GMS 10.0 Tutorial
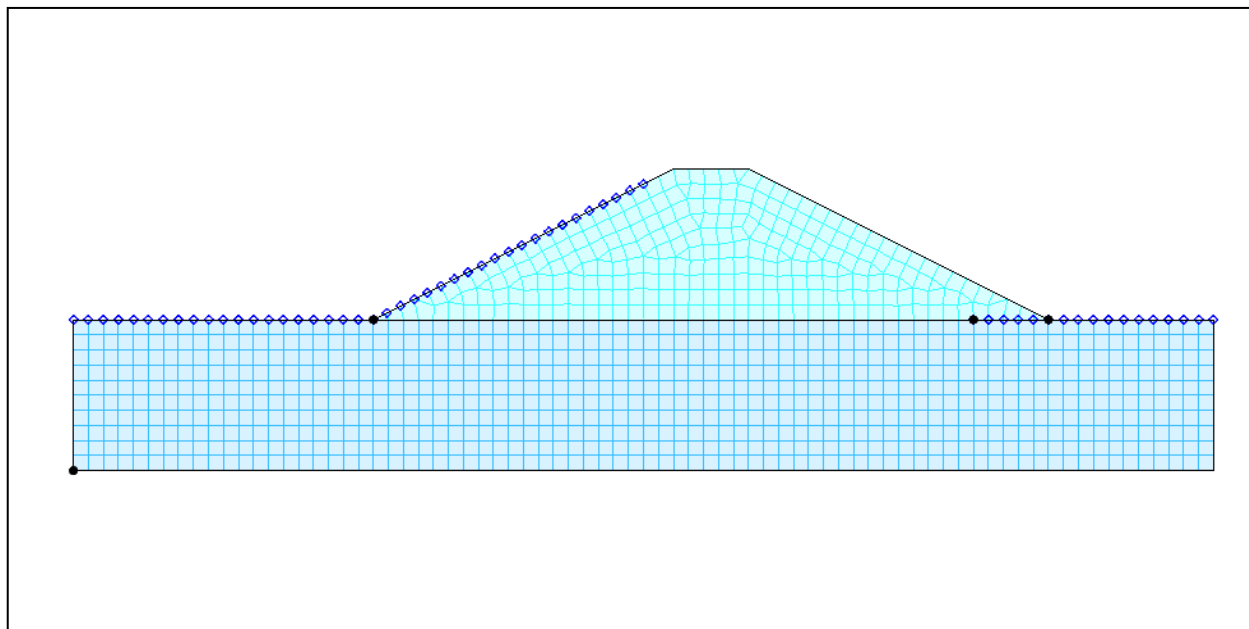# UTEXAS – GeoStudio
Import a GeoStudio file and convert it to a UTEXAS model

Objectives
Learn to import a GeoStudio file and convert it to a UTEXAS model.

Prerequisite Tutorials
- None

Required Components
- GIS
- Map
- SEEP2D
- UTEXAS

Time
- 10-15 minutes

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1   Contents

2   Introduction

GMS can import files created in GeoStudio containing seepage and/or slope stability information and convert them into SEEP2D and UTEXAS models.

This tutorial will introduce the steps to import a GeoStudio file and will list some of the caveats in working with these files.

2.1   Outline

This is what you will do:

1. Open a GeoStudio file.

2. Select what types of data to import.

3   Getting Started

If you have not yet done so, launch GMS. If you have already been using GMS, you may wish to select the *File | New* command to ensure the program settings are restored to the default state.

4   Reading the GeoStudio File

The first step is to read the GeoStudio file.

1. Select the *Open* button 📂.

2. Navigate to **Tutorials\UTEXAS\geostudio**

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3. In the *Open* dialog, change the *Files of type* to **GeoStudio (*.gsz)**.

4. Select the file entitled **Rapid drawdown.gsz** and select the *Open* button.

5   Selecting the Analyses to Import

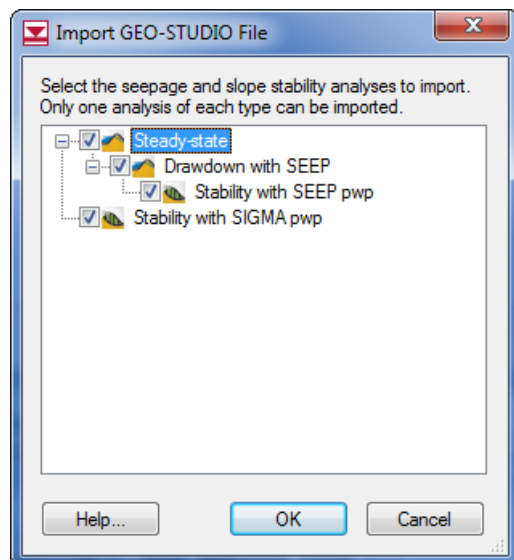You should now see the list of SEEP and SLOPE analyses in the file as you can see below.

Figure 1.   GeoStudio analyses.

Only one analysis of each type may be selected in a single import. We are going to import both a SEEP and a SLOPE analysis in this tutorial.

1. Check the boxes for the analyses shown in the above figure and click *OK*.

6   Viewing the Results

GMS now processes the GeoStudio file and imports the selected analyses. According to what we chose, there should now be both a SEEP2D and a UTEXAS stability model listed in the *Project Explorer*.
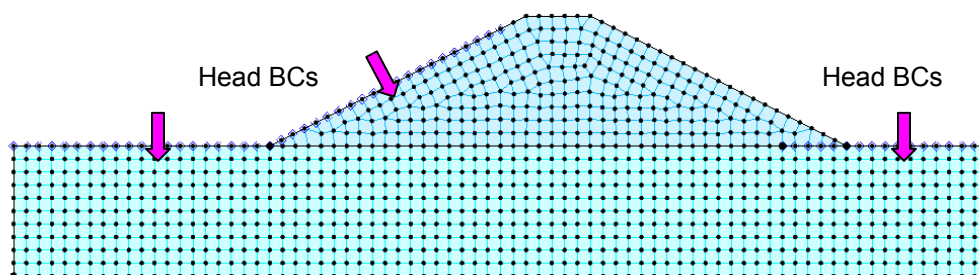
Figure 2.   Imported mesh with head boundary conditions.

6.1   Boundary Conditions

Notice that some of the nodes have a symbol (usually a blue diamond) indicating a boundary condition as shown in the above figure. These are the head boundary conditions that GMS found in the file.

1. In the *Project Explorer*, click on the 2D Mesh Data folder to switch to the 2D Mesh module.

2. Select the Select Nodes tool.

3. Click on one of the nodes marked with a head boundary condition.

4. Select the *SEEP2D | Node BC* menu command.

Notice the boundary condition is head and there is a value specified for the head.

5. Click *OK* to exit the dialog.

6.2   Materials

GMS also recognizes the materials defined in the imported file and creates corresponding materials in GMS.

1. Select the *Edit | Materials* menu command.

Notice that two materials were imported. Although the names and colors of the materials match what was defined in the GeoStudio file, the material properties are all at their default values. You will need to enter in the correct properties for your SEEP2D simulation.

2. Click *OK* to exit the dialog.

6.3 Profile

GMS imported the profile data used to define the slope stability model and created a UTEXAS conceptual model and coverage from this data.

1. In the *Project Explorer*, turn off the 2D Mesh Data folder.

2. Expand the items under the Map Data folder to reveal the *UTEXAS* conceptual model and the Profile lines coverage.

Notice that GMS created the arcs and polygons which define the dam profile.

3. Double-click on the Material Properties item under the UTEXAS item.

Notice that GMS found and imported values for the unit weight, cohesion and angle of internal friction phi. Other material properties are at their default values and you will need to further define them in order to finish the UTEXAS model.

4. Click *OK* to exit the dialog.

5. Double-click on UTEXAS item in the *Project Explorer*.

GMS does not import much in terms of UTEXAS analysis options so you will need to define the analysis options you want to use with UTEXAS to complete the model.

6. Click *OK* to exit the dialog.

7 Conclusion

This concludes the tutorial. Here are the things that you should have learned in this tutorial:

- You can import GeoStudio files into GMS.

- Only one instance of a SEEP or SLOPE analysis may be selected to import.

- You need to further define the SEEP2D and UTEXAS inputs to complete the models.