

DEPARTMENT OF AGRICULTURE

PESTICIDE AND PLANT PEST MANAGEMENT DIVISION

REGULATION NO. 641. COMMERCIAL FERTILIZER BULK STORAGE

(By authority conferred on the department of agriculture by 1994 PA 451, MCL 324.8513)

R 285.641.1 Definitions.

Rule 1. (1) As used in these rules:

(a) "API 650 standard" means the American Petroleum Institute standard number 650, tenth edition, November 1998, containing standards for the design and construction of welded steel tanks for oil storage, published by the American Petroleum Institute, 1220 L. Street, Northwest, Washington D.C., 20005-4070, <http://www.api.org> or surviving organization. This document is available at a cost of \$289.00, which is the cost at the time of publication of this rule. This document is available for inspection from the Michigan Department of Agriculture, Pesticide and Plant Pest Management Division, 525 W. Allegan, Lansing, MI 48933.

(b) "API 653 standard" means the American Petroleum Institute standard number 653, third edition, September 2003, containing standards for the inspection, repair, alteration and reconstruction of welded steel tanks for oil storage, published by the American Petroleum Institute, 1220 L. Street, Northwest, Washington D.C., 20005-4070, <http://www.api.org> or surviving organization. This document is available at a cost of \$176.00, which is the cost at the time of publication of this rule. This document is available for inspection from the Michigan Department of Agriculture, Pesticide and Plant Pest Management Division, 525 W. Allegan, Lansing, MI 48933.

(c) "Approved" means approval by the director of the department or his or her representative.

(d) "Appurtenances" mean any of the following which are connected to a bulk fertilizer container or which are used for transferring bulk fertilizer between containers:

- (i) Valves.
- (ii) Gauges.
- (iii) Portable manufacturing units.
- (iv) Pumps.
- (v) Fittings.
- (vi) Hoses.
- (vii) Mixing containers.
- (viii) Plumbing.
- (ix) Metering devices.

(e) "Aqua ammonia" means an aqueous solution of anhydrous ammonia which generally contains 18% to 30% of ammonia (NH₃) by weight and which has a vapor pressure that usually varies from 0 to 10 pounds per square inch gauge (psig) at 104 degrees Fahrenheit.

(f) "Authorized inspector" means a person who is certified by the American Petroleum Institute under appendix D-authorized inspector certification, of the API 653 standard.

(g) "Bladder system" means a non-adhering liner physically attached to the inside of the large storage tank. The liner, constructed of a compatible synthetic material, provides physical separation of the liquid product from the sidewalls and storage container floor.

(h) "Bulk fertilizer" means fluid fertilizer in a single container that has a capacity of more than 2,500 United States gallons, fluid fertilizer in containers that have a combined total capacity for all storage containers or tanks located at a single site or location of more than 7,500 United States gallons, or dry fertilizer in an individual quantity of more than 2,000 pounds. For purposes of these rules, use solutions and rinsates are bulk fertilizers if they are in containers that meet the capacities specified in this subdivision.

(i) "Department" means the Michigan department of agriculture.

(j) "Discharge" means an uncontained release to the environment in a quantity that is more than 55 United States gallons of liquid or 650 pounds of dry bulk fertilizer. "Discharge" does not include a fully contained transfer of bulk fertilizer that is made pursuant to sale, storage, distribution, or intended use.

(k) "Distribute" has the meaning as defined in section 8501 of 1994 PA 451, MCL 324.8501.

(l) "Elephant ring" means a storage container which has an open top and which serves as a secondary containment vessel into which a primary storage container with a smaller volume is placed.

(m) "Existing bulk storage facility" means a facility that, on the effective date of this rule, is being used to store or hold bulk fertilizers where the location of bulk containers remains the same whether bulk containers are replaced, added to, or reorganized.

(n) "Fertilizer" has the meaning as defined in section 8501 of 1994 PA 451, MCL 324.8501.

(o) "Field operations" means the application of fertilizer to soil or plants in the course of normal agricultural or horticultural practice.

(p) "Floodplain" means any land area that is subject to a 1% or greater chance of flooding. This is equivalent to a 100-year flood.

(q) "Fluid fertilizer" means fertilizer in fluid form and includes solutions, emulsions, suspensions, and slurries. "Fluid fertilizer" does not include anhydrous ammonia.

(r) "Large storage tank" means a closed container used to store liquid fertilizer that has a capacity of 100,000 gallons or more and which has been constructed on-site.

(s) "Mobile container" means a container designed or used for transporting fertilizer.

(t) "Modification" means changes in structures, processes, or activities at a bulk fertilizer storage facility that alter the efficiency or capacity of containment structures or systems.

(u) "New bulk storage facility" means a storage facility designated by the director or a storage facility that locates new, used, or refurbished bulk containers where, before the effective date of this rule, bulk storage was not conducted.

(v) "Operational area containment" means a structure or system that is designed and constructed to effectively intercept and contain spills, container or equipment washwater, and precipitation to prevent the runoff or leaching of fertilizer from an area or areas at a storage facility where bulk fertilizers are transferred, loaded, unloaded, mixed, impregnated, repackaged, or refilled.

(w) "Primary containment" means the storage of bulk fertilizer in storage containers at a storage facility.

(x) "Primary containment piping" consists of any conveyance utilized to transport liquid fertilizer into or out of the storage area.

(y) "Rinsate" means the liquid that is generated from the rinsing of the interior surface of fertilizer application equipment or a fertilizer container that has come in direct contact with fertilizer. The liquid is a mixture of water and a relatively low concentration of fertilizer. "Rinsate" includes the liquid that is generated by cleaning a containment area under R 285.641.10(3).

(z) "Secondary containment" means a structure, including dikes, that is effectively designed and constructed to contain spills or leaks and to prevent escapes, runoff, and leaching of fertilizer from bulk storage containers and appurtenances.

(aa) "Spill" means a contained release, within a containment area or operational pad, in a quantity that is more than 55 United States gallons of liquid or 650 pounds of dry bulk fertilizer. "Spill" does not include a fully contained transfer of bulk fertilizer that is made pursuant to sale, storage, distribution, or intended use.

(bb) "Storage" means the storage of bulk fertilizer by a person who manufactures or distributes bulk fertilizer.

(cc) "Storage container" means a container, rail car, nurse tank, or mobile container that is used for the storage of bulk fertilizer. "Storage container" does not include any of the following:

(i) A mobile container that stores bulk fertilizer at a storage facility for less than 30 consecutive days if the storage is incidental to the loading or unloading of a storage container at the storage facility.

(ii) A mobile container that is located on property other than property which is owned, operated, or controlled by an owner or operator of a storage facility for less than 30 consecutive days.

(iii) A rail car that stores bulk fertilizer at a storage facility for less than 30 consecutive days without reloading or unloading.

(iv) A container which is 2,500 gallons or less and which is used solely as emergency storage for leaking fertilizer containers.

(dd) "Storage facility" means a facility which is used to store or hold bulk fertilizer and which is owned, operated, controlled, or leased by a person who manufactures or distributes bulk fertilizer.

(ee) "Surface water" means a body of water that has its top surface exposed to the atmosphere and includes lakes, ponds, or water holes that cover an area of more than 0.25 acres and streams, rivers, or waterways that maintain a flow year-round. "Surface water" does not include waterways that have an intermittent flow.

(ff) "Washwater" means the liquid that is generated from rinsing the exterior surfaces of application, handling, storage, transportation, or nurse equipment. "Washwater" does not include the liquid that is generated by cleaning a containment area under R 285.641.10(3).

History: 1998-2000 AACCS.

R 285.641.2 Storage facility registration.

Rule 2. (1) A person shall not operate a storage facility in Michigan until it is registered with the department. Each facility shall submit a registration application on forms provided by the department. The registration application shall disclose the physical location of the facility and its mailing address if different from the address on the application. A person shall submit a discharge response plan under R 285.641.14 and a site plan of the facility with the registration application. The site plan shall include all of the following:

(a) A plot plan or map of the property that shows all structures and the location of all wells on the site.

(b) A plot plan or map that shows all of the following:

(i) Precipitation runoff routes to and from the storage facility.

(ii) Approximate distance to, and the identity of, lakes, streams, drainage ditches, or storm drains within 0.5 mile of the storage facility location.

(iii) The distance and direction to the nearest public and private wells.

(iv) Site soil characteristics.

(v) Depth to groundwater.

(c) A plot plan or map that shows the location of bulk storage tanks and their horizontal, raised, or vertical situation at the site, and a tank schedule that provides all of the following information for each tank:

(i) The construction material.

(ii) The capacity.

(iii) The diameter.

(iv) The height.

(v) The product stored.

(vi) The date of installation.

(d) Secondary and operational area containment construction plans and the capacity of the containments in gallons.

(e) If synthetic liners or synthetic materials are used, containment structure manufacturer installation instructions and confirmation of compatibility with fertilizer. If prefabricated basins are used, containment structure manufacturer confirmation of compatibility with fertilizer and an estimate of the life expectancy of the structure.

(f) An operational plan for containment areas that shows the handling and utilization of recovered fertilizer materials, rinsewater, and precipitation accumulation.

(2) For a facility which is in operation on the effective date of this rule and which does not meet the containment requirements of this rule, the facility shall submit both of the following with the registration application:

(a) Items that are required under subrule (1) of this rule.

(b) Designs for required containment structures, including the amount of construction that has been completed and a timetable for complete compliance with this rule.

(3) All registrations expire on December 31 of each year. The facility site plan need not be submitted with the registration application after the first registration is approved unless modifications to the facility occur affecting subrules (1) and (2) of this rule.

(4) For a facility that has containments under construction or that has plans for construction, the facility shall submit annually the items specified in subrule (2) of this rule with the registration application until the construction has been completed.

(5) After an initial storage facility registration has been completed, if changes or modifications have not occurred since the latest registration, then facility need not submit the items in subrules (1) and (2) of this rule with the storage facility registration application/renewal.

(6) The department may approve a registration application with conditions if the applicant facility has met the requirements of subrules (2) to (5) of this rule. A facility applying for an approval with conditions shall meet timetables for project completion as approved by the department and may have a maximum of 5 years to fully complete a project.

(7) The department may deny a registration if the applicant facility does not meet the requirements of this rule. The applicant facility may appeal a registration denial to the department director for reevaluation.

(8) The department shall notify an applicant regarding the status of their registration within 120 days of receipt of the registration. This notification shall indicate the conditions of approval or the reasons for denial of registration, if applicable. An applicant facility shall be deemed registered for operation for 1 year if the department does not respond within the 120 days.

(9) The department may exempt any person from a requirement under these rules if compliance is not technically feasible and if the department finds that alternative measures provide substantially similar protection against a discharge to the environment. The person who requests the exemption shall provide all information which is required to prove that substantially similar protection is possible to the department.

(10) For the year in which this rule takes effect, a facility applicant shall submit a registration application to the department within 180 days of the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.3 Siting of storage facilities.

Rule 3. (1) The siting of a bulk fertilizer storage facility shall comply with applicable local, state, and federal regulations.

(2) A storage facility shall locate its new bulk storage facilities and its respective containment areas shall be located as follows:

(a) Above a floodplain as defined in R 285.641.1(1).

(b) A minimum of 200 feet from surface water.

(c) A minimum of 2,000 feet from type I and type IIa public water supply wells, as defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(d) A minimum of 800 feet from type IIb and type III public water supply wells, as defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(e) A minimum of 150 feet from all other drinking water supplies that are not defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(3) Existing bulk storage facilities that have approved containment shall have the outside base of the containment areas located as follows:

(a) A minimum of 200 feet from type I and type IIa public water supply wells, as defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(b) A minimum of 75 feet from type IIb and type III public water supply wells, as defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(c) A minimum of 50 feet from all other drinking water supplies that are not defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws.

(4) All bulk storage facilities shall utilize appropriate engineering safeguards to prevent water supply contamination if the floodplain, surface water, or water supply setback requirements in subrules (2) and (3) of this rule cannot be met. A storage facility shall implement the engineering safeguards before initial approval of a facility registration by the department.

(5) A storage facility shall ensure that bulk storage construction standards for primary, secondary, and operational containment facilities that are constructed after the effective date of this rule are of a type recommended by any of the following entities:

(a) Michigan state university.

(b) Midwest plan service.

(c) Tennessee valley authority.

(d) United States Department of Agriculture natural resources conservation service.

(e) A licensed engineer.

(f) Other sources approved by the department.

(6) The department is not liable for the structural integrity of a department-approved storage facility.

History: 1998-2000 AACCS.

R 285.641.4 Primary containment of bulk liquid fertilizer.

Rule 4. (1) A storage facility shall ensure that a storage container and an appurtenance are constructed, installed, and maintained to prevent the unintentional discharge of fluid fertilizer.

(2) A storage facility shall ensure that a storage container and an appurtenance are constructed of materials that are resistant to corrosion, puncture, or cracking.

(3) A storage facility shall ensure that metals which are used for valves, fittings, and repairs on metal containers are compatible with the metals that are used in the construction of the storage container so that the combination of metals does not cause or increase corrosion which may weaken the storage container or its appurtenances or create a risk of discharge.

(4) A storage facility shall ensure that a storage container and an appurtenance are designed to handle all operating stresses, taking into account static head, pressure buildup from pumps and compressors, and any other mechanical stresses to which the storage containers and appurtenances may be subject in the course of operations.

(5) A storage facility shall ensure that a storage container and an appurtenance, including pipes, are protected against reasonably foreseeable risks of damage by trucks and other moving vehicles that are engaged in the handling of bulk fertilizers.

(6) A storage facility shall ensure that a storage container and an appurtenance are constructed of materials that are compatible with the product or products being stored and handled.

(7) A storage facility shall ensure that a storage container is not filled beyond the capacity for which it is designed, taking into account the physical characteristics of the fluid that is being stored.

(8) A storage facility shall ensure that flexible connections and properly supported appurtenances are utilized as dictated by engineering practices to reduce vibrational and stress-related deterioration.

(9) A storage facility shall ensure that backflow protection or a fixed air gap is utilized to protect water lines as required by standard engineering and plumbing practices.

(10) A storage facility shall locate primary containment piping above the ground and within secondary containment. The end of primary containment piping or any manifold device shall remain within secondary containment. Underground primary containment piping is permitted provided the piping is made of stainless steel, is enclosed in secondary containment (a pipe within a pipe) or is hydrostatically tested annually.

(11) A storage facility shall ensure that a storage container is anchored, elevated, or secured by some other means as necessary to prevent flotation or instability.

(12) A storage facility shall locate mobile storage container that contains liquid fertilizer not less than 100 feet from a water well or surface water.

(13) A person shall not store liquid fertilizer in a container that is located underground.

(14) A storage facility shall ensure that an adequate distance to allow for inspection and maintenance is maintained between storage containers and between storage containers and the secondary containment wall.

(15) A facility that has an existing secondary containment area on the effective date of this rule which does not provide adequate distance to allow for inspection and maintenance shall provide an adequate distance when a physical change to a storage container or the secondary containment takes place.

(16) A storage facility shall ensure that a bulk fertilizer storage container is labeled in a prominent location with lettering that is a minimum of 4 inches in height. In addition to meeting the provisions of Act No. 451 of the Public Acts of 1994, as amended, being §324.8501 et seq. of the Michigan Compiled Laws, a storage facility shall ensure that the labeling includes the capacity of the storage container.

(17) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule has 2 years to comply with this rule.

History: 1998-2000 AACCS.

R 285.641.5 Liquid level-gauging devices.

Rule 5. (1) A storage facility shall ensure that a storage container permits easy and safe measurement of the liquid level within the storage container. Liquid level gauging may be accomplished using any of the following:

- (a) Tank markings.
- (b) See-through gradations.
- (c) Dip sticks.

- (d) Site gauge tubes.
- (e) Other approved means.
- (2) A storage facility shall ensure that exterior liquid level gauging devices are secured to protect against breakage and vandalism.
- (3) A storage facility shall ensure that a storage container which has external sight gauges has a lockable bottom valve and is locked closed when not in use.
- (4) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule has 2 years to comply with this rule.

History: 1998-2000 AACCS.

R 285.641.6 Security requirements.

Rule 6. (1) A storage facility shall ensure that storage container and an appurtenance are secured to provide reasonable protection from wildlife, vandalism, and unauthorized access at all times. The container and appurtenance may be secured using any of the following:

- (a) Fencing.
 - (b) Lighting.
 - (c) Locks.
 - (d) Other approved means.
- (2) For nonapplication season storage, a storage facility shall ensure that an appurtenance and a valve on a storage container or mobile container are locked or otherwise secured.
- (3) A storage facility shall ensure that a storage container is equipped with a shutoff valve that is located on the storage container or at a distance from the storage container dictated by standard engineering practice.
- (4) For multiple valves that are located on a single line, a storage facility shall ensure that the valve closest to its storage container is securable.
- (5) A storage facility shall ensure that a valve on an empty container is closed.
- (6) A storage facility shall fully comply with the provisions of this rule 180 days after the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.7 Secondary containment of bulk liquid fertilizer.

Rule 7. (1) A storage facility shall locate a primary storage container of bulk fertilizer within a secondary containment area. Construction of containment areas that have discharge valves or drains will not be permitted after the effective date of this rule.

(2) A storage facility shall comply with all of the following capacity requirements for a secondary containment area, as applicable:

- (a) A storage facility shall ensure that a secondary containment area that is not protected from rainfall contains a minimum of 110% of the volume of the largest storage container within the diked area, plus the volume that is occupied by all other tanks within and below the height of the dike, plus the volume of a 6-inch rainfall.

(b) A storage facility shall ensure that a secondary containment area that is protected from rainfall contains a minimum of 110% of the volume of the largest storage container within the diked area, plus the volume that is occupied by all other tanks within and below the height of the dike.

(c) A secondary containment area which was constructed before the effective date of this rule and which does not have a capacity that includes the 6-inch rainfall complies with this rule. A storage facility to which this subdivision applies shall, upon alteration of the secondary containment area or increases in storage container volume, provide a capacity that includes a 6-inch rainfall within 1 year of the alteration or increase.

(d) A storage facility shall ensure that a secondary containment area that is not protected from rainfall provides for separation between bulk pesticides and bulk fertilizers to the extent that a common wall or curb between the pesticide and fertilizer areas will accomplish either of the following:

(i) Prevent pesticide from entering the fertilizer area, but allow fertilizer to enter and utilize the pesticide area while maintaining the capacity requirements specified in subdivisions (a) to (c) of this subrule.

(ii) Maintain a complete separation of fertilizer and pesticide, with or without a common wall, if each separate area maintains the capacity requirements specified in subdivisions (a) to (c) of this subrule.

(e) A storage facility shall ensure that tile drainage that underlies areas which are contained by earthen dikes is eliminated.

(3) A storage facility shall comply with all of the following construction requirements for secondary containment areas:

(a) A storage facility shall ensure that the walls and floors of a secondary containment area are constructed of any of the following materials and are designed to withstand a full hydrostatic head of any discharged liquid and weight load of material:

(i) Earth.

(ii) Steel.

(iii) Poured reinforced concrete.

(iv) Precast concrete modules.

(v) Solid masonry.

(vi) Other materials approved by the department.

(b) A storage facility shall ensure that all joints, seams, and cracking are sealed to prevent leakage.

(c) A storage facility shall ensure that walls are not more than 6 feet in height above interior grade unless provision is made for safe access and exiting.

(d) A storage facility shall ensure that earthen walls have a horizontal-to-vertical slope consistent with good engineering practice, are packed and protected from erosion, and the top are not less than 2.5 feet wide.

(e) A storage facility shall ensure that piping is not installed through the secondary containment wall, except for interconnections between multiple secondary containment structures. This prohibition does not apply to existing bulk storage facilities that have properly engineered, monitored, and maintained through-wall piping, as determined by the department.

(f) The floor of a secondary containment area may slope to a watertight catch basin or sump.

(g) A storage facility shall ensure that a secondary containment area that is constructed of earth or other permeable materials is lined with concrete, steel, approved synthetic liners, or a clay liner to achieve water tightness.

(h) If steel plates are used as a liner, then the department shall approve the installation plans. A storage facility shall ensure that the plates are protected against corrosion and joined in a manner to provide watertight joints.

(i) The department shall approve synthetic liners and installation plans before installation. A storage facility shall comply with all of the following provisions before the department will grant synthetic liner approval:

(i) The manufacturer of the liner shall provide written confirmation of compatibility and an estimate of the life expectancy of the liner.

(ii) A synthetic liner shall have a minimum thickness of 30 mils (0.8 millimeter) and be compatible with the materials being stored within the secondary containment area.

(iii) A synthetic liner shall be installed under the supervision of a qualified representative of the manufacturer, and all field-constructed seams shall be tested and repaired, if necessary, in accordance with the manufacturer's recommendations.

(j) A storage facility may use a soil or earthen liner for fertilizer bulk storage secondary containment structures if the liner meets all of the following requirements:

(i) The soil liner is maintained free of major cracking and vegetation.

(ii) The internal surface soil is sealed, including the berm of an earthen dike, with a sealing agent, such as sodium bentonite, attapulgite, or a similar clay material.

(iii) The soil liner is constructed in accordance with reliable engineering recommendations to achieve a coefficient of permeability of not more than 1.0×10^{-6} cm/sec at construction, is maintained at a permeability of 1.0×10^{-5} cm/sec, and is a minimum of 6 inches in thickness.

(k) A storage facility shall ensure that sump construction is of the same thickness on all sides including the base of the sump, as for the remainder of the containment area base and shall be watertight.

(l) A storage facility shall ensure that design and construction specifications for the sump address sediment accumulation, sediment removal, and freeze-thaw cycles.

(m) The department may approve the use of experimental materials upon written confirmation from the manufacturer regarding the pertinent specifications of the material for use in fertilizer containment.

(4) To be exempt from secondary containment lining requirements, a storage facility need not install a liner directly under a storage container which has a capacity of 100,000 gallons or more and which has been constructed on-site and put into use before the effective date of this rule if the facility complies with 1 of the following alternative procedures:

(a) The following provisions pertain to alternative procedure 1:

(i) A storage facility shall ensure that a second bottom that is made of the same material as the remainder of the storage container is constructed for the storage container. The facility shall ensure that the second bottom is placed over the original bottom and minimum 3-inch layer of smooth, fine gravel, coarse sand, or other material approved by the department. The department may approve alternate methods or materials under this provision provided the department determines that substantially similar protection will be achieved.

(ii) A storage facility shall test the original bottom of the storage container for leaks before the sand layer and second bottom are installed. The storage facility shall keep a record of the test on file.

(iii) A storage facility shall test the newly constructed bottom for leaks before any fluid fertilizer is stored on the newly constructed bottom. The storage facility shall keep a record of the test on file.

(iv) A storage facility shall employ a method by which leaks from the newly constructed bottom into the sand layer are readily detected.

(v) A storage facility shall test the newly constructed bottom at least once every 5 years for leaks. The storage facility shall maintain a record of the tests.

(b) The following provisions pertain to alternative procedure 2:

(i) A storage facility shall empty, clean, and test a container for leaks. The storage facility shall test the walls and floors of the container to assure that the welds and the thickness of the steel plates are sound and strong enough to contain the fertilizer. The storage facility shall keep a record of the inspection, test results, and any repairs made to the storage container on file.

(ii) A storage facility shall coat the interior floor and 24 inches up the walls of the container with an approved liner to inhibit corrosion. The storage facility shall keep a record of the liner's compatibility with fertilizer, life expectancy, and installation procedures on file.

(iii) A storage facility shall conduct an approved test for leaks, liner deterioration, and metal corrosion at least once every 5 years. The storage facility shall keep a record of the tests.

(c) The following provisions pertain to alternative procedure 3:

(i) A storage facility shall install approved monitoring devices in angled borings under each tank. The monitoring devices shall constitute a leak detection system for each tank that will detect any leak before reaching groundwater.

(ii) A storage facility shall use standard engineering practices and the specific characteristics of the site to determine the characteristics of the monitoring devices. The location of the monitoring devices shall provide the best practical early warning detection system for tank leakage.

(iii) The department shall approve each monitoring system to be implemented under this alternative procedure before installation.

(5) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule has 2 years to comply with this rule, except for containers specified in subrule (4) of this rule, for which a facility has 5 years to comply with this rule.

History: 1998-2000 AACCS.

R 285.641.8 Alternative to diking for storage containers.

Rule 8. (1) An individual storage container that does not have a capacity of more than 3,000 gallons may be contained within a secondary storage container, that is, an elephant ring, instead of a diked containment area.

(2) A storage facility shall ensure that both the primary storage container and the elephant ring are fabricated of material that is compatible with each other and with the fertilizer that is being stored.

(3) A storage facility shall ensure that the height of the elephant ring wall is not more than 4 feet.

(4) A storage facility shall ensure that the volume that is contained within the secondary storage walls up to the working height of the elephant ring is sufficient to contain 110% of the volume that is contained in the primary storage container plus the volume that is displaced by the footings of any equipment which is placed within the secondary containment vessel.

(5) A storage facility shall ensure that the elephant ring is free of leaks and structural defects. A storage facility shall ensure that the base is protected from corrosion, both from inside and outside, and is underlaid with a concrete pad or with 8 inches of compacted gravel beneath 4 inches of compacted sand or clay or is protected as recommended by the manufacturer of the elephant ring and as approved by the department.

(6) A storage facility shall ensure that all piping connections to the primary storage container are made over the wall of the elephant ring and are adequately supported and braced. A storage facility shall ensure that pumps and other fixtures, if located within the elephant ring containment structure, are placed on an elevated platform or otherwise protected from water accumulation.

(7) A storage facility shall ensure that accumulations of storm water and other material are pumped over the wall of the elephant ring by means of a pump within the secondary container or by means of an exterior portable pump and are disposed of in accordance with R 285.641.10(2).

(8) A storage facility shall fully comply with the provisions of this rule 2 years after the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.9 Operational area containment of liquid fertilizer.

Rule 9. (1) A storage facility shall ensure that operational areas are curbed or sloped to allow the containment of accumulated liquids. The storage facility shall construct the area of reinforced concrete or other suitable material approved by the department, to provide an impermeable surface. A storage facility shall ensure that operational area activities at the fertilizer storage facility are carried out within this area.

(2) A storage facility shall construct the operational area containment and reinforce the area to handle at least the foreseeable maximum gross load that could be on the pad.

(3) A storage facility shall comply with all of the following size and capacity requirements for operational area containments:

(a) A storage facility shall ensure that the operational area containment is a minimum width of 10 feet and a minimum length of 20 feet.

(b) A storage facility shall ensure that, except as provided in subdivision (c) of this subrule, curbed surfaces and catch basins are of an adequate size and design to contain a minimum of 1,500 gallons of discharged liquid.

(c) A storage facility shall ensure that if there are no storage containers that are used at the storage facility which have a capacity of more than 1,000 gallons, and if there are no mobile containers that are used to transfer liquid fertilizer to and from storage containers which have a capacity of more than 1,000 gallons, the curbed surface and catch basin are of an adequate size and design to contain 110% of the volume of the largest storage container or the largest mobile container that is used, whichever is greater.

(d) The operational area containment capacity may include an aboveground container for temporary storage if a pump is installed which automatically transfers the contents of the sump into the container and if the container is located within secondary containment.

(4) A storage facility shall ensure that any filling or unloading point of a mobile container is positioned over the paved area during loading or unloading to assure retention of any discharge.

(5) A storage facility shall ensure that the secondary containment area which is described in R 285.641.7 can, under the following conditions, be jointly utilized as an operational containment area instead of a separate operational containment area:

(a) The secondary containment area is not lined with a synthetic or soil liner only.

(b) The storage facility complies with sufficient capacity requirements, R 285.641.7, and this rule.

(6) A storage facility shall ensure that a storage container and an appurtenance, including pipes, are protected against reasonably foreseeable risks of damage by trucks and other moving vehicles that are engaged in the loading or unloading of bulk fertilizer.

(7) A storage facility shall ensure that loading and unloading operations are supervised at all times by an attendant who is familiar with the operation of the mechanical appurtenances in use at the facility and who is familiar with the procedures that are used for the control and recovery of discharges.

(8) This rule does not apply to a mobile container that is used to nurse field operations when the mobile container is at a field unloading site.

(9) Marine vessels and rail cars are exempt from the operational area containment requirements of this rule if appropriate protective actions are implemented to prevent uncontained discharges and are in compliance with applicable United States coast guard and department of transportation regulations.

(10) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule has 2 years to comply with this rule.

History: 1998-2000 AACCS.

R 285.641.9a Alternative to diking for large storage tanks.

Rule 9a. (1) A storage facility may install a bladder system in an individual large storage tank instead of a diked containment area, provided all of the provisions in this rule are met.

(2) Before construction and installation, the storage facility shall have written department approval for the proposed large storage tank and bladder system.

(3) A storage facility shall ensure that the bladder system plans are sealed by a professional engineer licensed in the state of Michigan.

(4) A storage facility seeking to install a bladder system into a new large storage tank shall ensure the tank is constructed according to API 650 standards by an authorized inspector.

(5) A storage facility seeking to install a bladder system in an existing large storage tank shall ensure the tank is inspected according to API 653 standards by an authorized inspector with a complete, out-of-service internal and external inspection. The tank shall be modified to meet API 653 standards before installing the bladder system.

(6) Large storage tanks equipped with a bladder system shall be inspected according to API 653 standards by an authorized inspector every 5 years after bladder system installation.

(7) The synthetic liner material used in the bladder system shall comply with the following provisions:

(a) The synthetic liner shall have a minimum thickness of 30-mils (0.8 millimeter).

(b) The synthetic liner shall be chemically compatible with all materials stored within it.

(c) The manufacturer of the liner shall provide written confirmation of liner compatibility and an estimate of the liner life expectancy.

(d) The synthetic liner shall be installed under the supervision of a qualified representative of the manufacturer.

(e) The synthetic liner shall be capable of meeting the stresses of normal operations without disintegrating, delaminating, or otherwise failing.

(8) A storage facility shall comply with the following bladder system installation requirements:

(a) The bladder system shall be installed to allow access to the space between the bladder and storage tank wall.

(b) The bladder system shall include a permeable protective geotextile barrier between the bladder and storage tank wall.

(c) The bladder system shall be installed under the supervision of a qualified representative of the manufacturer. All field seams shall be tested and repaired, if necessary, in accordance with the manufacturer's recommendations.

(d) The tank shall be prepared in accordance with the bladder manufacturer's specifications.

(e) Following installation, and before filling, the bladder system shall be thoroughly tested to ensure the system is free of leaks.

(9) A storage facility equipped with a bladder system shall have the bladder inspected within 2 years after the initial installation and, if no failure indications are found, at 5-year intervals thereafter.

(10) The large storage tank and bladder system shall be constructed and equipped with the following devices:

(a) A functioning automatic active liquid level-monitoring device. This overflow protection device shall notify the operator before the bladder is filled beyond its capacity by 1 or both of the following mechanisms:

(i) Automatic pump shut-off.

(ii) Audible alarm.

(b) A continuously working automatic liquid level monitoring and alarm system that will detect leaks from the storage tank.

(c) A leak detection system constructed under the synthetic liner that will detect leaks from the bladder system and allow full recovery of any liquid extracted from the effluent ports.

(11) Appurtenances connected to the large storage tank shall be maintained as follows:

(a) All external appurtenances, including pumps and leak detection ports, shall be encased or enclosed to contain any leaks and secured when not in use.

(b) All appurtenances that extend through both the storage tank and bladder system, not including manways, shall be equipped with a valve that meets both of the following requirements:

(i) The valve shall be enclosed within a structural steel containment box capable of withstanding the maximum head pressure of the bladder system and be equipped with a leak detection device or system.

(ii) The valve shall be secured against wildlife, vandalism, and unauthorized access at all times.

(c) The facility shall ensure that the storage tank, bladder system, and appurtenances, including pipes, are protected against reasonably foreseeable risks of damage by trucks and other moving vehicles.

(12) Inspection and maintenance records shall be maintained as follows:

(a) The storage tank, bladder system, and appurtenances shall be visually inspected daily during use, and at least monthly when not in use. The results of the inspection shall be recorded and shall be made available to the department during normal business hours.

(b) Inspection and maintenance records for the large storage tank, bladder system, and leak detection systems shall be maintained at the facility.

(c) The facility shall sample any effluent collected at the monitoring ports and analyze samples for fertilizer content on a quarterly basis. Results of any analysis with fertilizer content shall be reported to the department immediately.

(13) If a spill, discharge, overflow, or tank failure occurs, then the following applies:

(a) The operator shall report all discharges, overfills, and internal spills to the department immediately upon discovery.

(b) If a leak or other failure of the bladder system occurs, then the storage tank shall be emptied within 30 days.

(c) The affected areas of the bladder, bladder protection layer, and interior of the storage tank shall be thoroughly cleaned, repaired, and inspected before the storage tank and bladder system are again placed into service.

History: 2006 AACCS.

R 285.641.10 Containment area management and operation.

Rule 10. (1) If a secondary containment area is in use, then a storage facility shall manage accumulated precipitation, spills, or leaks within the containment area as follows:

(a) Remove accumulated liquids by a manually activated pump. Automatic pumps that have float switches are prohibited.

(b) Promptly recover accumulated liquids, discharges, or spills from containment areas.

(c) For accumulated liquids that do not contain any fertilizer, a storage facility may discharge liquids from containment areas as surface runoff, but shall not discharge the liquids directly into any surface water, waterway, storm drain, or field tile.

(d) For accumulated liquids that may contain fertilizer, a storage facility shall remove liquids from containment areas and may apply the liquids at agronomic rates to sites where the fertilizer can be utilized as intended.

(e) In the event of a spill within a containment area and following collection and recovery of the fertilizer containing liquids, a storage facility shall clean the area in accordance with subrule (2) of this rule before resuming the management practice of discharging accumulated liquids that do not contain fertilizer as surface runoff.

(2) A storage facility shall clean nonearthen containment areas as follows:

(a) Wash the area using clean water.

(b) Double rinse the area using clean water.

(c) Remove all rinsate that is generated by the containment area cleaning process.

(3) A storage facility shall promptly remediate earthen dikes if there is a spill or leak, which may require the removal of the soil in the containment area. A storage facility shall carry out soil remediation in accordance with department directives.

(4) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule and that has completed secondary or operational containment areas shall immediately comply with this rule. A facility that is in service before the effective date of this rule shall immediately comply with this rule upon completion of secondary or operational containment areas in compliance with R 285.641.7, R 285.641.8, or R 285.641.9.

History: 1998-2000 AACCS.

R 285.641.11 Abandoned containers.

Rule 11. (1) Storage containers and other containers that are used at a storage facility to hold bulk fertilizer or fertilizer rinsates are considered abandoned if they have been out of service for more than 6 months because of a weakness or leak or have been out of service for any reason for more than 2 years.

(2) A storage facility shall thoroughly clean abandoned containers by double rinsing.

(3) A storage facility shall fully comply with the provisions of this rule 90 days after the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.12 Site closure and discontinuation of operation.

Rule 12. (1) If a bulk fertilizer storage facility is closed or operations are discontinued, then both of the following provisions shall be complied with:

(a) A storage facility shall remove all fertilizers, rinsates, washwaters, and other materials that contain fertilizers from the facility site and utilize them for the original intended purpose of the product or dispose of them in a manner approved by the department.

(b) A storage facility shall thoroughly clean the storage containers at the facility by double rinsing or the equivalent.

(2) A storage facility shall fully comply with the provisions of this rule 90 days after the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.13 Storage of bulk dry fertilizer.

Rule 13. (1) A storage facility shall store and handle dry fertilizer materials in a manner to prevent contamination by minimizing losses to the air, surface water, groundwater, or subsoil.

(2) A storage facility shall store nonfluid fertilizers inside a sound structure or device that has a cover or roof top, sidewalls, and a base sufficient to prevent contact with precipitation and surface waters. If bulk dry fertilizer is stored outdoors, the storage facility shall place the dry fertilizer on a ground cover that is sufficiently impermeable to prevent seepage or runoff and shall completely cover the dry fertilizer with a tarpaulin or other suitable covering to prevent contact with precipitation and surface water.

(3) A storage facility shall conduct all loading, unloading, mixing, and handling of dry fertilizer at the storage facility on a paved impermeable surface of a size and design that will contain the fertilizer and allow for the collection of spilled material to be recycled, applied at agronomic rates, or disposed of in a manner approved by the department.

(4) A storage facility shall use containment devices, structures, or techniques to minimize the emission of dust and vapors beyond the facility boundaries.

(5) A facility that is placed in service after the effective date of this rule shall immediately comply with this rule. A facility that is in service before the effective date of this rule has 2 years to comply with this rule.

History: 1998-2000 AACCS.

R 285.641.14 Discharge response plan.

Rule 14. (1) An operator of a storage facility shall prepare a written discharge response plan for the storage facility. The plan shall include all of the following information:

(a) The identities and telephone numbers of the persons or agencies that are to be contacted in the event of a discharge, including the persons who are responsible for the stored fertilizer.

(b) For each bulk fertilizer that is stored at the facility, a complete copy of the storage container labeling that is required by this rule and the labeling required by Part 85 of Act No. 451 of the Public Acts of 1994, as amended, being §324.8501 et seq. of the Michigan Compiled Laws, to accompany the sale of the fertilizer.

(c) An identification, by location, of every bulk storage container that is located at the bulk storage facility together with the type of fertilizer it contains. The plan need not include the specific location of each mobile fertilizer container if the plan includes the general location within the facility where the containers are held.

(d) For each type of bulk fertilizer that is stored at the facility, the procedures to be used in controlling and recovering, or otherwise responding to, a discharge or spill.

(e) The procedures to be followed in using or disposing of a recovered discharge or spill.

(2) An operator shall keep the plan current and readily available and shall inform the local fire and police departments of the existence of the plan.

(3) The owner or manager of the bulk fertilizer storage facility shall conduct emergency and discharge response training for all new and existing employees of the facility annually before the beginning of the fertilizer use season. New employees shall receive training within 30 days of employment. A firm's owner, manager, and employees are responsible for following the firm's emergency and discharge response plan procedures.

(4) Every storage facility shall have an appropriate spill kit readily available in the event of a discharge or spill.

(5) A storage facility shall immediately report any discharges to the environment to the department at 1-800-405-0101, which is available 24 hours a day.

(6) A storage facility shall fully comply with this rule on the effective date of this rule.

History: 1998-2000 AACRS.

R 285.641.15 Inspection and maintenance requirements.

Rule 15. (1) An operator of a storage facility shall maintain the facility to minimize the risk of a discharge.

(2) An operator of a storage facility shall visually inspect the facility at least monthly while the facility is being utilized for the storage of bulk fertilizer.

(3) A storage facility shall maintain all secondary containment and operational areas free of debris and foreign matter.

(4) A storage facility shall make a written record of all inspections and maintenance on the day of the inspection or maintenance. A storage facility shall keep the record on file at the storage facility or at the nearest local office from which the storage facility is administered.

(5) A storage facility shall fully comply with the provisions of this rule on the effective date of this rule.

History: 1998-2000 AACRS.

R 285.641.16 Recordkeeping requirements.

Rule 16. (1) A storage facility shall prepare, maintain, and keep readily available all of the following records for a period of not less than 3 years at every storage facility or at the nearest local office from which the storage facility is administered:

(a) A record of all discharges to the environment or spills within containment areas at the storage facility.

(b) An inventory reconciliation for each storage container at facilities that utilize earthen dikes and soil liners. When facilities are in use for storage, a storage facility shall conduct an inventory reconciliation at least once every 3 months to compare the measured level in a storage container against shipments in and out of the container.

(c) Inspection and maintenance records.

(d) Facility site plan information required under R 285.641.2(1) and (2).

(2) A storage facility shall fully comply with this rule on the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.17 Remediation actions.

Rule 17. (1) If a discharge to the environment is reported or it is determined that a discharge to the environment has occurred, then an operator shall comply with both of the following provisions:

(a) Remove contaminated materials from the site, determine the concentration of fertilizer, and field-apply at or below agronomic rates or properly dispose of the contaminated material according to department directives.

(b) If the facility operator decides to close the facility as a result of a contamination notification, then the facility shall be closed in accordance with R 285.641.12.

(2) A storage facility shall fully comply with rule on the effective date of this rule.

History: 1998-2000 AACCS.

R 285.641.18 Advisory information.

Rule 18. (1) The information specified in this rule is offered by the department with respect to other state agencies and their policies and regulations that may have an impact on bulk storage facilities.

(2) All the following provisions apply to the pollution incident prevention plan (PIPP) requirements:

(a) A person who operates a bulk storage facility is advised that the department of environmental quality may require the submittal of a plan of loss prevention and recovery depending upon the type of material being processed or stored.

(b) A storage facility may submit the registration application, discharge response plan, and facility site plans required by R 285.640.2 as a PIPP plan to the department of environmental quality. The department of environmental quality may determine that the information meets all, or only a portion of, the requirements for the PIPP plan.

(c) The provisions of R 323.1151 to R 323.1169 of the water resources commission promulgated under Act No. 245 of the Public Acts of 1929, as amended, being §323.1 et seq. of the Michigan Compiled Laws, require that a pollution incident prevention plan be submitted for approval to the district office of the department of natural resources, waste management division. Copies of Act 245 of the Public Acts of 1929, other pertinent rules, district office locations, and requirements for the PIPP plans are available from the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909.

(3) Both of the following provisions apply to national pollution discharge elimination system (NPDES) storm water permit requirements:

(a) A person who operates a bulk storage facility is advised that the department of environmental quality may require a storm water permit to be obtained dependent upon the type of standard industrial classification (SIC) code that the facility falls within.

(b) Copies of pertinent rules, district office locations, and requirements for the NPDES storm water permit are available from the Michigan Department of Environmental Quality, Surface Water Quality Division, P.O. Box 30273, Lansing, Michigan 48909.

(4) Both of the following provisions apply to bulk storage facility designs:

(a) A person who operates a bulk storage facility is advised that the department, upon issuing a facility registration, is not liable for the structural integrity of the storage facility.

(b) It is recommended that a person who operates a bulk storage facility consult with a licensed professional engineer for designs and construction specifications for the modification or construction of a bulk storage facility to meet the requirements of these rules.

History: 1998-2000 AACR.