ARCHIVE: **Archived because this document no longer provides current guidance and because revisions made to VAP rules in 2002 in OAC Chapter 3745-300 necessitate revisions to this guidance. Refer to VA30007.03.014 for the updated document.**

OHIO EPA

DIVISION OF EMERGENCY AND REMEDIAL RESPONSE
VOLUNTARY ACTION PROGRAM

FREQUENTLY ASKED QUESTION #12: Use of the 95% UCL for the Protection of Ground Water Requirements

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PURPOSE

This series of fact sheets is intended to provide guidance regarding the Agency's position concerning the interpretation of certain voluntary action program (VAP) rule requirements. The information provided within these documents is based upon Agency evaluation of several VAP no further action letters submitted with the intent of obtaining a covenant not to sue as well as assistance provided for several VAP technical assistance projects.

QUESTION

How should the 95th upper confidence limit (UCL) of the arithmetic mean be used to characterize the concentration of chemicals of concern (COCs) in ground water when determining whether the property is, or is not, in compliance with the provisions for protection of ground water meeting unrestricted potable use standards (POGWMUPUS)?

BACKGROUND

Ohio Administrative Code (OAC) 3745-300-07(D)(3)(c)(i)(b) states that the 95% UCL of the arithmetic mean may be used to determine that the concentrations of chemical(s) of concern in the ground water that will result from the leaching of those chemical(s) of concern from the source area to the ground water will not exceed the unrestricted potable use standards (UPUS). With that in mind, it follows that

compliance with the provisions for POGWMUPUS would be achieved if the 95% UCL of the **arithmetic mean of the modeled data set representing the ground water concentration underlying the source area** was at or below the unrestricted potable use ground water standards.

The question that then arises is should the 95% UCL of the arithmetic mean of the modeled data set (with a sample number *n* equal to some integer *x,* such that *n* = *x)* be determined by modeling of the maximum concentration in the leachate (C_{max}) at *x* number of locations directly underlying the source area at a point along the unsaturated zone/saturated zone interface (Layer 4 in the SESOIL Modeling Runs for Ohio EPA Derived Leach-Based Soil Values)?

ANSWER

Compliance with the provisions for POGWMUPUS would be achieved if the 95% UCL of the arithmetic mean of the modeled data set representing the ground water concentrations underlying the source area is at or below the unrestricted potable use ground water standards.

The spatial variation in the modeled C_{max} values at an *x* number of locations in the interface zone underlying the source area should be based upon the variation in the soil concentrations in the unsaturated zone directly above the location at which each C_{max} value was modeled. Stated conversely, each C_{max} value at each location in the interface zone should be determined on the basis of the soil concentration in the source area (unsaturated zone) at each point directly overlying it for which directly measured soil concentration data are available.