

Actionable Science for Communities

Updating the Hydrologic Evaluation of Landfill Performance (HELP) Model

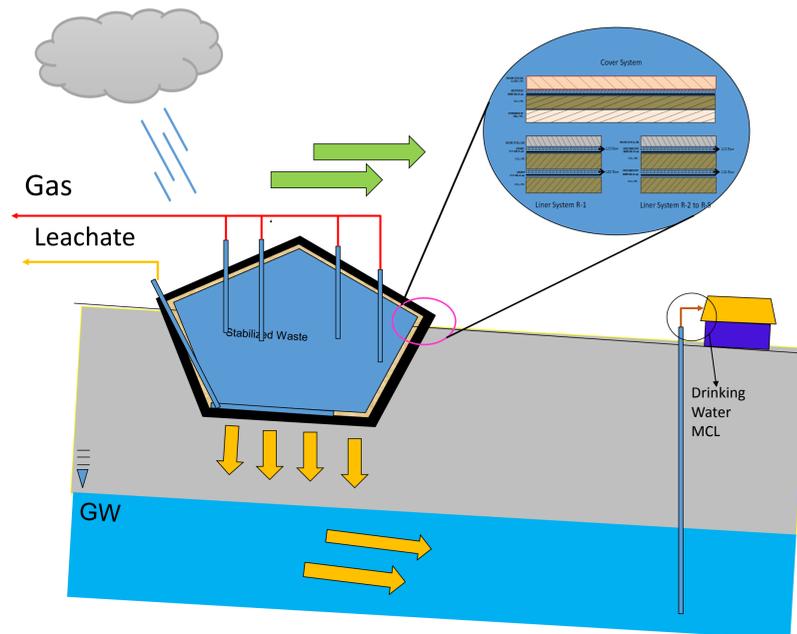
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Rationale

- The Hydrologic Evaluation of Landfill Performance (HELP) model v3.07 was last updated in 1995 by EPA/ORD in collaboration with US Army Corp of Engineers.
- The 1995 version was developed on a DOS operating system.
- HELP is used for water balance analyses of landfills, cover systems, and other solid waste containment.
- HELP is used to demonstrate compliance with a 30cm head on the liner requirement under 40CFR258.
- HELP also estimates leachate quantity for design of leachate collection systems.
- Currently, 1,900 MSW landfills are operating in U.S. that need this information to manage their systems.
- HELP needs to be updated to be compatible with modern PC Operating Systems and platforms.
- The underlying data needs to be updated to reflect new performance data and engineering designs, as well as more recent meteorology.



Objectives

- Update HELP from DOS executable file to macro-enabled Excel file
- Update relevant information such as landfill liner system performance, climate, and soil data
- Expand the capabilities to allow for newer types of landfill operation systems

Intended End-Users

- Office of Land and Emergency Management
- State Regulators and Engineers
- Landfill Owners/Operators
- Academic and Research Institutions

Approach

Translate HELP v3.07 (1995 version) Fortran code to Visual-Basic (VBA) Excel module

Test alpha version HELP v3.5 (VBA module) to get equivalent results to HELP v3.07

Update relevant data, new validation studies, and release new HELP v4.0

Potential Sources of New Data

- NOAA
- USGS
- SWANA
- A&WMA
- Journal publications

