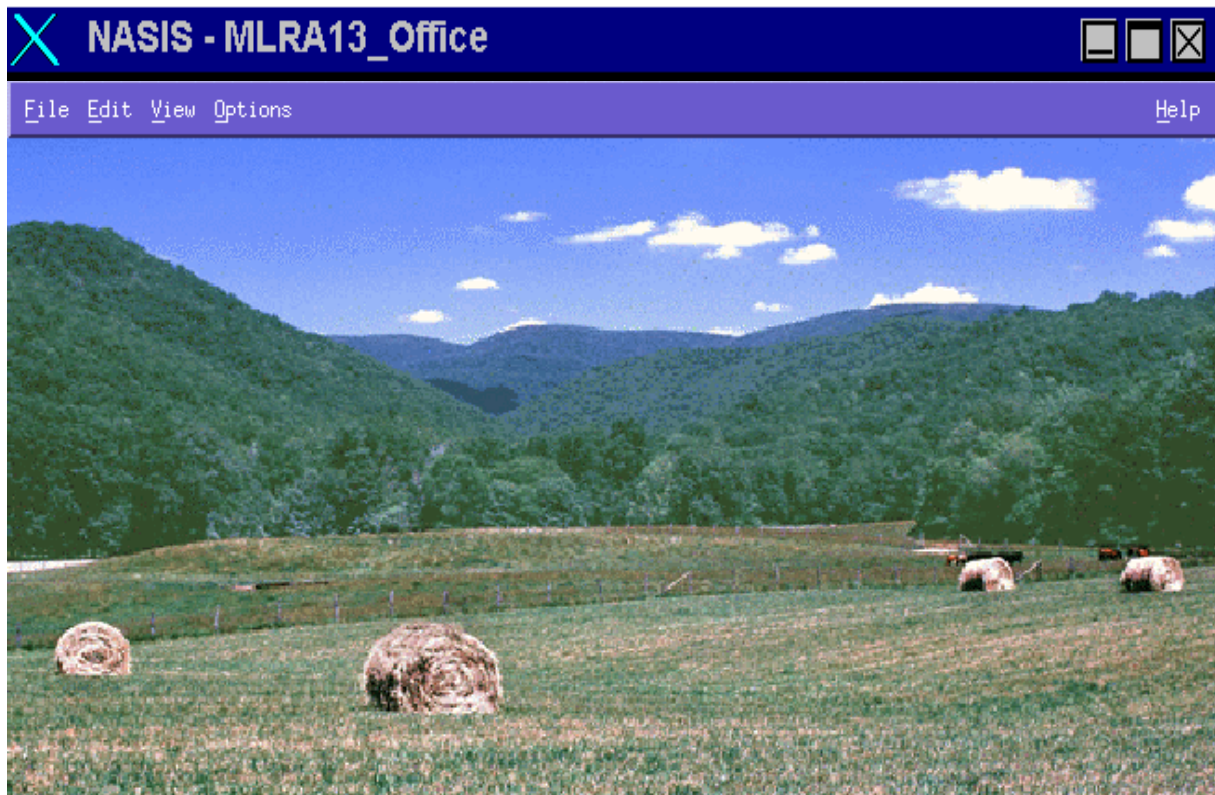


GUIDELINES FOR NASIS USE

CENTRAL APPALACHIANS

REGION, MO13



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Natural Resources Conservation Service
United States Department of Agriculture
Morgantown, West Virginia

CENTRAL AND SOUTHERN APPALACHIAN REGION, MO13 GUIDELINES FOR NASIS USE

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CENTRAL APPALACHIAN REGION GUIDELINES FOR NASIS USE

NASIS is a robust and multifaceted database tool for making and interpreting soil surveys. The intent of this document is to assist soil survey project staffs and resource soil scientists to make the process more efficient. The “Getting Started” manual is an excellent reference and the tutorial is highly recommended. The NASIS web site www.nasis.nrcs.usda.gov is also excellent. Spending some time surfing around on this web site will be well worth the effort. The more you know about NASIS and are more comfortable the more effective and efficient you will be when using the software. One concept to always keep in mind is that NASIS is a sort of landscape and as a soil scientist, your ability to visualize landscapes will serve you well using NASIS. The system is meant to be intuitive, with the parts being where you would expect them to be. As you work with the system more and more, you will see this to be true. With the advent of NASIS 5.0, the whole national database became easily available on the Central Server. This gives several new possibilities. For example, you can query in soil survey data from other MOs into your selected set. You can link to data on other NASIS sites. You can run reports and queries that are on any NASIS site. The soil information system is now truly national.

This guidebook is divided into four parts. The first part is a brief overview of the NASIS structure. Next is a listing of how to do common tasks in NASIS. The third section gives guidance on data population table by table and field by field. The last section is a compendium of helpful hints from a variety of sources.

I. THE STRUCTURE OF NASIS, BRIEFLY

The database is made up of groups of tables called Objects. The data in each of these objects is owned by and can be changed by some group. At present, there are two main sets of objects: the Point data (Site/Pedon) and the Aggregated data (Map Unit). Affix these diagrams both by your monitor and in your head. Both of these will be discussed in this document. We will start with the Map Unit (Aggregated) data since that is where you will spend most of your time.

AGGREGATED DATA STRUCTURE

The Map Unit data is made up of, primarily, the Area Type Object, the Legend Object, and the Data Mapunit object.

The Area Type Object is generally not editable. The contents of the Area Type Table are a listing of the various Area Types, such as MLRAs, County or Parish, Physiographic Province, and non-MLRA Soil Survey Areas. If you select an Area

Type and then table down, you will see the Areas listed for that Area Type.¹ The traditional soil surveys are listed under the Area Type name of “Non-MLRA Soil Survey Area”. If you highlight “Non-MLRA Soil Survey Area” and then table down, you will eventually see the contents of the Area table, which will be a spreadsheet of all the traditional soil survey areas in the country.

The Area Type called “non-MLRA Soil Survey” is the collection of Areas used by the Washington DC office to track progress. Thus, if you wish to create an Area that is not to be a part of the National reporting process, please use another Area Type, such as “MO13 Special Projects”. Each Area has one or more Legends associated with it.

The Legend Object contains several tables of interest. The Legend Table contains data such as the Area Type Name, Area Symbol, Area Name, Survey Status, and a wealth of other information related to the work on the Legends.² Typically, you will not edit anything in the Legend, Legend Mapping Goal, or Legend Mapping Progress tables, even though you may have edit privileges for that data. If you select a Legend and then table down, you will see the Map Unit table, which is a spreadsheet of the map units for that legend. Map unit symbols, Map unit names, Map unit kinds, and several other pieces of data are recorded for each map unit in the Map Unit table. Two important points in the Map Unit table. First, EVERY map unit used on the current legend is recorded and NEVER deleted (NASIS is a pack rat). Second, no two map units can have the same map unit symbol and map unit status.

Two key parts of the Legend Object are the Map Unit History table and the Map Unit Text table. The Map Unit History is used to record status and name changes for a map unit. In this table, you can record what was combined with what and why. This data can be part of the correlation document. The data is recorded because you may not remember at the next field review what you did. If you leave, the next project leader certainly will not know what you did. When the survey is updated, those folks will not have the foggiest idea what you were thinking unless you document what you have done. The Map Unit Text fields are used to record join statements, map unit descriptions, and items for the correlation document. The Map Unit Text Table is used to record all those pieces of information that you wish you could record about a map unit.

The Correlation table for a map unit shows the Data Mapunits that are linked to that map unit. Each map unit has one, always one, and only one Data Mapunit marked as representative. This leads to the Data Mapunit Object.

¹ You can load the Area Types by clicking on View => “NASIS sites” => “NASIS site”. Click on “NSSC Pangaea” and then click on “File” => “Load Related” => “Area Type”.

² We usually work on only one legend at a time, but you can load a large number of them into your selected set by clicking on View => “NASIS Sites” => “Group”. Click on Virginia, and then click on “File” => “Load Related” => Legends. This loads all the legends owned by the Virginia group.

The Data Mapunit Object consists of the group of tables that contain the data that describe each mapunit. The Data Mapunit table has columns for holding the DMU id, DMU description, Farm Class, and HEL data. DMU id and DMU description will be discussed further later. Below the data Mapunit table is the Component table. This table lists Component names, kinds, and percentages (among many other things). A Data Mapunit may have as many components as you need to describe the map unit. Mark your named components as major components. Eventually, when a full suite of components are compiled for a Data Mapunit, the Component Morphometry data is populated, and perhaps a few more data elements are added, we will have what may be termed the Official Data Mapunit for a landscape. This would be analogous to an Official Series Description for a pedon. Each Component has Horizon data tables, as well as other component data tables, such as the Component Month table where soil moisture data is recorded by month. Horizon data is related to pedons or sites, so we go now to the point data side of NASIS.

POINT DATA STRUCTURE

The Site Association Object consists of the Site Association, Site Association Site, and Site Association Text tables. The Site Association table is used to record some natural or artificial grouping of sites. The Site Association Site table records the identifier of a site that is a member of a site association. It provides the linkage between the site association table and the site table

The Site Object consists of a group of tables describing the site data for a particular geographic location. The Site table has location information and the ever-important User Site ID field. The User Site id should be a connotative name for the geographic area of the transect. The Site Observation table records more information related to the site over time. A site is not the same as a pedon. A site may encompass several pedons. The site object is a method of holding data for repeated observations over time at the same site, as in a climate study.

The Pedon Object consists of the group of tables describing a pedon. The Pedon table contains the User Site id and information about the pedon. The Pedon Horizon table, and its related tables, contains the horizon information for the pedon. A pedon must be linked to a site and may be linked to a transect.

The Transect Object consists of the Transect and Transect Text tables. The Transect Table holds a group of pedons, which we call a transect, together and contains data related to the transect.. The data in the Transect Object describes only the transect, not the stops along the transect. Think of the transect object and its contents as being the result of normal, day to day, data collection.

II. COMMON TASKS IN NASIS

Use this chart to get instruction on what you want to do. Not every possible scenario is covered, but one should be close to your needs. If you want another procedure added or you find errors in these, please e-mail Robert Dobos, MO13 NASIS Coordinator at robert.dobos@wv.nrcs.usda.gov.

<u>If you want to:</u>	<u>Page</u>
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A. – Load a Soil Survey Area into my selected set

There is a "family" of queries on the MLRA_13 site on the select manager for loading data for soil survey areas. Which query you use and how you set the target tables determines what data gets placed in your selected set. For example, you can load all the data for a soil survey area. This means active and additional map units, non-representative data mapunits, and all components major and minor. Or, you can load just active map units (status of correlated, approved, or provisional) and major (named) components.

The figure below shows the Select Manager. The first eight queries are used to load all or part the data for soil survey areas depending on the query used, how the target tables are set, and how the other parameters are answered.

Figure 1--The Select Manager for the MLRA_13 NASIS Site.

NASIS Site: ☐ Ready for Use Only

Query Name:

Select One or	Area/Legend/Component, MAJOR COMP by AREA NAME and leg stat.
Area Type	Area/Legend/Component, MAJOR COMP by AREA SYMB and leg stat.
Area	Area/Legend/Component/Horizon by AREA NAME, Area Type
Legend	Area/Legend/Component/Horizon by AREA SYMB, Area Type
Mapunit	Area/Legend/DHU, ACTIVE MUs by AREA NAME, Stat and Area Type
Correlation	Area/Legend/DHU, ACTIVE MUs by AREA SYMB, Stat and Area Type

Query Description:

Use this query to select data for only major components of active map units in a survey area, using the area name. Enter an appropriate area type name or just non*. This should be run against three target tables to load data

Query Text:

```
FROM areatype, area, legend, OUTER (mapunit, OUTER (correlation, data_mapunit, OUTER component))
WHERE area.area_name IMATCHES ? AND
```

A1 – You want to see all map units and all components used:

A1a – If you know the *Area Symbol* and *soil survey status*:³

1. Click on File => Select and the Select Manager (as seen in Figure one, above) comes up.

³ See Page 23 for help in getting proper names, symbols, and statuses for soil survey areas.

2. Press the down arrow to the right of the query name box and select the query called "Area/Legend/DMU, ALL MUs by AREA SYMB, status, and Area Type".
3. Set the target tables to Area, *Legend*, and DMU and apply.
4. Supply the area symbol, soil survey status, and the area type name (generally * or non* will do) and press apply.

A1b – If you know the *Area Name* and status:

1. Click on File => Select and the Select Manager comes up.
2. Press the down arrow at the end of the query name, and select the query called "Area/Legend/DMU, ALL MUs by AREA NAME, status, and Area Type".
3. Set the target tables to Area, *Legend*, and DMU and apply.
4. Type your soil survey area name. Note that the query is not case sensitive and wild cards can be used (thus p* works for Pennsylvania).
5. Put in your soil survey status, area type name (non*) and apply.

A2 – You want only the active map units:

A2a – If you know the *Area Symbol* and status:

1. Click on File => Select and the Select Manager comes up.
2. Press the down arrow to the right of the query name box and select the query called "Area/Legend/DMU, ACTIVE MUs by AREA SYMB, stat, and Area Type".
3. Set the target tables to Area, *Correlation*, and DMU and apply.
4. Supply your area symbol and soil survey status and apply.

A2b – If you know the *Area Name* and status:

1. Click on File => Select and the Select Manager comes up.
2. Press the down arrow at the end of the query name, and select the query "Area/Legend/DMU, ALL MUs by AREA NAME, stat, and Area Type".
3. Set the target tables to Area, *Correlation*, and DMU and apply.
4. Type your soil survey area name. Note that the query is not case sensitive and wild cards can be used (thus p* works for Pennsylvania).
5. Put in your soil survey status, area type name (non*) and apply.

A3 – If you want to load only a few data mapunits, do not set data mapunit as a target table in any of the above scenarios. Load the legend, select the map unit you want to work on, down table to *Correlation*, and click on the rep DMU. Now, go to File => Load Related => Data Mapunit. One DMU will be loaded.

A4 -- If you want to see only the major components, use either of the queries that specify "Area/Legend/Component", set the target tables to Area, *Correlation*, and *Component* (not Data Mapunit), add the other information and press apply.

A5 -- You can load just a component for a soil survey area by using either of the queries that start out with "Area/Legend/Component/Horizon". Set the target tables to Area, *Correlation*, and *Component*. Enter the desired component name,

6 -----

Common tasks in NASIS

symbol or soil survey area name, area type name, enter an * in Designation, and the soil survey status. Press apply.

A6 -- You can load just a particular horizon for a component also by using one of the queries that start out with "Area/Legend/Component/Horizon". Set the target tables to Area, Correlation, and Horizon. Enter the desired component name, symbol or soil survey area name, area type name, enter the desired horizon designation in Designation, and the soil survey status. Press apply.

Obviously, query design and target table selection govern what will end up in a selected set. The lower in the hierarchy of an object the target table is, the more precise the selected set will be.

B. BUILD A DATABASE

B1-Start from the beginning, having no legend, map units, or data mapunits: Go to Page 8.

B2-Find good data mapunits for my legend: Go to Page 9

B3-Find good components for my legend: Go to Page 11

B1-Start from the beginning, having no legend, map units, or data mapunits:

AREA TYPE OBJECT

Area Type and Area Tables – Only under certain circumstances will you need to do anything in the Area Type Object. Talk to a State or MO Office person for guidance.

LEGEND OBJECT

Legend Table – The legend tables for the non-MLRA Soil Survey Areas are very sensitive. A legend table record should already be entered for a soil survey area in which you are working. National and State progress is derived from carefully balanced acreage totals in the Legend object. If you copy an existing legend, you will essentially double the acreage of a soil survey area. This will cause problems. So, if you need to do anything with a legend table, please talk to a State or MO Office person for guidance.

Map Unit Table – You can populate this manually or it can be copied from another legend. I would always get as much data of any sort as possible from similar surveys. Every map unit symbol that has ever been used on a map sheet must be accounted for in the map unit table.

Populate Manually – Key in map unit symbols and map unit names. Choose appropriate kind, status will typically be provisional at this point. For sequences of similarly named map unit records, type one, copy it, then paste it as necessary and adjust the symbol and name for slopes, stoniness etc. Acreage and feature data will come later.

Copy From Another Survey – Determine which survey area has the most overlap in terms of map unit names with your survey area. Load both your legend and the legend that you want to copy into your selected set. If you View => Legends => legend, you will see two records, yours and the one from which you want to copy. Click on the one you want to copy and down table into the map unit table. You will see the spreadsheet of the map units of that legend. Highlight the whole table by clicking in the leftmost column of the top map unit record and then scrolling to the bottom of the table and press “control” and click in the leftmost column of the last record. Press “copy”. Press up table, select your legend, down table, put the cursor in the mapunit table, click on the top record, and press paste. If your map unit table is empty, the needed lines will open automatically. This will copy the whole Map Unit Table and lower, including Map Unit History, Map Unit Text, and the Correlation Table. Make any needed adjustments to suit your legend.

Map Unit History Table – A map unit history text record is used for each mapunit. A new record is inserted in this table each time the status or name of the map unit changes. Thus, at this point you would press F8 to open a new line, enter the current name of the map unit, enter the status. Zoom open the text field and enter the rationale for your correlation decision.

Correlation Table – This will be populated or edited when the Data Mapunit data is in place. If you copied a group of map units, you will see that the correlation table is populated and the map units are tied to the data mapunits from that other survey area. You will link to a data mapunit for your legend once you get the data mapunit.

B2-Find good data mapunits for my legend:

There are several strategies for finding suitable data mapunits. One method is to consider the data of nearby soil survey areas. The more recent the correlation, the more likely the database is to be current and require less editing. Also, keep in mind that some surveys may have better databases than others based simply on the people who made the database. Remember, when you copy at the DMU level, you get all the components with all the related component tables and horizon with the related horizon tables. When you copy at the component level, you get just that one component with its tables and horizon tables. Here is a method of borrowing DMUs.

Creating Map Units and Linking DMUs

1. Create a Map Unit in the Map Unit table and populate as needed.
2. Load some Data Mapunits that you may want to copy by using the local query "WV Component"⁴. If you have an idea where you want the DMU to come from, use the local query "Area/Legend/Component/Horizon by AREA SYMBOL (or AREA NAME), Area Type" and set the target tables to Data Mapunit. Enter the component name and survey information. Run the query to load the DMUs having that component.
3. Look over the DMUs you loaded, find the one that comes the closest to what you need, and copy it, then paste. This creates a new DMU that you own and can edit. (The leftmost column of the new DMU has an "N" in it.)
4. Change the DMU Description to suit your county.
5. With the new DMU highlighted, go to File => copy rows, click on copy rows. This copies just the row to the clipboard.
6. Go to view legend-legend and select the legend for your county, then table down to the map unit table.
7. Select the map unit that you created in step one and table down to the correlation table.
8. Click on paste. NASIS will automatically open a new row and populate the DMU Description and DMU ID. Change the Rep DMU to yes.

A variation:

- 1) Load in your county data.
- 2) Load in the county data from which you wish to copy. These two procedures could make the contents of your data mapunit table quite large.
- 3) Go to view => Legends => Legend
- 4) Click on the legend from which you want to copy and table down to mapunit.
- 5) Click on the map unit you wish to copy the Data Mapunit for and table down to correlation.
- 6) Click on the representative data mapunit and go to View => Find Related
- 7) Click on Data Mapunit. This will switch you to the Data Mapunit table with the highlight (cursor) in the Data Mapunit that you want to copy.
- 8) Click Copy and then Paste.
- 9) Change the DMU Description to suit your county.
- 10) With the new DMU highlighted, go to file => copy rows, click on copy rows. This copies just the row to the clipboard.
- 11) Go to view legend-legend and select the legend for your county, then table down to the map unit table.
- 12) Select the map unit that you created in step one and table down to the correlation table.
- 13) Click on paste. NASIS will automatically open a new row and populate the DMU Description and DMU ID. Change the Rep DMU to yes.

⁴ If you use a popular component, you will get many DMUs.

B3-Find good components for my legend:

As with Data Mapunits, finding suitable components is easier if you know the quality of the databases for the surrounding counties. If you wish to broaden your search, try this.

- 1) Click File => Select and the select manager comes up.
- 2) Click on the down arrow to the right of the NASIS Site box.
- 3) Select MLRA18_Office from the list.
- 4) Scroll down to and select "TN Search for Component"⁵
- 5) Set target table to component.
- 6) Enter the component name, the surface texture (in the form gr-sil), and slopes, hit apply.
- 7) You will get a list of components of the series you chose with the surface texture and slope ranges you specified. If the component does not exist with that surface texture, you get nothing. If the component does not have those slopes, you get nothing. This will work well if you know how a component is used in surrounding surveys.

If you know an adjacent or nearby survey used the component that you want and did a good job editing it, try this:

- 1) Click File => Select and the select manager comes up.
- 2) Click the down arrow to the right of the query name box.
- 3) Select the query named "Area/Legend/Component/Horizon by AREA SYMBOL (or AREA NAME), Area Type".
- 4) Set the target tables to Area, Correlation, and Component, then apply.
- 5) Type in the component name and the area symbol (or name) and apply.
- 6) This will load each occurrence of that component in correlated map units from a soil survey area.

When you get an array of likely components in your selected set:

- 1) Click on the component (not DMU) that you like, press copy.
- 2) Table up to Data Mapunit, Click on your data mapunit, table down to component.
- 3) Click in the component table and press paste.

Please document where DMUs and components came from in DMU and component text notes. That way, if some one discovers an error in those datasets, you or the next person will know to adjust your survey data accordingly.

⁵ Trick Time – If you know what letter a query starts with, if you click in the query name box and then type that letter, the first instance of that letter appears. Subsequent pressing scrolls through the list of queries starting with that letter. When you find the one that you want, just click on it.

Make data mapunits having components to describe each of your map units. This will serve as an interim database until you have a chance to really work over your data. If some one needs data, they have it available even if it is not the final form. **Always populate the major component flag as yes or no for major or minor components.**

C. EVALUATE DATA

SOIL DATA QUALITY IN NASIS

A soil survey publication consists of three parts: the descriptive data, the spatial data, and the tabular data. In the past, most soil survey projects concerned themselves mainly with the first two items. They wrote the manuscript and they mapped the soils. With the advent of NASIS, the creation, editing and management of the quality of the tabular data also comes into the purview of the soil survey project. This is quite a departure from the way things were and it necessitates a lot of new thinking on **everybody's** part.

To ensure the quality of manuscripts, a process of technical review and edit as well as English edit is employed. Spatial data quality is ensured by map checks and GIS validations. A series of reports and validations are used in NASIS to find errors, omissions, and inconsistencies. If you tried to hand-edit all of the data tables in the typical soil survey area database, you would quickly become aware of the magnitude of the task. The checking procedures in NASIS make things much easier.

The following is a series of procedures that can be used to clean up your data. Two kinds of checks are run. First, you can check the data consistency. This means if the data makes sense to the database. Second, you can check data accuracy. This means if the data makes sense to you, the scientist. Some overlap occurs between the two. Data consistency is easier and will be addressed first.

Data Consistency Checks

1. Correlation errors in rep DMU. This is a Standard Report found in the National listing. Load your selected set with a query that gets all map units. I use the national query "Area/Legend/DMU, ALL MUs by AREA NAME, Status and Area Type". This one helps you to get your map units linked properly to data mapunits.
2. Correlation errors in status. This is another national report. Load your selected set with the same query as above. This report will tell you if the linkages between active and additional map units are OK. Also, it shows provisional map units. This is a good one for after a final field review when the correlation document is being prepared.

3. The FOCS download. This one covers a lot of ground. This output will tell you if horizon depths are continuous, if classification looks ok, and a raft of other information. Load your selected set with "Area/Legend/DMU, ACTIVE MUs by AREA NAME, Stat and Area Type." Go to File => Export.=> FOCS Format. Run the "Preview Errors and Warnings" option. You must correct errors. You should probably correct warnings.

These first three procedures will get you a long way. The next several procedures are validations. You need to have your cursor in or near the field in question, click options => validate data elements.

4. Constituent acres validation. Click in the total acres column in the **Map unit table**. Click options => validate data elements. Click "use all rows currently loaded". This will tell you if your constituent acres in the correlation table add up to the acreage of the soil survey area.

5. Component percentages validation. Click in the **Data mapunit table**. Click options => validate data elements. Click "use all rows currently loaded". This procedure tells you if your component percentages add up to more than 100 percent.

The next validations are run with the cursor in the **Horizon table**. They can be run on just one horizon or on every horizon in the selected set. Click on options => validate data elements to see the choice list.

6. AASHTO class validation. Checks to see if the AASHTO class agrees with the sieve data and plasticity index for a horizon.

7. Ksat population validation. Checks to see if ksat is populated for horizons having a "term in lieu of texture".

8. Particle Size Distribution validation. Checks to see if the representative values of the percent sand, silt, and clay for a horizon add up to 100.

9. Percent Passing Sieves validation. Checks to see if the percentage passing a sieve is equal to or less than the next larger sieve.

10. Texture Class vs Particle Size Separate validation. Checks to see if the percentage of sand silt and clay for a horizon agree with the texture classes given for a horizon.

11. Texture Modifier by Horizon Fragments validation. Checks to see if the fragment percentages in the horizon fragments table agree with the texture modifier for a horizon.

12. Texture Modifier by Sieves validation. Checks to see if the texture modifier agrees with the rock fragment percentages indicated by the sieve data.

13. Unified Class validation. Checks for agreement between the unified class and the sieve data and the plasticity index for a horizon.

These validations check the internal consistency of the data. A Fauquier map unit could be linked to a Berks data mapunit and the database would not care. The validations save you some time to do the scientist end of the database. Several strategies exist for checking the science.

One method is to run the reports that generate the manuscript tables and carefully peruse them for accuracy. Another way is to use the "CHECK" reports to pull out data to look at it. To use one of these reports, load in your selected set with Area, Legend, and Data Mapunit. Click on Options => standard reports, and scroll down to the list of CHECK reports. Click on each report and read the report description to see what data will be reported. Check reports are not yet available for all data elements, so running a manuscript report is the only option for these. Examples are crop yield data, tree yields, and tree species. Once you decide what components and data elements need to be edited, you need a method of doing the work.

D. EDIT DATA

The main strategy for editing data is to do as little of it as possible. This is not to say we should pass off shoddy workmanship, but rather to say that we need to be efficient. Starting with as good of a dataset as you can get is important. Also, remember that the NASIS database is similar to the soil survey program as a whole: we build on the foundations left by those who went before. Thus, the database improves with each iteration of a legend in a survey area. In NASIS, each correlation of a component should improve upon the previous correlation. You want to copy and paste more than direct keying of data whenever possible. REMEMBER – NASIS is property driven and its purpose is to record soil characteristics as observed in the field as accurately as possible.

Ideally, a DMU and its associated components should be in good shape when the map unit is approved. Progressive database development, like progressive correlation, will keep you from needing to develop your entire database between the final field review and the final correlation. If you view the Data Mapunit table, you will see that not much needs to be done there. The Component tables and the Component Horizon tables are where the work resides. You should keep your selected set as small as possible. This helps save to run faster and keeps data unlocked for other users.

Here is a strategy for editing components that occur frequently in your database.

1), Decide how many surface texture phases of a component that you need. Not much changes, except Component Crop Yield data, with slope at the component level.⁶

2) Get the horizons for that component populated as well as you can. Also, populate each of the component tables as completely as possible.

3) When this component is as you want it, save your work and do a file => new. This will clear your selected set.

4) Now, run the query called "Area/Legend/Component/Horizon by AREA SYMBOL, Area Type". Set your target tables to area, legend, and component. Enter your survey area and the component on which you are working. This will load each instance of that component into the data mapunit object of your selected set.

5) View the component table and find the component that you edited.

6) Copy it by pressing "copy". Now click in the data mapunit table (the line where DMU descriptions are found) and press "paste". In the dialogue box, click on "Paste component to all data mapunits" and "delete existing components", then apply. This will replace the interim components with the edited component.

As you can see, you want to know EXACTLY what is in your selected set before doing this step. When you edit the other surface phases of the same component, deselect⁷ the data mapunits having the first component before copying and pasting the second component.

You may do something similar by:

1) View the horizons of the edited component.

2) Highlight all of the horizons by clicking and dragging down the leftmost column.

3) Press "copy", table up to component, highlight a component, and then press "paste".

4) In the dialogue box, check "Paste horizons to all components" and "Delete existing horizons" then apply.

This will replace the original horizons with your edited horizons in every component in your selected set but maintain the data in the component table of each component.

You should leave a trail of what you did and when while editing your component and horizon data by populating component and horizon text fields.

The actual fields that you edit and populate will depend on the intended use of the survey and database. At the very least, the fields needed to generate the interpretations that will be in the report should be populated and edited. Here is how to find out which soil properties an interpretation uses:

⁶ The stored interpretations are going to "go away" soon and should only be edited in special cases. The downloads calculate interpretations "on the fly".

⁷ Deselect by highlighting DMUs for the components you do not want to edit, go to File => deselect.

- 1) Load one DMU into your selected set by querying for area and legend. Do not query for DMU at this point.
- 2) View legend-mapunit. Look for a likely map unit, click on it, then table down to correlation. Find the rep DMU.
- 3) Go to file-select-load related-data mapunit. Select data mapunit. This will load one data mapunit.
- 4) Now, go to options-standard reports, click on National, go to portrait table, hit preview, select National, pick the interpretation you want to study.
- 5) On the lower part of the dialog box, set reporting depth to 2, select RV, select Least/most restrictive, select Show fuzzy values, and set the Reasons to 0. Then hit apply. Setting reasons to 0 will cause the interpretations generator to return all the soil properties used in the generation of the report.
- 6) Look at the report you get in the report viewer. If you see null and/or default data used for important soil properties, then you had best populate these fields. Some of the interpretations get rather complicated.

The horizon and component data need to agree with the map unit name. For example, if a map unit is named as very stony, stones need to appear in the horizon sieve data, the component surface fragment table, and in the horizon fragment table. If a map unit is named as occasionally flooded, occasional flooding needs to occur in the component month table. Use the Local report called CHECK-MU Name Kind validation to check some of these properties. If the map unit generator is to be used, enough data to allow the reports to make sense needs to be entered. More information on entering data will be presented when each table is discussed.

E. COMBINE MAP UNITS

During the correlation process, map units are often found to be similar and are combined. Map units could also be combined to make a complex.

Combining map units and still a consociaton:

- 1) View the Map Unit table and change the status of the map unit that will no longer be used to additional.
- 2) Click in the additional unit, table down to correlation, highlight the correlation records and press "copy".
- 3) Place the cursor in the correlation table of the map unit that is still being used and press "paste".
- 4) Make sure that the appropriate DMU is marked as being the "rep DMU". Make sure that the other DMUs are set to "no".
- 5) Record your correlation decision in the map unit history text of both map units.

Combining map units to make a complex, using one of existing symbols:

- 1) View the Map Unit table, and change the status of the map unit that will no longer be used to additional.
- 2) Click in the additional unit, table down to correlation, highlight the correlation records and press "copy".
- 3) Place the cursor in the correlation table of the map unit that is still being used and press "paste".
- 4) Make sure that the appropriate DMU is marked as being the "rep DMU". Make sure that the other DMUs are set to "no".
- 5) View the components in the data mapunit of the map unit being absorbed, highlight the ones that should be included in the complex, and copy them.
- 6) View the component table of the new complex and paste the components from step 5 into this table.
- 7) Adjust the percent composition data to agree with you transect data.
- 8) Change the map unit kind of the unit you kept to complex.
- 9) Record your correlation decision in the map unit history text of both map units. Look at "Getting Started" for detailed information on how to populate these text fields.

Combining map units to make a complex, creating a new symbol:

- 1) View the Map Unit table, and change the status of the map units that will no longer be used to additional.
- 2) Open up a new line in your map unit table and populate it with the appropriate information. (You could also just copy an existing map unit and adjust accordingly.)
- 3) Click in the additional units, table down to correlation, highlight the correlation records and press "copy".
- 4) Place the cursor in the correlation table of the map unit that you just created and press "paste". A new line will open automatically.
- 5) Copy and paste the data mapunit that has one of the components of your complex.
- 6) View the components of the data mapunit of the other mapunit and copy them, then paste them in the new data mapunit.
- 7) Put the cursor in the data mapunit record of the new data mapunit for the complex and got to edit => copy rows.
- 8) Place the cursor in the correlation table of the complex and press paste. This puts the new DMU id in the new correlation record. Mark it as rep DMU.
- 9) Record your correlation decision in the map unit history text of both map units. Look at "Getting Started" for detailed information on how to populate these text fields.

F. WORK WITH TEXT FIELDS

Copying WORD files into NASIS

In the past, such documents as correlation notes and map unit histories were kept in text documents along with the Field Review Report. NASIS has a great capability to sort and store this type of documentation. In the future, this data will be placed directly into NASIS. For the present, we, or at least I, have a large amount of map unit history data in electronic files associated with field review reports. This data belongs in NASIS. Here is how to get it there without retyping⁸.

1) The first step is to start NASIS using Secure Access, just as you normally do. This automatically starts EXCEED.

2) The next step is to bring up the EXCEED toolbar. Do this by right clicking the EXCEED button on the WINDOWS taskbar. On the ensuing menu, go to "Tools", then go to "Toolbar". Click on "Show". This gives you an odd-looking square with smaller squares inside it. This is the Toolbar that you want. Run your cursor over each square and a little note will come up telling you what each button does. The one we will use most is the one that says "Paste Clipboard To X Selection". It looks like a clipboard with an X and an arrow curving away from the X.

3) Load the document from which you want to copy notes into WORD. Highlight the text to transfer and click your right mouse button. From the menu that comes up, left click on "Copy". The selected text was just put on the clipboard. You can move between the WORD window and the NASIS window simply by clicking on their icons on the taskbar (the buttons to the right of the "Start" button).

4) To get to the map unit text table, in your NASIS window click view, go to Legends, and then Map Unit text. You will probably need to open a new line with "F8". Locate the text field where you want to insert the information from step 3. Click on the zoom to open the NASIS text field editor.

5) Click on the "Paste Clipboard to X Selection" button.

6) Put the cursor in the text field and click both the right and the left buttons at the same time. This should insert the text into the field. If you have a suite of similar map units using the same notes, here is what to do. Highlight the contents of the NASIS text editor, click the "Copy X Selection To Clipboard" button on the EXCEED toolbar, zoom into the next text field you wish to populate, press the "Paste Clipboard To X Selection" button, and then press both mouse buttons at the same time⁹. The note stays on the clipboard until you replace it with another note.

⁸ "Click" means to click the left mouse button, "right click" means to click the right mouse button. The taskbar is the row of buttons to the right of the "Start" button.

⁹ Procedure from Wayne Gabriel, embellished by R. Dobos, 3/6/99

Map unit history or map unit text?

Some confusion exists over whether certain information should be put into map unit history or map unit text. Here is how the *map unit history table* is meant to be used.

- 1) The first record in the map unit history table documents when that map unit was added to the legend and its name as a provisional map unit.
- 2) The next record in the map unit history for a map unit documents the change from provisional to approved (normally) and any name changes along the way.
- 3) The text field in the map unit history records correlation decisions such as what changed and why.

In map unit text, you can and should give a good account of the metadata for a map unit. You can include information about geologic materials (this could also be in Component Text), tacit information used in mapping, your map unit description, join statements, or any other information that you would like to capture. Please remember that your data is available to a large group of people nationwide.

Entering and Printing Correlation Proposals

Before your field review you can let others know what you propose to present for approval.

- 1) View the Map Unit Text table for the map unit you are planning to present for approval view => legends => mapunit text. (This will change your default table down sequence.)
- 2) Press F8 to open a new line (check caps lock key!!).
- 3) Select "correlation notes" for the kind, enter "correlation proposal" for the category, and the year, like 2000, for the subcategory.
- 4) Zoom open the text field and enter your rationale for adding this unit to your legend.
- 5) You can print correlation proposals for any year for any survey that has the correlation proposals entered by first loading that survey into you selected set and then going to options => standard reports => click on the report called 13-TEXT – Correlation Proposal Report and preview. Enter the kind of review and the year in the upper box and just the year for which you want the report in the lower box and then apply.

G. POPULATE MINOR COMPONENTS

NASIS provides for the storage of as many minor (not named in the map unit name) components as you wish to include. You need to make your database reflect your manuscript. Thus, you will have some minor components that are correlated and others that are not. "Unnamed minor components" are probably a series somewhere that can be copied and pasted. Change the component name to "unnamed different soil" and the component kind can be left null or populated with family or taxon above family, as appropriate. In a component text note, you can tell what the unnamed series really is. **Remember to set the major or minor component flag for each component.**

The number of minor components needed will vary with the complexity of the landscape. Your transect documentation will help you to decide; however, ten may be too many. Make sure that any hydric minor components are listed. Populate the minor components so that interpretations can be generated from them as well as the named components. Look at Windsor County, Vermont, which has a status of project, for a good example of minor component population.

H. ENTER SITE/PEDON DATA

The Site/Pedon side of NASIS is grouped into four main sections: the Site Association, the Site, the Pedon, and the Transect Objects. Think of these three like this:

1) Site Association represents the entirety of a geographic area, 2) Site represents the surroundings of a point in that geographic area, 3) Pedon represents the horizons under your feet at that point. 4) Transect represents a grouping of pedons within a geographic area.

Population of site data begins in the Site Object.

- 1) Click on View => Site => Sites. Press F8 to open a new line.
- 2) Populate data elements in the Site table. The key field is the User Site ID field. Since the site represents a geographic area, it is recommended that the User Site ID symbol have some meaning. Thus, "Clinch Mountain area" might be a good connotative name. It will not hurt to also include the soil survey area id and a sequence number with the name.
- 3) Table down and populate the Site Observation data.
- 4) You can click on view => site observation => accelerated erosion, site observation text, existing vegetation, soil moisture, or soil temperature and populate these fields if data is available. You can always populate a text field because you make that data yourself.
- 5) If you click on View => Site => Site area overlap, you can populate the site area overlap table. This one is not transparent as to what goes into it. But, in order to have all the fields populated when you print out a pedon description, you need to add a line for each of the area types "county or parish", "mlra", "Non-mlra soil survey area", "physiographic division", "physiographic province", "physiographic

section", and "state or territory". They can be copied from one site and pasted into another site.

6) A pedon is a type of site observation. In order to link a pedon to a site, open up a site observation record. Record relevant information in this table.

If you populate the site area overlap table, you can retrieve your site data by using the National query called "Sites by Site Area Overlap". This query requires the area type (non-mlra soil survey or non*) and your area name (Potter County, Pennsylvania) to get the sites for a survey area.

To populate a pedon in NASIS, you must first have a Site and a Site Observation.

1) View the site to which the pedon is associated, table down to site observation. Put the cursor in the Site Observation Table and press "Copy", view the pedon table, and press "Paste". User Site ID, Site ID, Site Observation ID, Observation Date, and Observation Date Kind will populate.

2) Populate the data elements. Many of the data fields have choice lists. Populate the User Pedon ID field with an identifier unique to that pedon, for example, a concatenation of year, state, county FIPS, and sequential number. (This is very similar to the system used by the National Soil Survey Lab at Lincoln to track samples.) Thus, 99VA167001 would represent the first site in Russell County, Virginia for calendar year 1999.¹⁰ These need to be unique for each pedon.

3) Table down to Pedon Horizon. Use F8 to open enough lines for horizons for your pedon. Enter the horizon depths. This table is sorted on horizon depth.

4) You will find that if you populate the horizons vertically rather than horizontally, you will be able to go faster. In other words, populate horizon designations and the pedon horizon designation suffix table for each horizon, then populate the depths, then pedon horizon texture (a calculated field, you must table down). Populate horizon color horizon by horizon (table down since a horizon can have more than one color). You will be constantly changing your view, i.e. View => pedon horizon => pedon horizon color then view => pedon horizon => pedon horizon designation suffix... and so on. If you try to complete your description by completing a horizon and then going to the next one, population will take longer. (WINDOWS PEDON will fix the baud rate problem.)

5) Use copy and paste to borrow horizons from one pedon to copy into another, then just edit what is needed.

You should enter at least your typical pedons into the site data for now.

To group pedons together into a transect, first, click on View => Transect => Transect.

1) Open a new line in the Transect Table by pressing F8.

¹⁰ You will notice that when you open a new line in the site table and populate a user site id that the Rec ID populates automatically. Each site is numbered consecutively by NASIS.

- 2) Enter a Transect ID. Tying the transects to a map unit seems logical. (The problem here is that the map unit symbol and even the soil series that you use can change.) Perhaps it will be workable to use the map unit symbol as currently mapped and then give a narrative of what this map unit is describing in the Transect Text.
- 3) Enter information related to the transect.
- 4) To link the transect to its constituent pedons, click on View => Pedons => Pedon.
- 5) Enter the transect identifier into the User Transect ID field of the pedons that are a part of that transect.

Retrieving Site and Pedon data.

Four National queries are available to retrieve site and pedon data.

- 1) Pedons by Site Area Overlap. You enter the area type name (generally non* will do) and your soil survey area name. Depending on how you set the target tables, the query returns all of your pedons, all of your sites, and the site and mapunit overlaps.
- 2) Pedons by User Pedon ID. You enter the User Pedon ID. The query returns the pedon having that User Pedon ID. Or if you use wild cards (*), and depending on how you assigned User Pedon IDs, you could get all of your pedons (VA167*) or just your pedons for a particular year (*99*).
- 3) Sites by Site Area Overlap. You enter the area type name (non*) and your soil survey area name. The query returns all of your sites.
- 4) Sites by User Site ID. You enter a user site ID or a combination of characters and wildcards to get the User Site IDs that you want.

To print a pedon, select the National report called Pedon Description (metric) or (English). This will produce a description of all the pedons in your selected set.

I. GET A LIST OF ALL THE SOIL SURVEY AREAS, SYMBOLS, AND THEIR STATUS FOR ANY STATE

This is easy.

- 1) Click on options => Standard Reports.
 - 2) Select the report called UTIL – Soil Survey Symbols, Names, and Status by Status. Or select 13-UTIL - Soil Survey Symbols, Names, and Status by Area and preview.
 - 3) Type the state FIPS code followed by an asterisk in the upper box, i.e. oh*.
- Type the state name in the lower box, i.e. "Ohio". Then apply.

J – CHANGE A LEGEND FROM APPROVED TO CORRELATED, ASSIGNING PUBLICATION SYMBOLS

I have worked up a protocol for changing soil survey legends from “approved” to “correlated” and assigning publication symbols. SSURGO downloads, among other things, do not work on legends that are not correlated. Of course, more than one method could be used, but this is how I have done it.

- 1) Query the database for the survey area that you want to work over. At this point, the map units’ status will probably be a mix of additional, provisional, and approved. After the Final Field Review, perhaps all the provisional map units should be either approved or additional.
- 2) Check over the existing approved legend. Correct spelling errors (Hazelton or Hazleton?), make sure that the NASIS legend corresponds exactly with the Legend and Manuscript, and make sure all the map units are in the database. In order to get a SSURGO download, you will have to check the classification in the components table, the layer depths, and other things that the machine will tell you about. Save your work when you are done and maybe a few times in between.
- 3) Get to the Mapunit table and global assign the status of each map unit to additional. At this point all of the mapunit symbols should still be different, so you can save your work here if you wish.
- 4) Highlight every map unit by clicking and dragging the cursor down the left-most column.
- 5) Click the “copy” button. This will copy the entire Map Unit table (legend) to the clipboard and will take a few seconds.
- 6) Move the cursor into the map unit field and click in the upper left most of the editable fields (seq). Click the paste button. This will insert a whole new legend, map unit by map unit, into the existing legend.
- 7) Look at the left-most field. It should be a series of dashes “-“ and “Ns”. The dashes represent the old map units and the Ns represent the new map units. You cannot save at this point, since several map units have the same symbol and status.
- 8) For each map unit marked with “N”, change the map unit symbol to the publication symbol and change the status to “correlated”. (You could just as easily change the ones marked with dashes, but be consistent.) When you are done, you will have the whole legend made up of correlated and additional mapunit symbols. Since the linkage to the data mapunit table is through the correlation table which you copied recursively with the mapunit table, you do not need to worry about linking the correlated map units to the data mapunits. It is done already. The Data Mapunit descriptions of the representative data

mapunits should be changed to reflect the publication symbols. This will make any future editing easier.

- 9) Document what you have done in Map Unit History.

Ps—This is not for the faint-hearted.

K. CHANGE MY UNIX PASSWORD

These are the instructions for changing your password on the NASIS 5.0 Central Server.

NOTE: Choose a password that is 6 to 8 characters long. The first six characters of the password must contain at least two alphabetic characters and at least one numeric or special character.

- 1) Run NASIS Secure Access, click on the Open an Xterm button and when prompted, enter your password.

- 2) At your unix prompt, type: `chkey -p`.

You should see messages similar to this:

Updating nisplus publickey database.

Reencrypting key for 'unix.1059@sc.egov.usda.gov'.

Please enter the Secure-RPC password for your_loginid:

- 3) When prompted, enter your current password and press the enter key.

- 4) Then at the unix prompt, type: `passwd`

You should see messages similar to this:

Enter login(NIS+) password: (enter your current password here)

New password: (enter your new password following the password rules listed above)

Re-enter new password: (re-enter your new password)

NIS+ password information changed for your_loginid

NIS+ credential information changed for your_loginid

You should change your password frequently. Do not keep the same password more than 90 days. You should not use 1 plus your login as your password.

Password aging has been turned off, at least for now, on the Central Server. So, your password will not expire. If the password you type in is rejected, first check your caps lock key. If this is ok, you have forgotten your password. Call Tammy Cheever at 402.437.5379 and she can reset it for you.

L – PRINT A REPORT LOCALLY

Quite often, you will want to print a report that you generated from NASIS. Sometimes, local printing does not look quite right. Or you may want an electronic document in WORD that you can email. Here is a method of getting a hard copy and also an electronic copy.

1. Create the report that you want to capture in NASIS.
2. Select "save" at the bottom of the Report Viewer. This brings up the "Report File Selection Manager" that looks like Figure 2.

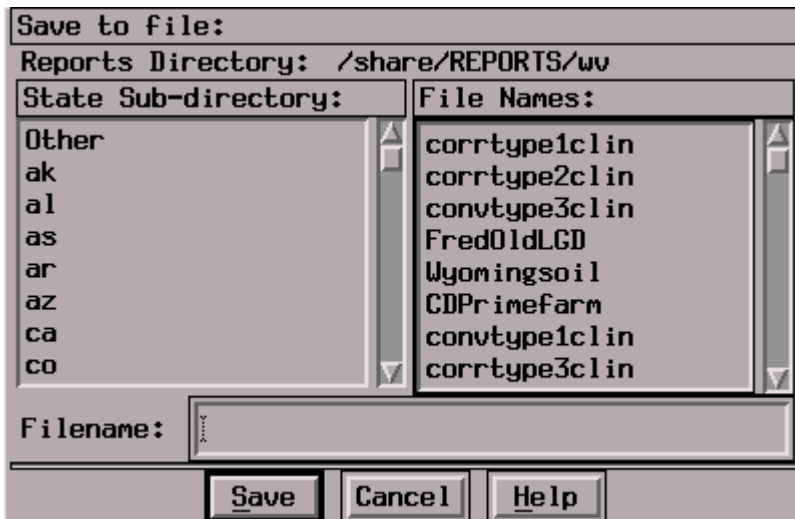


Figure 2 -- The Report File Selection Manager

3. Select the state Sub-directory appropriate for your state.
4. Enter a unique file name in the filename field and press "Save".

The report is now captured on the Central Server. Now you need to move it to your local computer. To do this:

1. Start NASIS Secure Access.
2. Click the NASIS Download tab. The dialogue box will look like Figure 3 below .
3. Click on the Reports category. Things will work for a moment and then you will be asked for your password. Enter your password, hit enter.
4. Select your state from the "States" column.
5. Highlight the name of your report in the File Name column. You may highlight as many files as you need. By selecting the ASCII download checkbox in the download form, the file will be converted to a MS-Windows format -(Carriage Return - Line Feed) for the end of line marks.
6. Press the "Download File(s)" button. You will be asked for your password (again) and the files will be placed in the directory that you selected for your NASIS downloads.

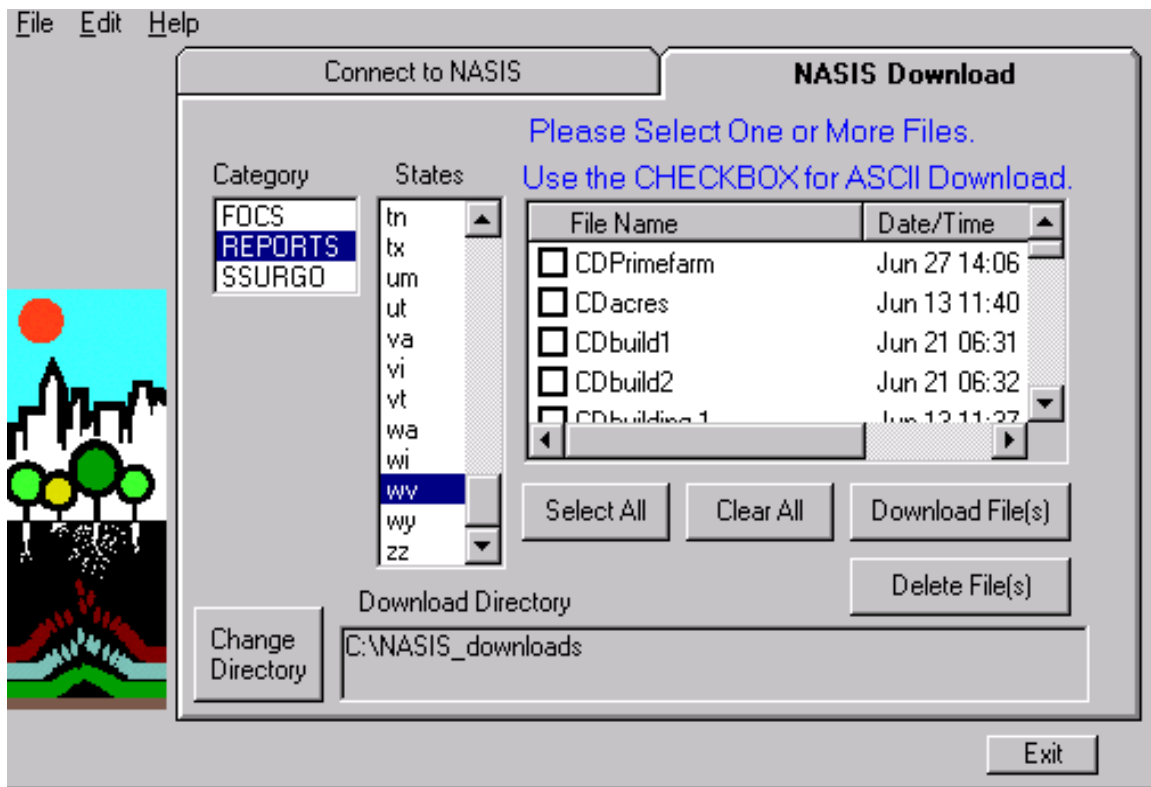


Figure 3 -- The NASIS download screen

To print the files from MS WORD, do this.

1. Start MS WORD and open the file in your c:\Temp folder (or wherever the file resides).
2. Highlight the whole document, select a font size of 8 and the font Courier New. Most other fonts will not work properly.
3. Click on file in MS WORD and select page setup. Some reports are printed in "landscape", so you may need to select this option. You will probably need to open the margins as far as you can. Generally 0.3 does well for left and right. Use 0.6 for the top and 0.5 for the bottom. These margin settings will be close to the page breaks that were in the original document.
4. Use the Print Preview feature to look at the document and adjust headers, lines, and margins until the document looks good.
5. Print the document on your local printer.
6. Save the document if you wish to do so.
7. Remember to delete the original document using the "Delete File(s) button on the download screen. (Reports seem to go away on their own after a month or so.)

If you do not have a printer, you can probably set up a FAX on your local computer and send the file to a FAX machine.

M. SET UP A PC TO PRINT FROM NASIS

1) These instructions are in Appendix C of the "Getting Started" manual. If you need help, call Robert Dobos at 304.284.7588.

N. – USE THE HELP SYSTEM

Help is located on the right-hand edge of the NASIS screen. You will see the word "Help" written out and below it a yellow question mark. The yellow question mark is a shortcut to what is called "on Context Help". Click on the question mark and the cursor becomes a question mark. Move this special cursor to a field about which you have a question, click the mouse again, and you will see the HyperHelp system starts with an explanation of the field you chose.

Click on "Help" and a little menu appears with choices of Contents, Index, On Context, On Session, and If you're new.

Clicking on "Contents" opens the Help Topics Dialog box. This gives you the options of Contents, Index, and Find. Under contents, areas you may find useful are "conceptual guide", NASIS online help guide", and "using NASIS".

If you click on "Index", you will see an upper box in which you can type the first few letters of a topic on which you want help and then select the topic from the lower box.

On Context starts the question mark cursor, as does shift+f1.

The On Session choice causes information about your session to be displayed. Also in this box are the numbers for the NASIS Hotline, which can be very helpful.

The "If you're new" choice opens a box full of useful information for new NASIS users.

A tip about "help". Once you start it, reduce it to an icon rather than closing it (Help takes a while to start). Surf around in the Help system to learn how it works and what is in it.

O -- FREE RECORDS LOCKED BY A DEAD SESSION

Occasionally, your connection may crash or NASIS lock up for some reason. This may leave you in a situation such that the dead session is locking your database.

If you have a crash, do this:

- 1) Start Secure Access.
- 2) Click on the "Open an Xterm" button.
- 3) In the Xterm window, type `who` and hit enter. This lists who is logged on.
- 4) Look to see if your login is listed twice. If it is, the earlier of the two sessions is the one that is disconnected.
- 5) Type `ps -fu yourlogin` and hit enter. This gives you a screen like Figure 4.

```
nasis2% who
jfortner pts/6 Jul 27 07:11 (nasis2)
rdobos pts/9 Jul 27 08:13 (nasis2)
jihaag pts/12 Jul 27 09:17 (nasis2)
rdobos pts/1 Jul 27 09:54 (nasis2)
jsawyer pts/2 Jul 27 08:52 (nasis2)
ledland pts/4 Jul 27 06:41 (nasis2)
wbott pts/5 Jul 27 07:01 (nasis2)
sfinn pts/10 Jul 27 07:45 (nasis2)
nasis2% ps -fu rdobos
  UID  PID  PPID  C   STIME TTY      TIME CMD
rdobos 17526 17474 0 09:54:12 ?        0:00 csh -c /usr/openwin/bin/xterm
rdobos 17530 17529 0 09:54:14 pts/1    0:00 csh
rdobos 14713 14712 0 08:13:13 pts/9    0:00 csh
rdobos 14709 14690 0 08:13:10 ?        0:00 csh -c /usr/openwin/bin/xterm
rdobos 17529 17526 0 09:54:12 ?        0:00 /usr/openwin/bin/xterm
rdobos 14712 14709 0 08:13:10 ?        0:00 /usr/openwin/bin/xterm
nasis2% 
```

Figure 4 -- Xterminal screen when killing processes

- 6) Look at the connect times and process id numbers (PID).
- 7) Type `kill -1 PID` and hit enter to delete the processes associated with the earlier login. For example: `kill -1 14709` kills the process "14709". Be careful not to kill the process associated with your current session.
- 8) Keep killing processes until when you type `who` and hit enter, only one session is listed. Then your records should be unlocked.

NEVER use the command `kill -9` on NASIS.

If you accidentally type the wrong number either you will kill your current session, or nothing will happen (if you type in the number of a process that either does not exist or that you do not own).

III. NOTES ON USING NASIS AND POPULATING DATA ELEMENTS

This is a guide for using the National Soils Information System at the Central and Southern Appalachian Area MLRA Office located in Morgantown, West Virginia (MO13). It is a working document that provides operational guidance and will change periodically. It was produced with input from MO13 staff, the MO12 NASIS Group and MO-1 which produced the template from which this guide was developed. Suggestions are welcome and can be forwarded to the NASIS Coordinator at the Morgantown Regional Soil Survey Office. It is organized with the following sections: NASIS User Notes, Notes on Populating Data Elements, and NASIS text note guidance.

A. NASIS USER NOTES

Loading your data into a NASIS edit session:

NASIS runs best when you load a small amount of data. Therefore, you should only query into your selected set the data you will need. Since most data can be edited by more than one person, you could lock out other users from the data if you bring in large data sets, i.e. the legend and all the map units. It is recommended that you load data by map units or even by components. You can select your soil survey area's data using the soil survey id code (i.e. VA005) or the survey area name (i.e. Alleghany County, Virginia). The following is a partial list of queries can be used to load data to edit from the MLRA13_Office Select Manager, Figure 5: There are basically five scenarios for loading soil survey data. These are 1) Loading all the mapunits and data mapunits (active and additional), 2) Loading just active map units and data mapunits, 3) Loading all the components of the data mapunits, 4) Loading only major components, and 5) loading some of the data mapunits. How much data you load depends on what you wish to do. For example, I want to check the linkages between additional and correlated map units and data mapunits in Lee County, Virginia. The process is:

- 1) File => Select, highlight the local query "Area/Legend/DMU ALL MUs by AREA SYMB, Status and Area Type"
- 2) Select target tables AREA, LEGEND, and DATA MAPUNIT (this selects all map units in legend)
- 3) Apply
- 4) Enter Soil survey area ID, Area type name, and Status (i.e. VA005, non*, and project)
- 5) Apply

If you select by area name, use the next query up on the list and substitute "Lee County, Virginia" for "VA005".

If I wanted to edit the Andover components in Clinton County, Pennsylvania:

NASIS Site: ☐ Ready for Use Only

Query Name:

Select One or	
Component Interp	Area/Legend/Component, MAJOR COMP by AREA NAME and leg sta
Area Type	Area/Legend/Component, MAJOR COMP by AREA SYMB and leg sta
Area	Area/Legend/Component/Horizon by AREA NAME, Area Type
Legend	Area/Legend/Component/Horizon by AREA SYMB, Area Type
Mapunit	Area/Legend/DHU, ACTIVE MUs by AREA NAME, Stat and Area Ty
	Area/Legend/DHU, ACTIVE MUs by AREA SYMB, Stat and Area Ty
	Area/Legend/DHU, ALL MUs by AREA NAME, Status and Area Typ
	Area/Legend/DHU, ALL MUs by AREA SYMB, Status and Area Typ

Query Description:

Use this query to find soils that are unranked for hydric soils. Run the query one time for the desired survey area.

Query Text:

```
FROM component_interp, area_type, area, legend, mapunit, correlation,
data_mapunit, component
WHERE component_interp.interpretation_kind = "hydric soil rating" AND
```

Figure 5 -- The select manager showing eight queries for loading soil survey data.

- 1) File => Select, highlight the local query called "Area/Legend/Component/Horizon by AREA SYMBOL and Area Type
- 2) Set the target tables to AREA, CORRELATION, and COMPONENT (this will get active mapunits of a specified component)
- 3) Apply
- 4) Enter the Component Name (Andover), Area Symbol (pa035), Area Type Name (non*), Designation (* in this case. The B or B*x horizons could be specified. The current example will get all horizons), and Survey Status (update).
- 5) Apply

Sometimes queries that seem to be the same will return different information because of how the query is written and how you set the target tables. It is a good practice to read the query description of any query that you have not used before.

A status window will tell you how many rows from what objects loaded into the edit session. To begin you can VIEW-LEGENDS-LEGEND and down table to MAP UNIT and CORRELATION. While in the CORRELATION table using VIEW-FIND RELATED-DATA MAPUNIT (DMU) will show the associated DMU in the edit window. At this point, the data is loaded into the edit session so you are ready to edit the data, if you are a member of the group that owns it.

As a matter of practice, you should frequently save your work.

B. ADDITIONAL USER NOTES

This section is topical help that will be updated as issues develop. Suggestions are welcome.

Caps Lock key	Should not be left on. This will disable the function keys.
Object status = Locked	This means that another user is working with the data. The user has write privileges to the data. You should check with other members of your NASIS group to find out who has it and what their plans are. The NASIS Group can be found by looking at the data element, Group, at the far right of the record. You will not lock records if you don't have write privileges to the data.
Data Mapunits	DMUs from published legend data sets are protected and not editable for updates. Each map unit in an update legend should have its own DMU unless the published DMU meets your data requirements. If not, create a new DMU by copying and pasting the published DMU into the Data Mapunit table and link the "new" DMU to the update map unit. This DMU can then be modified based upon field data. Linking to existing DMUs comes with some conditions. Anyone making modifications to that DMU should communicate that fact to those groups linking to it (See Update Report).
Calculations	These useful tools are to populate data elements. They are available for each table by viewing Options/Calculate Data Elements. This will be activated if there are calculations available for the selected table. You can calculate data at any time.
Update Report	This functionality exists as the UPDATE REPORT button you will see at the bottom of the NASIS screen. With the cursor in the selected Data Mapunit row open the sash (see NASIS Getting Started page 12.11) and click on this button for a report showing the map units to which that DMU has been linked.

Queries and Reports	When you use File/Select or View Options/Reports the local choices are the default. Click on the National button to use those queries or reports. Many of these are in various states of readiness and usefulness, some of which are identified at this time by indicating "Draft" or something similar in the title, or checking the Ready To Use column in the query or report table as yes or no. A simple convention will help to maintain these lists in a usable form. If you create a query, list the focus of the query, for example: Area/Legend/DMU by area (all Mus). If you write a report, name it by what it outputs, for example: "CHECK Check Cec to Clay Ratio".
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Validations

This is a useful tool that should be used to check your data. They are available for each table by viewing Options/Validating Data Elements. This will be activated if there are validations available for the selected table. You can validate data anytime but certainly prior to each progress review is a good practice. A list of current programmed validations is included here.

Name	Table	Elements Used	Conditions Checked
Taxonomic Classes	Component	Order Suborder Great Group Subgroup Particle Size Reaction Temp Class CEC Activity Class Mineralogy	The particle size, mineralogy, reaction, CEC, and temperature classes for the component must be appropriate for the order, suborder, great group, or subgroup entered.

Name	Table	Elements Used	Conditions Checked
Component Percentages	Data Mapunit	Comp Pct (RV)	Sum of all component percents entered for a Data Mapunit must be no more than 100.
Horizon Depth	Horizon	Top (l,r,h) Bottom (l,r,h)	Top depth of first horizon must be 0 Bottom depth of a horizon must equal top depth of the following horizon. Top depth of a horizon must be less than bottom depth of the same horizon. Tests are repeated for Low, RV, High
Percent Passing Sieves	Horizon	Sieve #4(l,r,h) Sieve #10(l,r,h) Sieve #40 l,r,h) Sieve #200 (l,r,h)	#4 must be equal or greater than #10. #10 must be equal or greater than #40. #40 must be equal or greater than #200 Tests are repeated for Low, RV, High
Particle Size Distribution	Horizon	Total Sand (RV) Total Silt (RV) Total Clay (RV)	Sum of sand, silt and clay must be 100 if all are entered.

Name	Table	Elements Used	Conditions Checked
Texture Modifier (by sieves)	Horizon	Sieve #10 (RV) Db 0.33 bar (RV) Rock > 10 (RV) Rock 3-10 (RV) Texture modifier	If the rock fragments >2 mm are 15% or more by volume, there must be a texture modifier on at least one texture for the horizon.
Texture Modifier (by fragment volume)	Horizon	Frag Volume (RV) Texture modifier	If the sum of all fragment volume percents for the horizon is 15% or more, there must be a texture modifier on a least one texture for the horizon.
Ksat Population	Horizon	Ksat (RV) Terms in lieu of texture	If a term in lieu of texture is entered for a horizon, the saturated hydraulic conductivity (Ksat) must also be entered.
Texture Class vs. Particle Size Separates	Horizon	Total Sand (l,h) Total Silt (l,h) Total Clay (l,h) Texture class	For each texture entered, the horizon's ranges for sand, silt and clay must intersect the allowable ranges for that texture.
AASHTO Class	Horizon	Sieve #10 (l,h) Sieve #40 (l,h) Sieve #200 (l,h) PI (l,h) LL (l,h) AASHTO class	For each AASHTO class entered, the horizon's ranges of sieve percents and Atterberg limits must intersect the allowable ranges for that class.

Name	Table	Elements Used	Conditions Checked
Unified Class	Horizon	Sieve #4 (l,r,h) Sieve #10 (l,r,h) Sieve #40 (l,r,h) Sieve #200(l,r,h) PI (l,r,h)LL (l,r,h) Unified class	For each Unified class entered, the horizon's ranges of sieve percents and Atterberg limits must intersect the allowable ranges for that class.
Legend Acres	Legend	Area Acres (Area) Total Acres (Map unit)	The sum of the acres for each active map unit in the legend must equal the acres recorded for the area. Excludes additional symbols.
Land Category Acres	Legend	Area Acres (Area) Land Category Acres	The sum of the land category acres in a legend must equal the acres recorded for the area.
Overlap Acres	Legend Area Overlap	Overlap Acres (Legend Area Overlap) Overlap Acres (Map unit Area Overlap)	The sum of overlap acres for each legend must equal the overlap acres recorded for the map unit.
Constituent Acres	Map unit	Total Acres (Map unit) Constituent Acres (Correlation)	The sum of constituent acres for each Data Mapunit must equal the total acres recorded for the map unit.

Name	Tables	Elements used	Conditions checked
Pedon Taxonomic Classes	Pedon	Order Suborder Great Group Subgroup Particle Size Reaction Temp Class CEC Activity Class Mineralogy	The particle size, mineralogy, reaction, CEC, and temperature classes for the component must be appropriate for the order, suborder, great group, or subgroup entered.

C. NOTES ON POPULATING DATA ELEMENTS

This section provides general guidance for understanding and populating data elements. As a guide, consider populating at a minimum those data elements required to produce the interpretations given in the standard soil survey tables. Use of the interpretations generator rather than the stored interpretations is the goal (especially since the stored interpretations will “go away” soon). Some states may require data such that a map unit generator will produce good results.

Linking to or copying existing DMUs from published data sets (these DMUs generally are not editable) provides a good starting point. Data elements that currently have no description have no specific population guidance or a priority that is low at this time. As we learn more about these elements and establish priorities, this information will be updated.

TABLES:

Aggregated Data Structure

- Legend Object
 - Legend
 - Mapunit
 - Correlation
- Data Mapunit Object
 - Data Mapunit
 - Component
 - Horizon

Point Data Structure

- Site Object
 - Site
 - Site Observation
- Pedon Object
 - Pedon
 - Pedon Horizon
- Site Association Object
 - Site Association
 - Site Association Site
- Transect Object
 - Transect

LEGEND OBJECT

Legend Table

Table	Element	Instruction
Legend		This data is usually populated by a State Soil Scientist, Soil Data Quality Specialist, or Web User. While the information is important and interesting, it is best left untouched. Please refer to the Soil Survey Schedule User Guide for more information.

Map Unit Table

Table Name	Element	Instruction
Map unit table	Seq	Usually not populated. If you put a number in for one record, then the records must all be numbered consecutively.
Map unit table	Mapunit Symbol	Type in the appropriate Map Unit Symbol.
Map unit table	Mapunit Name	Enter the mapunit name either in all capital letters or as an appropriate mix of upper and lower case.
Map unit table	Kind	Pick correct class off the choice list.
Map unit table	Status	Pick correct status off the choice list.
Map unit table	Total Acres	Populate when data is available.
Map unit table	Linear Feature Width	Will be used later.
Map unit table	Point Feature Area	Will be used later.

Correlation Table

Table	Element	Instruction
Correlation table	Seq	Not normally populated
Correlation table	DMU ID	A unique identifier for each DMU on the system. If you enter a DMU ID, the DMU Description will Automatically be populated. Entering a DMU ID links the map unit with its attribute data.
Correlation table	DMU Description	Also links the mapunit with its data. Should identify the state, county, and mapunit of origin, thus MD013AbC could be the DMU description for map unit AbC in Carroll County, Maryland.
Correlation table	Rep DMU	A map unit may have several DMUs describing it. Only one, however, is that really represents the map unit. Mark that one "yes", mark the other ones "no".
Correlation table	Constituent acres	Enter the acreage in the record for the Rep DMU.

Map Unit History Table

Table	Element	Instruction
Mapunit History table	Date	Automatically populates or you can enter.
Mapunit History table	Historical Name	Any previous names a map unit was called.
Mapunit History table	Status	The status of the map unit when changes occurred.
Mapunit History table	Text	A short note telling what was done, such as "map unit was approved" or "map unit was combined with...". Each change of status requires a new record. Give the full rationale for correlation decisions. (See Map Unit Text Table for more types of data)

Map Unit Text Table

Notes entered in this table should apply to the MapUnit as a whole. A wide range of information can go into Map Unit Text. Field Review stop notes, geomorphic setting, or any magic used in mapping the map unit is goes here. See the section, Central Appalachian Area NASIS Text Field User Guidance for text entries.

Table	Element	Instruction
Map Unit Text Table	Seq	Entries are not necessary. If you enter a sequence number in one row, enter a number in all rows.
Map Unit Text Table	Date	Automatically defaults to today's date. Can be changed to any appropriate date.
Map Unit Text Table	Author	The writer of the note. Should be the whole name, spelled out, and not initials.
Map Unit Text Table	Kind	Enter the kind of note from the choice list.
Map Unit Text Table	Category	There is no choice list for category, so you can enter anything in this field that will help identify the type of notes entered. Please consult with the MLRA Office so that the categories can be coordinated and somewhat standardized. This will facilitate the exporting of notes in MUDs and MO standard reports
Map Unit Text Table	Subcategory	Same as Category.
Map Unit Text Table	Text	Enter field notes that apply to the category and sub category. If data is to be extracted for the map unit description, enter the data exactly as you wish it to appear in the MUD.

DATA MAPUNIT OBJECT

Data Mapunit Table

Table	Element	Instruction
Data Mapunit Table	DMU ID	The DMU ID is a unique identifier that NASIS gives to each DMU on the system. Using the DMU ID is a handy way of insuring that you have the DMU that you want.
Data Mapunit Table	DMU Description	For new DMUs, you should use the following elements: State Abbreviation, three digit soil survey ID, and mapunit symbol. Thus, for map unit AgB in Clinton County, Pennsylvania, the DMU Description would be PA035AgB. For a numeric legend, the map unit symbol may need to be padded with zeros in order to sort correctly. Thus, for map unit 6F in Russell County, Virginia, the DMU Description is VA167006F. Please remember that zeros and capital "O"s are quite different to the computer. The DMU Description is mainly for human convenience. The computer looks at the DMU ID.
Data Mapunit Table	Farm Class	Farmland classification code and HEL class should agree. You would not normally have a prime farmland map unit that is highly erodible, however, since these ratings are determined by different criteria, it is possible that some prime farmland units will be highly erodible.
Data Mapunit Table	HEL	Map unit HEL class. If map unit is HEL either water or wind, the map unit is HEL. Check with your State Soil Scientist before populating HEL.
Data Mapunit Table	HEL Water	Enter the HEL class for the map unit because of water erosion.
Data Mapunit Table	HEL Wind	Enter the HEL class for the map unit because of wind erosion.
Data Mapunit Table	Interpretive Focus	The targeted landuse for which the Data Mapunit (DMU) was developed. The properties of included mapunit components are tailored towards this landuse. There is no choice list for this element. Suggested entries are: forest, crop, hay and pasture, and urban.

Table	Element	Instruction
Data Mapunit Table	Order of Mapping	Most of what we do is order 2. Order 3 and Order 1 mapping are also done.
Data Mapunit Table	IA; NH; VT columns	Used by other states. Do not enter data.
Data Mapunit Table	DMU Certification Status	Code should be "0" until all data has been entered for the map unit, after which you can change to a "1". Use code "2" after data has been validated and reviewed. Use code "3" only after final correlation and all corrections have been made to data. Descriptions of each code are available in choice list.
Data Mapunit Table	DMU Site	The NASIS site that owns the DMU.
Data Mapunit Table	Group	The group that owns the DMU.
Data Mapunit Table	User	The last person who edited the DMU.
Data Mapunit Table	Last Updated	The data the last time the DMU was altered.

Data Mapunit Crop Yield Table

When yield tables and MUIR (Map Unit Interpretation Record) data were generated at Ames, the same yields were entered in both the Data Mapunit Crop Yield table and the Component Yield tables. If you publish yields by component, populate the Component Yield table. This should have been determined and specified in the work plan for the survey.

Table	Element	Instruction
Data Mapunit Crop Yield Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Data Mapunit Crop Yield Table	Crop Name	Enter crop name from choice list.
Data Mapunit Crop Yield Table	Units	Enter unit of measurement from choice list.
Data Mapunit Crop Yield Table	Nirr Yield	Enter the yield in RV column
Data Mapunit Crop Yield Table	Irr Yield	Enter yield in RV column if soil is irrigated.

Data Mapunit Text Table

Notes entered in this table should apply to the Data Mapunit as a whole. Notes that apply to only one component should be entered in the Component Text Table. See the section, Central Appalachian Area NASIS Text Field User Guidance for text entries.

Table	Element	Instruction
Data Mapunit Text Table	Seq	Entries are not necessary. If you enter a sequence number in one row, enter a number in all rows.
Data Mapunit Text Table	Date	Automatically defaults to today's date. Can be changed to any appropriate date.
Data Mapunit Text Table	Author	The writer of the note. Should be the whole name, spelled out, and not initials.
Data Mapunit Text Table	Kind	Enter the kind of note from the choice list.
Data Mapunit Text Table	Category	There is no choice list for category, so you can enter anything in this field that will help identify the type of notes entered. Please consult with the MLRA Office so that the categories can be coordinated and somewhat standardized. This will facilitate the exporting of notes in MUDs and MO standard reports. If everyone makes a different list of categories and sub categories, you will each have to write a separate report to do essentially the same thing.
Data Mapunit Text Table	Subcategory	Same as Category.
Data Mapunit Text Table	Text	Enter field notes that apply to the category and sub category. If data is to be extracted for the map unit description, enter the data exactly as you wish it to appear in the MUD.

Component Table

Table	Element	Instruction
Component Table	Comp %	Enter a percentage value for each component in the map unit (including minor components - formerly called inclusions) in the RV column. Leave Low and High values blank unless you have collected data and can make estimates of the range in composition. Total of all components RV values must not exceed 100%. This information should match the map unit description.
Component Table	Component Name	Component names should be entered in title case, i.e. Berks. However, the name in another mode, i.e. upper case is acceptable. This is suggested to improve the appearance of reports. There currently is no global function that can be done to change case. However, it might be possible to script reports to handle this so no revisions are necessary. This suggestion is for initial data entry. Keep names of unnamed soils as short as possible so they do not take up excessive space when printed in tables, for example: Wet soils; Soils 20 to 40" deep.
Component Table	Kind	Enter from the choice list. Unnamed soils should be left as null unless it can be selected as family or taxon above family. The "Miscellaneous Area" category has a specific list of terms (SSM); it does not cover "everything else".
Component Table	Major Component	Indicate yes or no. Recommendation is to populate this element for reports. Populating this element will also aid querying your data.
Component Table	SIR Phase	Phase names from SIRs (Form Soils-5) were entered from converted SSSD data. For new series, enter a phase name if one is needed. Phase name should be the same as that used in component name above.
Component Table	Local Phase	Phase criterion to be used at local level to help identify soil components. This includes stoniness and flooding. "Berks, very stony" is the sort of information that goes here.
Component Table	Slope Gradient	Enter slope range for component in map unit. The range will generally be, but not in all cases, the same as the range in map unit name. RV value should be the dominant slope, not the average. It must fall between the low and high values.
Component Table	Slope Length USLE	Enter estimated slope lengths if this data has been collected.

Table Name	Element	Instruction
Component Table	Runoff Class	Runoff potential class for the component estimated from slope and permeability (NSSH 618-35).
Component Table	T factor	Check the T factor carefully, as this is a sensitive issue.
Component Table	WEI	Populate if you have data and wind erosion is relevant.
Component Table	WEG	Populate if you have data and wind erosion is relevant.
Component Table	Erosion Class	Enter the observed erosion class for the component.
Component Table	Cover Kind 1	Absence of an entry in this column implies that the range of physical and chemical properties for the soil applies for all earth covers. Consider the effect of woodland versus cropland.
Component Table	Cover Kind 2	Absence of an entry in this column implies that the range of physical and chemical properties for the soil applies for all earth covers.
Component Table	Hydric Condition	Enter data only if this component is a hydric soil. Select from choice list.
Component Table	Drainage Class	Enter only one drainage class for a component. If a soil has been mapped with dual drainage classes, they should be entered as separate phases of the soil. That is, each phase will be entered as a separate component, e.g., Philo: moderately well drained and Philo: somewhat poorly drained. (See Local Phase)
Component Table	Elevation	Enter elevation range in meters. Use a conversion chart to convert from feet to meters, if needed.
Component Table	Aspect Counter Clockwise	Enter the azimuth in a counter clockwise direction from the RV. This value represents one end of the range in aspect for the map unit. For example; a map unit with North aspect that ranges from 325 to 45 degrees, the aspect counter clockwise would be 325; the aspect representative would be 350 degrees; and the aspect clockwise would be 45 degrees.
Component Table	Aspect Representative	Enter the dominant azimuth.
Component Table	Aspect Clockwise	Enter the azimuth in a clockwise direction from the RV.

Table Name	Element	Instruction
Component Table	Albedo Dry	Calculate the dry albedo..
Component Table	MAAT	Enter air temperature values in degrees Celsius.
Component Table	MAP	Enter precipitation in millimeters.
Component Table	REAP	This column is used to provide an estimate of the actual amount of moisture available for use by plants or for soil forming processes. The amount may be more, less, or the same as the Mean Annual Precipitation of the area. It may vary from MAP as a function of slope, aspect, runoff, etc. Enter an estimate in millimeters, if applicable.
Component Table	Frost Free Days	Enter dominant or average value in days.
Component Table	Nirr LCC	Enter numeric value for capability class.
Component Table	Nirr Subcl	Enter alpha character for subclass.
Component Table	Nirr LCU	Land Capability units are not used in MO-13.
Component Table	Irr LCC	Irrigated LCC is generally not used in MO-13. Enter numeric value for capability class if the soil is irrigated.
Component Table	Irr Subcl	Enter alpha character for subclass if irrigated.
Component Table	Irr LCU	Land Capability units are not used in MO-13.
Component Table	Prod Index	An index of the capacity of a soil to produce specific commonly grown plants, under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yield, net return, land assessment values, taxation and to perform risk analysis. Talk to your State Soil Scientist for details.
Component Table	Cons Tree Shrub Group	The identifier for a particular Conservation Tree Shrub Group (CTSG) which that is associated with a soil map unit component. A CTSG is a physiographic unit or area having similar climatic and edaphic characteristics that control the selection and height of growth of trees and shrubs (National Forestry Manual). Select proper choice from choice list as applicable.
Component Table	Windbreak Suitability (Obsolete)	Enter the Conservation Tree/Shrub Group code for the component. This may be run as an interpretation under FORESTRY interpretations. This is scheduled to be dropped as part of the transition to fuzzy interpretation generation.

Table Name	Element	Instruction
Component Table	Range Prod	If component is used as range land, enter production in pounds.
Component Table	Forage Suitability Group Type	Populate if applicable.
Component Table	Forage Suitability Group MLRA	Populate if applicable.
Component Table	Forage Suitability Group LRU	Populate if applicable.
Component Table	Forage Suitability Group Number	Populate if applicable.
Component Table	Forage Suitability Group State	Populate if applicable.
Component Table	Ord Species (Obsolete)	The ordinating species. Choose from the choice list. Local plant name will automatically populate. NOTE The ordination species concept is no longer supported by NRCS.
Component Table	Local Plant Name	This field works with the Ord Species field. When one is populated with a valid entry, the other populates automatically.
Component Table	Wildlife Interpretations	If wildlife interpretations are to be included in the survey manuscript, they must be calculated manually and entered into these twelve fields. Otherwise, leave blank. NOTE: the interpretation generator will eventually calculate these fields.
Component Table	Soil Slip Pot	Enter rating for soil slippage if criteria have been developed for the survey area.
Component Table	Frost Action	Enter frost action potential as determined using NSSH Exhibit 618-5.
Component Table	Init Subsid	If the soil has a mineral or thin organic surface, enter 0 in all 3 fields. Do not enter subsidence for organic surface layers less than 5 cm. thick.
Component Table	Total Subsid	Leave as null if soil is not organic. For organic soils, enter the total amount of subsidence expected.
Component Table	Hydrologic Group	Enter value from choice list.

Table	Element	Instruction
Component Table	Corrosion Concrete	Enter value from choice list.
Component Table	Corrosion Steel	Enter value from choice list.
Component Table	Taxonomic Class	Calculated field. Enter manually only in rare instances. This field must be recalculated any time there is a change in any of the subsequent classification fields. These fields should be populated first. Classification report is generated from data in the Taxonomic Class field. All instances of a component must have the same classification.
Component Table	Order	Enter value from choice list.
Component Table	Suborder	Enter value from choice list.
Component Table	Great Group	Enter value from choice list.
Component Table	Subgroup	Enter value from choice list.
Component table	Particle Size	Enter value from choice list.
Component table	Particle Size Mod	Enter value from choice list.
Component table	CEC Activity Cl	Enter value from choice list.
Component table	Reaction	Enter value from choice list.
Component table	Temp Class	Data in this field are used to construct the taxonomic name.
Component table	Moist Subclass	This field is used for querying. Make sure it agrees with the moisture regime for the soil.
Component table	Temp Regime	This field is used for querying. Make sure it agrees with the entry in Temp Class.
Component table	Keys to Soil Taxonomy used	Enter the edition of the Keys to Soil Taxonomy used to classify the soils in this legend
Component table	State Columns	Used by other states. Do not enter any data in these 12 fields unless you are in these states.
Component Table	SIR #	Historical information but basically an obsolete field used for reference only. There will not be a number assigned to new series.

Component Crop Yield Table

When yield tables and MUIR data were generated at Ames, the same yields were entered in both the Data Mapunit Crop Yield table and the Component Yield tables. Crop yields have always been reported by component. Yields have not been averaged for the map unit. If you expect to publish yield data by map unit, this table needs populated and yields averaged. If you publish yields by component, populate the Component Yield table. Each State Soil Scientist should determine this.

Table name	Element	Instruction
Component crop yield table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component crop yield table	Crop Name	Enter crop name from choice list.
Component crop yield table	Units	Enter unit of measurement from choice list.
Component crop yield table	Nirr Yield	Enter the yield in RV column.
Component crop yield table	Irr Yield	Enter yield in RV column if soil is irrigated.
Component crop yield table	Prod Index	An index of the capacity of a soil to produce specific commonly grown plants, under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yield, net return, land assessment values, taxation and to perform risk analysis. Populate if data is available. Talk to your State Soil Scientist.
Component crop yield table	VA Soil Prod Grp	Virginia uses this field.

Component Canopy Cover Table

Table name	Element	Instruction
Component Canopy Cover Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Canopy Cover Table	Canopy Cover %	Enter the percent of the canopy area occupied by a particular species.
Component Canopy Cover Table	Local Plant Symbol	Enter plant symbol from Local Plant Table.
Component Canopy Cover Table	Local Plant Name	Plant name is entered automatically when the symbol is entered.

Component Existing Plants Table

Table name	Element	Instruction
Component Existing Plants Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Existing Plants Table	Local Plant Symbol	Enter plant symbol from Local Plant Table.
Component Existing Plants Table	Local Plant Name	Plant name is entered automatically when the symbol is entered. You may get a choice list until the Local Plants table is cleaned up on the Central Server.
Component Existing Plants Table	Understory Prod %	The percentage of total annual site production attributed to the specific forest understory plant, expressed as percent of total air dry plant material by weight.
Component Existing Plants Table	Range Prod %	The percentage of total annual site production attributed to the specific rangeland plant, expressed as percent of total air-dry plant material by weight. Not used in MO-13

Component Forest Productivity Table

Table name	Element	Instruction
Component Forest Productivity Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Forest Productivity Table	Local Plant Symbol	Enter plant symbol from Local Plant Table.
Component Forest Productivity Table	Local Plant Name	Plant name is entered automatically when plant symbol is entered.
Component Forest Productivity Table	Site Index Base	Enter numeric code for the site curve number used to determine site index. Choose from choice list.
Component Forest Productivity Table	Site Index	Enter value.
Component Forest Productivity Table	Productivity ft ³ /ac/yr CMAI	Enter value.

Component Forest Productivity - Other Table

The Component Forest Productivity - Other table lists the site index and annual productivity of forest overstory tree species in units other than cubic feet per acre per year for trees that typically occur on this component in this mapunit.

Table name	Element	Instruction
Component Forest Productivity - Other Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Forest Productivity - Other Table	Site Index Base	The number in the National Register of Site Index Curves corresponding to the site index curve used to determine the site index and the annual growth of the forest overstory tree species shown above in the Component Forest Productivity table. Choose from choice list.
Component Forest Productivity - Other Table	Site Index	The site index for the tree species shown above in the Forest Productivity table, based on the site index curve number shown in the Site Index Base column.
Component Forest Productivity - Other Table	Productivity	Annual growth in the units of measure shown in the Units column for the plant shown above in the Forest Productivity table.
Component Forest Productivity - Other Table	Units	The unit of measure for the value in the Productivity column.

Component Potential Ecosystem Table

Table Name	Element	Instruction
Component Potential Ecosystem Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Potential Ecosystem Table	Ecosystem Type	Type of ecosystem. Ecosystem types include range site, grazable forest, native pasture, etc. Select from the choice list.
Component Potential Ecosystem Table	Ecosystem ID	An ID that in conjunction with ecosystem type uniquely identifies a particular ecosystem. For example, for range sites, the combination of ecosystem type=rangesite and ecosystem ID=rangesite ID uniquely identifies a particular rangesite. This element needs further clarification. Populate it if you can, leave it null if you can not.
Component Potential Ecosystem Table	Ecosystem Name	The descriptive name of a particular ecosystem. As above, the intended content of this element is unclear.

Component Potential Windbreak Table

Table Name	Element	Instruction
Component Potential Windbreak Table	Seq	Entries are not necessary, If you enter a sequence number in one row, enter a number in all rows.
Component Potential Windbreak Table	Height	Windbreak tree height at age 20 years.
Component Potential Windbreak Table	Local Plant Symbol	Enter plant symbol from Local Plant Table. Open a new line for each windbreak species.
Component Potential Windbreak Table	Local Plant Name	Plant name is entered automatically when plant symbol is entered.

Component Trees to Manage Table

Table Name	Element	Instruction
Component Trees to Manage Table	Seq	Entries are not necessary. If you enter a sequence number in one row, enter a number in all rows.
Component Trees to Manage Table	Local Plant Symbol	Enter plant symbol from Local Plant Table. Open a new line for each tree species.
Component Trees to Manage Table	Local Plant Name	Plant name is entered automatically when plant symbol is entered.

Component Geomorphic Description Table

Geomorphic positions must be categorized and classified according to the Geomorphic Description System.

Table Name	Element	Instruction
Component Geomorphic Description Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Geomorphic Description Table	Feature Type	Enter value from choice list. Select from Local or National. At this time, no local choices exist.
Component Geomorphic Description Table	Feature Name	Enter value from choice list. An "*" in the search field will return all values.
Component Geomorphic Description Table	Feature Modifier	A user specified term(s) used in association with geomorphic features to further define, clarify, and describe the setting of a soil in the the landscape. The terms may, for example, describe relative position, mode of formation, degree of degradation, slope, or geologic time of origin.
Component Geomorphic Description Table	Feature ID	Enter a numeric value starting with 1 if you want to identify a landscape feature that occurs on another landscape feature.

Table Name	Element	Instruction
Component Geomorphic Description Table	Exists On Feature ID	If feature exists on another feature, e.g. depression on drumlin, enter the feature id number.
Component Geomorphic Description Table	RV	Enter yes or no.

Component Two Dimensional Surface Morphometry Table

Table Name	Element	Instruction
Component Two Dimensional Surface Morphometry Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Two Dimensional Surface Morphometry Table	Hillslope Profile	This field Indicates the position of the site on the Geomorphic Component. Select summit, shoulder, backslope, footslope, or toeslope off the choice list.

Component Three Dimensional Surface Morphometry Table

Table Name	Element	Instruction
Component Three Dimensional Surface Morphometry Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Three Dimensional Surface Morphometry Table	Geomorphic Component - Mountains	Populate this field if the site is in mountains. Mountains have relief in excess of 1000 feet. Select the proper mountain slope location for the site off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Component Three Dimensional Surface Morphometry Table	Geomorphic Component - Hills	Populate this field if the site is in an area of hills. Hills are upland areas having relief less than 1000 feet (305 meters). Choose the proper slope shape (interfluvial, headslope, sideslope, noseslope, or baseslope) off of the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Component Three Dimensional Surface Morphometry Table	Geomorphic Component - Terraces	Populate this field if the site is on a river terrace system. Select the appropriate position of off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Component Three Dimensional Surface Morphometry Table	Geomorphic Component - Flats	Populate this field if the site is on a large flat. This is probably meant for coastal plain or lake plain sorts of flats.

Component Slope Shape Surface Morphometry Table

Table Name	Element	Instruction
Component Slope Shape Surface Morphometry Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Slope Shape Surface Morphometry Table	Shape Across	Shape of the land surface parallel to topographic contours for the component on all or part of the geomorphic feature shown above in the Component Geomorphic Description table. Enter a value in this column only if appropriate to do so for the geomorphic feature being considered. Select off choice list.
Component Slope Shape Surface Morphometry Table	Shape Down	Shape of the land surface perpendicular to topographic contours for the component on all or part of the geomorphic feature shown above in the Component Geomorphic Description table. Enter a value in this column only if appropriate to do so for the geomorphic feature being considered. Select off choice list.

Component Microrelief Surface Morphometry Table

Table Name	Element	Instruction
Component Microrelief Surface Morphometry Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Microrelief Surface Morphometry Table	Microrelief	A description of the position of a component on the geomorphic (microfeature) feature shown above in the Component Geomorphic Description table. Enter a value in this column only if the geomorphic feature is a microfeature. Select high or low off the choice list.

Component Erosion Accelerated Table

Table Name	Element	Instruction
Component Erosion Accelerated Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Erosion Accelerated Table	Kind	Select erosion kind off the choice list.
Component Erosion Accelerated Table	RV	Representative erosion style for the component.

Component Surface Fragments Table

Enter data in this table if the map unit is a phase with rock fragments on the surface of the soil.

Table Name	Element	Instruction
Component Surface Fragments Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Surface Fragments Table	Cover %	Enter percent of surface that is covered by rock fragments, expressed as an integer. Use Soil Survey Manual guidelines.
Component Surface Fragments Table	Spacing	Enter distance between fragments using Soil Survey Manual guidelines.
Component Surface Fragments Table	Kind	Enter kind of rock from choice list. It is suggested to select the dominant rock type. This produces better wording in reports.
Component Surface Fragments Table	Size	Enter standard rock fragment size range from Soil Survey Manual.
Component Surface Fragments Table	Shape	Enter shape from choice list.
Component Surface Fragments Table	Roundness	Enter roundness from choice list.
Component Surface Fragments Table	Hardness	Enter hardness from choice list.

Component Parent Material Group Table

Table Name	Element	Instruction
Component Parent Material Group Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Parent Material Group Table	Group Name	Calculated field. Enter data in the Component Parent Material Table.
Component Parent Material Group Table	RV	Enter "yes" for the representative group name, or all groups if you want them all to be listed in the map unit description.

Component Parent Material Table

Table Name	Element	Instruction
Component Parent Material Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Parent Material Table	Vertical Order	No entry needed if no discontinuity. Number discontinuities from top down.
Component Parent Material Table	Textural Modifier	Select from choice list
Component Parent Material Table	General Modifier	A user specified term(s) used to further describe the nature of the parent material for a given soil.
Component Parent Material Table	Kind	Select from choice list
Component Parent Material Table	Origin	Select from choice list

Component Month Table

Table Name	Element	Instruction
Component Month Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Month Table	Month	Enter one record for each month.
Component Month Table	Flooding Frequency	Enter frequency for each class of flooding from choice list. If the soil is not flooded, enter "none".
Component Month Table	Flooding Duration	Enter duration from choice list. If soil is not flooded, leave blank. Enter duration even for "rare" flood class.
Component Month Table	Ponding Frequency	Enter frequency from choice list. If soil is not ponded, enter "none".
Component Month Table	Ponding Duration	Enter duration from choice list. If soil is not ponded, leave blank.
Component Month Table	Ponding Depth	Enter ponding depth in centimeters.
Component Month Table	Daily Precip	Enter average daily precip for the month from precip stations, if available.
Component Month Table	Daily ET	Enter evapotranspiration data, if available.

Component Soil Moisture Table

Table Name	Element	Instruction
Component Soil Moisture Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Soil Moisture Table	Moisture Status	Enter soil moisture status by horizon or layer: wet, moist, or dry. NASIS provides applicable definitions. Depths should be the same values that are entered in the Horizon Table, however, more than one horizon is allowed to be combined into layers with the same status. Wet status is the same as seasonal water table. Dry status must be estimated by depth and by month from experience and should agree (as close as possible) with the taxonomic classification. Those soils with a perched water table will have a drier status assigned above and below the wet layer.
Component Soil Moisture Table	Top Depth	Enter top depth of the layer in centimeters.
Component Soil Moisture Table	Bottom Depth	Enter bottom depth of the layer in centimeters.

Component Soil Temperature Table

Table Name	Element	Instruction
Component Soil Temperature Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Soil Temperature Table	Monthly Temp	The mean monthly soil temperature at a specified depth. Record the temperature in degrees Celsius.
Component Soil Temperature Table	Top Depth	The distance from the top of the soil to the upper boundary of the soil temperature layer.
Component Soil Temperature Table	Bottom Depth	The distance from the top of the soil to the lower boundary of the soil temperature layer.

Component Restrictions Table

Depths to restrictions given in this table must agree with the depths in the component horizon table.

Table Name	Element	Instruction
Component Restrictions Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Restrictions Table	Kind	Examples are fragipan or bedrock. Pick off of the choice list.
Component Restrictions Table	Hardness	Enter rupture resistance value. Note that bedrock can be soft, hard, and very hard. This gradation can be approximated in the database.
Component Restrictions Table	Top Depth	Enter depth range to the top of the restricting layer. If depth to bedrock is 20 (50 cm.) to 40 (100 cm.) inches, both values go in this element: L=50, RV=75, and H=100
Component Restrictions Table	Bot Depth	Enter depth to the bottom of the restricting layer. Depths for a lithic contact should be estimated to at least 25 cm. below the contact and the lowest layer for a paralithic contact or other root restricting layer should be described to a depth of at least 150 cm. below the soil surface (NSSH 618.31).
Component Restrictions Table	Thickness	Thickness in centimeters

Component Diagnostic Features Table

Table Name	Element	Instruction
Component Diagnostic Features Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Diagnostic Features Table	Kind	Select from the choice list.
Component Diagnostic Features Table	Top Depth	Top of feature, in centimeters.
Component Diagnostic Features Table	Bot Depth	Bottom of feature, in centimeters.
Component Diagnostic Features Table	Thickness	Thickness of the feature, in centimeters.

Component Taxonomic Family Mineralogy Table

Table Name	Element	Instruction
Component Taxonomic Family Mineralogy Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Taxonomic Family Mineralogy Table	Mineralogy	Select mineralogy class from choice list. This element is needed to calculate the classification of the component

Component Taxonomic Family - Other Table

Table Name	Element	Instruction
Component Taxonomic Family - Other Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Taxonomic Family - Other Table	Family Other	Soil characteristics other than the defined family characteristics of particle-size classes, mineralogy classes, calcareous and reaction classes, and soil temperature classes. These characteristics include depth of soil, consistence, moisture equivalent, slope of soil, and permanent cracks. Select from choice list if used.

Component Taxonomic Moisture Class Table

Table Name	Element	Instruction
Component Taxonomic Moisture Class Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Taxonomic Moisture Class Table	Moisture Class	Soil moisture classes are unique to the family classification, though not included specifically in the name, this is a mechanism to provide clear identification of the actual moisture regime. Select from choice list.

Component Interpretation Table

With NASIS 4.0, this table became obsolete. The interpretation ratings converted from SSSD are stored in this table and will no longer be maintained. This table will eventually be hidden and interpretations will be generated each time you want to produce a report.

Soil survey projects that are not near completion and do not have tables generated from SSSD should not enter data in this table. Ask your State Soil Scientist or Soil Data Quality Specialist for further instruction.

Table Name	Element	Instruction
Component Interpretation Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Interpretation Table	Kind	Select interpretation from choice list.
Component Interpretation Table	Rating	Slight, moderate, or severe.

Component Interpretation Restriction Table

See note above for Component Interpretation Table

Table Name	Element	Instruction
Component Interpretation Restriction Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Interpretation Restriction Table	Restriction	Enter the restriction or select from the choice list.

Component Text table

Table Name	Element	Instruction
Component Text table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Text table	Kind	Select from the choice list the kind that comes closest to describing the intent of the note.
Component Text table	Category	No choice list. See the section of this document on text fields for more information.
Component Text table	Subcategory	No choice list. See the section of this document on text fields for more information.
Component Text table	Text	Enter relevant information. Remember that NASIS is a national database.

Component Pedon Table

This table provides one of the linkages between the Point Data and Aggregated Data sides of NASIS. The data on the Site/Pedon part of NASIS must be populated before this table can be completed. As many pedons as needed can be linked to a component.

Table Name	Element	Instruction
Component Pedon Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Component Pedon Table	Pedon ID	This will populate automatically if you populate the User Pedon ID. Pedon ID is a sequential numbering of all pedons.
Component Pedon Table	User Pedon ID	This is the identifier that you assigned to your pedon. The suggested format is like the NSSL numbering system.
Component Pedon Table	Describer's Name	This will populate automatically when a User Pedon ID or a Pedon ID is supplied.
Component Pedon Table	Rep Pedon	If this is the Typical Pedon for the component, set the rep pedon flag to "yes".
Component Pedon Table	Rec ID	This is an internal tracking number.

Horizon Table

Data in this table consists of a record for each horizon listed in the typical pedon for the survey area. Data that was converted from SSSD contains layer data and will need to be split into individual horizons.

Soil surveys that are near completion will need to decide whether they want to revise the layers. This layer data has horizon designations of H1, H2, H3, etc. Also any map units copied or linked from adjoining surveys that have not had the layer data split into horizons will need to be updated. REMEMBER, zero and null (blank) are different. If a value is zero, enter a zero. If an interpretation, when it encounters a null, uses a default value that is way off for a soil property, the interpretive result could be misleading. See the *Field Book for Describing and Sampling Soils* for more information.

Table Name	Element	Instruction
Horizon Table	Seq	It is not necessary to enter a sequence for each horizon. These rows are sorted by horizon depth. NOTE: to complete a SSURGO download you will have to assign sequence numbers if there are MORE than 6 horizons.
Horizon Table	Designation	Horizon designation is a calculated field. Do not enter manually except in rare instances. This field must be recalculated every time there is a change in the Disc, Master, Sub columns or the Horizon Designation Suffix table. This field can be calculated for the entire selected set at the same time, or just for the rows selected. It is a good idea to calculate the Designation for each component after they are entered so the entries can be checked for errors or omissions. Layer data that was converted from SSSD will have to be split out by horizon and in many cases, the percent passing and other values will need to be revised to reflect the texture range for each horizon.
Horizon Table	Disc	Enter a numeric value for the discontinuity if one is present.
Horizon Table	Master	Enter the master horizon from choice list.
Horizon Table	Sub	Enter numeric value if the master horizon is subdivided.
Horizon Table	Top Depth	Enter the depth, in centimeters, to the top of each horizon. NASIS help system has a conversion chart. The value in the RV column should be the horizon depth in the typical pedon for the survey area. The Low and High values represent the range in depth to the top of each horizon, not the thickness. These values will be cumulative.

Table Name	Element	Instruction
Horizon Table	Bottom Depth	Enter the depth, in centimeters, to the bottom of each horizon. The value in the RV column should be the horizon depth in the typical pedon for the survey area. The Low and High values represent the range in depth to the bottom of each horizon, not the thickness. These values will be cumulative. In the case where the bottom horizon is bedrock, add 25 centimeters to the top of the bedrock layer as the bottom depth. For a paralithic contact or other root-restricting layer the horizon should be described to a depth of at least 150 cm. below the soil surface (NSSH 618.31).
Horizon Table	Thickness	The RV is the thickness of each horizon in the typical pedon. The Low and High values are the range in thickness from the range in characteristics. Usually this value will be taken from the pedon description in the taxonomic unit.
Horizon Table	Rock >10	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	Rock 3-10	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	#4 sieve	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	#10 sieve	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	#40 sieve	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	#200 sieve	If populated this data was converted from SSSD and needs to be checked for each horizon.
Horizon Table	Total Sand	Enter total sand range for the textures listed in the Texture Class.

Table Name	Element	Instruction
Horizon Table	Vcos	Enter data if available.
Horizon Table	Cos	Enter data if available.
Horizon Table	Ms	Enter data if available.
Horizon Table	Fs	Enter data if available.
Horizon Table	Vfs	Enter data if available.
Horizon Table	Total Silt	Enter total silt range for the textures listed in the Texture Class.
Horizon Table	Coarse Silt	Enter if lab data is available to support estimates.
Horizon Table	Fine Silt	Enter if lab data is available to support estimates.
Horizon Table	Total Clay	Enter clay range for the textures listed in the Texture Class. Totals for RVs of sand, silt, and clay must not exceed 100%. Validation routine is available to check this. For soils with andic properties, enter the field estimated clay.
Horizon Table	Om	Enter organic matter range for horizon. This data will have to be adjusted on components where horizons are split from layers converted from SSSD. Where applicable, this value must support the taxonomic classification.
Horizon Table	Db 0.1 bar H2O	Do not enter unless lab data is available.
Horizon Table	Db 0.33 bar H2O	Enter estimates for all horizons.
Horizon Table	Db 15 bar H2O	Do not enter unless lab data is available.
Horizon Table	Dp	Do not enter unless lab data is available

Table Name	Element	Instruction
Horizon Table	Ksat	Enter Ksat range that is equivalent to permeability ranges as listed in NSSH 618.28. Do not adjust high and low values of each range.
Horizon Table	AWC	Enter Available Water-holding Capacity data for each horizon. Adjust the raw AWC for horizon rock fragment content.
Horizon Table	0.1 bar H2O	This is a calculated field. Do not enter values.
Horizon Table	0.33 bar H2O	This is a calculated field. Do not enter values.
Horizon Table	15 bar H2O	This is a calculated field. Do not enter values.
Horizon Table	Saturated H2O	This is a calculated field. Do not enter values.
Horizon Table	LEP	If populated values should be checked for each horizon.
Horizon Table	LL	If populated values should be checked for each horizon.
Horizon Table	PI	If populated values should be checked for each horizon.
Horizon Table	AASHTO Group Index	This is a calculated field. Do not enter values.
Horizon Table	Kw	If populated values should be checked for each horizon. Kw should be less than Kf if there are rock fragments.
Horizon Table	Kf	If populated values should be checked for each horizon.
Horizon Table	CaCO ₃	Enter 0 in all 3 fields if CaCO ₃ is not present.
Horizon Table	Gypsum	Enter 0 in all 3 fields if Gypsum is not present.
Horizon Table	SAR	Enter 0 in all 3 fields if sodium is not present.
Horizon Table	Free Iron	Enter if lab data is available, otherwise, leave blank.
Horizon Table	Extract Al	Enter if lab data is available, otherwise, leave blank.
Horizon Table	Ext Acidity	Enter if lab data is available, otherwise, leave blank.
Horizon Table	CEC-7	If populated values should be checked for each horizon.
Horizon Table	ECEC	Used if pH ≤ 5.5. NSSC is developing a guide for the Northeast area.

Table Name	Element	Instruction
Horizon Table	pH H2O	If populated, values should be checked for each horizon.
Horizon Table	pH CaCl2	If populated, values should be checked for each horizon.
Horizon Table	Free Iron	If populated, values should be checked for each horizon.
Horizon Table	Oxalate Fe	If populated, values should be checked for each horizon.
Horizon Table	Ext Acidity	If populated, values should be checked for each horizon.
Horizon Table	Extract Al	If populated, values should be checked for each horizon.
Horizon Table	Oxalate Al	If populated, values should be checked for each horizon.
Horizon Table	Bray 1 Phos	If populated, values should be checked for each horizon.
Horizon Table	Oxalate Phos	If populated, values should be checked for each horizon.
Horizon Table	Water Soluble Phos	If populated, values should be checked for each horizon.
Horizon Table	Total Phos	If populated, values should be checked for each horizon.
Horizon Table	Excav Diff	Enter value from choice list. Description button provides information about each choice.
Horizon Table	SIR Layer	Obsolete. Used as a reference only to layers on Soil Interpretation Record, Form Soils-5.

Horizon Designation Suffix Table

Table Name	Element	Instruction
Horizon Designation Suffix Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon Designation Suffix Table	Suffix	Enter the suffix from the choice list. If more than one suffix applies to the horizon, enter each suffix on a separate row.

Horizon Texture Group Table

Table Name	Element	Instruction
Horizon Texture Group Table	Seq	Enter a sequence number only if you want the textures listed in a specific order. If you use a sequence number in one row, enter a number in all rows.
Horizon Texture Group Table	Tex Mod & Class	This is a calculated field and is protected. The entry will be calculated from the entries in the Horizon Texture and Horizon Texture Modifier tables. This field must be recalculated each time there is a change in one of those tables. Each texture class must be entered on a separate row unless the texture is stratified. First, open a row in this table, and then open a row in the Texture and Texture Modifier tables. When entries have been made in these tables, calculate the Texture Class table.
Horizon Texture Group Table	Stratified?	Enter yes if this horizon is stratified, otherwise, enter no.
Horizon Texture Group Table	RV?	Enter yes in the row that has the representative value texture of the typical pedon. All other rows should be "no". Texture will not be printed in the mini profile in the MUD if no texture is marked as representative. If all textures are marked as representative, they will all be listed in reports and the mini profile.

Horizon Texture Table

Table Name	Element	Instruction
Horizon Texture Table	Seq	Sequence numbers are not necessary unless you want the textures listed in a specific order. If so, enter a number in all rows. Otherwise null sequence values will be listed first.
Horizon Texture Table	Texture	Enter only valid USDA textures from choice list; one texture per row.
Horizon Texture Table	In Lieu	Enter value from choice list for anything that is not a valid USDA texture, i.e., MAT for Oa horizons.

Horizon Texture Modifier Table

Table Name	Element	Instruction
Horizon Texture Modifier Table	Seq	Sequence numbers are not necessary unless you want the modifiers listed in a specific order. If so, enter a number in all rows. Otherwise null sequence values will be listed first.
Horizon Texture Modifier Table	Modifier	Enter value from choice list.

Horizon Fragments Table

This table is for the fragments in each horizon. Values should be checked to confirm surface texture modifiers.

Table Name	Element	Instruction
Horizon Fragments Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon Fragments Table	Vol %	List percent by volume from range in characteristics. Must agree with percent passing sieves and total of RV column must agree with texture modifiers. Enter volume percent of all fragments larger than 2mm using standard fragment size ranges.
Horizon Fragments Table	Kind	List dominant rock type from choice list.
Horizon Fragments Table	Size	List size in millimeters by class. Use a new row for each size class.
Horizon Fragments Table	Shape	Select appropriate shape from the choice list.
Horizon Fragments Table	Roundness	Select appropriate roundness from the choice list.
Horizon Fragments Table	Cementation	Enter hardness of fragments as a degree of cementation. Classes are defined in a choice list. List each class of hardness on a separate row and estimate percentage in each class.

Horizon AASHTO Table

Table Name	Element	Instruction
Horizon AASHTO Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon AASHTO Table	AASHTO	Enter each class on a separate row.
Horizon AASHTO Table	RV	Enter yes for the representative classification in each horizon.

Horizon Unified Table

Table Name	Element	Instruction
Horizon Unified Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon Unified Table	Unified	Enter each class on a separate row.
Horizon Unified Table	RV	Enter yes for the representative classification in each horizon.

Horizon Pores Table

Table Name	Element	Instruction
Horizon Pores Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon Pores Table	Quantity	Enter the actual number of pores of a size class that were observed. No choice list.
Horizon Pores Table	Size	Select the proper size from the choice list. Each size is a separate record in the table.
Horizon Pores Table	Continuity	Select the observed continuity from the choice list.
Horizon Pores Table	Shape	Select the proper shape from the choice list. Each shape is described on a separate record in the table.
Horizon Pores Table	RV	Select an RV. More than one RV can be used.

Horizon Text Table

Table Name	Element	Instruction
Horizon Text Table	Seq	Entries are not necessary, however if you enter a sequence number in one row, enter a number in all rows.
Horizon Text Table	Kind	Enter the kind of note from the choice list.
Horizon Text Table	Category	There is no choice list for category, so you can enter anything in this field that will help identify the type of notes entered. Before you go crazy with note keeping, please consult the MO so that the categories can be coordinated and somewhat standardized. This will facilitate the exporting of notes in MUDs and reports. If everyone makes a different list of categories and subcategories, you will each have to have a separate report written to do essentially the same thing.
Horizon Text Table	Subcategory	Same as above.
Horizon Text Table	Text	Enter information pertinent to the horizon.

POINT DATA STRUCTURE

The Point Data Structure is found in four objects: the Site Association Object, the Site Object, the Transect Object, and the Pedon Object. Data population begins in the Site Object. The Pedons and Site Associations are then linked to the Sites. Pedons are also linked to transects. A site, which represents a geographic area, can have several different sorts of site observation data associated with it. These include temporal data, such as moisture, temperature, and erosion as well as pedons, which are time independent entities (more or less). The site is also linked to site area overlaps, associated soils, parent material, and the geomorphic description.

The Site Area Overlap table is the murkiest of these, conceptually. Any overlap table attempts to illustrate spatial data in a tabular format. Thus, the Site Area Overlap table records such spatial items as the MLRA, County, Military Reservation, or USGS Topoquad in which the site exists.

THE SITE OBJECT

Site Table

Table	Element	Instruction
Site Table	Rec ID	This is assigned by NASIS. Can be useful for querying.
Site Table	User Site ID	Enter an identifier that makes sense for your area. The site represents a geographic area, so the User Site ID should have a geographic phrase. Tying in the Soil Survey Area ID, year, and a sequence makes sense for querying by the User Site ID. A two part name, such as "Happy Valley area, 99PA163-001" would allow querying by just the geographic area, (Happy Valley area*), or by just the soil survey area, (*PA163*), or by the year and soil survey area (*99PA163*), or by any other combination.
Site Table	Lat. Degrees	Enter the degrees of latitude.
Site Table	Lat. Minutes	Enter the minutes of latitude.
Site Table	Lat. Seconds	Enter the seconds of latitude to the hundredths.

Table	Element	Instruction
Site Table	Lat. Direction	Enter "north" or choose from the choice list.
Site Table	Long. Degrees	Enter degrees of longitude.
Site Table	Long. Minutes	Enter minutes of longitude.
Site Table	Long Seconds	Enter seconds of longitude to the hundredth of a second.
Site Table	Long. Direction	Enter "west" or choose from the choice list (in the western hemisphere).
Site Table	Datum Name	This is either "NAD27" or "NAD83". The datum is specified on the topoquad.
Site Table	Location Description	Zoom open the text field and type in the location of the site.
Site Table	PLSS Section Details (Not normally populated in the East)	Detail about the location within the specified section to locate the site. This is based on a reference to one of the corners of the section, and distance and direction to locate the site within the section.
Site Table	PLSS Section (Not normally populated in the East)	The numeric identifier of a subdivision of a township quadrangle, normally 1 square mile, 36 sections per township.
Site Table	PLSS Township (Not normally populated in the East)	The unit of survey, normally a quadrangle 6 miles on a side. When used in conjunction with "range" to indicate the coordinates of a particular township quadrangle.
Site Table	PLSS Range (Not normally populated in the East)	The reference to a township quadrangle, when used in conjunction with township.
Site Table	PLSS Meridian (Not normally populated in the East)	The designated identifier of a line along an astronomical meridian that establishes the reference for township boundaries. This is part of the Public Land Survey System (PLSS) which includes meridian, township, range, and section.

Table	Element	Instruction
Site Table	UTM Zone	Zones of the Universal Transverse Mercator projection system bounded by meridians, the longitudes are multiples of 6 degrees. Zones are numbered from 1 to 60 proceeding east from the 180th meridian from Greenwich, England. Populate if you wish to do so.
Site Table	UTM Northing	The distance, in meters, north from the UTM zone origin. For "north", origin is the equator and is equal to zero. For the southern hemisphere, it is a false northing with origin, i.e. the equator, equal to 10,000,000 meters. Populate if you wish..
Site Table	UTM Easting	The distance, in meters, proceeding east for the UTM zone. The UTM zone central meridian is the origin and is designated a value of 500,000 meters creating a "false" easting. Populate if you wish to do so
Site Table	Elevation	Insert the elevation of the site in meters.
Site Table	Geomorphic Component - Hills	Populate this field if the site is in an area of hills. Hills are upland areas having relief less than 1000 feet (305 meters). Choose the proper slope shape (interfluve, headslope, sideslope, noseslope, or baseslope) off of the choice list. See the Field Book for Describing and Sampling Soils for further information.
Site Table	Geomorphic Component - Mountains	Populate this field if the site is in mountains. Mountains have relief in excess of 1000 feet. Select the proper mountain slope location for the site off the choice list. See the Field Book for Describing and Sampling Soils for further information.

Site Table	Element	Instruction
Site Table	Geomorphic Component - Terraces	Populate this field if the site is on a river terrace system. Select the appropriate position of off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Site Table	Geomorphic Component - Flats	Populate this field if the site is on a large flat. This is probably meant for coastal plain or lake plain sorts of flats.
Site Table	Hillslope Profile	This field Indicates the position of the site on the Geomorphic Component. Select summit, shoulder, backslope, footslope, or toeslope off the choice list.
Site Table	Slope Position	Position of the pedon site within the segment of the slope.
Site Table	Slope Gradient	Enter the percent slope at the site.
Site Table	Aspect	Enter the direction toward which the surface of the soil faces, expressed as an angle between 0 and 360 degrees measured clockwise from true north.
Site Table	Slope Length USLE	Enter the distance in meters from the point of origin of overland flow to the point where either the slope gradient decreases enough that deposition begins, or the runoff water enters a well-defined channel that may be part of a drainage network or a constructed channel.
Site Table	Upslope Length	The length of slope, measured in meters, that contributes water to a site or point.
Site Table	Slope Shape Across	The geometric, two dimensional profile (shape) of the slope parallel to elevation contours. Select concave, convex, or linear off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Site Table	Slope Shape Up/Down	The longitudinal shape of the slope. Select concave, convex, or linear off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.

Table	Element	Instruction
Site Table	Slope Complexity	The identification of whether the landscape surface is simple or complex. Select simple or complex off the choice list. See the <u>Field Book for Describing and Sampling Soils</u> for further information.
Site Table	Local Physiographic Name	A name used locally to identify physiographic features. These may be names found on USGS Topographic Quadrangles, i.e. Daves Hill. There is no choice list for this.
Site Table	Geologic Formation	The local name for the geologic formation found at the observation site, e.g. Clinch sandstone or Conemaugh Formation. Colluvial and alluvial deposits cause some complication. "Colluvium from sandstone and shale" or "Alluvium from limestone and shale" may have to suffice.
Site Table	Bedrock Depth	Enter the depth to bedrock in centimeters.
Site Table	Bedrock Kind	Select the bedrock kind from the choice list.
Site Table	Bedrock Hardness	Select the appropriate bedrock hardness from the choice list.
Site Table	Bedrock Fracture Interval	Select the fracture interval that is the best fit from the choice list. This measurement is in centimeters.
Site Table	Bedrock Weathering	Select the bedrock weathering from the choice list.
Site Table	Bedrock Strike	The apparent direction or bearing of a horizontal line in the plane of an inclined stratum. If the bedrock is not tipped, it has no strike. Strike is usually reported relative to north.
Site Table	Bedrock Dip	The apparent inclination of bedrock from the horizontal. This is measured in degrees of slope. The direction of dip is not recorded as a data element.

Table	Element	Instruction
Site Table	Drainage Class	Identifies the natural drainage conditions of the soil and refers to the frequency and duration of wet periods. An example of a drainage class is well drained. Select the appropriate drainage class from the choice list.
Site Table	Site Permeability	A class rating of the overall ability of air and water to move through the soil profile. The class limits are as defined in NSSH.
Site Table	Runoff Class	Runoff potential class for the soil. Select the appropriate class from the choice list.
Site Table	Parent Material Group Name	This is a calculated field. Name for the concatenation of PARENT_MATERIAL_MODIFIER, PARENT_MATERIAL_KIND, and PARENT_MATERIAL_ORIGIN for each of the parent materials that may occur in a vertical cross section of a soil. These elements are all populated in the Site Parent Material Table.
Site Table	Plant Association Name	The name assigned to a particular plant community found at a particular location. A plant association is a kind of plant community represented by a high degree of floristic uniformity in all layers. Plant Associations are identified and named for the dominant plant species in a layer. (Nat. Soil-Range Team, 1988, Instr. for Completing the Stand. Site Descrip.) No choice list. Refer to "Ecological Units of the Eastern United States, First Approximation", 1995, USFS.
Site Table	Climate Station ID	The station identifier. This is assigned by the responsible agency. This identifier uniquely identifies a climate station. Populate if available.

Table	Element	Instruction
Site Table	Climate Station Name	The full descriptive name of the station as recognized by the agency responsible for the station. Populate if available.
Site Table	Climate Station Type	The type of the weather station, U.S. Official or Other. Populate if available.
Site Table	Frost Free Days	The expected number of days between the last freezing temperature (0 degrees C) in spring (Jan-Jul) and the first freezing temperature (0 degrees C) in the fall (Aug-Dec). The number of days is based on the probability that the values for the standard "normal" period of 1961 to 1990 will be exceeded in 5 years out of 10.
Site Table	MAP	The arithmetic average of the total annual (liquid) precipitation taken over the standard "normal" period, 1961-1990. This is measured in millimeters.
Site Table	REAP	This column is used to provide an estimate of the actual amount of moisture available for use by plants or for soil forming processes. The amount may be more, less, or the same as the Mean Annual Precipitation of the area. It may vary from MAP as a function of slope, aspect, runoff, etc. The values for REAP are estimated by comparing the vegetation, soil moisture and temperature characteristics existing at the site, with some other location with a similar characteristics and which is considered to be in a neutral setting with respect to slope, aspect, runoff, etc. The MAP values of the neutral site are used as the REAP values at the site in question.

Table	Element	Instruction
Site Table	MAAT	The arithmetic average of the daily maximum and minimum temperatures for a calendar year taken over the standard "normal" period, 1961 to 1990. All temperatures are in Celsius degrees.
Site Table	MAST	The mean annual soil temperature (MAST) at 20 inches. This is in Celsius degrees.
Site Table	MSAT	Mean Summer Air Temperature, or in other words, the mean of the mean June, July and August mean air temperatures in the northern hemisphere. Enter if data is available. This is in Celsius degrees.
Site Table	MSST	Mean Summer Soil Temperature, or in other words, the mean of the mean June, July and August mean soil temperature at 20 inches in the northern hemisphere. Enter if data is available.
Site Table	MWAT	Mean Winter Air Temperature, or in other words, the mean of the mean December, January and February mean air temperatures in the northern hemisphere. Enter if data is available.
Site Table	MWST	Mean Winter Soil Temperature, or in other words, the mean of the mean December, January and February mean soil temperature at 20 inches in the northern hemisphere. Enter degrees Celsius if data is available.
Site Table	Flooding Frequency	The annual probability of a flood event expressed as a class. Enter the appropriate class from the choice list.
Site Table	Flooding Duration	Average duration of inundation per flood occurrence and expressed as a class. Select class from the choice list. If flooding is "none", then leave this field blank.
Site Table	Flooding Month	The month of the year in which the predicted flooding period of a soil is likely to begin. Select from the choice list.
Site Table	Ponding Frequency	The number of times ponding occurs over a period of time. Select from the choice list.

Table	Element	Instruction
Site Table	Ponding Duration	The average duration, or length of time, of the ponding occurrence. Select from the choice list. Classes are defined in the <u>Field Book for Describing and Sampling Soils</u> . Leave blank if the soil is not ponded.
Site Table	Ponding Month	The month of the year in which the predicted flooding period of a soil is likely to begin. Select from the choice list. Leave blank if the soil is not ponded.
Site Table	Water Table Duration	The cumulative annual duration (time) that a water table can be expected to exist in the soil, measured in days. Enter data if you have actual measurements.
Site Table	Site Site	The name of the NASIS Site that owns the site. NASIS automatically enters the NASIS Site name when a new site is created. This column is always protected and cannot be edited, but ownership of a data mapunit may be changed from the Options Menu.
Site Table	Group	The name of the group that owns the site record. NASIS automatically enters the user's default group name when a new site is created. This column is protected and cannot be edited, but ownership of a pedon may be changed through the Options menu.
Site Table	User	The name of the user who created the site or the name of the user who last modified any record in the site object. NASIS automatically enters the user name. This column is protected.
Site Table	Last Updated	The last date in which any data element of the Site was modified.

Site Area Overlap Table

This table attempts to represent, in a tabular way, the spatial coincidence of the site with other geographic entities. These geographic entities are known as Area Types, and include states, soil survey areas, MLRAs, physiographic provinces, USGS 7.5 minute quadrangles, counties, and a few others. All of the records in this table for one site can be copied and pasted into another site.

Table	Element	Instruction
Site Area Overlap Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Area Overlap Table	Area Type Name	Typically, the Area Types needed are under the National choice list. Open a new row for each Area Type. In order to make pedon description reports look good, here are the Area Types you need to include: County or Parish, MLRA, Non-MLRA Soil Survey Area, Physiographic Division, Physiographic Province, Physiographic Section, State or Territory, and USGS 7.5 Minute Quadrangles. Occasionally you will see a Military Reservation or Indian Reservation. These are all choices from the National choice list. Press F8 to open a new line.
Site Area Overlap Table	Area Symbol	When you enter a valid symbol here, the Area Name populates automatically. The choice list you see will be specific to the Area Type listed for that row. Quite often, you will be better off populating the Area Name field first, as some of the symbols have no cognitive meaning.
Site Area Overlap Table	Area Name	Entering an Area Name automatically populates the Area Symbol field. This will be useful for entering USGS 7.5 minute quadrangles. The items brought in to a choice list will be specific for the Area Type.
Site Area Overlap Table	Rec ID	An internal, non-editable tracking number.

Site Associated Soils Table

This allows the associated soils to be recorded.

Table	Element	Instruction
Site Associated Soils	Seq	Entries are not needed.
Site Associated Soils	Associated Soil	Name of a soil (series or other identifier) that is associated with the soil being described.
Site Associated Soils	Rec ID	An internal number.

Site Geomorphic Description Table

The geomorphic features found at the site are listed in this table.

Table	Element	Instruction
Site Geomorphic Description Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Geomorphic Description Table	Feature Type	Choose Anthropogenic Feature, Landform, Landscape, or Microfeature off of the choice list as appropriate. Two or three lines will be needed to adequately describe the site. A landform and landscape line will be needed. A microfeature line or Anthropogenic line may be needed. A landscape has a broader scope than a landform. A landform is bigger than a microfeature. Anthropogenic features seem likely to be at the same level as a landform.
Site Geomorphic Description Table	Feature Name	The name for the geomorphic feature, such as drumlin or esker. You must enter a kind of feature (landform, landscape) in the Feature Type column before you can enter a name (drumlin, esker) in this column. Both columns are required to identify a geomorphic feature.

Table	Element	Instruction
Site Geomorphic Description Table	Feature Modifier	Specify term(s) used in association with geomorphic features to further define, clarify, and describe the setting of a soil in the landscape. The terms may, for example, describe relative position, mode of formation, slope, or geologic time of origin.
Site Geomorphic Description Table	Feature ID	A row ID assigned by a user to identify a particular row in this table.
Site Geomorphic Description Table	Exists on Feature ID	An integer referring to a sequence number in the same table, intended to indicate a relationship between two or more rows in the table. If you wanted to describe a site that was in a sinkhole on a valley floor, then the valley floor would be Feature ID 2, the sinkhole would be Feature ID 1, and in the Exists on Feature ID column of the sinkhole, you would put a 2 to show that the sinkhole exists on the valley floor.
Site Geomorphic Description Table	Rec ID	An internal, non-editable tracking number.

Site Parent Material Table

This table allows you to specify the parent material(s) of a pedon at a site.

Table	Element	Instruction
Site Parent Material Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Parent Material Table	Vertical Order	The sequence in which the parent material occurs, when more than one parent material exists for one soil profile. If only one parent material occurs for a soil, i.e. no lithologic discontinuities, no entry is required.

Table	Element	Instruction
Site Parent Material Table	Textural Modifier	General description of the texture of the parent material. Class limits correspond to those of textural groupings defined in the Soil Survey Manual and family particle-size classes in Soil Taxonomy. Select a texture that fits from the choice list.
Site Parent Material Table	General Modifier	Specify term(s) used to further describe the nature of the parent material for a given soil.
Site Parent Material Table	Kind	A term describing the general physical, chemical and mineralogical composition of the material, mineral or organic, from which the soil develops. Mode of deposition and/or weathering may be implied or implicit. Select from the choice list.
Site Parent Material Table	Origin	The type of bedrock from which the parent material was derived. Select from the choice list.
Site Parent Material Table	Weathering	Degree of parent material weathering. Select the weathering from the choice list.
Site Parent Material Table	Rec ID	An internal, non-editable tracking number.

Site Text Table

This table allows documentation of the Site.

Table	Element	Instruction
Site Text Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Text Table	Date	The date this text record was added to the database or other date appropriate to this text. NASIS automatically enters the date when this record is added to the database. You can change the date if necessary. Enter the date in mm/dd/yyyy format.

Table	Element	Instruction
Site Text Table	Author	Name of the person who entered, or is responsible for, a particular record. This should probably be a full name and not initials.
Site Text Table	Kind	A text entry is identified by its kind, category, and subcategory. Kind is the highest division of classification. "Correlation notes" and "Nontechnical description" are two kinds of text entries. Select the best fit for "kind" from the choice list.
Site Text Table	Category	A text entry is identified by its kind, category, and subcategory. Category is a subdivision of kind. "Agr" and "Soi" are two categories for the text kind "Nontechnical Description". There is no choice list for "category". You can leave this field blank or populate it with something that makes sense for you. MO13 does not at present have an approved list for category.
Site Text Table	Subcategory	A text entry is identified by its kind, category, and subcategory. Subcategory is a subdivision of category. There is no choice list for "subcategory". You can leave this field blank or populate it with something that makes sense for you. MO13 does not at present have an approved list for subcategory.
Site Text Table	Text	Zoom open the text editor and enter the relevant information.
Site Text Table	Rec ID	An internal, non-editable tracking number.

Site Observation Table

The Site Observation Table holds information about the surface of the site, dealing mainly with ponding and microrelief. This table also provides the linkage between the site and the temporal observations as well as the pedon. Notice that the Site Observation Table carries the time stamp (date) for the observations. Each new visit to a site requires a new record in this table.

Table	Element	Instruction
Site Observation	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Observation	Observation Date	The date on which this particular site was observed, described, or sampled, expressed as month, day, year -- mm/dd/yyyy.
Site Observation	Observation Date Kind	Indicates whether the date associated with a site observation is the actual date of observation or the date the data was entered.
Site Observation	Air Photo ID	Identification (number) of the photograph where the site is located.
Site Observation	Surface Water Kind	The type (source) of water observed on the soil surface. Select none, ponded, or flooded, as appropriate, from the choice list.
Site Observation	Surface Water Depth	The observed depth of water on the soil surface, in centimeters. This can be moving water or still water.
Site Observation	Microrelief Kind	Slight variations in the height of a land surface that are too small to delineate on a topographic or soils map at commonly used scales (1:24000, 1:15840). Describe where on the microrelief the site is located. Select microrelief high or microrelief low from the choice list.
Site Observation	Microrelief Elevation	Enter the elevation difference between the high and low in meters.
Site Observation	Microrelief Pattern	Select the appropriate pattern from the choice list.
Site Observation	Yield Study ID	Enter a unique identifier for a yield study at this site, if any.
Site Observation	Rec ID	An internal, non-editable tracking number.

Site Soil Moisture Table

Use this table to record soil moisture profile observations at a site. Note that although this is a temporal, or time dependent, observation, the date is not recorded here. The date is recorded in the Site Observation Table. If more than one observation of soil moisture is taken, each requires a new row in the Site Observation Table.

Table	Element	Instruction
Site Soil Moisture	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Soil Moisture	Top Depth	The distance from the top of the soil to the upper boundary of the moisture layer, in centimeters.
Site Soil Moisture	Bottom Depth	The distance from the top of the soil to the lower boundary of the moisture layer, in centimeters.
Site Soil Moisture	Observed Moisture State	The relative moisture state of the soil layer at the time of observation. Select the appropriate moisture status from the choice list.
Site Soil Moisture	Vol Moisture %	If you have real, measured data, please include it here.
Site Soil Moisture	Moisture Tension	If you have real, measured soil moisture tension data for a site, enter it here.
Site Soil Moisture	Rec ID	An internal, non-editable tracking number.

Site Erosion Accelerated Table

Table	Element	Instruction
Site Erosion Accelerated Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Erosion Accelerated Table	Kind	Select the kind of erosion that is operative at the time of observation from the choice list.
Site Erosion Accelerated Table	Rec ID	An internal, non-editable tracking number.

Site Soil Temperature Table

If measurements of soil temperature are obtained, here is where they can be recorded.

Table	Element	Instruction
Site Soil Temperature Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Soil Temperature Table	Depth	The measured depth, in centimeters, from the soil surface to the point at which the soil temperature reading was recorded.
Site Soil Temperature Table	Temperature	Soil temperature reading, in degrees Celsius, at a specified depth. Actual, reliable measurements only.
Site Soil Temperature Table	Rec ID	An internal, non-editable tracking number.

Site Existing Vegetation Table

The Site Existing Plants table lists the plants, either rangeland or forestland, that were found at this site at the time of observation.

Table	Element	Instruction
Site Existing Vegetation Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Existing Vegetation Table	Local Plant Symbol	If you know the symbol for a plant, you may use it. Remember, they are all upper case. When a Plant Symbol is selected, Plant Name fills automatically.
Site Existing Vegetation Table	Local Plant Name	Type in or search for the plant name. You can use wildcards in your search (*spruce*) to narrow down the choices. When a Plant Name is selected, Plant Symbol fills automatically. Ten species are probably enough.
Site Existing Vegetation Table	Rec ID	An internal, non-editable tracking number.

Site Observation Text Table

The Site Observation Text Table is used to record additional information about Site Observations. The Site Observation Text table contains notes and narrative descriptions that apply to the whole site at the time of observation. Site Observation text is typically used to document additional features observed for a site, but no data elements exist for these features.

Table	Element	Instruction
Site Observation Text Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Observation Text Table	Date	Today's date is populated automatically. This can be changed to reflect the date that the observation was made.
Site Observation Text Table	Author	Enter the name of the note-writer.
Site Observation Text Table	Kind	Select the best choice from the choice list.
Site Observation Text Table	Category	No choice list. Use "Site Soil Moisture", "Site Soil Temperature", "Site Erosion Accelerated", "Site Existing Vegetation", and "Other" for Categories.
Site Observation Text Table	Subcategory	No choice list. Enter something that makes sense to you or leave null.
Site Observation Text Table	Text...	Zoom open the text editor and enter any relevant information.
Site Observation Text Table	Rec ID	An internal, non-editable tracking number.

THE PEDON OBJECT

The Pedon Object contains the collection of tables that hold the data related to an individual pedon.

Pedon Table

Table	Element	Instruction
Pedon Table	User Pedon ID	A unique site identifier for the pedon being described. It is made up of the concatenation of the last two digits of the calendar year, alpha state FIPS code, numeric FIPS code of the soil survey area, and a three-digit consecutive pedon number for the calendar year. An alphanumeric subunit may follow. For example, "00PA015003".
Pedon Table	Pedon Record Origin	This field typically tells where a pedon comes from, if it was converted from the PEDON program or if someone entered it through NASIS. This column is intended to assist with identifying the originating location of a particular pedon description record in the database, especially in those instances when a description may get entered more than once. This can happen during conversion of existing PDP data to NASIS. A description may get converted from a field location and also from NSSL data. Descriptions entered directly through the NASIS screens, will by default be designated as "NASIS". Descriptions converted from existing data, will get some local designation. Because you wanted to know.
Pedon Table	Describer's Name	Enter the name or names of the describers. This field should always be populated.

Table	Element	Instruction
Pedon Table	Site ID	The Site ID and User Site ID columns work together. They are used to link this pedon to a particular Site stored in the Site table. The site information must be entered in the Site table before an entry can be made here. The same choice list appears for either column. When you enter data in either column, NASIS automatically enters the corresponding data in the other column.
Pedon Table	User Site ID	The User Site ID is the more easily remembered link between the Site and the Pedon. When a User Site ID is placed in this field, the Site ID populates automatically. The choice you make for User Site ID will determine the contents of the choice list for the next three columns.
Pedon Table	Site Observation ID	The Site Observation ID, Observation Date, and Observation Date Kind columns work together. They are used to link this pedon to a particular Site Observation record stored in the Site Observation table. A multitude of Site Observations can be linked to a Site. They can be temperature, moisture, vegetation, or pedon observations. The same choice list appears for either column. When you enter data in any of the columns, NASIS automatically enters the corresponding data in the other columns.
Pedon Table	Observation Date	From the choice list, select the date that you described the pedon. When an Observation Date is selected, Site Observation ID, Observation Date, and Observation Date Kind will populate automatically.
Pedon Table	Observation Date Kind	This field populates automatically when Observation Date is entered.
Pedon Table	User Transect ID	Enter the User Transect Id, or search and choose from the choice list, of the transect to which this pedon should be linked.

Table	Element	Instruction
Pedon Table	Transect Author	Populates automatically when User Transect Id is inserted. Or, you can leave User Transect Id blank, populate Transect Author first, and select User Transect Id from the list of transects that you have run.
Pedon Table	Transect ID	Populates at the same time as User Transect Id and Transect Author.
Pedon Table	Transect Stop Number	Enter the stop number that this pedon represents.
Pedon Table	Transect Interval	Enter the distance between points on your transect.
Pedon Table	Soil Name As Sampled	Name of a soil that was expected at the site. Be sure to populate this field, because it is a handy one to query for.
Pedon Table	Correlated Soil Name	This column can be left blank unless you change the name of the pedon as a result of a correlation decision.
Pedon Table	Taxon Kind	Select the proper taxon kind from the choice list. This is generally "series". Remember that miscellaneous area does not mean "everything else".
Pedon Table	Pedon Type	Select from the choice list. This field shows how the pedon described relates to the target classification or map unit.
Pedon Table	Pedon Purpose	Select from the choice list the reason this pedon was described. Differing uses generally mean differing intensities of description. A field note is less rigorous than a full pedon description, for example.
Pedon Table	Pedon #	The consecutive number of the pedon sampled in a particular survey area in a particular year. It is used as part of the site id.
Pedon Table	Exposure Size	The approximate lateral extent of the soil exposure observed and/or sampled. Measured in centimeters or meters.
Pedon Table	Exposure UOM	The unit of measure associated with the relative exposure size column. Select meters or centimeters from the choice list.

Table	Element	Instruction
Pedon Table	Cover Kind 1	The natural or artificial material that is observed to cover a portion of the earth's surface. It is determined (at least conceptually) as a vertical projection downward. Level one of a hierarchical system. Choose the appropriate cover kind from the choice list
Pedon Table	Cover Kind 2	The description of ground cover based on a set of vegetal and non-vegetal classes. It is determined (at least conceptually) as a vertical projection downward. Level two of a hierarchical system. This is a more specific cover kind than cover kind 1. Select appropriate cover from the choice list.
Pedon Table	Erosion Class	Select the appropriate class of accelerated erosion from the choice list. see the NSSH for more information.
Pedon Table	Taxonomic Class	This is a calculated field. Enter the formative elements and then use Options => Calculate data elements => Pedon Taxonomic Classification.
Pedon Table	Order	Select the correct order from the choice list.
Pedon Table	Suborder	Select the correct suborder from the choice list.
Pedon Table	Great Group	Select the correct Great Group from the choice list.
Pedon Table	Subgroup	Select the correct Subgroup from the choice list.
Pedon Table	Particle Size	Select the correct particle size class from the choice list.
Pedon Table	Particle Size Mod	Taxonomic family criteria that is used to indicate the presence of more than two strongly contrasting classes in the particle size control section. Select "aniso" or "not used" from the choice list.
Pedon Table	CEC Activity Cl	Select the CEC Activity Class from the choice list.

Table	Element	Instruction
Pedon Table	Reaction	Indicates the presence or absence of carbonates and the reaction. They are treated together because of their intimate relationship, and are used to indicate family differentiae. Select the proper class from the choice list.
Pedon Table	Temp Class	Select the taxonomic temperature regime from the choice list. It is null when the temperature class is embedded in the higher levels of the taxonomic class.
Pedon Table	Moist Subclass	Soil moisture subclasses are taxonomic subgroup criteria, whether included or not in the name of the subgroup. The definition of each subclass is dependent upon the specific taxonomic great group to which it is attached. This field is useful for querying the database for moisture class. Select from the choice list.
Pedon Table	Temp Regime	The taxonomic temperature regime. This field is useful for querying for temperature regime. Select from the choice list.
Pedon Table	Keys to Soil Taxonomy Edition Used	Select the appropriate edition of the Keys from the choice list.
Pedon Table	PSC Top Depth	Enter the depth to the particle size control section in centimeters.
Pedon Table	PSC Bottom Depth	Enter the depth to the bottom of the particle size control section in centimeters.
Pedon Table	Current Weather	Select from the choice list the option that best describes the weather at the time the pedon was described and/or sampled.
Pedon Table	Current Air Temp	Enter the ambient air temperature at the time the pedon was described and/or sampled, in degrees Celsius.
Pedon Table	Lab Source ID	Soil characterization laboratory identification. Which lab did the analyses?
Pedon Table	Lab Pedon #	Enter the laboratory sample number for the pedon. Constructed by two digit fiscal year * 100000 + sequential pedon number in that year.

Table	Element	Instruction
Pedon Table	Pedon Site	The NASIS site where the pedon was created. The default is the NASIS site on which you are working. In the future, you will be able to work on multiple NASIS sites, if needed.
Pedon Table	Group	The group that owns and can edit the data for this object, in this case, pedon.
Pedon Table	User	The last person who edited this pedon.
Pedon Table	Last Updated	The last date that someone changed this object, in this case, pedon.
Pedon Table	Rec ID	An internal, non-editable tracking number.

Pedon Diagnostic Features Table

Table	Element	Instruction
Pedon Diagnostic Features Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Diagnostic Features Table	Kind	Select from the choice list the kind(s) of diagnostic feature(s) present in the pedon. Open a new row for each feature.
Pedon Diagnostic Features Table	Top Depth	Enter the depth in centimeters from the soil surface to the top of the diagnostic feature.
Pedon Diagnostic Features Table	Bottom Depth	Enter the depth in centimeters to the bottom of the diagnostic feature.
Pedon Diagnostic Features Table	Thickness	Enter the high, low, and representative thickness of the feature if you have the data to do so..
Pedon Diagnostic Features Table	Rec ID	An internal, non-editable tracking number.

Pedon Field Measured Property Table

The Pedon Field Measured Property table contains the results of field or office conducted soil property analyses that apply to the profile as a whole, that cannot

be stored elsewhere in the database as separate data elements in other tables. Analyses that apply to specific horizons are entered into the Pedon Horizon Field Measured Property table.

Table	Element	Instruction
Pedon Field Measured Property Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Field Measured Property Table	Name	Enter the name of the measured property that you wish to record. There is no choice list.
Pedon Field Measured Property Table	Value	Enter the measured value.
Pedon Field Measured Property Table	Unit of Measure	Enter the unit of measure. There is no choice list.
Pedon Field Measured Property Table	Rec ID	An internal, non-editable tracking number.

Pedon Restrictions Table

Table	Element	Instruction
Pedon Restrictions Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Restrictions Table	Kind	Select the restriction kind from the choice list. Open a new line for each type of restriction.
Pedon Restrictions Table	Hardness	Select the best description of the hardness or degree of cementation from the choice list.
Pedon Restrictions Table	Top Depth	Enter the depth from the soil surface to the top of the restriction, in centimeters.

Table	Element	Instruction
Pedon Restrictions Table	Bottom Depth	Enter the depth from the soil surface to the bottom of the restriction, in centimeters.
Pedon Restrictions Table	Thickness	Enter a Low, RV and High for the thickness of the restricting layer if enough data is available to meaningfully do so.
Pedon Restrictions Table	Rec ID	An internal, non-editable tracking number.

Pedon Surface Fragments Table

Table	Element	Instruction
Pedon Surface Fragments Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Surface Fragments Table	Cover %	Enter a measured rock fragment coverage percentage. Each kind and size of rock fragment has its own coverage percentage.
Pedon Surface Fragments Table	Spacing	Average distance, in meters, between surface stones and/or boulders, measured between edges.
Pedon Surface Fragments Table	Kind	The lithology/composition of the surface fragments 2mm or larger. Select the best fit from the choice list.
Pedon Surface Fragments Table	Size	The size classes are 2-75mm, 75-250mm, 250-610mm and 600-3000mm for non-flat fragments. For flat fragments, the classes are 2-150mm, 150-380mm, 380-600mm and 600-3000mm. Use the RV value to show any skewing of the size data.
Pedon Surface Fragments Table	Shape	Select flat or nonflat as the general shape of each class of surface fragment.

Table	Element	Instruction
Pedon Surface Fragments Table	Roundness	Select the degree of rounding that best fits each class of surface fragment.
Pedon Surface Fragments Table	Hardness	Select the hardness that best fits each class of surface fragment from the choice list.
Pedon Surface Fragments Table	Rec ID	An internal, non-editable tracking number.

Pedon Taxonomic Family Mineralogy Table

Table	Element	Instruction
Pedon Taxonomic Family Mineralogy Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Taxonomic Family Mineralogy Table	Mineralogy	Select the family mineralogy class for the pedon from the choice list.
Pedon Taxonomic Family Mineralogy Table	Rec ID	An internal, non-editable tracking number.

Pedon Taxonomic Family Other Criteria Table

Table	Element	Instruction
Pedon Taxonomic Family Other Criteria Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.

Table	Element	Instruction
Pedon Taxonomic Family Other Criteria Table	Family Other	Soil characteristics other than the defined family characteristics of particle-size classes, mineralogy classes, calcareous and reaction classes, and soil temperature classes. These characteristics include depth of soil, consistence, moisture equivalent, slope of soil, and permanent cracks. Select from the choice list if appropriate, or leave this table null.
Pedon Taxonomic Family Other Criteria Table	Rec ID	An internal, non-editable tracking number.

Pedon Taxonomic Moisture Class

The Pedon Taxonomic Moisture Class table provides clear identification of the intended taxonomic moisture class, even though moisture class is implied at a higher taxonomic level. The class or classes listed in this table describe the representative situation for the pedon.

Table	Element	Instruction
Pedon Taxonomic Moisture Class	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Taxonomic Moisture Class	Moisture Class	Soil moisture classes are unique to the family classification, though not included specifically in the name, this is a mechanism to provide clear identification of the actual moisture regime. Select the proper moisture regime for the pedon from the choice list.
Pedon Taxonomic Moisture Class	Rec ID	An internal, non-editable tracking number.

Pedon Text Table

The Pedon Text table contains notes and narrative descriptions for this pedon as a whole that can not be described using existing data elements in other tables. In many cases, the table will be empty. Notes that apply to a specific soil horizon should be entered in the Pedon Horizon Text table.

Table	Element	Instruction
Pedon Text Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Text Table	Date	NASIS automatically enters the date the note was created when the row in the table is opened. This may be changed to the appropriate date for the note. Enter in mm/dd/yyyy format.
Pedon Text Table	Author	Enter the name of the note writer.
Pedon Text Table	Kind	Select the note kind from the choice list.
Pedon Text Table	Category	There is no choice list for this element. You can leave it blank or enter something meaningful to you.
Pedon Text Table	Subcategory	There is no choice list for this element. You can leave it blank or enter something meaningful to you.
Pedon Text Table	Text	Zoom open the text editor and enter the relevant information.
Pedon Text Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Table

The Pedon Horizon table lists the horizons for each pedon. If the horizon thickness is greater than zero (low=5, RV=8, high=12), the horizon exists throughout the exposure of the profile. If the horizon thickness includes zero (low=0, RV=1, high=3), the horizon may exist in some places, but may not exist in other places. Horizons that have two distinct parts, such as E/B or E&Bt, are recorded twice: Once for the characteristics of the first part; and again on another row, using the same depths and thicknesses, for the characteristics of the other part.

Table	Element	Instruction
Pedon Horizon Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Table	Observation Method	Select the way the profile was observed from the choice list. Consider more than one option may be needed in a profile, since you may dig to 40 inches (100 cm) and then auger to 60 inches (152 cm).
Pedon Horizon Table	Designation	This is a calculated field, so you really should not populate it manually.
Pedon Horizon Table	Disc	Discontinuity in the profile. Leave null if no discontinuities are observed.
Pedon Horizon Table	Master	The master horizon designation, O, A, B, C, or R. Select from choice list.
Pedon Horizon Table	Prime	Use the prime in the case of a bisequum.
Pedon Horizon Table	Sub	Vertical Subdivision of a major horizon. This is the “2” of the Bt2, for example. So, there is no choice list. Just enter a small number, if needed. The pedon horizon designation suffix (the “t” of the Bt2) is in its own table.
Pedon Horizon Table	Top Depth	Enter the depth to the top of the horizon from the soil surface, in centimeters.
Pedon Horizon Table	Bottom Depth	Enter the depth to the bottom of the horizon from the soil surface, in centimeters.
Pedon Horizon Table	Thickness	Enter a Low, RV and High if you have an exposure that is wide enough to get this information.
Pedon Horizon Table	Tex Mod & Class	This is a calculated field made up of a concatenation of texture modifier and texture class. Texture modifier and Texture class are in their own tables, since more than one can be present in a horizon.
Pedon Horizon Table	Stratified?	Select “yes” if the horizon is stratified.

Table	Element	Instruction
Pedon Horizon Table	Est Clay %	Enter the estimate the clay percentage while describing the horizon.
Pedon Horizon Table	Est Silt %	Estimate the silt percentage while describing the horizon and enter that number here.
Pedon Horizon Table	Est Sand %	Estimate the sand percentage while describing the horizon and enter that number here
Pedon Horizon Table	Variegated Colors?	Enter "yes" if the horizon colors are variegated.
Pedon Horizon Table	Rubbed Fiber %	The proportion of the organic material in a sample that is composed of fibric material, reported as a percent by volume of the less than 2 mm fraction.
Pedon Horizon Table	Unrubbed Fiber %	The proportion of the organic material in a sample composed of fibric and hemic material, reported as a percent by volume of the less than 2 mm fraction.
Pedon Horizon Table	Observed Moisture State	This is the moisture status of the horizon at the time of describing the pedon in the field. Select from the choice list. Water table observation data is to be stored in the Site Soil Moisture table.
Pedon Horizon Table	Rupture Moist	The rupture resistance of a block-shaped specimen of 25 to 30 mm size and moist water state. Better known as moist consistence. Select from choice list.
Pedon Horizon Table	Rupture Dry	The rupture resistance of a block-shaped specimen of 25 to 30 mm size and dry water state. Better known as dry consistence. If the soil was dry when described, include this data. Select from the choice list.
Pedon Horizon Table	Rupture Cement	The rupture resistance of a block-like specimen of 25 to 30 mm size that has been air dried and then submerged in water. Select from the choice list.
Pedon Horizon Table	Rupture Plate	The rupture resistance of an air dry plate-shaped specimen of specified size. If the soil is not platy, leave null. Select from the choice list.

Table	Element	Instruction
Pedon Horizon Table	Manner of Failure	The manner in which soil specimens fail under increasing force. Select the best fit from the choice list.
Pedon Horizon Table	Stickiness	Select the stickiness of the horizon from the choice list.
Pedon Horizon Table	Plasticity	Select the plasticity of the horizon from the choice list.
Pedon Horizon Table	Tough Class	The relative force necessary to deform a puddled soil mass near the plastic limit. Look at the descriptions on the choice list. Select the best fit from the choice list.
Pedon Horizon Table	Penetration Resistance	The capacity of an undisturbed soil mass to resist penetration by a rigid object. Select from the choice list if you have performed penetrometer readings on the horizon.
Pedon Horizon Table	Penetration Orientation	The orientation of the penetrometer rod when inserted into the soil. Select horizontal or vertical if penetrometer readings were made.
Pedon Horizon Table	Ksat	The mean Ksat for the horizon measured in the field. It should be based on at least 3 measurements. The number of replicate measurements used in calculating the mean, and the standard deviation should also be noted.
Pedon Horizon Table	Ksat Std Dev	The statistical standard deviation of the calculated mean Ksat value, using the individual measurements taken for a particular soil horizon.
Pedon Horizon Table	Ksat Rep #	The number measurements made, at the same time and location used to reduce sampling error. These individual measurements are used to calculate the mean saturated hydraulic conductivity for the soil horizon.
Pedon Horizon Table	Permeability Class	Select estimated class from the choice list.
Pedon Horizon Table	Field pH	Enter the pH reading obtained by whatever field method used.
Pedon Horizon Table	pH Method	Select the method used to obtain the pH value from the choice list.

Table	Element	Instruction
Pedon Horizon Table	Efferv Class	General terms used to describe the degree of effervescence of soil material when tested for carbonates in the field. Select from the choice list.
Pedon Horizon Table	Efferv Loc - obsolete	Effervescence location is now an obsolete descriptor, as effervescence by definition applies only to the soil matrix (see Field Book for Describing and Sampling Soils, 1998). This column is included for the purpose of storing data converted from the PDP databases only. It is not intended to be populated for new descriptions. All choices are coded as obsolete. Do not populate this field.
Pedon Horizon Table	Efferv Agent	Select the chemical reagent used to test for carbonates in the field from the choice list.
Pedon Horizon Table	Alpha Dipyr Reaction	If you tested a wet soil for the presence of iron by using this reagent, select negative or positive off the choice list as correct .
Pedon Horizon Table	EC	The electrolytic conductivity of an extract from saturated soil paste. If you measured EC, enter the reading here in millimhos per centimeter.
Pedon Horizon Table	EC Method	If you measured EC, select the method that you used from the choice list.
Pedon Horizon Table	SAR	SAR is rarely measured in the East. Leave this field null.
Pedon Horizon Table	Excav Diff	An estimation of the difficulty of working an excavation into soil layers, horizons, pedons, or geologic layers. In most instances, excavation difficulty is related to and controlled by a water state. Choose the class from the choice list.
Pedon Horizon Table	Boundary Distinctness	Choose the boundary distinctness from the choice list.
Pedon Horizon Table	Boundary Topography	Choose the boundary topography from the choice list.
Pedon Horizon Table	Total Volume %	The total volume percentage of the horizon in the pedon. Populate if relevant, with a low, RV, and high value.

Table	Element	Instruction
Pedon Horizon Table	Lateral Area %	Percentage of horizontal cross sectional area of the pedon occupied by a horizon. Populate if relevant, with a low, RV, and high value.
Pedon Horizon Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Cementing Agent

The Pedon Horizon Cementing Agent table describes the chemical compound(s) that act as binding agents in cemented horizons.

Table	Element	Instruction
Pedon Horizon Cementing Agent	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Cementing Agent	Cementing Agent	Any substance that bonds soil particles into hard, brittle masses that persist even when wet. Select a cementing agent from the choice list if the horizon is cemented.
Pedon Horizon Cementing Agent	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Color Table

The Pedon Horizon Color Table describes the Munsell color of the soil matrix of each horizon described. Colors of other features are recorded in other tables used to describe those features.

Table	Element	Instruction
Pedon Horizon Color Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Color Table	Color %	The area of the observed face occupied by a particular color.

Table	Element	Instruction
Pedon Horizon Color Table	Phys State	The physical condition or location of the soil sample used to determine soil color. Select from the choice list.
Pedon Horizon Color Table	Hue	Select the hue from the choice list.
Pedon Horizon Color Table	Value	Select a value from the choice list.
Pedon Horizon Color Table	Chroma	Select a chroma from the choice list.
Pedon Horizon Color Table	Moist State	Select moist or dry from the choice list as appropriate.
Pedon Horizon Color Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Designation Suffix Table

The Horizon Designation Suffix table contains the suffixes, one per row, for each horizon. For example, the "h" and "s" of a Bhs horizon appear as two rows in this table.

Table	Element	Instruction
Pedon Horizon Designation Suffix Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Designation Suffix Table	Suffix	Letter suffixes are used to designate subordinate distinctions within master horizons, and layers using lowercase letters. Select from the choice list.
Pedon Horizon Designation Suffix Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Concentrations Table

The Pedon Horizon Concentration table describes soil features that form by accumulation of material during pedogenesis that are identified in each soil profile horizon at the time of description. They may be chemical or biological in nature.

Multiple rows may be entered to describe different combinations of size, composition, shape, hardness, etc.

Table	Element	Instruction
Pedon Horizon Concentrations Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Concentrations Table	Percent	The amount or abundance of segregated material. The percentage of the horizon occupied by the features.
Pedon Horizon Concentrations Table	Size	The size of the features. Select from the choice list. If you highlight a size on the choice list and then press "Description" a little box opens up to tell you how big the size is.
Pedon Horizon Concentrations Table	Contrast	The contrast with the matrix. The "Description" button tells what each class means.
Pedon Horizon Concentrations Table	Hue	Select hue from the choice list.
Pedon Horizon Concentrations Table	Value	Select value from the choice list.
Pedon Horizon Concentrations Table	Chroma	Select chroma from the choice list.
Pedon Horizon Concentrations Table	Moist State	Select moist or dry from the choice list.
Pedon Horizon Concentrations Table	Hardness	Select a hardness from the choice list.
Pedon Horizon Concentrations Table	Shape	Look through the choice list and select a shape that fits best.
Pedon Horizon Concentrations Table	Kind	Select a kind of concentration from the choice list.

Table	Element	Instruction
Pedon Horizon Concentrations Table	Location	Select the location that describes where the concentrations are from the choice list.
Pedon Horizon Concentrations Table	Boundary	Select the sharpness of the edges of the concentration from the choice list.
Pedon Horizon Concentrations Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Features Table

The Pedon Horizon Features table describes special soil features found in a particular soil horizon at the time of description. Leave the table blank if none exist.

Table	Element	Instruction
Pedon Horizon Features Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Features Table	Kind	Select a kind of special feature from the choice list. Leave blank if none exist.
Pedon Horizon Features Table	Total Volume %	Enter a Low, RV, and High value for the volume of the feature.
Pedon Horizon Features Table	Lateral Area %	Plan view area of the feature. Enter a Low, RV, and High value.
Pedon Horizon Features Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Field Measured Property Table

The Pedon Horizon Field Measured Property table contains the results of field or office conducted soil property analyses that apply to an individual horizon, that cannot be stored elsewhere in the database as separate data elements in other tables. Analyses that apply to the profile as a whole are entered into the Pedon Field Measured Property table. Leave the table empty if none exist.

Table	Element	Instruction
Pedon Horizon Field Measured Property Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Field Measured Property Table	Name	The name of the test. There is no choice list.
Pedon Horizon Field Measured Property Table	Value	The numerical value of the result obtained
Pedon Horizon Field Measured Property Table	Unit of Measure	The unit of measure of the result.
Pedon Horizon Field Measured Property Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Fragments Table

The Horizon Fragments table lists the mineral and organic fragments included in the horizon shown in the Pedon Horizon table. The Volume % in a row, is the estimated average for the kind and size of fragment identified in that row.

Table	Element	Instruction
Pedon Horizon Fragments Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Fragments Table	Vol %	Enter the estimated volume percent of rock fragments for the horizon.
Pedon Horizon Fragments Table	Kind	The lithology/composition of the horizon fragments 2mm or larger. Select the best fit from the choice list. Each kind goes on a separate line.

Table	Element	Instruction
Pedon Horizon Fragments Table	Size	The size classes are 2-75mm, 75-250mm, 250-610mm and 600-3000mm for non-flat fragments. For flat fragments, the classes are 2-150mm, 150-380mm, 380-600mm and 600-3000mm. These values go in the low and high fields. Use the RV value to show any skewing of the size data.
Pedon Horizon Fragments Table	Shape	This is a general shape. Select flat or nonflat from the choice list.
Pedon Horizon Fragments Table	Roundness	Select the average degree of roundness from the choice list.
Pedon Horizon Fragments Table	Hardness	Select the degree of hardness from the choice list. Generally, this will be strongly, very strongly, or indurated.
Pedon Horizon Fragments Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Mottles Table

The Pedon Horizon Mottles table describes those color patterns found in soil horizons that are NOT associated with concentrations, redoximorphic features, or ped and void coatings. Mottles are now defined as being non-wetness related color separations. They are generally lithochromic or lithomorphoc in nature.

Table	Element	Instruction
Pedon Horizon Mottles Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Mottles Table	Percent	The percentage of the horizon occupied by the color variegation.
Pedon Horizon Mottles Table	Size	Select the size from the choice list. The "Description" button on the Choice List shows what the size classes mean.

Table	Element	Instruction
Pedon Horizon Mottles Table	Contrast	The contrast with the matrix. The "Description" button tells what each class means.
Pedon Horizon Mottles Table	Hue	Enter the color hue of the mottle. If the mottle has several hues, open a new line for each. In other words, open a new line for each color.
Pedon Horizon Mottles Table	Value	Enter the color value of the mottle. If the mottle has several values, open a new line for each.
Pedon Horizon Mottles Table	Chroma	Enter the color chroma of the mottle. If the mottle has several chromas, open a new line for each.
Pedon Horizon Mottles Table	Shape	Select the mottle shape from the choice list. Read the description of each choice, if needed.
Pedon Horizon Mottles Table	Moist State	Select moist or dry as is appropriate.
Pedon Horizon Mottles Table	Location - obsolete	The location of the mottle being described within the soil horizon. Do not populate this element. It has been retained only so that no data was lost in the PEDON to NASIS conversion.
Pedon Horizon Mottles Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Ped Void Surface Features Table

The Pedon Horizon Ped Void Surface Feature table describes those features found on the surface of peds or voids in the respective soil horizon.

Table	Element	Instruction
Pedon Horizon Ped Void Surface Features Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.

Table	Element	Instruction
Pedon Horizon Ped Void Surface Features Table	Percent	Percentage of the horizon occupied by the feature.
Pedon Horizon Ped Void Surface Features Table	Distinctness	Select faint, distinct, or prominent from the choice list. The description tells what each class means
Pedon Horizon Ped Void Surface Features Table	Continuity	Select the continuity from the choice list. The description tells what each means.
Pedon Horizon Ped Void Surface Features Table	Hue	Enter the color hue of the feature. If the feature has several hues, open a new line for each. In other words, open a new line for each color.
Pedon Horizon Ped Void Surface Features Table	Value	Enter the color value of the feature. If the feature has several values, open a new line for each.
Pedon Horizon Ped Void Surface Features Table	Chroma	Enter the color chroma of the feature. If the feature has several chromas, open a new line for each.
Pedon Horizon Ped Void Surface Features Table	Moist State	Select moist or dry as is appropriate.
Pedon Horizon Ped Void Surface Features Table	Kind	Select the kind of feature from the choice list. No descriptions are available for the kind of feature.
Pedon Horizon Ped Void Surface Features Table	Location	Select the option from the choice list which best describes where the feature occurs.
Pedon Horizon Ped Void Surface Features Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Pores Table

The Pedon Horizon Pores table lists the voids for the horizon shown above in the Pedon Horizon table. More than one row can be listed because a horizon may have more than one size or shape of void.

Table	Element	Instruction
Pedon Horizon Pores Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Pores Table	Quantity	The number of pores of a certain size in undisturbed soil.
Pedon Horizon Pores Table	Size	The average diameter of a pore. Select the size class from the choice list.
Pedon Horizon Pores Table	Continuity	Average vertical distance through which the minimum diameter of the pore exceeds 0.5mm when the soil layer is moist or wetter. Select the continuity class from the choice list
Pedon Horizon Pores Table	Shape	Select the choice that best describes the observed pore. The "Description" may help in the selection process.
Pedon Horizon Pores Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Redoximorphic Features Table

The Pedon Horizon Redoximorphic Features table describes those soil horizon features that are the result of the accumulation or depletion of minerals caused by the oxidation and/or reduction of iron and/or manganese. In other words, these are wetness features.

Table	Element	Instruction
Pedon Horizon Redoximorphic Features Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Redoximorphic Features Table	Percent	Percentage of the horizon occupied by the redoximorphic feature.

Table	Element	Instruction
Pedon Horizon Redoximorphic Features Table	Size	Select the size class from the choice list. See the description of each class for an explanation.
Pedon Horizon Redoximorphic Features Table	Contrast	Select faint, distinct or prominent from the choice list. See the description of each class for an explanation.
Pedon Horizon Redoximorphic Features Table	Hue	Enter the color hue of the feature. If the feature has several hues, open a new line for each. In other words, open a new line for each color.
Pedon Horizon Redoximorphic Features Table	Value	Enter the color value of the feature. If the feature has several values, open a new line for each.
Pedon Horizon Redoximorphic Features Table	Chroma	Enter the color chroma of the feature. If the feature has several chromas, open a new line for each.
Pedon Horizon Redoximorphic Features Table	Moist State	Select moist or dry as is appropriate.
Pedon Horizon Redoximorphic Features Table	Hardness	The degree to which the feature resists crushing. Select the class from the choice list.
Pedon Horizon Redoximorphic Features Table	Shape	Select the shape of the redoximorphic feature from the choice list.
Pedon Horizon Redoximorphic Features Table	Kind	Select the type of feature observed from the choice list.
Pedon Horizon Redoximorphic Features Table	Location	The location of the redoximorphic feature in relation to other morphological soil properties. Select appropriate location from the choice list.
Pedon Horizon Redoximorphic Features Table	Boundary	The gradation of color between the feature and the matrix. Select the best fit from the choice list. The description defines each class.
Pedon Horizon Redoximorphic Features Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Roots Table

The Pedon Horizon Roots table describes the abundance, size and location of roots in each soil horizon.

Table	Element	Instruction
Pedon Horizon Roots Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Roots Table	Quantity	The number of the selected size of roots per unit area. Usually a square 10cm on a side.
Pedon Horizon Roots Table	Size	Select the root size from the choice list. Use the description to get the definition of the size classes.
Pedon Horizon Roots Table	Location	Choose the root location off the choice list.
Pedon Horizon Roots Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Sample Table

The Pedon Horizon Sample table describes the relationship between a soil horizon description and other types of data that may be in the database that relate to that specific horizon, i.e. laboratory analysis results.

Table	Element	Instruction
Pedon Horizon Sample Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Sample Table	Lab Sample #	Among other things, the lab sample number can also be the internal laboratory sample number for the horizon. This number is assigned by the Soil survey Lab. The number is constructed by the two digit fiscal year * 10000 + consecutive sample number in that year.
Pedon Horizon Sample Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Soil Structure Table

The Pedon Horizon Soil Structure table describes the soil structure of each horizon described. Multiple types, size and grades of structure may be described as well as their relationship to one another.

Table	Element	Instruction
Pedon Horizon Soil Structure Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Soil Structure Table	Grade	Select the grade of structure from the choice list.
Pedon Horizon Soil Structure Table	Size	Select a size from the choice list. Use the description to find the right class, if needed.
Pedon Horizon Soil Structure Table	Type	Select the major type of structure from the choice list. Use the description for an explanation of each class.
Pedon Horizon Soil Structure Table	Structure ID	Structure ID is used when one type of structure parts to another. The larger structure would have Structure ID 1, the smaller structure would have Structure ID 2. Thus, if one type of structure parts to another, two rows are needed in the Pedon Horizon Soil Structure Table table.
Pedon Horizon Soil Structure Table	Parts to Structure ID	The type of structure to which the larger structure parts. This field would have a "2" in the row for the larger structure type. This field is blank for the smaller structure, unless it too parts to still smaller structure.
Pedon Horizon Soil Structure Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Texture Table

The Horizon Texture table lists the texture, or terms in lieu of texture, for the texture modifier and class shown above in the Pedon Horizon table. Only the unmodified texture term is listed in the Pedon Horizon Texture table; modifiers are listed in the Pedon Horizon Texture Modifier table. For example, a gravelly loamy sand is shown as "GR-LS" in the Pedon Horizon table, "ls" in this table, and "gr" in the Pedon Horizon Texture Modifier table.

Table	Element	Instruction
Pedon Horizon Texture Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Texture Table	Texture	Select the fine-earth texture for the horizon from the choice list. If the horizon can have more than one texture, open a new row for each additional texture.
Pedon Horizon Texture Table	In Lieu	Substitute terms applied to materials that do not fit into a textural class because of organic matter content, size, rupture resistance, solubility, or another reason.
Pedon Horizon Texture Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Texture Modifier Table

The Pedon Horizon Texture Modifier table lists the texture modifiers for the texture shown above in the Pedon Horizon and Pedon Horizon Texture tables. For example, a gravelly loamy sand is shown as "GR-LS" in the Pedon Horizon table, "ls" in the Pedon Horizon Texture table, and "gr" in this table. If no modifier is needed, then this table is null (left empty)

Table	Element	Instruction
Pedon Horizon Texture Modifier Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Texture Modifier Table	Modifier	Select an appropriate modifier from the choice list.
Pedon Horizon Texture Modifier Table	Rec ID	An internal, non-editable tracking number.

Pedon Horizon Text Table

The Horizon Text table contains notes and narrative descriptions for each horizon. Horizon text is typically used to document additional features observed for a horizon, but no data elements exist for these features. An entry is optional. In many cases, the table is empty.

Table	Element	Instruction
Pedon Horizon Text Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Pedon Horizon Text Table	Date	Today's date will populate automatically. You can enter any date you wish. Use a mm/dd/yyyy format.
Pedon Horizon Text Table	Author	Enter the note author's full name. No one will know your initials 20 years from now.
Pedon Horizon Text Table	Kind	Select an appropriate note kind from the choice list.
Pedon Horizon Text Table	Category	Enter a category that makes sense to you or leave blank. No choice list is available.
Pedon Horizon Text Table	Subcategory	Enter a subcategory that makes sense to you or leave blank. No choice list is available.
Pedon Horizon Text Table	Text	Zoom open the text editor and enter the text. This text note is for information that has no other place in the system, for a horizon
Pedon Horizon Text Table	Rec ID	An internal, non-editable tracking number.

SITE ASSOCIATION OBJECT

The Site Association Object allows logical groupings of sites that go together. The Site Association table is used to record some natural or artificial grouping of sites. For example, a soil temperature study could be composed of a number of stations. The study is described in the Site Association table, and the individual stations are identified in the Site table. Other types of groupings may be recorded as needed by the user.

Site Association Table

Table	Element	Instruction
Site Association Table	Rec ID	NASIS automatically assigns the record ID when a new row is created and uses this number as part of an internal key to uniquely identify each record in the database. This column always has protected status and can never be edited.
Site Association Table	User Site Association ID	This field identifies a particular site association. Like User Site ID, it should be geographically or pedologically meaningful.
Site Association Table	Site Association Site	The name of the NASIS Site that owns the site association. NASIS automatically enters the NASIS Site name when a new site association is created. This column is always protected and cannot be edited, but ownership of a data mapunit may be changed from the Options Menu.
Site Association Table	Group	The name of the group that owns the site association. NASIS automatically enters the user's default group name when a new site association is created. This column is protected and cannot be edited, but ownership of an site association may be changed through the Options menu.
Site Association Table	User	The name of the user who created the site association or the name of the user who last modified any record in the site association object. NASIS automatically enters the user name. This column is protected.
Site Association Table	Last Updated	The last date in which any data element of a particular NASIS object (area, data mapunit, etc.) was modified.

Site Association Site Table

This table records the identifiers of the sites that are members of a particular site association. A site association may contain any number of sites, and a site may be a member of more than one site association.

Table	Element	Instruction
Site Association Site Table	Seq	Entries are not needed. If you enter a number for one record, then number all of the records.
Site Association Site Table	Site ID	The Site ID and User Site ID columns work together. They are used to indicate which Sites, stored in the Site table, are a part of the Site Association highlighted above. The site information must be entered in the Site table before an entry can be made here. The same choice list appears for either column. When you enter data in either column, NASIS automatically enters the corresponding data in the other column.
Site Association Site Table	User Site ID	This is probably the more useable of the two (Site ID or User Site ID), since it is user-assigned. If you put in a valid User Site ID, the Site ID will populate automatically.
Site Association Site Table	Rec ID	Not to be confused with Site ID. The Rec ID is an internal, non-editable tracking number.

Site Association Text Table

The Site Association Text table records notes and other narrative descriptions that help to describe a particular site association.

Table	Element	Instruction
Site Association Text Table	Seq	Entries are not needed. If you enter a number for one record, then number all.
Site Association Text Table	Date	The date the note was added to the database, or some appropriate date.
Site Association Text Table	Author	The person who wrote the note.

Table	Element	Instruction
Site Association Text Table	Kind	Select appropriate kind from the choice list.
Site Association Text Table	Category	There is no choice list for category. Either leave this field null or enter a category that will be useful for querying later.
Site Association Text Table	Subcategory	There is no choice list for subcategory. Either leave this field null or enter a subcategory that will be useful for querying later.
Site Association Text Table	Text	Zoom open the text editor and type in the relevant information.
Site Association Text Table	Rec ID	An internal, non-editable tracking number.

TRANSECT OBJECT

The tables in the Transect Object records the groupings of points that were observed on a transect.

Transect Table

Table	Element	Instruction
Transect	Rec ID	An identifier for this transect that is assigned by NASIS. You can refer to this number for future reference.
Transect	User Transect ID	You assign this label so that you can identify the transect later. A combination of map unit symbol and a sequence number is good.
Transect	Transect Author	Names of the person or persons that ran the transect. This is one of the few places where it is ok to have more than one item in one field.
Transect	Transect Kind	You must specify whether this transect is regular interval or random point.

Table	Element	Instruction
Transect	Transect Selection Method	Describes how the transect location was selected. Described as being one of the following: Randomly selected or selected based on some bias. This is a required entry field for transect data.
Transect	Transect Delineation Size	Estimate the size of the delineation in which the transect was run.
Transect	Transect Direction	Direction of transect as measured in degrees of aspect from the first observation point on the transect. This is a required entry field for transects.
Transect	Transect Site	The NASIS site that owns the transect.
Transect	Group	The Group that owns the transect.
Transect	User	The user that last touched the transect..
Transect	Last Updated	The date of the last revision.

D. NASIS TEXT FIELD USER GUIDANCE

Use this table for guidance in completing text notes. Following these conventions will allow you to utilize local and national reports for various survey activities. It is not necessary to change note categories if you have already have created text note categories and reports that accompany them although you can do so.

It is recommended that you coordinate with the MLRA Office for new categories. These listings were constructed from a national effort in MLRA Offices to coordinate usage and categories.

It is recommended that you document edits that you do in NASIS with the edit notes. This may seem, actually might be, cumbersome. However, in doing so, we can create a history of database edits for future use.

Table	Kind	Category	Subcategory	Usage
Area Text				Not editable, generally.
Legend Text	certification statements	date	ssurgo	Actual date of ssurgo download.
Legend Text	certification statements	notes	ssurgo	Notes on legend changes for ssurgo.
Legend Text	correlation notes	amendment	first, second, etc	Notes on changes to the legend as a whole.
Legend Text	correlation notes	evaluation		Notes pertinent to the evaluation of the survey
Legend Text	correlation notes	joins		Notes on join decisions.
Legend Text	edit notes			Notes pertinent to edits made to the entire legend.
Legend Text	field reviews	ifr233	date	Copy of the Quality Assurance form.
Legend Text	field reviews	pfr233	date	Copy of the Quality Assurance form.
Legend Text	field reviews	ffr233	date	Copy of the Quality Assurance form.
Legend Text	miscellaneous notes	manuscript	history	Manuscript history section.
Legend Text	miscellaneous notes	manuscript	geology	Manuscript geology section.

Legend Text	miscellaneous notes	manuscript	bldgsite	Manuscript building site section (pwm).
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Table	Kind	Category	Subcategory	Usage
Legend Text	miscellaneous notes	manuscript	physical	Manuscript physical properties (pwm).
Legend Text	miscellaneous notes	manuscript	PWM sections by name	Manuscript properties and interps section(pwm).
Legend Text	mou	initial	date	Copy of the initial MOU.
Legend Text	mou	amendment	date	Copy of the amended MOU.
Legend Text	miscellaneous notes	ownership	[object]	Used to indicate change in ownership.

Map Unit text notes relate to individual map units.

Table	Kind	Category	Subcategory	Usage
Map Unit Text	certification statements	ssurgo		Notes pertaining to ssurgo certification for a mapunit.
Map Unit Text	correlation notes	evaluation		Notes by mapunit found during the evaluation.
Map Unit Text	correlation notes	field notes		Onsite investigation notes pertaining to correlation decisions.
Map Unit Text	correlation notes	field reviews		Correlator's notes during field reviews.
Map Unit Text	correlation notes	field reviews	fieldnote	Correlator's notes for field stops during field reviews.
Map Unit Text	correlation notes	field reviews	series	Correlator's notes for taxonomic units during field reviews.
Map Unit Text	correlation notes	joins		Notes on joins between surveys.
Map Unit Text	correlation notes	lab data		Notes on lab data and findings.
Map Unit Text	correlation notes	reconciliation		Correlator notes for documenting reconciliation decisions.

Table	Kind	Category	Subcategory	Usage
Map Unit Text	edit notes			General notes on editing.
Map Unit Text	map unit description			Map unit description from the manuscript
Map Unit Text	miscellaneous notes	field notes		Documentation of findings during normal soil survey operations.
Map Unit Text	nontechnical descriptions			Nontechnical descriptions used for planning.

Data Mapunit text applies to the Data Mapunit as a whole.

Table	Kind	Category	Subcategory	Usage
Data Mapunit Text	certification statements			Open for discussion.
Data Mapunit Text	correlation notes	field notes		Documentation of findings during normal soil survey operations.
Data Mapunit Text	edit notes	[table edited]	[field edited]	Description of edits within the data mapunit.
Data Mapunit Text	miscellaneous notes	location		Introductory paragraph for map unit report.
Data Mapunit Text	miscellaneous notes	setting		Second paragraph for map unit report.
Data Mapunit Text	miscellaneous notes	major uses		Final paragraph for map unit report.
Data Mapunit Text	miscellaneous notes	site notes		
Data Mapunit Text	miscellaneous notes	typical vegetation		used for the map unit description generator to indicate vegetation types such as "annual grasses and forbs"

Component Text describes the components of a data mapunit.

Table	Kind	Category	Subcategory	Usage
Component Text	correlation notes			Open for discussion.
Component Text	edit notes	[table]	[element]	Notes on edits made within the component tables. Record which element was edited in what table.
Component Text	miscellaneous notes	lab data	Modal pedon,	
Component Text	miscellaneous notes	lab data	Reference pedon,	
Component Text	miscellaneous notes	lab data	ric pedon	
Component Text	miscellaneous notes	lab data	Satellite pedon,	
Component Text	miscellaneous notes	lab data	Taxadjunct pedon	
Component Text	miscellaneous notes	component		Used in map unit report for component notes.
Component Text	miscellaneous notes	definition		Used in map unit report for miscellaneous land units notes.
Component Text	s5description			Data converted from sssd.

Horizon Text notes document observations for a horizon.

Table	Kind	Category	Subcategory	Usage
Horizon Text	correlation notes			open for discussion
Horizon Text	edit notes	[element]		Notes on edits made to a horizon.
Horizon Text	miscellaneous notes			

Site Text notes are used to describe a site in the Point Data Structure side of NASIS.

Table	Kind	Category	Subcategory	Usage
Site Text	correlation notes			
Site Text	miscellaneous notes			
Site Text	site notes, formatted			
Site Text	site notes, unformatted			

Site Observation text notes in the Point Data Structure.

Table	Kind	Category	Subcategory	Usage
Site Observation Text	correlation notes			
Site Observation Text	miscellaneous notes			
Site Observation Text	site observation, formatted			
Site Observation Text	site observation, unformatted			

Pedon Text Notes

Table	Kind	Category	Subcategory	Usage
Pedon Text	correlation notes			
Pedon Text	miscellaneous notes			
Pedon Text	pedon note, formatted			
Pedon Text	pedon note, unformatted			

Pedon Horizon Text

Table	Kind	Category	Subcategory	Usage
Pedon Horizon Text	correlation notes			
Pedon Horizon Text	miscellaneous notes			
Pedon Horizon Text	horizon note, formatted			
Pedon Horizon Text	horizon note, unformatted			

Map unit history text is discussed in the section dealing with populating data elements.

IV. TIPS, TRICKS, AND HINTS¹¹

Remember: NASIS is run in an X-windows and UNIX environment and thus requires a little knowledge of UNIX. DOS commands will be of no avail in the X-window. Also, NASIS itself requires a few tips to ease you down the path. Here are some of the things that will be helpful for you to know.

1. After starting NASIS Secure Access, I choose "Open an xterm" rather than "Start NASIS". This allows me to work in the unix side and issue commands.
2. Whenever I log onto to Central Server, I type the command "who" and press return. This command gives me a listing of other users on the system. Generally these will be NASIS users. The command "ps -ef |grep nasix" will actually list the nasix processes so I can tell who is actually using NASIS. If a nasix session is owned by "nasis" it means a session is just starting or that a process is hung and nasis is not coming up for someone. This useful information tells me how much competition I will have for RAM, or if a user in my group is on, the potential for someone to have the data that I want to edit in use which would lock me out.
3. I am also looking to see if I have any hung sessions. If my connection crashed or NASIS locked up, I may have more than one NASIS session running, or I may have a DXPC session hung. It is considered crass to have dead sessions lying around. Type "ps -ef |grep yourlogin" and press return to see what processes are running under your login. Look for your login an ports (tty[x]) that your old session may be logged in on and note the PID or process identification number for the old session. Type kill -1 PID and return to delete the processes you wish to kill. NEVER use the command kill -9 NASIS. For example: kill -1 24910 kills the process "24910". If you accidentally type the wrong number either you will kill your current session, or nothing will happen if you type in the number of a process that either does not exist or that you do not own.
4. You can also use the command "ps -fu yourlogin" and press return. This will list your processes the same way as the "ps -ef |grep yourlogin" command would.
5. Eventually, there will come a time when you try to edit data for a county that you worked on just yesterday, but now you can not touch it. It is locked. There is an "L" to the left of the object. Try killing any dead sessions if you lost your connection abruptly. This will free up any records that were left locked as a result of an inelegant exit from the system. If the data is still locked, press the "Object Status" button in the upper center of your NASIS screen. This will tell you who is currently locking the data. Someone else in your group may have the

¹¹ Henry Ferguson of MO-11 contributed to this section.

data loaded. If that person has saved at least once, the new name will appear in the data. You might recall who is on the system and compare the list with your user group. A quick look at the user tables will provide you with the phone numbers of the other group members. You may have to give them a call. (Click on View => NASIS Sites => User for user information.)

6. On a related note. Often a hot project may require several individuals to look at the same data over a short period of time. To be courteous to other members of your group, there are some measures that can be taken. If you are just looking at the data and do not plan to edit, you could export the data from NASIS using the EXPORT reports and then review the data in EXCEL. This would free up the database for editors. You could also start two NASIS sessions. In the first session you load the desired selected set. You then load the very same selected set in the second session. The data will be locked in the second session. You then perform a "file-new" on the first session. This will free the data for other members of the group to edit while you are viewing a locked version of the data in your selected set. Yet another option is for members of the same group to work on different parts of the same database by querying by component name and legend or by mapunit name. Using a load related on the correlation table to bring in a very few data mapunits at a time, is another way to minimize the size of a selected set.

7. I highly recommend setting your personal user preferences to nobitmap (Options => nasis preferences => nobitmap-does not display a picture during startup). By doing so the initial picture on each NASIS server will not show up and NASIS starts faster.

Also, set your default state directory for reports and downloads.

8. Save, Save, Save. When you have an edit session running in NASIS, you should save often. Sooner or later, you will make an edit that you do not like and will want to do a "file-new". This blows away your selected set and any unsaved edits, both wanted and unwanted. Do not work more than 10 or 15 minutes without saving some good work. Also, you do not know when the connection will crash, or some other bad thing will happen that will cause you to lose unsaved work.

9. BEFORE YOU SAVE. Make sure that the edits that you have made are really the ones that you want to make. Although we have a backup of the region's data, we can not recover an individual's previous data without trashing the rest of the region's edits.

10. Remember what is in your selected set. This is especially true if you have several counties which you can edit loaded. If you are editing one county, any global edits you do will occur in all of them. Also, any report you write could be

VERY large, which takes up system resources, and may be more than you want to print or look through.

11. On a related note: I recommend that you change your text editing preference to the Desktop Editor. This is under Options-preferences. The choices are

- 1: The original Motif text window
- 2: The VI editor
- 3: The Desktop Editor, which includes find/replace, line numbers and spell checking

12. Printing reports directly from NASIS may be a problem. Some reports are not designed to be printed at all. You should try using NASIS download to bring a saved report back to your desktop. At that point you can reformat the report and print it from WORD, WORDPAD, or EXCEL. A good example of this is the EXPORT-component horizon data, comma delimited. This report has in excess of 100 columns of data. The intent for the use of this report is for sorting and comparing data in EXCEL. By using data sort commands and hiding multiple columns, single pages of very useful data can be printed out from EXCEL.

13. If you are adding data mapunits to a legend and you just happen to have membership in several groups, please make sure that you set your default group to the group that needs the data mapunits. In other words, if my default group is Virginia and I make a data mapunit for the group Berks County, Pennsylvania; the Berks County group can only edit that data mapunit if I change my default group to the Berks County group before I make the data mapunit. With dataset manager privileges, I can change the ownership of the data mapunit to Berks County group ownership, however other users without such privileges do not have that option. They must call a data set manager and request that the data set manager change ownership for them.

14. If you have a good shortcut or practical tip, share it with other users. Everyone will appreciate it.

15. Short list of tips:

To open a line in a table, press F8. Make sure the caps lock key is off. The new line will be opened above the cursor.

To get rid of a line, using F6(delete) rather than Cut is quicker. Cut copies the data to the clipboard, F6 or delete only marks the line for deletion.

Get used to using Edit setups when editing. These edit setups have been designed by everyday NASIS users to make the job of data population easier. Edit setups help move selected columns into view so that you do not have to scroll right very far to find elements to view or populate.

Don't get hung up over which manuscript reports to use when editing data. Any good report can be used to review data, you just have to be careful when

producing a final product that you use an approved report for your manuscript/product.

Keep your selected set as small as possible. This reduces edit time searching for the right data mapunit, and reduces saving time because the selected set is small.

Learn to use the same query to get different selected sets by choosing different tables. An example is to just load the legend using a query that could be used to load an entire survey.

Take some time to explore and use the "Load Related" function as a quick and dirty way to load data. You do not have to run a query. For example: click on view-NASIS Sites-Group. Now select the group that owns your legend. Now go to File-load related and click on legend. This loads the legends owned by that particular group into the selected set.

16. If you really want to know what data to populate for a particular interpretation, try this. Load one DMU into your selected set. This can be done by first using a query to load an area and legend. Review the legend for a likely map unit and table down to the correlation table. Select the entry in the correlation table for the representative DMU. Go to file-select-load related-data mapunit and load the data mapunit. This will load one data mapunit. Now select options => standard reports => national. Select the INTERP-Portrait table, click on preview, select National, and pick the interpretation you want to study. On the lower part of the dialog box, set reporting depth to 2, select RV, select Show fuzzy values, and set the Reasons to 0. Then click on apply. Setting reasons to 0 will cause the interpretations generator to return all the soil properties used in the generation of the report. Look at the report you get in the report viewer. If you see null and/or default data used for important soil properties, then you had best populate these fields.

17. Whenever you want to run a report or query, always read the description. You can get a lot of good information from a well written and maintained description. The description should tell you what tables you need to have loaded or which tables to set as target tables. For some reports, you do not need a selected set.

18. If you press "shift" and "page up" at the same time in the x-window, you can page up through the information that scrolled by so fast that you could not read it. Pressing "shift" and "page down" at the same time moves the view back down to the cursor.

19. You can get a "Unique constraint violation" if you try to save map units that have the same status and symbol even if only one of them is in your selected set. This can happen if a mapunit is not linked to a representative data mapunit and you used a query that loaded the legend based upon the representative data mapunit designation in the correlation table. The legend would load without the particular mapunit in question and since you could not see it you might figure that

you forgot to enter it, and you might enter it again. When you try to save, a Unique Constraint Violation would occur. To avoid this try running the National Query called "Area/Legend/DMU by area and area status (all Mus) to be sure to catch ALL of the mapunits, linked or otherwise.

20. There are a couple of National queries that can help you keep the NASIS database clean. One brings in Data Mapunits not linked to legends, and another brings in mapunits not linked to data mapunits. These can be helpful if you are interrupted in your session and get data saved but not properly linked.

21. Maintaining a single "null" datamapunit to link multiple mapunits to until you have decided which Data Mapunit to link to can be helpful.

22. The report "UTIL- Soil Survey Progress" can be very helpful if you either forget what the status is of the legend that you are looking for, or if you forgot to enter a status when you created a legend.

23. Never, Never, Never! Create a non-mlra soil survey legend without consulting your state soil survey schedule steward. If you need to work on a legend for a special project, create your own area type and keep the legend out of the National Reporting System until you have consulted with your state soil survey schedule steward and identified how or if the legend should fit into the National Reporting System.

24. If you want a shortcut to Secure Access on your desktop, try this:

Use Windows NT explorer,

- 1) Make explorer not take up your whole screen by clicking the middle button of the three in the upper right-hand corner of the window, if you need to.
- 2) In the left-hand panel: click on the plus sign (+) next to Program Files, click on the + next to USDA, Click on NASIS SecureAccess.
- 3) In the right-hand panel, highlight the NASIS SecureAccess.exe file. Right click on the file and select "create a shortcut" from the menu that pops up.
- 4) If you click on the new shortcut, you can drag it and drop it on your desktop (providing that some of the desktop is visible).

25. A new feature for NASIS 5.0 is the "ready for use only" button on the report manager, query manager, and a few other managers. This button lets you choose to see only those items that the authors consider good enough to be ready to use. That means the report or query will do what it is intended to do. If you turn off the "ready for use only" you will see all of the reports, queries, rules, and so on. They may or may not work exactly as advertised because they are works in progress. If you cannot find a query or report that you used to use, it could be that the author never changed the ready for use flag to "yes", thus the item will not be visible unless you turn off the ready for use only filter.

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