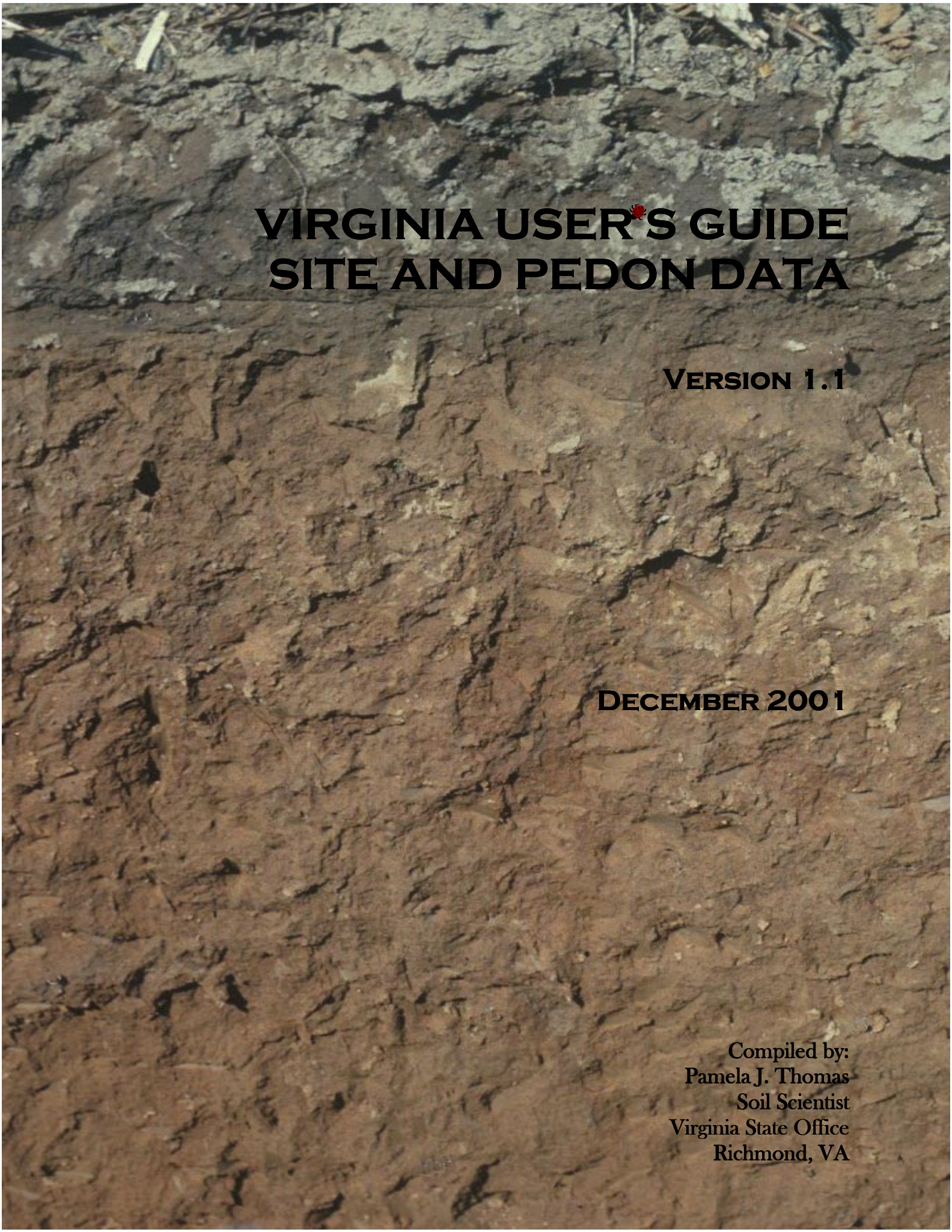

VIRGINIA USER'S GUIDE SITE AND PEDON DATA

Version 1.1

December 2001

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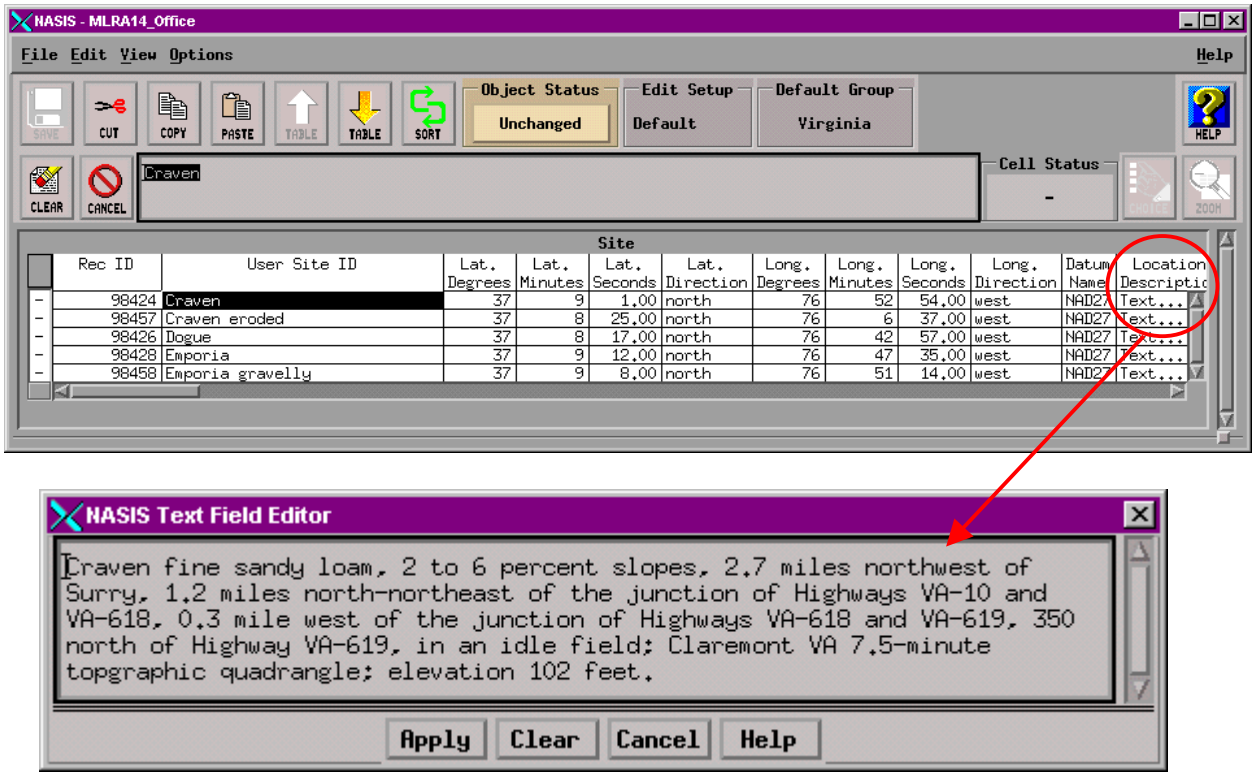
Richmond, VA

VIRGINIA USER'S GUIDE
SITE AND PEDON DATA

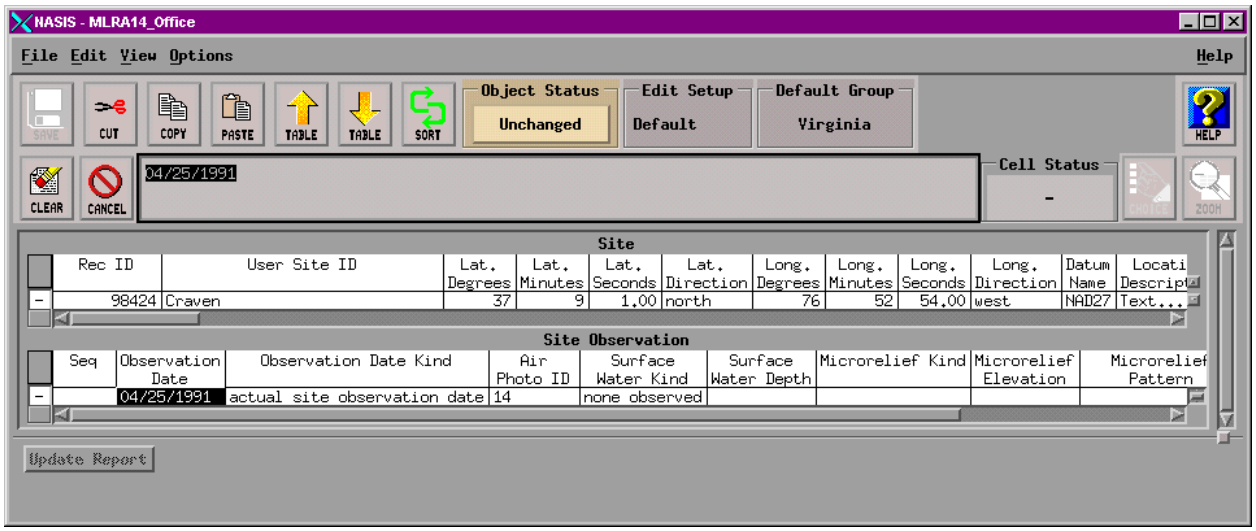
(Adapted from NASIS 5.0 User's Guide – Chapter 19 and MO-1 Pedon Thunderbook)

DEFINE A NEW SITE

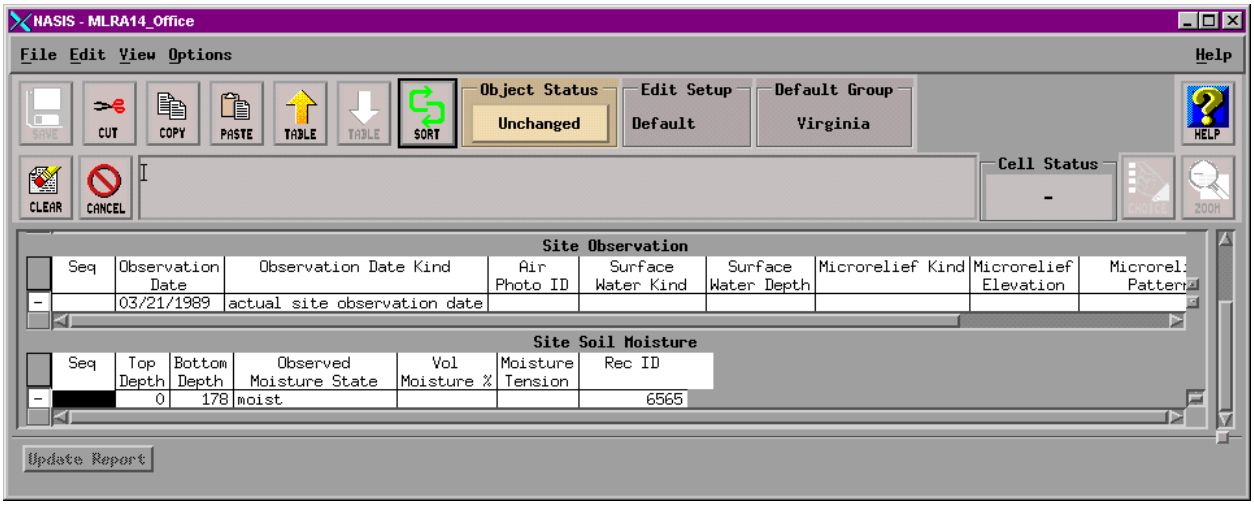
1. **View** menu, click **Sites**, then click **Site**.
2. Click **F8** to create a new row.
3. In the **User Site ID** cell, type the ***name of your pedon/profile/transect***. The name must be unique for each pedon entered. Use sample number, name, etc. Suggestion: If you use the sample #, i.e., S01VA-181-5, also include the name of the soil, e.g., Emporia. It makes it easier for you and others to view your data.
4. Insert information for location, elevation,…; enter as much detail as possible; as a minimum include *latitude and longitude, location description, elevation, geomorphic component, slope, bedrock features (if available), drainage class, parent material, and flooding frequency*.
5. If you have several pedons/profiles/transects you wish to enter into the database, it is more time efficient to enter all of the site data before proceeding to the next steps.



6. Either table down or select **View**, **Site Observation**, **Site Observation** to open Site Observation table.
7. Click **F8** to create a new row.
8. Enter *observation date*.
9. In the **Observation Date Kind** cell, click on the **Choice** list, and select A**ctual site observation date**.
10. Enter other data as available.

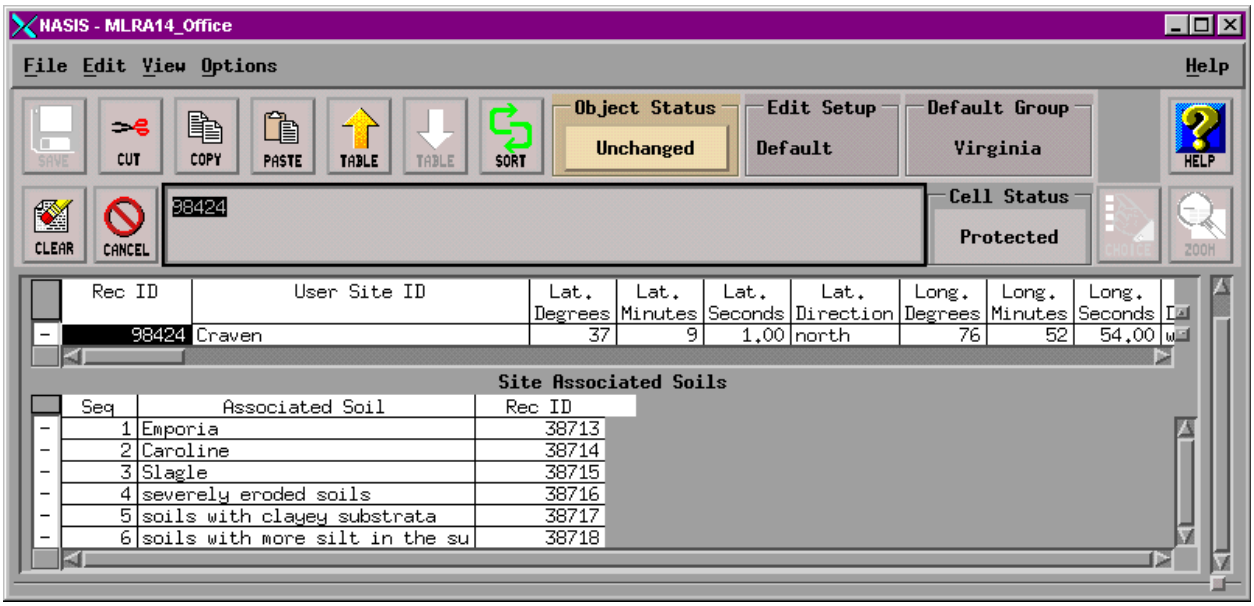


11. **Table down** to the **Site Soil Moisture** table.
12. Press **F8** to enter a row, then complete the **Top Depth, Bottom Depth**, and **Moisture Status** (from site observation, not the OSD or typical pedon moisture status)
13. As with the Site table, if you have more than one pedon/profile/transect to enter, complete site observation and site soil moisture table before proceeding to the next step.

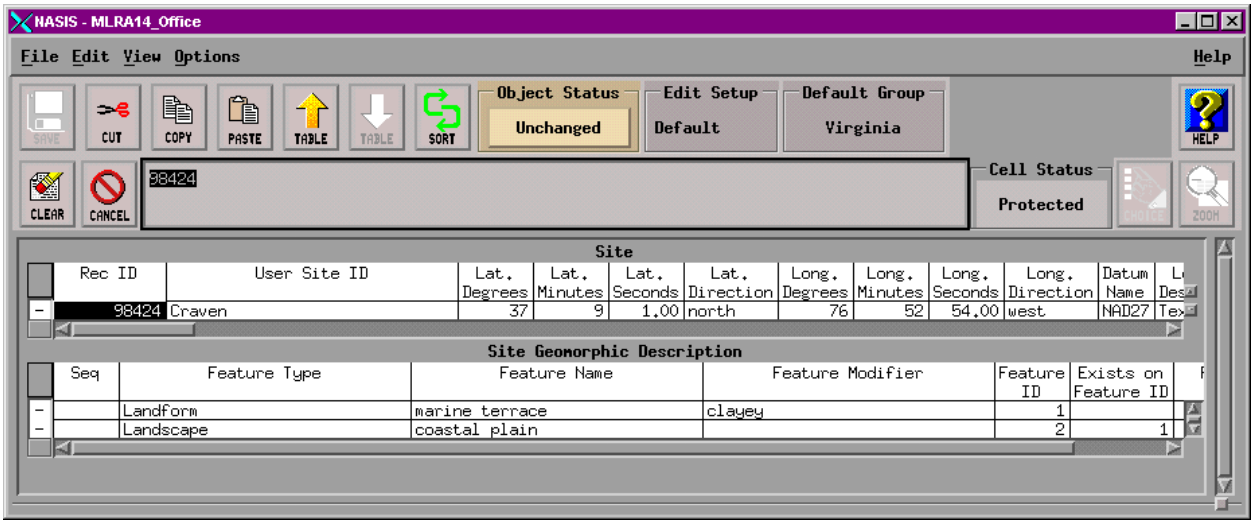


OTHER SITE TABLES

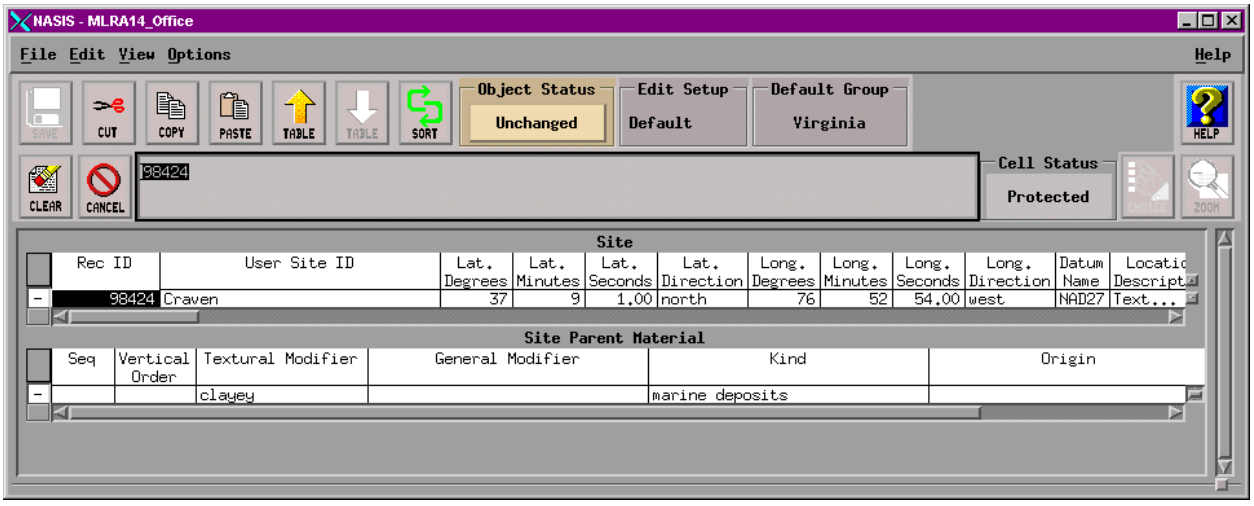
Site Associated Soils



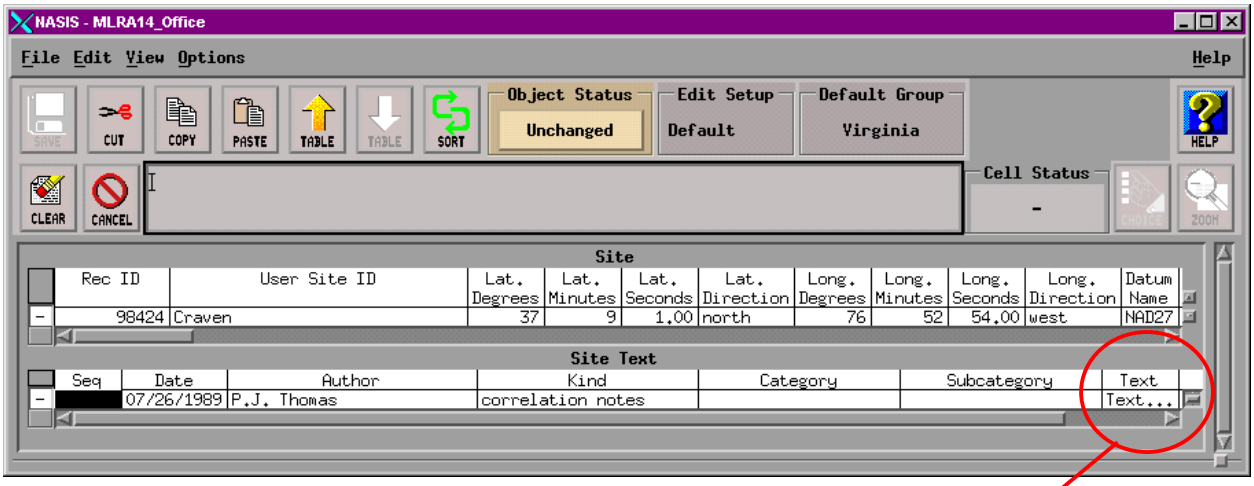
Site Geomorphic Description

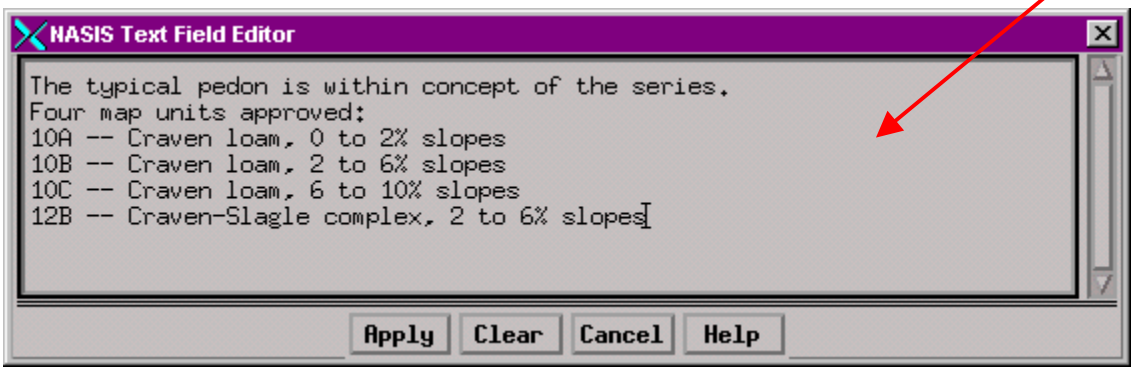


Site Parent Material



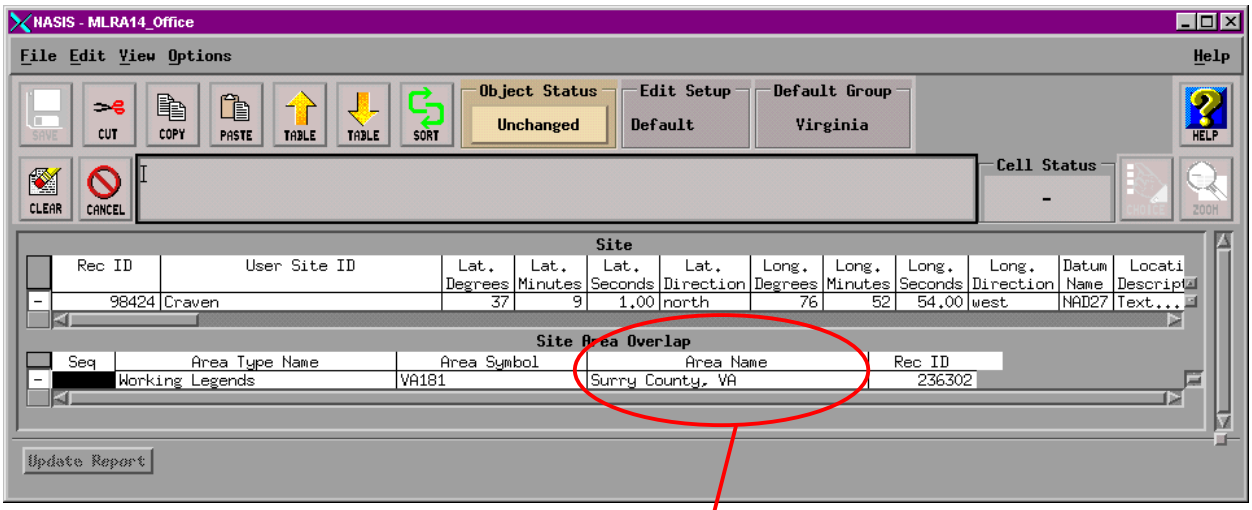
Site Text

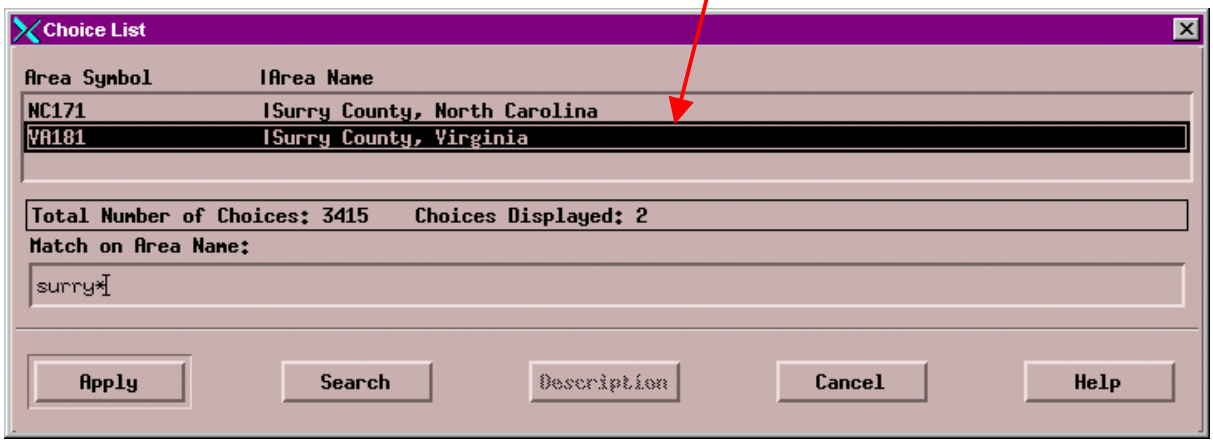




ESTABLISHING A SITE AREA OVERLAP

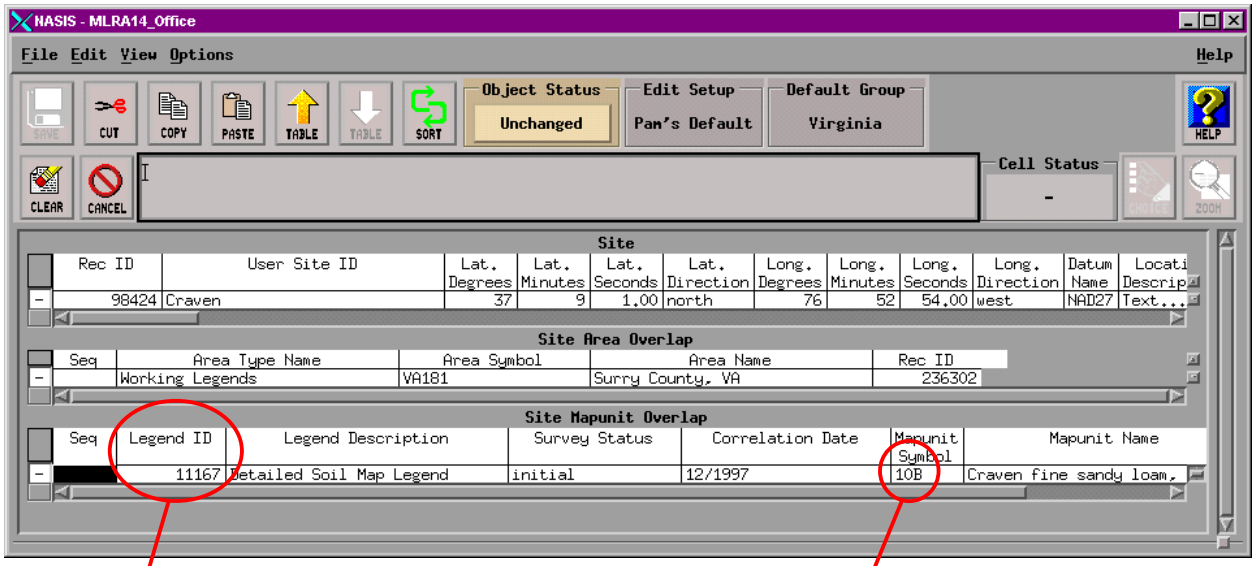
1. On the **View** menu, select **Site**, then **Site Area Overlap**.
2. Click **F8** to open a new row.
3. Select **Area Type** cell. Click the **Choice** button. If you are working with your Non-MLRA Soil Survey Area legend, then click the **National** button. Highlight the **Non-MLRA Soil Survey Area**. Click **Apply**. If you are using your working legend, then click the **local** button. Highlight the **Virginia Working** for MLRA13 and **Working Legends** for MLRA14. Click **Apply**.
4. Skip the Area Symbol field. In the **Area Name** field, click the **Choice** button. For a working legend, scroll until you find your **area**. Select and click **Apply**. For a Non-MLRA legend, in the match on area name field, type in your county or city name with an asterisk and click search. E.g., Surry* will return two fields. Select your **area** and click **Apply**. Or simply type out your area name in the field. The **Area Symbol** will automatically populate.
5. Replicate steps 2-4 for each site observation.

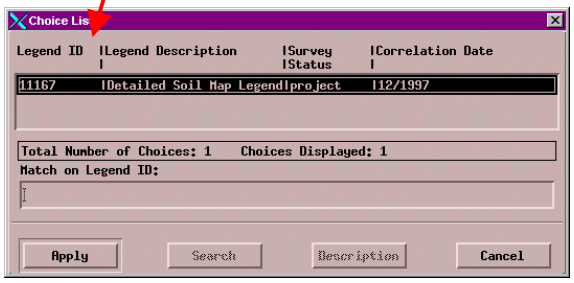


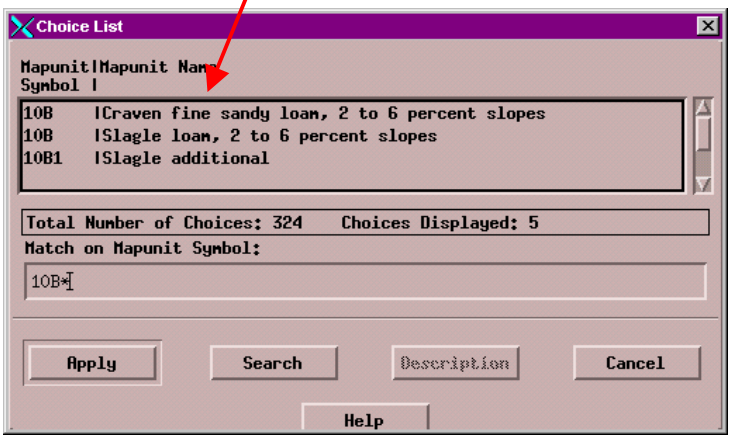


LINKING A SITE TO A MAP UNIT

1. From the **Site Overlap** table, table down to the **Site Mapunit Overlap** table.
2. Click **F8** to open a new row and position the cursor in the **Legend ID** field.
3. Click the **Choice** button. Select the **Legend**, click **Apply**. (If multiple legends are linked to the Area listed in the Site Area Overlap table, they will all be displayed in the choice list box.
4. Position the cursor in the **Mapunit Symbol** column.
5. Click the **Choice** button. All the map units in your legend are displayed.
6. Select the appropriate **Map unit symbol** associated with the site and click **Apply**. You've now created the site mapunit overlap, which indicates that this site is located within the map unit.





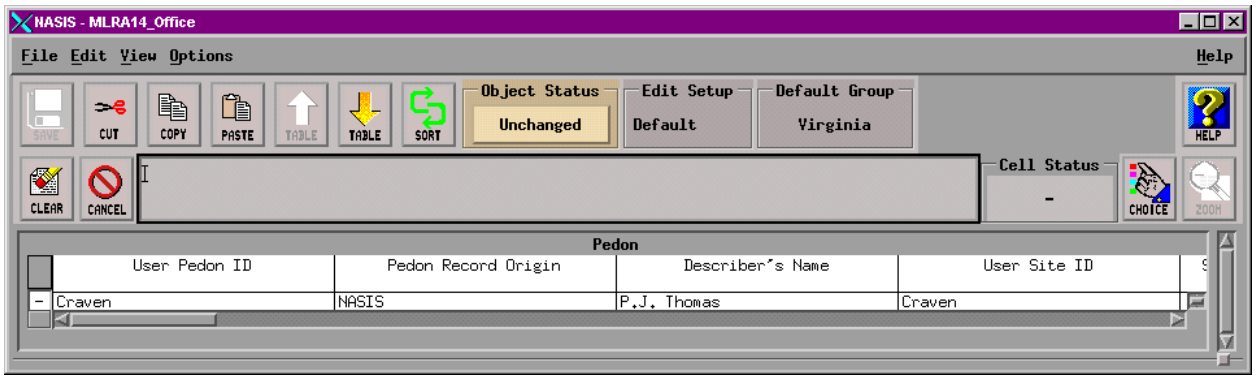


7. With your cursor in the **Site Mapunit Overlap** table, click **File**, **Load Related**.
8. Click **Mapunit** to load the related map unit.
9. Only link <u>one</u> mapunit to the site. In version 1.0 of the document, multiple map units were linked. If multiple map units are linked, the Taxonomic Unit Descriptions will not print correctly.

ADDING A PEDON

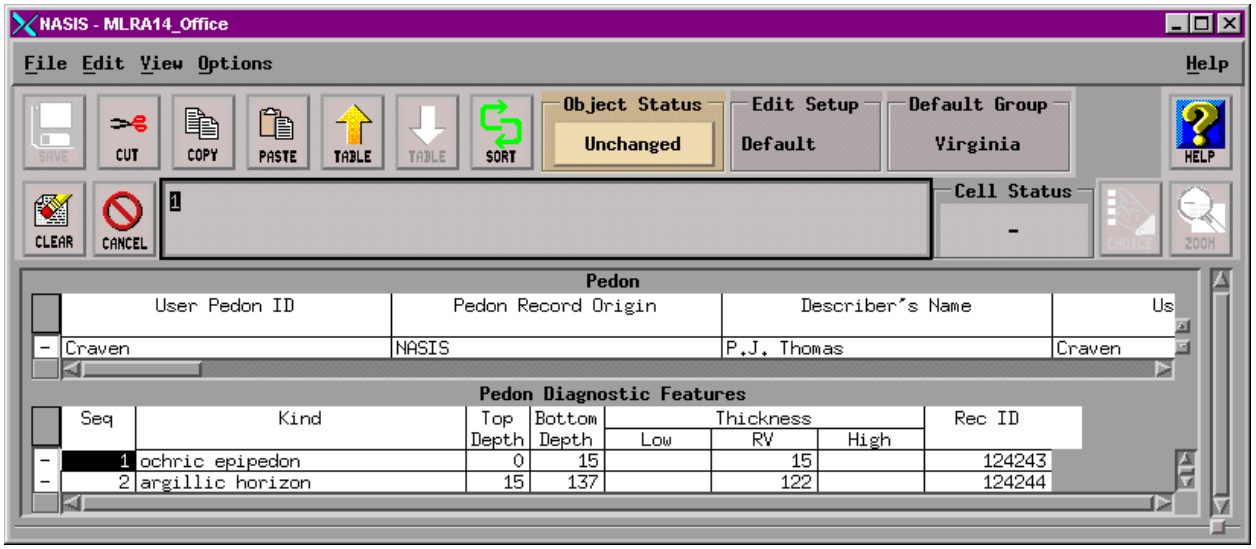
You're almost ready to enter your pedon description.

1. On the **View** menu, select **Pedons**, **Pedon**.
2. Click **F8** to open a row.
3. At the **User Site ID** column (not the User Pedon ID column), click the **Choice** button, select the *User Site ID* associated with the pedon. Click **Apply**.
4. Complete the remaining columns of the Pedon table. You must enter a **User Pedon ID**. Make sure it is descriptive enough for you and others viewing your data to understand. For example, use the soil name, soil phase, mapunit ID, sample number…

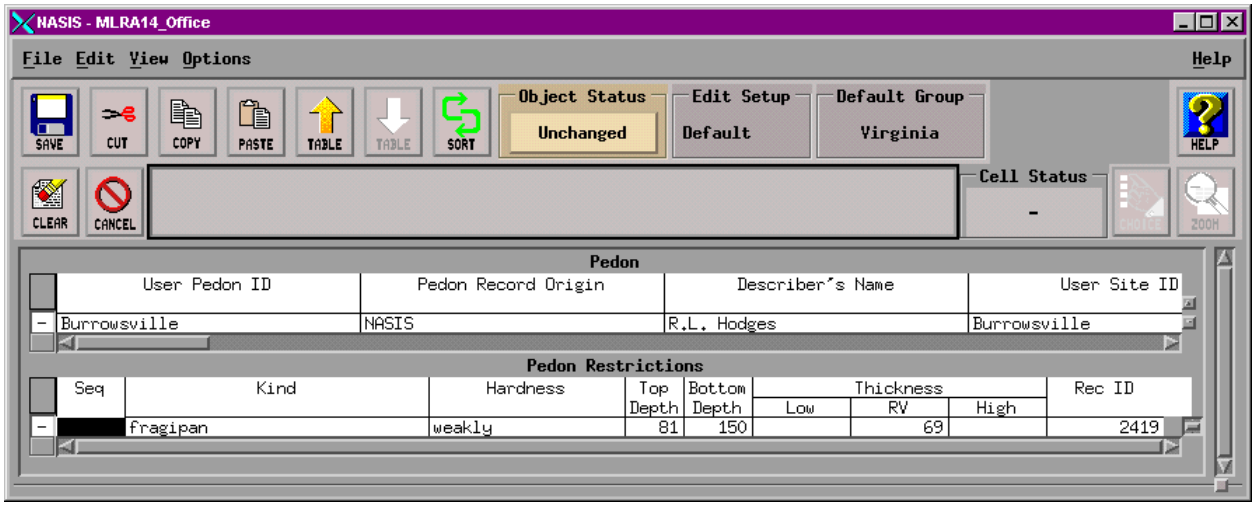


OTHER PEDON TABLES

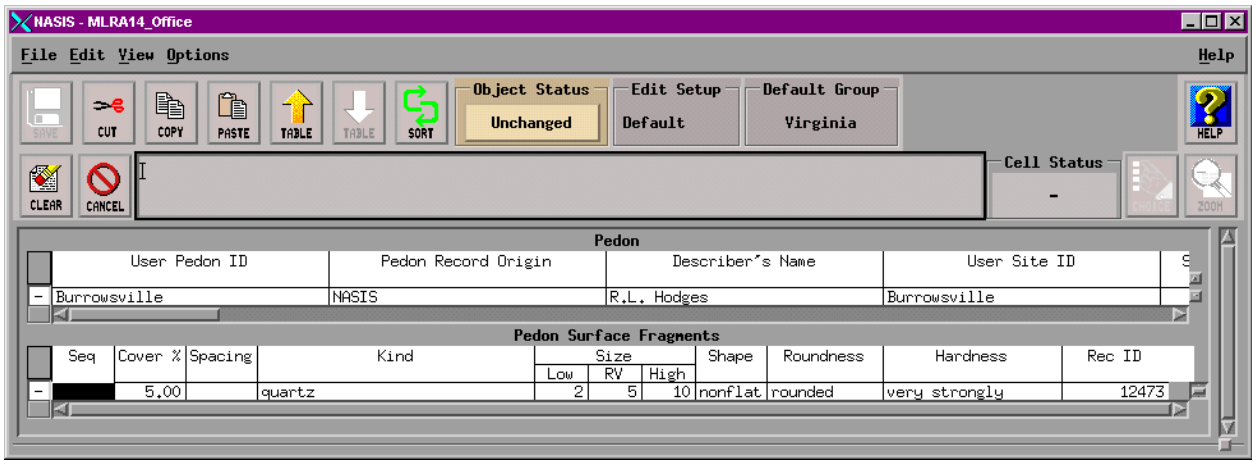
Pedon Diagnostic Features



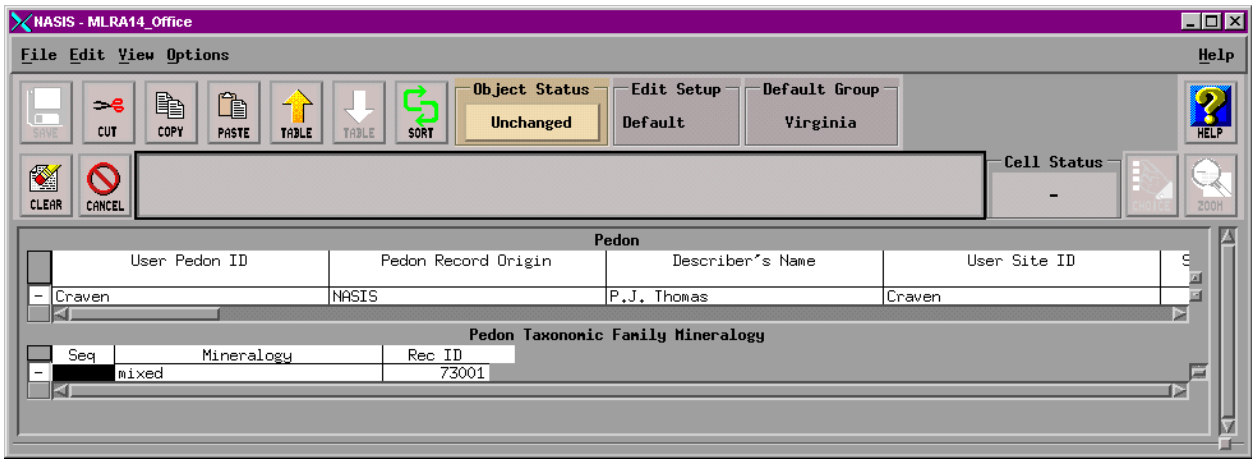
Pedon Restrictions



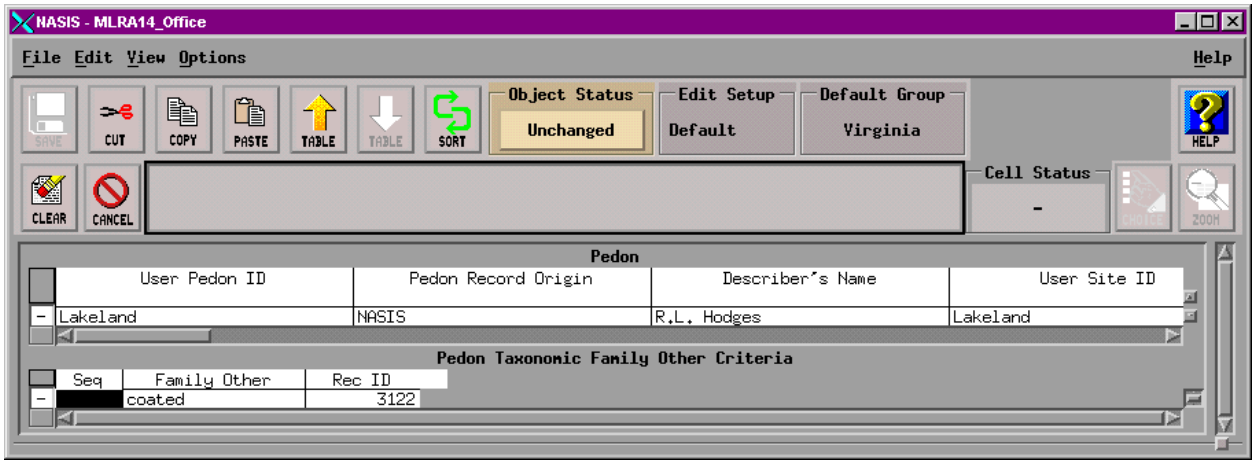
Pedon Surface Fragments



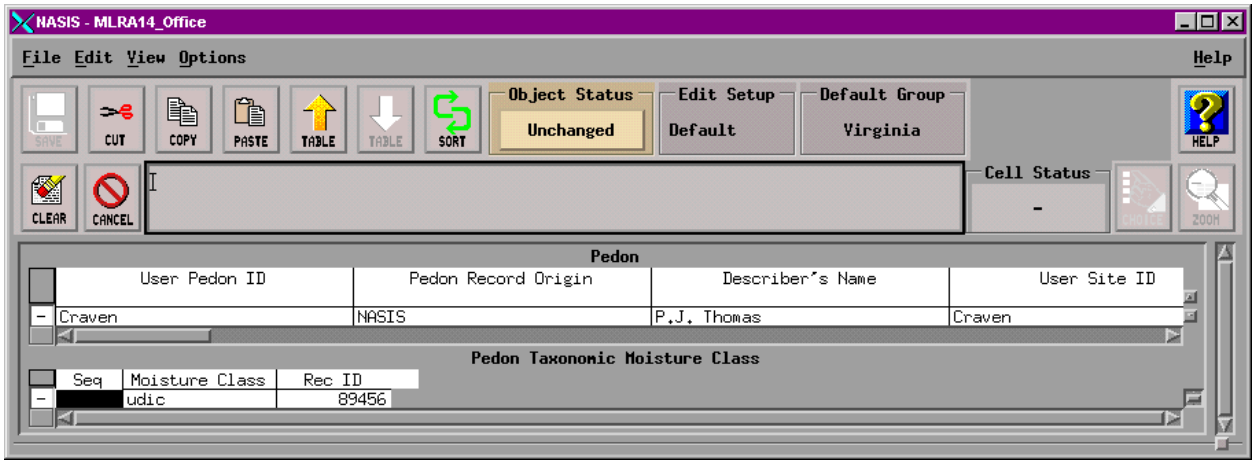
Pedon Taxonomic Family Mineralogy



Pedon Taxonomic Family Other Criteria

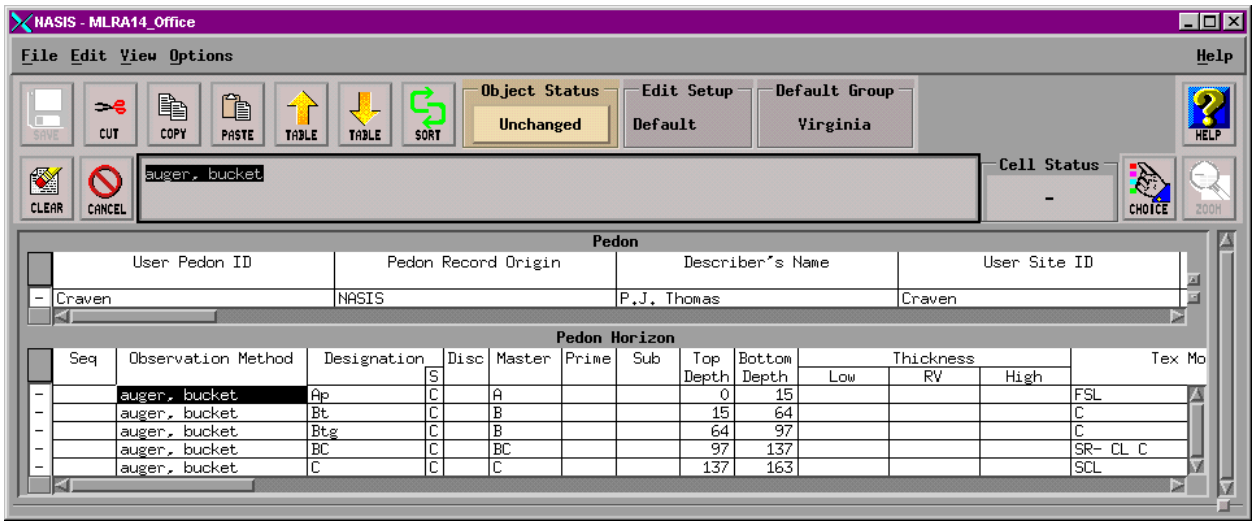


Pedon Taxonomic Moisture Class



ADDING PEDON HORIZON DATA

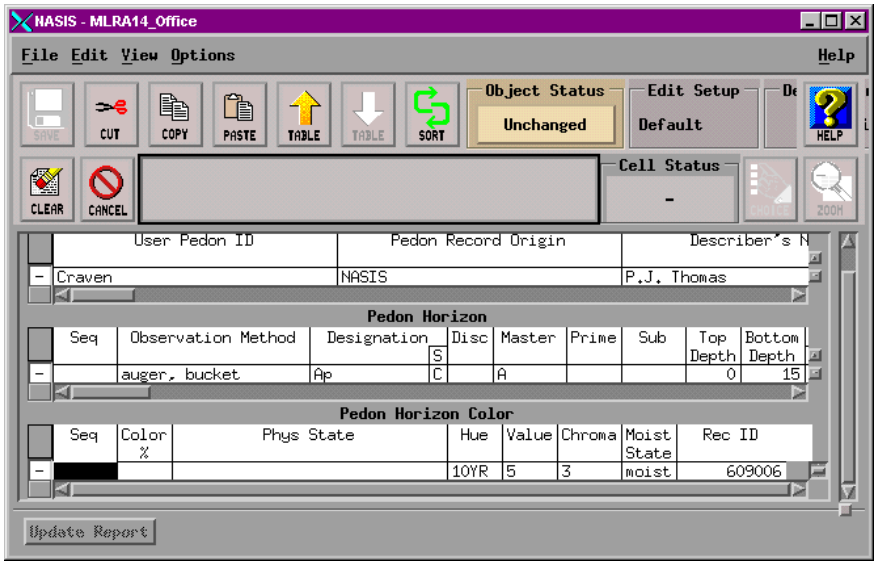
1. Click the **Down table** to open the **Pedon Horizon** table.
2. Now you are ready to enter your pedon description.
3. Click **F8** to open a new row.
4. Move cursor to **the Observation Method**, click **Choice** and select the observation method. Click **Apply**.
5. Enter data for remaining columns in this table. At a minimum for a full pedon description you should enter horizon designation (not H1, H2…), depths, texture, rupture resistance, stickiness, plasticity, and boundary.



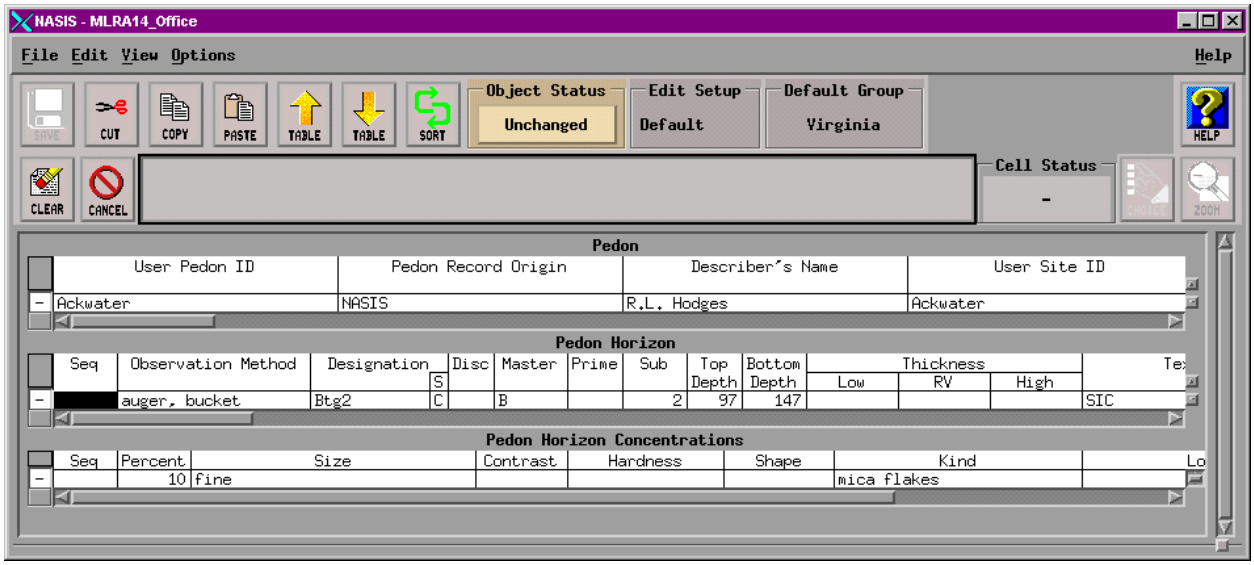
6. Click **Pedon Horizons** and view the table selections.

7. For full pedon descriptions, enter data in as many of these tables as possible. Examples of these tables are shown below and on the next few pages.

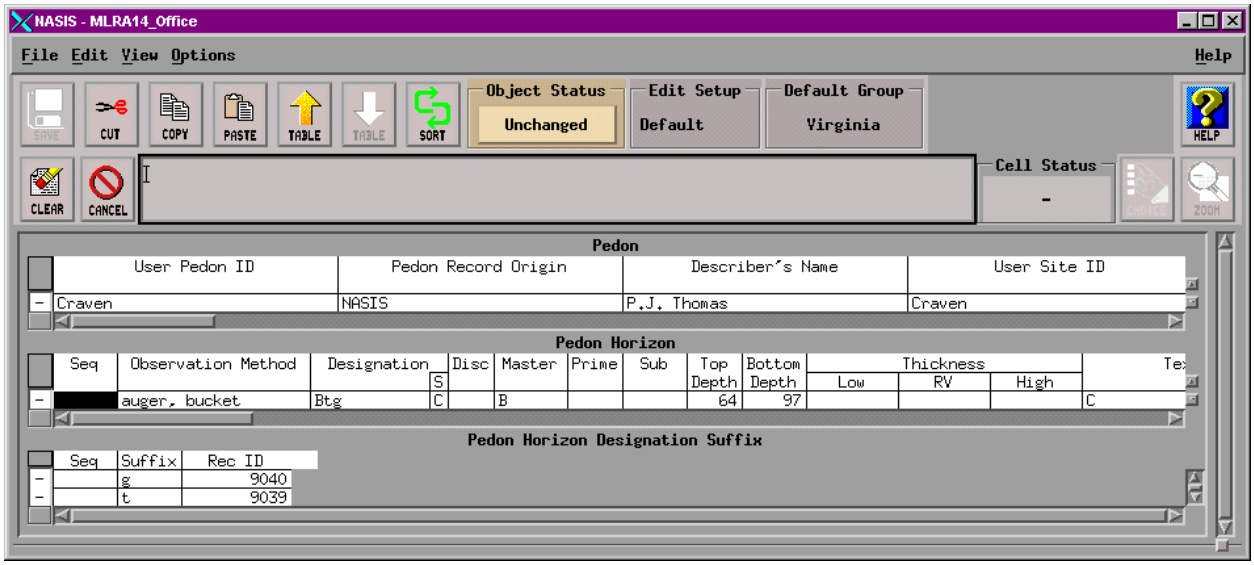
Pedon Horizon Color



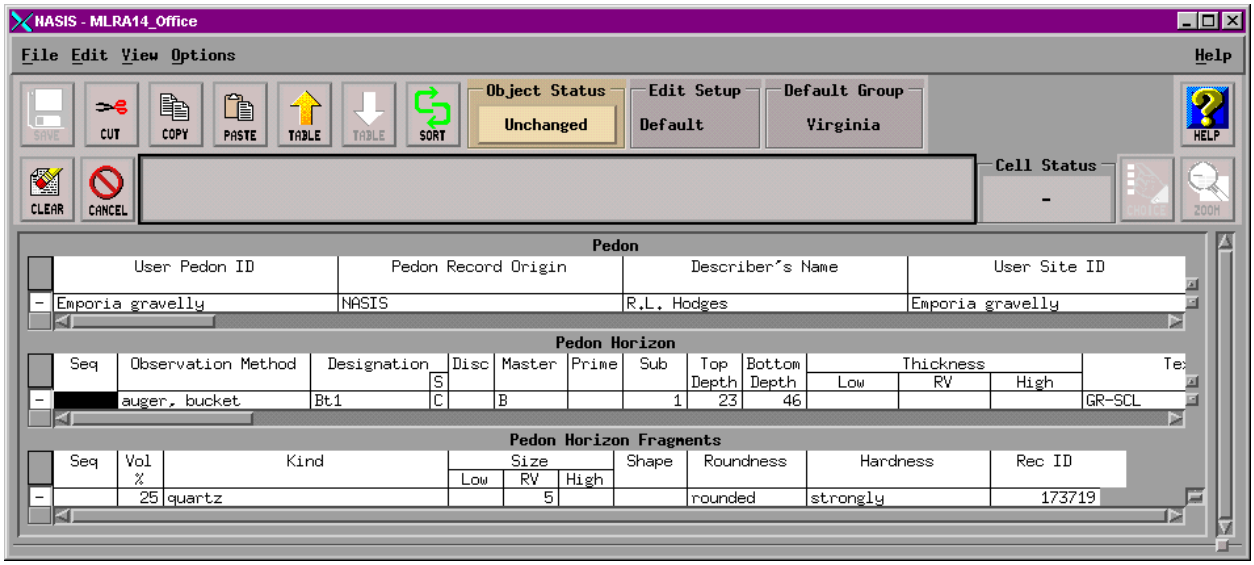
Pedon Horizon Concentrations



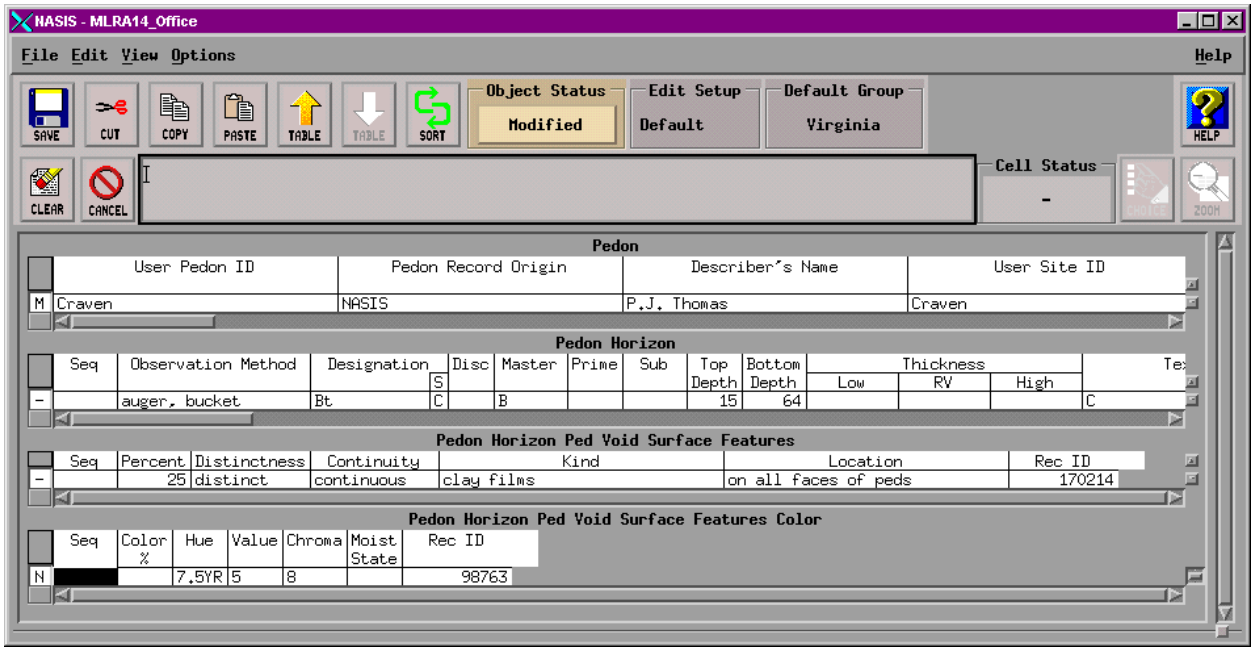
Pedon Horizon Designation Suffix



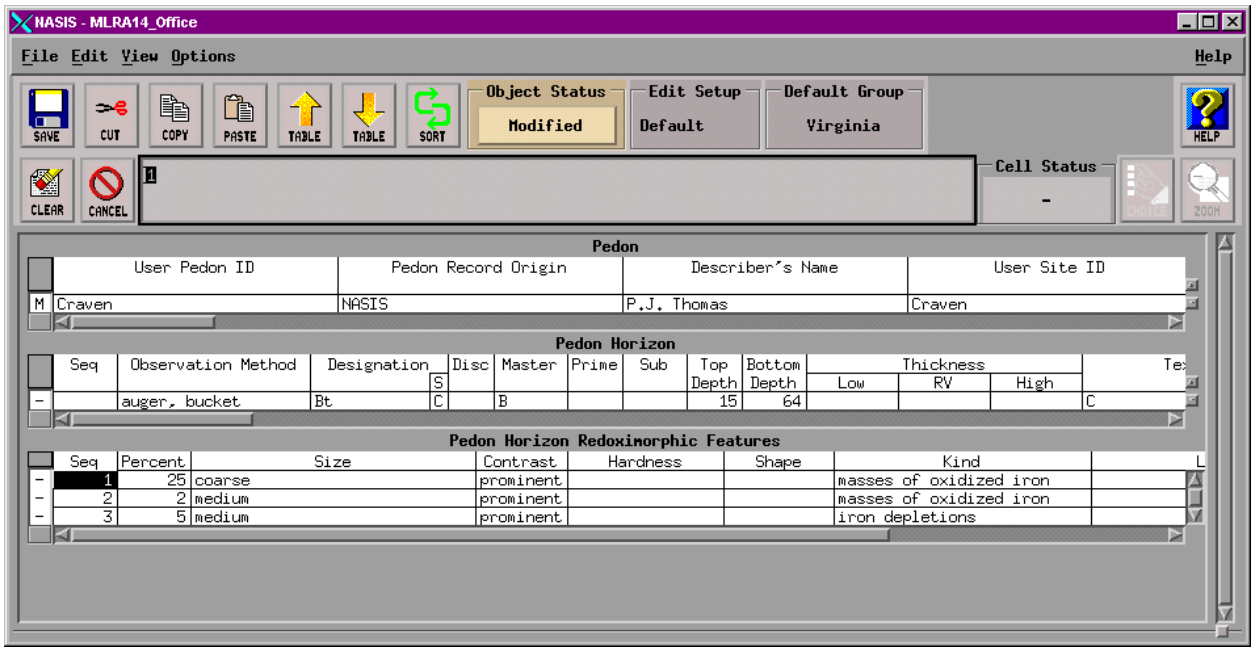
Pedon Horizon Fragments



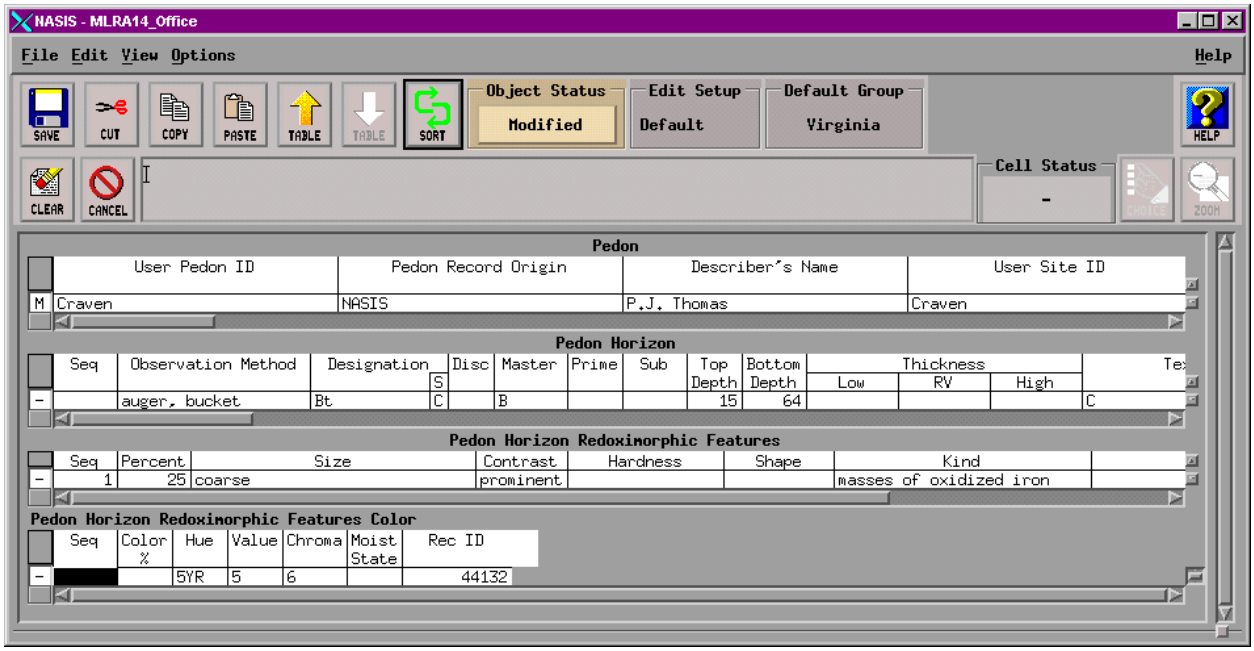
Pedon Horizon Ped Void Surface Features and Ped Void Surface Features Color



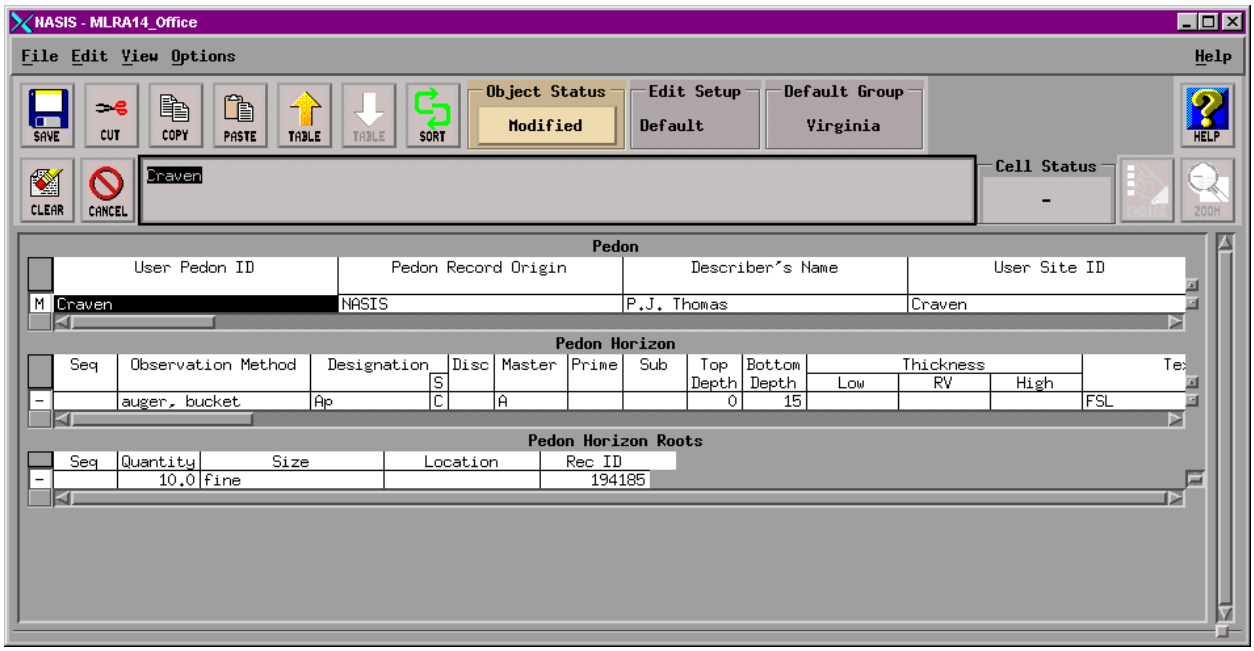
Pedon Horizon Redoximorphic Features



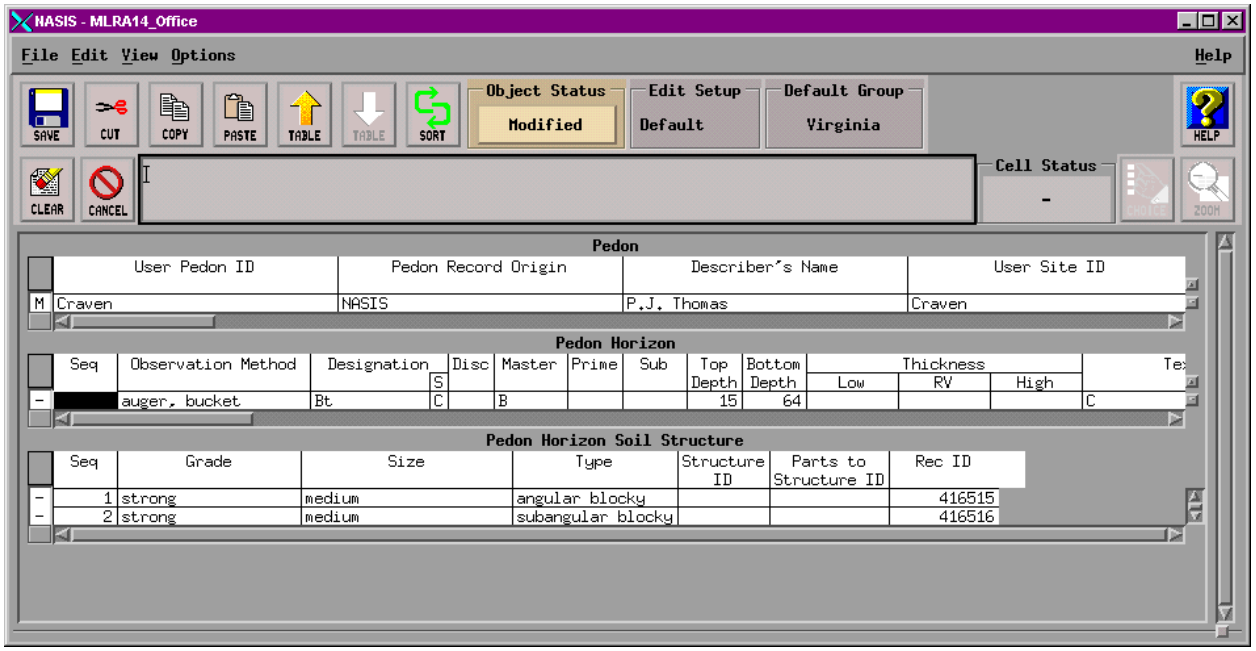
Ped Horizon Redoximorphic Features Color



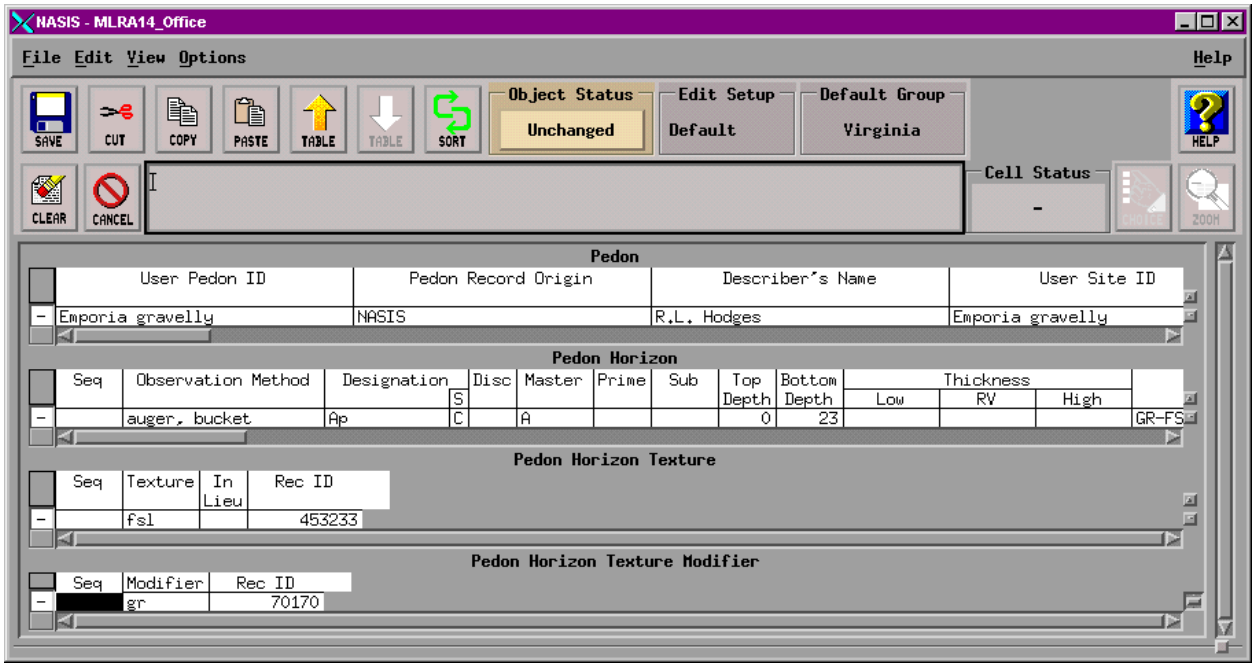
Pedon Horizon Roots



Pedon Horizon Soil Structure

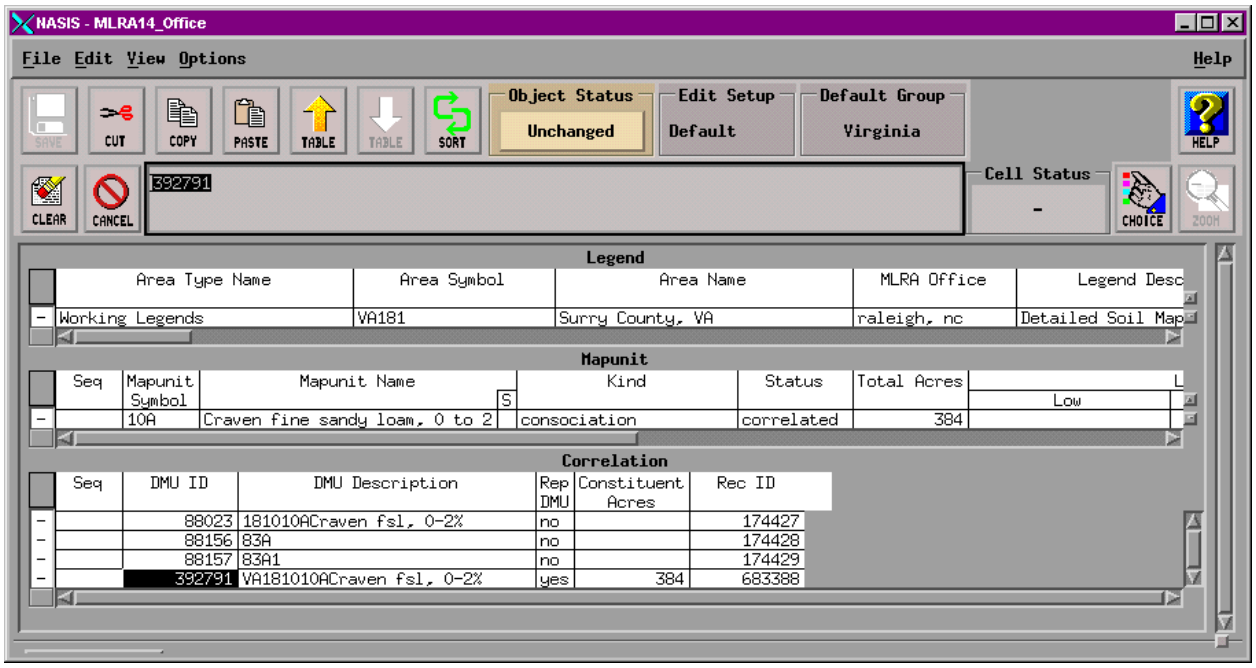


Pedon Horizon Texture and Pedon Horizon Texture Modifier

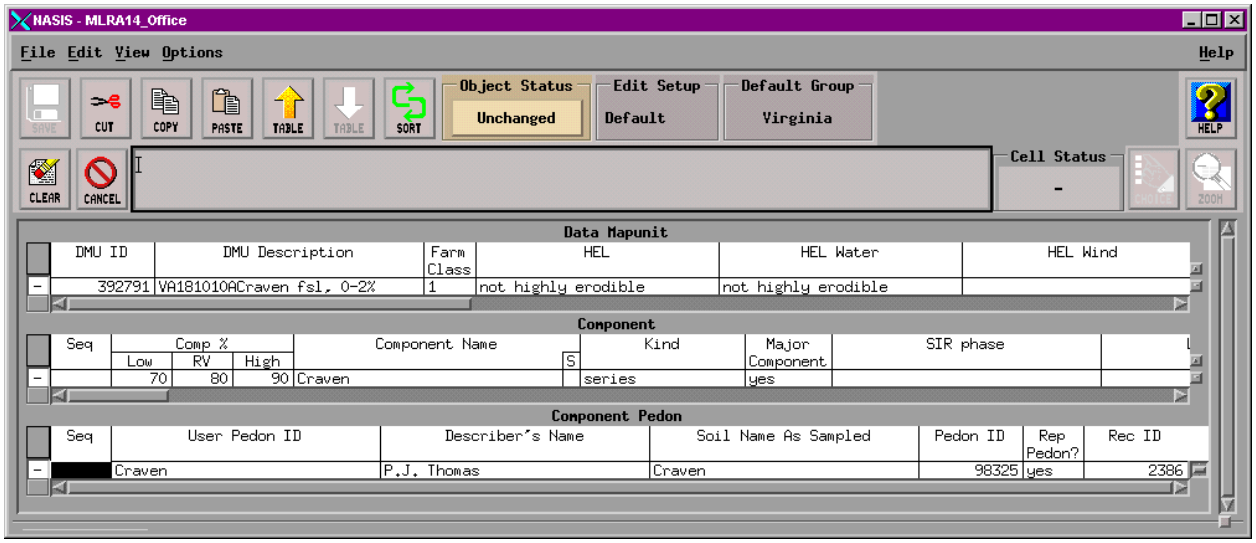


LINKING A PEDON TO A COMPONENT

1. On the **View** menu, select **Legends**, then click Correlation.
2. Highlight **DMU ID** number, e.g., DMU ID *392791*

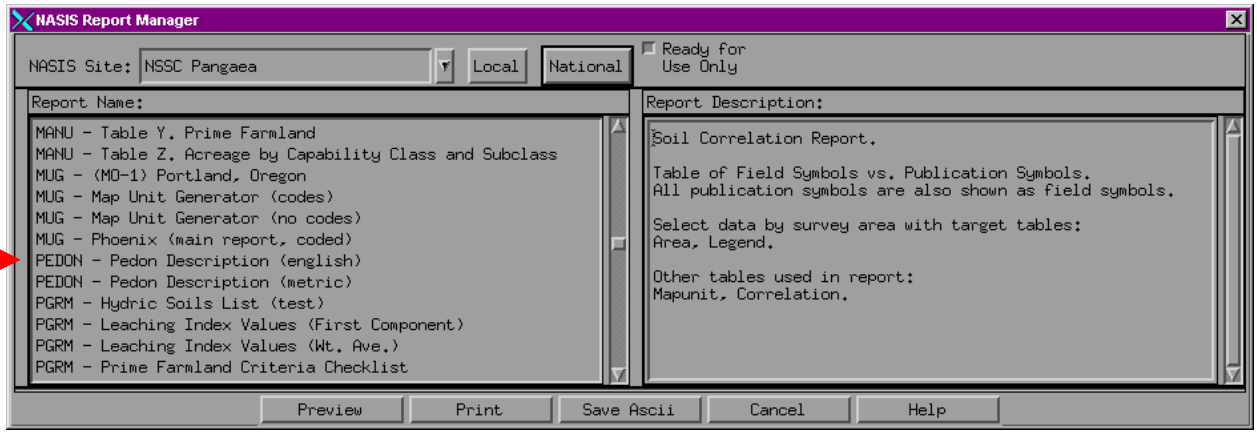


3. On the **File** menu, select **Load Related**, then click **Data Mapunit**.
4. On the **View** menu, select **Components**, then click **Component**.
5. Click the Component. E.g., *Craven*
6. On the **View** menu, select **Components**, then click **Component Pedon**.
7. Click **F8** to insert row.
8. At the **User Pedon ID** field, click the **Choice** button.
9. Highlight the **User Pedon Site ID** (e.g., Craven), then click **Apply**.



PEDON DESCRIPTION GENERATORS FROM NASIS

From the National Site



USDA - NATURAL RESOURCES CONSERVATION SERVICE
PEDON DESCRIPTION

Print Date: 06/15/2001
Description Date: 04/25/1991
Describer: P.J. Thomas

Site ID: Craven
Site Note:
Pedon ID: Craven
Lab Pedon #:
Lab Source ID:

Soil Name as Described/Sampled: Craven
Soil Name as Correlated: Craven
Classification:

Pedon Type: modal pedon for series
Pedon Purpose: full pedon description
Taxon Kind: series

Location Information:
County:
State:
MLRA:
Soil Survey Area:
Map Unit: --

Location Description: Craven fine sandy loam, 2 to 6 percent slopes, 2.7 miles northwest of Surry, 1.2 miles north-northeast of the junction of Highways VA-10 and VA-618, 0.3 mile west of the junction of Highways VA-618 and VA-619, 350 north of Highway VA-619, in an idle field; Claremont VA 7.5-minute topgraphic quadrangle; elevation 102 feet.

Legal Description: of Section , Township , Range

Latitude: 37 degrees 9 minutes 1.00 seconds north
Longitude: 76 degrees 52 minutes 54.00 seconds west
Datum: NAD27

UTM Zone:
UTM Easting:
UTM Northing:

Physigraphic Division:
Physiographic Province:
Physiographic Section:
State Physiographic Area:
Local Physiographic Area:

Geomorphic Setting: None Assigned
Upslope Shape:
Cross Slope Shape:

Primary Earth Cover:
Secondary Earth Cover:

Parent Material: clayey marine sediments
Bedrock Kind:
Bedrock Depth: inches
Bedrock Hardness:
Bedrock Fracture Interval:

Surface Fragments:

Particle Size Control Section:

Diagnostic Features:

ochric epipedon	0.0	to 5.9	in.
argillic horizon	5.9	53.9	

Top Depth (in)	Bottom Depth (in)	Restriction Kind	Restriction Hardness

Slope (%)	Elevation (feet)	Aspect (deg)	MAAT (F)	MSAT (F)	MWAT (F)	MAP (in)	Frost-Free Days	Drainage Class	Slope Length (feet)	Upslope Length (feet)
4.0	102		61			47		moderately well		

Ap--0.0 to 5.9 inches; brown (10YR 5/3), fine sandy loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; many fine roots; moderately acid, pH 5.7; abrupt smooth boundary.

Bt--5.9 to 25.2 inches; yellowish brown (10YR 5/6), clay; strong medium angular blocky and strong medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; 25 percent continuous distinct strong brown (7.5YR 5/8) clay films on all faces of peds; 2 percent medium prominent red (2.5YR 4/8) masses of oxidized iron and 5 percent medium prominent light brownish gray (10YR 6/2) iron depletions and 25 percent coarse prominent yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid, pH 4.7; gradual smooth boundary.

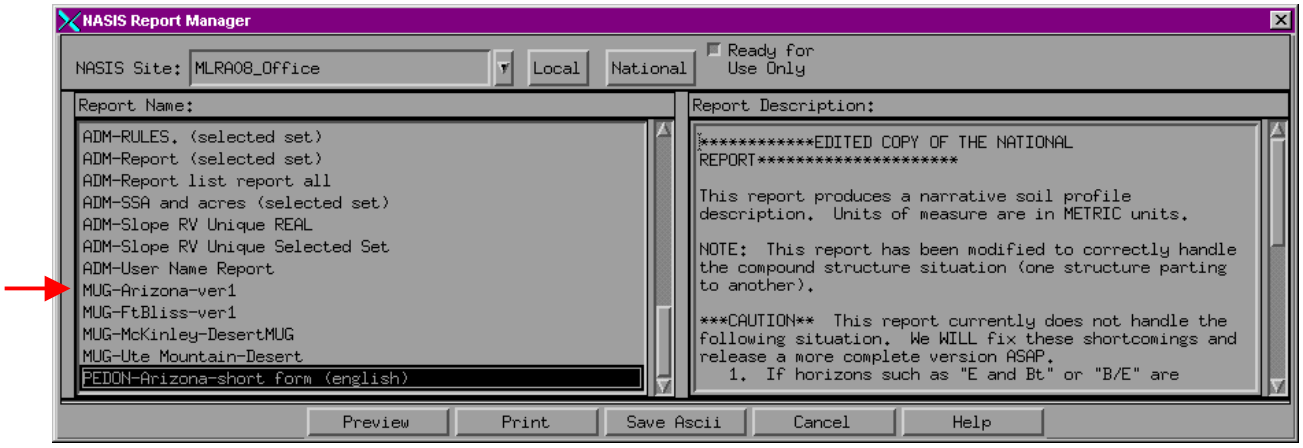
Btg--25.2 to 38.2 inches; light gray (10YR 7/1), clay; moderate medium angular blocky and moderate medium subangular blocky structure; firm,

moderately sticky, moderately plastic; common fine roots; 25 percent continuous distinct clay films on all faces of peds; 25 percent coarse prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) and yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid, pH 4.7; gradual smooth boundary.

BC--38.2 to 53.9 inches; strong brown (7.5YR 5/6), stratified clay loam to clay; weak coarse angular blocky structure; firm, moderately sticky, moderately plastic; 10 percent continuous distinct clay films on all faces of peds; 10 percent coarse prominent light gray (10YR 7/1) iron depletions and 20 percent coarse prominent yellowish red (5YR 4/6) and yellowish brown (10YR 5/8) masses of oxidized iron; very strongly acid, pH 4.7; clear smooth boundary.

C--53.9 to 64.2 inches; strong brown (7.5YR 5/6), sandy clay loam; structureless massive; friable, moderately sticky, moderately plastic; 10 percent medium prominent light gray (N 7/0) iron depletions; extremely acid, pH 4.2.

From MO8 Site



USDA - NATURAL RESOURCES CONSERVATION SERVICE
PEDON DESCRIPTION

Print Date: 06/15/2001
Description Date: 04/25/1991

Soil Name as Described/Sampled: Craven

Location Description: Craven fine sandy loam, 2 to 6 percent slopes, 2.7 miles northwest of Surry, 1.2 miles north-northeast of the junction of Highways VA-10 and VA-618, 0.3 mile west of the junction of Highways VA-618 and VA-619, 350 north of Highway VA-619, in an idle field; Claremont VA 7.5-minute topographic quadrangle; elevation 102 feet.

Legal Description: of Section , Township , Range

Latitude: 37 degrees 9 minutes 1.00 seconds north
Longitude: 76 degrees 52 minutes 54.00 seconds west

Ap--0.0 to 5.9 inches; brown (10YR 5/3), fine sandy loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; many fine roots; moderately acid, pH 5.7; abrupt smooth boundary.

Bt--5.9 to 25.2 inches; yellowish brown (10YR 5/6), clay; strong medium angular blocky and strong medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; 25 percent continuous distinct strong brown (7.5YR 5/8) clay films on all faces of peds; 2 percent medium prominent red (2.5YR 4/8) masses of oxidized iron and 5 percent medium prominent light brownish gray (10YR 6/2) iron depletions and 25 percent coarse prominent yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid, pH 4.7; gradual smooth boundary.

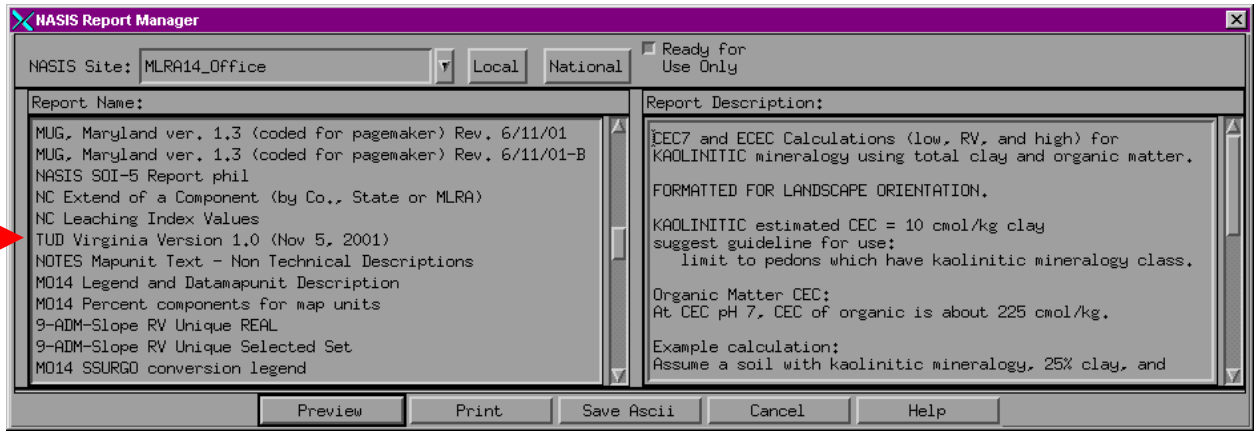
Btg--25.2 to 38.2 inches; light gray (10YR 7/1), clay; moderate medium angular blocky and moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; 25 percent continuous distinct clay films on all faces of peds; 25 percent coarse prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8) and

yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid, pH 4.7; gradual smooth boundary.

BC--38.2 to 53.9 inches; strong brown (7.5YR 5/6), stratified clay loam to clay; weak coarse angular blocky structure; firm, moderately sticky, moderately plastic; 10 percent continuous distinct clay films on all faces of peds; 10 percent coarse prominent light gray (10YR 7/1) iron depletions and 20 percent coarse prominent yellowish red (5YR 4/6) and yellowish brown (10YR 5/8) masses of oxidized iron; very strongly acid, pH 4.7; clear smooth boundary.

C--53.9 to 64.2 inches; strong brown (7.5YR 5/6), sandy clay loam; structureless massive; friable, moderately sticky, moderately plastic; 10 percent medium prominent light gray (N 7/0) iron depletions; extremely acid, pH 4.2.

From MO14 Site



Emporia Series

Local Physiographic Area: Southern Coastal Plain
Geomorphic Setting: On upland on marine terrace
Parent Material: Loamy marine sediments
Drainage Class: Well drained
Permeability Class: Moderate to moderately rapid
Soil Depth Class: Very deep
Slope: 0 to 6 percent

Associated Soils

Caroline soils that are clayey.
Kempsville soils that do not have iron depletions.
Slagle soils that are moderately well drained.
Uchee soils that have a thick, sandy surface layer.

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Emporia fine sandy loam in an area of Emporia fine sandy loam, 2 to 6 percent slopes; located 2.5 miles northeast of Surry, 1.8 miles northeast of the junction of Highways VA-10 and VA-638, 1.2 miles northwest of the junction of Highways VA-634 and VA-636, 1.0 mile west of the junction of Highways VA-636 and VA-637, in a stand of loblolly pines; Surry VA 7.5-minute topographic quadrangle; elevation 62 feet.;
Latitude: 37 degrees, 9 minutes, 12.00 seconds N.
Longitude: 76 degrees, 47 minutes, 35.00 seconds W.

A--0 to 6 inches; brown (10YR 5/3), fine sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; common fine roots; very strongly acid; abrupt smooth boundary.

E--6 to 14 inches; light yellowish brown (10YR 6/4), loamy fine sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine roots; strongly acid; clear smooth boundary.

Bt1--14 to 18 inches; yellowish brown (10YR 5/4), fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; 10 percent continuous distinct clay bridging between sand grains; 10 percent medium faint light yellowish brown (10YR 6/4) masses of oxidized iron; strongly acid; clear smooth boundary.

Bt2--18 to 41 inches; strong brown (7.5YR 5/6), sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine roots; 15 percent continuous distinct clay films on all faces of peds; 10 percent medium distinct yellowish red (5YR 4/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

BC--41 to 54 inches; strong brown (7.5YR 5/6), sandy clay; weak coarse subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; 5 percent discontinuous distinct clay films on all faces of peds; 5 percent medium distinct (5YR 4/8) masses of oxidized iron; 10 percent medium prominent light gray (10YR 7/1) iron depletions; strongly acid; clear smooth boundary.

C--54 to 72 inches; light gray (N 7/0) and yellowish red (5YR 4/6) and brownish yellow (10YR 6/6) and strong brown (7.5YR 4/6), stratified sandy loam to sandy clay loam; structureless massive; firm, slightly sticky, slightly plastic; strongly acid.

Range in Characteristics

Solum thickness: Commonly 40 to 60 inches, but ranges from 40 to 75 inches.
Depth to bedrock: More than 6 feet.
Rock fragments: 0 to 35 percent gravel in the A and B horizons and 0 to 60 percent in the C horizon.
Litholigic discontinuity: Below 40 inches in some pedons.
Consistence: Firm or very firm in some part of the Bt or BC horizon of most pedons. Exchangeable aluminum: Less than 6 cmol/kilogram of soil in the A and B horizons.
Mica flakes: None to common in some pedons.
Reaction: Very strongly acid through moderately acid, unless limed.

Ap horizon
Hue -- 10YR or 2.5Y
Value -- 4 through 6
Chroma -- 2 through 4
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

A horizon
Hue -- 10YR or 2.5Y
Value -- 2 through 6
Chroma -- 2 through 4
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

E horizon
Hue -- 10YR or 2.5Y
Value -- 5 through 7
Chroma -- 3 to 6
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

BA or BE horizon
Hue -- 7.5YR through 2.5Y
Value -- 5 through 7
Chroma -- 3 through 6
Texture -- sandy loam, fine sandy loam, or loam in the fine-earth fraction.

Bt horizon (upper)
Hue -- 5YR through 10YR
Value -- 4 through 7
Chroma -- 3 through 8
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Bt horizon (lower)
Hue -- 5YR through 2.5Y or multicolored without dominant matrix hue
Value -- 4 through 7
Chroma -- 3 through 8
Iron depletions -- commonly are below a depth of 36 inches
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy clay or clay in some pedons

Btg horizon
Hue -- neutral or 5YR through 2.5Y
Value -- 4 through 6
Chroma -- 0 through 2
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

BC or CB horizon
Hue -- 2.5YR through 2.5Y or is multicolored without dominant matrix hue
Value -- 4 through 6
Chroma -- 3 through 8
Texture -- coarse sandy loam, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

BCg or CBg horizon
Hue -- neutral or 2.5YR through 2.5Y
Value -- 4 through 6
Chroma -- 3 through 8
Texture -- coarse sandy loam, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

C horizon
Hue -- 2.5YR through 5Y or is multicolored without dominant matrix hue
Value -- 3 through 8
Chroma -- 3 through 8
Iron depletions -- most pedons are variegated with iron depletions and accumulations
Texture -- sandy loam through clay in the fine-earth fraction

Cg horizon
Hue -- neutral or 5YR through 5Y
Value -- 3 through 8
Chroma -- 0 through 2
Texture -- sandy loam through clay in the fine-earth fraction