

**CHAPTER 218: BRINE EVAPORATION PITS**  
**§§218.1, 218.5, 218.10, 218.15, 218.20, 218.25, 218.30, 218.35, 218.40**  
**Effective October 16, 2008**

**§218.1. Definitions.**

The following words and terms, when used in the subchapter, have the following meanings unless the context clearly indicates otherwise.

(1) **Brine evaporation pit** -- A surface impoundment within which groundwater and incidental storm water, is or has been retained and evaporated, for the purpose of recovering brine product.

(2) **Brine product** -- concentrated brine water and residual minerals, salts, or other naturally occurring substances produced by the evaporation of groundwater.

(3) **Facility** -- the brine evaporation pit and composite liner system; storm water control and retention structures; and brine product handling areas.

(4) **Incidental storm water** -- rainwater falling directly into a brine evaporation pit and/or collected storm water runoff from brine product handling areas.

(5) **Licensed engineer** -- an engineer who holds a license issued under Texas Occupations Code, Title 6, Chapter 1001.

(6) **Operator** -- Any person responsible for the physical operation and control of a brine evaporation pit.

(7) **Owner** -- Any person having title, wholly or partly, of a brine evaporation pit.

Adopted September 24, 2008

Effective October 16, 2008

**§218.5. Purpose.**

The purpose of this subchapter is to regulate brine evaporation pit operations to:

- (1) prohibit discharge from the facility into or adjacent to water in the state;
- (2) establish standards for design, construction, location, operation, and maintenance to prevent contamination of surface and groundwater resources;
- (3) require financial assurance to ensure proper closure of the evaporation pit; and

(4) require that the owner or operator submit evidence to the Texas Commission on Environmental Quality of pollution liability insurance coverage of bodily injury and property damage to third parties.

Adopted September 24, 2008

Effective October 16, 2008

**§218.10. Applicability.**

(a) This subchapter applies to a brine evaporation pit:

(1) operated for the commercial production of brine product by solar evaporation; and

(2) in operation on or after the effective date of this rule, regardless of the date the facility began operation.

(b) This subchapter does not apply to:

(1) operations associated with oil and gas production and regulated under the authority of the Texas Railroad Commission; in accordance with 16 TAC §3.30 (relating to Memorandum of Understanding between the Railroad Commission of Texas (RRC) and the Texas Commission on Environmental Quality); or as is in 16 TAC §3.30; or

(2) the recovery of brine product via evaporation of water sources other than groundwater and incidental storm water.

Adopted September 24, 2008

Effective October 16, 2008

**§218.15. Authorization.**

(a) An owner or operator must obtain an individual wastewater permit subject to the requirements of Chapter 305 of this title (relating to Consolidated Permits).

(1) For new facilities, the owner or operator shall obtain an issued individual wastewater permit prior to construction of the facility.

(2) For facilities in existence upon the effective date of this section, the owner or operator shall submit an application for an individual wastewater permit within 180 days of the effective date of this section.

(b) An application for an individual wastewater permit must be submitted on the forms provided by the executive director in accordance with §305.45(a)(8) of this title (relating to Contents of Application for Permit) and must include:

(1) a closure and post-closure plan developed in accordance with §218.25 of this title (relating to Closure and Post Closure Care); and

(2) a cost estimate developed in accordance with §218.30 of this title (relating to Cost Estimate for Closure and Post Closure Care).

(c) A new individual wastewater permit application or renewal, amendment, or modification of an existing permit is subject to the public notice requirements within Chapter 281 of this title (relating to Applications Processing).

Adopted September 24, 2008

Effective October 16, 2008

**§218.20. Surface and Groundwater Protection.**

(a) Location. The owner or operator shall ensure that the facility is located so that a failure of the facility or unauthorized discharge from the facility does not result in an adverse effect on water in the state.

(1) A brine evaporation pit may not be located in the 100-year flood plain, unless protected from inundation and damage that may occur during that flood event in accordance with subsection (b)(4)(A) of this section.

(2) The facility may not be located within:

(A) 500 feet of a public water well as provided by §290.41(c)(1)(B) of this title (relating to Water Sources); nor

(B) 250 feet of a private water well.

(b) Design and Construction. The owner or operator of a brine evaporation pit shall ensure the facility is designed and constructed to prevent an unauthorized discharge into or adjacent to water in the state. An owner or operator shall not place or allow the placement of groundwater into a brine evaporation pit if the facility does not comply with the provisions of this subsection.

(1) Brine Evaporation Pit Liner. The owner or operator shall ensure the brine evaporation pit is lined with a composite liner system in accordance with §330.331(e)(1) of this title (relating to Design Criteria) that meets at least the following minimum requirements.

(A) The upper component must consist of a geomembrane liner at least 30 mil thick, and must be at least 60 mil thick if constructed of high density polyethylene.

(B) The geomembrane liner component must be installed in direct and uniform contact with the compacted soil component.

(C) The lower component must consist of at least a three-foot layer of re-compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  centimeters per second (cm/sec).

(D) The composite liner system shall be designed by a licensed engineer.

(E) The owner or operator shall furnish certification, signed, sealed, and dated by a licensed engineer that the completed liner meets the evaporation pit liner criteria described in this paragraph. Certification shall be submitted to the executive director at least 30 days prior to use.

(2) Alternative liner. The owner or operator may apply for approval of an alternative brine evaporation pit liner. An alternative liner design may be authorized by the executive director if the owner or operator demonstrates the proposed alternate liner achieves an equivalent protective hydraulic conductivity which meets or exceeds the composite liner criteria. At the discretion of the executive director, a field demonstration may be required to prove the practicality and performance capabilities of an alternative liner design.

(3) Storm Water Retention Ponds.

(A) Storm water retention pond liners must consist of at least a three-foot layer of re-compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.

(B) Storm water retention ponds must be capable of containing the volume of storm water runoff from brine product handling areas generated from a 24-hour, 25-year storm.

(C) The owner or operator shall furnish certification, signed, sealed, and dated by a licensed engineer that the completed storm water retention pond liner meets the criteria described in this paragraph. Certification shall be submitted to the executive director at least 30 days prior to use.

(4) Storm Water Controls. Storm water control structures must be properly constructed and maintained to prevent storm water from entering the brine evaporation pit.

(A) A facility located in the 100-year flood plain must be equipped with storm water diversion structures at a minimum height equal to two feet above the 100-year flood water elevation around the evaporation pit.

(B) A facility located above the 100-year flood plain shall be equipped with storm water diversion structures that are, at a minimum, capable of diverting all rainfall from a 24-hour, 25-year storm.

(c) Operations and Maintenance.

(1) The owner or operator shall at all times ensure that the facility is properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of the brine evaporation pit liner, and storm water control and retention structures in order to prevent an unauthorized discharge.

(2) Storm water that comes into contact with any brine product storage pile must be collected in a retention pond and recycled to the evaporation pit.

(3) Loading and unloading of brine product must be conducted within an area which is adequately curbed and sloped to allow for containment of storm water runoff.

(4) Storm water runoff from brine product loading and unloading areas must be collected in a lined retention pond and recycled to the evaporation pit.

(5) The owner or operator shall have a licensed engineer review the documentation and evaluate the site at least once every five years or following a permit amendment resulting from a substantial change to the facility or operation.

(6) The brine evaporation pit must maintain a two-foot freeboard at all times.

(7) Operations and maintenance records must be retained at the facility site for a period of five years and be readily available for review by representatives of the executive director.

Adopted September 24, 2008

Effective October 16, 2008

**§218.25. Closure and Post Closure Care.**

(a) At closure, the owner or operator must:

(1) remove or decontaminate all brine product waste and waste residues, contaminated design and operating system components such as liners, dikes, storm water retention structures, brine product handling areas, and contaminated media; or

(2) eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues; stabilize remaining wastes to a bearing capacity sufficient to support final cover; and cover the brine evaporation pit with a final cover designed and constructed to:

(A) provide long-term minimization of the migration of liquids through the closed impoundment;

(B) function with minimum maintenance;

(C) promote drainage and minimize erosion or abrasion of the final cover;

(D) accommodate settling and subsidence so that the cover's integrity is maintained; and

(E) be constructed of at least a three-foot layer of re-compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  centimeters per second (cm/sec).

(b) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with the following post-closure requirements:

(1) maintain the integrity and effectiveness of the final cover including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events; and

(2) prevent run-on and run-off from eroding or otherwise damaging the final cover.

(c) Additional post closure requirements may be added by the executive director as determined to be necessary to protect human health and/or the environment; including but not limited to, groundwater monitoring.

(d) The closure plan for the brine evaporation pit must include both a plan for complying with subsection (a)(1) of this section and a contingent plan for complying with subsection (a)(2) of this section, in case not all contaminated subsoils can be practicably removed at closure; and the owner or operator must prepare a contingent post-closure plan for complying with subsection (b) of this section, in case not all contaminated subsoils can be practicably removed at closure.

(e) Written notification must be provided to the executive director at least 90 days prior to conducting any facility closure activity.

(f) Within ten days after completion of final closure activities of a facility, the owner or operator shall submit to the executive director by registered mail the following:

(1) a certification, signed by a licensed professional engineer, verifying that final facility closure has been completed in accordance with the approved closure plan. The submittal to the executive director shall include all applicable documentation necessary for certification of final facility closure; and

(2) for a facility that does not require post-closure care, a request for voluntary revocation of the permit.

Adopted September 24, 2008

Effective October 16, 2008

### **§218.30. Cost Estimate for Closure and Post Closure Care.**

(a) The owner or operator shall prepare a closure cost estimate based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither the parent nor a subsidiary of the owner or operator. Notwithstanding other closure costs, such estimate must also include the costs associated with third party removal, shipment off-site, and processing or disposal off-site, and processing or disposal off-site of the following wastes to an authorized storage, processing, or disposal facility:

(1) maximum inventory of wastes in storage and/or processing units, including, but not limited to, storage surface impoundments, waste piles, tanks, and containers;

(2) wastes generated as a result of closure activities (e.g. decontamination, removal of liquids from surface impoundments, or waste piles); and

(3) contaminated storm water.

(b) The cost estimates calculated for closure and post-closure care of a brine evaporation pit facility subject to this chapter must include the cost of complying with the contingent closure plan specified within §218.25(a)(2) of this title (relating to Closure and Post Closure Care) and the contingent post-closure plan specified within §218.25(b) of this title, but are not required to include the cost of expected closure under subsection §218.25(a)(1) of this title.

Adopted September 24, 2008

Effective October 16, 2008

**§218.35. Financial Assurance.**

An owner or operator of a brine evaporation pit shall establish and maintain financial assurance for closure and third party pollution liability in accordance with Chapter 37, Subchapter X of this title (relating to Financial Assurance for Brine Evaporation Pits). The amount of financial assurance for closure must be no less than the amount determined by the executive director as sufficient to meet the requirements of the cost estimate calculated in accordance with §218.30(b) of this title (relating to Cost Estimate for Closure and Post Closure Care).

Adopted September 24, 2008

Effective October 16, 2008

**§218.40. Fees.**

The owner or operator shall comply with the applicable fee requirements within Chapter 21 of this title (relating to Water Quality Fees).

Adopted September 24, 2008

Effective October 16, 2008