

**Comparison of 2004 Tanks RBCA Guidance to the  
Department's Proposed Tanks RBCA Rules  
February 8, 2011**

- In several places, the proposed rules specify a requirement but qualifying language is included to allow the department to approve requirements less than or in addition to what is specifically provided for in rule. The 2004 guidance implied as much but the proposed rules clarify the department's authority in this regard.
- The 2004 guidance was not clear with regard to the application of Tier 2 Site-Specific Target Levels (SSTLs), in particular that, once SSTLs are developed, the Tier 1 Risk-Based Target Levels (RBTLs) are no longer applicable, even if the RBTLs are higher than the SSTLs. This is clarified in the proposed rules.
- The 2004 guidance did not include provisions related to public participation and notice when contamination migrates off the source property and onto adjacent properties. The proposed rules include requirements in this regard (the requirements build on requirements found in existing rule 10 CSR 20-10.067).
- The 2004 guidance did not provide for public participation. The proposed rules build on existing rule 10 CSR 20-10.067 and require public participation and notice when a Corrective Action Plan is required. As with the existing rule, the proposed rule places the onus for compliance with the rule on the department. However, the proposed rule allows an owner/operator to take on the responsibility for public participation and notice activities in lieu of the department.
- The 2004 guidance required a Corrective Action Plan (called a "Risk Management Plan" in the 2004 guidance) when contaminant concentrations exceeded applicable target levels. The proposed rules require a Corrective Action Plan when concentrations of chemicals of concern (COCs) exceed residential standards. The rules explain that, in some cases, the Corrective Action Plan may propose reliance solely on long-term stewardship (LTS) measures to mitigate future risk.
- The 2004 guidance stipulated that Activity and Use Limitations (AULs) might be required when contaminants at concentrations above applicable target levels were to be left in place. The proposed rules require LTS whenever contaminants will remain on a property at concentrations above residential targets.
- The March 2005 revision of the guidance replaced the residential and non-residential RBTLs with soil type dependent RBTLs. The 2004 guidance was also modified in March 2005 to provide information regarding how soil type was to be evaluated. The proposed rules do not include the soil type dependent RBTLs or requirements regarding soil type determinations. The proposed rules do not include soil type specific RBTLs or requirements for determining soil type; the six sets of soil type dependent RBTLs (based on three soil types and residential and non-residential land use) are replaced with two sets of RBTLs, one for residential land use and one for non-residential land use.
- The 2004 guidance considered tank closures as part of the RBCA process and therefore allowed the application of some risk-based provisions at closure, such as the application of non-residential RBTLs. The proposed rules consider tank closure to be a "pre-RBCA" activity. Consequently, the rules do not allow the application of other than the Default Target Levels or, if certain conditions are met, the Tier 1 residential

- The 2004 guidance did not prescribe a deadline for closure report submittal. The proposed rules prescribe a 60-day deadline.
- The 2004 guidance did not include provisions specifically related to the migration of contamination off of the source property. The proposed rules include several requirements in this regard, including requirements related to site characterization, risk assessment, public participation and notice, and corrective action.
- The 2004 guidance did not provide detailed provisions regarding Reasonably Anticipated Future Use (RAFU) determinations, nor did the guidance stipulate that the department would make RAFU determinations. The proposed rules clearly explain how the RAFU determination process will work, with the department making the decision based on input provided by tank owners/operators and owners of affected off-site property.
- The 2004 guidance specified that geotechnical data be obtained from a specific minimum number of sampling points. The proposed rules make clear that the number of sampling points for geotechnical data must be sufficient to accurately represent the soils associated with a site and that owners/operators must consider the heterogeneity of the soil in determining what geotechnical values to use to develop Tier 2 SSTLs.
- The 2004 guidance did not adequately address data needs for developing Tier 2 SSTLs. The proposed rules stipulate that data must be representative of spatial variability in fractional organic carbon and both spatial and temporal variability in volumetric water content. Where collected data is not adequately representative or where an owner/operator prefers to do so, literature values may be used if shown to be representative of site conditions.
- The 2004 guidance did not include provisions to ensure that vadose zone volumetric water content data adequately represents spatial and, in particular temporal variations. The proposed rules present specific requirements regarding volumetric water content data, including that it be representative of both spatial and temporal variations.
- The 2004 guidance did not include adequately detailed guidance regarding the collection of fractional organic carbon data. The proposed rules specifically require that the data accurately represent spatial variations (horizontal and vertical) in fractional organic carbon and that the value used to develop Tier 2 SSTLs be in consideration of such variation and representative of the site as a whole.
- The 2004 guidance did not include specific provisions regarding the evaluation and consideration of specific soil horizons in relation to geotechnical data. The proposed rules require that soil heterogeneity be evaluated and considered in the development of Tier 2 SSTLs.
- The 2004 guidance allowed delineation of contamination in soil and groundwater to applicable target levels (i.e., either residential or non-residential and soil type specific). The proposed rules require that COCs be delineated to the DTLs or, with the department's approval, the soil type 1 residential RBTLs unless all properties within 1,000 feet of the source property are currently and will remain non-residential and certain conditions, such as karst geology and migration of COCs via preferential pathways, do not apply to the site, in which case delineation may be to non-residential target levels.

- The 2004 guidance did not explain that soil samples need not be analyzed for ethanol and methanol. The proposed rules explain that soil samples need not be analyzed for ethanol or methanol.
- The 2004 guidance did not provide instruction regarding sampling groundwater for ethanol and methanol. The proposed rules explain when groundwater must be analyzed for ethanol and methanol.
- The 2004 guidance required a minimum of three monitoring wells when investigating groundwater contamination. The proposed rules do not specify a minimum number of wells; rather, the rules require sufficient sampling to adequately represent the full extent of groundwater contamination to meet delineation criteria.
- The 2004 guidance stated that plume stability monitoring should be conducted for two years, but that, in certain cases, one year of data might be enough. The proposed rules specifically state that a minimum of two years of monitoring data is required to begin a stability evaluation, but that the department may require more or less data if needed.
- The 2004 guidance required that utility lines be identified and investigated as contaminant conduits. The proposed rules include this requirement but also require that utility lines in contact with contamination be evaluated for degradation due to contact with contaminants.
- The 2004 guidance stated that surface soil need not be evaluated relative to the indoor inhalation pathway. The proposed rules require that surface soil be evaluated for threats to indoor inhalation when and where warranted (e.g., when a building will or could be built over contaminated surface soil).
- The RBTLs in the 2004 guidance and the soil type dependent Tier 1 RBTLs effective in March 2005 did not include dermal toxicity per EPA Risk Assessment Guidance for Superfund (RAGS), Subpart E. The RBTLs in the proposed rules incorporate dermal toxicity per Subpart E and therefore differ from the RBTLs in the 2004 guidance (the proposed RBTLs were developed in consideration of other changes related to revised toxicity data and exposure factors as well).
- The 2004 guidance referred to “free product” whereas the proposed rules refer to “Light non-aqueous phase liquid” or “LNAPL.” In addition, the 2004 guidance contained only limited information regarding LNAPL recovery. Finally, the 2004 guidance did not require a work plan for LNAPL recovery. The proposed rules contain specific requirements regarding LNAPL recovery, including work plan requirements, evaluation of recovery impracticability, evaluation of recovery warranted based on risk, and the application of LTS measures when LNAPL will remain in place.
- The 2004 guidance allowed soil gas sampling only at Tier 2, primarily because the guidance did not include Tier 1 soil gas RBTLs. The proposed rules allow soil gas sampling at Tier 1 and provide for Tier 1 soil gas RBTLs. The rules also allow the development of SSTLs for soil gas at Tier 2.
- The 2004 guidance did not explain that the department may require soil gas sampling where it believes such sampling is warranted to assess acute risks (e.g., explosivity). The proposed rules clearly allow the department to require soil gas sampling where the department feels such sampling is warranted to ensure adequate human health protection.

- The 2004 guidance did not include provisions related to the type of backfill used following corrective action to meet Tier 2 SSTLs. Such provisions are necessary because Tier 2 SSTLs are based on the properties of in-situ soils. If those soils are subsequently removed during corrective action or development, the SSTLs are no longer applicable. The proposed rules require that the type of material used to backfill excavations be the same as or better than the soil removed in order for the Tier 2 SSTLs to remain applicable. If a dissimilar material is used as backfill, the Tier 2 SSTLs no longer apply and the Tier RBTLs must be met.
- The 2004 guidance did not adequately explain that the progression from Tier 1 to Tier 2 to Tier 3 is a one-way path. The proposed rules explain that the SSTLs developed at Tier 2 or Tier 3 apply even if they are lower (more conservative) than the Tier 1 RBTLs or, for a Tier 3, the Tier 2 SSTLs.
- The 2004 guidance used the terms “Risk Management” and “Risk Management Plan.” The proposed rules use “Corrective Action” and “Corrective Action Plan.”
- The 2004 guidance provided minimal information regarding the use of activity and use limitations to mitigate risk. The proposed rules provide more specific requirements with respect to long-term stewardship requirements and options.
- The 2004 guidance did not provide information regarding determining COC concentrations in LNAPL and the use of the data in developing representative concentrations. The proposed rules stipulate requirements regarding this subject.
- The 2004 guidance was not adequately specific with regard to the development of representative concentrations for subsurface soil. The proposed rules are more specific in this regard.
- The 2004 guidance did not include provisions regarding the consideration of changes in COC concentrations in groundwater associated with an unstable plume and the development of groundwater representative concentrations. The proposed rules stipulate requirements for both.
- The 2004 guidance did not include provisions related to calculating soil vapor representative concentrations. The proposed rules include information in this regard.
- The 2004 guidance set forth general provisions for the issuance of a No Further Remedial Action letter, but did not provide detail regarding the conditions under which a NFRA letter would be issued, what information the letter would specifically contain, nor the specific conditions under which the department may revoke a NFRA letter. The proposed rule devoted to this topic makes clear when the NFRA letter will be issued, what conditions must be met, the information the letter will contain, and when the department may revoke the letter.
- The 2004 guidance presents information regarding applicability of the guidance. This information has been modified in the proposed rules to specifically explain when the new RBCA rules must be followed and to what sites the rules apply. In addition, the proposed rules clarify when tank owners/operators may proceed under the 2004 (as modified in March 2005) guidance and when owners/operators must comply with the new rules when closing a tank or changing how the tank is used.
- The 2004 guidance did not contain definitions of important words and terms related to the RBCA process. The proposed rules include definitions for such words and terms.

- The 2004 guidance did not include clear provisions regarding accessing adjacent and nearby properties to ensure complete site characterization. The proposed rules stipulate when such access is necessary and what the owner/operator must do both to gain access and in the event access is denied.
- The 2004 guidance did not include specific provisions for corrective action on adjacent and nearby properties onto which contamination has migrated. The proposed rules specifically state when such corrective action is required, the tank owner/operator's options for addressing contamination on an adjacent property, and what actions the owner/operator must take if the owner of the adjacent property denies the tank owner/operator access to their property.
- The 2004 guidance did not provide for a formal or informal appeals process by which owners/operators could challenge Department decisions regarding the RBCA process and rules. The proposed rules include provisions for an informal review process by which owners/operators may challenge Department decisions.