ARCHIVE: **Archived due to the 2014 rule revision. The TGC language was incorporated into rule. The rule revision eliminates the need for the TGC for the 2014 rules, but the TGC is still applicable under the 2009 rules.**

TITLE: **Use of Modeling to Estimate the 95% UCL for Demonstrations of the Protection of Ground Water**

DATE EFFECTIVE: January 2003

HISTORY: Update of VA30007.03.014 - Revision was necessary to reflect changes in the rule citations that became effective in March 2009.

KEYWORDS: Ground water, protection of ground water, modeling, anti-degradation, 95% UCL, leaching

RULE/ AUTHORITY: OAC 3745-300-07(F)(3)(a), 3745-300-07(G), and 3745-300-10(D)

QUESTION: When demonstrating compliance with the provisions for protecting ground water meeting unrestricted potable use standards (UPUS), can modeling activities be conducted to estimate the ninety-five percent upper confidence limit of the arithmetic mean (95% UCL) of the concentrations of chemicals of concern (COCs) in ground water underlying a source area?

ANSWER: Yes, when demonstrating compliance with the provisions for protecting ground water meeting UPUS (in accordance with OAC 3745-300-07(F)(3)(a)), modeling activities may be used to estimate the 95% UCL of the concentrations of COCs in ground water. The modeling must be conducted in accordance with OAC 3745-300-07(G). OAC 3745-300-07(G)(4)(b) of the rule allows for the quantitative determination of uncertainty in the modeling results, such as the concentrations of COCs in ground water. However, when conducting the modeling and calculating the 95% UCL, the property must comply with the anti-degradation provision of the rules. OAC 3745-300-10(D) states that ground water meeting UPUS must be protected so that it continues to meet UPUS (i.e., ensure that the migration of COCs from sources or source areas on the property will not result in UPUS being exceeded anywhere within the saturated zone). Therefore, the modeling evaluation and the determination of the 95% UCL of the concentrations of COCs in ground water must address each location separately where concentrations are expected to be greatest.

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