

The Texas Commission on Environmental Quality (TCEQ or commission) adopts new Chapter 335, Subchapter T, Permitting Standards for Owners and Operators of Commercial Industrial Nonhazardous Waste Landfill Facilities, §§335.580 - 335.594. Sections 335.581 - 335.584, 335.586 - 335.592, and 335.594 are adopted *with changes* to the proposed text as published in the September 5, 2003 issue of the *Texas Register* (28 TexReg 7626). Sections 335.580, 335.585, and 335.593 are adopted *without changes* and will not be republished.

The commission has decided to *withdraw* the proposal of §335.595, Fees.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The commission adopts these new rules to establish specific requirements for the location, design, construction, and operation of commercial industrial nonhazardous solid waste landfills. Current rules under 30 TAC §§305.50(1) - (3), 305.127(4)(A), 335.4, and 335.8, and Texas Health and Safety Code (THSC), §361.002(a) contain some provisions governing the design, construction, and operation of nonhazardous industrial solid waste landfills. This adoption provides comprehensive and consistent standards for the disposal of nonhazardous industrial solid waste in commercial industrial nonhazardous waste landfills (CINWLs) and specifies requirements that must be met to obtain a permit to operate a CINWL facility. This rulemaking also implements House Bill 2554, 78th Legislature, 2003, which requires that the commission adopt rules governing all aspects of the management and operation of a new commercial landfill facility that proposes to accept nonhazardous industrial solid waste.

30 TAC Chapter 330, Municipal Solid Waste, allows for the disposal of industrial nonhazardous solid waste at municipal solid waste landfills and contains specific requirements governing this disposal. The standards set forth in this adoption are intended to be substantially consistent with the Chapter 330 standards applicable to the disposal of nonhazardous industrial solid waste. Therefore, this rulemaking incorporates by reference many of the Chapter 330 requirements. However, where deemed appropriate by the commission, these rules also include additional provisions that differ from those in Chapter 330. The standards that differ include: the allowance for above-grade landfills and alternate liners; siting requirements relating to soil and groundwater; and other requirements relating to inspections, personnel training, waste analysis, contingency plans, and ignitable, reactive, or incompatible waste. These differing standards are analogous to the requirements for hazardous waste facilities, which the commission deems necessary to provide added protection to address the potential hazards associated with commercial disposal of industrial solid waste. The commission notes that many of these standards for industrial nonhazardous solid waste landfill facilities currently are recommended in TCEQ technical guidance and through agency practice. The commission anticipates that there will be future rulemaking to harmonize the Chapter 330 requirements for disposal of industrial nonhazardous waste with this adoption.

These new rules do not apply to municipal solid waste landfills, nor do they change any existing rules that apply to the noncommercial or on-site management of nonhazardous industrial solid waste. An applicant with a pending application for a CINWL facility on the effective date of these new rules may revise the application to meet the requirements of these rules for a permit to manage and operate a commercial landfill for nonhazardous industrial solid waste. An applicant with a pending application

for a CINWL facility may not amend that application to meet the requirements for any other type permit or authorization granted by the TCEQ. An applicant with a pending application for a CINWL facility who chooses not to amend the application to meet the requirements of these new rules is subject to having the application returned.

SECTION BY SECTION DISCUSSION

The commission adopts new §335.580, Purpose and Applicability. Section 335.580(a) contains language explaining the purpose of Subchapter T, which is to establish minimum standards for facilities subject to this subchapter. Subsection (a) also states that nothing in this subchapter shall be construed to restrict the commission's authority to implement §335.4, concerning General Prohibitions, and the provisions of Texas Water Code (TWC), Chapter 26. Section 335.580(b) states that this subchapter applies to the following types of facilities at which nonhazardous industrial solid waste is stored, processed, or disposed: 1) new CINWL facilities; and 2) existing CINWL facilities with areal or capacity expansions of the CINWL. Section 335.580(c) states that the standards in this subchapter do not apply to municipal solid waste facilities at which nonhazardous industrial solid waste is managed.

The commission adopts new §335.581, Definitions. Section 335.581(1) defines "Commercial industrial nonhazardous waste landfill (CINWL) facility" as a landfill facility that accepts, for disposal and for a charge, nonhazardous industrial waste. In a change from proposal in response to comment, the following sentence is added under adopted §335.1(1): "This definition does not apply to municipal solid waste facilities at which nonhazardous industrial waste is managed in accordance with Chapter 330 of this title (relating to Municipal Solid Waste)." Section 335.581(2) defines "New commercial

industrial nonhazardous waste landfill (CINWL) facility” as a CINWL facility which is not an existing CINWL facility and for which an application was filed on or after June 20, 2003, or for which an application was pending on June 20, 2003. Section 335.581(3) defines “Existing (CINWL) facility” as a CINWL facility for which a permit was issued prior to June 20, 2003. In response to comment, a definition for “Regional aquifer” is adopted under new §335.581(4), which is defined as “Any aquifer identified as a major or minor aquifer by the Texas Water Development Board.”

The commission adopts new §335.582, Prohibited Wastes. The prohibited wastes include municipal solid waste (conditional prohibition), hazardous waste (conditional prohibition), polychlorinated biphenyl compounds, putrescible waste (conditional prohibition), explosive material, certain radioactive or nuclear materials, medical waste, liquid waste, wastes identified in §330.5(e)(1) - (5), and wastes containing asbestos (conditional prohibition).

Acceptance of municipal solid waste at a CINWL is limited to no more than 20% of the total amount of waste accepted, unless specifically otherwise authorized by the facility permit. The conditional 20% limitation for receipt of municipal solid waste at a CINWL facility is adopted because this limitation is consistent with the limitation on the receipt of industrial solid waste by municipal solid waste facilities. The 20% limitation on receipt of industrial solid waste by municipal solid waste landfills was established in the municipal solid waste rules to avoid the recurrence of solid waste companies obtaining a permit for a municipal solid waste facility and then accepting primarily industrial solid waste. The 20% limitation on receipt of municipal solid waste at a CINWL facility has been changed at adoption to be conditional by adding the phrase “unless otherwise specifically authorized by the facility permit.”

The conditional prohibition for hazardous waste, which is a change from proposal, is needed because adopted §335.590(25) provides a conditional allowance for the acceptance for disposal of hazardous waste from a conditionally exempt small quantity generator. Therefore, the commission adopts the following phrase, which is added under §335.582(2): “, except as provided in §335.590(25).” In a change from proposal in response to comment, additional prohibited wastes are added to §335.582(9) and (10). The commission adopts the following prohibitions which are added under §335.582(9) and (10): “wastes identified in §330.5(e)(1) - (5) of this title (relating to General Prohibitions), except as allowed under that section” and, “wastes identified in §330.136(b)(3) and (4) of this title (relating to Disposal of Special Wastes), except as allowed under that section, respectively.

The commission adopts new §335.583, Permit Procedures. Section 335.583(a) lists permit application requirements for facilities subject to this subchapter, including certain provisions of the following requirements applicable to municipal solid waste facilities: 30 TAC §§330.50 - 330.58, 330.62, and 330.64. In the incorporation of §330.51, any references or requirements relating to land-use only public hearings are not applicable under §335.583(a), because such hearings are not included as an option under this adoption. The incorporation of §330.56 does not include §330.56(n), concerning a landfill gas management plan except when the executive director determines that inclusion of §330.56(n) is necessary. The wording concerning the executive director determination has been revised slightly at adoption to stipulate that the applicant must provide a demonstration for consideration of approval by the executive director. Section 335.583(b) lists additional permit application requirements concerning location restrictions, general inspection requirements, personnel training, waste analysis, contingency plans, and ignitable, reactive, or incompatible wastes.

The commission adopts new §335.584, Location Restrictions, to identify those areas in which a CINWL cannot be constructed and those areas in which a CINWL cannot be constructed without first meeting specific requirements. Section 335.584(a) lists location restrictions applicable to municipal solid waste facilities, and applies these restrictions to facilities subject to this subchapter, including those relating to flood plains, wetlands, fault areas, seismic impact zones, and unstable areas. Section 335.584(b)(1) prohibits a new CINWL facility, or an areal or capacity expansion of an existing CINWL unit, where underlying soil unit(s) within five feet of the lower component of the bottom liner have certain specified sand or gravel Unified Soil Classifications, unless it is in an area where the average annual evaporation exceeds average annual rainfall by more than 40 inches; or the soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration. In a change from proposal based on comment, the phrase “lower component” is replaced with the word “base” and the following phrase is added “which includes the sides and bottom of the containment structure.” A conforming change is also made in response to comment under §335.584(b)(2) to add the phrase “which includes the sides and bottom of the containment structure.” Section 335.584(b)(2) prohibits a new CINWL facility, or an areal or capacity expansion of an existing CINWL unit, in areas overlying a regional aquifer unless the regional aquifer is separated from the base of the containment structure by a minimum of ten feet of material with a hydraulic conductivity towards the aquifer not greater than 10^{-7} centimeters per second (cm/sec), or a thicker interval of more permeable material that provides equivalent or greater retardation to pollutant migration. In another change from proposal in response to public comment, location restrictions are added under adopted §335.384(b)(3) and (4), by incorporating the following phrase “on a barrier island or peninsula” and wording concerning areas subject to active coastal shoreline erosion.

The commission adopts new §335.585, General Inspection Requirements, to describe the requirements for inspection of the facility. Section 335.585(a) states that a facility owner or operator must inspect the facility for malfunctions and deterioration, operator errors, and discharges that may be causing or may lead to a release of nonhazardous industrial solid wastes constituents to the environment or that may pose a threat to human health. Section 335.585(b) requires that the owner or operator must develop and maintain a written schedule for inspecting monitoring equipment, security devices, and operating and structural equipment. Section 335.585(c) requires the owner or operator to remedy any deterioration of equipment or structures. Section 335.585(d) requires the owner or operator to record inspections in an inspection log and to maintain inspection records for three years.

The commission adopts new §335.586, Personnel Training, to describe the types of training an owner or operator must provide for facility employees. Section 335.586(a) states that all facility personnel must successfully complete a training program that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this subchapter. Section 335.586(b) requires facility personnel to complete the training program within six months after the effective date of these regulations or six months after the date of their employment. Section 335.586(c) requires an annual review of the initial training. Section 335.586(d) requires the owner or operator to maintain the following documents at the facility: job title for each position related to nonhazardous industrial solid waste management; the name of the employee filling each position; a written job description for each position; a written description of the type and amount of training or job experience for each position; and records to document that the training or job experience required has been given to, and completed by, each employee. Section 335.586(e) requires the owner or operator to maintain training records for

at least three years from the date the employee last worked at the facility. In a change from proposal, the commission adopts the revisions to §335.586(a)(1) to refer to “waste,” rather than “nonhazardous industrial solid waste.” This change is necessary to make the subchapter internally consistent, because CINWLs are allowed to accept other types of waste in addition to nonhazardous industrial solid waste. In this regard, the commission notes that, in response to comment, proposed §335.582(1) is revised in this adoption to allow a CINWL owner or operator, if authorized by permit, to accept municipal solid waste in amounts greater than 20% of the total amount of waste accepted during the current or previous year. Additionally, in response to comment, proposed §335.582(4) is revised in this adoption to allow a CINWL owner or operator to accept putrescible wastes. Lastly, under proposed §335.590(25), which is adopted as proposed, acceptance of hazardous waste from conditionally exempt small quantity generators is allowed.

The commission adopts new §335.587, Waste Analysis, to describe the requirements for properly characterizing wastes received at a CINWL facility. These requirements are necessary to ensure that unauthorized waste is not placed in a CINWL, and include a requirement under §335.587(a) that the owner or operator obtain a detailed chemical and physical analysis of a representative sample of the waste, which provides all the information that must be known to treat, store, or dispose of the waste in accordance with this subchapter. Subsection (a) also requires the waste analysis plan to specify the procedures which will be used to inspect and, if necessary, analyze each movement of waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. Section 335.587(b) requires the owner or operator to develop and follow a written

waste analysis plan that describes the procedures which the owner or operator will carry out to comply with subsection (a).

In a change from proposal, the commission adopts revisions to §335.587(a)(1)(A) and (B), (2), (3)(A) and (B), (4), and (b)(1) and (5), to refer to “waste” rather than “nonhazardous industrial waste.” This change is necessary to make the subchapter internally consistent, because CINWLs are allowed to accept other types of waste in addition to nonhazardous industrial waste. In this regard, the commission notes that, in response to comment, proposed §335.582(1) is revised in this adoption to allow a CINWL owner or operator, if authorized by permit, to accept municipal solid waste in amounts greater than 20% of the total amount of waste accepted during the current or previous year. Additionally, in response to comment, proposed §335.582(4) is revised in this adoption to allow a CINWL owner or operator to accept putrescible wastes. Lastly, under proposed §335.590(25), which is adopted as proposed, acceptance of hazardous waste from conditionally exempt small quantity generators is allowed.

The commission adopts new §335.588, General Requirements for Ignitable, Reactive, or Incompatible Wastes. Section 335.588(a) states that the owner or operator shall take precautions to prevent accidental ignition or reaction of wastes that are ignitable or reactive. Section 335.588(b) states that the owner or operator who manages ignitable or reactive wastes, or who mixes incompatible waste or incompatible wastes with other materials, shall take precautions to prevent certain types of dangerous reactions listed in paragraphs (1) - (5). Section 335.588(c) requires the owner or operator to document compliance, when required to comply with subsection (a) or (b). In a change from proposal, the

commission adopts revisions to §335.588(a) to refer to “waste,” rather than “nonhazardous industrial waste.” This change is necessary to make the subchapter internally consistent, because CINWLs are allowed to accept other types of waste in addition to nonhazardous industrial waste, as discussed earlier in this preamble.

The commission adopts new §335.589, Contingency Plan, describing the contents of the contingency plan and the steps a facility owner or operator must take to implement the contingency plan in the event of a release of waste at the facility. This new section contains subsections (a) - (f), which describe: the purpose of the contingency plan; detailed requirements concerning implementation and content of the plan; provisions for maintaining and providing copies of the plan; amendment of the plan; emergency coordinator responsibilities and duties; and emergency procedures. In a change from proposal, the commission adopts revisions to §335.589(a)(1) and (2), (b)(1), (2), and (6), (d)(3), and (f)(3) and (6) to refer to “waste,” rather than “nonhazardous industrial waste” or “nonhazardous industrial solid waste.” This change is necessary to make the subchapter internally consistent, because CINWLs are allowed to accept other types of waste in addition to nonhazardous industrial waste, as discussed previously in this preamble.

The commission adopts new §335.590 to describe the requirements for day-to-day operation of a CINWL. The title of this section has been changed from proposal to “Operational and Design Standards” to more properly reflect the content of this section. This new section incorporates by reference the following municipal solid waste requirements: 30 TAC §§330.111 - 330.116, 330.117(a) - (c), 330.119 - 330.122, 330.125, 330.127 - 330.134, 330.138, and 330.139. The adopted

incorporation of §330.113 does not include §330.113(b)(3), concerning gas monitoring and remediation plan recordkeeping, except when the executive director determines that inclusion of §330.113(b)(3) is necessary because of the nature of the wastes. Section 330.130, Landfill Gas Control, does not apply except when the executive director determines that this is necessary because of the nature of the wastes. Section 335.590 also contains requirements concerning: shipping; reporting; landfill design, construction, and operation; and the acceptance of hazardous waste from conditionally exempt small quantity generators. A change from proposal in response to comment has been made under §335.590(24)(A) by the addition of clause (i)(III), to allow the executive director to approve an engineered design that would provide equal or greater protection to human health and the environment than would be provided by the adopted construction requirement. The new adopted language is as follows: “unless the executive director approves an engineered design that the applicant has demonstrated will provide equal or greater protection to human health and the environment, a landfill cell must be constructed where the base of the containment structure, which includes the sides and bottom of the containment structure, is at least five feet above the uppermost saturated soil unit having a Unified Soil Classification of GW (well-graded gravel), GP (poorly-graded gravel), GM (silty gravel), GC (clayey gravel), SW (well-graded sand), SP (poorly-graded sand), or SM (silty sand), or a hydraulic conductivity greater than 1×10^{-5} cm/sec, unless such saturated soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration.” Another change from proposal in response to comment is the addition of an allowance for an exemption from certain requirements for above-grade disposal under adopted §335.590(24)(F). Also, the prescriptive requirements under proposed §335.590(24)(F)(ii) and (iii) have been deleted in this adoption. In a change from proposal, the commission adopts revisions to §335.590(24)(F) to refer to “waste,” rather

than “nonhazardous industrial waste.” This change is necessary to make the subchapter internally consistent, because CINWLs are allowed to accept other types of waste in addition to nonhazardous industrial solid waste, as discussed previously in this preamble.

The commission adopts new §335.591, Groundwater Protection Design and Operation, describing the requirements for the landfill liner design and leachate collection system design and operation. This new section incorporates by reference the following requirements applicable to municipal solid waste facilities: 30 TAC §§330.201 - 330.203, 330.205, and 330.206. In a change from proposal based on public comment, the following reference has been added to adopted §335.591: “§330.204 of this title (relating to Geological Faults).” This change adds a restriction on locating a CINWL in areas subject to active faulting.

The commission adopts new §335.592, Groundwater Monitoring and Corrective Action, to describe the requirements for groundwater monitoring relating to detection monitoring and assessment monitoring. These incorporate by reference the following requirements applicable to municipal solid waste facilities: §§330.230, 330.231, 330.233 - 330.238, 330.241, and 330.242.

The commission adopts new §335.593, Closure and Post-Closure Care Requirements, to describe the requirements for maintenance of a landfill after it has been closed. This section addresses the care and maintenance of a CINWL after waste management activities at the facility have ceased.

The commission adopts new §335.594, Financial Assurance, to reference the requirements for financial assurance, which are in Chapter 37, Subchapter P. This section requires a CINWL owner or operator to provide financial assurance for the closure and post-closure care of a CINWL.

In a change from proposal, the commission does not adopt §335.595, Fees. The commission asserts that it is unnecessary to reference the requirement for payment of fees associated with commercial waste management facilities, because fees for commercial industrial solid waste disposal are addressed in Chapter 335, Subchapter J. Also, owners and operators of CINWL facilities that accept municipal solid waste are subject to applicable municipal solid waste fees.

The commission also adopts minor typographical and other revisions necessary to comply with Texas Register requirements.

RELATED ISSUE

The commission solicited comment on the issue of duration of the permit for a CINWL to which Chapter 335, Subchapter T would apply (see September 5, 2003 issue of the *Texas Register* (28 TexReg 7628)). Comments on this issue were solicited for consideration for future rulemaking regarding permit term limits under 30 TAC §305.127(1)(B)(ii), which provides that the duration of the permit “may be for the life of the project,” and would be determined on a case-by-case basis. Responses to comments on this issue are contained in the RESPONSE TO COMMENTS section of this preamble.

FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted new rules in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and has determined that these new rules are not subject to §2001.0225 because they do not meet the definition of a “major environmental rule” as defined in that statute. “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, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The specific intent of these new rules is to protect the environment and reduce risks to human health. This rulemaking implements House Bill 2554, which requires that the commission adopt rules governing all aspects of the management and operation of a new commercial landfill facility that proposes to accept nonhazardous industrial solid waste. The adopted new rules provide a set of comprehensive and consistent standards for the disposal of industrial nonhazardous waste in commercial industrial nonhazardous waste landfills. The new rules substantially advance their purpose by spelling out the requirements that must be met to obtain a permit to operate a CINWL, including specific requirements for location, design, construction, and operation. However, because the new rules do not require substantially more from an applicant than is required or allowed by current rules, law, or agency practice, these rules do not adversely affect in a material way the economy, a sector of the economy, productivity, competition, or jobs. These new rules are not anticipated to adversely affect in a material way the environment or the public health and safety of the state or a sector of the state because the rules specify technical standards for the disposal of waste in commercial industrial nonhazardous solid waste landfills.

In addition, the adopted new rules do not exceed the four applicability requirements of Texas Government Code, §2001.0025(a)(1) - (4) in that the rules do not: 1) exceed a standard set by federal law; 2) exceed an express requirement of state law; 3) exceed a requirement of a delegation agreement; or 4) adopt a rule solely under the general powers of the agency.

The rulemaking does not exceed a standard set by federal law because there are no such corresponding federal standards for the disposal of nonhazardous industrial waste in commercial industrial nonhazardous solid waste landfills. Further, the adopted rules do not exceed an express requirement of state law because THSC, Chapter 361 does not establish express requirements for the disposal of nonhazardous industrial waste in CINWLs. The adoption does not exceed the requirements of a delegation agreement because there is no delegation agreement that establishes express requirements for CINWLs. These rules are not adopted solely under the general powers of the agency, but under the provisions of TWC, §5.103 and §5.105, which provide the commission with the authority to adopt any rules necessary to carry out its powers and duties under the provisions of the TWC or other laws of this state; and under THSC, §361.017 and §361.024, which authorize the commission to regulate industrial solid waste and municipal hazardous waste and to adopt rules consistent with the general intent and purposes of the THSC.

TAKINGS IMPACT ASSESSMENT

The commission evaluated these new rules and performed an assessment of whether these rules constitute a takings under Texas Government Code, Chapter 2007. The specific purpose of these rules is to provide comprehensive and consistent standards for the disposal of nonhazardous industrial solid

waste in CINWLs and to specify requirements that must be met to obtain a permit to operate a CINWL facility. These rules significantly advance this purpose by creating new Chapter 335, Subchapter T, which establishes specific requirements for the location, design, construction, and operation of CINWLs.

The adopted new rules do not impose a greater burden than is necessary because the adopted location, design, construction, and operational requirements represent the engineering practice necessary to safeguard the health, welfare, and physical property of the people and to protect the environment by controlling the management of solid waste. Specifically, the adopted regulations do not restrict or limit the owner's right to property and reduce its value by 25% or more beyond that which would otherwise exist in the absence of the regulations because the new rules do not require substantially more from an applicant than is required or allowed by other current commission rules, law, or consistent practice of the agency. Promulgation and enforcement of these new rules will not affect private real property and would be neither a statutory nor a constitutional takings. These new rules do not prohibit economically viable or beneficial uses of real property. These rules merely provide specific requirements that must be followed to dispose of nonhazardous industrial solid waste in CINWLs. There is no alternative to adopting these rules, although the content of the rules could vary. House Bill 2554 requires the commission to adopt rules governing all aspects of the management and operation of a new commercial landfill facility that proposes to accept nonhazardous industrial solid waste.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed the rulemaking and found that the adopted rules affect an action and/or authorization identified in 31 TAC §505.11(a)(6). Consequently, the applicable goals and policies of the Texas Coastal Management Program (CMP) were considered during the rulemaking process. The commission has undertaken a consistency determination for the new rules in accordance with §505.22 and has found the rulemaking is consistent with the applicable CMP goals and policies. The following is a summary of that determination. The CMP goal applicable to this rulemaking is the goal to protect, preserve, restore, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas. Applicable policies are construction and operation of solid waste treatment, storage, and disposal facilities, such that new solid waste facilities and areal expansions of existing solid waste facilities shall be sited, designed, constructed, and operated to prevent releases of pollutants that may adversely affect coastal natural resource areas, and at a minimum, comply with standards established under the Solid Waste Disposal Act, 42 United States Code, §§6901 *et seq.* Promulgation and enforcement of these new rules are consistent with the applicable CMP goals and policies because the new rules provide comprehensive and consistent standards for the disposal of nonhazardous industrial waste in CINWL units and specify requirements that must be met to obtain a permit to operate a CINWL. In addition, these rules do not violate any applicable provisions of the CMP's stated goals and policies.

PUBLIC COMMENT

A public hearing on the proposal was scheduled to be held in Austin on September 30, 2003. No formal public comment was offered at the scheduled hearing time; so a hearing was not held. The comment period for written comments ended at 5:00 p.m., October 6, 2003. Written comments were

submitted during the comment period by Allied Waste Industries, Inc. (Allied); the City of Baytown; the City of Beach City; Chambers-Liberty Counties Navigation District (CLCND); Fritz, Byrne, Head & Harrison, L.L.P. (FBH&H), on behalf of Chambers County, Texas and Informed Citizens United; Citizens for a Better Baytown; Ewen Environmental Engineering, prepared at the request of FBH&H; Galveston Bay Foundation; the Harris County Attorney's Office (HCAO), on behalf of the Harris County Attorney's Office and Harris County Public Health and Environmental Services, Pollution Control Division; McElroy, Sullivan, Ryan & Miller, L.L.P. (MSR&M), on behalf of Republic Waste Services of Texas, Ltd.; Texas Disposal Systems Landfill, Inc.; Waste Management of Texas, Inc. (WMTX); and nine individuals. The comments are addressed in the RESPONSE TO COMMENT section of this preamble.

RESPONSE TO COMMENTS

No commenter expressed opposition to the proposed rules. Many commenters expressed support for the commission's efforts to adopt rules establishing comprehensive and consistent standards for the disposal of nonhazardous industrial solid waste in CINWLs, although all the commenters provided suggestions for change or questioned aspects of the proposed rules. Allied; the City of Baytown; Citizens for a Better Baytown; FBH&H; the Galveston Bay Foundation; MSR&M; and three individuals expressed support, including such statements as the rules are a "step in the right direction" or a "very good start." The City of Beach City; CLCND; Ewen Environmental Engineering; HCAO; Texas Disposal Systems Landfill, Inc.; WMTX; and five individuals expressed neither support nor opposition.

General Comments Concerning Additional Requirements

Several comments were received regarding requirements that were not addressed in the proposed new rules.

FBH&H stated that the proposed rules do not expressly address such topics as: deed recordation, detailed provisions for applicability, detailed definitions for the program, access control and security issues, unloading of waste, construction quality assurance plans, financial assurance for liability, financial capability of applicant, general prohibitions, detailed record keeping and notification requirements, and permitting of storage and processing units. The commenter encouraged the commission to revise the proposed rule language at adoption to comport with the municipal and hazardous waste programs by providing a comprehensive rather than a piecemeal program.

The commission disagrees with this commenter's recommendations. Although the commission acknowledges that there are certain requirements that were not specifically proposed or spelled out without a reference to other rules, the commission asserts that several of the requirements referenced by the commenter were provided for in the proposal. First, the commission notes that deed recordation is addressed in 30 TAC §335.5, which requires deed recordation for disposal of industrial solid waste. Furthermore, access control and security are addressed in §335.590(6), which references 30 TAC §330.116, concerning Access Control. Construction quality assurance is addressed in §335.583(7), under which an applicant for a CINWL permit must submit information required under 30 TAC §330.56, concerning Attachments to the Site Development Plan. Under §330.56(j), an applicant must submit a Soils and Liner Quality Control Plan that has been prepared in accordance with the requirements of §§330.200 - 330.206. Construction quality

assurance is also addressed in §335.591(5) and (6), which references 30 TAC §330.205, concerning Soils and Liner Quality Control Plan and §330.206, concerning Soils and Liner Evaluation Report (SLER) and Flexible Membrane Liner Evaluation Report (FMLER), respectively. Moreover, notification requirements are addressed in 30 TAC §335.6, and recordkeeping requirements are addressed in 30 TAC §335.15. The commission has made no changes to the proposed language in response to these comments and recommendations.

FBH&H stated that the proposed rules do not expressly address hours of operation.

The commission agrees with the comment that the proposed rules do not provide a restriction on the hours of operation for a CINWL facility. The commission recognizes that municipal solid waste facilities, including those that are authorized to accept Class 1 waste, have restricted hours of operation under 30 TAC §330.118, and further recognizes that this restriction could be construed as a disadvantage. Nevertheless, the commission does not regard this to be a significant potential disadvantage. The commission notes that under §330.118, the executive director may approve alternate hours of operation for special circumstances. Municipal solid waste facilities typically serve a specific geographic area, and municipal solid waste comprises the bulk of the waste delivered to a municipal solid waste facility. Deliveries to these facilities occur primarily during daylight hours, and the number of deliveries is controlled in part by the owner or operator of the facility. The sources of wastes delivered to a municipal solid waste facility tend to be restricted to a specific geographic area to a large degree, and the amount of Class 1 waste that may go to a municipal solid waste is limited to 20% of the facility's capacity.

On the other hand, a CINWL typically serves a large area, with no geographic restrictions regarding the source of the waste. Thus, a CINWL will serve a much larger geographic area than a municipal solid waste facility, and waste deliveries to a CINWL could come from distances of hundreds of miles, making the delivery schedules difficult to predict. The commission regards flexibility in the hours of operation for CINWLs to be protective of human health and the environment in that this would allow a CINWL to receive a delivery of Class 1 waste at any time, thereby decreasing the amount of time a Class 1 waste transporter may be on public roadways. Finally, although the proposed new rules do not restrict the hours of operation for CINWLs, the commission may, as deemed appropriate on a case-by-case basis, require limited hours of operation for a CINWL. The commission has made no changes to the proposed language in response to this comment.

FBH&H stated that the proposed rules do not expressly address the applicability and identification of appropriate 30 TAC Chapter 305 provisions.

The commission agrees with the comment that the proposal did not address the applicability and identification of Chapter 305 provisions. However, the commission does not agree that Chapter 305 provisions need to be addressed in this rulemaking, because they apply without having to be referenced. Furthermore, referencing portions of Chapter 305 that apply to CINWL facilities under Chapter 335, Subchapter T would necessitate amending Subchapter T each time the Chapter 305 rules are amended. The commission notes that, throughout this RESPONSE TO COMMENTS section of the preamble, portions of Chapter 305 which apply to CINWL facilities

are discussed on an issue-by-issue basis. The commission has made no changes to the proposed language in response to this comment.

The Galveston Bay Foundation recommended that storage and processing units be required to meet hazardous waste standards. Ewen Environmental Engineering commented that the proposed rules do not address permitting standards for nonhazardous waste storage or treatment. This commenter questioned whether the commission proposes to allow such facilities to be used at CINWL facilities, and if so, what the permitting standards would be. This commenter recommended that the commission seriously consider requiring that such storage and treatment units comply with the hazardous waste storage and treatment unit standards.

The commission agrees in part with these comments, in that the proposal does not specifically address permitting standards for industrial nonhazardous waste storage or processing units. The commission notes that the purpose of the proposal was to draft rules pertaining to CINWLs, rather than all types of industrial nonhazardous waste management units. The commission further notes that §§305.50(1) - (3), 305.127(4)(A), 305.142 - 305.145, 335.4, and 335.8, and THSC, §361.002(a) contain provisions which apply to nonhazardous industrial solid waste permits and provisions governing the design, construction, and operation of nonhazardous industrial solid waste facilities. With the possible exception of hazardous waste from conditionally exempt small quantity generators, hazardous waste regulations prohibit hazardous waste at permitted CINWL facilities; therefore, the commission will not allow processing of hazardous waste at a facility

permitted as a CINWL facility. The commission has made no changes to the proposed language in response to these comments.

Citizens for a Better Baytown commented that Class 1 wastes containing volatile compounds should be kept in tanks that meet the air emission standards for chemical plants, including maintenance, reporting, and testing.

The commission agrees with the comment that tanks used to store or process solid wastes should meet all applicable Clean Air Act emission standards. The commission notes that nothing in the proposed rules would exempt a CINWL facility from the requirements of the Clean Air Act. The commission has made no changes to the proposed language in response to this comment.

General Comments Concerning Organization and Approach

Several comments were received regarding the organization and approach of the proposed rules.

The City of Baytown suggested that the commission reevaluate its approach to this rulemaking and consider adoption of the hazardous waste rules as the starting point and incorporate the municipal solid waste rules only in those areas which are not directly tied to environmental protection. The City of Baytown also commented that it is critical for the commission to acknowledge that the municipal solid waste program may not be the appropriate response in regulating many features of the CINWL program, basically because of the increased risk associated with industrial nonhazardous wastes as compared to municipal solid wastes.

The commission disagrees with these comments. Concerning the comment that different standards such as hazardous waste program standards should be adopted to address CINWL facility permitting, the commission asserts that the proposed new rules as adopted today adequately and properly address the permitting of CINWL facilities. The commission realizes that there are differences between municipal solid waste and nonhazardous industrial solid waste, and notes that the adopted new rules, in addition to incorporating many of the Chapter 330 requirements, also incorporate additional requirements to address risks associated with management of industrial nonhazardous waste. The commission has made no changes to the proposed language in response to these comments.

WMTX encouraged the commission to adopt the 30 TAC Chapter 352 rules that were proposed in 1996, as they provided considerably more detail and more environmental protection than the proposed new rules. Citizens for a Better Baytown also recommended that the commission adopt the 1996 Draft Chapter 352 rules, rather than the proposed new rules.

The commission disagrees with these comments. The commission again asserts that the proposed new rules as adopted today adequately and properly address the permitting of CINWL facilities. Concerning the previous Chapter 352 rules proposal, the commission notes that it was the decision of the commission at that time to withdraw the proposal, and the commission finds that there is no compelling need to reverse this previous decision. The commission notes that, although the proposed Chapter 352 rules did not specifically reference Chapter 330 rules as do the proposed new rules, a comparison of the proposed Chapter 352 rules and the proposed new rules indicates

few substantial differences. Indeed, the proposed Chapter 352 rules were based on many of the requirements found in Chapter 330. The decision to incorporate many of the Chapter 330 rules into the proposed new rules was based on several considerations. First, the Chapter 330 rules address the management of Class 1 nonhazardous industrial waste. Although specific requirements for management of this waste in dedicated trenches at municipal solid waste facilities are in §330.137, these trenches are subject to all other requirements for a municipal solid waste facility. Second, in the interest of brevity, referencing existing rules was favored over the excessive duplication of those existing rules. Third, the Chapter 330 rules address many of the aspects necessary for proper management of solid waste, such as comprehensive permitting procedures, location restrictions, operational standards, and groundwater protection and remediation. Fourth, including by reference all appropriate requirements for municipal solid waste facilities that are authorized to manage Class 1 nonhazardous industrial waste enables the commission to more readily maintain economic equity, as warranted and feasible, between those municipal solid waste facilities and CINWL facilities.

WMTX commented that the commission's statements regarding the consistency of the proposed rules with the Chapter 330 municipal solid waste rules are ambiguous and should be clarified prior to adoption of the final rules.

The commission disagrees with this comment, and asserts that the statements regarding consistency of the proposed rules with the Chapter 330 rules are unambiguous. In the preamble to the proposed rules, the commission made it clear that the proposal would incorporate many of

the Chapter 330 rules applicable to the disposal of industrial nonhazardous waste and that the proposed rules contain additional requirements deemed necessary for regulating the disposal of industrial nonhazardous wastes. The commission has made no changes to the proposed rule language in response to this comment.

WMTX questioned whether the commission anticipated future rulemaking to require municipal solid waste standards analogous to the requirements for hazardous waste facilities and wanted to know what changes to Chapter 330 were anticipated. WMTX stated that the commission should not proceed with the proposed rules until these questions were answered so that industry would have an opportunity to comment on any changes to the Chapter 330 rules.

The commission disagrees with the commenter's statement that the commission should not proceed with the rulemaking until certain questions are answered. Although the commission asserts that industrial nonhazardous solid waste is currently being effectively managed at municipal solid waste facilities subject to the Chapter 330 rules, the commission stated in the preamble to the proposed rules that it anticipates future rulemaking to harmonize the Chapter 330 rules governing disposal of industrial nonhazardous waste with the proposed rules. Potential areas of harmonization include, but are not necessarily limited to, the following requirements for the disposal of Class 1 waste: general inspection requirements; waste analysis; general requirements for ignitable, reactive, or incompatible wastes; and contingency plans. At such time as these changes are proposed, both industry and the public will be given the opportunity to comment.

Any future changes to Chapter 330, however, will be independent of this rulemaking process.

Therefore, the commission sees no reason to postpone adoption of the proposed new rules.

The Galveston Bay Foundation commented that the proposed new rules did not address all aspects of the operation of a CINWL, as required by HB 2554, and did not contain the depth and specificity required by the statute.

The commission agrees in part with these comments, in that the proposal does not specifically address permitting standards for certain aspects of the operation of a CINWL (e.g., standards specifically applicable to industrial nonhazardous waste storage or processing units). However, as discussed previously in this preamble, the commission asserts that there are existing regulatory and statutory provisions which address these aspects. In this regard, the commission notes that §§305.50(1) - (3), 305.127(4)(A), 305.142 - 305.145, 335.4, and 335.8; and THSC, §361.002(a) contain provisions which apply to nonhazardous industrial waste permits and provisions which govern the design, construction, and operation of nonhazardous industrial waste facilities. These provisions, along with the proposed new provisions will be applied in the evaluation of permit applications for CINWL facilities. The commission has made no changes to the proposed language in response to these comments.

FBH&H commented that the proposed new rules were a marked improvement over the absence of any distinct CINWL rules.

The commission agrees with this comment.

Several comments were received regarding the toxicity of nonhazardous wastes.

The City of Baytown commented that nonhazardous wastes are not innocuous or harmless, and emphasized that the wastes which would be placed in a CINWL will be more toxic than those placed in a hazardous waste landfill. The City of Baytown urged the commission to consider strengthening the proposed rules in many respects. CLCND also commented that wastes placed in a CINWL contain higher concentrations of toxic chemicals than those placed in hazardous waste landfills. Ewen Environmental Engineering commented that mainly Class 1 nonhazardous industrial wastes which are more toxic than hazardous wastes would be received at CINWL facilities. Ewen Environmental Engineering also commented that the proposed rules do not take into consideration that due to the land disposal restrictions on hazardous wastes, nonhazardous industrial wastes often are more toxic than waste placed in hazardous waste landfills, which must have a double liner and a leak detection system. This commenter contended that the wastes allowed to be placed in a CINWL may contain constituents in concentrations thousands of times higher than allowed in a hazardous waste landfill, and provided a table in which a comparison was made for 21 typical toxic constituents allowed in hazardous waste landfills and CINWLs. In this table, the allowable concentrations for disposal of these constituents in CINWLs exceed those for disposal in hazardous waste landfills. This commenter stated that for toluene, phenol, antimony, beryllium, and zinc, there was no concentration limit for waste placed in CINWLs. Based on this comparison, Ewen Environmental Engineering recommended that the design, construction, operational, and monitoring requirements for CINWLs should be at least as stringent as those for hazardous waste landfills. The Galveston Bay Foundation and an individual commented that

the wastes placed in a CINWL should be subject to the land disposal restrictions in Chapter 335, Subchapter O because they present a greater threat to human health and the environment than wastes placed in a hazardous waste landfill.

The commission agrees in part and disagrees in part with these comments and recommendations. First, the commission recognizes that some wastes destined for disposal in CINWLs may have higher concentrations of certain chemical constituents than are allowed in hazardous wastes destined for disposal in hazardous waste landfills. However, as discussed at length in the following paragraphs, the commission considers these cases to be limited, and the commission asserts that they do not warrant the wholesale imposition of hazardous waste landfill design and operating standards on CINWLs.

Under the land disposal restrictions in Title 40 Code of Federal Regulations (CFR) Part 268, hazardous wastes must be treated to meet the standards in 40 CFR §268.40 prior to being placed in a hazardous waste landfill. In a limited number of instances, the treatment standard for a specific hazardous waste has a lower constituent concentration level than the regulatory standard for defining a Class 1 industrial nonhazardous waste. This results in the situation where the toxicity of a waste allowed to be placed in a hazardous waste landfill is less than the toxicity of a waste that may be disposed of in a CINWL. For example, a waste that contains 5.0 milligrams per liter (mg/L) leachable lead is a hazardous waste (40 CFR §261.24). One that contains 1.8 mg/L lead but less than 5.0 mg/L leachable lead is a Class 1 waste (30 TAC §335.505(1)). Under the land disposal restrictions, however, a nonwastewater hazardous waste cannot be placed in a

hazardous waste landfill until it has been treated such that its leachable lead content is less than or equal to 0.75 mg/L. The situation therefore exists where a waste that contains more than 0.75 mg/L but less than 5.0 mg/L leachable lead may be placed in a CINWL, but not in a hazardous waste landfill.

Although there are cases, such as the previously-stated example, where wastes destined for disposal in CINWLs may have higher concentrations of certain toxic constituents than are allowed in hazardous wastes destined for disposal in hazardous waste landfills, the commission asserts that these cases are limited in number, and do not support the generalization that wastes placed in a CINWL are more toxic than those placed in a hazardous waste landfill. Wastes that may be placed in a hazardous waste landfill include several hundred wastes identified in 40 CFR Part 261, Subpart D (the so-called “listed wastes”). These wastes remain hazardous wastes regardless of the treatment they may undergo, and therefore are prohibited from disposal in a CINWL. Of those wastes that are hazardous because they exhibit a characteristic identified in 40 CFR Part 261, Subchapter C (the so-called “characteristic wastes”), only a limited number have treatment standards that are below the limits for Class 1 nonhazardous industrial waste. For wastewaters, the land disposal restriction treatment standards for arsenic, chlorobenzene, 1,1-dichlorobenzene, hexachlorobenzene, lead, and pyridine are below the Class 1 waste limit. For nonwastewaters, the land disposal restriction treatment standards for cadmium, lead, and lindane are below the Class 1 waste limit.

For ten of the constituents (i.e., tetrachloroethylene, trichloroethylene, methyl ethyl ketone, benzene, cresols, barium, chromium, mercury, selenium, and silver) listed in the table provided by Ewen Environmental Engineering, the concentration limit defining a Class 1 waste is identical to that which defines a hazardous waste (compare §335.505(1) and 40 CFR §261.24).

In this table, Ewen Environmental Engineering also identified eight constituents (i.e., anthracene, antimony, beryllium, ethylbenzene, phenol, toluene, xylene, and zinc) as having “no limit” in Class 1 wastes, and the commission agrees with this comment. This situation exists because the presence of any of these eight constituents at a specific concentration is not a basis for defining a waste as hazardous, under either 30 TAC §335.1(62) or 40 CFR Part 261. Consequently, a quantity of pure anthracene, for example, could conceivably be classified as Class 1 waste and disposed in a CINWL, provided that it did not exhibit the hazardous waste characteristic of ignitability, corrosivity, or reactivity. As discussed further in this preamble, however, the commission asserts that there is limited opportunity for disposal of wastes that contain these constituents in unlimited concentrations.

The commission notes that wastes that contain any of the previously-stated eight constituents may be disposed in a CINWL irrespective of their concentration only if the following conditions are met: 1) the concentration of the constituent does not cause the waste to exhibit a hazardous waste characteristic; 2) the constituent is not a listed hazardous waste; 3) the constituent is not associated with a listed waste as a regulated hazardous constituent identified in 40 CFR §268.40; and 4) the waste is not a liquid waste.

With regard to “condition 1,” the commission notes that ethylbenzene, toluene, and xylene can exhibit the hazardous characteristic of ignitability, depending on the concentration of the constituent. Therefore, wastes containing these constituents are not allowed to be disposed in a CINWL if the concentration of any of these constituents causes them to exhibit the hazardous waste characteristic of ignitability. In other words, these constituents or wastes containing them would be allowed to be disposed in a CINWL only if the constituent concentrations are sufficiently low to prevent them from exhibiting the ignitability characteristic.

With regard to “condition 2,” a listed hazardous waste remains classified as a hazardous waste regardless of the treatment it has undergone, with few exceptions. Phenol, toluene, and beryllium powder are listed hazardous wastes (United States Environmental Protection Agency (EPA) hazardous waste numbers U188, U220, and P015, respectively) if they are discarded commercial chemical products, off-specification species, container residues, or spill residues. When the three previously listed hazardous wastes, or a mixture of solid waste and one or more of these wastes are sent for disposal, they remain classified as listed hazardous wastes even after treatment to meet land disposal restriction standards. Consequently, disposal of these hazardous wastes or mixtures is prohibited under adopted §335.582(2), unless the conditions concerning conditionally exempt small quantity generator waste under adopted §335.590(25) are met.

With regard to “condition 3,” although anthracene, antimony, beryllium (other than beryllium powder), ethylbenzene, xylene, and zinc are not hazardous wastes (unless they exhibit the characteristic of ignitability, corrosivity, or reactivity), each is a regulated hazardous constituent

under 40 CFR §268.40. For example, anthracene is one of 20 regulated hazardous constituents for listed hazardous waste K051, “API separator sludge from the petroleum refining industry.” Phenol, toluene, and beryllium powder are also regulated hazardous constituents for certain listed hazardous wastes. For example, toluene is one of ten regulated hazardous constituents for listed hazardous waste K087, “decanter tank tar sludge from coking operations.” Therefore, the presence of one or more of these eight constituents in a particular waste could be due to the presence of a listed hazardous waste. In such a case, that particular waste would be classified as a listed hazardous waste and thus would not be allowed to be disposed in a CINWL. In other words, a waste that contains any of these eight constituents may be disposed in a CINWL only if the constituents are not regulated hazardous constituents associated with a listed hazardous waste, and only if the waste is not hazardous waste for another reason such as exhibiting a hazardous waste characteristic.

With regard to “condition 4,” the commission notes that ethylbenzene, phenol, toluene, and xylene are typically liquids, and thus would be prohibited from disposal in a CINWL under adopted §335.582(8), regardless of their concentration.

With regard to zinc, the commission notes that zinc is identified as an underlying hazardous constituent for only one listed waste, K061. For K061, zinc is one of 13 underlying hazardous constituents on which this listing is based. Furthermore, in 40 CFR §268.48, the EPA notes that zinc is not an underlying constituent for wastes that exhibit a characteristic of hazardous waste.

Therefore, a material cannot be designated a characteristically hazardous waste solely on the presence of zinc.

In summary, the commission recognizes that a few wastes that are allowed to be disposed in a CINWL may contain certain chemical constituents in concentrations greater than for wastes allowed for disposal in hazardous waste landfills. However, due to the limited number and relative volumes and quantities of such wastes, the commission asserts that this situation does not warrant the imposition of either hazardous waste landfill design and operating standards or land disposal restrictions on CINWLs. Therefore, the commission has made no changes to the proposed language in response to these comments.

CLCND commented that the prefix “non” should be removed from the term “nonhazardous waste,” as it is intentionally misleading and misrepresents the nature of these wastes. An individual questioned how a landfill could be termed nonhazardous if chemicals such as arsenic, lead, and mercury could be placed in it. Another individual commented that the commission was being deceptive in calling a landfill nonhazardous when chemicals such as lead, mercury, benzene, and arsenic could be placed in the landfill.

The commission notes that Class 1 (nonhazardous) wastes are defined in §335.1 as “Any industrial solid waste or mixture of industrial solid wastes which because of its concentration, or physical or chemical characteristics, is toxic, corrosive, flammable, a strong sensitizer or irritant, a generator of sudden pressure by decomposition, heat, or other means, or may pose a substantial present or

potential danger to human health or the environment when improperly processed, stored, transported, or disposed of or otherwise managed, as further defined in §335.505 of this title (relating to Class 1 Waste Determination).” The commission asserts that this definition does not describe a substance that is harmless or innocuous, nor is it misleading or misrepresentative of the potential dangers associated with Class 1 wastes. The term “nonhazardous” simply designates that a waste is not a hazardous waste as defined by the EPA in 40 CFR §261.3. The commission has made no change to the proposed language in response to these comments.

Comments were received regarding the transportation of wastes to CINWLs and verification of waste classification.

An individual questioned who would verify the classification of wastes being transported to a CINWL facility, and asked if other states and countries would be allowed to transport waste through communities to a CINWL facility. The individual also asked who would check, on a daily basis, to determine if wastes were properly contained during transportation.

The commission responds that verification of the proper classification of a waste shipped to a CINWL is the responsibility of both the generator of the waste, who under Chapter 335, Subchapter R is required to properly classify the waste, and the owner or operator of the facility that receives the waste. The commission notes that, under adopted §335.587, Waste Analysis, the operator of a CINWL facility is required to verify all shipments of waste received at the facility and resolve any discrepancies between the description of the waste on the manifest and his determination of the waste type. Actual transportation of the wastes is under the jurisdiction of the Texas Department of Transportation (TxDOT). The transporter must meet all TxDOT

requirements, including shipment in TxDOT-approved containers. Waste management facilities in Texas are authorized to receive shipments of waste from other states and from foreign countries. The Commerce Clause of the United States Constitution prohibits states from excluding out-of-state shipments of waste. Such shipments must meet the same requirements as in-state shipments and must be identified as being from out-of-state or out-of-country. The commission has made no changes in response to this commenter's questions.

Several comments were received on capacity issues.

WMTX commented that the proposed new rules create an unfair advantage for CINWL facilities over municipal solid waste facilities in that Class 1 nonhazardous industrial solid waste and municipal solid waste may be co-mingled at a CINWL facility, but not at a municipal solid waste facility. This commenter stated that municipal solid waste facilities must construct separate facilities for the disposal of Class 1 waste, whereas municipal solid waste may be placed in the same landfill in which Class 1 waste is placed at a CINWL facility.

The commission disagrees for the most part with this comment. First, the commission notes that a CINWL facility may conditionally receive municipal solid waste in amounts up to only 20% of the total amount of waste received during the current or previous year, under §335.582(1) and (4). This proposed allowance was based on 30 TAC §330.137(f), which limits the amount of Class 1 wastes disposed at a municipal solid waste facility to 20% of the total amount of waste received during the current or previous year. The commission further notes that the primary purpose of allowing disposal of municipal solid waste at a CINWL was to address the question of consistency

between the requirements applicable to municipal solid waste and CINWL facilities, both of which compete for industrial solid waste. The commission agrees that the allowance of co-mingling of industrial and municipal waste at CINWL facilities and not at municipal solid waste facilities could be a slight advantage for CINWL facilities. Nevertheless, the commission asserts that the allowance for minimal commingling at permitted CINWL facilities is justified in light of the higher standards required for such facilities. The commission has made no changes to the proposed language in response to this comment.

WMTX commented that the allowance of commingling at a CINWL facility will complicate the state's efforts to assess future disposal capacity needs. An individual commented that the commission periodically conducts needs assessments, and suggested that the proposed new rules should be revised to require the commission to reject an application for a CINWL unless the commission has determined there is a need for it. This individual stated that because a CINWL facility represents a greater danger to human health and the environment than a hazardous waste disposal facility, a CINWL should be permitted only if the commission has determined that the state needs the added disposal capacity for nonhazardous wastes. The individual also commented that given the low number of applications for CINWL facilities over the years, conducting such assessments will not be a large burden on the commission.

The commission disagrees with these comments. The commission disagrees with the statement that a CINWL facility represents a greater danger to human health and the environment than a hazardous waste landfill facility. In the lengthy discussion earlier in this preamble, the

commission stated that, although there are cases where wastes destined for disposal in CINWLs may have higher concentrations of certain toxic constituents than are allowed in hazardous wastes destined for disposal in hazardous waste landfills, the commission asserted that these cases are limited in number, and do not support the generalization that wastes placed in a CINWL are more toxic than those placed in a hazardous waste landfill. The commission also disagrees with the statement that a CINWL should be permitted only if the commission has determined that the state needs the added disposal capacity. The commission does not have the statutory authority to deny an application for a solid waste management facility based on lack of need. The commission has made no changes to the proposed language in response to these comments.

Related Issues

The Galveston Bay Foundation and one individual submitted comments regarding the commission's determination that the proposed rules were consistent with the Coastal Management Program (CMP). These commenters stated that this determination of consistency should be made by the Coastal Coordination Council, not the commission. The individual recommended that the proposed rulemaking be revised to state that the Coastal Coordination Council shall make a determination for consistency with the CMP.

The commission disagrees with these comments, and notes that it made this determination in accordance with 31 TAC §505.22(a), in which the Coastal Coordination Council directs an agency that is proposing to adopt or amend a rule to make a determination of consistency with all CMP policies and to submit that determination to the council secretary. The commission submitted this

determination to the council secretary and received no comments from the Coastal Coordination Council. No revision to the proposed rules is necessary in that the commission was required to make the determination and submit it to the Coastal Coordination Council for its review under §505.22(a).

Citizens for a Better Baytown and three individuals submitted comments regarding TSP Development, Ltd.'s application for a CINWL in Chambers County.

Although TSP Development, Ltd.'s application may be affected by these adopted new rules, the commission's responses are limited to comments on the actual proposed rules. TSP Development, Ltd.'s application currently is the subject of an evidentiary hearing under the jurisdiction of the Texas State Office of Administrative Hearings. It is inappropriate for the commission to consider and respond to comments regarding TSP Development, Ltd.'s application in the course of this rulemaking.

FBH&H and the Galveston Bay Foundation commented on the related issue of duration of the permit for a CINWL, which under 30 TAC §305.127(1)(B)(ii), "may be for the life of the project." FBH&H stated that the proposed rules do not expressly address terms of permits, and commented that because of the threat posed by Class 1 industrial solid waste, such permits should be periodically reviewed and be limited to a ten-year term as are hazardous waste permits. The Galveston Bay Foundation commented that CINWL permits should be issued for a specific period of time and be subject to periodic review.

The commission disagrees for the most part with these comments. The commission does not agree that CINWL permits should be issued for a specific period of time, whether it be ten or some other number of years. Although the commission recognizes that there are certain advantages in conducting periodic reviews of CINWL permits, the commission asserts that the disadvantages outweigh these advantages when considering whether a change in the rule is needed. Advantages include that a periodic review would: 1) allow the commission to review the permit for regulatory completeness; 2) ensure that the permittee assesses the permit's adequacy regarding waste management authorizations that are needed to conduct business; and 3) allow the public the opportunity to participate in the permitting process on a periodic basis. However, the commission must consider the effect of imposing the renewal process on one type of facility (i.e., a CINWL facility) and not on another (i.e., a municipal solid waste facility). In this regard, the commission notes that CINWL facilities and municipal solid waste facilities that are authorized to accept Class 1 waste are competing for Class 1 waste, which raises the question of whether imposition of a term limit on a CINWL facility would place a CINWL owner or operator at an economic disadvantage to competitors. For instance, the CINWL would necessarily have to invest a significant amount of time and money during the renewal process, including preparation of a permit renewal application and any subsequent public involvement. The commission notes that the process of renewing a hazardous waste permit may take over a year. The commission further notes that a permittee has the continuing obligation to update a permit as necessary throughout its term to meet all applicable regulatory requirements. The commission does not consider it necessary at this time to further consider future rulemaking in response to these comments, and makes no changes to the proposed language in response to these comments.

Allied commented that the requirements of §305.127(1)(B)(ii) should not be changed. The commenter noted that landfills are designed to accommodate a specific volume of waste for disposal, not a specific duration of time, and that the actual operational life of a landfill is difficult to predict due to such factors as changes in the size of the population served, openings or closures of other landfills in the area, and efficiency of operations. Allied also commented that if a landfill has not achieved final grades when a permit expires, the site's drainage structure could be adversely affected. This commenter contended that no environmental or public health need is served by requiring a landfill owner or operator to be held to a permitting duration that is shorter than its life. To maintain a permitting time frame that most appropriately coincides with the planning and function of a landfill, the commenter recommended that CINWL permits be issued for the life of the facility, and noted that current rules allow the commission the discretion to apply a term to a permit.

The commission agrees for the most part with this commenter. The commission agrees that the requirements of §305.127(1)(B)(ii) do not need to be changed for the purpose of setting term limits on CINWL facility permits, and agrees that CINWL permits should not be issued for a specific duration, as discussed earlier in the preamble, and also because of the variables associated with estimating the life of a landfill. However, the commission does not agree that permits should be issued with unlimited, nonspecific durations simply because a landfill forced to close before it has reached final grade would suffer adverse effects on its drainage structure. The commission notes that, once a permit is issued, a facility owner or operator is not required to keep the landfill in operation until its capacity is reached if, for example, economic conditions are too unfavorable. Conversely, if term limits were required for CINWL facility permits, an owner or operator could remain in operation past the initial time of

duration of the permit by going through the renewal process. If an owner or operator wishes to expand a facility, such expansion must be authorized through a permit amendment or modification (see 30 TAC §305.62 and §305.69, respectively). The commission may deny an application for permit renewal based on the grounds set forth in 30 TAC §305.66. Should a facility owner or operator choose to close a landfill before the final grade has been achieved, it is the responsibility of the owner or operator to modify the landfill design to ensure compliance with the general prohibitions of 30 TAC §335.4. The commission has made no changes to the proposed language in response to this comment.

§335.580 - Purpose and Applicability

WMTX commented that compliance with the proposed new rules will subject CINWL facilities to substantial costs, which will be passed on to facility customers. This commenter stated that these added costs would encourage these customers to manage their nonhazardous waste on-site, which is subject to less stringent regulation.

The commission does not agree that the new rules will impose costs on CINWL operators which will be passed on to their customers to the degree that these customers will be substantially encouraged to dispose of their own waste under 30 TAC §335.2(d)(1). As a practical matter, existing CINWL facilities essentially meet the requirements of the rules. Although a facility that disposes of its own industrial nonhazardous waste on-site is not required to obtain a permit to do so, that facility still incurs many of the costs associated with disposal of industrial nonhazardous waste, such as landfill design, construction, and operation, recordkeeping, groundwater monitoring, closure, and post-closure care and is required to submit a notification (see 30 TAC

§335.6) for such activities. On-site disposal of industrial nonhazardous waste is also subject to deed recordation under §335.5, which may affect the future use and value of a property. The commission has made no changes to the proposed language in response to this comment.

WMTX commented that the proposed rules should also apply to facilities that manage their own nonhazardous waste on-site.

The commission disagrees with this comment, and notes that no permit is required for disposal of nonhazardous industrial solid waste if that waste is disposed on property owned or otherwise effectively controlled by the generator of the waste, under §335.2(d)(1). Also, under THSC, §361.090, the commission may not require a permit under THSC, Chapter 361 for the on-site disposal of nonhazardous industrial waste that is not disposed with solid waste from any other source or sources. Although the commission may adopt certain rules to control on-site management of industrial solid waste in accordance with THSC, §361.090(d), the statute does not direct the commission to adopt such rules. Nevertheless, certain rules do apply to on-site management of industrial solid waste under 30 TAC Chapters 335 and 350. It is therefore outside the scope of this rulemaking to apply these new rules to on-site facilities. The commission has made no changes to the proposed language in response to this comment.

FBH&H recommended that proposed §335.580 be revised at adoption to add “in accordance with 30 TAC Part 330” to clarify that municipal solid waste landfills can accept Class 2 and Class 3 industrial

solid waste and that Class 1 industrial solid waste may be accepted in designated cells provided they are not above grade.

The commission disagrees with this comment. In accordance with 30 TAC §330.580(c), the new rules do not apply to municipal solid waste facilities at which industrial nonhazardous waste is managed. This provision was included to clarify that the proposed rules do not apply to municipal solid waste facilities. It does not authorize a municipal solid waste facility to manage industrial nonhazardous waste outside the requirements of Chapter 330, nor does it restrict management of industrial nonhazardous waste at a municipal solid waste facility beyond the restrictions in Chapter 330. The commission has made no changes to the proposed language in response to this comment.

335.581 – Definitions

Texas Disposal Systems Landfill, Inc. suggested that the definition of CINWL in §335.581(1) be amended to specifically exclude municipal solid waste landfills regulated under Chapter 330. FBH&H commented that the definitions in §335.581 be greatly expanded to provide more clarity. An individual recommended that the proposed rules reference the definitions in Chapter 330 as applicable.

The commission agrees in part and disagrees in part with these comments. The commission notes that the definition of a CINWL in §335.581(1) is “a landfill facility that accepts, for disposal and for a charge, nonhazardous industrial waste.” Although municipal solid waste facilities that manage industrial nonhazardous waste are not subject to the proposed rules (see §335.580(c)), this

definition could be construed to include these municipal solid waste facilities. The definition of CINWL, therefore, has been amended by adding the following statement: “This definition does not apply to municipal solid waste facilities at which nonhazardous industrial waste is managed in accordance with Chapter 330 of this title “(relating to Municipal Solid Waste).”

The commission notes that the adopted rules are in Chapter 335, which currently contains an extensive list of definitions that pertain to industrial solid waste, and in part match the definitions in Chapter 330, Subchapter A. The commission has added definitions under Subchapter T which apply only to this subchapter. However, the commission understands that, by extensively referencing the Chapter 330 rules, some persons may be confused as to which of the many definitions in Chapter 330 apply to CINWLs. The commission notes that the definitions in Chapter 330 apply to CINWL facilities, where appropriate, but has made no changes to the proposed language in response to this comment.

335.582 – Prohibited Wastes

The City of Baytown recommended that proposed §335.582 be revised at adoption to include a prohibition on: wastes identified in §330.5(e); special wastes identified in §330.13(b)(3) - (7) and (c), unless managed in accordance with such provisions; dead animals; whole scrap tires; and Class 1 wastes that do not meet the requirements of Chapter 335, Subchapter O. MSR&M commented that there should be no restriction on the acceptance of municipal solid waste, including putrescible wastes, at a CINWL as there is no technical or legal justification for such a prohibition. MSR&M also commented that the rules should incorporate many of the requirements for municipal solid waste

facilities, including requirements for gas management, a principal concern with putrescible wastes.

HCAO commented that the gas management plan requirement in §330.56(n), which is referenced in §335.583(a)(7), is not required even though biodegradable materials commonly are a component of industrial wastes disposed in CINWLs. HCAO suggested that §335.583(a)(7) be revised to require a gas plan unless the executive director determines that such a plan is not necessary.

The commission agrees in part and disagrees in part with these comments. First, the commission agrees that the wastes identified in §330.5(e) (i.e., lead acid storage batteries, do-it-yourself used motor vehicle oil, used-oil filters, whole scrap tires, appliances containing chlorinated fluorocarbons, liquid wastes, regulated hazardous wastes, and polychlorinated biphenyls) should not be disposed in CINWLs. The commission notes that §335.582 prohibits the disposal of liquid wastes, polychlorinated biphenyls, and hazardous waste. In order to include the other wastes identified in §330.5(e) as prohibited wastes, proposed §335.582 has been revised in this adoption to prohibit the disposal of the waste identified in §330.5(e)(1) - (5), under adopted §335.582(9). With regard to a prohibition on the wastes identified in §330.136(b)(3) - (7), the commission notes that the proposed rules contained a prohibition on the disposal of medical waste. By including the revision at adoption to include the prohibition of wastes identified in §330.5(e)(3), the commission adopts the prohibition on used oil filters. The commission asserts that no prohibition on empty containers is needed, provided they are nonhazardous in accordance with §335.508. Hazardous waste from conditionally exempt small quantity generators is addressed under proposed §335.590(25). The commission asserts that there is no reason to prohibit disposal of certain of the wastes identified in §330.136(b)(7), provided they are not subject to any other prohibition (e.g.,

liquid waste). Section 335.582(10) has been added to include a conditional prohibition on wastes containing asbestos.

The commission has placed two restrictions on CINWLs regarding the acceptance of municipal solid waste. Under §335.582(1), the owner or operator of a CINWL can accept a total volume of municipal solid waste that does not exceed 20% of the total amount of waste accepted during the current or previous year, subject to permit conditions which may provide otherwise. This restriction is comparable to the restriction on acceptance of Class 1 waste at a municipal solid waste facility (please see §330.137(f)), and was included in the proposed rules to maintain consistency between municipal solid waste and CINWL facilities. The commission is retaining §335.582(1) and (4) from the proposed rules with two changes. First, §335.582(1) has been revised to allow for acceptance of greater than 20% municipal solid waste if specifically authorized by the facility permit. This change was made to be consistent with §330.137(f), which allows a municipal solid waste facility to accept Class 1 wastes in amounts greater than 20% if specifically authorized by the facility permit. Second, §335.582(4) has been revised to allow for the acceptance of putrescible wastes in a CINWL provided that in addition to the requirements of this proposed rulemaking, §330.126, Disease Vector Control, and §330.300, Airport Safety, are met. To date, the commission has not determined that there is a sufficient technical basis for prohibiting the disposal of putrescible waste in CINWLs.

FBH&H commented that the proposal appears to prohibit land-use only public hearings on CINWL permit applications, and recommended that the adopted rule should clarify that land-use compatibility documentation for a proposed CINWL is required in the permit application, despite the fact that a separate hearing is not required. The City of Baytown commented that CINWL facilities should be located in compatible land-use settings and that the commission should revise the rule at adoption to include requirements for such land demonstrations. The City of Baytown also commented that the commission should consider land-use compatibility in the ultimate permitting for CINWL facilities.

The commission disagrees for the most part with these comments. Although the proposed rulemaking does not include provisions for a separate hearing on land-use, §335.583(3) references §330.53. Under §330.53, an applicant for a permit for a CINWL facility is required to submit information relating to land-use compatibility under the provisions of THSC, §361.069 (see §330.53(a)(1)). Under §330.53(b)(7) and (8), an applicant is required to provide a detailed land-use map and other land-use information, respectively. Based on this information, the executive director will evaluate the impact of the site on the surrounding area. The commission makes no changes to the proposed language regarding land-use in response to these comments.

The City of Baytown commented that the reference to §330.55 should be amended to delete the reference to §330.55(b)(10)(I), as it is superceded by this rulemaking.

The commission disagrees with this comment because proposed §335.583(6), which references §330.55, excludes §330.55(b)(10)(I). Therefore, no changes to the proposed language are made in response to this comment.

335.584 – Location Restrictions

The commission received numerous comments on proposed §335.584(b)(1). Under this proposed rule, a CINWL is not allowed to be located in an area where the underlying soils within five feet of the base of the landfill containment structure are porous or have a hydraulic conductivity greater than 1×10^{-5} centimeters per second (cm/sec) unless it is in an area where the average annual evaporation exceeds the annual rainfall by more than 40 inches or where the soil unit is not sufficiently thick or laterally continuous to provide a significant pathway for waste migration.

Texas Disposal Systems Landfill, Inc. commented that the word “within” can be taken as being within zero to five feet or before or at five feet and that clarification of the intent of this part of the rule would be helpful.

The commission asserts that there is no difference between “zero to five feet” or “before or at five feet, in the context of the proposed language, and that the phrase “in areas where underlying soil unit(s) within five feet . . .” is sufficiently clear. Consequently, the commission has made no change to the proposed language in response to this comment.

Texas Disposal Systems Landfill, Inc. commented that the phrase “lower component of the containment structure” is undefined, and suggested it be changed to “base of the containment structure.”

The commission agrees with this comment, and has revised the proposed language under §335.584(b)(1) in this adoption to replace the phrase “lower component” with the word “base.”

FBH&H and an individual commented that the proposed rule should specify five feet of *in situ* soils. FBH&H stated that location restrictions should be premised on natural conditions rather than engineering techniques. FBH&H commented that if an applicant is allowed to replace existing natural soils with engineered soils to achieve ten feet of soil with a hydraulic conductivity less than 1×10^{-7} cm/sec, the engineered soil layer would become the base of the containment structure, and that public health should not have to rely on the thoroughness of additional engineering containment. An individual commented that the rule should be clear that an applicant cannot circumvent this requirement through engineering.

The commission disagrees with these comments, noting that it is not generally opposed to replacement of underlying soils with a constructed soil layer. In such a situation, an applicant must demonstrate that existing soils can be removed and replaced with a constructed soil layer that would meet or exceed the required specifications. The commission believes that a man-made soil layer, when properly designed and constructed and with appropriate construction quality assurance and control, will provide greater assurance of functioning as a barrier to waste migration than most *in-situ* soils. Therefore, the commission has made no changes to the

proposed language in the location restrictions under §335.584 in response to the comments and recommendations concerning *in situ* soils. However, in response to these comments, the commission has added language in the landfill cell design requirements under §335.590(24) to allow the executive director to approve an engineered design that would provide equal or greater protection to human health and the environment than would be provided by the following construction requirement: “a landfill cell must be constructed where the base of the containment structure, which includes the sides and bottom of the containment structure, is at least five feet above the uppermost saturated soil unit having a Unified Soil Classification of GW (well-graded gravel), GP (poorly-graded gravel), GM (silty gravel), GC (clayey gravel), SW (well-graded sand), SP (poorly-graded sand), or SM (silty sand), or a hydraulic conductivity greater than 1×10^{-5} cm/sec, unless such saturated soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration.”

FBH&H also commented that the terms “sufficiently thick” and “significant pathway” in §335.584(b)(1)(B) were vague and could create an onerous burden in an evidentiary hearing, and suggested that §335.584(b)(1)(B) be deleted from the rule upon adoption. The Galveston Bay Foundation commented that the sand and gravel descriptions in the proposed rule should be made specific. Citizens for a Better Baytown commented that a hydraulic conductivity of 1×10^{-5} cm/sec translates to a groundwater velocity of about ten feet a year. Citizens for a Better Baytown commented that this rate of groundwater flow was not protective if a porous soil were separated from the landfill by only five feet.

The commission disagrees with these comments. First, with regard to the comment on the terms “sufficiently thick” and “significant pathway,” the commission asserts that §335.584(b)(1)(B) should not be deleted. The commission notes that, although demonstrating that the underlying soils are “not sufficiently thick or laterally continuous to provide a significant pathway for waste migration” may appear to be burdensome, it should be noted that the burden of proof is on the applicant to prove the soils meet the required standards, for the sake of the protection of human health and the environment. The commission further notes that situations could arise where a negligible portion of the soils within five feet of the base of the containment structure do not meet the requirements of §335.584(b)(1)(B). In such a case, the applicant may be able to demonstrate that there is not a significant pathway for waste migration, and the commission asserts that the applicant should be provided the option to make such a demonstration. With regard to the soil types identified in §335.584(b)(1), the commission notes that these are specific soil types formally recognized and defined under the Unified Soil Classification System of the United States Bureau of Reclamation. Each is a soil type based on specific engineering properties, and the commission asserts that they are sufficiently specific. The commission has made no changes to the proposed language in response to these comments.

The commission notes that units of hydraulic conductivity are commonly expressed as cm/sec, which is a simplification of $\text{cm}^2/(\text{cm} \times \text{sec})$. However, this simplification can be misleading in that the units cm/sec imply a velocity. Although the velocity at which groundwater travels is directly related to hydraulic conductivity by the expression: groundwater velocity = (hydraulic conductivity x gradient)/effective porosity, it is not equivalent to hydraulic conductivity. An

increase in hydraulic conductivity generally will represent an increase in groundwater velocity, but a hydraulic conductivity of 1×10^{-5} cm/sec does not represent a groundwater velocity of ten feet per year, except in the restricted case where gradient/effective porosity = 1.0.

Groundwater flow velocity depends not only on the hydraulic conductivity, which is a measure of the ability of soil or rock to transmit water, but also on the gradient of the groundwater, which is the change in elevation of the groundwater over distance and the effective porosity of the soil or rock, which is a measure of how well-connected the pores are in the soil or rock. The commission emphasizes that the requirements of proposed §335.582(b)(1), which are identical to the requirements in §335.204(e)(5) for hazardous waste landfills, are just one of several precautions against migration of liquids from a CINWL and do not represent the sole barrier to the migration of such liquids. Therefore, the commission declines to make the recommended changes to the proposed rules.

The commission received several comments on proposed §335.584(b)(2). Under the provisions of this rule, the base of the containment structure of a CINWL must be separated from a regional aquifer by at least ten feet of material with a hydraulic conductivity towards the aquifer not greater than 1×10^{-7} cm/sec, or a thicker interval of more permeable material that provides equivalent or greater retardation to pollutant migration.

Texas Disposal Systems Landfill, Inc. suggested that the term “regional aquifer” be defined as a major or minor aquifer as defined by the Texas Water Development Board.

The commission agrees with this comment. As a matter of practice, the commission regards all major and minor aquifers identified by the Texas Water Development Board to be regional aquifers. Therefore, §335.581 has been revised to add a definition of “regional aquifer” to be any aquifer identified as a major or minor aquifer by the Texas Water Development Board.

Ewen Environmental Engineering recommended that §335.584(b)(2) be revised to refer to *in situ* soils, as location restrictions should be premised on natural conditions rather than on engineering techniques. An individual recommended that the proposed rule specify naturally occurring *in situ* soils for the same reason.

FBH&H expressed the opinion that the proposed rule does not provide sufficient protection for permitting of CINWLs, given the large quantities of toxic industrial Class 1 wastes that will be disposed of in CINWLs. Specifically, FBH&H recommended that proposed §335.584(b)(2) be revised at adoption to require that the determination of hydraulic conductivity be based on a minimum of five samples, that all samples have a hydraulic conductivity no greater than 1×10^{-7} cm/sec, and that only soils having a Unified Soil Classification of either CL (lean clay) or CH (fat clay) be permitted within ten feet of the base of the containment structure, as any soil other than CL or CH would be unlikely to exhibit a hydraulic conductivity of 1×10^{-7} cm/sec or less. FBH&H cautioned that the commission should not rely on §330.56(d)(5)(A)(iv), the requirements to which CINWLs are subjected under proposed §335.583(a)(7), to address the previously-stated issues. FBH&H emphasized that natural soils commonly are heterogeneous.

The commission disagrees for the most part with these comments. As discussed in the response to comments on proposed §335.584(b)(1), the commission does not agree that compliance with §335.584(b)(2) should be based on *in situ* soils. The commission agrees with the comment that natural soils commonly are heterogeneous, and it is for this reason that the commission maintains that a man-made soil, for which the hydraulic properties can be closely controlled, can provide a more reliable barrier to waste migration than *in-situ* soils. The commission asserts that proposed §335.584(b)(2), which is identical to §335.204(e)(4)(B) for hazardous waste landfills, is protective. A determination of the number of samples necessary to adequately determine the hydraulic conductivity of a soil unit or stratum is by nature subjective, and should be based on the geologic setting of the proposed site. Under §330.56(d)(5)(A) and (B), which applies to CINWL permit applications through §335.583(a)(7), an applicant is required to complete a sufficient number of borings to characterize the subsurface stratigraphy at a proposed site. Under §330.56(d)(5)(B)(i), the executive director may require as many additional tests as necessary to characterize a soil layer or stratum. Given that the soil-boring plan must be approved by the executive director prior to initiation of the work, and that the executive director may require as many samples as necessary, the commission sees no distinct advantage in requiring a minimum of five samples from each soil zone or stratum, and has made no changes to the proposed text in this regard.

With regard to the proposed requirement that all samples exhibit a hydraulic conductivity no greater than 1×10^{-7} cm/sec, the commission prefers to retain the flexibility of evaluating a determination of hydraulic conductivity for a soil layer or stratum based on all factors that characterize the soil layer or stratum, including the number of samples analyzed for hydraulic

conductivity; the location of the samples; the range of values of hydraulic conductivity of the samples; the thickness, lateral extent, and compositional variation of the soil layer or unit; and the availability of other types of hydraulic conductivity determinations for the unit, such as pump or slug tests, and any statistical evaluation of the hydraulic conductivity of the samples. The commission also disagrees that only soils with a Unified Soil Classification of CL or CH should be allowed within ten feet of the base of the containment structure. The standard is a hydraulic conductivity of 1×10^{-7} cm/sec. Any soil that does not meet this standard does not satisfy the requirements of §335.584(b)(2), even if it meets the CL or CH designation. The commission notes that determination of a Unified Soil Classification presents the same concerns as determination of hydraulic conductivity regarding the appropriate number of samples needed to make a soil classification determination and prefers to rely on hydraulic conductivity as the standard for underlying soils. The commission has made no changes to the proposed language in response to these comments.

FBH&H commented that it could be argued that the commission staff will insure that the issues relating to determination of hydraulic conductivity are properly addressed during review of the applicant's Soil Boring Plan. FBH&H expressed the opinion, however, that the issue of determination of hydraulic conductivity is too critical to the protection of human health and the environment to rely on subjective determinations, and that the determination of hydraulic conductivity should be specifically described in the CINWL rules.

The commission contends that determination of hydraulic conductivity is adequately addressed in the proposed rules which allow the commission to review the soil boring plan prior to any boring being completed and to require the collection of as many samples as the executive director deems necessary. The commission has made no changes to the proposed language in response to these comments.

FBH&H commented that the proposed rule should clarify that the base of the containment structure includes not only the bottom but also the sides of the containment structure.

The commission agrees that the term “base of the containment structure” refers to both the sides and bottom of the containment structure. Therefore, §335.584(b)(1) and (2) has been revised to incorporate this specification.

The commission received numerous other comments on the location restrictions under §335.584(b).

An individual commented that proposed §335.584(b) should be revised to prohibit location of a CINWL in an area overlying a regional aquifer where that aquifer is hydraulically connected to surface waters of the State of Texas.

The commission disagrees with this comment. The commission asserts that the location restrictions in §335.584(b), the design requirements in §335.590(24)(A), and the groundwater monitoring requirements in §335.592 provide adequate protection to a regional aquifer, and

therefore also provide adequate protection to any surface waters to which the aquifer is connected.

An individual commented that proposed §335.584(b) should be revised to prohibit the location of a CINWL in areas that require penetration into or through soil units that have a Unified Soil Classification of GW, GP, GM, GC, SW, SP, or SM, or a hydraulic conductivity greater than 1×10^{-7} cm/sec.; or in areas less than five miles from a coastal shoreline that is subject to active shoreline erosion and adverse effects resulting from a combination of storm surge, wind and wave action, tidal action, and rainfall-surface runoff. This commenter's rationale for these changes was that an applicant should not be allowed to circumvent siting requirements with engineering controls. The commenter further stated that based on statements and technical data from the EPA, any engineering controls allowed to meet his suggested changes to §335.584 would invariably and conclusively fail to protect human health and the environment as well as both the waters of the State of Texas and of the United States. In support of the commenter's proposed prohibition on locating a CINWL in areas of active shoreline erosion, the individual referenced hurricane risk maps published by the Emergency Management Office of the State of Texas, which illustrate various zones of risk due to hurricanes.

With regard to the issue of location of a CINWL in coastal areas prone to flooding and storm surge, an individual commented that storm surge from hurricanes represents a great risk to facilities within the immediate coastal areas and proposed that a CINWL be prohibited from being located within five miles from a coastal shoreline. This individual was particularly concerned regarding areas that are classified as "environmentally sensitive" in the Texas General Land Office Oil Spill Prevention and Response

Atlas. The City of Baytown commented that due to the potential risks associated with Class 1 wastes and the proposed provisions to allow above-grade landfiling, a CINWL should not be located in an area that can be affected by a storm surge from a tropical storm. The City of Baytown commented that such weather events will result in flooding and wave action that can damage the infrastructure and protective systems of a CINWL facility, likely resulting in widespread release of wastes to populated areas and sensitive wetlands. HCAO commented that industrial nonhazardous wastes are by nature similar to hazardous wastes, and therefore the location restrictions for CINWLs should be more closely specified and more identical to those required for hazardous waste landfills. HCAO recommended that, with regard to shoreline erosion and barrier islands or peninsulas, CINWLs should be subject to the same location restrictions as hazardous waste landfills. CLCND commented that CINWLs should not be located within the coastal counties of Texas, or, at the very least, within five miles of a coastal waterway. CLCND emphasized that the Texas coastline and coastal counties have the highest concentration of population and the highest risk factors, and that there is no logical reason to allow a CINWL within a coastal county or close to a Texas or United States Waterway. An individual commented that the proposed rules failed to address shoreline erosion. This individual referenced a series of maps published by the Emergency Management Office of the State of Texas, which identify the areal extent of zones affected by different classes of hurricanes. The individual expressed concern that the proposed rules did not adequately address the potential effects of hurricanes on coastal areas of the state and recommended that a CINWL not be located within five miles of a coastal shoreline that is subject to active shoreline erosion and the adverse effects from hurricanes. Another individual questioned whether a CINWL may be constructed in a low-lying, flood-prone area from which stormwaters can overflow into a major bay, and also asked how close to a bay a CINWL could be

constructed, and whether it could be constructed in a flood-prone area. Still another individual commented that CINWLs should not be allowed in 100-year flood plains or near Waters of the United States, and noted that an industrial site near Baytown had to suspend operations due to a 100-year flood and later was subjected to a 500-year flood event. This individual recommended that because the wastes that may be placed in a CINWL are more toxic than hazardous wastes, a CINWL should not be located in a 100-year flood plain. The City of Beach City expressed the opinion that proposed §335.584(b) was inadequate to ensure appropriate site selection for a CINWL, and requested that §335.584(b) be amended to prohibit the location of a CINWL in unstable areas, suggesting that a CINWL not be located within five miles of a Texas coastal shoreline that would be subject to tropical storm surge or flooding.

The commission disagrees for the most part with these comments and recommendations. First, the commission notes that, under §335.583(a)(5), an owner or operator of a CINWL facility is subject to the requirements of §330.305, Unstable Areas. In §330.305, an unstable area is defined as “a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of a landfill’s structural components responsible for preventing releases from the landfill.” Under §330.305, the owner or operator of a CINWL is allowed to make a demonstration that engineering measures have been incorporated into the landfill design to ensure the integrity of the landfill’s structural components. This demonstration must be submitted with the landfill permit application and must be approved by the executive director. However, in view of the risk associated with migration of water, the commission has

added language to §335.590(24) related to landfill cell design requirements, as previously discussed.

The Texas Division of Emergency Management Maps depict Risk Areas from hurricanes. These maps are designed to help persons evaluate the need to evacuate their homes or places of business in the event of a hurricane. There are five Risk Zones, numbered from one to five, which correspond to Category 1 through Category 5 hurricanes, respectively, with Category 5 being the most severe. The Risk Areas form a band of concentric zones that roughly parallel the coast, with Risk Area 5 extending the furthest inland. The total width of these zones varies and based on the submitted maps from an individual, can range from about one mile to over 40 miles. The commission considers these maps to be important for evaluating the risks posed to a potential CINWL location. For example, a CINWL proposed to be located in Risk Zone 3 must be designed such that a hurricane of Category 3 or lower will not compromise the integrity of the structural components of the landfill. The applicant for a CINWL facility must demonstrate the proposed CINWL meets this performance standard as is required in proposed §335.584(a)(5). Given this wide range of inland extent of these Risk Areas, a landfill located five miles from the coast may or may not be located in one of these risk zones. Rather than arbitrarily prohibiting any CINWL within five miles of the coast, the commission asserts that the performance standard in proposed §335.584(a)(5) is more protective of human health and the environment regarding the effects of hurricanes on CINWL facilities. Nevertheless, the commission agrees in part with the concerns expressed in comments regarding the potential affects of hurricanes on coastal shorelines subject to active erosion, and therefore has adopted §335.584(b)(4), which prohibits the location of

a new CINWL facility, or an areal or capacity expansion of an existing CINWL facility “within 1,000 feet of an area subject to active coastal shoreline erosion, if the area is protected by a barrier island or peninsula, unless the design, construction, and operational features of the facility will prevent adverse effects resulting from storm surge and erosion or scouring by water. On coastal shorelines that are subject to active shoreline erosion and which are unprotected by a barrier island or peninsula, a separation distance from the shoreline to the facility must be at least 5,000 feet unless the design, construction, and operational features of the facility will prevent adverse effects resulting from storm surge and erosion or scouring by water.” This is identical to the standard under §335.204(e)(10) for hazardous waste landfills.

Given the risk associated with hurricanes, the commission agrees with the comment that a CINWL should not be located on a barrier island or peninsula. Therefore, the commission has revised §335.584 at adoption to include §335.584(b)(3), which prohibits the location of a CINWL on a barrier island or peninsula. This is identical to the standard under §335.204(e)(12) for hazardous waste landfills.

In response to the question from an individual concerning whether a CINWL may be constructed in a low-lying, flood-prone area, the commission notes that a CINWL is not allowed to be located in a 100-year floodplain unless it meets the requirements of §335.584(a)(1). Under this rule, a CINWL is subject to the requirements of §330.301, which requires that owners and operators of landfills located in a 100-year flood plain must demonstrate that the landfill is, among other things, designed to prevent washout of any solid waste that could pose a threat to human health

and the environment. This requirement is equivalent to that in §335.204(e)(1)(A) and (B) for hazardous waste landfills.

An individual commented that counties should be involved in the siting, and stated that on numerous occasions the commission's executive directors have testified that they would prefer cities or counties, or both, to make decisions regarding the siting of CINWLs. This individual suggested that the proposed rules be amended to require a pre-application review with the county judge of the county in which a CINWL is proposed to be located and that the county judge shall have the right to stand unopposed to the site or within nine months of the date of the pre-application review meeting pass a county ordinance that details areas of the county that are acceptable to the county for the location of a CINWL.

The commission disagrees with this comment. THSC, §364.012, Prohibiting Solid Waste Disposal in County, currently speaks to the authority of counties to prohibit disposal of municipal or industrial waste in a county. The commission asserts that a statutory revision to THSC, Chapter 364 would be required to address the commenter's concern. The commission has made no changes to the proposed language in response to this comment.

Comments received concerning the location restrictions relating to wetlands under §335.584(a)(2).

The Galveston Bay Foundation commented that the requirements of proposed §335.584 would not provide adequate protection from catastrophic and other releases on fish, wildlife, and other aquatic and ecological resources. This commenter suggested that the incorporation of §330.302, Wetlands, does

not correct this deficiency, because a showing of the relevant factors under §330.302 is not triggered unless the facility is located in a wetland. The commenter recommended that the proposed rule be revised at adoption to require a CINWL to meet the requirements of §330.302 even if it is not located in a wetland. An individual commented that although the Coastal Management Plan prohibits the location of hazardous waste management facilities in coastal wetlands, this prohibition applies only to wetlands defined as “jurisdictional” by the United States Army Corps of Engineers (USACE), and that the Galveston District Office of the USACE broadly exempts from regulation those wetlands defined as “isolated.” This individual further commented that this has resulted in the State of Texas having lost certain protections intended by the Clean Water Act and the Coastal Management Plan, and that sites which may be biologically significant for their habitat and water quality are now vulnerable. The individual suggested that the proposed rule be revised to prohibit the construction of a CINWL at a site that would require the filling, draining, or destruction of coastal wetlands that are waters of the State of Texas.

The commission disagrees with these comments. First, the commission notes that the Galveston Bay Foundation is proposing that any applicant for a CINWL permit must address the potential effects the proposed CINWL may have on wetlands, even if the proposed CINWL site is not within a wetland. The commission asserts that the wording in §330.302 is consistent with state statutes and other existing commission rules, making the commenter’s proposed change or any other changes unnecessary. The commission notes that, under §335.589, a CINWL owner or operator must have an approved Contingency Plan that describes the actions facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of

nonhazardous industrial waste or constituents of such waste to air, soil, or surface water at the facility. The commission has made no changes to the proposed rulemaking in response to these comments.

The Galveston Bay Foundation commented that it is generally recognized that the legal definition of “hazardous waste” is under-inclusive in that only 40 chemical constituents are used to determine toxicity, and that these 40 chemicals are just a small subpart of the chemicals recognized to be hazardous to human health. The Galveston Bay Foundation further commented that other environmental programs contain more extensive lists of hazardous substances and pollutants.

The commission disagrees with these comments. The commission notes that the 40 chemicals to which the commenter refers are those that are recognized under 40 CFR §261.24, Toxicity Characteristic, and do not represent all chemical constituents that are defined as hazardous under the Resource Conservation and Recovery Act. In addition to these 40 chemical constituents, the EPA recognizes over 800 other chemicals as hazardous (see Part 261, Subpart D). The commission has made no changes to the proposed text in response to these comments.

Comments were received regarding the location of a CINWL near populated areas.

An individual commented that a CINWL located near populated areas will pose potential health issues from groundwater pollution, runoff, and airborne particulate matter. Another individual asked if a CINWL could be built close to schools or heavily populated areas such as Harris County. Yet another

individual commented that CINWLs should not be built near schools or populated communities because of potential air pollution from a CINWL.

The commission disagrees with these comments. The commission notes that the proposed rules do not exempt a CINWL from the requirements of any other statute, including the Clean Air Act, the Clean Water Act, or the Safe Drinking Water Act. A CINWL facility must meet all applicable standards under these statutes and any other applicable standards. Although the proposed rules did not require a specific distance a CINWL must be from a residence or school, §335.583(a)(4) does require an applicant for a CINWL facility to address land use as required under §330.53(a)(7) and (8). These requirements include submission of information regarding zoning at the site and in the vicinity of the site, growth trends of the nearest community with directions of major development, and the proximity of the proposed site to residences, and other uses such as schools. The commission has made no changes to the proposed language in response to these comments.

WMTX commented that the location restrictions in §335.594(b) are unreasonable and unnecessary as the EPA has stated in the preamble to the Resource Conservation and Recovery Act, Subtitle D rules that a composite liner is suitable for any geology. This commenter contended that the proposed rules exceed federal requirements without offering proof that the federal standards are inadequate. The commenter recommended that the commission adhere to federal standards or provide grounds for deviating from those standards. WMTX also commented that the proposed rules do not allow for alternative designs, and recommended that the commission set performance-based standards for

engineering design of a CINWLs containment system. Lastly, WMTX suggested that a more appropriate approach would be to require an extended leachate monitoring system in areas where hydraulic conductivity or permeability of the underlying soils is an issue.

The commission disagrees with these comments. The commission notes that EPA's comment was in regard to municipal solid waste landfills, as the federal Subtitle D regulations under 40 CFR Parts 258 do not address disposal of industrial nonhazardous wastes. The commission asserts that the standards in proposed §335.584(b) do not exceed any federal standards, and further asserts that the proposed rules are justified, based on the potentially increased risk presented by nonhazardous industrial solid waste, compared to municipal solid waste. An extended leachate monitoring system could provide some insight as to the nature of leachate being generated in a landfill, but the commission disagrees that extended monitoring provides adequate protection to an underlying aquifer when the soils underlying a CINWL do not meet the requirements of §335.584(b). Therefore, the commission has made no changes to the proposed text based on these comments.

The City of Baytown commented that the proposed rules should be revised to prohibit the construction of a CINWL in an area where the landfill design requires excavation into water-bearing strata.

The commission agrees that as a general rule, a CINWL should not extend into water-bearing strata. However, as discussed previously in this preamble, the commission is not opposed to the use of engineering controls when such controls provide equivalent or greater protection. Under

§335.591(3), the liner design for a CINWL is subject to the Special Conditions (Liner Design Constraints) of §330.203. The requirements of §335.203(b) and (c) respectively, are that the leachate collection system must be designed to handle both the leachate generated and the groundwater inflow from materials beneath and lateral to the liner system, and that prior to excavation below a seasonally high water table the owner or operator shall perform a preliminary foundations evaluation, satisfactory to the executive director. Additionally, the location restriction requirement of §335.584(b) must still be met. The commission has made no changes to the proposed text in response to this comment.

Several comments were received regarding the location of a CINWL over an aquifer.

An individual asked if construction of a CINWL is allowed over an aquifer that supplies water to a community. Another individual commented that a CINWL should not be built over an aquifer that needs to be kept pure. The City of Beach City commented that proposed §335.584 should be revised at adoption to prohibit the construction of a CINWL over an aquifer, as aquifers are critical to the state and are easily contaminated. The City of Beach City further commented that all landfills leak, and that the permanent storage of hazardous or toxic chemicals should not be allowed over an aquifer.

The commission disagrees for the most part with these comments. The commission notes that existing rules do not prohibit the construction of either hazardous waste or municipal solid waste facilities over non-sole source aquifers (presently, only certain portions of the Edwards Aquifer have been designated as sole source aquifers under Federal Safe Drinking Water Act, §1424(e)). The commission asserts that there is no need for the CINWL rules to contain such a prohibition.

The commission regards the suggested prohibition on locating a CINWL over an aquifer as overly restrictive. Over 80% of the state is underlain by major and minor aquifers identified by the Texas Water Development Board, and this suggested prohibition would eliminate these areas from consideration solely on the basis of the presence of a regional aquifer. The commission believes that adequate aquifer protection is provided by the separation distance and hydraulic conductivity requirements in §335.584(b) and by the groundwater protection requirements in §335.591, Groundwater Protection Design and Operation, and §335.592, Groundwater Monitoring and Corrective Action. Therefore, the commission has made no changes to the proposed language in response to these comments.

An individual commented on proposed §335.584(a)(4), which requires an applicant for a CINWL permit to demonstrate compliance with the requirements of §330.304, Seismic Impact Zones. This individual commented that the demonstration required in §330.304 should be prepared by a registered civil engineer or certified engineering geologist.

The commission disagrees that any changes to the proposed rulemaking are necessary. Under §305.45(a)(8), any supplemental technical report submitted with a permit application must be prepared either by a Texas Licensed Professional Engineer or by a qualified person who is competent and experienced in the field to which the application relates and thoroughly familiar with the operation or project proposed in the application is made. Therefore, no change to the proposed rule language is necessary.

An individual commented on §330.204, providing recommendations for requirements concerning geological faults to be added to the proposed rules upon adoption.

The commission agrees for the most part with this comment. The commission notes that §330.204 was not incorporated in the proposed rules, but the requirements of §330.204 are essentially duplicated in 30 TAC §330.303. For consistency, the commission has revised the proposed rule language under §335.591 to require that a CINWL meet the requirements of §330.204. The requirements of §330.204 are that a CINWL shall not be located within 200 feet of a fault that has had displacement in Holocene time (approximately 11,000 years) unless the owner or operator can demonstrate that a lesser setback distance will not damage the structural integrity of the landfill.

An individual commented that the requirements of the proposed rule should be revised to prohibit the location of a CINWL within ten miles of the documented epicenter of an earthquake of magnitude 3.0 or greater. This individual also commented that this suggested revision is not highly restrictive, as no more than 49,000 such earthquakes occur worldwide each year. The individual further commented that it is impossible to document an earthquake during Holocene time because no records of earthquakes exist past 200 years ago. In support of this suggested revision, the commenter stated that it is impossible to design a structure that can withstand the one to 7×10^{15} ergs of energy released by a 3.0 magnitude earthquake. Finally, the commenter provided a map depicting the location of epicenters of documented earthquakes in Texas and noted that the proposed restriction would affect a small area of the state, but was necessary to protect human health and the environment.

The commission disagrees with this comment, and considers this suggested requirement to be overly restrictive. The commission notes that the federal location standards for hazardous waste facilities in 40 CFR §264.18 exempt the entire State of Texas from seismic considerations. Of the seven earthquake hazard zones illustrated on a map provided by the commenter, a majority of the area of the state is included in the two lowest hazard zones, and no part of the state is included in the three highest hazard zones. The commission believes that the requirements of §335.584(a)(4) adequately address the location of a CINWL with respect to the effects of an earthquake. Under the rule, a CINWL cannot be located in a seismic impact zone (area with a 10% or greater probability that the maximum horizontal acceleration in rock, expressed as a percentage of the earth's gravitational pull, will exceed 0.1g in 250 years), unless the owner or operator demonstrates that the landfill facility can withstand this maximum acceleration. The commission disagrees that earthquakes that occurred greater than 200 years ago cannot be documented. The occurrence of earthquakes can be documented on geologic evidence based on such factors as the amount of displacement of various-aged geologic units across a fault and the age of geologic units overlying a fault. Earthquake magnitude can be estimated based on the length of a fault and on the amount of fault displacement. Although such estimates are not exact, they have proven effective in evaluating both the occurrence and magnitude of earthquakes. The commission has made no changes to the proposed text in response to this comment.

An individual commented that siting of a landfill is important because all landfills will eventually leak. An individual commented that by allowing the use of engineering controls, the commission allows an applicant to circumvent siting requirements, rendering them useless.

The commission agrees with the comment that the siting of a landfill is important, and reasserts that the proposed rules adequately address the location of CINWLs, as discussed at length earlier in this preamble. The commission disagrees with the comment that allowing engineering controls provides an opportunity to circumvent siting requirements. The commission authorizes such controls only if an applicant can demonstrate that such controls provide equal or greater protection. The commission has made no changes to the proposed language in response to these comments.

The City of Baytown commented that, due to the toxicity of wastes that will be placed in them, improperly sited or operated CINWLs pose a greater risk than municipal solid waste landfills and should be subject to the location requirements in §335.204(e), which apply to hazardous waste landfills.

The commission agrees that CINWLs should be subject to more stringent siting requirements than municipal solid waste landfills. The commission disagrees that CINWLs should be subject to siting requirements for hazardous wastes, as they pose less of a threat than do hazardous waste landfills. As extensively discussed previously in this preamble, there are some Class 1 industrial wastes that can be placed in a CINWL which are more toxic than those allowed to be placed in a hazardous waste landfill, but the number of these wastes is limited. Overall, the commission considers the wastes placed in hazardous waste landfills to be more toxic than Class 1 wastes. In addition to the siting requirements for municipal solid waste facilities, the commission included some of the hazardous waste siting standards in the proposed rules; specifically §335.584(b), and asserts that these requirements are adequate for protection of human health and the environment.

§335.587 – *Waste Analysis*

The City of Baytown commented that because a variety of wastes may be accepted at a CINWL, the owner or operator of a CINWL should be required to meet the waste analysis requirements of 40 CFR §264.13, which apply to hazardous waste facilities. FBH&H commented that this proposed rule should be amended to require mandatory confirmation sampling by the owner or operator of a CINWL. An individual asked how the amount of carcinogens managed at a CINWL will be regulated.

The commission disagrees with these comments. The requirements of proposed §335.587 are identical to the requirements of §264.13 with two exceptions: they do not apply to noncommercial facilities, and they do not have land disposal restriction determination requirements.

Requirements for noncommercial facilities would be beyond the scope of this rulemaking, as would be land disposal restriction requirements, as discussed previously in this preamble. With regard to the management of carcinogens, the commission responds that these concerns are addressed in the proposed rules, as adopted today, and in existing rules. Except as provided under §335.582, Prohibited Wastes, the rules under Chapter 335, Subchapter T do not specifically limit the types of waste allowed to be received at a CINWL facility. However, each type of waste received at a CINWL facility is managed according to its overall toxicity, which in part may be based on a waste being carcinogenic. All Class 1 waste transported to a CINWL facility must be accompanied by a waste manifest. On this manifest, which is required under §335.10, the shipper of the waste must identify the type and volume of each waste shipped. Under §335.12, this information must be verified by the CINWL owner or operator. All waste received must be identified in accordance with the requirements of §335.587, Waste Analysis, to ensure that no

waste is received that is prohibited under §335.582. The commission has made no changes to the proposed rulemaking in response to these comments.

FBH&H stated that it regards as inadequate the requirement in proposed §335.587(a) that a waste determination be based on a representative sample. FBH&H recommended that the commission not rely on a single representative sample, given the range of values that define some Class 1 wastes and the poor reproducibility of the Toxicity Characteristic Leaching Procedure, especially between laboratories. FBH&H also commented that due to the inherent temporal variability of wastes, especially in contaminated media as compared to process wastes, a representative sample may not be adequate to characterize a waste. FBH&H suggested that the proposed rule be revised to require that if the analysis of a representative sample exhibits some percentage of a regulatory level, the owner or operator shall use multiple samples of that waste to characterize the waste. FBH&H also recommended that a 95% confidence limit be used to characterize the waste. FBH&H suggested that, alternatively, the commission should consider the approach used at municipal solid waste facilities where one representative sample is collected from every 50 cubic yards of waste or one sample per day or per week for process wastes until such time that the temporal variability of the waste is understood. FBH&H also recommended that the proposal be amended to delete the allowance on studies conducted on wastes from similar processes in lieu of waste analysis.

The commission disagrees with these comments and recommendations and the assumptions they are based on. The commission notes that, under §335.1, a representative sample is defined as “a sample of a universe or whole (e.g., waste pile, lagoon, groundwater) which can be expected to

exhibit the average properties of the universe or whole.” Inherent in this definition is the recognition that the concentration of a particular constituent will vary within a volume of waste or over time in a waste stream, and that some measure of the central tendency (the average) is desired for that constituent. Although a representative sample may be a single physical sample from a waste (such as a grab sample or a sample from a coliwassa), it may also be a composite of several physical samples from various locations within a volume of waste or of several samples taken over time from a waste stream. Under §335.509, the responsibility for characterizing a waste lies with the generator, who also bears the burden of proof for any waste analysis. The requirement of this rule is that a waste determination be based on a representative sample, which must be chosen using the methods described in Chapter 9 of SW-846 (Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA). These methods require the use of an appropriate number of samples to characterize a waste and recommend the use of a 90% upper confidence limit on the mean of a normal distribution, which is the standard for hazardous waste determinations. The commission considers these requirements to be adequate for a waste determination. Although all methods have some associated variability, the commission considers a Toxicity Characteristic Leaching Procedure extract to be a reliable approximation of the leachate that will be generated in a landfill and has no reason to believe that the variability between analyses of aliquots of the same sample is sufficient to compromise a Class 1 waste determination. The commission also considers as appropriate the use of studies conducted on wastes from similar processes in lieu of actual waste analysis, as allowed in proposed §335.587(a)(1) and (2). Such determinations, which are allowed for hazardous wastes, can be sufficient for wastes generated

under established conditions where waste characteristics have been documented over time. The commission has made no changes to the proposed rule in response to these comments.

Comments received on §335.589 – Contingency Plan

Citizens for a Better Baytown commented that the proposed rules should have requirements for reporting any spills of Class 1 wastes or any other hazardous materials outside of constructed containment areas.

The commission agrees with this comment, and notes that, under proposed §335.589(f), the commission requires the owner or operator to note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Furthermore, the owner or operator must submit a written report on the incident to the executive director within 15 days after the incident. No changes are necessary to the proposed rule in response to this comment.

Comments received on §335.590 – Operational Standards

Texas Disposal Systems Landfill, Inc. commented that the rules should contain a definition of “leachate,” with regard to proposed §335.590(24)(B). This commenter also stated that proposed §335.590(24)(E) contains requirements concerning a flexible membrane liner component in the final landfill cover, despite the fact that “everybody else including the EPA” was advocating the use of soils-only covers. This commenter, however, made no specific recommendation as to revision of the proposed rule language regarding soils-only covers. The City of Baytown commented that the requirements for landfill liner and leachate collection system in proposed §335.590(24)(A) and (B) are

not appropriate for a CINWL, and stated that the city's position is that the liner and leachate collection system designs should compare favorably with those required for hazardous waste landfills. The City of Baytown also commented that the commission should not allow above-grade waste placement at a CINWL that does not have a liner and leak-detection system that meet the standards for hazardous waste landfills.

The commission disagrees with these comments. The commission notes that the term "leachate" is defined in 30 TAC §335.1 as "any liquid, including any suspended components in the liquid, that has percolated through or drained from solid waste or hazardous waste." No amendment to the proposed rule is needed because the definitions in §335.1 apply to CINWLs.

Under 30 TAC §335.137(d)(5), the commission requires a flexible membrane liner component in the final cover for trenches dedicated for disposal of Class 1 wastes at municipal solid waste facilities. For consistency, the proposed rule includes an identical requirement. Under proposed §335.590(24)(A)(ii), a CINWL must have a composite liner consisting of a flexible membrane liner and three feet of compacted soil, and under proposed §335.590(24)(B), a CINWL must have a leachate collection system designed and constructed to maintain less than 30 centimeters of leachate over the liner. Both of these requirements are identical to those for trenches dedicated for disposal of Class 1 wastes at municipal solid waste facilities. The commission notes that these liner requirements exceed those for municipal solid waste landfills, and has made no changes to the proposed text in response to these comments.

FBH&H recommended that proposed §335.590(24)(A)(i)(I) be revised at adoption to replace the reference to Table 1 of §330.241 with 40 CFR Part 264, Appendix IX. FBH&H commented that the Appendix IX constituents are more appropriate for industrial wastes.

The commission disagrees with this comment. The commission notes that, although the list of monitoring constituents in Table 1 of §330.241 was developed for municipal solid wastes, all but two of these constituents are also in 40 CFR Part 264, Appendix IX. Additionally, under §335.592(4), the requirements of §330.234 apply to CINWL facilities. Under §330.234(a), the list of monitoring constituents in Table 1 of §330.241 is the minimum number of constituents that must be included in a detection monitoring program. Depending on the wastes to be received at a CINWL facility, the executive director may require monitoring constituents in addition to those listed in Table 1. The commission asserts that the monitoring constituents listed in Table 1 of §330.241 are appropriate minimum constituents for detection monitoring at a CINWL facility, and has therefore made no change to the proposed text under §335.590(24)(A)(i)(I) or §335.592(9) in response to this comment.

FBH&H commented that the liner requirements in §335.590(24)(A)(ii) are the same as required for a municipal solid waste landfill. FBH&H stated that, due to the toxicity of Class 1 wastes and due to the allowance of above-grade disposal of Class 1 wastes, which could reach hundreds of feet in height, the liner requirements should be equivalent to those for hazardous waste landfills.

The commission disagrees with this comment. First, the commission notes that the liner requirements in §335.590(24)(A)(ii) specify three feet of clay, as opposed to two feet for municipal

solid waste facilities. Also, proposed §335.590(24)(B) requires that a CINWL have a leachate collection and leachate removal system that is: 1) constructed of materials that are chemically resistant to the leachate expected to be generated; 2) of sufficient strength and thickness to prevent collapse under the pressures exerted by the overlying wastes, waste cover materials, and by any equipment used at the landfill; and 3) designed and operated to function through the scheduled closure and post-closure period of the landfill. The commission asserts that these design standards, in addition to the design standards in proposed §335.590(24)(F) for dikes, are sufficient for the above-grade placement of nonhazardous industrial wastes.

With regard to proposed §335.590(24)(F), WMTX commented that the commission has permitted existing commercial nonhazardous and hazardous waste facilities without requiring the construction of dikes and asked if the commission had obtained new information suggesting the necessity for containment of nonhazardous waste. This commenter questioned the requirement for the use of clay in dike construction and asked if the commission intended for dikes to replace containment systems. The commenter also inquired if alternate dike designs would be allowed, such as staged construction of dikes. WMTX commented that federal requirements for dikes containing hazardous wastes stored in surface impoundments are significantly more lenient than the proposed rules. The commenter stated that there is no basis to regulate the above-grade placement of nonhazardous waste more stringently than the federal requirements for hazardous waste surface impoundments, and suggested that proposed rule language under §335.590(24)(F)(i)(IV) be revised to provide that dikes be constructed to minimize storm water run-on, rather than to “prevent storm water from reaching the waste,” as proposed.

Further, WMTX stated that “The TCEQ has permitted existing commercial nonhazardous and hazardous waste facilities without requiring the construction of dikes.”

The commission disagrees for the most part with these comments. A review of all permits issued by the commission and its predecessor agency, the Texas Natural Resource Conservation Commission, finds that no permit has ever been authorized for the construction of a commercial above-grade industrial nonhazardous or hazardous waste landfill without dikes. In addition, an examination of historic records from other predecessor agencies did not unearth any active above-grade industrial hazardous or nonhazardous permitted commercial landfills constructed without dikes.

The commission notes that it and its predecessor agencies have long recommended that dikes be designed and constructed to ensure long-term containment and isolation (i.e., preventing future exposure of waste through erosion or weathering of the intermediate or final cover system). In permits for Class 1 industrial nonhazardous landfill facilities, the commission has required dikes. The commission does not agree with the commenter’s assertion that dikes are unnecessary for above-grade placement of industrial waste. The commission asserts that dikes should meet minimum performance standards. Nevertheless, after careful consideration of the commenter’s concerns, the commission asserts that the proposal was overly prescriptive in certain areas, and the commission maintains that the dikes should not necessarily be required to meet specific rule design criteria. Therefore, the commission is revising proposed §335.590(24)(F) at adoption by removing §335.590(24)(F)(ii) and (iii), which contains specific design standards. The commission

is retaining the waste placement criteria in proposed §335.590(24)(F)(iv) - (vii) and the dike certification requirement in clause (viii), which have been renumbered as clauses (ii) -(vi), respectively. The commission is also revising the proposed rule at adoption to allow an exemption from the requirements of renumbered clauses (ii) - (v) if the applicant successfully demonstrates that any of these requirements are unnecessary, based on a case-specific evaluation and receives written approval by the executive director.

The commission notes that it will allow staged dikes, provided the applicant can demonstrate that such dikes will meet the requirements of §335.590(24)(F)(i). The commission is not revising proposed §335.590(24)(F)(i)(IV) to require that dikes be constructed to minimize storm water run-on, rather than to “prevent storm water from reaching the waste,” as was proposed. The commission asserts that the owner or operator of a CINWL can construct dikes to prevent storm water run-on into a CINWL.

FBH&H commented that if the municipal solid waste liner requirement is retained in proposed §335.590(24)(A)(i)(II) at adoption, then the commission should revise the rule to prohibit the above-grade placement of Class 1 wastes. FBH&H noted that the commission prohibits above-grade placement of Class 1 wastes at municipal solid waste facilities and assumes that the commission has technical justification for this prohibition. The commenter suggested that the same rationale should be applied to CINWL facilities inasmuch as a CINWL will have the same liner as a Class 1 dedicated trench at a municipal solid waste facility.

Prior to adoption of the federal Resource Conservation and Recovery Act, Subtitle D regulations in 40 CFR Part 258, and the subsequent adoption of the equivalent Chapter 330 rules for municipal solid waste, disposal of municipal solid waste was under the authority of the Texas Department of Health and disposal of industrial solid waste was under the authority of the Texas Department of Water Resources, which is a predecessor agency to the commission. At that time, the disposal of nonhazardous Class 1 industrial solid waste was allowed at a municipal solid waste facility upon approval by the Texas Department of Health, with the concurrence of the Texas Department of Water Resources. Because these nonhazardous wastes would be leaving their purview, the Texas Department of Water Resources specified, as a conservative precaution, that no operator dispose of industrial nonhazardous wastes above grade at a municipal solid waste facility. The commission retained this prohibition in the Chapter 330 rules, which were adopted in 1993. 40 CFR Part 258 of the federal rules does not address the disposal of industrial nonhazardous waste. Above-grade placement currently is allowed for municipal solid waste and for hazardous waste. The commission contends that the design requirements in proposed §335.590(24) for the liner and leachate collection system and the design requirements for dikes in proposed §335.590(24)(F) are sufficient for the allowance of above-grade placement of nonhazardous industrial waste in CINWLs. The commission plans to harmonize the Chapter 330 rules for disposal of industrial nonhazardous waste with the rules adopted today, as appropriate. The commission has made no changes to the proposed language in response to these comments.

An individual asked if the burning of carcinogens would be allowed at CINWLs causing air pollution.

The commission responds that the proposal does not address the incineration of any type of waste. Any incineration of nonhazardous industrial wastes would have to meet all applicable air quality standards under the Clean Air Act. An application for a permit to operate a commercial incinerator for industrial nonhazardous waste would be evaluated on a case-by-case basis. The commission sees no need to change the proposed rulemaking in this regard.

Citizens for a Better Baytown commented that the high density polyethylene component of the liner can be damaged easily by moving equipment or even foot traffic, and asked how the integrity of the HDPE would be protected during installation and operation of the landfill and how leakage would be controlled.

The commission responds by first noting that proper installation and care of the flexible membrane liner component of the composite liner, such as a high density polyethylene was addressed in proposed §335.591(4) and (5). Section 335.591(4) requires an applicant for a CINWL to meet the requirements of §330.205, Soils and Liner Quality Control Plan (SLQCP), and §335.591(5) requires an applicant to meet the requirements of §330.206, Soils and Liner Evaluation Report (SLER) and Flexible Membrane Liner Evaluation Report (FMLER). The Flexible Membrane Liner Evaluation Report must describe construction methods and quality-control testing procedures. All aspects of the installation of the flexible membrane liner must be performed by a person acting in compliance with the provisions of the Texas Engineering Practices Act and other state laws and regulations. Quality control of construction and quality assurance must follow the latest technical guidelines of the executive director. Once construction

and testing of a liner is complete, it must be covered with at least one foot of protective cover (see 30 TAC §330.200(e)(2), which is referenced in proposed §335.591). The commission sees no need to change the proposed rulemaking in regard to this comment.

Citizens for a Better Baytown commented that the proposed rules did not address the disposal of contaminated storm water. This commenter stated that the recycling of these fluids should not be allowed within a CINWL as such recycling could result in increases in concentrations of chemical constituents in these liquids to the point they become hazardous materials. The commenter recommended that fluids from the landfill be tested on an ongoing basis and, if determined to be toxic, be disposed of at a hazardous waste facility.

The commission disagrees with these comments. The commission notes that, under proposed §335.582(8), no owner or operator may dispose of liquids in a CINWL; therefore recycling of contaminated storm water in a CINWL is prohibited. Any liquids from a CINWL would be considered to be wastes generated by the owner or operator of the CINWL, who would be responsible for classifying those wastes in accordance with the requirements of Chapter 335, Subchapter R, Waste Classification. Under §335.2, Permit Required, disposal of all industrial wastes is allowed only at authorized disposal facilities. Therefore, an owner or operator of a CINWL must dispose of contaminated storm water at a facility authorized for disposal of such wastes. Discharge of storm water from a CINWL would be regulated under the Clean Water Act. The commission has made no changes to the proposed language in response to these comments.

Citizens for a Better Baytown noted that under proposed §335.590(25), hazardous waste from conditionally exempt small quantity generators are allowed to be placed in a CINWL. The commenter stated that this practice could be catastrophic if the liner system failed and this waste was released to an aquifer that nearby residents rely on for drinking water, and questioned if the potential risk to the safety, health, and welfare of these residents was necessary.

The commission disagrees with these comments. The commission notes that a conditionally exempt small quantity generator is that which in a month generates less than 220 pounds of hazardous waste or 2.2 pounds of acutely hazardous waste. Under §335.78(g)(3)(D) and (E), hazardous waste from a conditionally exempt small quantity generator may be disposed of at either a municipal solid waste landfill or a CINWL. This state rule is identical to the federal standards in 40 CFR §261.5(g)(3)(iv) and (v). Thus, any prohibition on the placement of conditionally exempt small quantity generator waste in a CINWL would be more stringent than federal regulations. It would also be more stringent than what is allowed at municipal solid waste landfills that are subject to lesser siting and design requirements than a CINWL facility. The commission believes that the design and operating requirements in the proposed rules provide adequate protection to an aquifer that may underlie a CINWL, and has made no changes to the proposed text in response to these comments.

Citizens for a Better Baytown commented that proposed §335.582 pertains to containerized hazardous wastes and asked what provisions are made for the cleaning and disposal of the empty containers.

The commission responds that §335.582, Prohibited Wastes, does not specifically address containerized hazardous wastes. Under this rule, there is a conditional prohibition on the disposal of “hazardous waste” as defined in §335.1 at a CINWL. Wastes authorized for acceptance at a CINWL facility may arrive in containers. Empty containers are considered to be a solid waste and are regulated under §335.508(2). Under this existing rule, empty containers must be assigned a waste classification and managed under all applicable rules for the particular waste classification. Rinse waters or liquids generated from the cleaning of containers also are solid wastes that must be assigned a waste classification by the generator (in this case, the owner or operator of a CINWL), and must be managed in accordance with all applicable rules pertaining to the waste classification assigned these rinse waters or liquids. The commission has made no changes to the proposed language in response to this comment.

Citizens for a Better Baytown referenced proposed §335.590(22), and commented that Class 1 wastes should be stored in leak-free tanks and that all areas where Class 1 waste is stored or processed should have a containment area constructed of concrete. This commenter stated that this containment area should drain through an enclosed sewer system to a treatment facility, where all liquids from the containment area can be treated to meet water quality discharge requirements. The commenter also stated that wash-up facilities should drain into a water treatment facility.

The commission responds that §335.590(22) requires that the owner or operator of a CINWL facility meet the requirements of §330.139, Contaminated Water Discharge. Under the requirements of §330.139, contaminated waste cannot be discharged without specific written

authorization. As discussed earlier in this preamble, the proposed rules do not specifically address storage and processing units. Construction and operation of such units typically would be such that they would be designed by a qualified professional engineer and would be designed to be compatible with the waste proposed to be placed in them. Unit design requirements also would typically include adequate secondary containment for leaks, spills, or accumulated rainfall if the unit is outside or uncovered. Secondary containment would have to be constructed of materials compatible with the wastes managed in the units associated with the secondary containment. Any liquids from these units would be considered to be industrial wastes and would have to be managed in accordance with all applicable state regulations. Prior to discharge, these liquids would have to meet water quality standards mandated in a wastewater discharge permit under the Clean Water Act. Similar requirements would apply to wash-up facilities. The commission has made no changes to the proposed language in response to these comments.

Citizens for a Better Baytown commented that Class 1 wastes should not be placed on the ground, and that dirt dikes should be replaced with concrete.

The commission disagrees with these comments, and notes that the requirements in §335.590(24)(F) do not mandate that dikes be constructed of concrete. The commission maintains that properly designed dikes constructed of earthen materials will have sufficient strength to prevent slope failure. Section 335.590(24)(F)(i)(II) requires that dikes be constructed with a minimum factor of safety of 1.5. The commission emphasizes that the liner required under §335.590(24)(A) and the leachate collection system requirements in §335.590(24)(B) must extend

upwards along the interior of the dikes, and provide adequate containment of waste and any leachate generated in the landfill. The commission has made no changes to the proposed text in response to these comments.

Citizens for a Better Baytown commented that the permitting process should address each type of waste that is processed and disposed of at a CINWL. The commenter stated that authorizing the processing of hazardous waste into nonhazardous waste under a single permit is analogous to the issuance of a single permit for a chemical manufacturer to process anything from food stuffs to arsenic, which obviously is not done.

The commission responds that, as previously discussed in this preamble, waste processing units at CINWL facilities are not specifically addressed in these adopted rules. The commission notes that the processing of hazardous waste requiring a permit may only be undertaken in accordance with the existing rules in Chapter 335, Subchapter F, and other applicable permitting requirements. Processing of hazardous waste cannot be authorized under this rulemaking. The commission has made no changes to the proposed rules in response to these comments.

Citizens for a Better Baytown commented that any spills outside containment areas should be required to be reported.

The commission agrees with this comment and notes that §305.145, Release or Discharges of Solid Waste, contains provisions which cover the commenter's concerns, including a list of information which must be reported within 24 hours. This list includes information concerning releases that

may endanger public drinking water supplies or which could threaten the environment or human health or safety outside the facility.

Citizens for a Better Baytown commented that proposed §335.590(25) is a big loophole, and that no hazardous waste should be allowed at a CINWL.

The commission disagrees with this comment. Section 335.590(25) allows the owner or operator of a CINWL facility to accept hazardous waste from conditionally exempt small quantity generators. As previously discussed in this preamble, the commission maintains that acceptance of conditionally exempt small quantity generator hazardous waste for disposal at a CINWL is environmentally acceptable, and thus has made no changes to the proposed language in response to this comment.

Citizens for a Better Baytown commented that the proposed rules should include requirements for dust suppression, use of personal protection equipment, and general compliance with Occupational Health and Safety Act standards for Class 1 waste processing.

This commission agrees for the most part with these comments. The commission notes that, under §335.590, the owner or operator of a CINWL facility must follow procedures for the suppression and control of dust. Nothing in the proposed rules exempts the owner or operator of a CINWL from the applicable requirements of Occupational Health and Safety Act standards, which include requirements for worker safety through the use of appropriate personal protection

equipment. The commission has made no changes to the proposed rulemaking in response to these comments.

335.593 – Closure and Post-Closure Care Requirements

The commission received a comment on proposed §335.593, Closure and Post-Closure Care Requirements. FBH&H commented that the rule should include a reference to §330.254(b), Post-Closure Care Maintenance Requirements for MSWLF Units Closing on or after October 9, 1993 and §330.256, Completion of Post-closure Care Maintenance.

The commission disagrees with this comment and notes that post-closure care for CINWLs is addressed under §335.8; therefore there is no need to change the proposed text in response to this comment.

335.594 – Financial Assurance

Several comments were received on the proposed financial assurance requirements. Some of the comments were specific to proposed §335.594, which requires an applicant to establish and maintain financial assurance for closure and post-closure care of the landfill in accordance with Chapter 37, Subchapter P, Financial Assurance for Hazardous and Nonhazardous Industrial Solid Waste Facilities; the other comments were general in nature.

The City of Baytown and FBH&H commented that an applicant for a CINWL permit should be required to demonstrate adequate financial resources necessary for the construction and operation of the

proposed CINWL. FBH&H further commented that this demonstration should include information regarding how the applicant intends to obtain financing for construction and operation of the proposed facility.

The commission disagrees for the most part with these comments. The commission notes that THSC, Chapter 361 does not authorize the commission to require this information from an applicant for a nonhazardous waste management facility. Absent specific statutory requirements for such a demonstration, the commission asserts that it must not require this demonstration from an applicant for a CINWL. Therefore, the commission has made no changes to the proposed rule in response to these comments.

The City of Baytown and FBH&H commented that an applicant should be required to provide financial assurance for liability coverage as is required for hazardous waste landfill owners and operators, as the wastes that will be handled at CINWLs in many cases will be more toxic than those handled at hazardous waste landfills.

The commission disagrees for the most part with these comments. The commission notes that the requirement for liability insurance is based on the perceived risk presented by the wastes managed at a facility. Liability insurance is required for hazardous waste facilities, but not for municipal solid waste facilities. Although the perceived risks associated with Class 1 wastes are greater than those for municipal solid waste, they are less than those for hazardous waste. Landfills make up only a very small percentage of units permitted at hazardous waste facilities. These permitted

facilities contain many other types of units which treat, store, and dispose of hazardous waste, including tanks, container storage areas, surface impoundments, incinerators, boilers, etc.

Because of the physical nature and volume of hazardous wastes handled, as well as the types of units in which the waste is managed, the commission requires all permitted industrial hazardous waste facilities to provide liability insurance. However, wastes authorized for management at a CINWL facility vary widely in toxicity and include all types of nonhazardous waste (i.e., Class 1, Class 2, and Class 3), municipal solid waste, and hazardous waste from conditionally exempt small quantity generators. Consequently, the need for liability insurance will depend on the relative proportion of each of these types of waste received at a particular CINWL facility. Under §335.7, Financial Assurance Required, if the executive director determines that there might be a significant risk to human health and the environment from sudden or non-sudden accidental occurrences resulting from the operations of a nonhazardous industrial waste treatment, storage, or disposal facility, the owner/operator may be required to provide liability insurance in accordance with Chapter 37, Subchapter P. Therefore, §335.7 provides the commission the flexibility to require liability insurance when appropriate. The commission has made no changes to the proposed rule in response to these comments.

The City of Baytown commented that an applicant should be required to provide financial assurance for corrective action. An individual commented that financial assurance for post-closure care should be required for as long as waste is buried, while another individual commented that financial assurance for post-closure care should be provided for as long as human health is endangered by the CINWL.

The commission disagrees with these comments. The commission notes that, according to §335.7, the authority to store, process, or dispose of industrial solid waste or municipal hazardous waste is contingent upon the execution and maintenance of financial assurance in accordance with Chapter 37, Subchapter P. Subchapter P requires financial assurance for closure, post-closure care, and corrective action. Also, under 30 TAC Chapter 350, the duration of post-closure care is determined by the commission. The commission asserts that these requirements provide adequate protection, and that no revision to the proposed rule text is warranted. The commission has made no change to the proposed language in response to these comments.

**SUBCHAPTER T: PERMITTING STANDARDS FOR OWNERS AND OPERATORS OF
COMMERCIAL INDUSTRIAL NONHAZARDOUS WASTE LANDFILL FACILITIES**

§§335.580 - 335.595

STATUTORY AUTHORITY

The new rules are adopted under TWC, §5.103 and §5.105, which provide the commission with the authority to adopt any rules necessary to carry out its powers and duties under the provisions of the TWC or other laws of this state; under THSC, Solid Waste Disposal Act, §361.017 and §361.024, which authorize the commission to regulate industrial solid waste and municipal hazardous waste and to adopt rules consistent with the general intent and purposes of the THSC; THSC, §361.036, which orders the commission to adopt rules requiring a person who generates, transports, processes, stores, or disposes of nonhazardous industrial solid waste to provide recordkeeping and use a manifest; THSC, §361.061, which allows the commission to require and issue permits for solid waste facilities used to store, process, or dispose of solid waste; and HB 2554 (78th Legislature, 2003), which requires the commission to adopt rules governing all aspects of the management and operation of a new commercial landfill facility that proposes to accept nonhazardous industrial solid waste and requires that the proposed rules apply to pending permit applications.

§335.580. Purpose and Applicability.

(a) The purpose of this subchapter is to establish minimum standards for facilities subject to this subchapter under subsection (b) of this section. Nothing in this subchapter shall be construed to

restrict the commission's authority to implement §335.4 of this title (relating to General Prohibitions) and the provisions of Texas Water Code, Chapter 26.

(b) This subchapter applies to the following types of facilities at which nonhazardous industrial waste is stored, processed, or disposed:

(1) any new commercial industrial nonhazardous waste landfill facility; and

(2) any existing commercial industrial nonhazardous waste landfill facility with an areal or capacity expansion of the commercial industrial nonhazardous waste landfill.

(c) This subchapter does not apply to municipal solid waste facilities at which nonhazardous industrial waste is managed.

§335.581. Definitions.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly requires otherwise.

(1) **Commercial industrial nonhazardous waste landfill (CINWL) facility** - A landfill facility that accepts, for disposal and for a charge, nonhazardous industrial waste. This

definition does not apply to municipal solid waste facilities at which nonhazardous industrial waste is managed in accordance with Chapter 330 of this title (relating to Municipal Solid Waste).

(2) **New commercial industrial nonhazardous waste landfill (CINWL) facility - A**

CINWL facility which is not an “existing CINWL facility” and for which an application was filed on or after June 20, 2003, or for which an application was pending on June 20, 2003.

(3) **Existing commercial industrial nonhazardous waste landfill (CINWL) facility -**

A CINWL facility for which a permit was issued prior to June 20, 2003.

(4) **Regional aquifer - Any aquifer identified as a major or minor aquifer by the Texas**

Water Development Board.

§335.582. Prohibited Wastes.

The following wastes shall not be disposed:

(1) municipal solid waste, as defined in §330.2 of this title (relating to Definitions), but

only in amounts such that the total volume of municipal solid waste accepted does not exceed 20%, unless specifically authorized by the facility permit, of the total amount of waste (not including municipal solid waste) accepted during the current or previous year. The amount of waste may be

determined by volume or weight, but the same unit of measure shall be used for each year, unless a variance is authorized by the executive director;

(2) hazardous waste, as defined in §335.1 of this title (relating to Definitions), except as provided in §335.590(25) of this title (relating to Operational Standards);

(3) polychlorinated biphenyl compounds (PCBs), as defined by the United States Environmental Protection Agency (EPA) in regulations issued pursuant to the Toxic Substance Control Act under Title 40 Code of Federal Regulations (CFR) Part 761 unless authorized by the EPA;

(4) putrescible waste, as defined in §330.2 of this title, unless the requirements of §330.126 of this title (relating to Disease Vector Control) and §330.300 of this title (relating to Airport Safety), and this subchapter are met;

(5) explosive material, as defined by the Department of Transportation in 49 CFR Part 173;

(6) radioactive or nuclear materials regulated under Texas Health and Safety Code, Chapter 401, or rules of the commission, the Texas Department of Health, the Texas Railroad Commission, or any other applicable rules of state or federal authorities;

(7) medical waste, as defined in §330.2 of this title;

(8) liquid waste, as defined in §330.2 of this title;

(9) wastes identified in §330.5(e)(1) - (5) of this title (relating to General Prohibitions),
except as allowed under that section; and

(10) wastes identified in §330.136(b)(3) and (4) of this title (relating to Disposal of
Special Wastes), except as allowed under that section.

§335.583. Permit Procedures.

(a) The following requirements applicable to municipal solid waste facilities apply to permit
applications for facilities subject to this subchapter:

(1) §330.50 of this title (relating to Pre-application Review);

(2) §330.51 of this title (relating to Permit Application for Municipal Solid Waste
Facility), except that the references and requirements relating to a land-use only public hearing do not
apply;

(3) §330.52 of this title (relating to Technical Requirements of Part I of the
Application) except §330.52(b)(11) of this title, concerning financial assurance shall not apply;

(4) §330.53 of this title (relating to Technical Requirements of Part II of the Application);

(5) §330.54 of this title (relating to Technical Requirements of Part III of the Application), except that the requirement in §330.54(3) of this title, concerning an estimate of the population or population equivalent served at the site does not apply;

(6) §330.55 of this title (relating to Site Development Plan), except that the reference to “§330.137 of this title (relating to Disposal of Industrial Wastes)” in §330.55(b)(10)(I) of this title does not apply and “§335.590(22) of this title (relating to Operational Standards)” applies instead;

(7) §330.56 of this title (relating to Attachments to the Site Development Plan), except that the requirements relating to Attachment 14 - landfill gas management plan under §330.56(n) of this title will not apply if an applicant provides a demonstration, approved in writing by the executive director, that such a plan is not necessary;

(8) §330.57 of this title (relating to Technical Requirements of Part IV of the Application);

(9) §330.58 of this title (relating to Technical Requirements of Part V of the Application);

(10) §330.62 of this title (relating to Property Rights); and

(11) §330.64 of this title (relating to Additional Standard Permit Conditions for Municipal Solid Waste Facilities), except that the reference to “§305.70 of this title (relating to Municipal Solid Waste Permit Modifications)” does not apply and “§305.69 of this title (relating to Solid Waste Permit Modification at the Request of the Permittee)” applies instead.

(b) In addition to the requirements in subsection (a) of this section, the permit application must include information to demonstrate compliance with the following requirements:

(1) §335.584(b) of this title (relating to Location Restrictions);

(2) §335.585 of this title (relating to General Inspection Requirements);

(3) §335.586 of this title (relating to Personnel Training);

(4) §335.587 of this title (relating to Waste Analysis);

(5) §335.588 of this title (relating to General Requirements for Ignitable, Reactive, or Incompatible Wastes); and

(6) §335.589 of this title (relating to Contingency Plan).

§335.584. Location Restrictions.

(a) The following location restrictions applicable to municipal solid waste facilities apply to facilities subject to this subchapter:

- (1) §330.301 of this title (relating to Floodplains);
- (2) §330.302 of this title (relating to Wetlands);
- (3) §330.303 of this title (relating to Fault Areas);
- (4) §330.304 of this title (relating to Seismic Impact Zones); and
- (5) §330.305 of this title (relating to Unstable Areas).

(b) In addition to the location restrictions in subsection (a) of this section, a new commercial industrial nonhazardous waste landfill facility, or an areal or capacity expansion of an existing commercial industrial nonhazardous waste landfill unit, may not be located:

- (1) in areas where underlying soil unit(s) within five feet of the base of the containment structure, which includes the sides and bottom of the containment structure, have a Unified Soil Classification of GW (well-graded gravel), GP (poorly-graded gravel), GM (silty gravel), GC (clayey

gravel), SW (well-graded sand), SP (poorly-graded sand), or SM (silty sand), or a hydraulic conductivity greater than 1×10^{-5} cm/sec, unless:

(A) it is in an area where the average annual evaporation exceeds average annual rainfall by more than 40 inches; or

(B) the soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration;

(2) in areas overlying a regional aquifer unless the regional aquifer is separated from the base of the containment structure, which includes the sides and bottom of the containment structure, by a minimum of ten feet of material with a hydraulic conductivity towards the aquifer not greater than 10^{-7} centimeters per second (cm/sec), or a thicker interval of more permeable material that provides equivalent or greater retardation to pollutant migration;

(3) on a barrier island or peninsula; or

(4) within 1,000 feet of an area subject to active coastal shoreline erosion, if the area is protected by a barrier island or peninsula, unless the design, construction, and operational features of the facility will prevent adverse effects resulting from storm surge and erosion or scouring by water. On coastal shorelines that are subject to active shoreline erosion and which are unprotected by a barrier island or peninsula, a separation distance from the shoreline to the facility must be at least 5,000 feet

unless the design, construction, and operational features of the facility will prevent adverse effects resulting from storm surge and erosion or scouring by water.

§335.585. General Inspection Requirements.

- (a) The owner or operator must inspect the facility for compliance with the site operating plan.

- (b) The owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.
 - (1) The owner or operator must maintain the schedule at the facility.

 - (2) The schedule must identify the types of problems (e.g., malfunctions or deterioration) that are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, or eroding dike).

 - (3) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipments and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be

inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies required in 40 Code of Federal Regulations §264.303 for hazardous waste landfills.

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures that the inspection reveals on a schedule that ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary, and retain these records in accordance with the requirements of §335.113(d) of this title (relating to Reporting of Emergency Situations by Emergency Coordinator). At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

§335.586. Personnel Training.

(a) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this subchapter. The owner or operator must ensure that this program includes all the elements described in the document required under subsection (d)(3) of this section.

(1) This program must be directed by a person trained in waste management procedures, and must include instruction that teaches facility personnel waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(2) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

(A) procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(B) communications or alarm systems;

(C) response to fires or explosions;

(D) response to ground-water contamination incidents; and

(E) shutdown of operations.

(b) Facility personnel must successfully complete the program required in subsection (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later.

Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of subsection (a) of this section.

(c) Facility personnel must take part in an annual review of the initial training required in subsection (a) of this section.

(d) The owner or operator must maintain the following documents and records at the facility:

(1) the job title for each position at the facility related to waste management, and the name of the employee filling each job;

(2) a written job description for each position listed under paragraph (1) of this subsection. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(3) a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (1) of this subsection; and

(4) records that document that the training or job experience required under subsections (a) - (c) of this section has been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility and training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

§335.587. Waste Analysis.

(a) The following waste analysis requirements apply to owners and operators of facilities subject to this subchapter.

(1) Before treating, storing, or disposing of any waste, the owner or operator shall obtain a chemical and physical analysis of a representative sample of the waste. At a minimum, the analysis must contain all the information that must be known to treat, store, or dispose of the waste in accordance with this subchapter.

(A) A waste generator's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with this paragraph.

(B) The owner or operator may arrange for the generator of the waste to supply the information required by this paragraph. If the generator does not supply the information,

and the owner or operator chooses to accept a waste, the owner or operator is responsible for obtaining the information required to comply with this section.

(2) The analysis may include data developed under Subchapter R of this chapter (relating to Waste Classification), and existing published or documented data on a waste or on such waste generated from similar processes.

(3) The analysis must be repeated as necessary to ensure that it is accurate and up-to-date. At a minimum, the analysis must be repeated:

(A) when the owner or operator is notified, or has reason to believe, that the process or operation generating the waste has changed; and

(B) when the results of the inspection required in paragraph (4) of this subsection indicate that the waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(4) The owner or operator shall inspect and, if necessary, analyze each waste received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(b) The owner or operator shall develop and follow a written waste analysis plan that describes the procedures which the owner or operator will carry out to comply with subsection (a) of this section. This plan must be submitted with the permit application. The owner or operator shall keep this plan at the facility. At a minimum, the plan must specify:

(1) the parameters for which each waste will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with subsection (a) of this section);

(2) the test methods which will be used to test for these parameters; and

(3) the sampling method that will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(A) one of the sampling methods described in Appendix I of Title 40 Code of Federal Regulations Part 261; or

(B) an equivalent sampling method approved by the executive director;

(4) the frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up-to-date;

(5) the waste analyses that waste generators have agreed to supply; and

(6) where applicable, the methods that will be used to meet any additional waste analysis requirements in §335.588 of this title (relating to General Requirements for Ignitable, Reactive, or Incompatible Wastes).

§335.588. General Requirements for Ignitable, Reactive, or Incompatible Wastes.

(a) The owner or operator of a facility subject to this subchapter shall take precautions to prevent accidental ignition or reaction of wastes that are ignitable or reactive as defined in §335.505 of this title (relating to Class 1 Waste Determination). This waste must be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. “No Smoking” signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) The owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, shall take precautions to prevent reactions which:

- (1) generate extreme heat or pressure, fire or explosions, or violent reactions;
- (2) produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
- (3) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
- (4) damage the structural integrity of the device or facility; or
- (5) through other like means threaten human health or the environment.

(c) When required to comply with subsection (a) or (b) of this section, the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses as specified in §335.587 of this title (relating to Waste Analysis), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

§335.589. Contingency Plan.

- (a) Purpose and implementation of contingency plan.

(1) Each owner or operator of a facility subject to this subchapter shall have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of waste or constituents of such waste to air, soil, or surface water. The contingency plan must be submitted to the executive director with the permit application and, after modification or approval, will become a condition of any permit issued.

(2) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of waste or constituents of such waste that could threaten human health or the environment.

(b) Content of contingency plan.

(1) The contingency plan must describe the actions facility personnel must take to comply with subsections (a) and (f) of this section in response to fires, explosions, or any unplanned sudden or non-sudden release of waste or constituents of such waste to air, soil, or surface water at the facility.

(2) If the owner or operator manages waste in tanks and has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Title 40 Code of Federal Regulations (CFR) Part 112, 40 CFR Part 1510, or some other emergency or contingency plan, the

owner or operator need only amend that plan to incorporate waste management provisions that are sufficient to comply with the requirements of this part.

(3) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services.

(4) The plan must specify that the owner or operator will maintain a list of names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subsection (e) of this section), and this list must be kept up-to-date and at the facility. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

(5) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment), where this equipment is required. This list must be kept up-to-date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(6) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin

evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of waste or fires).

(c) Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:

(1) maintained at the facility; and

(2) submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

(d) Changes to the contingency plan. The contingency plan must be reviewed, and immediately updated, if necessary, whenever:

(1) the facility permit is revised;

(2) the plan fails in an emergency;

(3) the facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of waste or constituents of such waste, or changes the response necessary in an emergency; or

(4) the list of emergency equipment changes.

(e) Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(f) Emergency procedures.

(1) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) shall immediately:

(A) activate facility alarms or communication systems, where applicable, to notify all facility personnel; and

(B) notify appropriate state or local agencies with designated response roles if their help is needed.

(2) Whenever there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

(3) Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any waste surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

(4) If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility and if the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities, and must be available to help appropriate officials decide whether local areas should be evacuated.

(5) The emergency coordinator shall immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under 40 CFR Part 1510) or the National Response Center (using their 24-hour toll free number 1-800-424-8802). The report must include:

- (A) name and telephone number of reporter;
- (B) name and address of facility;
- (C) time and type of incident (e.g., release, fire);
- (D) name and quantity of material(s) involved, to the extent known;
- (E) the extent of injuries, if any; and
- (F) the possible hazards to human health, or the environment, outside the facility.

(6) During an emergency, the emergency coordinator shall take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

(7) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(8) Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. The owner or operator shall classify all recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility in accordance with Subchapter R of this chapter (relating to Waste Classification) and in accordance with all applicable requirements of Subchapter A of this chapter (relating to Industrial Solid Waste and Municipal Hazardous Waste in General).

(9) The emergency coordinator shall ensure that, in the affected area(s) of the facility:

(A) no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(B) all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(10) The owner or operator shall notify the executive director, and other appropriate state and local authorities, that the facility is in compliance with paragraph (8) of this subsection before operations are resumed in the affected area(s) of the facility.

(11) The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the

incident, the owner or operator shall submit a written report on the incident to the executive director.

The report must include:

- (A) name, address, and telephone number of the owner or operator;
- (B) name, address, and telephone number of the facility;
- (C) date, time, and type of incident (e.g., fire, explosion);
- (D) name and quantity of material(s) involved;
- (E) the extent of injuries, if any;
- (F) an assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- (G) estimated quantity and disposition of recovered material that resulted from the incident.

§335.590. Operational and Design Standards.

The following requirements, including those applicable to municipal solid waste facilities, apply to owners and operators of facilities subject to this subchapter:

- (1) §330.111 of this title (relating to General);
- (2) §330.112 of this title (relating to Pre-operation Notices);
- (3) §330.113 of this title (relating to Recordkeeping Requirements), except that the requirements under §330.113(b)(3) of this title concerning recordkeeping for gas monitoring and remediation plans relating to explosive and other gases do not apply, except as determined necessary by the executive director;
- (4) §330.114 of this title (relating to Site Operating Plan);
- (5) §330.115 of this title (relating to Fire Protection);
- (6) §330.116 of this title (relating to Access Control);
- (7) §330.117(a) - (c) of this title (relating to Unloading of Wastes);

(8) §330.119 of this title (relating to Site Sign);

(9) §330.120 of this title (relating to Control of Windblown Waste and Litter);

(10) §330.121 of this title (relating to Easement and Buffer Zones);

(11) §330.122 of this title (relating to Landfill Markers and Benchmarks);

(12) §330.125 of this title (relating to Air Criteria);

(13) §330.127 of this title (relating to Site Access Roads);

(14) §330.128 of this title (relating to Salvaging and Scavenging);

(15) §330.129 of this title (relating to Endangered Species Protection);

(16) §330.130 of this title (relating to Landfill Gas Control) as determined necessary
by the executive director;

(17) §330.131 of this title (relating to Abandoned Oil and Water Wells);

(18) §330.132 of this title (relating to Compaction);

(19) §330.133 of this title (relating to Landfill Cover);

(20) §330.134 of this title (relating to Poned Water);

(21) §330.138 of this title (relating to Screening of Deposited Wastes);

(22) §330.139 of this title (relating to Contaminated Water Discharge);

(23) the owner or operator shall have and follow procedures for the suppression and control of dust; and

(24) the owner or operator shall ensure that each commercial industrial nonhazardous waste landfill unit meets the requirements of subparagraphs (A) - (F) of this paragraph.

(A) Design criteria.

(i) Landfill cells shall be designed and constructed in accordance with subclause (I) or (II) of this clause, and shall also be constructed in accordance with subclause (III) of this clause.

(I) a design that ensures that the concentration values listed in Table 1 of §330.241 of this title (relating to Constituents for Detection Monitoring) will not be

exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the executive director under clause (iv) of this subparagraph; or

(II) a composite liner, as defined in clause (ii) of this subparagraph, and a leachate collection system that is designed and constructed in accordance with subparagraph (B) of this paragraph; and

(III) unless the executive director approves an engineered design that the applicant has demonstrated will provide equal or greater protection to human health and the environment, a landfill cell must be constructed where the base of the containment structure, which includes the sides and bottom of the containment structure, is at least five feet above the uppermost saturated soil unit having a Unified Soil Classification of GW (well-graded gravel), GP (poorly-graded gravel), GM (silty gravel), GC (clayey gravel), SW (well-graded sand), SP (poorly-graded sand), or SM (silty sand), or a hydraulic conductivity greater than 1×10^{-5} cm/sec, unless such saturated soil unit is not sufficiently thick and laterally continuous to provide a significant pathway for waste migration.

(ii) For purposes of this section, "composite liner" means a system consisting of two components. The upper component shall consist of a minimum 30-mil (0.75 mm) flexible membrane liner and the lower component shall consist of at least a three-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec flexible membrane liner components consisting of high density polyethylene shall be at least 60-mil thick. The flexible

membrane liner component must be installed in direct and uniform contact with the compacted soil component.

(iii) When approving a design that complies with clause (i)(I) of this subparagraph, the executive director may consider at least the following factors:

(I) the hydrogeologic characteristics of the facility and surrounding land;

(II) the climatic factors of the area; and

(III) the volume and physical and chemical characteristics of the leachate.

(iv) For purposes of this paragraph, the relevant point of compliance is defined in §330.2 of this title (relating to Definitions). In determining the relevant point of compliance, the executive director may consider at least the following factors:

(I) the hydrogeologic characteristics of the facility and surrounding land;

(II) the volume and physical and chemical characteristics of the leachate;

(III) the quantity, quality, and direction of flow of groundwater;

(IV) the proximity and withdrawal rate of the groundwater users;

(V) the availability of alternative drinking water supplies;

(VI) the existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently used or reasonably expected to be used for drinking water;

(VII) public health, safety, and welfare effects; and

(VIII) practicable capability of the owner or operator.

(B) Landfill cells shall have a leachate-collection system designed and constructed to maintain less than a 30-cm depth of leachate over the liner. The leachate-collection and leachate-removal system shall be:

(i) constructed of materials that are chemically resistant to the leachate expected to be generated;

(ii) of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill;
and

(iii) designed and operated to function through the scheduled closure and post-closure period of the landfill.

(C) Storm water run-on/run-off facilities such as berms and ditches shall be provided in accordance with §330.54 of this title (relating to Technical Requirements of Part III of the Application).

(D) The site shall have a groundwater monitoring system installed that is capable of detecting the migration of pollutants from the landfill and is sampled semiannually for the parameters specified in Chapter 330, Subchapter I of this title (relating to Groundwater Monitoring and Corrective Action).

(E) The final cover placed over the commercial industrial nonhazardous waste landfill unit shall consist of a minimum of 18 inches of uncontaminated topsoil overlying four feet of compacted clay-rich soil material meeting the requirements of §330.253 of this title (relating to Closure

Requirements for MSWLF Units That Receive Waste on or after October 9, 1993 and MSW Sites).

The final cover over the aerial fill shall meet the requirements of §330.253 of this title and shall include a flexible membrane component.

(F) Nonhazardous waste may be placed above natural grade in commercial industrial nonhazardous waste landfill units provided the conditions in clauses (i) - (vi) of this subparagraph are met, except as provided in clause (vii) of this subparagraph:

(i) waste placed above grade shall be laterally contained by dikes that are constructed to:

(I) prevent washout, release, or exposure of waste;

(II) be physically stable against slope failure, with a minimum safety factor of 1.5;

(III) prevent washout from hydrostatic and hydrodynamic forces from storms and floods;

(IV) prevent storm water from reaching the waste;

(V) minimize release of leachate; and

(VI) minimize long-term maintenance;

(ii) the liner required in paragraph (22) of this section shall extend to the crest of the dike;

(iii) waste placed against the dike is placed no higher than three feet below the crest of the dike;

(iv) the slope of the wastes placed in the commercial industrial nonhazardous waste landfill units does not exceed 3% to the center of the unit;

(v) no waste is placed higher than the lowest elevation of the dike crest; and

(vi) a dike certification report is submitted with Attachment 10 of Part III of the permit application. The certification shall be in the following form:

Figure: 30 TAC §335.590(24)(F)(vi)

“I (qualified Professional Engineer) , Texas P.E. Registration Number , certify under penalty of law that I have personally examined and am familiar with the design and construction of the dikes that are a portion of unit name .

I further certify that I have evaluated the dike design and materials of construction using accepted engineering procedures, and have determined that the dike has structural integrity, and:

(I) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the unit; and

(II) Will not fail due to scouring or piping, without dependence on any liner system included in the unit construction.

(Signature)

Date:

(SEAL)”

(vii) a commercial industrial nonhazardous waste landfill is not subject to the requirements of clauses (ii) - (v) of this subparagraph provided that the owner or operator submits a demonstration that the standards of clause (i) of this subparagraph can be met without meeting the requirements of clauses (ii) - (v) of this subparagraph, the demonstration is approved in writing by the executive director, and the owner or operator enters the approval into the facility operating record.

(25) Hazardous waste from a conditionally exempt small quantity generator as defined in §335.78(a) of this title (relating to Special Requirements for Hazardous Waste Generated by Conditionally Exempt Small Quantity Generators), may be accepted for disposal in any commercial industrial nonhazardous waste landfill facility provided the amount of hazardous waste accepted from each conditionally exempt small quantity generator does not exceed 220 pounds (100 kilograms) a calendar month, and provided the landfill owner or operator is willing to accept the hazardous waste.

§335.591. Groundwater Protection Design and Operation.

The following requirements applicable to municipal solid waste facilities apply to owners and operators of facilities subject to this subchapter:

- (1) §330.201 of this title (relating to Leachate Collection System);
- (2) §330.202 of this title (relating to Alternate Design);
- (3) §330.203 of this title (relating to Special Conditions (Liner Design Constraints));
- (4) §330.204 of this title (relating to Geological Faults);
- (5) §330.205 of this title (relating to Soils and Liner Quality Control Plan); and
- (6) §330.206 of this title (relating to Soils and Liner Evaluation Report (SLER) and

Flexible Membrane Liner Evaluation Report (FMLER)).

§335.592. Groundwater Monitoring and Corrective Action.

The following requirements applicable to municipal solid waste and hazardous waste facilities apply to owners and operators of facilities subject to this subchapter:

- (1) §330.230 of this title (relating to Applicability);
- (2) §330.231 of this title (relating to Groundwater Monitoring Systems);
- (3) §330.233 of this title (relating to Groundwater Sampling and Analysis Requirements);
- (4) §330.234 of this title (relating to Detection Monitoring);
- (5) §330.235 of this title (relating to Assessment Monitoring Program);
- (6) §330.236 of this title (relating to Assessment of Corrective Measures);
- (7) §330.237 of this title (relating to Selection of Remedy);
- (8) §330.238 of this title (relating to Implementation of the Corrective Action Program);
- (9) §330.241 of this title (relating to Constituents for Detection Monitoring); and
- (10) §330.242 of this title (relating to Monitor Well Construction Specifications).

§335.593. Closure and Post-Closure Care Requirements.

The owner or operator of a facility subject to this subchapter shall close the facility or any part of it in accordance with the requirements of §335.8 of this title (relating to Closure and Remediation). In addition to these requirements, the owner or operator shall meet the requirements for closure and post-closure of municipal solid waste facilities in §330.253 of this title (relating to Closure Requirements for MSWLF Units That Receive Waste on or after October 9, 1993 and MSW Sites).

§335.594. Financial Assurance.

The owner or operator of any landfill subject to this subchapter shall establish and maintain financial assurance for closure and post-closure care of the landfill in accordance with Chapter 37, Subchapter P of this title (relating to Financial Assurance for Hazardous and Nonhazardous Industrial Solid Waste Facilities).