Windows 2000/XP Pro

Visual HELP

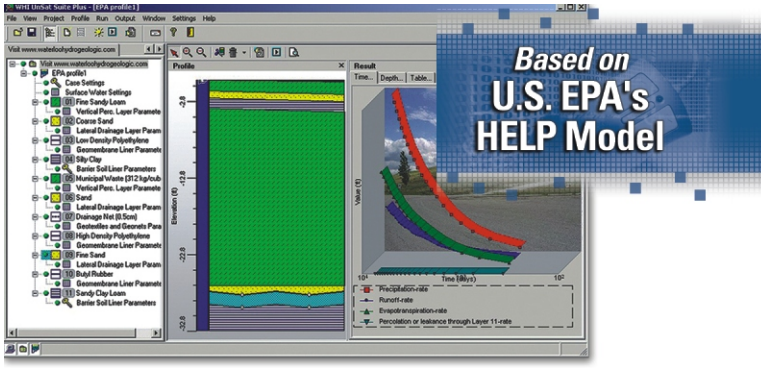
Waterloo Hydrogeologic Software

Environmental software designed to address your project needs

Hydrologic Landfill Design and Optimization

Professional Applications

- **Optimizing the hydrologic design of sanitary landfills**
- **Estimating leachate flow rates and volumes in a landfill**
- **Evaluating the effectiveness of landfill materials/liners**
- **Determining the effectiveness of landfill caps, considering slope, vegetation, and climate conditions**
- **Predicting seasonal infiltration and recharge rates through the vadose zone to an aquifer**
- **Generating statistically reliable weather data**



Overview

The U.S. EPA's **HELP** model (**H**ydrologic **E**valuation of **L**andfill **P**erformance) has become the international standard for modeling landfill hydrology and estimating groundwater recharge rates. Unfortunately the HELP model only operates in the DOS environment, making it difficult to use. Recognizing this major deficiency, our team of programmers have designed a Windows-based solution that incorporates many new "power features" for modeling, evaluating, and optimizing the hydrologic design of a landfill.

Visual HELP Highlights

With Visual HELP*, you can:

- Graphically create landfill profiles representing various parts of a landfill
- Automatically generate statistically reliable weather data using the built-in International Weather Generator
- Run complex model simulations to estimate volume and flow rates through landfill layers under variable weather conditions
- Interpret and analyze the model results using daily, monthly, and yearly plots of simulated data
- Automatically generate professional reports of your model results using the built-in Report Generator

Model Design Features

Visual HELP is designed with an innovative graphical user interface, facilitating an extremely quick learning time. The user-friendly graphical tools and flexible data handling procedures give you convenient access to both the basic and advanced features of the HELP model including:

- An interactive display of the model profile for viewing and modifying layer properties and geometry
- Interactive GIS-based weather generator for developing HELP model inputs
- A built-in database containing properties for 42 landfill materials
- A built-in model template containing the standard U.S. EPA's recommended landfill profile design

Generating Weather Data

To run the HELP model, daily values for precipitation, solar radiation, and mean air temperature are required. Visual HELP makes acquiring this data simple with a built-in GIS tool to locate weather station(s) nearest to your site. The GIS links to a database containing climate data for over 3,000 weather stations around the world, plus you can import your own historic weather records from standard NOAA format or from the Canadian Climate Centre format.

Visual HELP Model Results

Daily, monthly, and yearly flow rates and volumes are available for reporting using a powerful graphing component.

Model results include time-series data for:

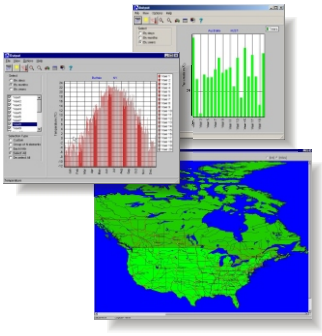
Surface Data:
Surface storage, snowmelt, runoff, infiltration, evapotranspiration, vegetation growth, and soil moisture storage

Subsurface Data:
Lateral layer drainage, percolation through specific layers, leakage through geomembrane liners, and average head in specific layers

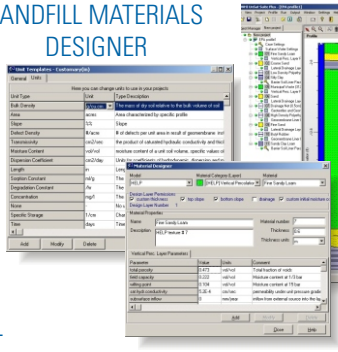
Groundwater Modeling

Visual HELP's ability to predict seasonal effects on groundwater recharge rates make it an excellent companion product for groundwater flow models such as **Visual MODFLOW Premium**.

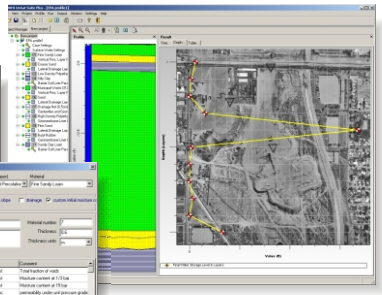
Export flow data (daily, monthly, or annual formats) directly into Visual MODFLOW Premium, accounting for site-specific variable groundwater recharge rates. Now, groundwater professionals have the tools to truly improve the reliability and quality of your groundwater flow models.



GIS-BASED INTERNATIONAL WEATHER GENERATOR



LANDFILL MATERIALS DESIGNER



WATER STORAGE IN LAYERS GRAPH

Documentation: Visual HELP 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

Visual HELP..... US$995.00

UnSat Suite Plus..... US$1,495.00
(Includes Visual HELP & UnSat Suite)

Note: Educational & Government Rates Available!