PROJECT STATUS

Task 1 Literature Review:

A review of the different concerns about the use of lysimeters for alternative cover demonstration projects was conducted. This step started by collecting results of several field studies that involve the assessment of the water balance. The case studies were not limited to landfill cover applications. The next step consisted of contacting individuals with experience in alternative earthen cover and collecting their reservations and/or their input on the design of lysimeters.

The following concerns and points of interests were stated:

- **Use of Sidewall**: Do we need sidewalls for these lysimeters. How high should the sidewalls be. At what slope do they become necessary.
- **Optimum Size of Lysimeter**: What govern the size of a lysimeter. How does the size affect the cost.
- **Effect of Root Barrier**: Does the root barrier induce capillary barrier effects. If so, at what weather conditions these effects are more significant
- **Effect of FML at Bottom Lysimeter**: What is the difference in percolation rate between a test section with and without the FML at the bottom.
- **Effect of Geonet-Geotextile Composite at Bottom Lysimeter**: The Use of percolation collection layer on top of FML permit the collection and measurement of percolation, however, it might affect the flow. If yes how and by how much.

Task 2 – Simulations

Computer simulations of virtual lysimeters are being performed using the computer code HYDRUS 2D for two-dimensional simulations and UNSAT-H for one-dimensional simulations. So far, simulation has shown that the use of a root barrier does not significantly affect the percolation rate for different weather conditions and cover designs.