

The Texas Commission on Environmental Quality (commission) adopts 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.

Sections 222.1, 222.3, 222.33, 222.35, 222.39, 222.41, 222.43, 222.45, 222.71, 222.75, 222.77, 222.83, 222.111, 222.113, 222.119, 222.127, 222.153, 222.155, 222.157, 222.159, and 222.161 are adopted *without changes* to the proposed text as published in the February 17, 2006, issue of the *Texas Register* (31 TexReg 976) and will not be republished. Sections 222.5, 222.31, 222.37, 222.73, 222.79, 222.81, 222.85, 222.87, 222.115, 222.117, 222.121, 222.123, 222.125, 222.151, and 222.163 are adopted *with changes* to the proposed text and will be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED 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 adopts 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 adopted rules 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 domestic systems with a capacity of less than 5,000 gpd. There has been legislative and stakeholder consensus that current regulations are adequate for domestic 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 adopts additional rulemaking in 30 TAC Chapter 30, Occupational Licenses and Registrations; Chapter 55, Requests for Reconsideration and Contested Case Hearings and 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

Adopted §222.1 establishes 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

Adopted §222.3 establishes to which systems the chapter does and does not apply. The chapter applies to subsurface area drip dispersal systems that inject treated effluent 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

Adopted §222.5 defines the terms used in this chapter.

#### *Subchapter B, Administrative Procedures*

##### Section 222.31, Application Process

Adopted §222.31 establishes 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. Section 222.31 also allows subsurface area drip dispersal system permittees with valid permits to continue to operate under their current permit until that permit expires or is superceded 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.

Adopted §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 under commission compliance history rules.

#### Section 222.33, Public Notice

Adopted §222.33 requires 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

Adopted §222.35 establishes the procedures for public participation in an application to authorize a subsurface area drip dispersal system. The commission applies 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 states 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

Adopted §222.37 establishes 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

Adopted §222.39 establishes 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

Adopted §222.41 establishes 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

Adopted §222.43 establishes 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

Adopted §222.45 establishes 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

Adopted §222.71 establishes §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

Adopted §222.73 establishes the criteria for performing a soil evaluation of the site adopted 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

Adopted §222.75 establishes 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

Adopted §222.77 prohibits the pollution of groundwater and establishes 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 has the potential to pollute the quality of the groundwater.

#### Section 222.79, Recharge Feature Plan

Adopted §222.79 establishes 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 establishes the required elements of the plan to protect the recharge feature, if one is located on the site.

#### Section 222.81, Buffer Zone Requirements

Adopted §222.81 establishes the distance required to locate the subsurface area drip dispersal system and the associated system from water features. These buffer zone requirements are designed to be protective of groundwater, surface water, and public health.

#### Section 222.83, Hydraulic Application Rates

Adopted §222.83 establishes 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, PhD, who are associated with Texas A & M University, Texas Cooperative Extension Service. The commission adopts this requirement to ensure that groundwater will not be contaminated.



Adopted §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 section also requires 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.

Adopted §222.83(b) requires the applicant that does not qualify for the default 0.1 g/sf/d application rate or chooses not to use the default to calculate the allowable annual hydraulic loading rate based on nitrogen used by the vegetative cover. The nitrogen application rate equation is the same equation used by several other states, as well as the United State Environmental Protection Agency (EPA). Section 222.83(b) also establishes that upon approval by the executive director, the applicant may use an alternate equation.

Adopted §222.83(c) requires the applicant to design and operate the subsurface area 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

Adopted §222.85 establishes the minimum quality of effluent that can be introduced from a treatment facility into a subsurface area drip dispersal system. Limitations are established to protect the environment and public health.

#### Section 222.87, Effluent Limitations

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

#### *Subchapter D, Design Criteria*

#### Section 222.111, General Provisions

Adopted §222.111 establishes 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 establishes 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

Adopted §222.113 sets the 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 design and the engineering justification for the 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

Adopted §222.115 provides 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 adopted §222.115 are based on standard engineering and commission practices.

Adopted §222.115(a) gives 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.

Adopted §222.115(b) gives 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.

Adopted §222.115(c) provides the design criteria for anaerobic biological reactors. The requirements of adopted §222.115(c) are based on standard engineering and commission practices.

Adopted §222.115(d) provides the design criteria for sand filters. The requirements of adopted §222.115(d) are based on standard engineering and commission practices.

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

Adopted §222.115(f) establishes 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

Adopted §222.117 establishes 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 adopted §222.117 are based on standard engineering and commission practices.

Adopted §222.117(a) establishes 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.

Adopted §222.117(b) requires 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.

Adopted §222.117(c) requires 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.

Adopted §222.117(d) establishes 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 and at the depth 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.

Adopted §222.117(e) requires 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 establishes this requirement to be consistent with standard engineering and commission practices.

Adopted §222.117(f) requires 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 adopts this requirement to be consistent with standard engineering and commission practices.

Adopted §222.117(g) requires 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 adopts this requirement to be consistent with standard engineering and commission practices.

#### Section 222.119, Delivery Systems

Adopted §222.119 establishes the requirements for the piping and pumps that deliver effluent from the treatment facility to the dispersal zones.

Adopted §222.119(a) requires 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.

Adopted §222.119(b) requires 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.

Adopted §222.119(c) establishes that the permittee is 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.

Adopted §222.119(d) requires 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.

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

Adopted §222.119(f) requires 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.

Adopted §222.119(g) requires 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

Adopted §222.121 establishes the design criteria for the subsurface area drip dispersal system.

Adopted §222.121(a) requires that the placement lines with emitters be installed between 6 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).

Adopted §222.121(b) requires 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.

Adopted §222.121(c) requires 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.



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

Adopted §222.121(e) requires that emitters shall be spaced not less than one foot, nor more than three feet, on center, unless a variance is granted due to site 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.

Adopted §222.121(f) requires 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.

Adopted §222.121(f) allows the applicant to submit the criteria and then requires the permittee to comply with the criteria submitted.

Adopted §222.121(g) requires 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. Adopted §222.121(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

Adopted §222.123 establishes 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. Adopted §222.123 establishes 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

Adopted §222.125 establishes the minimum separation distances beneath 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 allows 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 in the individual permit.

#### Section 222.127, Storage

Adopted §222.127 establishes 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, Prohibitions

Adopted §222.151(a) prohibits 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. Adopted §222.151 would allow leaching sufficient to maintain the health of the cover crop.

Adopted §222.151(b) prohibits permittees causing ponding or surfacing of effluent in drip dispersal zones. Surfacing or ponding effluent are indicators of a malfunctioning subsurface area drip dispersal system.

Adopted §222.151(c) prohibits permittees from allowing conditions to exist that cause odors or attract vectors.

Section 222.153, System Flushing

Adopted §222.153 establishes 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 therefore prevent clogging.

#### Section 222.155, Soil Moisture Sampling

Adopted §222.155 establishes that certain subsurface area drip dispersal system permittees must sample soil moisture and prescribes 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 may be 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

Adopted §222.157 requires that the permittee sample soils in the dispersal zones for the presence of constituents. A build-up of constituents could harm or degrade the cover vegetation or leach out of the root zone and potentially impact groundwater.

Adopted §222.157(a) provides 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.

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

Adopted §222.157(c) enumerates the constituents for which the permittee must sample.

Adopted §222.157(d) establishes the depths at which the samples must be taken.

Adopted §222.157(e) allows 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.

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

Adopted §222.157(g) establishes that soil samples be collected from each different type of soil in the subsurface area drip dispersal system. Because constituents 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.

Adopted §222.157(h) establishes 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.

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

#### Section 222.159, Operator Licensing

Adopted §222.159 establishes 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. Adopted §222.159 also requires 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, are mostly underground, and have automated control systems, the use of a wastewater operator with more experience and training than is normally required for other land application disposal systems is appropriate. Subsurface area drip dispersal systems currently operating have two years from the date of adoption of this rule to have a Class A, B, or C chief operator. This allows Class D operators who are currently operating subsurface area drip dispersal systems to gain the training and experience necessary to become a Class C operator.

#### Section 222.161, Vegetative Cover

Adopted §222.161 establishes requirements for minimum standards for planning, reporting, and maintaining the vegetative cover portion of a subsurface area drip dispersal system. 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.

#### Section 222.163, Closure Requirements

Adopted §222.163 establishes the requirements for decommissioning a subsurface area drip dispersal system. Proper closure is required to protect the environment and prevent pollution.

#### FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted 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 adopted rules are intended to implement HB 2651, relating to the regulation of subsurface area drip dispersal systems. The adopted 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 adopted rules are intended to provide a permitting procedure and criteria for using subsurface area drip dispersal systems. The adopted 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 adopted 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 adopted rules do not meet the definition of a major environmental rule as defined in the Texas Government Code.

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



requirements of TWC, Chapter 32, and are adopted to implement HB 2651. Third, the adopted 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 adopted rules have not been adopted solely under the general powers of the agency, but have been adopted under the express requirements of TWC, Chapter 32. The adopted 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 adopt these rules solely under the commission's general powers. These adopted rules do not meet the criteria for a major environmental rule as defined by Texas Government Code, §2001.0225. Written comments on the draft regulatory impact analysis determination were solicited; no comments were received on the draft regulatory impact analysis determination.

#### TAKINGS IMPACT ASSESSMENT

The commission prepared a takings impact assessment for these adopted rules under Texas Government Code, §2007.043. The purpose of this adopted rulemaking is to implement the provisions of TWC, Chapter 32. The primary purpose of this adopted 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 adopted rules are intended to provide a permitting procedure that includes scientifically based requirements for design and operation of these systems. The adopted 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 adopted rules 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 adopted rules will not affect private real property in a manner that requires compensation to private real property owners under the United States Constitution or the Texas Constitution. The adopted 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, these rules do not meet the definition of a takings under Texas Government Code, §2007.002(5). Therefore, the adopted rules will not constitute a taking under Texas Government Code, Chapter 2007. Written comments on the draft takings impact analysis determination were solicited; no comments were received on the draft takings impact analysis determination.

#### CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the adopted rulemaking and found that the rule 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 adopted rules in

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

The CMP goal applicable to the adopted rulemaking is the goal to protect, preserve, restore, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas. Adopted Chapter 222 meets the provisions of this goal. Adopted 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 adopted rulemaking are located in 31 TAC §501.21, Policies for Discharge of Municipal and Industrial Wastewater to Coastal Waters. Adopted Chapter 222 complies with the policies in this section. Adopted 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 adopted rules will not violate or exceed any standards identified in the applicable CMP goals and policies because the adopted rules are consistent with these CMP goals and policies, because these adopted rules do not create or have a direct or significant adverse effect on any coastal natural resource areas.

## PUBLIC COMMENT

The public comment period ended March 20, 2006. A public hearing was held March 14, 2006, at 2:00 p.m. at the Texas Commission on Environmental Quality, Building F, Conference Room 2210, 12100 Park Thirty-Five Circle, Austin, TX. Oral comments were received from JN Technologies (JNT). Written comments were received from Harris County Public Infrastructure Department (HCPID); United States Department of Energy, National Nuclear Security Administration, Pantex Site Office (DOE); Lower Colorado River Authority (LCRA); Drip-Tech Wastewater Systems (DTWS); Save Our Springs Alliance (SOSA); and Snowden Onsite Septic, Inc. (SOSI). Texas Council of Engineering Companies (TCEC) submitted a written comment after the close of the comment period, which was addressed. The comments generally concerned technical issues.

## RESPONSE TO PUBLIC COMMENTS

### Comment

SOSA commented that the rules fail to prohibit discharges to land, ponding, vector generation, odor and nuisance conditions.

## RESPONSE

**The commission agrees in part with the comment. TWC, Chapter 32 and Chapter 222 add regulations to those already established against these activities in TWC, Chapter 26 and applicable chapters of 30 TAC. Prohibitions against ponding, and nuisance conditions such as vector attraction and odor have been added to §222.151 for clarity.**

Comment

SOSA commented that the rule ascribes unfettered discretion to the executive director (ED) in many cases, e.g., he could approve more or less stringent methods of compliance. SOSA claims that this results in a rule which fails to serve the regulated community, since they do not have guidance in the rule to determine what methods would be determined acceptable by the ED.

**RESPONSE**

**The commission disagrees with the comment. The regulated community has a set of rules that covers most aspects of applying for authorization, designing, installing, and operating subsurface area drip dispersal systems. ED discretion is necessary to address unforeseen, site-specific situations. Permitting staff members are available to meet with the regulated entities before and throughout the permit application process to assist them in designing a system that protects human health and the environment and meets the regulations. Each permit application will be given a thorough technical review and the draft permit will be available for public comment. ED decisions are subject to commission review.**

Comment

SOSA commented that the rules fail to address cumulative impacts of subsurface area drip dispersal systems.

**RESPONSE**

**The rules do not address cumulative impacts because subsurface area drip dispersal systems are required to be designed not to create cumulative impacts. The application rate must be within soil hydrologic absorption rates and crop/root absorption rates. Effluent must be applied within specified absorption rates, no migration is allowed beyond the root zone and no buildup of effluent constituents is expected in the soil. Therefore, no cumulative impacts are anticipated.**

Comment

SOSI commented that throughout the proposed rules are statements similar to the following, “subsurface area drip dispersal systems are an innovative technology and require a consistently high quality of effluent to prevent clogging and malfunction . . .” SOSI stated that this is not a factual statement and, therefore, cannot be repeatedly used as the factual basis anywhere in this rule package.

**RESPONSE**

**The commission agrees in part with the comment. Subsurface area drip dispersal systems are an innovative technology that allow for precise application rates and specific placement of treated effluent. Most systems are operated through computerized control systems that require skilled operators. Equipment standards require effluent that can be filtered to 100 microns to ensure that sediment buildup does not affect the tubing or the emitters. Field flushing, in conjunction with the 100 micron filtration, prevent biological growth that can foul the tubing and emitters.**

Comment

Re: §222.5(2)

SOSA stated that the definition of buffer zone should include public and private wells.

**RESPONSE**

**The commission agrees with the comment and has revised the definition of buffer zone to include public wells, private wells, and springs.**

Comment

Re: §222.5(4) and (13)

SOSI commented that the definitions of domestic wastewater and industrial wastewater in this rule contradict the Chapter 285 definitions of domestic wastewater and industrial wastewater. The definitions in this rule would transfer jurisdiction of subsurface area drip dispersal systems serving office buildings, restaurants, grocery stores, and other facilities that are not strictly “household” activities from Chapter 285 to new Chapter 222.

**RESPONSE**

**The commission disagrees with the comment. There are no definitions of domestic wastewater and industrial wastewater in Chapter 285. Facilities that produce wastewater that meet the Chapter 222 definition of industrial waste will be required to apply for authorization under the rules of this chapter. Facilities that produce wastewater from human activities and household**

**operations will be required to apply for authorization under the rules of this chapter if they produce an average flow over 5,000 gpd.**

Comment

Re: §222.31

SOSA requested the required components for a complete application and the factors the ED will consider when reviewing a permit application to be clearly stated.

#### **RESPONSE**

**As part of the rule package, the commission is revising Chapter 305, which identifies the contents of permit applications and §281.5, which identifies the additional items needed for wastewater permit applications to include the applications received under this chapter. The information identified in these chapters is required before an application can be declared administratively complete.**

Comment

Re: §222.31

SOSA requested clarification of whether public notice and hearing requirements apply to the ED's granting of variances in this provision. SOSA commented that such public notice and hearing requirements ought to apply to ensure that the variances sought are truly in the public interest.



**RESPONSE**

**If a permittee seeks to take advantage of the variance allowed in this rule, it may occur as part of the permit renewal or amendment process. The permit application will be subject to the applicable provisions of Chapter 55, that apply to applications that are declared administratively complete after September 1, 1999.**

Comment

Re: §222.31(e)

SOSA commented that a consultation with the United States Fish and Wildlife should be added to the list of consultations in this provision.

**RESPONSE**

**Section 222.31(e) reflects the language in the statute, which does not include notification of the United States Fish and Wildlife Service. The commission's rules require facilities to meet applicable local, state, and federal laws. The applicant must comply with the requirements that apply to this facility concerning threatened or endangered species. The United States Fish and Wildlife Service or the Texas Parks and Wildlife Department have jurisdiction over and can provide assistance regarding the presence of threatened or endangered species or habitat. The United States Fish and Wildlife Service may be contacted by mail at 711 Stadium Drive, Suite 252, Arlington, Texas 76011-6247 or by phone at 1-817-277-1100. The Texas Parks and Wildlife Department may be contacted by mail at 4200 Smith School Road, Austin, Texas 78744 or by phone at 1-800-792-1112.**

Comment

Re: §222.31(e)(1)

SOSA requested that this provision specify what factors the ED's inspection will include.

**RESPONSE**

**The ED will investigate all sites that propose to use subsurface drip irrigation as its disposal method permitted under these requirements. The ED is proposing to use the current standard operating procedures for inspecting systems with domestic flows of less than 5,000 gpd that use subsurface drip irrigation as their wastewater disposal method as the basis for designing an investigation protocols for subsurface area drip dispersal systems for industrial sites and domestic sites over 5,000 gpd. Standard operating procedures will require verifying the suitability of items such as the soil type, the slope, the buffer zones, the cover crop, and the precipitation averages. Using standard operating procedures rather than rules to define investigation criteria will allow the ED to revise the protocol in relation to emerging issues.**

Comment

Re: §222.31(j)

SOSA requested establishing standard to the ED to accept late renewals.

**RESPONSE**

**Section 222.31(j) and §305.63 require permittees to submit their renewal applications at least 180 days prior to the expiration date of the effective permit. In addition, TCEQ rules allow the ED to**

**grant permission upon request for applications to be submitted within 180 days of the permit expiration date, but no later than the permit expiration date. Permission to file within the 180 days prior to the permit expiration date may be granted as long as the delay causes no threat to human health or the environment and does not extend beyond the date of the permit expiration.**

Comment

Re: §222.31(1)

DOE commented that the rule does not provide any guidance on continued system operation should a variance request not be approved. DOE requested that a 60-month compliance period be allowed to comply with any criteria for which a variance request was denied.

#### **RESPONSE**

**The commission agrees in part with this comment. A compliance period is necessary to allow the permittee to meet the criteria when a variance request is denied. This section was amended to include a compliance period of no more than three years, in accordance with §305.127(3).**

Comment

Re: §222.37(b)

DOE commented that the compliance history for a governmental entity should be limited to the facility, not all facilities owned by the same governmental unit as was provided for military bases. DOE asked for its compliance history to be for its facility and not the entirety of the Department of Energy facilities in Texas.

**RESPONSE**

**The commission agrees in part with the comment. TWC, Chapter 32 requires that the compliance history of all related entities be evaluated. The compliance history of all Department of Energy facilities in Texas will be evaluated for any permitting action for any DOE facility.**

**The draft rule erred in basing the compliance history of military bases on the individual base. A military base was the only type facility whose compliance history did not include other related facilities. The rule has been revised to state that all facilities belonging to a single branch of service will be evaluated for any facility belonging to that branch.**

Comment

Re: §222.73(a)(2) and (3)

JNT asked for clarification on what evidence is necessary to demonstrate primary and secondary rooting depths.

**RESPONSE**

**Primary rooting depth is the depth where most roots are found. For most plants, it is the interval from zero to one foot. Secondary rooting depth is, by default, the rooting depth below the primary rooting zone and in this case, below the one-foot depth. Note that these are functional definitions since rooting density varies by species and it is affected by many environmental factors such as moisture availability, presence of restrictive strata, etc.**

**Description of roots in these two depth intervals should include, at a minimum, root density by depth (sometimes, most roots are found in the zero to six-inch depth), whether the plants are tap rooted or fibrous (branches out in all directions) in growth habit, presence and depth of root restrictive layers. No change was made to the provision. Standard definitions from the related literature are used in this provision.**

Comment

Re: §222.73(a)(4)(F)

JNT asked if the coarse fragments requirement was going to follow the same basic program that Chapter 285 does now.

#### **RESPONSE**

**The purpose of this provision is for the permittee to provide information on the coarse fragments in the soil so that the technical review of the permit application can result in an overall understanding of the soil profile. The intent of this provision is not to provide the restrictions imposed by Chapter 285.**

Comment

Re: §222.73(b)

JNT, TCEC, and SOSI requested that a licensed professional engineer, in addition to a Texas licensed professional geoscientist, be allowed to conduct a soil evaluation.

**RESPONSE**

**The commission agrees with this comment. Section 222.73(b) has been revised to include a licensed professional engineer. The Texas Geoscience Practice Act and the rules of the Texas Board of Professional Geoscientists require that geoscientific work be performed by a licensed professional geoscientist unless exempted under the act. As such, it is the responsibility of the licensed individual to ensure that he or she is qualified to perform the soil evaluation.**

Comment

Re: §222.77

SOSI commented that §222.77, concerning the protection of groundwater, was not directed by HB 2561 and exceeds the legislative intent and directive.

**RESPONSE**

**The commission disagrees with the comment. Section 222.77 was included in order to aid in the implementation of TWC, §32.003(1) and (3) that states: “It is the policy of this state and the purpose of this chapter to: (1) maintain the quality of fresh water in the state to the extent consistent with public health and welfare and the operation of existing industries” and “(3) prevent underground injection that may pollute fresh water.” The intent of §222.77 is to provide the ED with the means to establish a baseline quality of groundwater and to continue to sample the groundwater at subsurface area drip dispersal sites where it is necessary to ensure that no pollution of fresh water has occurred.**

Comment

Re: §222.77

JNT requested a clarification of what is meant by the term groundwater in this section.

**RESPONSE**

**Section 222.5(10) provides the following definition for groundwater: “subsurface water occurring in soils and geologic formations that are fully saturated year-round, seasonally, or intermittently.”**

Comments

Re: §222.77(b) and (c)

LCRA requested that the commission remove the ED’s exercise of discretion in §222.77(b) and (c), under which the ED may require baseline groundwater quality be documented and may impose groundwater monitoring. SOSA requested clarification and specification of the ED’s exercise of discretion in requiring baseline groundwater quality documentation and the imposition of groundwater monitoring.

**RESPONSE**

**These provisions allow the ED to base decisions on the best professional judgment on the part of technical staff and the applicant. Initial documentation of groundwater quality or groundwater monitoring may not be appropriate for portions of the state where the first occurrence of groundwater is hundreds of feet below ground level and the application rate of the system is quite**

**low. Likewise, initial documentation and groundwater monitoring would likely be appropriate in parts of the state where the first occurrence of groundwater is in the soil zone a few feet from the surface. These conditions would be established in a draft permit, on which the applicant and any interested parties would be allowed to comment.**

Comment

Re: §222.79

JNT asked if there is a hierarchy to the review of the listed agencies or if a professional engineer or geoscientist needs agency sign off that its records were reviewed.

#### **RESPONSE**

**This provision lists the sources that the licensed professional engineer or geoscientist will review to look for recharge features (i.e. water wells, oil wells, borrow pits, etc.). There is no hierarchy to the sources, nor is there a sign-off procedure with those agencies. Rather, it is the role of the professional engineer or professional geoscientist to state in the Recharge Feature Plan that the records kept with the listed entities (at minimum) were reviewed for the presence or absence of recharge features on the site of the proposed subsurface area drip dispersal system.**

Comment

Re: §222.79

SOSA commented on the absence of reference to the Edwards Aquifer and other sensitive groundwater areas in the state. TCEQ should prohibit subsurface area drip dispersal systems in the artesian or



recharge zones of the Edwards Aquifer and other karst-type aquifers or strengthen the requirements of §222.79.

**RESPONSE**

**Subsurface area drip dispersal systems are already prohibited over the Edwards Aquifer recharge zone and the Edwards Aquifer transition zone as stated in 30 TAC §213.8(a)(1), (b)(1), and (c).**

**There are no existing prohibitions for subsurface area drip dispersal systems over other karst aquifers in the state, and to include those prohibitions is outside of the scope of this rulemaking. New and expanding subsurface area drip dispersal systems proposed within the recharge areas of other karst aquifers in the state will be required to include a Recharge Feature Plan as required in §222.79.**

Comment

Re: §222.79(4)

SOSA commented that permittees should be required to install necessary and appropriate protective measures and implement a groundwater monitoring plan. SOSA pointed out that the proposed rule allows permittees a choice between those two options in §222.79(4)(A) and (B).

**RESPONSE**

**Section 222.79(4)(A) and (B) provides a professional engineer or professional geoscientist with options on how to best offer protection of recharge features identified on the Recharge Feature Plan developed for the site. Section 222.71 allows the ED to issue a permit for a new or expanding facility only if the permit minimizes the risk to groundwater and surface water quality. Additionally, §222.77(b) and (c) enable the ED to require groundwater monitoring for facilities if necessary to ensure that they do not pollute groundwater.**

Comment

Re: §222.79(4)(B)

JNT asked the commission to clarify the depth and size of monitoring wells to be used under the groundwater monitoring plan. Is the intent to sample an aquifer or perched water table?

#### **RESPONSE**

**The intent of this provision is to sample the first occurrence of groundwater. This groundwater can include saturated waters in the soil, perched water tables, and aquifers. The monitoring wells need to be deep enough to sample the first occurrence of groundwater and of a sufficient size to pull a sample. The item has been revised to clarify that the plan is required to be designed to monitor the first occurrence of groundwater.**

Comment

Re: §222.79(4)(A)

SOSA asked for clarification of the reference to using impervious cover as a protective measure for recharge features. SOSA notes it is not clear how impervious cover protects recharge features and state that “paving over” is not protective.

**RESPONSE**

**The commission agrees with the comment. This provision has been revised to remove the term impervious cover.**

Comment

Re: §222.79(4)(B)

SOSA asked for clarification that groundwater monitoring is required downstream of the dispersal fields.

**RESPONSE**

**The commission agrees with the comment. This provision has been revised to require that, at a minimum, two wells down-gradient of subsurface area drip dispersal systems are included in a groundwater monitoring plan when a groundwater monitoring plan is required.**

Comment

Re: §222.81

SOSA recommended that recharge features be added to the list of items that require a buffer zone.

**RESPONSE**

**The commission disagrees with the comment. This rule does not mandate the buffer requirements for recharge features beyond surface water in the state, wells, and springs. For new or expanding subsurface area drip dispersal systems, any other recharge feature will have a buffer zone or other protective measures proposed by a licensed professional engineer or professional geoscientist in the Recharge Feature Plan, as required by §222.79. The ED will review the Recharge Feature Plan to ensure that it is protective of groundwater quality.**

Comment

Re: §222.81(d)

JNT and DOE requested a definition of floodway.

**RESPONSE**

**Section 222.5(15) contains the definition for floodway.**

Comment

Re: §222.81

SOSA commented on the need to add a substantial buffer zone around surface waters currently listed as impaired for biochemical oxygen demand, pathogens, and nutrients.

**RESPONSE**

**Subsurface area drip dispersal systems are designed to deliver doses of water not to exceed soil hydrologic absorption rate and crop/plant root absorption rate as required in §222.3(b). As such, no lateral migration of water is expected. The 100-foot buffer established for all surface waters in the state is expected to be protective of surface water quality, including impaired water bodies if the specific absorption rates determined for the site are followed.**

Comment

Re: §222.81(d)

LCRA commented that, “Under the definition of floodway found in proposed §222.5(8), we suggest that you add the following: ‘FEMA maps are prima facie evidence of floodway locations. However, in preparing a permit where the floodway boundary is in question, the ED shall also accept the submittal of, and consider, additional scientifically accepted information and data submitted by a County or a river authority, that indicate the presence or absence of a floodway.’”

## **RESPONSE**

**The definition of “floodway” in §222.5(8) has been revised to clarify that Federal Emergency Management Agency maps are the commission’s primary source of floodway determinations. Section 222.81(d) has been revised to require the permittee to provide the source of all data used to determine floodway locations.**

**The ED currently accepts and considers information submitted by the public, including a county or river authority, in relation to a draft permit. This information is typically submitted during**

**the public comment period after a draft permit has been published. The commission also considers the additional information in hearing requests or motions to overturn the ED's decision.**

Comment

Re: §222.83

HCPID commented that the proposed application rate assumes no percolation or soil absorption into the underlying soils. HCPID stated that this is inconsistent with HB 2651, which defines a subsurface area drip dispersal system as a system that injects 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. HCPID requests that the rule be revised so that soil absorption is to be allowed for consistency with HB 2651.

#### **RESPONSE**

**The commission disagrees with the comment. The application rate calculations required by the formulas allow soil absorption within the constraints of the definition of subsurface area drip dispersal systems. The definition states that injection cannot occur beyond a depth of 48 inches. The application rate formulas were designed to not allow seepage or percolation beyond the 48-inch depth specified in TWC, §32.002(8).**

Comment

Re: §222.83(a)

SOSA commented that this provision is inconsistent with TWC, Chapter 32 and asked that it be revised to state that the subsurface area drip dispersal system's application rate "meet the more restrictive of the following," in reference to the hydraulic application rate and the nitrogen application rate.

#### **RESPONSE**

**This requirement is found in §222.83(c). Permittees who choose to or are required to use the application rate formulas listed in Figures 2 and 3 are required to use the more restrictive of the calculations. Permittees who apply for permits for subsurface area drip dispersal systems located west of the demarcation line in Figure 1 are allowed to apply at the default rate of 0.1g/d/sf, if the systems are located in clay or clay-loam soils and have non-native grasses overseeded with cool season grasses in the winter.**

Comment

Re: §222.83

SOSA commented that phosphorus and salts are critical pollutants and to ignore them and their consequences is arbitrary and capricious.

#### **RESPONSE**

**The commission disagrees that monitoring of phosphorus and salts has been ignored. Monitoring of these two parameters is addressed in the rules in §222.157. This provision requires annual soil sampling, analysis, and reporting for phosphorus, conductivity, sodium, and salinity.**

**Conductivity, sodium, and salinity are measurements of salt content.**

Comment

Re: §222.83

JNT commented that the line determining whether an applicant can use the default 0.1 g/d/sf application rate or must perform the calculations to determine a site-specific application rate is too conservative and that the line be moved further east.

**RESPONSE**

**The commission disagrees with the comment. The application rate of 0.1 g/d/sf is equal to 4.88 feet per year per square foot and is set for non-native grasses that are over seeded with cool season grasses in the winter months. Using the equations from Texas A & M Extension Service, they showed systems started failing in areas of the state with average rainfall greater than 35 inches per year.**

Comment

Re: §222.83

JNT commented that the application rate calculations do not consider the slope of the dispersal zone.

**RESPONSE**

**The commission agrees with the comment. The slope of the land can be very important. The rule requires the drip lines to be placed along the contour lines of the drip dispersal zones. The local site conditions such as soil types, slope of the land, and types of vegetative, are important in**



**designing the hydraulic rate. The applicant must take these factors into account when designing the disposal system. There have been no changes to this provision.**

Comment

Re: §222.83

JNT commented that the effective rainfall percentage in the application rate calculation peaks at one-third efficiency drop. JNT's experience is that the effective rainfall percentage can be much lower.

#### **RESPONSE**

**The commission agrees with the comment. The effective rainfall percentage may be greater than or less than one third of the rainfall. The applicant must justify values used in its calculations if other than the 67% value assumed in the model equations. The applicant must be able to justify a different value based on soil types, location, and area rainfall. No changes were made to this provision.**

Comment

Re: §222.83(a)

DOE commented that the hydraulic application rate does not address the distribution of wastewater through a subsurface area drip dispersal system for maintenance purposes or soil moisture preparation when there is no vegetative cover present. System owners need to have the ability to route a limited volume of wastewater through the irrigation system during periods when active crop growth is not occurring to meet the manufacturer's recommended maintenance requirements.

DOE also commented that the proposed rule does not encompass cropping practices, which rotate crops through a fallow period to avoid exhausting the nutrients from the soil column and maintenance of the system. Chapter 222 should include this agriculture practice, with a direct reference to the Underground Injection Control regulations, or include provisions that provide criteria for this practice.

#### **RESPONSE**

**Before being issued a permit under Chapter 222, an applicant must illustrate that the soil hydrologic absorption rate and crop/plant root absorption rate are not exceeded at any time. Other permitting option for systems that do not meet the requirements of this chapter remain available. The applicant must also consider nitrogen application rate calculation to determine if the effluent will exceed the capability of the site to prevent the migration of nitrogen based upon the nitrogen loading for the proposed crop/vegetative yields.**

Comment

Re: §222.83(a)(3)

DOE commented that a violation would result if the maximum application rate was applied during the first ten days of the month and in the last 20 days of the month an unusually heavy precipitation event were to occur. The combination of the two could cause a facility to be out of compliance even though irrigation was halted before the application rate was exceeded.

#### **RESPONSE**

**The commission agrees that there may be some seepage or percolation if monthly rainfall exceeds the normal rainfall amounts for which the application rates were set. The design of the system should minimize the effect of rainfall by encouraging rainfall runoff and prohibiting rainfall run-on over the dispersal zones. If the terms of the permit are met and no negative effects on the environment or human health are noted, the facility would not be charged with a violation. No change was made to this provision.**

Comment

Re: §222.85(b)(1)

DOE commented that this provision does not specify where the pH limit would be applicable (before or after addition of maintenance and agricultural chemicals to the system). Chemicals such as nitrogen-based fertilizers dramatically increase the pH of the water delivered to crops. Some systems use acids to remove mineral and biologic deposits from the system and as a means to add other agricultural chemicals. DOE requested that pH limits be deleted from the proposed rule as it is not relevant to the protection of the environment or the protection of the public from facilities from which the public is denied access.

## **RESPONSE**

**The commission agrees in part with this comment. All monitoring of effluent and the application of limitations is required on the final effluent after commingling of all component wastewater streams and additives (maintenance chemicals and agricultural amendments). The language has been revised to indicate that the permittee shall maintain the pH of the effluent within the limits**

**of 6.0 to 9.0 standard units immediately prior to dispersal, in accordance with §309.20(b)(5)(E), unless a specific variance is approved by the ED based upon site-specific conditions.**

Comment

Re: §222.85(b)(2)

SOSA commented that this provision regarding domestic effluent quality does not include specifics, is vague, obtuse, and confusing. The proposed rule states "the permittee shall comply with specific effluent limitations placed in the permit by the ED to control the discharge of toxic constituents." SOSA questions the consistency with §222.87 (Effluent Limitations) with regards to establishing effluent limitations in a permit for toxic pollutants for domestic wastes. Specifically, SOSA requests that the rules specify whether or not effluent limitations for toxic pollutants will be applied; what limitations will be applied for which toxic pollutants; and when will effluent limitations for toxic pollutants be required in a permit.

#### **RESPONSE**

**The commission agrees in part with the comment. Section 222.85(b)(2) has been deleted from the rule and §222.87 has been expanded to require permittees to comply with the effluent limits from Chapter 309 and with any specific effluent limits included in the permit by the ED. This change allows greater control of effluent constituents, because it allows the ED to control substances that are harmful to human health and the environment but may not be considered toxic. Each facility's limits will be determined by TCEQ technical staff, based on the constituents in its proposed wastewater streams during the evaluation of the individual permit application.**

Comment

Re: §222.85(b)(3)

DTWS commented that the rules should not require that subsurface drip technology meet a standard imposed on surface application technology. DTWS commented that subsurface area drip dispersal system designers should only be required to design wastewater systems in accordance with the proper functioning of the equipment components in the design. DTWS states that the rule should not require subsurface area drip disposal system designers to design for failure to get approval from TCEQ.

#### **RESPONSE**

**The commission disagrees with the comment. Subsurface area drip dispersal systems installed in areas such as school playgrounds and ball fields are required to demonstrate that their effluent meet a standard of 200 colony forming units of fecal coliform bacteria per milliliter of effluent, the standard for water designated for contact recreation. Spray irrigation effluent applied to areas not restricted from public access is required to have a chlorine residual that inhibits bacterial growth. Due to the natural siphoning effect of activity on the surface of the soil, some effluent may surface in wet conditions when persons are running, jumping, and playing on an field that contains a subsurface drip dispersal zone.**

Comment

Re: §222.85(b)(3)

JNT commented that certain limitations placed on system components by the manufacturers may cause difficulty with complying with the disinfection requirements.

**RESPONSE**

**The commission disagrees with this comment. The rules do not prescribe the method by which permittees must comply with the 200 cfu/ml fecal coliform requirement. Ultraviolet light is one alternative that would not affect system components.**

Comment

Re: §222.87

JNT requested clarification on whether continuous monitoring of effluent would be required and the frequency required if the testing is required on an intermittent basis.

**RESPONSE**

**The testing frequency for each effluent parameter in the permit will be established using 30 TAC Chapter 319, Subchapter A requirements and commission practice.**

Comment

Re: §222.87(b)

SOSA stated that this provision relating to industrial effluent limitations is vague. SOSA questioned the meaning of the statement that the permittee shall "demonstrate compliance with technology-based effluent limitations by monitoring the effluent prior to introduction into the subsurface area drip dispersal system" and stated that "compliance with technology-based effluent limitation can be determined by asking, quite simply, 'has the permittee employed the necessary technology and

processes.'" SOSA also requested that the draft rule be revised to include specific details related to what effluent limitations a permittee would likely expect to find in a permit.

## **RESPONSE**

**The statement in this provision that the permittee shall "demonstrate compliance with technology-based effluent limitations by monitoring the effluent prior to introduction into the subsurface area drip dispersal system" means that the permit will require routine monitoring of the effluent that is introduced into the subsurface area drip dispersal system and the effluent sampled at this point must comply with any technology-based effluent limitations established in the permit. The monitoring requirements may include parameters that are common to such systems {such as pH, ammonia as nitrogen, total dissolved solids and biochemical oxygen demand (5-day)} and other parameters (metals, toxics, organics, pesticides, etc.) that are unique to the permittee's wastewater streams.**

**Technology-based effluent limitations refer to those limitations that are established in a permit and are not derived by agronomic requirements, capabilities of the crops, and/or local groundwater quality. Technology-based limitations typically reflect quality levels that need to be achieved by a combination of effluent pretreatment and facility management practices that will insure that a contaminant is not present above limited amounts. An example would be establishing a technology-based limitation for benzene as an indicator parameter on effluent from a petroleum bulk storage facility.**

**Since there are infinite number of manufacturing/commercial activities that can occur and an infinite number of combinations of chemicals that could be handled at a facility, it is impractical to establish a definitive list of effluent limitations that may be included in an individual permit. Technology-based effluent limitations appropriate to the specific facility will be established in the individual permit after technical review of the permit application. Actual limitations and monitoring frequencies will be included in the draft permit which will be available for public review.**

Comment

Re: §222.87(b)(1)(D)

DOE commented that it has exclusive authority to regulate itself for the disposition of radioactive wastes regulated by the Atomic Energy Act of 1954. DOE also recommended this provision be revised as follows: “radioactive wastes unless the permittee is authorized to store, process, and dispose of these wastes in compliance with the Atomic Energy Act of 1954 (as amended); or the permittee is authorized to store, process, and dispose of these wastes in compliance with specific licensing and permitting requirements under Texas Health and Safety Code, Chapter 401 and the rules of the Texas Commission on Environmental Quality or Texas Department of Health Services or Texas Railroad Commission, and/or any other state or federal authorities.”

## **RESPONSE**

**The commission agrees in part with the comment. Generally, subsurface irrigation is not an appropriate disposal method for radioactive materials because such disposal does not assure that**



releases of radioactivity in the effluent to the general environment is as low as is reasonably achievable. The Department of Energy does self-regulate certain radioactive material under the Atomic Energy Act of 1954. However, not all radioactive materials are subject to regulation under the Atomic Energy Act. The commission has revised the language in the prohibition to use the term “wastes containing radioactive materials” and to acknowledge that certain wastes may be regulated under the Atomic Energy Act or in compliance with the Texas Radiation Control Act in Texas Health and Safety Code, Chapter 401. Existing commission rules at 30 TAC §305.52, require an application that involves the disposal of waste containing radioactive materials must be accompanied by a letter or other instrument from the commission, the Texas Department of State Health Services, or other appropriate regulatory authority stating that either the applicant has the appropriate license or authorization for disposal of the waste containing radioactive material or that the applicant does not need such a license. An applicant for a subsurface area drip dispersal system permit would have to comply with this requirement in §305.52.

Comment

Re: §222.117(a)(2)

DOE commented that this provision is overly prescriptive, because it includes an equipment capacity requirements for dosing tanks.

## **RESPONSE**

The commission disagrees with this comment. This subsection prescribes that at minimum the dosing tank must be able to accommodate the permitted design flow, the volume of the supply

**lines and supply, and the volume of the return manifold. The ED may grant a variance to this requirement if an applicant presents adequate documentation to show that the operation of the system will not be compromised by the lack of capacity in the dosing tank. No changes were made to this subsection.**

Comment

Re: §222.117(a)(4)

DOE commented that this provision is overly prescriptive, because automatic flushing is convenient, but that manual operation is as efficient and more certain.

#### **RESPONSE**

**The commission disagrees that this provision is overly prescriptive. This subsection lists the minimum functions of the control system components. The commission agrees that the word "automatic" should be deleted from §222.117(a)(4)(C) and (D). These provisions have been revised.**

Comment

Re: §222.117(a)(4)(D)

DTWS commented that dosing chemicals are not necessary to reduce emitter clogging if the emitters used are warranted by the manufacturer not to need chemical injection for this purpose.

**RESPONSE**

**The permittee may request a variance to the requirement for chemical dosing based on the manufacturer's warranty of the emitters. The ED will review and may approve a variance based on its ability to protect human health and the environment.**

Comment

Re: §222.117(a)(9)

DOE recommended deleting the provision requiring the return of flush water to the pre-application system from the rule.

**RESPONSE**

**The commission disagrees with deleting this provision from the rule. The water generated by flushing the emitter lines could cause adverse environmental or health effects. The permittee has no way to sample flush water to determine the level of constituents (such as fecal coliform or pH) in it. For example, a dispersal zone located under a school playground could expose children to the flush water that is high in bacteria or is highly acidic. Section 222.11(d) allows the ED to consider a variance to this requirement, if the permittee is able to document that field flushing will not harm the environment or human health.**

Comment

Re: §222.117(b)(1)and (2)

JNT and DOE commented that the requirement for system shut-down when there is more than a ten percent variance in flow or pressure in the subsurface area drip dispersal system is overly prescriptive. JNT and DOE requested that these provisions be modified to provide for the design to include criteria for high and low alarms and shut-down for pressure and flow conditions that would indicate abnormal fluid dynamics were occurring in the system.

#### **RESPONSE**

**The commission agrees with the comment. These provisions have been modified to require the design to include criteria for high and low alarms and for shut-down due to pressure and flow conditions that indicate abnormal fluid dynamics in the system. The provision has been clarified to state that the ten percent variation in pressure applies only after start-up is complete.**

Comment

Re: §222.117(d)

JNT commented that it is sometimes difficult to design a system that will drain if required because of the potential for freezing.

#### **RESPONSE**

**The self-draining requirement is only required when the system is placed in a zone of the soil that is subject to freezing. The applicant has the choice of placing the system below the freeze line or designing it to be self-draining.**

Comment

Re: §222.117(f)

DOE commented that the wording of this provision indicates that a separate backflow device is necessary when the backflow prevention is part of the design of many emitters.

**RESPONSE**

**The commission disagrees with the comment. The commission believes the provision includes the concept of incorporated backflow prevention. No change to the provision has been made.**

Comment

Re: §222.123(b)

DOE commented that this provision requiring a control system that will run both pumps in a wet well simultaneously is overly prescriptive, is in conflict with §222.117(a)(3)(B), and does not provide protection of the public or the environment. DOE requested that this requirement be deleted.

**RESPONSE**

**The commission agrees with the comment. This provision has been deleted and the subsequent subsections have been relettered.**

Comment

Re: §222.125(2)

DTWS commented that this paragraph requires two feet of vertical separation between the drip line and any restrictive soil layer. The rule for wastewater remediation with drip technology should require only one foot of vertical separation.

#### **RESPONSE**

**The commission agrees with this comment. The paragraph has been changed to require only one foot of soil over any restrictive soil horizon.**

Comment

Re: §222.127

JNT asked why three days of effluent storage was determined to be necessary. SOSA commented that there is no justification to prove that three days storage is adequate to protect the environment and cites 30 TAC §285.34(e)(1) as an example of commission rules that require seven days of storage. SOSA asked that the rule be revised to require seven days of storage.

#### **RESPONSE**

**The commission has established three days storage as the minimum standard for wastewater facilities that use land application disposal methods. Each permit application will be evaluated to insure that the amount of storage proposed will be adequate for the proposed specific system and site conditions. Because 30 TAC §285.34(e)(1) regulates holding tanks and allows them “only on sites where other methods of sewage disposal are not feasible,” it is not pertinent to emergency storage for subsurface area drip dispersal systems.**

Comment

Re: §222.151(c)

JNT commented that although percolation was prohibited by the rule and not part of the application rate calculations, it would occur when there is rainfall.

#### **RESPONSE**

**The commission agrees that there may be some seepage and percolation if wet weather conditions exceed the rainfall averages for which the system was designed. This provision prohibits the permittee from using an application rate greater than the soil absorption rate and the crop/root absorption rate for the conditions specific to the site where the system is to be installed. The application rate calculations should take into consideration average rainfall on a monthly basis, as well as the type of soil and the planned vegetative cover. The amount of water leaving the root zone should be included in the leaching calculated as necessary for the health of the vegetative cover. The design of the system should minimize the effect of rainfall by encouraging rainfall runoff and prohibiting rainfall run-on over the dispersal zones. No change has been made to this provision.**

Comment

Re: §222.155

LCRA commented that it strongly supports the use of data logger/monitor devices to measure soil moisture at shallow subsurface irrigation sites for one year or until patterns of soil moisture retention are established.

**RESPONSE**

**The purpose of the soil moisture requirements in the rules is to allow commission technical staff the latitude to require this form of monitoring in systems where staff has determined it is needed to protect groundwater. When required, soil moisture monitoring devices will be equipped with an automated system to shut off the flow of wastewater to any zone with saturated soil. Data logger/monitor devices are not necessary to protect groundwater.**

Comment

Re: §222.159

SOSA commented that the rulemaking inappropriately grandfathers existing facilities and allows them two years to come into compliance with the requirement that the facility be operated by a chief operator holding a valid Class A, B, or C wastewater operator license.

**RESPONSE**

**The commission disagrees with the comment. This provision requires that operators of all subsurface area drip dispersal systems receive training relevant to the specific systems they are to operate. This requirement will be effective upon adoption of the rules and will insure Class D operators receive additional site-specific training in the operation and maintenance of their specific wastewater treatment facility and the associated subsurface area drip dispersal system. The delayed implementation of the requirement to employ a chief operator with at least a Class C wastewater operator license will allow time for Class D wastewater operators currently serving as chief operators of subsurface area drip dispersal systems to retain their jobs and to obtain the**



**additional wastewater training and experience necessary meet the Class C wastewater licensing requirements. Permits issued under this rule on or after November 1, 2007, will require the chief operator to hold at least a Class C wastewater license.**

Comment

Re: §222.161(b)

DOE commented that the rule does not address the distribution of wastewater through a subsurface area drip dispersal system for maintenance purposes or soil moisture preparation when there is no vegetative cover present.

#### **RESPONSE**

**Under this rulemaking, applicants can apply for a variance if they have systems that discharge to traditional crops such as small grains and row crops. However, the applicant must illustrate that the soil holding capacities will not be exceeded during or after an application of effluent to establish appropriate soil moisture for pre-planting of the desired crop(s) or for maintenance purposes.**

## **SUBCHAPTER A: GENERAL PROVISIONS**

### **§§222.1, 222.3, 222.5**

#### **STATUTORY AUTHORITY**

The new sections are adopted 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 adopted 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, public and domestic water well, and springs.
- (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. Federal Emergency Management Agency (FEMA) maps are prima facie evidence of floodway locations.

(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 adopted 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 adopted 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 Department of State Health Services for the purpose of soliciting comments on the application; and

(3) allow 30 days for the 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.

(m) The executive director may grant a period of up to three years, in accordance with §305.127(3)(A) of this title (relating to Conditions to be Determined for Individual Permits) to meet the requirements that were the basis for a denial of a variance to a permittee that applies for and is denied a variance, provided that the system meets the requirements in subsection (l) of this section.

**§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 branch of military service;
- (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 adopted 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 adopted 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 or engineer.

**§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 ½ 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 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. The plan shall monitor the first occurrence of groundwater. At a minimum, the groundwater monitoring plan shall specify the location of proposed monitoring wells including a minimum of two wells downgradient of the subsurface area drip dispersal systems, 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. The permittee shall provide the source of all data for determination of the floodway locations and include a copy of the relevant Federal Emergency Management Agency (FEMA) flood map or the calculations and maps used where a FEMA map is not available.

**§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 2: 30 TAC §222.83(a)(2)

$$\mathbf{AR = ET - RAINe + LEACH}$$

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

**RAINe** =  $RAIN \times EF\%$  , 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)

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

Where:

**SMa** - 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

**Cn** = 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 immediately prior to dispersal 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) 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.

(3) 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.

(4) 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.

(5) 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) and any specific effluent limitations placed in the permit by the executive director.

(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) wastes containing radioactive materials unless the permittee is authorized to store, process and dispose of these wastes in compliance with the Atomic Energy Act of 1954 (as amended) or in compliance with the Texas Radiation Control Act.

(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 adopted 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 adopted 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 of 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 title (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) flushing of each drip lateral with filtered effluent;

(D) 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 after the start-up process is complete.

(2) The system must be equipped an alarm system for high and low flow conditions and an automatic mechanism to shut down the dispersal system for pressure and flow conditions that would indicate abnormal fluid dynamics were occurring.

(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 on not 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 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.

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

- (d) The permittee shall use telemetering of the alarms.
- (e) The permittee shall house controls in a weatherproof and intruder-resistant enclosure.
- (f) The permittee shall use controls that meet Underwriter's Laboratories requirements.
- (g) 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 one foot 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 adopted 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 adopted 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. Prohibitions.**

(a) 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. .

(b) Surfacing or ponding of effluent is prohibited.

(c) Creating a condition at the treatment facility or the drip dispersal zones that contributes to vector attraction or odor 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 (f) 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.