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**TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 653. AQUIFER STORAGE AND RECOVERY**

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SUBCHAPTER 1. GENERAL PROVISIONS

Section

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252:653-1-1. Purpose

This Chapter establishes a framework for aquifer storage and recovery ("ASR") projects under the authority of the Oklahoma Department of Environmental Quality ("DEQ"). This Chapter establishes the standards for permitting, construction, operation, and maintenance of ASR projects.

252:653-1-2. Authority

- (a) DEQ is designated as a groundwater quality and protection agency at 27A O.S. § 1-3-101(B)(4) and is authorized to develop rules in the area of groundwater quality and protection at 27A O.S. § 1-1-202(C)(4) for promulgation by the Environmental Quality Board as the DEQ's rulemaking body. Additional authority for the promulgation of rules in the area of groundwater quality and protection is found at 27A O.S. § 1-3-101(B)(7) and § 2-6-701 (underground injection control); 27A O.S. (2017) § 2-6-110 (limited-scale ASR projects); and 27A O.S. § 2-6-310.1 (legislative findings and declaration).
- (b) DEQ is authorized by U.S. EPA to administer an underground injection control program for Class I, III, IV, and V wells at 40 C.F.R. § 147.1850.
- (c) DEQ incorporates by reference the federal requirements for its underground injection control program at OAC 252:652-1-3. All applicable rules to ASR projects which are incorporated at OAC 252:652-1-3 shall apply in this Chapter.

252:653-1-3. Applicability

- (a) The rules in this Chapter shall apply only to persons who undertake the construction, operation, and/or maintenance of an ASR project.
- (b) The rules in this Chapter shall not apply to any activity conducted outside the scope of an ASR project regulated by this Chapter.

252:653-1-4. Conformity with other applicable rules

All rules contained in this Chapter shall be applied and interpreted in conformity with all applicable standards and regulations of the Oklahoma Water Resources Board (OWRB), the Oklahoma Corporation Commission, or any other appropriate agency.

252:653-1-5. Definitions

The following words and terms, when used in this Chapter, shall have the following meaning, unless the context clearly indicates otherwise:

"Activity" means the construction or operation of an ASR treatment plant, or the construction and operation of an ASR recharge well, infiltration basin or any other water delivery mechanisms, including all ASR-related activities under this Chapter.

"Applicant" means any person who submits a permit application for ASR activities under this Chapter.

"Aquifer" for the purposes of this Chapter, means a subsurface water-bearing zone limited in extent by the area of hydrologic effect associated with the ASR project.

"Aquifer Storage and Recovery" ("ASR") means delivery of water into an aquifer for later recovery and use. For purposes of this Chapter, ASR activities shall not include groundwater recharge or augmentation through a natural connection with a farm pond or other impoundment. ASR activities shall not include groundwater recharge or augmentation from nonpoint source runoff or stormwater discharge under the jurisdiction of the Oklahoma Department of Agriculture Food and Forestry pursuant to 2 O.S. §§ 2A-1 *et seq.* For purposes of this Chapter, ASR activities shall not include activities specifically authorized pursuant to 82 O.S. § 1020.2(G) or stormwater runoff management practices otherwise authorized by law. ASR does not constitute water reuse.

"ASR Project" means a project regulated under this Chapter; including ASR construction and operation activities.

"Area of Hydrologic Effect" means the area determined by the projected extent of the underground stored water as calculated by using site-specific hydrogeologic information, and as influenced by the specific design and anticipated operation of the ASR project.

"Drinking Water Treatment Residuals" means wastewater (e.g. membrane filter reject water) from drinking water treatment processes.

"Infiltration Basin" means a shallow structure that is used to infiltrate water through permeable soils into an aquifer for ASR projects.

"Limited-Scale ASR Pilot Projects" means ASR pilot projects authorized by 27A O.S. § 2-6-110.

"Monitor Well" means any well used for the sampling or measurement with field instrumentation of any chemical or physical property related to ASR activities.

"Person" means any individual, corporation, industry, firm, partnership, association, venture, trust, institution, local governmental entity, or agency that seeks to conduct ASR activities under this Chapter.

"Raw Water" means untreated water from any source used in an ASR project.

"RWACP" means Raw Water and Aquifer Characterization Plan required by Subchapter 3 of this Chapter.

"Stored Water" means water in the aquifer that has been delivered pursuant to an ASR project.

"Treated Water" means raw water that has undergone treatment within a water treatment plant meeting the requirements of this Chapter.

252:653-1-6. Siting criteria

The applicable siting criteria for an ASR project shall be determined on a site-specific basis. This determination shall be made by DEQ based on the submittals required by this Chapter.

252:653-1-7. Statement of interest

(a) All persons seeking to establish an ASR project shall submit a written statement of interest to DEQ that summarizes the project goals and objectives and describes the methods to be used to achieve the project goals.

(b) The statement of interest shall include:

- (1) the proposed location of the ASR project, including a mapped diagram, and a complete and accurate legal description of the project property(s);
- (2) a description of the purpose and scope of the ASR project;
- (3) the proposed source of the of water for the ASR project;
- (4) the intended use of recovered water from the ASR project;
- (5) a description of the proposed method of recharge (i.e. ASR wells, infiltration basin, or other method);
- (6) a topographic map which shows the location of surface water bodies (natural and man-made), and areas within the estimated areas of hydrologic effect where there is potential for impairment to water rights or other detrimental effects to land owners; and
- (7) information on existing wells, springs, seeps, and wetlands and a description of the methods that will be used to analyze possible impairment and/or detrimental effects from the ASR project;
- (8) a demonstration of sufficient legal rights and access to the land surface above the area of hydrologic effect.
- (9) a demonstration that the applicant is actively seeking water rights through OWRB, if applicable; and
- (10) consideration of economic factors and alternatives to conducting an ASR project.

252:653-1-8. Initial meeting with DEQ

All persons seeking to undertake an ASR project shall request a meeting with DEQ to discuss the scope of the project prior to initiating any ASR activities required by this Chapter.

252:653-1-9. Permits required

(a) **ASR treatment plant construction permit.** A permit issued by DEQ is required to construct an ASR treatment plant in accordance with Subchapter 5 of this Chapter. An ASR Treatment Plant Construction Permit will not be required for any existing DEQ permitted water or wastewater treatment plant used in an ASR project provided that it meets the requirements of Subchapter 5 of this Chapter.

(b) **ASR water delivery construction permit.** A permit issued by DEQ is required to construct an ASR recharge well, infiltration basin, or other water delivery mechanisms in accordance with Subchapter 7 of this Chapter.

(c) **ASR operating permit.** A permit issued by DEQ is required to operate an ASR recharge well, infiltration basin, or other DEQ approved ASR activity in accordance with Subchapter 9 of this Chapter.

252:653-1-10. Notifications [RESERVED]

252:653-1-11. Water sampling and analysis

Water sampling and analyses methods shall be in accordance with EPA approved procedures. Applicant shall use a DEQ accredited laboratory, the State Environmental Laboratory, or another laboratory which is authorized by a nationally recognized accreditation program (e.g. NELAC, EPA), for sample analysis.

252:653-1-12. Fees [RESERVED]

SUBCHAPTER 3. RAW WATER AND AQUIFER CHARACTERIZATION

Section

- 252:653-3-1. Applicability
- 252:653-3-2. Raw water and aquifer characterization plan ("RWACP") requirements
- 252:653-3-3. Attenuation of constituents in aquifer media
- 252:653-3-4. Groundwater standards
- 252:653-3-5. Groundwater monitoring well construction and/or plugging
- 252:653-3-6. RWACP implementation
- 252:653-3-7. Raw water and aquifer characterization report

252:653-3-1. Applicability

- (a) A person submitting a permit application for an ASR project shall complete a raw water and aquifer characterization which meets the requirements of this Subchapter prior to submitting the permit applications for an ASR project.
- (b) The applicant shall include the results from the raw water and aquifer characterization as part of the permit applications for:
 - (1) construction of an ASR Treatment Plant
 - (2) construction of a Recharge Well and/or Infiltration Basin, or any other water delivery mechanism.

252:653-3-2. Raw water and aquifer characterization plan ("RWACP") requirements

- (a) **RWACP required.** Prior to initiating the raw water and aquifer characterization, a plan meeting the requirements of this Section shall be submitted to DEQ for approval, in order to determine the level to which raw water must be treated and to maintain the quality of groundwater in the aquifer.
 - (1) **DEQ Approval required.** Characterization shall not begin until the RWACP has been approved by DEQ.
 - (1) **RWACP revisions.** Any revisions to the RWACP shall be approved by DEQ.
- (b) **RWACP content.** The RWACP shall include the following information at a minimum:
 - (1) a proposal for the characterization of the raw water that evaluates:
 - (A) the source of the raw water;
 - (B) the chemical and biological composition as well as physical characteristics of the raw water;
 - (C) flow rate;
 - (D) total annual volume planned to be used for ASR;
 - (E) characterization of the raw water during high flow and low flow conditions and other atypical flow conditions;

- (F) the duration and frequency of sampling and sampling methodology;
 - (G) reliability of deliveries; and
 - (H) conveyance methods.
- (2) a proposal for hydrological investigation and characterization of the aquifer that evaluates:
- (A) areal and vertical characterization of the ambient water quality in the aquifer;
 - (B) geochemical characteristics and hydrogeologic properties of the aquifer;
 - (C) volumes and capacity of the aquifer;
 - (D) analysis of the compatibility of the delivered water with the aquifer media and the resulting impact;
 - (E) installation of exploratory borings and monitoring wells;
 - (F) surface water infiltration rates;
 - (G) groundwater migration rates;
 - (H) methodologies for obtaining aquifer parameters;
 - (I) groundwater level and quality monitoring plans;
 - (J) surface water (including springs, base flow, wetlands and/or other characteristics) flow and quality measurements; and
 - (K) potential for land surface subsidence.
- (3) a proposed method to calculate the amount of recoverable water and proposed method of water recovery which provides:
- (A) the amount of recoverable water in storage;
 - (B) the method of calculation to determine the amount of recoverable water; and
 - (C) the proposed method of water recovery.
- (4) a discussion of the hydrogeological information to include:
- (A) depth to groundwater and elevation of groundwater (or potentiometric surface of groundwater) in the area of hydrologic effect;
 - (B) perched groundwater conditions;
 - (C) groundwater flow direction and velocity;
 - (D) description of the aquifer selected for storage, including its areal extent and any associated confining or semi-confining layer(s);
 - (E) rock and soil types in the vicinity of the proposed ASR project;
 - (F) subsurface lithology and mineralogy/geochemistry in the vicinity of the proposed ASR project;
 - (G) relevant aquifer parameters;
 - (H) groundwater quality data and the methods used to measure or estimate their values;
 - (I) water quality of any wells within the estimated area of hydrologic effect;
 - (J) subsidence data;
 - (K) planned duration of the ASR project and its facilities; and
 - (L) relevant information on past and present land use
- (5) a proposed schedule for completion of the RWACP; and
- (6) any additional information DEQ determines to be necessary for the specific ASR project.

252:653-3-3. Attenuation of constituents in aquifer media

On a case-by-case basis, the potential for attenuation of constituents in the aquifer media will be considered in meeting groundwater standards. The hydrological investigation and

characterization of the aquifer must obtain the necessary information to support such an evaluation.

252:653-3-4. Groundwater standards

Water, as delivered to the aquifer, shall meet the numeric values and any applicable narrative criteria listed in OAC 785:45 for the class of the groundwater aquifer that will receive the water. No allowance for attenuation will be considered unless outlined in OAC 785:45 or on a case-by-case basis, at DEQ's discretion, if human health will not be impacted.

252:653-3-5. Groundwater monitoring well construction and/or plugging

All monitoring wells shall be constructed and/or plugged in accordance with the applicable requirements of OWRB at OAC 785:35.

252:653-3-6. RWACP implementation

Implementation of any DEQ approved RWACP for an ASR project shall commence within one (1) year of DEQ approval, unless an extension is approved by DEQ. Failure to implement RWACP within approved timeline may require submittal of a revised RWACP.

252:653-3-7. Raw water and aquifer characterization report

The results of the raw water and aquifer characterization shall be submitted to DEQ for approval. Absent an episodic event that changes the characterization of the raw water or aquifer, DEQ's approval of the report will be effective for five (5) years.

SUBCHAPTER 5. ASR TREATMENT PLANT CONSTRUCTION

Section

- 252:653-5-1. Permit and pilot study required
- 252:653-5-2. Construct according to plans and specifications
- 252:653-5-3. Variances from construction standards
- 252:653-5-4. Operator certification

252:653-5-1. Permit and pilot study required

- (a) Subject to the results of the raw water and aquifer characterization of Subchapter 3 of this Chapter, an ASR water treatment plant and a pilot study may be required.
- (b) No person shall construct or modify an ASR water treatment plant without first obtaining a permit to construct in accordance with applicable requirements of OAC 252:626 and 656 and be designed to meet the Groundwater Quality Standards of OAC 785:45-7.
- (c) The ASR water treatment plant shall be operated pursuant to the operating requirements of Subchapter 9 of this Chapter.
- (d) The applicant shall demonstrate that adequate capacity and treatment are consistent with all applicable state and federal laws and regulations.
- (e) Unless an extension is granted, a construction permit expires if construction does not begin within one (1) year.
- (f) The permit application is a three-step process:
 - (1) demonstrate compliance with the provisions of Subchapter 3 of this Chapter;

- (2) submit an engineering report (as described in applicable sections of OAC 252:626 and 656); and
- (3) submit the final design report (as described in applicable sections of OAC 252:626 and 656), along with the required application forms and fees. The final design report shall:
 - (A) include two (2) sets of plans and specifications (or as otherwise directed by DEQ), and
 - (B) reflect any changes from the approved engineering report.
- (g) The applicant shall inform DEQ in writing at least ten (10) days before completion of the project.
- (h) If treated water is chlorinated, it shall be dechlorinated, as appropriate, prior to delivery to the aquifer.

252:653-5-2. Construct according to plans and specifications

- (a) Applicants must construct facilities according to the plans and specifications that are approved by DEQ. The permittee must comply with the terms of the permit that is issued. A permit may contain provisions more stringent than these rules in order to meet applicable ground water standards. Any changes to the approved plans and specifications must be submitted and approved in writing by DEQ. The permittee and the permittee's engineer must sign and certify the documentation.
- (b) The permittee must file as-built plans (plans of record), which identify any changes to DEQ approved plans and specifications and a professional engineer's certification that the construction was completed according to the requirements of this subchapter within six (6) months after the project is completed.

252:653-5-3. Variances from construction standards

The policy of DEQ is to encourage better water treatment methods and equipment, including the use of new technology. DEQ may approve processes or equipment not specifically covered by the standards in this Chapter provided the permittee requests an approvable variance. A variance from the standards in this Chapter may be allowed, upon the request of the applicant, if DEQ finds the variance will not increase the likelihood of a system failure or detrimental effects to the aquifer. No variance will be allowed unless it is noted on the construction permit.

252:653-5-4. Operator certification

Operator certification requirements for the ASR water treatment plant shall be consistent with the requirements of OAC 252:710.

SUBCHAPTER 7. ASR WATER DELIVERY CONSTRUCTION

Section

- 252:653-7-1. Applicability
- 252:653-7-2. Permit application requirements
- 252:653-7-3. Additional application requirements for recharge wells
- 252:653-7-4. Additional application requirements for infiltration basins
- 252:653-7-5. Additional application requirements for other water delivery mechanism
- 252:653-7-6. Water delivery pilot test
- 252:653-7-7. Aquifer testing

252:653-7-1. Applicability

Applicants requesting a permit for any recharge well, infiltration basin and/or other water delivery mechanism shall submit a permit application to DEQ meeting the requirements of this Subchapter.

252:653-7-2. Permit application requirements

The following shall be included in an application for a construction permit for any recharge well, infiltration basin and/or other water delivery mechanism.

- (1) **Site description.** A description of the ASR site.
- (2) **Map.** A map showing the location of the proposed recharge wells and/or infiltration basins for which a permit is being sought and the applicable extent of the area of hydrologic effect of the project. Within the area of hydrologic effect, the map must show the number, or name, and location of all oil and gas wells, dry holes, artificial penetrations, surface bodies of water, springs, wetlands, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected, and areas of known or suspected contamination. Public records which verify the information regarding all oil and gas wells, water wells, dry holes, and areas of known contamination submitted on the map shall also be included.
- (3) **Geologic cross-sections.** Maps and cross-sections detailing the geologic structure and stratigraphy to include the area of hydrologic effect.
- (4) **Operations.** Proposed operating data.
- (5) **Contingency plans.** Contingency plans to cope with system failures.
- (6) **Groundwater monitoring plan.** A plan for monitoring groundwater for changes in water level and water quality. All groundwater monitoring wells shall be constructed as required in OAC 785:35.
- (7) **Run-on/run-off.** Estimated annual precipitation, evaporation, transpiration, and recharge rates in the area of hydrologic effect.
- (8) **Raw water and Aquifer Characterization.** The results of the raw water and aquifer characterization required in Subchapter 3.
- (9) **Additional information.** Any additional information DEQ determines to be necessary based on information obtained from the Raw Water and Aquifer Characterization.

252:653-7-3. Additional application requirements for recharge wells

In addition to the requirements of OAC 252:653-7-2, permit applications for the construction of recharge wells shall include the following:

- (1) construction details to include, at a minimum, depth and diameter of casings and screens (or open hole completion), description of the installation method, construction features and specifications for the materials to be used;
- (2) plugging and abandonment plan;
- (3) proposed injection procedure;
- (4) proposed operating data:
 - (A) average and maximum daily injection rates and volumes for each well;
 - (B) average and maximum injection pressure; and
 - (C) description of the injectate parameters to be monitored;
- (5) any additional information DEQ determines to be necessary for the specific ASR project.

252:653-7-4. Additional application requirements for infiltration basins

In addition to the requirements of OAC 252:653-7-2, permit applications for the construction of infiltration basins shall include the following:

- (1) construction details to include:
 - (A) number of infiltration basin(s);
 - (B) dimensions of the infiltration basin(s), including:
 - (i) surface area in acres;
 - (ii) depth and horizontal extent of trenches or other excavations to increase recharge;
 - (ii) maximum depth of water in basin; and
 - (iii) freeboard allowance
 - (C) gradients and elevations;
 - (D) method of construction;
 - (E) materials used;
 - (i) soil type and permeability;
 - (ii) filter fabric; and
 - (iii) aggregate material
 - (F) erosion control measures;
 - (G) flood control features;
 - (H) inflow and outflow/overflow points;
 - (I) measurement points; and
 - (J) monitoring equipment.
- (2) operating parameters:
 - (A) schedule of hydraulic loading and basin drying cycles;
 - (B) estimated flow rate;
 - (C) estimated infiltration rate for each basin;
 - (D) estimated hydraulic loading rate with consideration given to drying time; and
 - (E) distance to maintain between bottom of basin and top of groundwater mound
- (3) closure plan
- (4) any additional information DEQ determines to be necessary for the specific ASR project.

252:653-7-5. Additional application requirements for other water delivery mechanism

In addition to the requirements of OAC 252:653-7-2, applicable construction, closure and proposed operating data shall be provided as part of the permit application for other water delivery mechanisms not contemplated by these rules. The applicant shall provide information DEQ determines to be necessary for the specific ASR project.

252:653-7-6. Water delivery pilot test

In addition to the requirements of OAC 252:653-7-2, a water delivery pilot test plan shall be included as part of the permit application. The plan shall include the following, as applicable:

- (1) **Recharge well(s).** Field injectivity tests shall be conducted to assist in the design of the operating parameters of the recharge well. Details of the injectivity tests to be conducted shall be included.
- (2) **Infiltration basin(s).** Field infiltration tests shall be conducted to assist in the design of infiltration systems. Infiltration rates must be determined by an appropriate infiltration test to be conducted by the applicant. Details of the infiltration tests to be conducted shall be included.
- (3) **Other water delivery mechanism.** Field tests of the water delivery mechanism shall be conducted as required by DEQ.

252:653-7-7. Aquifer testing

In addition to the requirements of OAC 252:653-7-2, a plan for evaluating, through appropriate testing and modeling, the compatibility of the delivered water with the receiving aquifer water for possible subsequent changes in aquifer characteristics, groundwater, or stored water due to hydrogeologic or hydrogeochemical changes shall be submitted to DEQ. The plan shall include provisions for testing to determine if the proposed full-scale, long-term project is hydrologically feasible and to collect and evaluate operational, hydrologic, and geologic data, including dissolution rates, needed to support operational application for a full scale project.

SUBCHAPTER 9. AQUIFER STORAGE & RECOVERY OPERATIONS

Section

- 252:653-9-1. Applicability
- 252:653-9-2. Duration and continuation of expiring permit
- 252:653-9-3. No endangerment
- 252:653-9-4. Permit application requirements
- 252:653-9-5. Operation and maintenance of ASR water treatment plant
- 252:653-9-6. Operation and maintenance of recharge wells
- 252:653-9-7. Operation and maintenance of infiltration basins
- 252:653-9-8. Operation and maintenance of other water delivery systems
- 252:653-9-9. Source control
- 252:653-9-10. Groundwater monitoring requirements
- 252:653-9-11. Contingency plan
- 252:653-9-12. Corrective action
- 252:653-9-13. Reporting requirements
- 252:653-9-14. Closure plan

252:653-9-1. Applicability

Applicants requesting a permit for ASR operations shall submit a permit application to DEQ meeting the requirements of this Subchapter.

252:653-9-2. Duration and continuation of expiring permit

(a) Any ASR operating permit issued under this Subchapter shall extend for a period of (10) ten years, and shall be reviewed by DEQ every (5) five years for possible permit modification. Upon expiration of an ASR operating permit, a permittee may seek a renewal in accordance with the application requirements of this Subchapter.

(b) A permittee may continue operating under the conditions of an expired permit provided that a permit renewal application has been submitted to DEQ 180 days prior to expiration of the permit.

(c) In the event that the water quality standards of OAC 785:45 change within the duration of an ASR operating permit, the permittee shall submit a plan within 180 days of the effective date of the standard to ensure the continued operation of the ASR project shall meet the new water quality standards.

252:653-9-3. No endangerment

Pursuant to specific permit conditions, all ASR projects shall be operated in such a manner that the project will not endanger drinking water sources.

252:653-9-4. Permit application requirements

The following shall be included in an application for an operations permit for an ASR project:

- (1) **Site description.** A description of the ASR site which includes, at a minimum, a legal description of the site, a discussion of all surface facilities, and a description of the area of hydrologic effect.
- (2) **Map.** A map showing the constructed ASR project for which a permit is being sought.
- (3) **Operations.** Proposed operating parameters.
- (4) **Contingency plan.** Contingency plans to address system failures.
- (5) **Groundwater monitoring plan.** A plan for monitoring groundwater for changes in aquifer pressure and water quality.
- (6) **Water delivery pilot test results.** Results of the water delivery pilot test conducted as required in Subchapter 7 of this Chapter.
- (7) **Operation and maintenance.** Operation and maintenance requirements for the ASR system as required in this Subchapter.
- (8) **Closure Plan.** A closure plan for the ASR system.
- (9) **Cost Estimates.** Cost estimates for closure of the facility.
- (10) **Financial assurance.** Financial assurance to cover the cost of closing the facility.
- (11) **Horizontal and vertical extent of stored water.** A map showing the estimated maximum extent of stored water and discussion of the method and assumption used.
- (12) **Additional information.** Any additional information DEQ determines to be necessary for the specific ASR project.

252:653-9-5. Operation and maintenance of ASR water treatment plant

An Operation & Maintenance Manual for the operation and maintenance of the ASR treatment plant must, at a minimum, include:

- (1) system Treatment Requirements;
- (2) description, operation and control of the ASR treatment plant;
- (3) description, operation and control of the treatment works;
- (4) control of unit processes;
- (5) laboratory testing;
- (6) common operating problems;
- (7) start-up testing and procedures;
- (8) normal operating procedures;
- (9) alternative and emergency operations;
- (10) emergency shutdown operations and emergency response;
- (11) records control and retention;
- (12) safety;
- (13) ASR treatment maintenance requirements and/or water reuse system maintenance requirements;
- (14) spare parts and chemical inventory; and
- (15) reclaimed water storage and distribution system flushing plan to prevent slime growth, regrowth of pathogens and water age.

252:653-9-6. Operation and maintenance of recharge wells

- (a) **Operation.** The operation of recharge wells shall include:
- (1) **Injection pressure.** Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure the pressure in the injection zone does not cause movement of fluid out of the injection zone.
 - (2) **Mechanical integrity.** The owner or operator shall maintain the mechanical integrity of all recharge wells operated under this Subchapter.
 - (3) **Continuous monitoring.** The recharge well(s) shall be monitored continuously, to include at a minimum, monitoring of the injectate for flow, injection pressure and any constituents required by DEQ.
- (b) **Maintenance.** The method and schedule for maintaining recharge wells shall be included. This shall also provide for redevelopment procedures.

252:653-9-7. Operation and maintenance of infiltration basins

- (a) **Operation.** The operation of infiltration basins shall include:
- (1) **Flow rate.** The flow rate into the infiltration basin shall be calculated based on the capacity of the infiltration basin to minimize the likelihood of overflow. Annual precipitation and evaporation should be taken into account.
 - (2) **Monitoring.** The infiltration basin(s) shall be monitored as required by DEQ, to include at a minimum, flow rate, infiltration rate, and any constituents required by the operations permit.
- (b) **Maintenance.** The method and schedule for maintaining the infiltration basin(s) shall include:
- (1) the method for addressing the development of clogging layers and maintaining design recharge capacity;
 - (2) the frequency at which maintenance, including debris/sediment cleanout, occurs; and
 - (3) maintenance shall be in relation to site-specific variables such as soil characteristics, source water chemistry and facility design.
- (c) **Inspections.** The permittee shall conduct routine inspections as follows:
- (1) annual inspections of sediment traps or forebays and cleanout;
 - (2) monthly inspections of erosion prevention measures; and
 - (3) monthly inspections of flood control features.

252:653-9-8. Operation and maintenance of other water delivery systems

Methods for operation and maintenance of other water delivery systems shall be included in the application.

252:653-9-9. Source control

The applicant shall provide a mechanism for monitoring any changes to the source of raw water and updating raw water characterization in order to determine if the requirements of the ASR treatment plant need to be modified to address the change in the raw water characteristics.

252:653-9-10. Groundwater monitoring requirements

- (a) **Groundwater monitoring.** The permittee shall monitor the groundwater quality through a network of groundwater monitoring wells for site-specific constituents to be approved by DEQ.

- (b) **Alert triggers.** The applicant shall identify alert triggers, to be approved by DEQ, for each constituent monitored, for which the contingency plan will be activated.
- (c) **Frequency.** DEQ shall approve groundwater monitoring frequency on a case-by-case basis.
- (d) **Submittal of data to DEQ.** All groundwater monitoring data required by this Subchapter shall be submitted to DEQ.

252:653-9-11. Contingency plan

A contingency plan must be developed to address potential problems that may occur during the operation of the ASR project. The contingency plan shall include the following.

- (1) **Alert trigger.** The alert trigger is a numeric value, approved by DEQ, at which action must be taken for water level monitoring and/or water quality monitoring. The alert trigger must be set at such level as to provide early warning to correct a problem before impairment or harm occurs.
- (2) **Course of action.** A clearly-defined course of action designed to verify and correct the condition that has caused an alert trigger to be exceeded.
- (3) **Water management.** Procedures for appropriate management of raw and/or treated water.
- (4) **Emergency coordinator.** The name and telephone number of the emergency coordinator responsible for implementing and managing the contingency plan.
- (5) **Cease operations.** The permittee shall immediately cease operations when the alert trigger is exceeded.
- (6) **DEQ notification.** The emergency coordinator shall notify DEQ within 24 hours and include the following information:
 - (A) description of the alert trigger that has been exceeded and the possible effects to the project and the area of hydrologic effect;
 - (B) the date and time when the alert level was exceeded;
 - (C) the method used or being used to correct the situation; and
 - (D) discussion on possible impairment and harm as a result of the exceedance.
- (7) **DEQ approval to resume operations.** Operation shall not resume until approval is received from DEQ.

252:653-9-12. Corrective action

If it is determined that the groundwater has been compromised, corrective action will be required. The following actions will be required for the implementation of corrective action:

- (1) a corrective action groundwater monitoring program must be established and implemented as specified by DEQ;
- (2) the corrective action remedy must be selected and implemented;
- (3) interim measures necessary to ensure the protection of human health and the environment must be taken; and
- (4) financial assurance for corrective action must be established.

252:653-9-13. Reporting requirements

Each calendar month the ASR project operator shall provide DEQ with the following information for the previous month:

- (1) the volume of water delivered for storage;
- (2) the volume of water recovered for beneficial use;

- (3) monthly average injection pressures, if applicable; and
- (4) other information as determined by DEQ to be necessary.

252:653-9-14. Closure plan

A plan for the closure of the ASR facility shall include the following, if applicable:

- (1) plugging and abandonment of ASR recharge wells;
- (2) closure of ASR infiltration basins;
- (3) closure of any other ASR water delivery mechanism; and
- (4) closure of the ASR treatment plant.

SUBCHAPTER 11. COST ESTIMATES AND FINANCIAL ASSURANCE

Section

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252:653-11-1. Applicability

All ASR projects are subject to the requirements of this Subchapter, except limited-scale pilot projects.

252:653-11-2. Duty to maintain financial assurance

Financial assurance for closure and/or corrective action, as applicable, must be maintained continuously until released from the requirement to maintain such assurance by:

- (1) demonstrating compliance with the closure requirements of Subchapter 9 of this Chapter; and
- (2) demonstrating compliance with the corrective action requirements, if necessary.

252:653-11-3. Permit transfers

(a) **Transfer of permit.** When the operating permit is transferred from one owner/operator ("transferor") to another owner/operator ("transferee"), the transferee shall either provide new financial assurance or assume the existing assurance, if adequate in amount.

(b) **Release of transferor's financial assurance.** DEQ will not release the transferor's financial assurance until the transferee has obtained approved financial assurance.

252:653-11-4. Substitute financial assurance

(a) **Substitutions allowed.** Substitute financial assurance may be provided as specified in this Subchapter.

(b) **Release of previous instrument.** DEQ will not release any current assurances until an approved substitute is in place.

252:653-11-5. Cost estimates for closure

(a) **Closure cost estimate.** Closure cost estimates shall be submitted to DEQ for approval. The estimate shall be a detailed written estimate, in current dollars, of the cost of hiring a third party to close the ASR facility in accordance with the permit, the approved closure plan, and the rules of this Chapter at any time during its active life.

(b) **Amount.** The cost estimate shall be set by DEQ and be equal to the cost of closing the ASR facility when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

(c) **DEQ approval.** A copy of the cost estimate shall be submitted to DEQ for approval.

(d) **Increases required.** Closure cost estimates and the amount of financial assurance provided must be increased if, at any time during the active life, changes to the closure plan or facility conditions increase the maximum cost of closure.

(e) **Reductions allowed.** Proposals for reduction of closure cost estimates and the amount of financial assurance required may be approved by DEQ.

(1) **Conditions.** To qualify for a reduction:

(A) part of the closure plan must have been completed and approved by DEQ; or

(B) the cost estimate must be demonstrated to exceed the maximum cost of closure during the remaining life of the facility.

(2) **Adequate assurance remains.** The amount of security remaining after the reduction must adequately cover the estimated closure cost yet to be performed.

(3) **DEQ approval required.** Financial assurance shall not be reduced until DEQ approval has been granted.

252:653-11-6. Cost estimates for corrective action

(a) **Corrective action cost estimate required.** When corrective action is required at an ASR facility, cost estimates for corrective action shall be submitted to DEQ for approval. The cost estimates shall be a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action.

(b) **Amount.** The corrective action cost estimate shall be set by DEQ and account for the total costs of corrective action activities as described in the approved corrective action plan for the entire corrective action period.

(c) **Increases required.** The corrective action cost estimate and the amount of financial assurance provided must be increased at any time changes to the corrective action program or facility conditions increase the estimated cost of corrective action.

(d) **Reduction allowed.** Proposals for reduction of corrective action cost estimates and the amount of financial assurance required may be approved by DEQ.

(1) **Estimate exceeds cost.** To qualify for a reduction, the cost estimate must be demonstrated to exceed the maximum cost of corrective action at any time during the remaining life of the facility.

(2) **Adequate assurance remains.** The amount of security remaining after the reduction must adequately cover the estimated corrective action costs yet to be realized.

(3) **DEQ approval required.** Financial assurance shall not be reduced until DEQ approval has been granted.

252:653-11-7. Annual adjustments to cost estimates

(a) **Adjustment required.** Except as provided in (b) and (c) of this Section, cost estimates for closure and/or corrective action shall be adjusted no later than April 1st of each year. The adjustment must be submitted to DEQ for approval.

(1) **Recalculation of maximum costs.** The maximum costs of closure and/or corrective action may be recalculated in current dollars using the procedure in Part 5 of this Subchapter (relating to determination of cost estimates).

(2) **Use of inflation factor.** If there are no significant changes to the closure plan and/or corrective action plan, or facility conditions, cost estimates may be adjusted by use of an inflation factor derived from the most recent annual "Implicit Price Deflator for Gross National Product" or the "Implicit Price Deflator for Gross Domestic Product" published by the U.S. Department of Commerce in its *Survey of Current Business* in the year for which the adjustment is being made.

(A) The first adjustment shall be made by multiplying the approved cost estimate by the inflation factor. The result is the adjusted cost estimate.

(B) Subsequent adjustments shall be made by multiplying the latest adjusted cost estimate by the latest inflation factor.

(b) **Corporate test or guarantee as financial assurance mechanism.** When the corporate test (OAC 252:653-11-18) or guarantee (OAC 252:653-11-20) is used as the financial assurance mechanism, the cost estimates for closure and/or corrective action shall be adjusted no later than 90 days after the close of the corporate fiscal year.

(1) **Required information.** The financial strength information specified in OAC 252:653-11-18(c) shall be submitted to DEQ for approval.

(2) **Extension allowed.** DEQ may provide up to an additional 45 days to submit the information upon demonstration that 90 days is insufficient time to acquire audited financial statements.

(c) **Local government test or guarantee as financial assurance mechanism.** When the local government test (OAC 252:653-11-19) or guarantee (OAC 252:653-11-21) is used as the financial assurance mechanism, the cost estimates for closure and/or corrective action shall be adjusted no later than 180 days after the close of the municipal government's fiscal year. The financial strength information specified in OAC 252:653-11-19(h) shall be submitted to DEQ for approval.

252:653-11-8. Financial assurance

(a) **General Requirements.** To qualify as financial assurance for the performance costs of closure and/or corrective action, a financial assurance mechanism must:

- (1) ensure that the amount of funds assured is sufficient to cover the costs of closure and/or corrective action for known releases when needed;
- (2) ensure that funds will be available in a timely fashion when needed;
- (3) be legally valid, binding, and enforceable under State and Federal law;
- (4) be non-negotiable;
- (5) be in an amount approved by DEQ;
- (6) indicate the purpose of the financial assurance is to provide funds for the adequate completion of closure and/or corrective action upon the failure of the owner/operator ("principal") to fully complete performance according to the terms of the permit and applicable law;
- (7) provide the name, address, telephone number(s), contact person(s), and organizational information for the principal and for the financial assurance issuer ("issuer");
- (8) provide information on financial responsibility and liability limits of the issuer;
- (9) provide a clause requiring payment to the State of Oklahoma, Department of Environmental Quality Revolving Fund, as the sole beneficiary upon DEQ's certification that the principal has not fully or satisfactorily performed required closure and/or corrective action activities;
- (10) provide a clause addressing termination and stating that neither the principal nor issuer can revoke or cancel the financial assurance mechanism without notice to DEQ 120 days before revocation or cancellation is effective;
- (11) provide a clause requiring notice to DEQ by issuer and to the principal prior to renewal date, if any;
- (12) provide a clause requiring 30 day notice to DEQ by issuer of principal's failure to pay renewal fee(s), if any;
- (13) specify whether coverage is for the life of the facility through certified closure and/or corrective action;
- (14) include original signatures and typed names of authorized agents of the principal and the issuer; and
- (15) contain evidence that the signatory for the issuer is empowered to commit the issuer to payment.

(b) **Submit to DEQ.** An original and one copy of the approved mechanism shall be submitted to DEQ for deposit or filing in the State Treasurer's office.

252:653-11-9. Use of multiple mechanisms

(a) **Multiple mechanisms allowed.** Financial assurance requirements may be satisfied by establishing more than one approved financial assurance mechanism described in this Part.

(b) **Amount must be sufficient.** If multiple mechanisms are used, the amount of financial assurance for all mechanisms must total at least the current cost estimate for closure and/or corrective action.

(c) **Limitations on performance mechanisms.** Mechanisms guaranteeing performance rather than payment may not be combined with other mechanisms.

(d) **Limitations on corporate test or guarantee.** The financial test or a guarantee provided by a corporate parent, sibling, or grandparent may not be combined if the financial statements of the two firms are consolidated.

252:653-11-10. Allowable financial assurance mechanisms

(a) The owner/operator must choose from the financial assurance mechanisms specified in this Part.

(b) The mechanisms must ensure that the funds necessary to meet the costs of closure and corrective action for known releases will be available whenever they are needed.

252:653-11-11. Cash

(a) **Cash authorized.** Financial assurance requirements may be satisfied by making a deposit, via cash, certified check, or money order, to the State Treasury, payable to the Department of Environmental Quality Revolving Fund, for the fully approved cost estimates for closure and/or corrective action.

(b) **Additional requirements.** Compliance with OAC 252:653-11-8(a)(5), (6), (7), and (13) is required.

(c) **Submit to DEQ.** Documentation demonstrating compliance with (a) and (b) of this Section shall be submitted to DEQ.

252:653-11-12. Certificate of deposit

(a) **Certificate of deposit authorized.** Financial assurance requirements may be satisfied through a certificate of deposit payable to the Department of Environmental Quality Revolving Fund, for the fully approved cost estimates for closure and/or corrective action. Such certificate shall be filed with the Office of the State Treasurer.

(b) **Chartered bank.** The certificate of deposit shall be issued by a state or federally chartered bank, regulated and examined by a state or federal agency.

(c) **Additional requirements.** Compliance with OAC 252:653-11-8(a)(5), (6), (7), and (13) is required.

(d) **Submit to DEQ.** Documentation demonstrating compliance with (a) through (c) of this Section shall be submitted to DEQ.

252:653-11-13. Trust fund

(a) **Trust fund authorized.** Financial assurance requirements may be satisfied by establishing a trust fund meeting the requirements of this Section.

(b) **Acceptable trustee.** The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(c) **Additional requirements.** The trust must be in a format approved by DEQ and contain an irrevocable assignment of the funds to DEQ.

(d) **Submit trust agreement to DEQ.** A copy of the trust agreement must be submitted to DEQ for approval.

(e) **Pay-in period.** Payments into the trust fund must be made no later than April 9th of each year as follows:

(1) **Closure.** For closure, the pay-in period shall be 10 years after the date of permit issuance.

(2) **Corrective action.** For corrective action, the pay-in period shall be 10 years after the corrective action remedy has been selected, or one-half of the estimated length of the corrective action program, whichever is shorter.

(f) **Payments into trust for closure.** Payments into the trust for closure shall be made as follows:

(1) **First payment.** The first payment into the fund must be at least equal to the current cost estimate for closure except as provided in OAC 252:653-11-9 (relating to the use of multiple mechanisms), divided by the number of years in the pay-in period.

(2) **Subsequent payments.** Subsequent payments shall be determined by the following formula: $\text{Next Payment} = (\text{CE} - \text{CV}) \div \text{Y}$, where

(A) "**CE**" is the current cost estimate for closure (updated for inflation or other changes); and

(B) "**CV**" is the current value of the trust fund; and

(C) "**Y**" is the number of years remaining in the pay-in period.

(g) **Payments into trust for corrective action.** Payments into the trust for corrective action shall be made as follows:

(1) **First payment.** The first payment into the trust fund must be at least equal to one-half of the current cost estimate for corrective action, except as provided in OAC 252:653-11-9 or the approved corrective action plan, divided by the number of years in the corrective action pay-in period.

(2) **Subsequent payments.** Subsequent payments shall be determined by the following formula: $\text{Next Payment} = (\text{RB} - \text{CV}) \div \text{Y}$, where

(A) "**RB**" is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period); and

(B) "**CV**" is the current value of the trust fund; and

(C) "**Y**" is the number of years remaining in the corrective action pay-in period.

(h) **Trust fund after use of other mechanisms.** If a trust fund is established after having used one or more alternate mechanisms specified in this Part, the initial payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made in accordance with (f) and/or (g) of this Section.

(i) **Requests for reimbursement from trust fund.** Persons authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures.

(1) **Sufficient funds available.** Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure or corrective action

(2) **Submit justification to DEQ.** Documentation of the justification for reimbursement must be submitted to DEQ.

(3) **Document reimbursement received.** Documentation shall be provided to DEQ to demonstrate reimbursement has been received.

252:653-11-14. Escrow account

(a) **Escrow account authorized.** Financial assurance requirements maybe satisfied by establishing an escrow account in the name of the Department of Environmental Quality.

- (b) **Chartered bank.** The escrow bank must be a state or national bank located within the State of Oklahoma authorized to receive and hold State funds.
- (c) **Additional requirements.**
- (1) **Escrow agreement.** The escrow agreement must contain an irrevocable assignment of the funds therein to DEQ to be used in accordance with this Section.
 - (2) **Funds insured.** The funds placed in the escrow account must be fully insured and/or collateralized by the Bank's pledge of government securities.
- (d) **DEQ approval required.** The form of the escrow agreement must be approved by DEQ, and a copy of the approved escrow agreement submitted to DEQ.
- (e) **Pay-in period.** Payments into the escrow account must be made no later than April 9th of each year as follows:
- (1) **Closure.** For closure, the pay-in period shall be 15 years after the date of permit issuance.
 - (2) **Corrective action.** For corrective action, the pay-in period shall be 15 years after the corrective action remedy has been selected, or one-half of the estimated length of the corrective action program, whichever is shorter.
- (f) **Payments into escrow for closure.** Payments into the escrow account for closure shall be made as follows:
- (1) **First payment.** The first payment must be at least equal to the current cost estimate for closure except as provided in OAC 252:653-11-9 (relating to the use of multiple mechanisms), divided by the number of years in the pay-in period.
 - (2) **Subsequent payments.** Subsequent payments shall be determined by the following formula: $\text{Next Payment} = (\text{CE} - \text{CV}) \div Y$, where
 - (A) "**CE**" is the current cost estimate for closure (updated for inflation or other changes); and
 - (B) "**CV**" is the current value of the escrow account; and
 - (C) "**Y**" is the number of years remaining in the pay-in period.
- (g) **Payments into escrow for corrective action.** Payments into the escrow account for corrective action shall be as follows:
- (1) **First payment.** The first payment must be at least equal to one-half of the current cost estimate for corrective action, except as provided in OAC 252:653-11-9 or the approved corrective action plan, divided by the number of years in the corrective action pay-in period.
 - (2) **Subsequent payments.** Subsequent payments shall be determined by the following formula: $\text{Next Payment} = (\text{RB} - \text{CV}) \div Y$, where
 - (A) "**RB**" is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period); and
 - (B) "**CV**" is the current value of the escrow account; and
 - (C) "**Y**" is the number of years remaining in the corrective action pay-in period.
- (h) **Escrow after use of other mechanisms.** If an escrow account is established after having used one or more alternate mechanisms specified in this Part, the initial payment into the escrow account must be at least the amount that the account would contain if it were established initially and annual payments made in accordance with (f) and/or (g) of this Section.
- (i) **Reimbursements authorized.** Persons authorized to conduct closure or corrective action activities, may request DEQ authorize reimbursement from the escrow account for these expenditures.

- (1) **Sufficient funds available.** Requests for reimbursement will be granted by DEQ only if sufficient funds are remaining in the escrow account to cover the remaining costs of closure or corrective action.
- (2) **Submit justification to DEQ.** Justification for the reimbursement must be submitted to DEQ for approval.
- (3) **Document reimbursement received.** Documentation shall be provided to DEQ to demonstrate reimbursement has been received.
- (4) **Principal protected.** The escrow bank shall not allow any withdrawal from the escrow account, except for interest once the account is fully funded, without written authorization from the Executive Director of DEQ.

252:653-11-15. Surety bond

- (a) **Surety bond for closure authorized.** Financial assurance requirements for closure may be satisfied by obtaining a payment or performance surety bond conforming to the requirements of this Section.
- (b) **Performance bond for corrective action authorized.** Financial assurance requirements for corrective action may be satisfied by obtaining a performance bond conforming to the requirements of this Section.
- (c) **Submit bond to DEQ.** A copy of the bond must be submitted to DEQ for approval.
- (d) **Acceptable bonds.** The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.
- (e) **Penal sum.** The penal sum of the bond must be in an amount at least equal to the current closure or corrective action cost estimate, whichever is applicable, except as provided in OAC 252:653-11-19 (relating to the use of multiple mechanisms).
- (f) **Surety liable.** Under the terms of the bond, the surety will become liable on the bond obligation when the owner/operator fails to perform as guaranteed by the bond.
- (g) **Establish standby trust fund.** A standby trust to receive bond payments must be established that meets the requirements of OAC 252:653-11-13, except the requirements for initial payment and subsequent annual payments specified in OAC 252:653-11-13(e) through (g).
- (h) **Deposits into standby trust.** Payments made under the terms of the bond must be deposited by the surety directly into the standby trust fund.
- (i) **Payments from the trust.** Payments from the trust fund must first be approved by DEQ and the trustee.
- (j) **Cancellation by surety.** Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner/operator and to DEQ 120 days in advance of cancellation.
- (k) **New financial assurance required.** DEQ approved alternate financial assurance meeting the requirements of this Part must be established:
 - (1) prior to the effective date of cancellation of the bond by the surety, or
 - (2) within 60 days of receipt of notice the surety no longer meets the requirements of (d) of this Section.

252:653-11-16. Letter of credit

- (a) **Letter of credit authorized.** Financial assurance for closure and/or corrective action may be satisfied by obtaining an irrevocable standby letter of credit that conforms to the requirements of this Section.
- (b) **Submit letter of credit to DEQ.** A copy of the letter of credit must be submitted to DEQ for approval.
- (c) **Acceptable issuing institutions.** The issuing institution must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.
- (d) **Documents to include.** A letter from the owner/operator referring to the letter of credit by number and containing the following must be included with the letter of credit:
 - (1) the name of the issuing institution;
 - (2) the date the letter of credit was issued;
 - (3) the disposal facility name and address; and
 - (4) the amount of funds assured.
- (e) **Letter of credit requirements.** The letter of credit must:
 - (1) be irrevocable;
 - (2) be issued for a period of at least one year in an amount at least equal to the current cost estimate for closure and/or corrective action, except as provided in OAC 252:653-11-9; and
 - (3) provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution cancels the letter of credit.
- (f) **Cancellation by issuing institution.** The issuing institution may cancel the letter of credit by sending notice of cancellation by certified mail to the owner/operator and DEQ 120 days in advance of cancellation.
- (g) **New financial assurance required.** If the letter of credit is canceled by the issuing institution, alternate financial assurance meeting the requirements of this Part must be obtained prior to the effective date of cancellation.

252:653-11-17. Insurance

- (a) **Insurance authorized.** Financial assurance for closure may be satisfied by obtaining insurance that conforms to the requirements of this Section.
- (b) **Definition.** When used in this Section, the term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.
- (c) **Acceptable insurers.** At a minimum, the insurer must be licensed to transact the business of insurance in the State of Oklahoma, or be eligible to provide insurance as an excess or surplus lines insurer, in one or more States.
- (d) **Submit to DEQ.** A copy of the insurance policy must be submitted to DEQ for approval.
- (e) **Policy requirements.** The insurance policy must include the following provisions.
 - (1) **Face amount.** The policy must be issued for a face amount at least equal to the current cost estimate for closure except as provided in OAC 252:653-11-9 (relating to the use of multiple mechanisms).
 - (2) **Funds available.** The policy must guarantee that funds will be available to close the facility whenever final closure occurs for the facility.

- (3) **Insurer responsible.** The policy must guarantee that once closure begins, the insurer will be responsible for the paying out of funds to the owner/operator or other person authorized to conduct closure, up to an amount equal to the face amount of the policy.
- (4) **Assignment of policy.** The policy must contain a provision allowing assignment of the policy to a successor owner/operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.
- (5) **Insurer may not cancel, terminate, or fail to renew.** The policy must include a provision that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium.
- (6) **Automatic renewal.** The policy must provide the insured with the option of automatic renewal of the policy at the face amount of the expiring policy.
- (f) **Reimbursements authorized.** Persons authorized to conduct closure may receive reimbursements from the insurer for closure expenditures, whichever is applicable.
- (1) **Sufficient value.** The remaining value of the policy must be sufficient to cover the remaining costs of closure.
- (2) **Justification.** Justification for the reimbursement must be submitted to DEQ for approval.
- (3) **Document reimbursement received.** Documentation shall be provided to DEQ to demonstrate reimbursement has been received.
- (g) **Cancellation for non-payment.** If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the owner/operator and to DEQ at least 120 days in advance of cancellation.
- (h) **New financial assurance required.** DEQ approved alternate financial assurance meeting the requirements of this Part must be established:
- (1) prior to cancellation of the policy by the insurer; or
- (2) within 60 days of receipt of notice the insurer no longer meets the requirements of (c) of this Section.

252:653-11-18. Corporate financial test

- (a) **Corporate test authorized.** A corporate owner/operator that satisfies the requirements of this Section may demonstrate financial assurance up to the amount specified in this Section.
- (b) **Financial component.** The following demonstrations must be submitted to DEQ for approval.
- (1) The corporation must satisfy one of the following three conditions:
- (A) a current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; or
- (B) a ratio of less than 1.5 comparing total liabilities to net worth; or
- (C) a ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.
- (2) The corporation's tangible net worth must be greater than:
- (A) the sum of the current closure and/or corrective action cost estimates and any other environmental obligations, including guarantees, covered by a financial test plus \$10 million except as provided in (B) of this paragraph.
- (B) \$10 million in net worth plus the amount of any guarantees that have not been recognized as liabilities on the financial statements provided all of the current closure, and corrective action costs and any other environmental obligations covered by a

financial test are recognized as liabilities on the corporation's audited financial statements, and subject to the approval of DEQ.

(3) The corporation must have assets located in the United States amounting to at least the sum of current closure and corrective action cost estimates and any other environmental obligations covered by a financial test as described in (d) of this Section.

(c) **Recordkeeping and reporting.** The following must be submitted to DEQ for approval:

(1) A letter signed by the owner/operator's chief financial officer that:

(A) lists all the current cost estimates covered by a financial test, including, but not limited to:

(i) cost estimates required for municipal solid waste management facilities under this Chapter;

(ii) cost estimates required for UIC facilities under 40 CFR Part 144, if applicable;

(iii) cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable;

(iv) cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and

(v) cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265, if applicable; and

(B) provides evidence demonstrating that the corporation meets the conditions of either (b)(1)(A), (b)(1)(B), or (b)(1)(C) of this Section, and (b)(2) and (b)(3) of this Section.

(2) A copy of an independent certified public accountant's unqualified opinion of the owner/operator's financial statements for the latest completed fiscal year. A corporate owner/operator may not use the corporate test as a financial assurance mechanism if it receives an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant. In such case, alternate financial assurance meeting the requirements of this Part shall be provided.

(3) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that owner/operator satisfies (b)(1)(B) or (b)(1)(C) of this Section that are different from data in the audited financial statements referred to in (c)(2) of this Section or any other audited financial statement or data filed with the SEC, then a special report from the owner/operator's independent certified public accountant to the owner/operator is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

(4) If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in (b)(2)(B) of this Section, then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least \$10 million plus the amount of any guarantees provided.

(d) **Calculation of costs to be assured.** When calculating the current cost estimates for closure and corrective action, or the sum of the combination of such costs to be covered, and any other

environmental obligations assured by a financial test referred to in this Section, the owner/operator must include:

- (1) cost estimates required for ASR facilities under this Chapter; and
- (2) cost estimates required for the following if it assures them through a financial test:
 - (A) obligations associated with UIC facilities under 40 CFR Part 144
 - (B) obligations associated with petroleum underground storage tank facilities under 40 CFR Part 280;
 - (C) obligations associated with PCB storage facilities under 40 CFR Part 761; and
 - (D) obligations associated with hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265.

(e) **New financial assurance required.** If the owner/operator no longer meets the requirements of (b) of this Section, the owner/operator must obtain DEQ approved alternative financial assurance that meets the requirements of this Part within 120 days following the close of the owner/operator's fiscal year.

(f) **DEQ may request financial information.** DEQ may, based on a reasonable belief that the owner/operator may no longer meet the requirements of (b) of this Section, require the owner/operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in (c) of this Section. If DEQ finds that the owner/operator no longer meets the requirements of (b) of this Section, the owner/operator must comply with (e) of this Section.

252:653-11-19. Local government financial test

(a) **Local government test authorized.** A local government owner/operator that satisfies the requirements of this Section may demonstrate financial assurance up to the amount specified in this Section.

(b) **Local government not eligible for assurance.** A local government is not eligible to assure its obligations under this Section if it:

- (1) is currently in default on any outstanding general obligation bonds;
- (2) has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's;
- (3) operated at a deficit equal to five percent or more of total annual revenue in each of the past two fiscal years; or
- (4) receives an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant (or appropriate State agency) auditing its financial statement as required by (e) of this Section.

(c) **Definitions.** The following words or terms, when used in this Section, shall have the following meaning unless the context clearly indicates otherwise:

- (1) **"Deficit"** means total annual revenues minus total annual expenditures;
- (2) **"Total revenues"** means revenues from all taxes and fees but does not include the proceeds from borrowing or asset sales, excluding revenue from funds managed by local government on behalf of a specific third party;
- (3) **"Total expenditures"** means all expenditures excluding capital outlays and debt repayment;
- (4) **"Cash plus marketable securities"** means all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions; and

- (5) **"Debt service"** means the amount of principal and interest due on a loan in a given time period, typically the current year.
- (d) **Financial component.** The owner/operator must submit a demonstration to DEQ for approval, that it satisfies one of the following:
- (1) **General obligation bond rating.** If the owner/operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, it must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard and Poor's on all such general obligation bonds; or
 - (2) **Financial ratio.** The owner/operator must satisfy each of the following financial ratios based on the owner/operator's most recent audited annual financial statement:
 - (A) a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05; and
 - (B) a ratio of annual debt service to total expenditures less than or equal to 0.20.
- (e) **Preparation of financial statements.** The owner/operator must prepare its financial statements in conformity with Generally Accepted Accounting Principles for governments and have its financial statements audited by an independent certified public accountant (or appropriate State agency).
- (f) **Public notice component.**
- (1) **CAFR.** Except as provided in (2) of this Subsection, the owner/operator must place a reference to the closure and/or corrective action costs assured through the financial test into its next comprehensive annual financial report (CAFR). Disclosure must include:
 - (A) the nature and source of closure and/or corrective action requirements;
 - (B) the reported liability at the balance sheet date;
 - (C) the estimated total closure cost remaining to be recognized.
 - (2) **First year.** For the first year the financial test is used to assure costs at a particular facility, until issuance of the next available CAFR or annual audited financial statement if timing does not permit the reference to be incorporated into the most recently issued CAFR or budget.
- (g) **Assurance of compliance.** For closure costs, conformance with Government Accounting Standards Board Statement 18 assures compliance with the public notice requirements of (f) of this Section.
- (h) **Recordkeeping and reporting.** The local government owner/operator must submit the following to DEQ for approval:
- (1) a letter signed by the local government's chief financial officer that:
 - (A) lists all the current cost estimates covered by a financial test, as described in (k) of this Section;
 - (B) provides evidence and certifies that the local government meets the conditions of (b), (d), and (e) of this Section; and
 - (C) certifies that the local government meets the conditions of (f) and (k) of this Section.
 - (2) the local government's independently audited year-end financial statements for the latest fiscal year (except for local governments where audits are required every two years where unaudited statements may be used in years when audits are not required), including the unqualified opinion of the auditor who must be an independent, certified public accountant or an appropriate State agency that conducts equivalent comprehensive audits;

(3) a report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency based on performing an agreed upon procedures engagement relative to the financial ratios required by (d)(2) of this Section, if applicable, and the requirements of (b)(3), (b)(4), and (e) of this Section. The CPA or State agency's report should state the procedures performed and the CPA or State agency's findings; and

(4) either a copy of the comprehensive annual financial report (CAFR) or annual audited financial statements used to comply with (f) of this Section, or certification that the requirements of General Accounting Standards Board Statement 18 have been met.

(i) **New financial assurance required.** A local government must satisfy the requirements of the financial test at the close of each of its fiscal years. If the local government owner/operator no longer meets the requirements of the local government financial test it must obtain a DEQ approved alternative financial assurance that meets the requirements of this Part within 210 days following the close of its fiscal year.

(j) **DEQ may request financial information.** DEQ, based on a reasonable belief that the local government owner/operator may no longer meet the requirements of the local government financial test, may require additional reports of financial condition from the local government at any time. If DEQ finds, on the basis of such reports or other information, that the owner/operator no longer meets the requirements of the local government financial test, the local government must comply with (i) of this Section.

(k) **Calculation of costs to be assured.** The portion of the closure and corrective action costs for which an owner/operator can assure under this Section is determined as follows.

(1) **No other environmental obligations.** If the local government owner/operator does not assure other environmental obligations through a financial test, it may assure closure and corrective action costs that equal up to 43 percent of the local government's total annual revenue.

(2) **Other environmental obligations.** If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, it must add those costs to the closure and/or corrective action costs it seeks to assure under this paragraph. The total that may be assured must not exceed 43 percent of the local government's total annual revenue.

(3) **Alternative financial assurance required.** The owner/operator must obtain an alternate financial assurance mechanism for those costs that exceed the limits specified in (1) and (2) of this Subsection.

252:653-11-20. Corporate guarantee

(a) **Corporate guarantee authorized.** An owner/operator may satisfy his financial assurance requirements by obtaining a written guarantee from a corporate sponsor ("guarantor").

(b) **Relationship of guarantor to owner/operator.** The guarantor must be the direct or higher-tier parent corporation of the owner/operator, a firm whose parent corporation is also the parent corporation of the owner/operator, or a firm with a substantial business relationship with the owner/operator.

(c) **Requirements of guarantor.** The guarantor must meet the requirements for corporate owner/operators in OAC 252:653-11-18 and must comply with the terms of the guarantee.

(d) **Documentation required.** The owner/operator must submit to DEQ for approval, a certified copy of the guarantee, along with copies of the information described in OAC 252:653-11-18(c).

(1) If the guarantor's parent corporation is also the parent corporation of the owner/operator, the letter from the guarantor's chief financial officer must describe the value received in consideration of the guarantee.

(2) If the guarantor is a firm with a substantial business relationship with the owner/operator, this letter must describe this substantial business relationship and the value received in consideration of the guarantee.

(e) **Terms of guarantee.** The terms of the guarantee must include certain provisions.

(1) **Failure to perform.** If the owner/operator fails to perform closure and/or corrective action of a facility covered by the guarantee, the guarantor will:

(A) perform, or pay a third party to perform, closure and/or corrective action as required (performance guarantee); or

(B) establish a fully funded trust fund as specified in OAC 252:653-11-13 in the name of the owner/operator (payment guarantee).

(2) **Guarantee remains in force unless cancelled.** The guarantee will remain in force for as long as the owner/operator must comply with the applicable financial assurance requirements of this Subchapter unless the guarantor sends prior notice of cancellation by certified mail to the owner/operator and to DEQ. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner/operator and DEQ, as evidenced by the return receipts.

(3) **Obtain alternate financial assurance after cancellation.** If notice of cancellation is given, the owner/operator must, within 90 days following receipt of the cancellation notice by the owner/operator and DEQ, obtain DEQ approved alternate financial assurance meeting the requirements of this Part.

(4) **Failure to provide alternate financial assurance.** If the owner/operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide DEQ approved alternate assurance within 120 days of receipt of the cancellation notice.

(f) **Corporate guarantor no longer qualifies.**

(1) **Obtain alternative financial assurance.** If a corporate guarantor no longer meets the requirements of OAC 252:653-11-18(b), the owner/operator must, within 90 days of receipt of such notice, obtain DEQ approved alternative financial assurance meeting the requirements of this Part.

(2) **Failure to provide alternate financial assurance.** If the owner/operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide DEQ approved alternate assurance within the next 30 days.

252:653-11-21. Local government guarantee

(a) **Use of local government guarantee to satisfy financial assurance.** An owner/operator may demonstrate financial assurance for closure and corrective action by obtaining a written guarantee provided by a local government ("guarantor").

(b) **Requirements of guarantor.** The guarantor must meet the requirements of the local government financial test in OAC 252:653-11-19, and must comply with the terms of a written guarantee.

(c) **Terms of guarantee.** The guarantee must provide include the following provisions.

(1) **Failure to perform.** If the owner/operator fails to perform closure and/or corrective action of a facility covered by the guarantee, the guarantor will:

- (A) perform, or pay a third party to perform, closure and/or corrective action as required; or
- (B) establish a fully funded trust fund as specified in OAC 252:653-11-13 in the name of the owner/operator.

(2) **Guarantee will remain in force.** The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner/operator and to DEQ. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner/operator and DEQ, as evidenced by the return receipts.

(3) **Obtain alternate financial assurance after cancellation.** If a guarantee is canceled by the local government, the owner/operator must, within 90 days following receipt of the cancellation notice, obtain DEQ approved alternate financial assurance meeting the requirements of this Part.

(4) **Failure to provide alternate financial assurance.** If the owner/operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide DEQ approved alternate assurance within 120 days following receipt of the guarantor's notice of cancellation.

(d) **Local government guarantor no longer qualifies.**

(1) **Obtain alternative financial assurance.** If a local government guarantor no longer meets the requirements of OAC 252:653-11-19, the owner/operator must, within 90 days of receipt of such notice, obtain DEQ approved alternative assurance meeting the requirements of this Part.

(2) **Failure to provide alternate financial assurance.** If the owner/operator fails to obtain alternate financial assurance within that 90-day period, the guarantor must provide DEQ approved alternate assurance within the next 30 days.

(e) **Recordkeeping and reporting.** The owner/operator must submit a certified copy of the guarantee along with the items required under OAC 252:653-11-19(h) to DEQ for approval.

252:653-11-22. State approved mechanism

An owner/operator may satisfy the requirements of this Part by obtaining any other financial assurance mechanism that meets the financial assurance mechanism criteria specified in OAC 252:653-11-8 and that is approved by DEQ.