

The Texas Commission on Environmental Quality (commission) proposes new §§222.1, 222.3, 222.5, 222.31, 222.33, 222.35, 222.37, 222.39, 222.41, 222.43, 222.45, 222.71, 222.73, 222.75, 222.77, 222.79, 222.81, 222.83, 222.85, 222.87, 222.111, 222.113, 222.115, 222.117, 222.119, 222.121, 222.123, 222.125, 222.127, 222.151, 222.153, 222.155, 222.157, 222.159, 222.161, and 222.163.

#### BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE PROPOSED RULES

House Bill (HB) 2651, 79th Legislature, 2005, amended the Texas Water Code (TWC) by adding Chapter 32, Subsurface Area Drip Dispersal Systems.

The commission proposes these rules to regulate subsurface area drip dispersal systems that dispose of wastewater generated by treatment facilities that process more than 5,000 gallons per day (gpd) of domestic wastewater or any amount of industrial wastewater. The proposed rules will provide permitting procedures and technologically based requirements for design, operation, and closure of subsurface area drip dispersal systems. HB 2651 does not limit applicability to systems with capacity of greater than 5,000 gpd of domestic wastewater, but systems with a capacity of less than 5,000 gpd of domestic wastewater are regulated by Texas Health and Safety Code (THSC), Chapter 366 and 30 TAC Chapter 285, On-Site Sewage Facilities. Those statutes and regulations provide adequate protection of human health and the environment for single family residential systems that with a capacity of less than 5,000 gpd. There has been legislative and stakeholder consensus that current regulations are adequate for single family residential systems that treat less than 5,000 gpd and that TWC, Chapter 32 should not be interpreted as applying to those systems.

The commission also proposes additional rulemaking to 30 TAC Chapter 30, Occupational Licenses and Registrations; Chapter 55, Requests for Reconsideration and Contested Case Hearings; Public Comment; Chapter 281, Applications Processing; Chapter 305, Consolidated Permits; Chapter 309, Domestic Wastewater Effluent Limitation and Plant Siting; and Chapter 331, Underground Injection Control, in this issue of the *Texas Register* to implement HB 2651.

## SECTION BY SECTION DISCUSSION

### *Subchapter A, General Provisions*

#### *Section 222.1, Purpose and Scope*

Proposed new §222.1 would establish the purpose and scope of Chapter 222, which is to establish procedures for the permitting, design, and operation of subsurface area drip dispersal systems.

#### *Section 222.3, Applicability*

Proposed new §222.3 would establish to which systems the chapter does and does not apply. The chapter applies to subsurface area drip dispersal systems that inject at a depth of less than 48 inches from facilities with a capacity of more than 5,000 gpd of domestic wastewater and from facilities that process industrial wastewater. This chapter does not apply to subsurface area drip dispersal systems that are regulated by THSC, Chapter 366 and Chapter 285. Chapter 222 exempts systems that are excluded from TWC, Chapter 32 and systems that do not meet the definition of subsurface area drip dispersal system in TWC, §32.002.

*Section 222.5, Definitions*

Proposed new §222.5 would define the terms used in this chapter.

*Subchapter B, Administrative Procedures*

*Section 222.31, Application Process*

Proposed new §222.31 would establish the procedure that applicants must follow to submit an application for authorization to operate a subsurface area drip dispersal system and the associated treatment system. The process is essentially the same as other wastewater discharge permits. This proposed new §222.31 would also allow subsurface area drip dispersal system permittees with valid permits to continue to operate under their current permit until that permit expires or is superseded by an amended permit. Applicants who have administratively complete permit applications on file with the commission prior to the adoption of these rules, will be permitted using the current process under TWC, Chapter 26.

Proposed new §222.31 also contains the opportunity for permittees filing a permit renewal application for a subsurface area drip dispersal system to request a variance from the requirements of this chapter. To qualify for the variance, the subsurface area drip dispersal system must: 1) be in good working order; 2) not cause pollution, soil saturation, or a build-up of waterborne constituents in the soil; 3) not be prohibited by other commission regulations; and 4) not be a poor performer.

*Section 222.33, Public Notice*

Proposed new §222.33 would require applicants for subsurface area drip dispersal system applications to comply with the commission's regulations regarding public notice for wastewater discharge permit applications found in 30 TAC Chapter 39, Public Notice.

*Section 222.35, Requests for Reconsideration and Contested Case Hearing and Public Comment*

Proposed new §222.35 would establish the procedures for public participation in an application to authorize a subsurface area drip dispersal system. The commission proposes to apply TWC, Chapter 5, Subchapter M, Environmental Permitting Procedures rules, the "HB 801 process," to applications for subsurface area drip dispersal system permits. The procedures in Chapter 55, Subchapters D - F will apply to applications for subsurface area drip dispersal system permits for requesting a public meeting, submitting public comment, and requesting reconsideration or a contested case hearing.

Because TWC, §32.056 is based upon language derived from TWC, §27.018 and permit applications under TWC, Chapter 27 are subject to the HB 801 process, the commission expressed its belief that it is the legislative intent to subject TWC, Chapter 32 applications to the HB 801 process. The commission proposes that affected persons and local governments must follow the process established under the provisions of Chapter 55, Subchapters D - F in order for a contested case hearing to be granted. Under §55.211, a request for a contested case hearing is granted: 1) if made by an affected person who raises disputed issues of fact that were raised during the comment period, that were not withdrawn by the commenter by filing a withdrawal letter with the chief clerk prior to the filing of the executive director's response to comment, and that are relevant and material to the commission's decision on the application; is timely filed with the chief clerk; 2) is pursuant to a right to hearing

authorized by law; and 3) complies with the requirements of §55.201, Requests for Reconsideration or Contested Case Hearing. Under §55.203 governmental entities, including local governments and public agencies, with authority under state law over issues raised by the application may be considered affected persons.

*Section 222.37, Compliance History*

Proposed new §222.37 would establish the method for evaluating the compliance history of an applicant seeking authorization to operate a subsurface area drip dispersal system. TWC, §32.101(c) establishes a broader compliance history than required by 30 TAC Chapter 60, Compliance History. TWC, §32.101(c) requires that a compliance history be prepared for all entities related to or closely related to the permittee, while Chapter 60 requires that a compliance history be prepared for the permitted entity only.

*Section 222.39, Term of the Permit*

Proposed new §222.39 would establish the term of a permit. Texas Land Application Permits are permitted for a maximum of ten-year terms, and the maximum permit term for subsurface area drip dispersal systems is set at ten years.

*Section 222.41, Right of Entry*

Proposed new §222.41 would establish parameters for commission representatives to enter the facility where a subsurface area drip dispersal system is located. TWC, §32.151 establishes the power to enter property, addressing commission staff, authorized agents, and employees of local government.

Employees of local governments are not addressed in this section as included in TWC, Chapter 32, since the commission's jurisdiction does not extend to employees of local government. TWC, §26.173 grants local government the same power as the commission is granted in TWC, §26.014, to enter property for the purpose of inspecting and investigating conditions relating to the quality of water in the state or compliance with any rule, regulation, or permit.

*Section 222.43, Construction Notices to Regional Office*

Proposed new §222.43 would establish the requirements for the permittee to notify the appropriate regional office of construction milestones. Regional office staff may be able to prevent substandard subsurface area drip dispersal systems from being installed during the construction process, and therefore, protect the environment and possibly offer a cost savings to the permittee when noncompliance with rules or permit requirements can be discovered before construction is complete.

*Section 222.45, Local Health Department Notification*

Proposed new §222.45 would establish the procedure for the permittee to notify the local health department of the installation and operation of a subsurface area drip dispersal system, as required by TWC, §32.102(b).

*Subchapter C, Siting Requirements and Effluent Limitations*

*Section 222.71, Site Selection*

Proposed new §222.71 would establish §309.12, Site Selection to Protect Groundwater or Surface Water, as the criteria for site selection of a subsurface area drip dispersal system.

*Section 222.73, Soil Evaluation*

Proposed new §222.73 would establish the criteria for performing a soil evaluation of the site proposed for a subsurface area drip dispersal system. An in-depth evaluation of the soils at the subsurface area drip dispersal system site is necessary to assess the suitability of the proposed site. It is also necessary to know the specific conditions of the chosen site in order to design a subsurface area drip dispersal system that will function properly.

*Section 222.75, Site Preparation Plan*

Proposed new §222.75 would establish the elements necessary in the site preparation plan that commission staff need to determine if the site preparation is suitable to address site-specific limitations for the proposed subsurface area drip dispersal system.

*Section 222.77, Protection of Groundwater*

Proposed new §222.77 would prohibit the pollution of groundwater and to establish procedures for determining the quality of groundwater located under a subsurface area drip dispersal system prior to installing a subsurface area drip dispersal system. The documentation of the condition of the groundwater prior to installation of a subsurface area drip dispersal system is necessary to determine if the subsurface area drip dispersal system pollutes the quality of the groundwater.

*Section 222.79, Recharge Feature Plan*

Proposed new §222.79 would establish the requirement for certification that documents the presence or absence of recharge features on the proposed site of a subsurface area drip dispersal system, and

proposes to establish the required elements of the plan to protect the recharge feature, if one is located on the site.

*Section 222.81, Buffer Zone Requirements*

Proposed new §222.81 would establish the distance required to locate the subsurface area drip dispersal system and the associated system from water features. These proposed buffer zone requirements are protective of groundwater, surface water, and public health.

*Section 222.83, Hydraulic Application Rates*

Proposed new §222.83 would establish the maximum rate at which effluent can be applied to the soil through a subsurface area drip dispersal system. The rates are based on the amount of effluent that can safely be applied to the soil and utilized by vegetation without causing seepage, percolation or surfacing of water, or an excess of nitrogen in the soil. The limits for the application rate are based on observation of subsurface area drip dispersal systems that are successfully operating and upon scientific modeling done by Bruce Lesikar, Ph.D. and Guy Phipps, Ph.D, who are associated with Texas A & M University, Texas Cooperative Extension Service. The commission proposes this requirement to ensure that groundwater is not contaminated.

Proposed §222.83(a) provides that the maximum allowable hydraulic application rate of effluent is 0.1 gallons per square foot per day (g/sf/d) assuming that: 1) the site is located west of the boundary shown in Figure 1; 2) the cover crop is non-native grasses that is over-seeded in the winter; and 3) there is at least four feet of clay or clay-loam soil below the drip emitters. The east-west boundary is

drawn along county lines closest to the 35 inch-per-year rainfall line. This new section also proposes to require the applicant to calculate the hydraulic application rate for the subsurface drip dispersal system and provides the equation for the calculation, if the applicant does not wish to use the 0.1 g/sf/d application rate or the applicant's site does not fit the criteria to use the 0.1 g/sf/d application rate.

Proposed §222.83(b) would require the applicant to calculate the allowable annual hydraulic loading rate based on nitrogen used by the vegetative cover. The proposed nitrogen application rate equation is the same equation used by several other states, as well as the United State Environmental Protection Agency (EPA). New §222.83(b) also proposes that upon approval by the executive director, the applicant may use an alternate equation.

Proposed §222.83(c) would require the applicant to design and operate the subsurface drip dispersal system based on the limiting application rate derived from the more restrictive of the application rate calculations based on either the hydraulics equation or the nitrogen loading equation.

*Section 222.85, Effluent Quality*

Proposed new §222.85 would establish the minimum quality of effluent that can be introduced into a subsurface area drip dispersal system. Limitations are established to protect the environment and public health.

*Section 222.87, Effluent Limitations*

Proposed new §222.87 would establish the effluent limitations for domestic wastewater effluent and establish the methods for determining industrial effluent limitations and the prohibitions against certain substances being discharged through a subsurface area drip dispersal system. These proposed effluent limitations are necessary to protect the environment and public health.

*Subchapter D, Design Criteria*

*Section 222.111, General Provisions*

Proposed new §222.111 would establish that approval of a subsurface area drip dispersal system by the executive director does not relieve the permittee of any liabilities or responsibilities related to designing, constructing, and operating the subsurface area drip dispersal system and the associated treatment facility in compliance with federal and state statutes, commission rules, or in a manner that protects human health and the environment. New §222.111 also proposes a provision to allow the applicant to apply for a variance from design criteria in this subchapter, provided that the variance is at least as protective of human health and the environment as the required design.

*Section 222.113, Engineering Report*

Proposed new §222.113 would set requirements for the engineering report. The engineering report is the report that accompanies the plans and specification of the subsurface area drip dispersal system and is submitted after the permit is issued. These requirements include that the report is prepared by a licensed professional engineer, includes the proposed design and the engineering justification for the

proposed design, specifications for all equipment, and maps and drawings of all pertinent features of the site and the proposed system.

*Section 222.115, Treatment System*

Proposed new §222.115 would provide the design criteria for the units and processes used to provide treatment prior to discharging effluent into the soil treatment portion of the subsurface area drip dispersal systems. The requirements of proposed §222.115 are based on standard engineering and commission practices.

Proposed §222.115(a) would give the applicant the option to use the design criteria in 30 TAC Chapter 317, Design Criteria for Sewerage Systems, as the requirements for designing, installing, and operating the system of a subsurface area drip dispersal system. The requirements of Chapter 317 have been adopted by the commission as the standard for sewage system designs.

Proposed §222.115(b) would give the applicant the option to use the design criteria in Chapter 285, Subchapter D, Planning, Construction, and Installation of OSSFs, if the applicant plans to use septic tanks as the treatment system. The requirements of Chapter 285 have been adopted by the commission as the standard for septic system designs.

Proposed §222.115(c) would provide the design criteria for anaerobic biological reactors. The requirements of proposed §222.115(c) are based on standard engineering and commission practices.

Proposed §222.115(d) would provide the design criteria for sand filters. The requirements of proposed §222.115(d) are based on standard engineering and commission practices.

Proposed §222.115(e) would require that the design for the subsurface area drip dispersal system include the criteria for solids removal from the treatment unit.

Proposed §222.115(f) would establish that the treatment unit be designed to process the flow of the facility supplying the sewage. Most sewage systems experience peaks and valleys in flow rates and with some systems, those peaks are significant. Recreational facilities that are used more on the weekends or in the summer months, churches, and sports facilities with grandstands are some examples of systems that would require the treatment system to be able to process a significantly higher peak flow than the average daily flow.

*Section 222.117, Dispersal System Design*

Proposed new §222.117 would establish the design criteria for the systems that discharge the effluent into the soil treatment portion of the subsurface area drip dispersal system. The requirements of proposed §222.117 are based on standard engineering and commission practices.

Proposed §222.117(a) would establish subsurface area drip dispersal system components and requirements for those components that include effluent filters, dosing tanks, pumps, control systems, supply lines, and manifolds. These components, with these minimum requirements, are necessary for the subsurface area dispersal system to operate properly.

Proposed §222.117(b) would require the permittee to include the hydraulic calculations for the pump and distribution system in the engineering report. The calculations are necessary for the evaluation of the efficacy of the design of the subsurface area drip dispersal system.

Proposed §222.117(c) would require that the permittee design the subsurface area drip dispersal system to uniformly supply effluent to all the dispersal zones. Unless effluent is evenly distributed to the dispersal zones in the subsurface area drip dispersal system, the design of the system is not valid. The efficiency and efficacy of the system rely on the uniform distribution of effluent, even to the dispersal zones farthest from the system.

Proposed §222.117(d) would establish that the permittee design the subsurface area drip dispersal system to be self-draining to prevent freezing if there is a potential for freezing in the area where the subsurface area drip dispersal system is located. This requirement will vary with the climate in the location of the subsurface area drip dispersal system. Frozen effluent in pipes and lines could cause lines to crack or break causing system malfunction or failure.

Proposed §222.117(e) would require that the permittee provide adequate velocity of flush water throughout the system during the flushing operation. This requirement ensures that the entire system is properly scoured during the flushing. The commission proposes this requirement to be consistent with standard engineering and commission practices.

Proposed §222.117(f) would require that the subsurface area drip dispersal system be equipped with backflow prevention devices to prevent the siphoning of soil and water into the emitters. Siphoning of soil and water back into the emitters could cause the emitters to clog or the system to malfunction. The commission proposes this requirement to be consistent with standard engineering and commission practices.

Proposed §222.117(g) would require the permittee to establish storm water run-on controls to minimize infiltration of precipitation into the dispersal zones. Minimization of water on the site, other than the effluent delivered to the subsurface area drip dispersal system, is required for the system to operate properly and not cause seepage or percolation. The commission proposes this requirement to be consistent with standard engineering and commission practices.

*Section 222.119, Delivery Systems*

Proposed new §222.119 would establish the requirements for the piping and pumps that deliver effluent from the treatment facility to the dispersal zones.

Proposed §222.119(a) would require the permittee to use the criteria from Chapter 317 for the piping associated with delivering treated effluent from the treatment facility to the dispersal zones.

Proposed §222.119(b) would require the permittee to use standardized nomenclature for identifying piping materials. This requirement is necessary so that commission staff can identify the type of piping used.

Proposed §222.119(c) would establish that the permittee be required to use a multiple pump system and include the design criteria for the pumps. A multiple pump system protects the operation of the subsurface area drip dispersal system by maintaining a redundant system of pumping treated effluent from the treatment facility to the dispersal zones.

Proposed §222.119(d) would require that there are valves installed for each submersible pump to assure that there is a method for regulating flow into and out of each submersible pump.

Proposed §222.119(e) would require corrosion-resistant materials in a subsurface area drip dispersal system that is subject to corrosive gases.

Proposed §222.119(f) would require that any self-priming pumps meet the requirements of §317.3, except that self-priming pumps used in subsurface area drip dispersal systems are not required to meet the solids-handling requirements found in §317.3.

Proposed §222.119(g) would require that each unit of the self-priming pump's discharge piping have a valve to regulate the flow of effluent from the pump to the dispersal zones.

*Section 222.121, Dispersal Zones*

Proposed new §222.121 would establish the design criteria for the subsurface area drip dispersal system.

Proposed §222.121(a) would require that the placement lines with emitters be installed between six and 48 inches below the surface of the soil. Six inches under the surface is the minimum depth for placement of emitters to prevent effluent from surfacing and to protect the tubing from surface activities. The 48-inch maximum depth is the maximum depth allowed for injection for a system to be considered a subsurface area drip dispersal system according to the definition of a subsurface area drip dispersal system defined in TWC, §32.002(a)(8).

Proposed §222.121(b) would require that the subsurface area drip dispersal system be divided into different dispersal zones. The subsurface area drip dispersal system must be able to treat and disperse the entire permitted flow with the greater of one dispersal zone or 10% of the total number of dispersal zones out of service.

Proposed §222.121(c) would require that the layout of the dispersal lines follow the contour of the site and not exceed 1% lateral slope. More than a 1% lateral slope prevents the even distribution of effluent to all emitters in all zones. The efficiency and efficacy of the system rely on the uniform distribution of effluent.

Proposed §222.121(d) would require that the engineering report include the design and specifications for each dispersal zone. This information is necessary to evaluate the efficacy of the design.

Proposed §222.121(e) would require that emitters shall be spaced not less than one foot, nor more than three feet, on center, unless a variance is granted due to specific conditions of the subsurface area drip

dispersal systems or the location. With less than one foot centers, there is a potential for wetting zone overlap from adjacent emitters that could cause subsoil seepage or percolation. With more than three feet centers, soil moisture would not be evenly distributed over the site and there would be patches of vegetative cover that would not receive adequate water or nutrients.

Proposed §222.121(f) would require the disinfection of the drip lines and emitters according to the degree and frequency determined by the design engineer to keep the system functioning properly and not clogging. No schedule has been imposed by the rule because different systems have different requirements. New §222.131(f) proposes to allow the applicant to submit the criteria and then requires the permittee to comply with the criteria submitted.

Proposed §222.121(g) would require that the subsurface area drip dispersal system be equipped with audible and visual alarms that will activate in case of a problem with the system. An audio-visual alarm is necessary to alert anyone in the area that there is a problem with the system. Proposed §222.131(g) also requires that subsurface area drip dispersal systems that are not manned daily have a telemetry system to notify a responsible party of a system problem. Because the majority of a subsurface area drip dispersal system is underground, alarms and telemetry are necessary to notify a responsible party, usually the operator, that a problem exists. Early warning systems prevent system failures and protect human health and the environment by notifying the operator of a problem before the system is compromised or a spill or discharge occurs.

*Section 222.123, Controls*

Proposed new §222.123 would establish the design criteria and components necessary for the automated control of the subsurface area drip dispersal system and the associated equipment. Because consistently even distribution of effluent is necessary for the subsurface area drip dispersal system to operate properly and much of the operation is underground, the operations must be constantly monitored by electronic means. Proposed §222.123 would establish the equipment standards and operational standards necessary to ensure that the operator is aware of how the system is functioning so that adjustments or repairs can be made in a timely manner.

*Section 222.125, Vertical Separation*

Proposed new §222.125 would establish the minimum separation distances between the subsurface area drip dispersal system to ensure that there is adequate soil for the system to operate properly and to protect groundwater. This section also proposes to allow the permittee to request a variance if soil conditions at the specific subsurface area drip dispersal system site do not meet the requirements of this section. If a variance is granted, the executive director may impose alternate methods of preventing pollution.

*Section 222.127, Storage*

Proposed new §222.127 would establish the minimum storage capacity for a subsurface area drip dispersal system. Minimum storage capacity is necessary to protect the environment if the system has a mechanical failure, requires maintenance, or if weather conditions prevent the application of effluent through the subsurface area drip dispersal system.

*Subchapter E, Operations and Maintenance*

*Section 222.151, Seepage and Percolation Prohibited*

Proposed new §222.151 would prohibit the effluent from leaving the root zone through either seepage or percolation. TWC, §32.3(8) defines a subsurface area drip dispersal system, in part, as a means of waste disposal that spreads waste over a large enough area that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded. Seepage and percolation would occur only if the soil hydrologic absorption rate and the crop/plant root absorption rate are exceeded. Proposed §222.151 would allow leaching sufficient to maintain the health of the cover crop.

*Section 222.153, System Flushing*

Proposed new §222.153 would establish the minimum frequency and method to flush the subsurface area drip dispersal system piping and emitters. Flushing is necessary to clear sediment and bacterial slime from the piping and emitters and to prevent clogging.

*Section 222.155, Soil Moisture Sampling*

Proposed new §222.155 would establish that certain subsurface area drip dispersal system permittees must sample soil moisture and prescribe the method to sample the presence of moisture beneath the dispersal zones. If groundwater is located under the subsurface area drip dispersal system site, soil moisture monitoring may be added to the permit by the executive director. Soil moisture sampling is necessary if groundwater is present to ensure that the subsurface area drip dispersal system is operating properly and not threatening groundwater.

*Section 222.157, Soil Sampling*

Proposed new §222.157 would require that the permittee sample soils in the dispersal zones for the presence of nutrients. A build-up of nutrient could harm or degrade the cover vegetation or leach out of the root zone and potentially impact groundwater.

Proposed §222.157(a) would provide that the soil nutrient sampling be performed during the same 45-day period on an annual basis. A consistent sampling protocol is necessary to assess the change over time in the nutrient levels in the soil beneath a subsurface area drip dispersal system.

Proposed §222.157(b) would require that the permittee submit the results of the soil samples by September 1 following the sampling event.

Proposed §222.157(c) would enumerate the nutrients for which the permittee must sample.

Proposed §222.157(d) would establish the depths at which the samples must be taken.

Proposed §222.157(e) would allow the permittee to request an alternate sampling schedule and requires the permittee to comply with any alternate sampling schedule that has been approved by the executive director.

Proposed §222.157(f) would allow the permittee to request alternate sampling depths and frequencies with justification that the alternate depths and frequencies sufficiently monitor the levels of nutrients in the soil beneath the subsurface area drip dispersal system.

Proposed §222.157(g) would establish that soil samples be collected from each different type of soil in the subsurface area drip dispersal system. Because nutrients behave differently in different soil types, a sample from each soil type within the dispersal zones is necessary to evaluate the nutrient loading in the soils of the subsurface area drip dispersal system.

Proposed §222.157(h) would establish that the soil samples be composite soil samples and at least one sample be taken from each dispersal zone. Because application rates can vary from dispersal zone to dispersal zone, a composite sample from each zone is necessary to evaluate the nutrient loading in the soils of the subsurface area drip dispersal system.

Proposed §222.157(i) would provide that if alternate samples or sampling methods or schedules are required by the executive director, the permittee must comply.

*Section 222.159, Operator Licensing*

Proposed new §222.159 would establish the minimum classification of licensure held by an operator of a domestic wastewater treatment facility that uses a subsurface area drip dispersal system and the subsurface area drip dispersal system. The subsurface area drip dispersal system must be operated by a chief operator holding a Class A, B, or C wastewater operator license. Proposed §222.159 would

also require that operators of all subsurface area drip dispersal systems receive training relevant to the specific systems they are to operate. Because subsurface area drip dispersal systems are an innovative technology and require a consistently high quality of effluent to prevent clogging and malfunction, the use of a wastewater operator with more experience and training than is normally required for other land application disposal systems is appropriate.

*Section 222.161, Vegetative Cover*

A key component of a subsurface area drip dispersal system is the vegetative cover that utilizes both the water and the nutrient components of the effluent. Proposed new §222.161 would establish requirements for minimum standards for planning, reporting, and maintaining the vegetative cover portion of a subsurface area drip dispersal system.

*Section 222.163, Closure Requirements*

Proposed new §222.163 would establish the requirements for decommissioning a subsurface area drip dispersal. Proper closure is required to protect the environment and prevent pollution.

**FISCAL NOTE: COSTS TO STATE AND LOCAL GOVERNMENT**

Nina Chamness, Analyst, Strategic Planning and Grants Management Section, determined that for the first five-year period the proposed new rules are in effect, no significant fiscal implications are anticipated for the agency or other units of state or local governments as a result of administration or enforcement of the proposed new rules.

The proposed rulemaking complies with the requirements of HB 2651, which added Chapter 32 to the TWC and required the commission to establish a new permit program for subsurface area drip dispersal systems by July 31, 2006. A subsurface area drip dispersal system is defined by statute as a waste disposal system that injects processed commercial, industrial, or municipal waste into the ground at a depth of not more than 48 inches and spreads the waste over a large enough area so the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded. The proposed new rules will regulate the disposal, by a subsurface area drip dispersal system, of any water-dominant domestic or municipal liquid waste with the potential to cause fresh water pollution when such wastewater effluent exceeds 5,000 gpd. The proposed new rules will regulate the disposal, by a subsurface area drip dispersal system, of any water-dominant commercial industrial wastewater of any flow capacity. However, the proposed rulemaking excludes liquid wastes from oil and gas, tar sands, sulfur, brine from desalination, or hazardous wastes, as defined by THSC, §361.003, from subsurface area drip dispersal systems requirements.

It is estimated that there are currently 125 subsurface area drip dispersal systems operating under approved permits. This number is not anticipated to increase significantly. It is not known how many subsurface area drip dispersal systems are operated by local governments, large businesses, small businesses, or micro-businesses.

Subsurface area drip dispersal systems have previously been permitted using current rules under TWC, Chapters 26 and 27. The proposed rulemaking will formalize and specifically codify many current permitting requirements for subsurface area drip dispersal systems. No significant fiscal impact is

anticipated for local governments, businesses, or individuals requesting permits for subsurface area drip dispersal systems, but more stringent operator license and training requirements seen in proposed rules related to licenses in Chapter 30 may increase operating costs of these systems.

#### PUBLIC BENEFITS AND COSTS

Ms. Chamness also determined that for each year of the first five years the proposed new rules are in effect, the public benefit anticipated from the changes seen in the proposed new rules will be implementation of state law and the establishment of the permitting requirements and process for subsurface area drip dispersal systems.

The proposed rulemaking will formalize and specifically codify many current permitting requirements applicable to subsurface area drip dispersal systems under existing commission permitting programs. No significant fiscal impact is anticipated for local governments, businesses, or individuals requesting permits for subsurface area drip dispersal systems, but more stringent operator license and training requirements seen in proposed rules related to licenses in Chapter 30 may increase operating costs of these systems.

#### SMALL BUSINESS AND MICRO-BUSINESS ASSESSMENT

No adverse fiscal implications are anticipated for small or micro-businesses as a result of this proposed rulemaking. The proposed rulemaking will formalize and specifically codify many current permitting requirements for subsurface area drip dispersal systems. No significant fiscal impact is anticipated for local governments, businesses, or individuals requesting permits for subsurface area drip dispersal

systems, but more stringent operator license and training requirements seen in proposed rules related to licenses in Chapter 30 may increase operating costs of these systems.

#### LOCAL EMPLOYMENT IMPACT STATEMENT

The commission reviewed this proposed rulemaking and determined that a local employment impact statement is not required because the proposed new rules do not adversely affect a local economy in a material way for the first five years that the proposed new rules are in effect.

#### DRAFT REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rules do not meet the definition of a “major environmental rule.” Under Texas Government Code, §2001.0225, “major environmental rule” means a rule the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure, and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The proposed new rules are intended to implement HB 2651, relating to the regulation of subsurface area drip dispersal systems. The proposed new rules will regulate subsurface area drip dispersal systems that beneficially reuse treated domestic or municipal wastewater effluent generated by treatment facilities of more than 5,000 gpd or industrial wastewater effluent. The proposed new rules are intended to provide a permitting procedure and criteria for using subsurface area drip dispersal systems. The proposed new rules will also require the commission to prepare a comprehensive compliance history for applicants seeking a permit under Chapter 222.

Chapter 222 is applicable to any person who operates a waste dispersal system that uniformly injects processed wastewater effluent into the ground at a depth of not more than 48 inches and spreads the waste over the area so that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded. Although the intent of the proposed new rulemaking is to protect the environment or reduce risks to human health from environmental exposure, it is not a major environmental rule because it does not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or public health and safety of the state or a sector of the state. Therefore, the proposed new rules do not meet the definition of a major environmental rule as defined in the Texas Government Code.

In addition, the proposed new rules are not subject to Texas Government Code, §2001.0225, because they do not meet the specified criteria. Texas Government Code, §2001.0225(a), applies to a rule adopted by an agency, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The proposed new rules do not meet any of these requirements. First, the proposed new rules do not exceed a standard set by federal law, because there is no comparable federal law. Second, the proposed new rules do not exceed an express requirement of state law, because they are consistent with

the express requirements of TWC, Chapter 32, and are proposed to implement HB 2651. Third, the proposed new rules do not exceed an express requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program. Fourth, the proposed new rules have not been proposed solely under the general powers of the agency, but have been proposed under the express requirements of TWC, Chapter 32. The proposed new rules substantially advance this specific purpose by setting forth permitting procedures, criteria for subsurface area drip dispersal systems, and a comprehensive compliance history review of applicants. Therefore, the commission does not propose these rules solely under the commission's general powers. These proposed new rules do not meet the criteria for a major environmental rule as defined by Texas Government Code, §2001.0225.

The commission invites public comment on the draft regulatory impact analysis determination.

#### TAKINGS IMPACT ASSESSMENT

The commission prepared a takings impact assessment for these proposed rules under Texas Government Code, §2007.043. The purpose of this proposed rulemaking is to implement the provisions of TWC, Chapter 32. The primary purpose of this proposed rulemaking is to implement the provisions of TWC, Chapter 32, which will regulate subsurface area drip dispersal systems that beneficially reuse treated wastewater effluent generated by domestic treatment facilities of more than 5,000 gpd and industrial facilities regardless of flow. The proposed new rules are intended to provide a permitting procedure that includes scientifically based requirements for design and operation of these systems. The proposed new rules also specifically contain the intention for the commission to prepare

a more comprehensive compliance history for Chapter 222 applications. Chapter 222 applies to any person who operates a waste dispersal system that uniformly injects processed wastewater effluent into the ground at a depth of not more than 48 inches and spreads the waste over the area so that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded. The proposed new rules would substantially advance this purpose by setting forth the standards and requirements for applications, permits, and actions by the commission to carry out the responsibilities for managing beneficial reuse of treated wastewater by means of subsurface area drip dispersal systems. The promulgation and enforcement of the proposed new rules will not affect private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. The proposed new rules also will not affect private real property in a manner that restricts or limits an owner's right to the property that would otherwise exist in the absence of the governmental action. Consequently, this proposal does not meet the definition of some takings under Texas Government Code, §2007.002(5). Therefore, the proposed new rules will not constitute a taking under Texas Government Code, Chapter 2007. The commission invites public comment on this preliminary takings impact assessment.

#### CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the proposed rulemaking and found that the proposal is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 *et seq.*, and therefore, must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the proposed new rules in

accordance with Coastal Coordination Act Implementation Rules, 31 TAC §505.22, and found the proposed rulemaking is consistent with the applicable CMP goals and policies.

The CMP goal applicable to the proposed rulemaking is the goal to protect, preserve, restore, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas.

Proposed Chapter 222 meets the provisions of this goal. Proposed Chapter 222 regulates effluent applied into the soil through subsurface area drip dispersal systems and does not allow that effluent to cause pollution.

CMP policies applicable to the proposed rulemaking are located in 31 TAC §501.21, Policies for Discharge of Municipal and Industrial Wastewater to Coastal Waters. Proposed Chapter 222 complies with the policies in this section. Proposed Chapter 222 regulates effluent applied into the soil through subsurface area drip dispersal systems and does not allow that effluent to impact groundwater or surface water of any kind, including coastal waters.

Promulgation and enforcement of these proposed new rules will not violate or exceed any standards identified in the applicable CMP goals and policies because the proposed new rules are consistent with these CMP goals and policies, because these proposed new rules do not create or have a direct or significant adverse effect on any coastal natural resource areas.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed in the SUBMITTAL OF COMMENTS section of this preamble.

#### ANNOUNCEMENT OF HEARING

A public hearing on this proposal will be held in Austin on March 14, 2006, at 2:00 p.m. at the Texas Commission on Environmental Quality in Building F, Room 2210, located at 12100 Park 35 Circle.

The hearing will be structured for the receipt of oral or written comments by interested persons.

Individuals may present oral statements when called upon in order of registration. There will be no open discussion during the hearing; however, an agency staff member will be available to discuss the proposal 30 minutes prior to the hearing and will answer questions before and after the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Patricia Durón, Office of Legal Services, at (512) 239-6087. Requests should be made as far in advance as possible.

#### SUBMITTAL OF COMMENTS

Comments may be submitted to Patricia Durón, MC 205, Texas Register Team, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas, 78711-3087, or faxed to (512) 239-4808. All comments should reference Rule Project Number 2005-050-222-PR.

Comments must be received no later than 5:00 p.m., March 20, 2006. For further information, please contact Sherry Smith, Water Quality Division, at (512) 239-0571 or Louis C. Herrin, III, P.E., Water Quality Division, at (512) 239-4552.

## **SUBCHAPTER A: GENERAL PROVISIONS**

### **§§222.1, 222.3, 222.5**

#### **STATUTORY AUTHORITY**

The new sections are proposed under the general authority granted in TWC, §5.013, which establishes the general jurisdiction of the commission over other areas of responsibility as assigned to the commission under the TWC and other laws of the state; §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103 and §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under TWC, §5.013; §26.011, which provides the commission with the authority to adopt any rules necessary to carry out its powers, duties, and policies and to protect water quality in the state; §26.013, which authorizes the executive director to conduct or have conducted any research and investigations considered advisable and necessary for the discharge of the duties under this chapter; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; §32.054, which authorizes the executive director to inspect the dispersion area; and §32.151, which authorizes the commission, authorized agent, or employee of local government the power to enter property. Rulemaking authority is expressly granted to the commission to adopt rules under TWC, Chapter 32, enacted by HB 2651, §2.

The proposed new sections implement HB 2651, which added Chapter 32 to the TWC. HB 2651, §2, expressly requires the commission to adopt rules to set standards and requirements for application

permits and actions by the commission to carry out the responsibilities for management of beneficial reuse of treated wastewater.

**§222.1. Purpose and Scope.**

The purpose of this chapter is to:

(1) maintain the quality of fresh water in the state to the extent consistent with the public health and welfare and the operation of existing industries;

(2) promote the beneficial reuse of commercial, industrial, and municipal waste for the economic development of the state, thereby reducing the demand on the state's supply of fresh water;

(3) prevent underground injection that may pollute fresh water; and

(4) require the use of all reasonable methods to implement this policy.

**§222.3. Applicability.**

(a) This chapter applies to any person who operates a waste dispersal system that:

(1) injects processed commercial, industrial, or municipal wastewater effluent into the ground at a depth of not more than 48 inches; and

(2) spreads the waste over the area so that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded.

(b) This chapter does not apply to:

(1) wastewater disposal systems authorized under Chapter 285 of this title (relating to On-Site Sewage Facilities) and Texas Health and Safety Code (THSC), Chapter 366;

(2) disposal systems for oil and gas waste, tar sands, sulfur, brine from desalination plants, and hazardous waste as defined by THSC, §361.003;

(3) drainfields, leaching chambers, or other gravity trench systems;

(4) subsurface drip irrigation systems that do not meet the definition of subsurface area drip dispersal systems, as defined in §222.5 of this title (relating to Definitions); or

(5) systems regulated in §331.8 of this title (relating to Prohibition of Motor Vehicle Waste Disposal Wells and Large Capacity Cesspools).

**§222.5. Definitions.**

The definitions contained in Texas Water Code, §§26.001, 27.002, 28.001, and 32.003 apply to this chapter. The following words and terms, when used in this chapter, have the following meanings.

(1) **Aquifer**--As defined or amended under Chapter 331 of this title (relating to Underground Injection Control).

(2) **Buffer zone**--The area between a subsurface area drip dispersal system boundary and surface waters in the state or a protected recharge feature.

(3) **Crop requirement**--The amount of nutrients that must be present in order to ensure that the crop nutrient needs are met, while accounting for nutrients that may become unavailable to the crop due to absorption to soil particles or other natural causes.

(4) **Domestic waste**--Waste and wastewater from humans and household operations that are discharged to a wastewater collection system or otherwise enters a treatment facility. This includes waterborne human waste and waste from domestic activities such as washing, bathing, and food preparation, including graywater and blackwater.

(5) **Emitter**--A device designed to discharge into the soil, a small uniform flow of water at a constant rate.

(6) **Evapotranspiration**--The water lost from an area through the combined effects of evaporation from the ground surface and transpiration from the vegetation.

(7) **Facility**--All land and fixtures, structures, or appurtenances used for storing, processing, treating, or disposing of waste, or for injection activities. A facility may consist of several storage, processing, treatment, disposal, or injection operational units.

(8) **Floodway**--A channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the surface elevation more than one foot.

(9) **Fresh water**--As defined or amended under Texas Water Code, §27.002.

(10) **Groundwater**--Subsurface water occurring in soils and geologic formations that are fully saturated year-round, seasonally, or intermittently.

(11) **Hazardous waste**--Any solid waste identified or listed as a hazardous waste by the administrator of the United States Environmental Protection Agency in accordance with the federal

Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, 42 United States Code, §§6901 *et seq.*, as amended.

(12) **Hydrologic connection**--The connection and exchange between surface water and groundwater.

(13) **Industrial waste**--Any non-domestic wastewater.

(14) **Infiltration**--The passage of water through the soil surface into the soil profile.

(15) **Licensed professional engineer**--An individual licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the State of Texas.

(16) **Licensed professional geoscientist**--An individual licensed by the Texas Board of Professional Geoscientists in accordance with its requirement for professional practice in the State of Texas.

(17) **Local government**--An incorporated city, county, river authority, groundwater conservation district, or a water district or authority acting under Texas Constitution, Article III, §52 or Article XVI, §59.

(18) **Owner**--The person, corporation, partnership, or other legal entity that owns or partially owns a facility or part of a facility, or that owns or partially owns the land on which a facility or part of a facility is located.

(19) **Public contact**--Significant dermal contact with soil.

(20) **Recharge feature**--Those natural or artificial features either on or beneath the ground surface at the site that provide or create a significant hydrologic connection between the ground surface and the underlying groundwater within an aquifer. Significant artificial features include, but are not limited to, wells and excavation or material pits. Significant natural hydrologic connections include, but are not limited to: faults, fractures, karst features, or other macro pores that allow direct surface infiltration; a permeable or shallow soil material that overlies an aquifer; exposed geologic formations that are identified as an aquifer; or a water course bisecting an aquifer.

(21) **Soil**--The upper layer of the surface of the earth that serves as a natural medium for the growth of plants.

(22) **Subsurface area drip dispersal systems**--A waste disposal system that injects processed commercial, industrial, or municipal waste into the ground at a depth of not more than 48 inches and spreads the waste over a large enough area that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded.

(23) **Surface water in the state**--Water in the state as defined in Texas Water Code, §26.001(5), except that “groundwater, percolating or otherwise,” is specifically excluded.

**SUBCHAPTER B: ADMINISTRATIVE PROCEDURES**

**§§222.31, 222.33, 222.35, 222.37, 222.39,  
222.41, 222.43, 222.45**

**STATUTORY AUTHORITY**

The new sections are proposed under the general authority granted in TWC, §5.013, which establishes the general jurisdiction of the commission over other areas of responsibility as assigned to the commission under the TWC and other laws of the state; §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103 and §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under TWC, §5.013; §26.011, which provides the commission with the authority to adopt any rules necessary to carry out its powers, duties, and policies and to protect water quality in the state; §26.013, which authorizes the executive director to conduct or have conducted any research and investigations considered advisable and necessary for the discharge of the duties under this chapter; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; §32.054, which authorizes the executive director to inspect the dispersion area; and §32.151, which authorizes the commission, authorized agent, or employee of local government the power to enter property. Rulemaking authority is expressly granted to the commission to adopt rules under TWC, Chapter 32, enacted by HB 2651, §2.

The proposed new sections implement HB 2651, which added Chapter 32 to the TWC. HB 2651, §2, expressly requires the commission to adopt rules to set standards and requirements for application

permits and actions by the commission to carry out the responsibilities for management of beneficial reuse of treated wastewater.

**§222.31. Application Process.**

(a) An owner of a subsurface area drip dispersal system shall apply for a permit in accordance with the provisions of this section for any subsurface area drip dispersal system that did not have an application for a subsurface area drip dispersal system permit that had been declared administratively complete or was authorized by a permit in effect at the time of the adoption of these rules.

(b) A permittee who holds a valid permit for a subsurface area drip dispersal system issued prior to July 31, 2006, and who wishes to renew that permit shall apply for a permit according to the requirements of this chapter upon the expiration date of the current permit.

(c) A permittee who holds a valid permit for a subsurface area drip dispersal system issued prior to July 31, 2006, and who wishes to amend that permit shall apply for a permit amendment according to the requirements of this chapter.

(d) Application for a permit shall be made on forms provided by the executive director. Applicants shall comply with §§305.41, 305.43, 305.44, 305.46, and 305.47 of this title (relating to Applicability; Who Applies; Signatories to Applications; Designation of Material as Confidential; and Retention of Application Data).

(e) Upon receiving an administratively complete application for a permit, the executive director shall:

(1) inspect the location of the proposed subsurface area drip dispersal system to evaluate the local conditions and the probable effect of the subsurface area drip dispersal system;

(2) forward a copy of the permit application to the Texas Department of State Health Services for the purpose of soliciting comments on the application; and

(3) allow 30 days for the Texas Department of State Health Services to submit comments on the permit application.

(f) The applicant shall submit an application that demonstrates compliance with the technical requirements set forth in this chapter and shall demonstrate compliance with the requirements of Subchapter C of this chapter (relating to Siting Requirements and Effluent Limitations).

(g) The applicant shall include the site preparation plan in the permit application packet. The site preparation plan shall comply with the requirements of §222.75 of this title (relating to Site Preparation Plan).

(h) The applicant shall provide such additional information in support of the application as may be necessary, as determined by the executive director, for an adequate technical review of the application.

(i) Each applicant and permittee shall comply with §§305.61 and 305.63 - 305.68 of this title (relating to Applicability; Renewal; Transfer of Permits; Permit Denial; Suspension and Revocation; Revocation and Suspension Upon Request or Consent; and Action and Notice on Petition for Revocation or Suspension).

(j) The permittee must file the application for renewal of an existing permit no later than 180 days before the expiration date of the current permit. Upon request, the executive director may grant an exception to this requirement, but in no case may the executive director grant permission for applications to be submitted later than the expiration date of the existing permit.

(k) Except as provided in §222.33(b) of this title (relating to Public Notice), notice, public comment, and hearing on applications shall be conducted in accordance with commission rules governing individual permits issued under Texas Water Code, Chapter 26. Each permittee shall comply with §305.125 of this title (relating to Standard Permit Conditions).

(l) A permittee who holds a valid permit for a subsurface area drip dispersal system under Texas Water Code, Chapter 26 issued prior to July 31, 2006, may apply for and be granted a variance

from the site requirements and design criteria in this chapter, if the subsurface area drip dispersal system is:

\_\_\_\_\_ (1) not in need of repair;

\_\_\_\_\_ (2) not causing pollution as determined by the executive director;

\_\_\_\_\_ (3) not causing soil saturation or a build-up of waterborne constituents within the soil;

\_\_\_\_\_ (4) not prohibited by §213.8 of this title (relating to Prohibited Activities);

\_\_\_\_\_ (5) not prohibited by §331.8 of this title (relating to Prohibition of Motor Vehicle Waste Disposal Wells and Large Capacity Cesspools); and

\_\_\_\_\_ (6) the permittee is not a poor performer or repeat violator as defined in §60.3(a) of this title (relating to Use of Compliance History) or has other compliance history issues that may indicate the lack of ability of the permittee to comply with the permit and commission rules.

**§222.33. Public Notice.**

(a) For the purpose of public notices, subsurface area drip dispersal systems shall be subject to the same public notice provisions required for wastewater discharge permits described in §39.403(b)(2) of this title (relating to Applicability).

(b) Applicants for subsurface area drip dispersal system permits shall comply with the regulations regarding public notice of applications for wastewater discharge permits found in Chapter 39 of this title (relating to Public Notice).

**§222.35. Requests for Reconsideration and Contested Case Hearing and Public Comment.**

Chapter 55, Subchapters D - F of this title (relating to Applicability and Definitions; Public Comment and Public Meetings; and Requests for Reconsideration or Contested Case Hearing) will apply to applications for permits authorizing subsurface area drip dispersal systems.

**§222.37. Compliance History.**

(a) A compliance history will be prepared and evaluated in accordance with Chapter 60 of this title (relating to Compliance History) for each of the following entities that have activities that are subject to regulation by the commission:

(1) the owner of the wastewater treatment facility supplying effluent to the subsurface area drip dispersal system;

\_\_\_\_\_ (2) the owner of the land where a wastewater treatment facility supplying effluent to the subsurface area drip dispersal system is located;

\_\_\_\_\_ (3) the owner of the subsurface area drip dispersal system;

\_\_\_\_\_ (4) the owner of the land where a subsurface area drip dispersal system is located;

\_\_\_\_\_ (5) each business entity that is related to the applicant(s). Business entities are related for the purposes of this requirement, if the business entities share:

\_\_\_\_\_ (A) the same owner(s) or partial owner(s); or

\_\_\_\_\_ (B) the same member(s) of a partnership; or

\_\_\_\_\_ (6) each business entity that is managed by the permittee.

\_\_\_\_\_ (b) If the owner of a subsurface area drip dispersal system is a governmental body or a subdivision of that governmental body, a compliance history will be prepared for that governmental body, such as:

\_\_\_\_\_ (1) a city;

\_\_\_\_\_ (2) a county;

\_\_\_\_\_ (3) a military base;

\_\_\_\_\_ (4) a state or federal agency, commission, or department; or

\_\_\_\_\_ (5) a quasi-governmental agency created by federal or state legislatures.

**§222.39. Term of the Permit.**

\_\_\_\_\_ The term of the permit shall not exceed ten years, in accordance with §305.127 of this title (relating to Conditions To Be Determined for Individual Permits).

**§222.41. Right of Entry.**

\_\_\_\_\_ Inspection and entry shall be allowed under Texas Water Code, Chapters 26 - 28 and 32, Texas Health and Safety Code, §§361.032, 361.033, 361.037, and 401.063, and 40 Code of Federal Regulations, §122.41(i). The statements in Texas Water Code, §26.014 and §32.151, that commission entry of a facility shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility, but merely describes the commission's duty to observe appropriate rules and regulations during an inspection.

**§222.43. Construction Notices to Regional Offices.**

(a) The permittee shall notify the appropriate Texas Commission on Environmental Quality (TCEQ) regional office at least 30 days prior to the date field layout and/or construction startup is scheduled to begin.

(b) If soils are to be imported, the permittee shall notify the TCEQ regional office at least 30 days prior to completion of the soil importing project.

(c) The permittee shall notify the appropriate TCEQ regional office at least 30 days prior to the date that construction is projected to be complete.

(d) The permittee shall notify the appropriate TCEQ regional office within 30 days after operation of the subsurface area drip dispersal system begins.

**§222.45. Local Health Department Notification.**

(a) Before commencing operation of the subsurface area drip dispersal system, the permittee must submit a copy of the permit to the health department with jurisdiction in the area where the system is located.

(b) The permittee must retain proof of delivery for the duration of the permit.

**SUBCHAPTER C: SITING REQUIREMENTS AND EFFLUENT LIMITATIONS**

**§§222.71, 222.73, 222.75, 222.77, 222.79,  
222.81, 222.83, 222.85, 222.87**

**STATUTORY AUTHORITY**

The new sections are proposed under the general authority granted in TWC, §5.013, which establishes the general jurisdiction of the commission over other areas of responsibility as assigned to the commission under the TWC and other laws of the state; §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103 and §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under TWC, §5.013; §26.011, which provides the commission with the authority to adopt any rules necessary to carry out its powers, duties, and policies and to protect water quality in the state; §26.013, which authorizes the executive director to conduct or have conducted any research and investigations considered advisable and necessary for the discharge of the duties under this chapter; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; §32.054, which authorizes the executive director to inspect the dispersion area; and §32.151, which authorizes the commission, authorized agent, or employee of local government the power to enter property. Rulemaking authority is expressly granted to the commission to adopt rules under TWC, Chapter 32, enacted by HB 2651, §2.

The proposed new sections implement HB 2651, which added Chapter 32 to the TWC. HB 2651, §2, expressly requires the commission to adopt rules to set standards and requirements for application

permits and actions by the commission to carry out the responsibilities for management of beneficial reuse of treated wastewater.

**§222.71. Site Selection.**

Site selection of a proposed subsurface area drip dispersal system is subject to the requirements in §309.12 of this title (relating to Site Selection to Protect Groundwater or Surface Water).

**§222.73. Soil Evaluation.**

(a) The applicant shall conduct and submit with the application a soils evaluation to identify the soils associated with the proposed site. At least one profile hole per soil type must be included in the evaluation. The applicant shall use soil borings, where appropriate, for enhancement of the profile hole determinations. The profile holes utilized in the site evaluation must be no more than five feet deep, or to the first continuous lateral lithic contact. The evaluation must include the following information:

(1) total depth of the profile hole;

(2) primary rooting depth;

(3) secondary rooting depth;

(4) horizon descriptions shall include:

(A) depth of the horizon;

(B) soil texture;

(C) soil structure;

(D) soil color;

(E) mottling; and

(F) percent coarse fragments;

(5) boundary descriptions (soil horizons);

(6) restrictive horizons;

(7) potential water bearing zones; and

(8) active water bearing zones.

(b) The soil evaluation shall be performed by a licensed professional geoscientist.

**§222.75. Site Preparation Plan.**

The applicant shall develop and submit, with the permit application, a site preparation plan that illustrates how site preparation will alleviate potential site-specific limitations and ensure suitability for the subsurface area drip dispersal system of wastewater. This plan must include the following if applicable:

(1) a site plan to minimize rainfall run-on and maximize rainfall runoff from the dispersal zones;

(2) design criteria to compensate for any restrictive horizons within the soil column;

(3) soil importation with descriptions of the chemical and physical characteristics of the proposed import material; and

(4) any planned removal of existing vegetation.

**§222.77. Protection of Groundwater.**

(a) A subsurface area drip dispersal system shall not pollute groundwater quality.

(b) If groundwater is present beneath the site of a proposed subsurface area drip dispersal system, the executive director may require that the baseline quality of the groundwater be documented by:

(1) sampling the quality of the first occurrence of groundwater on site for a minimum of two sample events at least 30 days apart; or

(2) an alternative method submitted by the applicant and approved by the executive director.

(c) The executive director may impose continuing groundwater monitoring at a particular subsurface area drip dispersal system site.

**§222.79. Recharge Feature Plan.**

For new facilities and facilities undergoing an expansion of the subsurface area drip dispersal system, the applicant must supply a recharge feature plan with the application that is signed and sealed by a licensed professional engineer or a licensed professional geoscientist who has inspected the site of the proposed subsurface area drip dispersal system. The recharge feature plan must:

(1) document the presence or absence of any recharge features identified on any tracts of land owned, operated, controlled, rented, or leased by the applicant and to be used as a part of the facility;

(2) list the sources and methods used to identify the presence or absence of recharge features. At a minimum, the licensed professional engineer or geoscientist must review the records and maps maintained by the following sources:

(A) Railroad Commission of Texas;

(B) a groundwater conservation district, if applicable;

(C) Texas Water Development Board;

(D) the commission;

(E) Natural Resources Conservation Service;

(F) a previous owner of the site, if available; and

(G) on-site inspection;

(3) provide a narrative description of the site-specific geology and groundwater at the facility. The narrative must include, at a minimum, the following information:

(A) a site-specific description of the geologic formations underlying the facility;

(B) the depth to groundwater;

(C) the general direction of groundwater flow;

(D) potential uses of the groundwater and any known uses of the groundwater within a 1/2 mile radius of the perimeter of the proposed subsurface area drip dispersal system site;  
and

(E) any well drillers' logs and water quality data obtained for wells on the subsurface area drip dispersal system site and within 500 feet of the property line; and

(4) identify measures to prevent impacts to groundwater from any recharge features present. The licensed professional engineer or licensed professional geoscientist must include at least one of the following in the plan:

(A) provisions for the installation of the necessary and appropriate protective measures for each located recharge feature, including impervious cover, berms, buffer zones, or other equivalent protective measures; or

(B) submission of a detailed groundwater monitoring plan covering all of the affected facility, including the subsurface area drip dispersal system. At a minimum, the groundwater monitoring plan shall specify the location of proposed monitoring wells, procedures to collect a groundwater sample from representative wells, the proposed constituents to be included in the sampling plan, and frequency of the sampling event; and, provide for any other similar method or approach demonstrated by the applicant to be protective of any associated recharge feature and approved by the executive director.

**§222.81. Buffer Zone Requirements.**

(a) The permittee must locate the subsurface area drip dispersal system a minimum horizontal distance of:

(1) 500 feet from public water wells, springs, or other similar sources of public drinking water;

(2) 150 feet from private water wells as described in §309.13(c)(1) of this title (relating to Unsuitable Site Characteristics); and

(3) 100 feet from surface waters in the state.

(b) The permittees must locate the wastewater treatment plant unit in accordance with §290.41(c)(1)(B) of this title (relating to Water Sources) and §309.13(c) of this title.

(c) Buffer variance.

(1) The executive director may grant a variance to a permittee operating a subsurface area drip dispersal system under an existing authorization issued prior to November 1, 2006, to continue the operation and use of any existing subsurface area drip dispersal system located within the buffer zones listed in this section provided that the system:

(A) is in compliance with the recharge feature plan required by §222.79 of this title (relating to the Recharge Feature Plan); or

(B) is certified by a licensed professional engineer or licensed professional geoscientist determining that the existing buffers will be protective of water quality.

(2) The permittee shall maintain documentation authorizing variances of buffer zones on site for the duration of the permit and make it available to commission personnel upon request.

(d) The permittee shall not locate a subsurface area drip dispersal system within a floodway.

**§222.83. Hydraulic Application Rate.**

(a) The permittee must demonstrate in the engineering report and ensure that the hydraulic application rate for a subsurface area drip dispersal system meets one of the following.

(1) The hydraulic application rate for a subsurface area drip dispersal system located west of the boundary shown in paragraph (2) of this subsection, Figure 1, and using a vegetative cover of non-native grasses that are over seeded with cool season grasses in the winter months (October - March) shall not exceed 0.1 gallons per square foot per day.

(2) The hydraulic application rate for a subsurface area drip dispersal system located east of the boundary shown in Figure 1 of this paragraph or in any part of the state when the vegetative cover is any crop other than non-native grasses, the permittee shall use the following equations to establish the rate.

Figure 1: 30 TAC §222.83(a)(2)



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Figure 2: 30 TAC §222.83(a)(2)

$$AR = ET - RAINe + LEACH.$$

Where:

**AR** = hydraulic application rate (inches per month)

**ET** =  $ET_o \times K_c$ , the actual water requirement of crop (inches per month)

**ET<sub>o</sub>** = potential evapotranspiration (inches per month)

**K<sub>c</sub>** = crop coefficient (decimal)  $K_c$  ranges from 0.5 to 1.0

**RAIN<sub>e</sub>** =  $RAIN \times EF\%$ , the effective rainfall (inches per month)

**RAIN** = total rainfall (inches per month)

**EF%** = effective rainfall percentage is the portion of rainfall/precipitation (inches) that infiltrates into the soil. An EF% of any value other than 0.67 must be justified by the applicant and approved by the executive director.

**LEACH** = leaching volume (inches per month). The leaching fraction may be determined using the electrical conductivity ( millimhos/cm at 25° C) of the applied water and targeted soil salinity level (see §309.20(b)(3)(A) of this title (relating to Land Disposal of Sewage Effluent); or

Figure 3: 30 TAC §222.83(a)(2)

**SM<sub>a</sub>** =  $ET - RAIN_e + LEACH - AR$ .

Where:

**SM<sub>a</sub>** - change in available soil moisture and is calculated from the soil depth and soil water holding capacity. Soil water holding capacity is defined as the

volume of water (inches) held in the soil between field capacity and permanent wilting point.

(3) The applicant must calculate the hydraulic application rate for each month of the year. A monthly water balance is computed that includes soil moisture storage. Any available soil moisture is carried over to the next month. The maximum application rate is exceeded when the total hydraulic loading (rainfall and irrigation) exceeds the total of the available soil moisture storage, the actual water requirement of crop (inches per month), and leaching.

Figure: 30 TAC §222.83(a)(3)

Soil Water Holding Capacity	
Soil	Holding Capacity
Clay	2.1
Clay Loam	2.0
Loam	1.7
Sand	0.9
Sandy Loam	1.4

(4) The permittee may use an alternative method to calculate the hydraulic application rate with the approval of the executive director.

(b) The nitrogen application rate for a subsurface area drip dispersal system must be calculated using the anticipated nitrogen concentration of wastewater effluent prior to land application.

(1) The permittee must calculate the allowable annual hydraulic loading rate based on nitrogen limits using the following equation.

Figure: 30 TAC §222.83(b)(1)

$$Lw_{(n)} = (Cp)(Pr-ET) + (U)(4.4). \\ (1-f)(Cn) - Cp$$

Where:

**Lw<sub>(n)</sub>** = allowable annual hydraulic loading rate based upon nitrogen limits in inches per year

**Cp** = total nitrogen concentration in soil solution in milligrams per liter. The soil solution contains small but significant quantities of soluble inorganic and organic compounds, some of which contains elements that are essential for plant growth.

**Pr** = precipitation rate in inches per year

**ET** = evapotranspiration rate in inches per year,

**U** = nitrogen uptake by crop in pounds per acre per year

**4.4** = combined conversion factor

$C_n$  = total nitrogen concentration in wastewater at time of application to land in milligrams per liter

$f$  = fraction of applied nitrogen removed by denitrification and volatilization and assumed to be 0.20.

(2) Upon request by the applicant, the executive director may approve other fractions of applied nitrogen removed based upon special conditions relating to a proposed site, if justified in the engineering report.

(c) The result obtained from calculation of the allowable annual hydraulic loading rate that is based upon nitrogen limits must be compared to the hydraulic loading rate that is based on crop need and soil water holding capacity. The more restrictive of the two calculations will set the maximum hydraulic application rate.

**§222.85. Effluent Quality.**

(a) Protection of fresh water. The applicant must demonstrate that both surface and subsurface fresh water will not be polluted by the application of wastewater by the subsurface area drip dispersal system.

(b) Domestic waste.

(1) The permittee shall maintain the pH of the effluent within the limits of 6.0 - 9.0 standard units in accordance with §309.20(b)(5)(E) of this title (relating to Land Disposal of Sewage Effluent), unless a specific variance is approved by the executive director based upon site-specific conditions.

(2) The permittee shall comply with specific effluent limitations placed in the permit by the executive director to control the discharge of toxic constituents.

(3) When a subsurface area drip dispersal system applies effluent on land where there is the potential for public contact with the soil, the permittee shall comply with Effluent Set 4 located in §309.4 of this title (relating to Table 1, Effluent Limitations for Domestic Treatment Plants), or with more stringent effluent limitations prescribed by the executive director, if warranted to protect human health and the environment.

(4) When a subsurface area drip dispersal system applies effluent on land where there is not potential public contact with the soil, the permittee shall comply with Effluent Set 5 located in §309.4 of this title, or with more stringent effluent limitations prescribed by the executive director, if warranted to protect human health and the environment.

(5) Disinfection.

(A) Permittees applying treated effluent to land where there is the potential for public contact with the soil must disinfect the effluent prior to it entering the subsurface area drip dispersal system in accordance with §309.3(g) of this title (relating to Application of Effluent Sets).

(B) If the effluent is to be transferred to a holding pond or tank prior to dispersal, the permittee shall ensure that the effluent meets the relevant criteria of §222.87 of this title (relating to Effluent Limitations) at the time it enters the distribution system.

(C) Permittees are allowed to use ultraviolet disinfection systems only with effluent having a daily average five-day biochemical oxygen demand (BOD<sub>5</sub>) concentration and total suspended solids concentration that are less than 20 milligrams per liter each.

(6) The permittee must comply with requirements other than those specified in this section, if determined by the executive director to be necessary to protect human health.

**§222.87. Effluent Limitations.**

(a) Domestic waste. The permittee shall comply with the effluent limitations in §309.3 and §309.4 of this title (relating to Application of Effluent Sets and Table 1, Effluent Limitations for Domestic Wastewater Treatment Plants).

(b) Industrial waste.

(1) The permittee is prohibited from introducing the following wastes into a subsurface area drip dispersal system:

(A) characteristically hazardous wastes as determined in 40 Code of Federal Regulations (CFR) Part 261, Subpart C;

(B) listed hazardous wastes as defined in 40 CFR Part 261, Subpart D;

(C) wastes specifically prohibited for land disposal in 40 CFR Part 268, Subpart C; and

(D) radioactive wastes.

(2) Effluent limitations.

(A) The permittee shall comply with effluent limitations established by the executive director in individual permits.

(B) The permittee shall demonstrate compliance with technology-based effluent limitations by monitoring the effluent prior to introduction into the subsurface area drip dispersal system.

(C) If the soil pH is less than 6.5 standard units at a subsurface area drip dispersal system site, the permittee shall monitor certain trace elements, including phosphorus, fluoride, and heavy metals as specified by the executive director in the individual permit.

(D) Prior to disposal, the permittee shall ensure that the effluent from a treatment system meets Effluent Set 5, established in §309.4 of this title.

**SUBCHAPTER D: DESIGN CRITERIA**

**§§222.111, 222.113, 222.115, 222.117, 222.119,  
222.121, 222.123, 222.125, 222.127**

**STATUTORY AUTHORITY**

The new sections are proposed under the general authority granted in TWC, §5.013, which establishes the general jurisdiction of the commission over other areas of responsibility as assigned to the commission under the TWC and other laws of the state; §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103 and §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under TWC, §5.013; §26.011, which provides the commission with the authority to adopt any rules necessary to carry out its powers, duties, and policies and to protect water quality in the state; §26.013, which authorizes the executive director to conduct or have conducted any research and investigations considered advisable and necessary for the discharge of the duties under this chapter; §26.034, which authorizes the executive director to review and approve plans and specification for domestic disposal systems; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; §32.054, which authorizes the executive director to inspect the dispersion area; and §32.151, which authorizes the commission, authorized agent, or employee of local government the power to enter property. Rulemaking authority is expressly granted to the commission to adopt rules under TWC, Chapter 32, enacted by HB 2651, §2.

The proposed new sections implement HB 2651, which added Chapter 32 to the TWC. HB 2651, §2, expressly requires the commission to adopt rules to set standards and requirements for application permits and actions by the commission to carry out the responsibilities for management of beneficial reuse of treated wastewater.

**§222.111. General Provisions.**

(a) This subchapter applies to any person who proposes to design and construct a facility that will treat or dispose of domestic or municipal wastewater and who uses a subsurface area drip dispersal system. This subchapter is not applicable to treatment facilities constructed for the purposes of complying with a commission-issued industrial wastewater permit, but is applicable to a subsurface area drip dispersal system if it is associated with an industrial wastewater treatment facility.

(b) This subchapter establishes the minimum design criteria pertaining to effluent quality necessary to meet state water quality standards. Plans, specifications, and reports for a proposed domestic wastewater project must conform to the requirements of this subchapter.

(c) The applicant for a permit for a domestic wastewater treatment facility with a subsurface area drip dispersal system shall submit to the executive director an engineering report, including the plans and specifications, that meets the requirements found in this subchapter. Construction must not begin on a facility with approved plans and specifications until the executive director issues a

wastewater permit, unless the commission authorizes the applicant to construct before permit issuance, under Texas Water Code, §26.027(c).

(d) The executive director may approve a variance from any of the design criteria in this subchapter. In accordance with §222.113 of this title (relating to Engineering Report), the applicant shall submit with the engineering report the variance request, and the technical justification for the design change and the way in which the change is at least as protective of human health and the environment as the required design criteria.

(e) Approval of the submitted engineering report, plans, or specifications by the executive director does not relieve the permittee of any liabilities or responsibilities associated with designing, constructing, and operating the subsurface area drip dispersal system and the associated treatment facility in accordance with applicable commission rules and in a manner that protects human health and the environment.

**§222.113. Engineering Report.**

The applicant shall submit an engineering report that includes the plans and specifications that:

(1) has been prepared by a licensed professional engineer;

(2) addresses the proposed design, hydraulic and organic loadings, and the basis for the design for the subsurface area drip dispersal system and the treatment system;

(3) a scale drawing of all land that is to be part of the subsurface area drip dispersal system showing the location of all existing and proposed facilities to include the following:

(A) buildings;

(B) dispersal zones;

(C) treatment facilities;

(D) effluent storage; and

(E) the buffer zones that demonstrate compliance with §222.81 of this title (relating to Buffer Zone Requirements);

(4) includes the site topography;

(5) includes storm water run-on prevention and storm water runoff accommodation;

and

(6) includes any variance requests with supporting documentation.

**§222.115. Treatment System.**

(a) For the systems and processes used to provide treatment of domestic wastewater prior to the wastewater entering the subsurface area drip dispersal system the applicant shall use the design criteria in Chapter 317 of this title (relating to Design Criteria for Sewerage Systems).

(b) If using septic tanks as the treatment system, the applicant shall design, construct, and install the tanks in accordance with Chapter 285, Subchapter D of this title (relating to Planning, Construction, and Installation of OSSFs).

(c) If using anaerobic biological reactors (ABRs) as the treatment system, the permittee must comply with the following criteria.

(1) The ABR must have a container that is a structural unit such as a concrete tank, or an earthen berm with a membrane liner that may be used for larger installations.

(A) The container must be designed for the internal and external stresses that may be placed on the container during fabrication and use.

(B) Materials used to construct an ABR structural container must meet the requirements for septic tanks in §285.32 of this title (relating to Criteria for Sewage Treatment Systems).

(C) Containers using compacted earthen berms must use a membrane of vinyl or other plastic with a minimum thickness of 40 mils as the waterproofing component.

(D) A cover is required unless a covering layer of gravel or other media is placed above the liquid level to present a dry surface.

(2) The ABR must have media that is inert, stable, of uniform size, and free of fines.

(A) Clean washed gravel, crushed rock, or plastic filter media made for trickling filter use is acceptable.

(B) Minimum media effective size must be one inch and the uniformity coefficient must be less than 3.0.

(3) The ABR must have a distribution system over the bottom of the ABR and a collection system near the top to the ABR.

(A) The piping for the distribution system must be constructed of pipe that:

(i) is class 200 or schedule 40 polyvinyl chloride (PVC);

(ii) meets American Standard Testing Material (ASTM) standards  
D-2241 or D-1785; and

(iii) has a one inch nominal diameter.

(B) The ABR must incorporate a sight well that allows monitoring the liquid  
level in the unit.

(C) The ABR must have a means to flush and remove excessive biomat  
buildup from the media.

(d) If using sand filters as the treatment system, the permittee shall use sand filters that have  
the following components and meet the following requirements.

(1) Sand filters must be contained in a structural unit designed for all internal and  
external stresses that may be placed on the containment device during fabrication and use such as:

(A) a septic tank unit that meets the requirements in Chapter 285, Subchapter  
D of this title;

(B) a poured in place concrete structure; or

(C) an earthen berm with an impermeable membrane liner that has a minimum thickness of 40 mils and an under-drain leak detection system.

(2) The permittee shall use a detention time of at least 24 hours for dosing to a sand filter at rates up to ten gallons per day per square foot.

(3) All sand filter containment devices shall provide sufficient freeboard above the filter surface to hold four dosing volumes.

(4) A sand filter must have a collection pipe system to collect the filtered effluent that meets the following requirements.

(A) The piping shall be arranged so that the maximum horizontal travel distance of water through the under-drain media is less than four feet.

(B) The collection piping and the drain pipe from the filter shall be sized to remove a filter dose volume from the filter within a ten-minute period.

(C) The ends of the collection lines shall be extended above the surface of the filter to allow aeration of the drained filter.

(D) The collection piping system shall be constructed of pipe that:

(i) is class 200 or schedule 40 PVC;

(ii) meets ASTM standards D-2241 or D-1785; and

(iii) has a two-inch nominal diameter.

(E) The sand filter media must:

(i) be an inert clean washed material that is free of fines, dirt, and organic material;

(ii) have an effective size and uniformity coefficient suitable for the design loading rate;

(iii) have a depth based on the effective grain size and the design effluent quality with coarse media requiring a greater media depth; and

(iv) be placed on top of a bottom drain media.

(F) The sand filter bottom media must:

(i) cover the effluent collection piping;

(ii) have an effective grain size from two to four times the effective grain size of the filter media; and

(iii) support the filter media, prevent washout, and hydraulic removal of the filter media.

(5) The surface distribution mechanism must distribute the liquid to be filtered over the surface of the filter in a uniform manner.

(A) If a filter receives the liquid by gravity, distribution shall be accomplished by troughs or channels using splash pads to reduce surface erosion.

(B) Pressure-dosed sand filters must have a distribution system that:

(i) provides even distribution of the liquid;

(ii) consists of a pipe network with discharge holes or spray nozzles; and

(iii) provides a uniform pressure at the discharge outlets.

(6) Loading rates and filter sizing must be designed to treat the specific characteristics of the incoming wastewater and the effluent quality.

(7) The loading rate shall be designed based on the influent qualities, the selected media, and the acceptable run time between filter media cleaning or replacement.

(e) The permittee must submit a design that specifies the minimum frequency for solids removal from the treatment system and the justification of the frequency based on the type of system and good engineering practice.

(f) The permittee shall design the treatment system with the capacity to process the peak flow from the wastewater producer. The following criteria shall be the basis to determine peak flow:

(1) wastewater design values will be determined in accordance with §317.4(a)(1) or (2) of this title (relating to Wastewater Treatment Facilities); or

(2) the peak flows of the particular waste generator when the waste generator has unusually high peak flows.

**§222.117. Subsurface Area Drip Dispersal System Design.**

(a) The permittee shall use the following design components for subsurface area drip dispersal systems:

(1) a minimum of dual 100-micron wastewater effluent filters prior to the effluent entering the subsurface area drip dispersal system. These filters must:

(A) effectively filter the peak hydraulic flows; and

(B) include control valves and piping that provide filtered effluent to flush the filters;

(2) the dosing tank(s) designed to hold at least the following volume:

(A) the daily design capacity required by the permit;

(B) effluent equal to six times the minimum dose cycle capacity of the drip lines plus the capacity of the supply and return manifold; and

(C) the following storage capacities as part of the dosing tank(s) or included in the plant design at another location:

(i) flow equalization storage;

(ii) emergency storage; and

(iii) return flows from flushing and system drainage;

(3) a duplex alternating pumping system designed:

(A) to dose and flush the dispersal zones and flush the filtration system; and

(B) with pumps sized in accordance with the hydraulic design calculations in §222.83 of this section (relating to Hydraulic Calculations);

(4) control system components that are capable of performing the following functions:

(A) flushing of the filter units;

(B) delivering a specified preprogrammed volume of effluent to each dispersal zone;

(C) automatic flushing of each drip lateral with filtered effluent;

(D) automatic dosing of chemicals intended to reduce emitter clogging, such as chlorine or oxidizing chemicals;

(E) monitoring alarm conditions;

(F) regulating the flow volume to each dispersal zone and to a sand filter,

when applicable;

(G) indicating a flow variance when flow varies more than 10% of the actual  
average daily flow;

(H) regulating pump run times;

(I) regulating the number and time of filter backwash and field flushing cycles;

and

(J) regulating the flows to the drip irrigation field system;

(5) supply lines and manifolds;

(6) zones of drip irrigation tubing;

(7) effluent manifolds;

(8) chemical dosing equipment; and

(9) flush return lines that return flushing water to the pre-application system, with provisions made to minimize disturbance of any solids in the settling chamber.

(b) The permittee shall submit the hydraulic calculations for the pump and distribution system with the engineering report. The report must address the following.

(1) Field pressure and flow variation due to friction loss and changes in static head must not exceed plus or minus 10% of the design emitter pressure or flow. The 10% difference must be the difference between any two emitters in the entire system.

(2) The system will not be allowed to initiate operations if the total flow or pressure variation is in excess of 10% of the design.

(c) The permittee shall design the subsurface area drip dispersal system to supply the effluent uniformly throughout each of the dispersal zones in the system.

(d) The permittee shall design the subsurface area drip dispersal system to be self-draining to prevent freezing if there is a potential for the soil to freeze to the depth that the pipes and lines of the subsurface area drip dispersal system are located.

(e) The permittee shall ensure that the velocity of the flush water shall be at least two feet per second at the end of each dispersal zone or return line during the flushing operation.

(f) The permittee shall equip the system with a backflow prevention device to prevent the siphoning of soil and water into the emitters.

(g) The permittee must establish stormwater run-on controls to minimize infiltration of precipitation into the dispersal zones.

**§222.119. Delivery Systems.**

(a) The permittee shall ensure that piping materials used in delivering treated effluent from the treatment facility to the dispersal zones is suitable for effluent and conforms to regulations as required by Chapter 317 of this title (relating to Design Criteria for Sewerage Systems).

(b) The permittee shall identify the piping materials by referring to the appropriate American Standard Testing Material, American National Standard Institute, or American Water Works Association specification numbers.

(c) A permittee shall use a multiple pump system for all systems requiring pumping of effluent to the dispersal zones.

(1) The permittee shall use pumps rated by the manufacturer for effluent disposal.

(2) The permittee shall use pumps that are each rated for at least 100% of the design flow.

(3) The permittee shall include the pumping capacity and pump head calculations in the plans and specifications.

(d) The permittee shall ensure that the pump discharge piping includes a check valve, union, and gate valve for each submersible pump installed.

(e) The permittee shall use piping and valves made of corrosion-resistant materials for applications subject to corrosive gases.

(f) If self-priming pumps are used for subsurface area drip dispersal systems, the permittee shall use pumps that meet at least the minimum requirements listed under §317.3 of this title (relating to Lift Station Pumps) with the exception that the pumps are not required to meet the solids-handling requirement.

(g) The permittee shall include a check and gate valve for each unit of the discharge piping for self-priming pumps.

**§222.121. Dispersal Zones.**

(a) The permittee must place lines with emitters between six and 48 inches below the surface of the soil.

(b) The permittee shall divide the subsurface area drip dispersal system into a sufficient number of different dispersal zones (at least two dispersal zones) so that the system can operate with the greater of either one dispersal zone or 10% of the total number of dispersal zones out of service.

(c) The permittee shall design the dispersal zones so that the dispersal lines follow the contour of the site and shall not exceed 1% lateral slope.

(d) The permittee shall include the dispersal zone design in the engineering report, including the following elements:

(1) the proposed line layout with:

(A) main line sizes and lengths; and

(B) individual dispersal line lengths;

(2) flushing flows;

(3) static head calculations;

\_\_\_\_\_ (4) the total proposed flow in gallons per day;

\_\_\_\_\_ (5) total length of emitter piping;

\_\_\_\_\_ (6) emitter spacing;

\_\_\_\_\_ (7) line spacing;

\_\_\_\_\_ (8) total number of lines; and

\_\_\_\_\_ (9) total number of lines to be included per flushing.

\_\_\_\_\_ (e) The permittee shall ensure that emitter and tubing spacing is on not less than one foot centers and not on greater than three feet centers, unless an exception is approved by the executive director.

\_\_\_\_\_ (f) The permittee shall disinfect the drip lines and emitters according to the degree and frequency determined by the design engineer and submitted in the engineering report along with the justification for the degree and frequency of disinfection.

\_\_\_\_\_ (g) The permittee shall equip the subsurface area drip dispersal system with audible and visual alarms that will activate in case of a problem with the system.

(1) If the subsurface area drip dispersal system is not staffed on a daily basis, the permittee shall equip the system with a telemetry device that notifies the operator in case of a system malfunction.

(2) The telemetry system must include the following components:

(A) remote access;

(B) audio/visual alarms for:

(i) flow or pressure variances; or

(ii) system failure;

(C) automated filter;

(D) zone flushing; and

(E) integrated external monitoring devices if required, such as soil moisture monitors.

**§222.123. Controls.**

(a) The permittee shall use a control system that includes a means of alternating the pumps on successive cycles.

(b) The permittee shall use a control system that allows both pumps to run at once through wet well sensors.

(c) The permittee shall use a control system with the following features:

(1) high water alarm that activates prior to any "lag pump on" activation;

(2) pump failure alarm;

(3) power outage alarm;

(4) mechanisms for testing and silencing the alarm system; and

(5) manual resetting after the alarm activates.

(d) The permittee shall ensure that all controls recommended by the manufacturer are present and in working order if using a proprietary control system.

(e) The permittee shall use telemetering of the alarms.

(f) The permittee shall house controls in a weatherproof and intruder-resistant enclosure.

(g) The permittee shall use controls that meet Underwriter's Laboratories requirements.

(h) The permittee shall ensure that installation, maintenance, and replacement of parts of the control system are performed in accordance with the National Electrical Code and all applicable federal, state, and local codes, regulations, and ordinances.

**§222.125. Vertical Separation.**

The permittee must maintain the following vertical separation distances beneath the subsurface area drip dispersal system.

(1) There must be at least five feet of soil over any sand or gravel strata.

(2) There must be at least two feet of soil over any restrictive soil horizons.

(3) There must be at least two feet of soil over any permanent or seasonal saturated zone of groundwater.

(4) The executive director may impose alternate separation requirements if necessary to protect human health and the environment.

**§222.127. Storage.**

(a) The applicant must design and install temporary storage that equals at least three days of the design flow of the facility for times when the subsurface area drip dispersal system is out of service due to an emergency or scheduled maintenance.

(b) In lieu of temporary storage, the executive director may approve an alternate method of disposing of effluent, if an alternate disposal plan is submitted by the applicant.

**SUBCHAPTER E: OPERATIONS AND MAINTENANCE**

**§§222.151, 222.153, 222.155, 222.157,  
222.159, 222.161, 222.163**

**STATUTORY AUTHORITY**

The new sections are proposed under the general authority granted in TWC, §5.013, which establishes the general jurisdiction of the commission over other areas of responsibility as assigned to the commission under the TWC and other laws of the state; §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103 and §5.105, which authorizes the commission to adopt rules and policies necessary to carry out its responsibilities and duties under TWC, §5.013; §26.011, which provides the commission with the authority to adopt any rules necessary to carry out its powers, duties, and policies and to protect water quality in the state; §26.013, which authorizes the executive director to conduct or have conducted any research and investigations considered advisable and necessary for the discharge of the duties under this chapter; §27.019, which requires the commission to adopt rules reasonably required for the regulation of injection wells; §32.054, which authorizes the executive director to inspect the dispersion area; and §32.151, which authorizes the commission, authorized agent, or employee of local government the power to enter property. Rulemaking authority is expressly granted to the commission to adopt rules under TWC, Chapter 32, enacted by HB 2651, §2.

The proposed new sections implement HB 2651, which added Chapter 32 to the TWC. HB 2651, §2, expressly requires the commission to adopt rules to set standards and requirements for application

permits and actions by the commission to carry out the responsibilities for management of beneficial reuse of treated wastewater.

**§222.151. Seepage and Percolation Prohibited.**

Seepage or percolation out of the root zone, other than leaching in the amount required to maintain the health of the vegetative cover, is prohibited.

**§222.153. System Flushing.**

The permittee shall flush the subsurface area drip dispersal system from the dispersal zone and return the flush water to a point preceding the treatment system at least once every two months.

**§222.155. Soil Moisture Monitoring.**

(a) The permittee shall comply with any requirement to monitor soil moisture to address specific soil limitations associated with a particular site, if included in the permit by the executive director.

(b) When required by the executive director, the permittee shall:

(1) monitor the soil moisture in each broadly defined soil characterization or soil textures, with at least one sample from each dispersal zone; and

(2) monitor the soil moisture at the one-foot depth, and/or at the level of existing near-surface seasonal or permanent soil saturation when either of these zones of saturation occur within the two-foot depth, below the dispersal zone.

**§222.157. Soil Sampling.**

(a) The permittee shall take soil samples within the same 45-day time frame each calendar year.

(b) Laboratory analyses of the soil samples must be submitted to the executive director by September 1 following the sampling date.

(c) The plant nutrient parameters shall be analyzed on a plant available or extractable basis. The permittee shall provide annual soil analyses of the dispersal zones for the following substances:

(1) pH (sample consisting of two volumes of water to one volume of soil mixture), in standard units;

\_\_\_\_\_ (2) conductivity (sample consisting of two volumes of water to one volume of soil mixture), reported in millimho per centimeter (mmho/cm);

\_\_\_\_\_ (3) total Kjeldahl nitrogen (TKN). Methods that rely on mercury as a catalyst are not acceptable;

\_\_\_\_\_ (4) nitrate-nitrogen;

\_\_\_\_\_ (5) plant-available potassium, reported on a dry-weight basis in milligrams per kilogram (mg/kg);

\_\_\_\_\_ (6) calcium, reported on a dry-weight basis in mg/kg;

\_\_\_\_\_ (7) Magnesium, reported on a dry-weight basis in mg/kg;

\_\_\_\_\_ (8) Sulfur, reported on a dry-weight basis in mg/kg; and

\_\_\_\_\_ (9) phosphorus, analyzed according to the Mehlich III procedure (the North American Proficiency Testing Program of the Soil Science Society of America) and reported on a dry-weight basis in mg/kg;

\_\_\_\_\_ (10) sodium, reported on a dry-weight basis in mg/kg;

(11) salinity; and

(12) trace elements as specified in the individual permit.

(d) The permittee shall take samples in:

(1) the zero to 12-inch zone of the soil; and

(2) the 12- to 24-inch zone of soil in the disposal area.

(e) If soil conditions or weather preclude sampling within the time period required, the permittee may submit a request to sample at another time. The request must include justification for the schedule change and the replacement schedule.

(f) Alternate soil sampling depths and frequency may be approved by the executive director if the permittee demonstrates that the alternate depths and frequency sufficiently monitors nutrient levels.

(g) The permittee shall collect soil composite samples from each broadly defined soil characterization or texture, as defined by the United States Department of Agriculture.

(h) The permittee shall take at least one composite soil sample from each dispersal zone.

(i) The permittee must comply with any alternate sampling methods or schedules required by the executive director.

**§222.159. Operator Licensing.**

(a) The permittee shall ensure that the facility supplying treated domestic wastewater to the subsurface area drip dispersal system and the subsurface area drip dispersal system is operated by a chief operator holding a valid Class A, B, or C wastewater operator license as defined in Chapter 30 of this title (relating to Occupational Licenses and Registrations).

(b) The permittee shall ensure that all wastewater operators have been trained to operate the specific treatment system and subsurface area drip dispersal system for which they have responsibility.

(c) Records of operator training must be made available to agency staff upon request.

(d) Any subsurface area drip dispersal system that utilizes treated domestic effluent and that is permitted under Texas Water Code, Chapter 26 before November 1, 2007, will not be required to have a chief operator with at least a Class C wastewater operator license until November 1, 2008.

**§222.161. Vegetative Cover.**

(a) The vegetative cover must be suited for the specific site characteristics, proposed site usage, and quality of effluent.

(b) The permittee shall plant and maintain a cover crop(s) that provides year-round vegetative growth.

(c) The permittee shall include in the engineering report the specific varieties of vegetation, harvest methods, and harvest frequencies to be utilized in association with the subsurface area drip dispersal system.

(d) The permittee shall maintain records documenting all activities associated with maintaining the vegetative cover, like planting, over-seeding, mowing height, fertilizing, and harvesting. Documentation shall be maintained for a minimum of five years and be made available to commission staff upon request.

**§222.163. Closure Requirements.**

(a) The permittee of a subsurface area drip dispersal system that is to be permanently discontinued or abandoned shall close the system under the standards set forth in this section.

(b) If the permittee removes all tanks, lines, and other equipment from the site, the permittee may:

(1) submit to the appropriate regional office a closure report prepared by the permittee that includes sufficient soil analyses to demonstrate that there is no soil contamination at the subsurface area drip dispersal system site; and

(2) omit the requirement to deed record the location of the closed subsurface area drip dispersal system as required by subsection (e) of this section.

(c) The permittee must conduct the closure according to a system closure plan that is prepared by or under the direct supervision of a licensed professional engineer or licensed professional geoscientist.

(d) The permittee must close the system in a manner that prohibits the movement of fluids into underground sources of drinking water, in compliance with §331.5 of this title (relating to Prevention of Pollution) and 40 Code of Federal Regulations §144.12, concerning Prohibition of Movement of Fluid into Underground Sources of Drinking Water.

(1) The permittee must remove all above ground tanks. The permittee may remove or empty, collapse in place, and cover with clean fill material any underground tanks.

(2) The permittee must cap and remove three feet of the end sections of pipes that convey waste between the pump house and the dispersal lines. The permittee must cut and cap pipes every 500 linear feet between the pump house and the dispersal field.

(3) The permittee shall remove all valves and plug the lines where the valves are located.

(e) If soil, gravel, sludge, liquids, or other materials associated with the system are contaminated, the material must be disposed or otherwise managed in accordance with Chapter 350 of this title (relating to Texas Risk Reduction Program) and all other applicable federal, state, and local regulations and requirements.

(f) The permittee must deed record the location of the closed subsurface area drip dispersal system in the deed records of the county in which the site is located.

(g) The permittee shall submit within 60 days after closing the system a closure report:

(1) that has been prepared by a licensed professional engineer or licensed professional geoscientist;

(2) that certifies that closure was in accordance with the requirements of this section and in a manner that will prevent pollution; and

(3) includes evidence of deed recordation.