is such that a secondary containment area should be able to hold the volume of the largest tank in the area plus providing an additional six inches of dike height for precipitation. It is not feasible to establish a different volume requirement for small business because a smaller area will not provide an adequate level of protection for the waters of the state if it cannot hold the contents of the largest tank in the event of a catastrophic failure of the tank. The materials requirement for design of a secondary containment area is a performance standard. The proposed rules do not specify that a particular material must be used, but rather that the material used must be impervious to and compatible with the product being

stored. This already allows discretion on the use of materials, but it is not limited to small business. There are no operational standards in the proposed rules.

And last, Agency staff considered whether small business should be exempt from any or all requirements of the rules. The exemptions that are provided for in the proposed rules are mostly for facilities that are regulated by some other federal or state laws. The other exemption is for those facilities which have tanks which are able to store 1,100 gallons or less. Some small business may fall into this exemption, but it is not feasible to provide a specific small business exemption from the proposed rules and still meet the Agency's statutory obligation to prohibit storage of a liquid substance in a manner which does not assure proper retention against entry into any waters of the state.

The Agency provided an opportunity for small business to participate in the rulemaking process in a variety of ways. A Notice to Solicit Outside Opinion was published in the April 16, 1990, State Register. A mailing was sent to over 500 persons and groups involved in tank storage inviting them to participate in the workgroups which were established in May of 1990. A Notice of Intent to Adopt Rules will be published in the November 12, 1991, STATE REGISTER, including a statement describing the effect the proposed rules may have on small business.

V. CONSIDERATION OF ECONOMIC FACTORS

In exercising its powers, the Agency is required by Minn. Stat. § 116.07, subd. 6 (1990) to give due consideration to economic factors. The statute provides:

In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation, and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax that may result therefrom, and shall take or provide for such action as may be reasonable, feasible, practical under the circumstances.

The proposed rules are not specifically designed to promote new business, but new business opportunities may be created as a result of the promulgation of the proposed rules. Some new businesses may form to meet the demand for containment safeguard upgrades, engineering, monitoring, and other services, and certainly, some existing business will see increased business.

Just as the proposed rules are not designed to promote business, they are not designed to put people out of business. But it is possible that there are some businesses which will simply not be able to afford to perform the upgrading work that will be required to be in compliance with the proposed rules. The proposed rules are written with the primary goal of environmental protection in mind. An important additional consideration is to promulgate rules which will be easily understood and followed by the regulated community and which will not impose an unreasonable economic burden on the majority of the regulated community.

Businesses will be affected by the proposed rules in a variety of ways. Any business that uses a storage tank that stores more than 1,100 gallons of a liquid substance that could cause pollution to the waters of the state will be required to be in compliance with the proposed rules. The provision that is the most broad based and will cost the most money is proposed Minn. Rules pt. 7151.0080, the provision that requires secondary containment for tanks greater than 1,100 gallons in capacity. A significant number of tank owners are already in compliance with this part of the proposed rules and, of course, will not be required to put in additional safeguards.

However, it is estimated that many hundreds of tank owners are storing hazardous substances in aboveground tanks with absolutely no secondary containment protection provided for the environment. Such a tank that does not have any safeguards at all is currently in violation of the existing rules in effect since 1964. Many tanks are also probably in violation of the federal law requiring secondary containment safeguards for tanks near navigable waters. Owners of tanks near navigable waters will face a cost under the proposed rules which could have been considerably less had they complied with existing rules. For these reasons, the Agency is requiring that safeguards be installed or upgraded on the time schedule established in proposed Minn. Rules pt. 7151.0190. The cost to tank owners will vary based on the size of the business, the substances being stored, and the quality of the existing safeguards.

A study conducted by Agency staff on what some of the costs associated with meeting the requirements of the proposed rules is included as Exhibit 13.

Three different contractors in three different parts of the state were interviewed for the study. The study shows that the cost for retrofitting a six tank bulk plant can vary from approximately \$18,000 for a facility in relatively good condition to a little over \$37,000 for a facility which is badly out of compliance. The difference in the low and high cost estimates is largely due to the fact that a facility which has been poorly maintained over the years and is out of compliance with existing rules will need to do more work on rebuilding the tanks. The study estimates that it could cost approximately a little more than \$2,500 to retrofit an old tank. This cost includes cleaning and inspecting the tank, a new bottom, a new roof (not always necessary) and an epoxy internal coating for the new tank bottom. The estimated cost of building a new six tank bulk plant is \$54,500. However, it is important to note that, in all of these cost estimates, it is not only the requirements in the proposed rules that will mean additional costs for the tank owner. The State Fire Code has its own set of rules and regulations with which tank owners must also comply. For instance, the Fire Code requires that tanks be situated in a secondary containment basin just as the proposed rules do. The difference is that the Fire Code does not specify that the secondary containment area be constructed of materials which are impervious to the product being stored. So, the rules being proposed by the Agency are more stringent in terms of materials, but the requirement is one shared by the two agencies. The Fire Code imposes various venting and piping requirements which are not required by the Agency's proposed rules. The costs cited in the study

include all costs which could be reasonably associated with a facility upgrade. As indicated, though, not all of the costs can be attributed solely to the requirements of these proposed rules. In fact, for the new facility, only 12 percent of the total capital costs for the facility can be attributed strictly to pollution prevention safeguard requirements of the proposed rules.

It is clear that it will cost many tank owners thousands of dollars to retrofit old facilities. In fact, for the very large facilities, it will likely run into the millions of dollars due to the numbers and sizes of the tanks on site and the complexity of the operation. This cost, however, must be balanced against the cost of cleanup of released substances from an aboveground tank. Over the past two years, there have been many releases from aboveground tanks. Some examples of the costs that were incurred are: 1.) a seven tank site which has already incurred \$70,000 in cleanup costs. The cleanup work is not yet complete, so naturally, this is not the final cost figure; 2.) a four tank site which has incurred \$152,000 of cleanup costs to date; 3.) a thirteen tank site has incurred more than \$100,000 in cleanup costs; and 4.) a 300 gallon tank released 200 gallons of diesel fuel and the cleanup costs were in excess of \$5,000. An extreme example of how expensive cleanup can be is a six tank facility that lost product in 1981 and has been involved in remedial action for ten years, the cost of now which exceeds \$250,000.

All cleanup activity will not cost this much, but it can happen. Clearly, in most cases, it is more expensive to clean up a site than to prevent a release from entering the environment. Also, in cases of petroleum contamination, the cleanup cost burden is borne by the state's Petroleum Tank

Release Compensation Fund (Petrofund), which is maintained by a fee to the petroleum dealers. This fee is passed on to the consumer in increased costs at the gas pump. It is the Agency's responsibility to assure that damage to environment and the cleanup costs are avoided in the first place by requiring tank owners to take preventive measures.

It is also important to note that usually the true cost of a pollution event is borne not by the tank owner but rather is borne by the site neighbors in the form of contaminated, unusable well water or other environmental degradation.

While some businesses will be affected by the proposed rules in what could be termed an adverse way because they must bear some costs in providing protection to the environment, other business will be positively affected in that they will be called upon to do the actual work that is required. Given the amount of aboveground tank storage in Minnesota, it is safe to say that many contractors will see an increase in their business as a result of the proposed rules. However, Agency staff has sought to propose rules that are clear enough and simple enough that most tank owners will not need to hire professional engineers to do planning and design for them. Owners of some of the larger facilities will need and want to do this, but many tank owners can work directly with a contractor to do the work.

Municipalities are not exempt from the proposed rules, but most municipalities have a minimal amount of aboveground storage for which they are specifically responsible. Some may be exempt by virtue of the size of the tanks they have (tanks 1,100 gallons and less are not directly affected by the

proposed rules). The requirement to upgrade secondary containment areas is the most costly requirement to meet. Since the existing requirement for secondary containment has been law for 27 years, they should already have some sort of secondary containment device or structure. If they do have secondary containment in compliance with the existing rules, they will have a minimum of three years to complete the upgrade. It is unlikely that a municipality would be required to assess a tax to meet this financial obligation. If they do not have any secondary containment, it is not the additional requirements in the proposed rules that will cause the financial burden. The municipality will be required to spend money to comply either with the proposed rules or with existi

VI. CONCLUSION

The Agency has, in this document and its exhibits, made its presentation of facts establishing the need for and reasonableness of the proposed amendments to Minnesota's liquid storage rules. This document constitutes the Agency's Statement of Need and Reasonableness for proposing Minn. Rules pts 7151.0010 to 7151.0240.

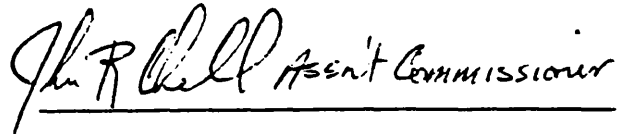
VII. LIST OF EXHIBITS

The Agency is relying on the following documents to support these proposed rules:

Agency

Ex. No.	Title
1	Minn. Rules pts. 7100.0010 to 7100.0090
2	Aboveground Storage Tank Inventory Report
3	AST Observations
4	Notice of Intent to Solicit Outside Opinion
5	Letter from Lakehead Pipe Line Company
6	Proposed Minn. Rules pts. 7151.0010 to 7151.0240
7	List of Aboveground Tank Workgroup Members
8	Minutes from Workgroup Meetings
9	List of persons interested in aboveground tank program
10	List of farm groups contacted
11	Letters from farmers in response to contact
12	40 CFR Part 112
13	An Economic Report on the Cost of Upgrading an Aboveground Storage Tank Facility
14	Letter from tank owner about others out of compliance
15	Evaluation of Aboveground Storage Tank Incident Information
16	Analysis Of Tank To Surface Water Setback Requirements
17	Summary of Aboveground Leak Sites

Date: 10-10-91



Charles W. Williams

Commissioner

