Environmental Geotechniques – Engi 7718
Assignment No. 3

Run the HELP model for two different scenarios to evaluate leachate production for a landfill site. Both landfill designs should be somewhat similar but one or more parameters should be varied. Each student should select a different city in the United States and let the Teaching Assistant know the city selected so that everyone has a unique location. Make sure that the City you select has enough data for you to use.

Name your project title according to the state and city you have selected. Metric or the Imperial system of units can be used. It is easiest to use the default values where possible. Follow the example in the class notes and use eleven layers as is used in that example.

Explain why you chose to vary the parameter(s) you did and what you were trying to discover about the model. Also explain how the change you made influenced the results. If you don't see any difference, explain your first attempt but then vary another parameter. It is best to "generate annual output" when asked at the end as otherwise you will have too much data. You can run the model for 5 years.

Reasonable parameters for input into the model must be selected and at least the minimum criteria for landfill design must be followed. General guidelines in the design of the landfill covers can be found on pages 68 and 69 of the class notes. Use a minimum drainage slope in the landfill cover of 3%. A one page typed report (single spaced or double spaced) should be prepared. Some of the computer model results will have to be printed to substantiate you conclusions. Complete assignments must be submitted to receive marks. Marks will be given for originality and the thought that goes into proposing the two designs.

"Environmental Standards for Municipal Solid Waste Landfills" is a Guidance Document prepared by the Government of Newfoundland and Labrador that can be accessed online through the MUN Library Catalogue and that also gives some guidelines with regards to landfill design.