MUG USER'S GUIDE FOR VIRGINIA

Version 1.0

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VIRGINIA MUG USERS GUIDE

(The following user's guide has been adapted from the Ohio MUG User's Guide.)

INTRODUCTION

The Map Unit Generator (MUG) report in NASIS can be run on an edited database. In order to populate some fields in the MUG, additional entries are needed in the NASIS database. These entries are various text notes. There are several places in NASIS where a text note can be entered. In order for the MUG to work properly, attention to the instructions for populating text notes should be closely followed.

All data elements in NASIS need not to be populated to run the MUG report. If data is missing for a data element used in the MUG report, in most cases the result will be a series of dashes ("----") in place of the data. This can be helpful in reviewing the MUG report output for missing or incomplete data in NASIS.

REPORT AND QUERY

In order to run MUG, you need to use a query that will build a selected set with all components. The National query labeled Area/Legend/DMU by area and legend status (active MUs) is recommended. **The MUG report is in Options, Standard Reports, MLRA14**. It is called **MUG Virginia Version 1.0 (Sept.13, 2001)**.

REQUIRED NASIS DATA ELEMENTS

In addition to the NASIS data elements used directly in the map unit description, NASIS data elements are used for the criteria in the management statements.

Certain data elements must be populated in order for the data to print in a MUG report. These data elements are:

- Legends Correlation - Rep DMU must say "yes"
- Components Component - major component must say "yes'
- Horizons Horizon - designation for the surface layer must be "H1"
- Horizons Horizon Texture Group - RV? for all layers must say "yes"

Text notes

Text notes allow some flexibility and additional information to be included in the map unit description that is not a part of the established NASIS database. Text notes operate on the WYSIWYG principle -- what you see is what you get. Please note, the text note will print in the map unit description exactly as it is entered.

Required text notes

The following text note needs to be populated in order to limit cropland management statements to only those map units where cropland is a use. For map units that have cropland as a use, in **data map unit text**, populate the category "major uses" and in the text note write "cropland**". An alternative method is to populate those map units where cropland is not a use with the text note "not cropland" and leave those map units blank where cropland is a use.** By default, the report will consider any unpopulated major use as cropland.

Category	Use
major uses	To populate land uses.

Optional text notes

The following text notes need to be populated in order show the desired information. These are optional entries and may not need to be populated for all map units. The text notes are located **in Data Mapunit, Data Mapunit Text**.

Category	Use
location	landform (This text note will take precedence over component geomorphic description.)
setting	setting note
position	position on the landform (This text note will take precedence over component three dimensional surface morphometry.)
soil properties	distinctive soil properties
Size of areas	size of areas
size and shape	size and shape of areas
shape of areas	shape of areas
perm	to overwrite permeability in the soil properties and qualities section (use this text note for consociations, for complexes use the component text note.)

Other text notes

Some text notes may be entered in Component Component Text. For miscellaneous land types a definition can be entered using the category "definition." This text note will print out under the "Soil properties and qualities" section with a prefix of "Definition:". A component note can be entered using the category "component." This note will print out under the "Map unit composition" section after similar soils. It will have a prefix of "Other features:".

Category	Use
definition	Define miscellaneous land types or gives more information about units with no soil properties in NASIS.
component	For a component note, such as "Most of the surface layer has been removed."
perm	To overwrite permeability in the soil properties and qualities section of complexes.

Components

MUG will state components as either *named, similar*, or *contrasting*. In order to flag these components, the sequence number needs to be populated. A component with a sequence number of *1* is a named component, *2* a similar component, and *3* a contrasting component. If the sequence number is not populated, by default, the named components are those that have "yes" in the major component field. All other components are treated as contrasting. In other words, if there are no similar soils, the sequence number does not need to be populated if the major component is yes for all named components. **NOTE: Using the sequence numbers will not allow for a data export download. The sequence numbers will have to be removed after MUG is run to make a download for SSURGO.**

Sequence number	Component
1	Named
2	Similar
3	Contrasting

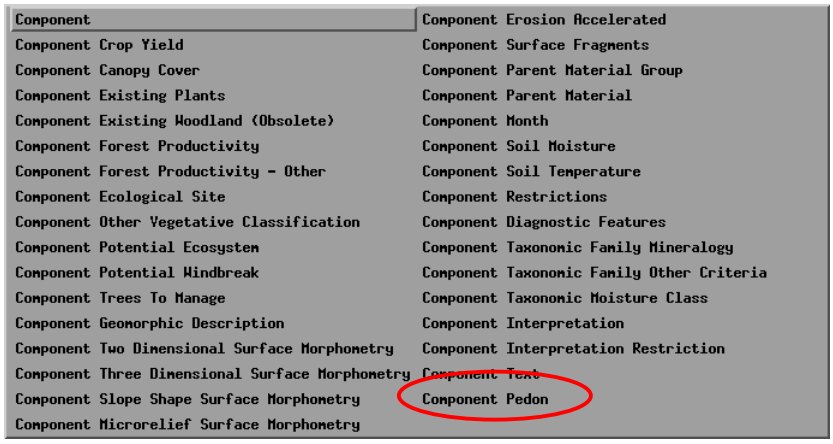
Landforms and position on the landform

The MUG report is designed to provide some flexibility when it comes to listing landforms and position on the landform. One option is to populate the landform is to enter data into Component Geomorphic Description. Under feature type enter landform. Under feature name, select the landform from the choice list. To populate position, enter data into Component Two Dimensional Surface Morphometry under hillslope profile. Use the choice list to select the desired position. Please note, with this option you are limited to selection in the choice list. For hillslope profile your only choices are summit, shoulder, backslope, footslope, or toeslope. There are 354 choices of landforms.

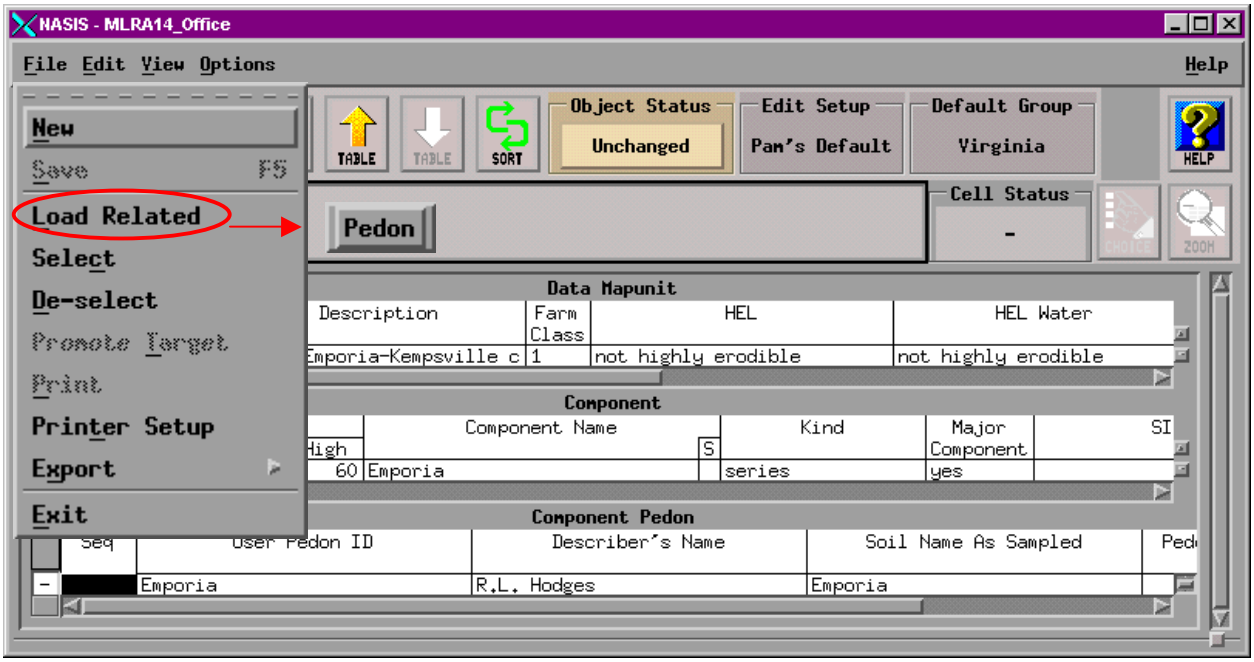
The second option to populate landform and position is by using text notes. If the first option does not provide the terms needed, a text note can be used to populate landform, position, either one, or both. See the instructions above on how to use the text note. The MUG report is designed to look first for a text note, if not populated it will default to either the geomorphic description or the hillslope profile depending on whether it is a landform or a position.

LINKING PEDON TO DMU

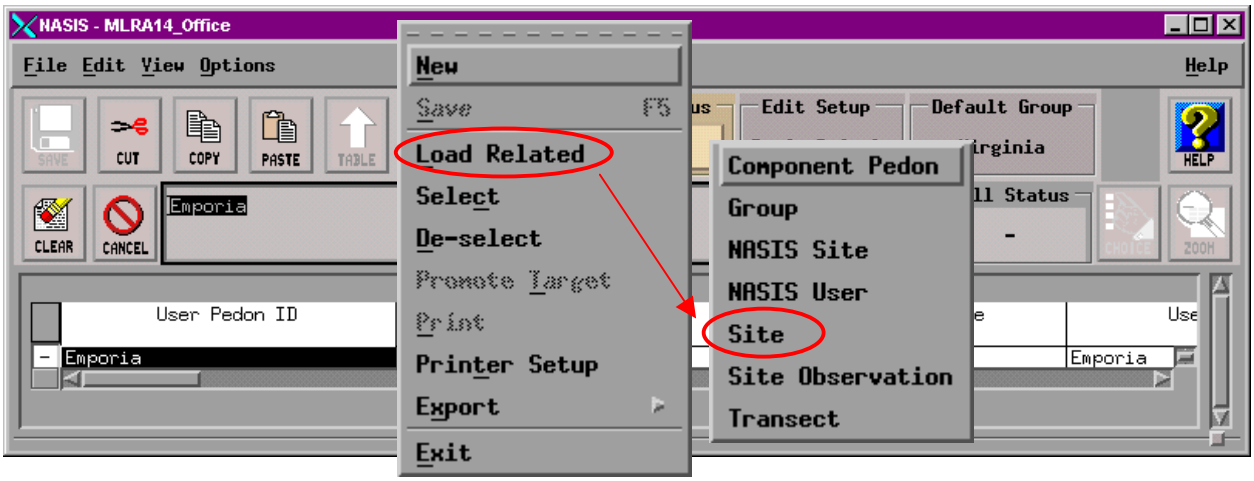
1. Site and Pedon must be entered into NASIS (see Virginia Pedon User's Guide).
2. Load Area, Legend, DMU's.
3. Select Component, Component Pedon.



4. With cursor in Component Pedon table, select File, Load Related, Pedon.



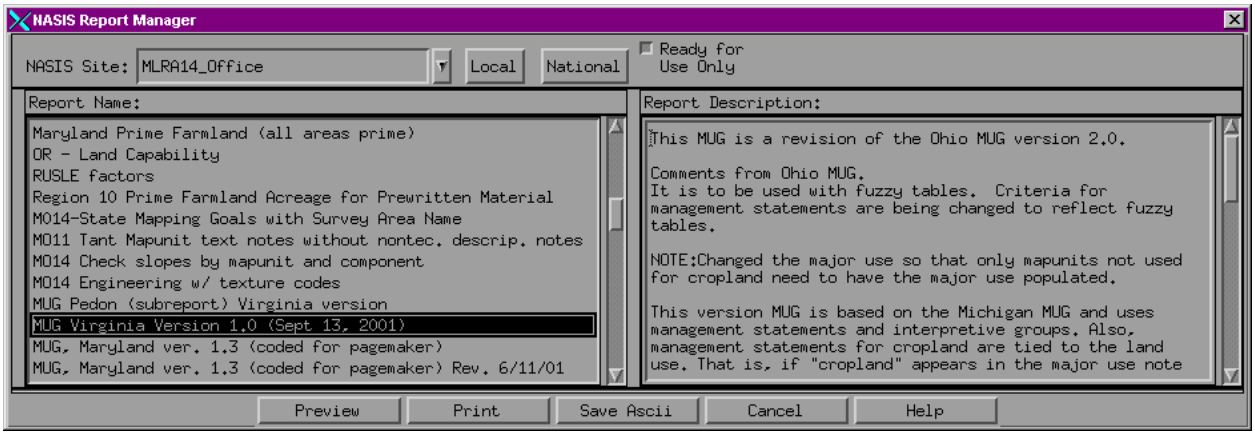
5. Select View, Pedon, Pedon.
6. Select File, Load Related, Site.



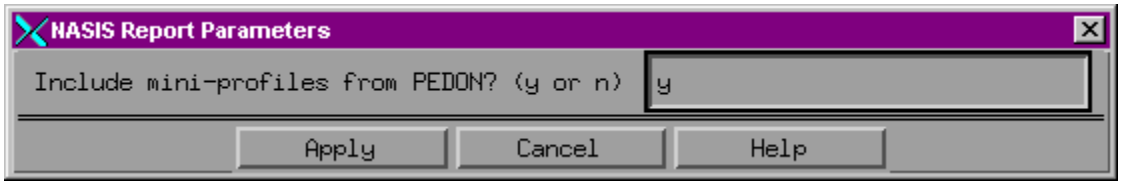
THE VIRGINIA MUG

You are now ready to run the Virginia MUG.

1. Select Options, Standard Reports, MLRA14.
2. Select MUG Virginia Version 1.0 (Sept. 13, 2001). *(Do <u>not</u> select MUG Pedon (subreport) Virginia version. This report is called by the MUG.)*



3. When running the Virginia MUG, a NASIS report parameter will popup.



4. If you select y, the mini-profile description will be selected from PEDON.
5. If you select n, the mini-profile description will be the standard mini-profile generated by MUG.
6. Examples of both MUG's (with and without PEDON TP's) are attached.

LIMITATIONS OF MUG

Some limitations with the report include the inability to link landform positions with landforms. For example if the map unit occurs on summits, shoulders, and backslopes of beach ridges and dunes the landforms entered into NASIS would be beach ridge and dune. The hillslope profile in the two dimensional surface morphometry would list summit, shoulder, and backslope for each landform. The output in the MUG report would have a list of landforms, in this example, beach ridge and dune. The report would also contain a list of positions, in this example it maybe something like summit, shoulder, summit, backslope, shoulder, backslope. In other words, the positions are listed twice since they were entered for each landform in NASIS.

MUD PEDON MINI-PROFILES

7A—Emporia fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Marine terrace on Coastal Plain
Position on the landform: Uplands
Size and shape of areas: 5 to 25 acres, elongated or irregularly oval

Map Unit Composition

Emporia and similar components: 70 to 90 percent

Similar components
Kempsville
Uchee
Slagle

Contrasting components
Yemassee
Myatt

Soil Properties and Qualities

Emporia
Available water capacity: About 6.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 3 to 9 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 3.0 to 4.5 feet
Water table kind: Apparent
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loamy marine sediments
Permeability: Moderately slow
Rock fragments on surface: None
Shrink-swell potential: Low
Surface layer texture: Fine sandy loam
Potential for surface runoff: High

Typical Profile

A--0 to 6 inches; brown, fine sandy loam
E--6 to 14 inches; light yellowish brown, loamy fine sand
Bt1--14 to 18 inches; yellowish brown, fine sandy loam; 10 percent light yellowish brown masses of oxidized iron
Bt2--18 to 41 inches; strong brown, sandy clay loam; 10 percent yellowish red masses of oxidized iron
BC--41 to 54 inches; strong brown, sandy clay; 5 percent masses of oxidized iron and10 percent light gray iron depletions
C--54 to 72 inches; light gray and yellowish red and brownish yellow and strong brown, stratified sandy loam to sandy clay loam

Use and Management Considerations

Cropland

- This soil is well suited to cropland.

Pastureland

- This soil is well suited to pasture.

Woodland

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The low strength of the soil increases the cost of constructing haul roads and log landings.
- Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.
- The limited available water capacity inhibits root development and increases the seedling mortality rate.
- A loss of soil productivity may occur following an episode of fire.

Building sites

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

Septic tank absorption fields

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Interpretive Groups

Emporia
Land capability classification: 1
Virginia soil management group: R
Prime farmland: All areas are prime farmland
Hydric soil: No

MUG DMU MINI-PROFILES

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H1--0 to 14 inches; fine sandy loam
H2--14 to 41 inches; sandy clay loam
H3--41 to 54 inches; sandy clay loam
H4--54 to 72 inches; fine sandy loam

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