



TCEQ Regulatory Guidance

Remediation Division

RG-366/TRRP-4A August 2003

SUBJECT: **Comparison of 30 TAC 334 and 30 TAC 350: Regulation of LPST Sites under TRRP**

Objectives: This document summarizes the primary differences between the 30 TAC 334 and the Texas Risk Reduction Rule.

Audience: Regulated Community and LPST Environmental Professionals

References: The regulatory citation for the Texas Risk Reduction Program (TRRP) Rule is 30 TAC 350.

The TRRP Rule and Preamble are on-line at
<http://www.tnrcc.state.tx.us/oprd/rules/indxpdf5.html>.

The TRRP Rule, together with conforming changes to related rules, is contained in 30 TAC Chapter 350, and was published in the September 17, 1999, Texas Register (24 TexReg 7413-7944). The Tier 1 PCL Tables, toxicity factors and other TRRP information can be downloaded at <http://www.tnrcc.state.tx.us/permitting/trrp.htm>.

Contact: Technical Support Section at 512/239-0310, Responsible Party Remediation Section at 512/239-2200, Site Assessment and Management Section at 512/239-2120.

For mailing addresses, see TCEQ's web page at <http://www.tceq.state.tx.us/>.

Beginning September 1, 2003, newly reported leaking petroleum storage tank (LPST) releases are regulated under the 30 TAC Chapter 350 Texas Risk Reduction Program (TRRP). For those LPST cases, TRRP replaces significant portions of the Chapter 334 regulations (§§334.78-81 and Subchapter G). This document notes and summarizes the primary differences between TRRP and the Chapter 334 program from the context of someone who is familiar with the Chapter 334 program.

One of the first differences that will be noted is that TRRP is a long rule packed with details. Because of that, TRRP can be intimidating. However, TRRP contains provisions and concepts that were borrowed from the Chapter 334 program. Therefore, people familiar with the Chapter 334 program should readily obtain a sufficient working knowledge of TRRP if specific effort is placed on:

- reading the entire rule with the intent of obtaining a general familiarity with the organization and the overall subject content of TRRP and learning what rule topics have associated guidance,

Texas Commission on Environmental Quality • PO Box 13087 • Austin, Texas • 78711-3087

The TCEQ is an equal opportunity/affirmative action employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation or veteran status. In compliance with the Americans with Disabilities Act, this document may be requested in alternate formats by contacting the TCEQ at 512/239-0028, Fax 239-4488, or 1-800-RELAY-TX (TDD), or by writing PO Box 13087, Austin, Texas 78711-3087. Authorization for use or reproduction of any original material contained in this publication, i.e., not obtained from other sources, is freely granted. The Commission would appreciate acknowledgment.

- learning and understanding the TRRP terminology, much of which either replaces PST terminology or puts new labels on familiar Chapter 334 concepts,
- obtaining a thorough understanding of Remedy Standards A and B, which are the endpoints that must be attained under the rule,
- familiarization with the subjects that are further addressed in guidance, and
- gaining an in-depth understanding of specific procedural details in the rule and associated guidance as the need develops.

The following table lists points to consider as TRRP is applied to LPST sites¹.

| Topic | |
|--|--|
| Applicability | |
| CH. 334 | Applies to LPST releases reported before September 1, 2003 |
| Reference | §334.71 |
| TRRP | LPST releases reported September 1, 2003 or later. TRRP does not affect which storage tanks are regulated or the technical standards that apply to storage tanks. |
| Reference | §350.2(g) |
| Terminology | |
| CH. 334 | TRRP |
| Owner/operator, responsible party (RP) | Person [§350.4(a)(62)] |
| Plan A | Tier 1 [§350.71(a)] |
| Plan B | Tier 2 or 3 [§350.71(a)] |
| Target concentration | Protective concentration level (PCL) [§350.4(a)(68)] |
| Site-specific target level (SSTL) | Tier 2 or 3 Protective Concentration Level ² |
| Lowest applicable target concentration for a medium | Critical protective concentration level |
| Site | Affected property (§350.4(a)(1)) |
| Contaminant | Chemical of concern (COC) [§350.4(a)(11)] |
| Contaminant delineation | Affected property assessment |
| Contamination extent needing corrective action | Protective concentration level exceedence zone (PCLE zone) [§350.4(a)(69)] |
| Delineation of Soil and Groundwater Contamination | |
| CH. 334 | The required extent of contaminant delineation is a site-specific decision made in accordance with the February 10, 1997 interoffice memorandum (IOM) pertaining to <i>Guidance for Judging the Adequacy of Contaminant Delineation for Purposes of Determining if Further Corrective Action is Needed</i> . Factors include absence of receptors, surface cover, groundwater use or likely future use, and geologic conditions. |
| TRRP | TRRP has uniform requirements to define the vertical and horizontal extent of chemical of concern (COC) concentrations in excess of <i>residential assessment levels</i> . The residential assessment level is dependent on the COC, environmental media, and groundwater classification. Delineation to assessment levels is similar in concept to defining the extent of contamination to Plan A target concentration levels. Depending on the particular site circumstances, TRRP delineation requirements are equivalent to or more extensive than those required under Chapter 334. |
| Reference | §350.51(a)-(e) |

¹ This guidance is not detailed enough or intended to sufficiently equip a person to be able to comply with TRRP. Reading this document in no way reduces the need to read the rule and associated guidance. See the TRRP web page <http://www.tnrcc.state.tx.us/permitting/trrp.htm> to obtain the TRRP guidance documents and other information.

² Target concentration (protective concentration level) development under Tiers 2 and 3 includes site-specific considerations, but is analogous to the Plan A back-calculation process and not the Plan B “risk assessment” process.

| Topic | |
|---|--|
| Priority Classification System | |
| CH. 334 | The LPST program has an exposure-based prioritization system (Priority 1-4). |
| TRRP | There has not been a prioritization system implemented specifically for TRRP, but TRRP reserves the right for the agency to implement one. The PST program will continue to use the existing priority classification system concept, albeit the current system will likely be modified to comport with TRRP elements. |
| Reference | §350.51(o) |
| Land Use Classification | |
| CH. 334 | Only residential and commercial/industrial land uses are considered. Land use classification is based on current and/or future land use of the property. Land use dictates the applicable exposure factors. |
| TRRP | Like PST, only residential and commercial/industrial land uses are considered and the definitions for residential and commercial/industrial are essentially the same as the Chapter 334 definitions. However, unlike PST land use classification is based only on current use of the property and the classification dictates the applicable exposure pathways and locations for points of exposure, in addition to exposure factors. An institutional control is required for commercial/industrial land use (see discussion of institutional controls and landowner consent). |
| Reference | §350.53, <i>Land Use Classification</i> (RG-366/TRRP-7) |
| Groundwater Categories | |
| CH. 334 | There are four categories of groundwater. The categories are differentiated based on current or likely future groundwater use, groundwater quality and productivity. The groundwater category defines applicable Plan A target groundwater concentrations reflecting different exposure pathways, risk levels and exposure factors. For Category 4 groundwater, only NAPL recovery is typically required. |
| TRRP | Threatened or impacted groundwater-bearing units must be classified. Only water-saturated zones with a hydraulic conductivity greater than 1×10^{-5} cm/sec are considered groundwater-bearing units. There are three classes of groundwater based on current groundwater use, groundwater quality and productivity. Groundwater classification defines applicable assessment levels and protective concentration levels reflecting the different exposure pathways, and groundwater response objectives (removal/decontamination vs. control). Exposure factors and risk levels are not modified based on groundwater classification. For Class 3 groundwater, protective concentration levels (target concentrations) apply as well as NAPL management obligations. |
| General relationship between the PST groundwater categories and TRRP groundwater classes: | |
| CH. 334 | TRRP |
| Category 1 groundwater | Class 1 groundwater |
| Category 2 groundwater | } Class 2 groundwater |
| Category 3 groundwater | |
| Category 4 groundwater | Class 3 groundwater |
| Reference | §350.52 <i>Groundwater Classification</i> (RG-366/TRRP-8) |
| Analytical Data Quality | |
| CH. 334 | Analytical data quality and laboratory reporting requirements are addressed in a general manner in guidance and not in rule. |
| TRRP | Analytical data quality and laboratory reporting requirements are addressed in terms of performance-based requirements in rule and are addressed in detail in guidance. The critical differences are that under TRRP, a data usability summary must be provided with the data in order that all data is qualified with regard to suitability for use for decision-making purposes and the submitted data package should include specific quality control results. |
| Reference | §350.54 <i>Review and Reporting of COC Concentration Data</i> (RG-366/TRRP-13) |

| | | Topic |
|----------------------------|--|--|
| Standard Exposure Pathways | | |
| | Soil | Groundwater |
| CH. 334 | <p>Ground surface to 15 feet below ground surface: Residential or commercial/industrial ingestion.</p> <p>Ground surface to 2 feet below ground surface: Residential or commercial/industrial inhalation of volatile and particulate emissions, unless soil is beneath an impervious cover.</p> <p><u>Residential or commercial/industrial soil:</u> groundwater protection</p> | <p>Category 1, 2, 3 groundwater: Residential or commercial/industrial ingestion.</p> <p>Category 1, 2, 3, 4 groundwater in current or planned subsurface utility or construction area: Incidental dermal contact and inhalation of volatile emissions during by a construction worker.</p> |
| | <p>Surface soil:</p> <p><u>Residential:</u> Combined inhalation of volatile and particulate emissions, ingestion, dermal, and vegetable consumption (residential surface soil is defined as the soil interval from ground surface to 15 feet below ground surface).</p> <p><u>Commercial/industrial:</u> Combined inhalation, ingestion, dermal (commercial/industrial surface soil is defined as the soil interval from ground surface to 5 feet below ground surface)</p> <p>Subsurface Soil: Residential or commercial/industrial inhalation of volatile emissions (residential and commercial/industrial subsurface soil is defined as the soil interval between the base of surface soil and the top of the saturated zone).</p> <p><u>Residential or commercial/industrial surface and subsurface soil:</u> groundwater protection</p> | <p>Class 1 and 2 groundwater: Residential or commercial/industrial ingestion.</p> <p>Class 1, 2 and 3 groundwater: Residential or commercial/industrial inhalation of volatile emissions in ambient air.</p> |
| Reference | §350.71(c); §350.4(a)(88) | |

| Topic | |
|---|--|
| Human Health Points of Exposure | |
| CH. 334 | <p>Plan A: Exposure points are set at all points throughout the contaminated environmental medium unless the agency agrees such is technically infeasible and public health and the environment are otherwise protected.</p> <p>Plan B: For groundwater, exposure points can be proposed for alternate locations on a site-specific basis in order to establish alternate target groundwater concentrations consistent with the level of natural attenuation between the source area and the proposed exposure point.</p> <p>Groundwater discharging to surface water: The exposure point is in the groundwater at the zone of discharge.</p> |
| Reference | §334.203(2)(H), §334.203(1)(I)(vii) and (viii), and §334.203(1) (L), <i>Clarifications and Amendments for Implementation of RG-36</i> , March 6, 1997 PST IOM. |
| TRRP | <p>Air, Soil, Groundwater: Points of exposure are set at all points throughout the affected environmental medium, except as modified below.</p> <p>Beneath or within a waste control unit (i.e., engineered landfill): No soil or groundwater point of exposure is required.</p> <p>Affected Class 2 and 3 groundwater: Alternate points of exposure may be proposed within the context of a plume management zone. This is similar to Chapter 334, but criteria are specified in rule for locating the alternate points of exposure.</p> <p>Groundwater discharging to surface water: Same as for Chapter 334, the exposure point is in the groundwater at the zone of discharge.</p> |
| Reference | §350.37(a)-(h), (l)-(m), <i>Human Health Points of Exposure (RG-366/TRRP-21)</i> |
| Risk Level, Hazard, and Exposure Factors | |
| CH. 334 | <p>Risk Level and Hazard Indices:</p> <p><u>Soil:</u> Cumulative risk not to exceed 1×10^{-6} for Class A and B carcinogens, 1×10^{-5} for Class C carcinogens. Hazard index not to exceed 1 for COCs affecting same target organ.</p> <p><u>Category 1 groundwater:</u> Cumulative risk not to exceed 1×10^{-6} for Class A and B carcinogens, 1×10^{-5} for Class C carcinogens. Hazard index not to exceed 1 for COCs affecting same target organ.</p> <p><u>Category 2 and 3 groundwater:</u> Cumulative risk not to exceed 1×10^{-5} for Class A and B carcinogens, 1×10^{-4} for Class C carcinogens. Hazard index not to exceed 1 for COCs affecting same target organ.</p> <p><u>Category 4 groundwater:</u> no exposure assumed</p> <p>Exposure factors: Exposure factors are provided in guidance. Reasonable Maximum Exposure (RME) or Most Likely Exposure (MLE) factors used depending on the scenario.</p> <p><u>Soil:</u> RME</p> <p><u>Category 1 and 2 groundwater:</u> RME</p> <p><u>Category 3 groundwater:</u> MLE</p> <p><u>Category 4 groundwater:</u> no exposure assumed</p> |
| Reference | §334.203(2)(F) and (G); §334.203(1)(I)(iv) and (v); and §334.203(1)(J)(vii) and (viii), <i>Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)</i> |

| | Topic |
|---|--|
| TRRP | <p>Risk Level and Hazard Indices:</p> <p><u>All environmental media:</u> Individual carcinogenic risk: 1×10^{-5} Cumulative carcinogenic risk: 1×10^{-4} Hazard quotient: 1 Hazard index: 10</p> <p>Exposure Factors: Default values provided in the rule. Modifications may be allowed as defined in the rule.</p> |
| Reference | §350.74(j), <i>Risk Levels, Hazard Indices, and Cumulative Adjustment</i> (RG-366/TRRP-18) |
| Setting Human Health-Based Target Concentrations | |
| CH. 334 | <p>Two-tiered system: Plan A and Plan B</p> <p><u>Plan A:</u> Establishes “target concentrations” via prescribed risk-based formulas, exposure factors, toxicity factors, contaminant chemical/physical properties, and property parameters provided in guidance. No site-specific considerations. Plan A lookup values are provided in guidance.</p> <p><u>Plan B:</u> Establishes “site-specific target levels” via a risk assessment process.</p> |
| Reference | §334.203(1) and §334.203(2), <i>Risk-Based Corrective Action for Leaking Storage Tank Sites</i> (RG-36) |
| TRRP | <p>Three-tiered system: Tier 1, Tier 2, Tier 3</p> <p><u>Tier 1:</u> Establishes “protective concentration levels” (PCLs) via prescribed risk-based formulas, exposure factors, COC chemical/physical properties, and property parameters that are provided in rule. No site-specific considerations. Toxicity factors and Tier 1 lookup values are provided in guidance.</p> <p><u>Tier 2:</u> Establishes PCLs using the prescribed Tier 1 equations, additional prescribed Tier 2 equations, prescribed exposure factors (some potential for site-specific values), toxicity factors, COC chemical/physical properties, and site-specific property parameters.</p> <p><u>Tier 3:</u> Establishes PCLs using risk-based equations/models other than those prescribed for Tier 1 and 2, direct measurement of concentration reduction with transport (instead of modeling), with prescribed exposure factors (some potential for site-specific values), toxicity factors, COC chemical/physical properties, and site-specific property parameters.</p> |
| Reference | §350.71(a), §350.75(b)-(d), and §350.76, <i>Toxicity Factors and Chemical/ Physical Properties</i> (RG-366/TRRP-19), <i>Tier 1 PCL Tables</i> (RG-366/TRRP-23), <i>Determining PCLs for Surface Water and Sediment</i> (RG-366/TRRP-24), <i>Critical PCLs</i> (RG-366/TRRP-25), <i>Development of PCLs for Total Petroleum Hydrocarbon Mixtures</i> (RG-366/TRRP-27) |
| Ecological Exposure | |
| CH. 334 | By rule LPST sites must be environmentally protective. However, no specific ecological risk assessment process is defined under Chapter 334. However, in the event ecological risks are realized, the agency would most likely apply the same ecological program that was developed for TRRP. |
| Reference | §334.203(1)(K) and (2)(K) |
| TRRP | <p>The rule specifically addresses ecological risk assessment using a three-tiered approach:</p> <ul style="list-style-type: none"> Tier 1 - Exclusion Criteria checklist. Tier 2 - screening level eco evaluation Tier 3 - site specific eco evaluation <p>All affected properties must proceed through Tier 1 at a minimum. However, it is expected that LPST sites will frequently pass Tier 1 due to the typical concrete cover and surrounding urbanization at LPST sites that make them unattractive to ecological receptors.</p> |
| Reference | §350.77, <i>Guidance for Ecological Risk Assessment in Texas</i> (RG-263) |

| Topic | |
|---|---|
| Aesthetic Impact | |
| CH. 334 | Apply as warranted on a site-specific basis, no specifics offered. Aesthetics can drive a cleanup, but typically do not. |
| Reference | §334.203(1)(K) and (2)(K) |
| TRRP | Generally apply as warranted in response to site-specific circumstances, but some aspects applied proactively: In Class 1 groundwater, and Class 2 groundwater with an impacted or threatened water well, federal secondary MCLs apply. In such situations, the taste/odor threshold for MTBE (15 µg/L) applies, if MTBE is a target COC. If the concentration of a liquid COC exceeds 10,000 mg/kg in the upper 10 feet of soil, the person must evaluate soil integrity for surface use. |
| Reference | §350.74(f)(3), (i) |
| Public Notification | |
| CH. 334 | Required per §334.82 for each site requiring a corrective action plan. |
| TRRP | TRRP addresses this subject in detail. Landowners are required to be notified of the availability of data when samples are collected from their property, or when there are other lines of evidence that their property is affected in excess of a residential assessment level. The notification must be made either in advance of or at the same time the information is submitted to TCEQ. The person must notify all persons who are actually or probably exposed to a COC in excess of the applicable Tier 1 critical PCL as soon as possible, but not to exceed 60 days. |
| Reference | §350.55, <i>Notification Requirements</i> (RG-366/TRRP-17) |
| Corrective Action in Response to Exceeding Target Concentrations | |
| CH. 334 | Target concentrations can be achieved by either cleanup (removal or decontamination), by reliance on a physical control (e.g., concrete driveways) or by natural control (e.g., steady state or declining plume via natural attenuation in groundwater). |
| TRRP | TRRP uses two remedy standards to demonstrate an affected property is protective. Remedy Standard A allows only removal and/or decontamination remedies to be used. Remedy Standard B allows removal, decontamination and/or control remedies to be used. There is no formal equivalent concept of remedy standards in the Chapter 334 program. The concept of remedy standards was borrowed from the 30 TAC 335 Risk Reduction Rule. |
| Reference | §350.31-33, <i>Application of Remedy Standards A and B</i> (RG-366/TRRP-28), <i>Soil and Groundwater Response Objectives</i> (RG-366/TRRP-29) |
| Pre-Approval of Corrective Actions | |
| CH. 334 | Corrective actions can be self-implemented under the Chapter 334 program (Subchapter D and G) without pre-approval unless reimbursement from the PST Remediation Fund is desired. However, pre-approval for reimbursement is irrelevant for a TRRP LPST site because TRRP is only applicable to releases reported on September 1, 2003 or later. Any LPST release reported on or after December 22, 1998 is not eligible for reimbursement. |
| Reference | §334.81(f) and §334.310(f) |
| TRRP | Remedy Standard A is a self-implementing standard, meaning the person can initiate and complete a removal/decontamination response action without pre-approval of the agency. Remedy Standard B is not a self-implementing standard. Under Remedy Standard B, corrective actions (response actions) must be pre-approved. |
| Reference | §350.32(d), §350.33(d) <i>Application of Remedy Standards A and B</i> (RG-366/ TRRP-28) |

| Topic | |
|------------------------------------|--|
| Managing Groundwater Plumes | |
| CH. 334 | <p>This subject is addressed in rule and in two different ways in PST guidance.</p> <p>Under Plan B, the responsible party can propose alternate target groundwater concentrations that account for the natural attenuation that occurs between the source and a proposed down gradient exposure point location. Modeling or sample data can be used as the basis for estimating the natural concentration reduction between the source and the exposure point. Compliance point wells and groundwater monitoring wells along the central axis of the plume are required. Agency approval is required and an institutional control may be required on a site-specific basis. This option is not necessarily restricted to certain groundwater categories. (p. 32-33, RG-36).</p> <p>Alternatively, stable or declining groundwater plumes may be closed when target concentration levels are exceeded when criteria specified in the February 10, 1997 IOM <i>Process for Closure Evaluation for Petroleum Hydrocarbon LPST Sites Exceeding Target Concentrations</i> (aka "Exit Criteria") are met.</p> |
| Reference | §334.203(2)(H) and (I); §334.203(2)(L) |
| TRRP | <p>Following the PST Plan B concept, under Remedy Standard B, a <i>plume management zone</i> may be proposed for affected Class 2 and 3 groundwater. The use of a plume management zone requires prior agency approval, an institutional control, and typically post-response action care. The rule sets out criteria for the size limit for a plume management zone and for establishing attenuation monitoring points. The plume management zone concept in TRRP is more akin to the concept contained in RG-36 than the concept contained in the February 10, 1997 IOM. In the instance where a plume can be shown to be declining, the post-response action care should be minimal relative to a plume that is naturally steady state or that would expand if not properly managed.</p> |
| Reference | §350.37(l) and (m), §350.33(f)(4)(E), <i>Human Health Points of Exposure</i> (RG-366/TRRP-21), <i>Application of Remedy Standards A and B</i> (RG-366/ TRRP-28), <i>Soil and Groundwater Response Objectives</i> (RG-366/TRRP-29), <i>Monitored Natural Attenuation Demonstrations</i> (RG-366/TRRP-33) |
| Institutional Controls | |
| CH. 334 | <p>Optional: The owner/operator may recommend an institutional control in order to facilitate agency approval to use non-standard exposure assumptions concerns and to provide notice against changes in site conditions that could result in exposure. Prior landowner consent is required to be obtained before filing the institutional control. If the landowner consent cannot be obtained, then the owner/operator is required to take actions that avoid the need to use an institutional control.</p> |
| Reference | §334.203(1)(N), §334.203(2)(L); §334.205 |
| TRRP | <p>Unlike the Chapter 334 program, institutional controls are an integral part of TRRP. Institutional controls are required in order to use commercial/industrial land use assumptions and physical controls [§350.31(g)]; site-specific exposure areas [§350.51(1)(3) and (4)]; waste control unit [§350.33(f)(2)], technical impracticability [§350.33(f)(3)], and plume management zone [§350.33(f)(4)(C)(i)] under Remedy Standard B; site-specific exposure assumptions [§350.74(j)(2)(L)]; relocations and reuse of soils containing COCs equivalent to Remedy Standard B [§350.36].</p> <p>Also, at the agency's discretion, an institutional control can be required by the agency to provide notice of a long-term on-going response action [§350.31(h)]. Prior landowner consent is required to be obtained before filing the institutional control. If the landowner consent cannot be obtained, then the person is required to take actions that avoid the need to use an institutional control.</p> <p>If it is demonstrated to the satisfaction of the agency that it is technically impracticable to remediate an affected property such that institutional controls can be avoided, but the landowner will not consent to the placement of an institutional control, then the rule sets forth a process where the matter must be settled in civil court. If the court agrees with the technical impracticability demonstration, then the person must pay the amount of court-determined compensation to the landowner and then file a deed notice on the subject property.</p> |
| Reference | §350.111, <i>Institutional Controls</i> (RG-366/TRRP-16) |

| Topic | |
|-------------------------------|--|
| Control-Based Remedies | |
| CH. 334 | Under the February 10, 1997 IOM <i>Process for Closure Evaluation for Petroleum Hydrocarbon LPST Sites Exceeding Target Concentrations</i> , existing physical controls such as parking lots may be used to informally eliminate an otherwise complete exposure pathway. Because of this, formal control-based remedies are rare under the Chapter 334 program. One notable exception is where natural attenuation is relied upon to control a groundwater plume (steady state or declining conditions). If a physical control is formalized as a remedy, then the agency can compel long term monitoring of the control to verify the long-term effectiveness and permanence of the remedy. |
| Reference | §334.81(g) |
| TRRP | Under TRRP, the portions of environmental media with COC concentrations in excess of protective concentration levels must be formally addressed with a remedy under Remedy Standard A or B. Existing physical controls may not be relied upon to eliminate an exposure pathway unless that physical control is formalized as a remedy. The long-term effectiveness must be verified with monitoring under a post-response action care program until the remedy is determined to be permanently effective. |
| Reference | §350.33(i), (j), (k), |
| Financial Assurance | |
| CH. 334 | Chapter 334, Subchapter E requires \$1,000,000 in financial assurance. The owner/operator must meet requirements of §334.1, §334.7, and Chapter 37, Subchapter I. |
| TRRP | The person must provide financial assurance for the operation and maintenance of a physical control in order for a control-based remedy to be approved. The amount is determined on a site-specific basis. The default time period is 30 years, but it can be lowered on a site-specific basis. An allowance for reduced financial assurance is provided for small businesses. The standard Chapter 334 Financial Assurance may or may not always meet TRRP requirements. See the terms of the insurance policy. |
| Reference | §350.33(l)-(n); 30 TAC 37, Subchapter N |

| | Topic |
|----------------|--|
| Reports | |
| CH. 334 | <p>Various reports and agency report forms are required under the Chapter 334 program.</p> <p>Assessment Report Form; Exit Criteria; Field Activity Report Form; Plan B Risk Assessment; Product Recovery Report Form; Monitoring Event Summary and Status Report Form; Annual Groundwater Monitoring Report; Notice of Remedial System Installation Form; Operation, Monitoring, and Performance Report Form; Pilot Test Report; Remedial Technology Screening Form; CAP Worksheets; Corrective Action Plan; LPST Site Closure Request Form; Final Site Closure Report Form; Operation, Monitoring, and Performance Report Form</p> |
| TRRP | <p>TRRP details five different reports that may be required to be submitted. Agency report forms must be used.</p> <p>The Affected Property Assessment Report (APAR) combines the requirements for Plan A and B into one report. The APAR is a comprehensive report form that must be completed commensurate with the data generated during the assessment. [§350.91]</p> <p>The Self-Implementation Notice (SIN) is submitted 10 days prior to self-implementation of a response action under Remedy Standard A. [§350.92]</p> <p>The Response Action Effectiveness Report (RAER) is submitted every three years during the response action phase. It reports the remedial effectiveness in the context of the reasonable time frame established to complete the response action and system performance milestone specified in the SIN or RAP. It is analogous to a combination of PST Groundwater Monitoring Reports and Operation, Monitoring and Performance Report. [§350.93]</p> <p>The Response Action Plan (RAP) is used when Remedy Standard B will be used to complete a response action. The RAP proposes a reasonable time frame for completion of the response action, states response objectives, demonstrates the effectiveness of the proposed response action, proposes a compliance verification plan, and establishes the reporting frequency for the RAERs. It is analogous to a PST Corrective Action Plan. [§350.94]</p> <p>The Response Action Completion Report (RACR) documents completion of the response action. [§350.95]</p> <p>The Post-Response Action Care Report (PRACR) is used under the Remedy Standard B post-response action care phase to report the long-term effectiveness of a physical control. [§350.96]</p> |

A General Discussion of Remedial Endpoints, Remedial Progress and Natural Attenuation:

In order to qualify for a “no further action” letter under TRRP, COC concentrations must not exceed PCLs. Closure is not based on situational criteria as practiced under the Chapter 334 February 10, 1997 IOM pertaining to *Process for Closure Evaluation for Petroleum Hydrocarbon LPST Sites Exceeding Target Concentrations*.

With regard to remedial progress requirements, Chapter 334 specifies certain corrective action milestones that must be achieved within statutory deadlines in order to remain eligible for reimbursement from the PSTR Fund. No corrective action milestones are specified in Chapter 350. Rather, Chapter 350 only specifies that assessment and response actions must progress in a time frame that is reasonable considering the particular circumstances at the affected property. Reasonable times frames are proposed to the TCEQ for approval in the Self Implementation Notice (SIN) or Response Action Plan (RAP) (see

TCEQ guidance document *Application of Remedy Standards A and B* (RG-366/TRRP-28) for more information on evaluating reasonable time frames).

With regard to reasonable time frame, §350.31(h) allows the TCEQ to require the filing of an institutional control that provides notice of an on-going long-term response action when a response action is not or will not be completed within 15 years of the date of submittal of the SIN to the TCEQ, or within 15 years of the date of TCEQ approval of the RAP. This provision was included in the rule to give an incentive to complete response actions in a timely manner. The TCEQ can require the institutional control, when:

- (1) progress of the response action is unsatisfactory, or
- (2) performance monitoring data indicates that the concentrations of COCs will not be reduced to the critical residential PCLs within an additional reasonable time frame.

Natural attenuation has been routinely used in appropriate situations under the Chapter 334 program as the remedial technology for fuel hydrocarbons. Under Chapter 350 natural attenuation can continue to be used for fuel hydrocarbons and other COCs as appropriate to remove or decontaminate COC concentrations to PCLs or to manage the groundwater PCLE zone in the context of a plume management zone (PMZ). The person is required to provide a basis for concluding that natural attenuation (or any other remedial technology) will achieve the response action objectives within the proposed reasonable time frame for completion of the response action. If the proposed time frame is greater than 15 years or if it turns out that the remedial time frame extends beyond 15 years, then the TCEQ will determine on a case-specific basis whether or not to require the filing of the institutional control under §350.31(h).

Chapter 350 requires landowner consent for the filing of an institutional control. Therefore, if it is unlikely that natural attenuation will meet response action objectives within 15 years and that the landowner will not allow the filing of an institutional control, then sole reliance on natural attenuation is probably not the best course to take because failure to file required institutional controls can result in enforcement by the TCEQ.