

Windows 2000/XP Pro

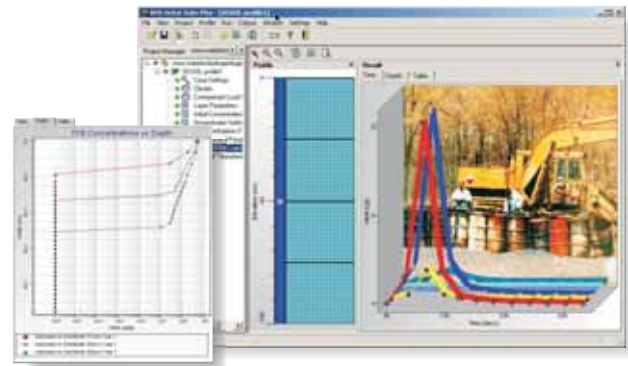
# UnSat Suite

Waterloo Hydrogeologic Software

Unsaturated Zone Flow and Contaminant Transport

## Professional Applications

- ▶ Modeling pollutant fate and transport of leaky UST's
- ▶ Simulating vertical migration and volatilization of VOCs from accidental spills
- ▶ Predicting impacts on groundwater supply wells from pesticide and herbicide application
- ▶ Developing contaminant loading rates for groundwater flow models (Visual MODFLOW Premium)
- ▶ Estimating aquifer vulnerability



## Overview

The **UnSat Suite**\* combines SESOIL, VLEACH, VS2DT, and PESTAN into a revolutionary graphical environment specifically designed for simulating one-dimensional groundwater flow and contaminant transport through the unsaturated zone. Each model is optimized to run as a native Windows application within the UnSat Suite easy-to-use graphical interface.

### Vadose Zone Analysis using SESOIL

**SESOIL** is a seasonal compartment model for simulating long-term pollutant fate and migration in the unsaturated soil zone. SESOIL provides a comprehensive treatment of unsaturated zone contaminant transport processes, including contaminant washload, volatilization, air diffusion of VOCs, sorption, degradation, cation exchange, hydrolysis, and metal complexation.

SESOIL simulation results describe:

- ▶ The hydrologic cycle
- ▶ Pollutant concentrations and masses in water, soil, and air phases
- ▶ Pollutant migration to groundwater
- ▶ Pollutant volatilization at ground surface

## Vadose Zone Analysis Models

**VLEACH** (Vadose zone **LEACH**ing) is a one-dimensional finite difference model for simulating the vertical mobilization and migration of dissolved organic contaminants through the vadose zone. This model is commonly used to evaluate potential groundwater impacts, and to predict volatilization of VOCs.

**VS2DT** (Variably-Saturated **2D** flow and solute Transport) is a finite difference numerical model for simulating steady-state or transient unsaturated flow and transport through multi layer, heterogenous soil conditions. Typical applications of the VS2DT model include determining the fate of agricultural chemicals, landfill leachate, UST leaks, and accidental chemical spills as they migrate through the unsaturated zone towards the water table.

**PESTAN** (PESTicide **AN**alytical) is a one-dimensional analytical model developed by the U.S. EPA for assessing the impact of pesticides on soil and groundwater. Common applications include estimating impacts to agricultural lands and drinking water resources. To aid in model development, the application includes a common list of pesticides and parameter data (e.g. Endosulfan, Atrazine, Ametryn, etc.).

## UnSat Suite Model Results

UnSat Suite includes a complete selection of graphical reporting tools for analyzing, interpreting, and printing the simulation results. Use it to graphically display all modeling results using a customizable plotting component for developing both time-series graphs and depth-series graphs.

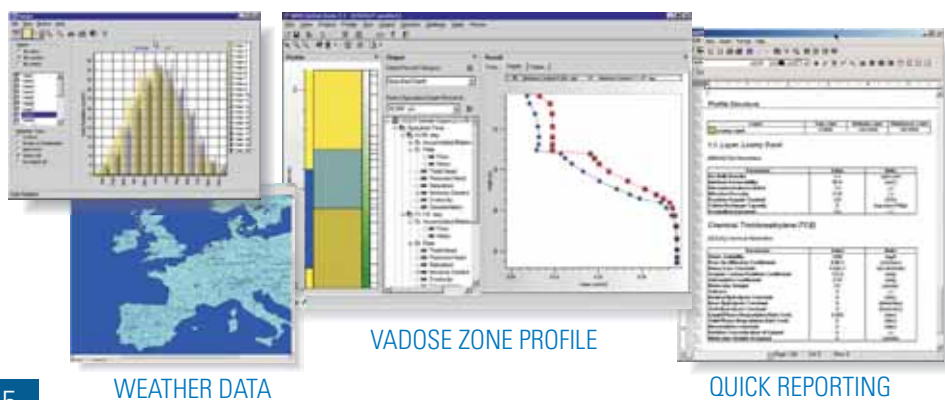
We've fully integrated the **Report Generator's** time saving functionality into UnSat Suite. With the simple click of a button, use it to automatically produce a detailed report describing the project team, model profile properties with supporting graphics, and simulation results.

### Need to connect your vadose zone model results to groundwater flow?

As a bonus feature UnSat Suite allows you to export flow and transport data (daily, monthly, or annual formats) directly into **Visual MODFLOW Premium**, accounting for site-specific contaminant loading rates. Now environmental professionals have the tools to improve the reliability and quality of their groundwater flow and transport models by including actual site-specific values!

**Documentation:** UnSat Suite includes a comprehensive User's Manual and a step-by-step tutorial to get you started fast!

**System Requirements:** PC Pentium II, 300MHz, 128 Mb RAM, SVGA monitor



## Pricing

UnSat Suite..... **US\$ 695<sup>00</sup>**

UnSat Suite Plus..... **US\$ 1,095<sup>00</sup>**  
(Includes Visual HELP & WHI UnSat Suite)

Educational & Government Rates Available!