# Chapter 9: Examining the Point Data Objects

The Site, Pedon, Site Association, and Transect Objects contain numerous tables for entering and maintaining site and point data in NASIS. In NASIS, the Site, Pedon, Site Association, and Transect tables can be populated independently of the legend, map unit, and component data. However, the site/pedon is linked to the legend/mapunit/component data. The site is linked to the legend and map unit, and the pedon is linked to the component.

Point data can be entered directly into NASIS6, imported from PedonPC, or imported from approved spreadsheets. Importing pedon data is discussed in Chapter 10.

This chapter provides a scenario-based exercise designed to explore the point data objects. The user can follow along exactly as written or can utilize data from their survey area.

Loading Existing Site and Pedon Records

1. The first step is to populate the local database with pedon data. Choose the national query "Pedon by author, series, and user pedon id" and run it against the national database. Select "Pedon" as the target table. In this example, the query is pinned to the Favorites list.
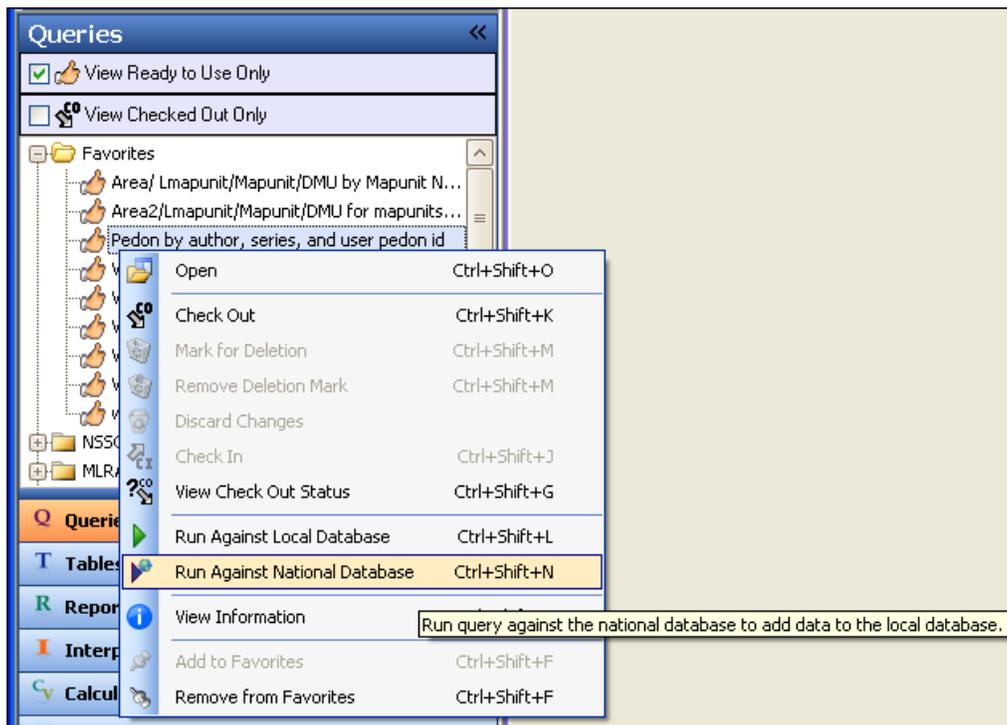
2. Choose "Pedon" as the target table. In the parameter fields, enter the describer's name (use wildcards if necessary) and use an asterisk for both the Soil Name as Sampled and the User Pedon ID fields. This loads all pedons associated with the describer "*finnell*."

3. The local database setup appears. It identifies those sites, pedons, and transects that are available to download from the national database. View the Status Messages Panel to verify the number of pedons, sites, and transects. Then click "Accept."

4. The query is run a second time against the local database using the same parameters. This loads pedon data from the local database into the selected set.
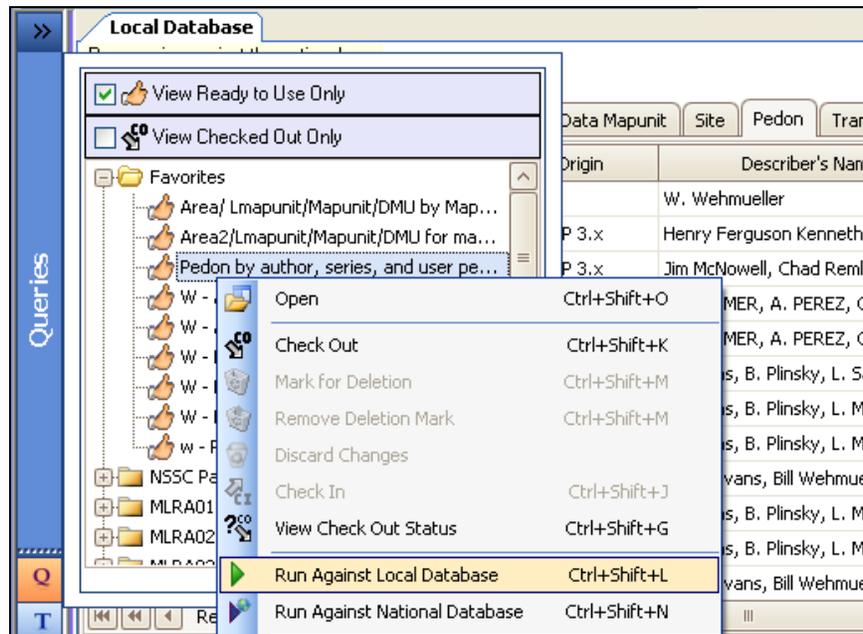
Note the additional target tables, which now include the Pedon, Site, and Transect tables.

Query Results

? Your query has completed successfully.

141 records were selected for table Pedon
141 records were selected for table Site
5 records were selected for table Transect

Would you like to add these to your selected set?

Yes   No
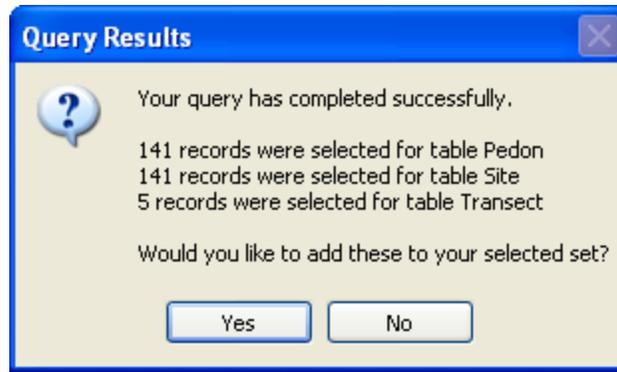
5. Click "Yes" to accept the results.

6. From the Tables Explorer Panel, open the Site, Pedon, and Transect tables.

		User Site ID ↑	Lat. Degrees	Lat. Minutes	Lat. Seconds	Lat. Direction	Long. Degrees	Long. Minutes	Long. Seconds	Long. Direction
▶	⊞	01KS161006								
	⊞	01KS177005	39	7	14.62	north	95	55	28.28	west
P	⊞	01KS177005	39	7	14.62	north	95	55	28.28	west
	⊞	01KS177010	39	7	0.45	north	95	59	3.43	west
P	⊞	01KS177010	39	7	0.45	north	95	59	3.43	west
	⊞	02KS087003	39	4	1.01	north	95	22	56.89	west
P	⊞	02KS087003	39	4	1.01	north	95	22	56.89	west
P	⊞	91KS155007	38	0	40.00	north	97	55	20.00	west

Examining the Site Tables

The Site table describes the location and characteristics of that particular geographic location. A site may be a specific location, such as a point where a soil profile description is taken, or it may have some spatial area that is chosen to be treated as a single point. Various kinds of data, such as soil profile descriptions, lab data, vegetative data, and so forth, may be linked to a site in this database.

1. Open the Site tab.

2. Use the "View Information" option to obtain information about the Site table. This option is located on the Table Editor Menu or the Table Editor Toolbar.

3. Scroll to the right and examine the various columns in the Site table. Use the "View Information" option for an explanation of each column.

4. Click on the plus sign (+) or choose the choice list to open the child tables.

NOTE: The Site Observation table records the date that the various observation or analytical data were collected for the specific site or location. Soil or site properties that may change with time are also recorded here. If a site is revisited at a later date for additional data collection, a new row with the appropriate date is entered in this table. Child tables exist for properties that may have multiple entries. Click on the plus sign to open and view all the child tables.

There are six child tables under the Site Observation table. These tables allow the user to revisit a site and collect additional or ongoing data by date.
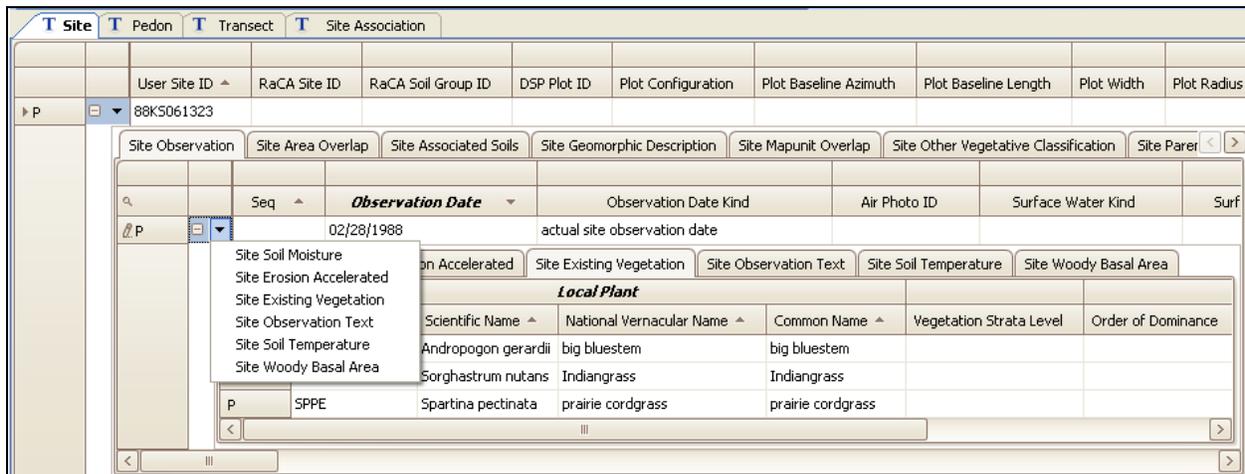
NOTE: The Site Soil Moisture table describes the soil moisture profile at this site at the time of observation. A soil moisture profile may be recorded on different dates. Each observation date is a new row that has the observation recorded for that specific date. This same concept is used for the Site Erosion Accelerated, Site Existing Vegetation, Site Observation Text, and the Site Soil Temperature tables.

5. Use the "View Information" menu option or toolbar button to examine the information on each table or other columns in these tables.

6. Click on the Site Area Overlap tab. This table is used to record the geographic spatial area overlaps, such as MLRA, county, State, or soil survey area in which the specific site occurs. This choice list comes from the Area Type Object.
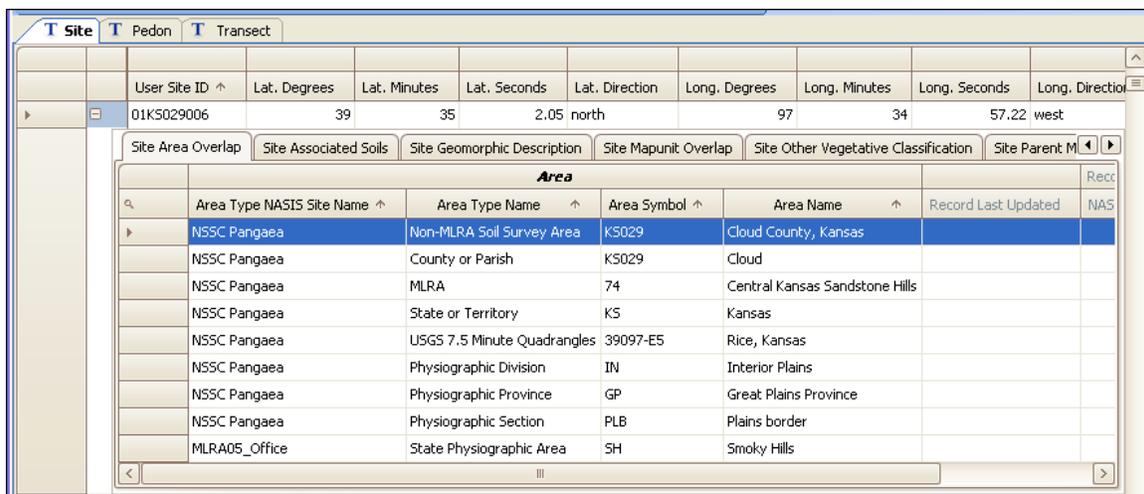
7. Click on the Site Geomorphic Description tab. This table is populated with the various geomorphic feature types used to describe the site. The choice lists come from the Geomorphic Feature Type Object.

8. Click on the Site Parent Material tab. This table is populated with the various parent materials that form the soil at the site. Multiple parent materials can be recorded using "Vertical Order."

9. Click on the remaining tables, scrolling through each table to view the columns associated with a specific table. Use the "View Information" menu option or toolbar button to examine the information on each table. Use the "View Information" option on the right-click menu for individual columns to examine the information on each column.

Examining the Link Between Sites and Map Units

Click on the Site Mapunit Overlap tab. This table links the site to the specific map unit from the soil survey in which the site was described. Scroll through the table and view the various columns.

The first few columns identify the legend in which the site is linked.

Scrolling to the right, the table identifies the map unit, within the specific legend, where the site was described.

The choices in this table are controlled by the local database. The local database must be populated with the legend(s) and the map unit(s) in order to link the site to a map unit.

Examining the Pedon Tables

1. Click on the Pedon tab.

2. The Pedon table contains soil profile information collected at the time it was described. The first few columns in the Pedon table contain the lineage link to the Site and Site Observation tables. The Pedon table is linked to the Site table through the Site Observation table. Scroll to the right to view the remaining columns found in the Pedon table.

3. Use the "View Information" menu option or toolbar button to examine the information on each table. Use the "View Information" option on the right-click menu for individual columns to examine the information on each column.

4. After examining the Pedon table, click the plus sign (+) button or the choice list to open the Pedon child tables. The child tables open to the Pedon Horizon table.

5. The Pedon Horizon table identifies the described horizons. Scroll through the table to review the many fields available for population. Use the "View Information" option to identify population needs for specific columns.

6. Horizons that have two distinct parts, such as E/B or E & Bt, are recorded twice. The characteristics of the first part are populated in one record. Then in a second row, using the same horizonation, depths, and thicknesses, the characteristics of the second part are populated. This is the only location and the only time this population rule is used. This population rule is NOT used in the Component Horizon table.

7. Click through the remaining Pedon child tables and scroll through each table to become familiar with the columns. In NASIS 6, new columns have been placed in the Pedon Horizon table. Use the "View Information" menu option or toolbar button to examine the information on each table or column.

8. Return to the Pedon Horizon table. Use the plus sign (+) or choice list button to open the Pedon Horizon child tables. The child tables open to the Pedon Horizon Texture table; however, the choice list can be used to select a specific child table.
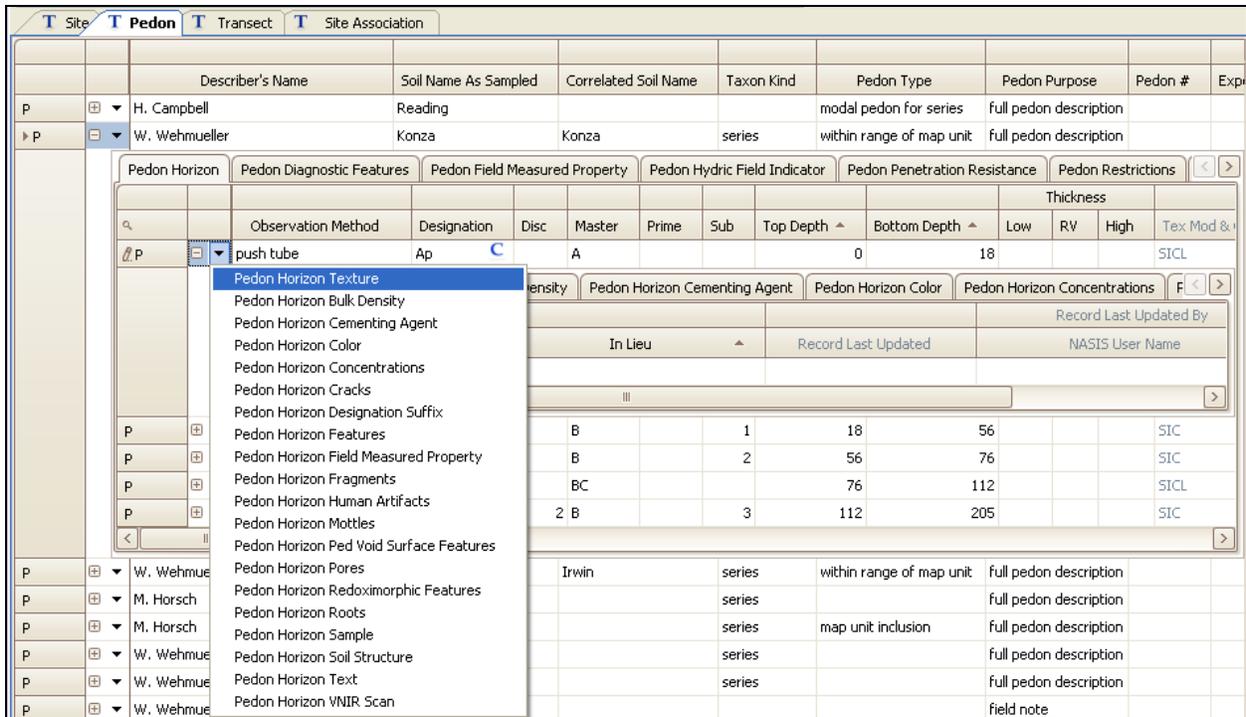
NOTE: Textures or the terms used *in lieu* of texture are populated in the Pedon Horizon Texture table.

> 9. Click through the remaining Pedon Horizon child tables, scrolling through each table to become familiar with the columns. Use the "View Information" menu option or toolbar button or the right-click menu to examine the information in each table or column.

> 10. After examining the Pedon Horizon child tables, return to the Pedon Horizon Texture table and click the plus sign (+) or choice list button to open the Pedon Horizon Texture child table. The child tables open to the Pedon Horizon Texture Modifier table.
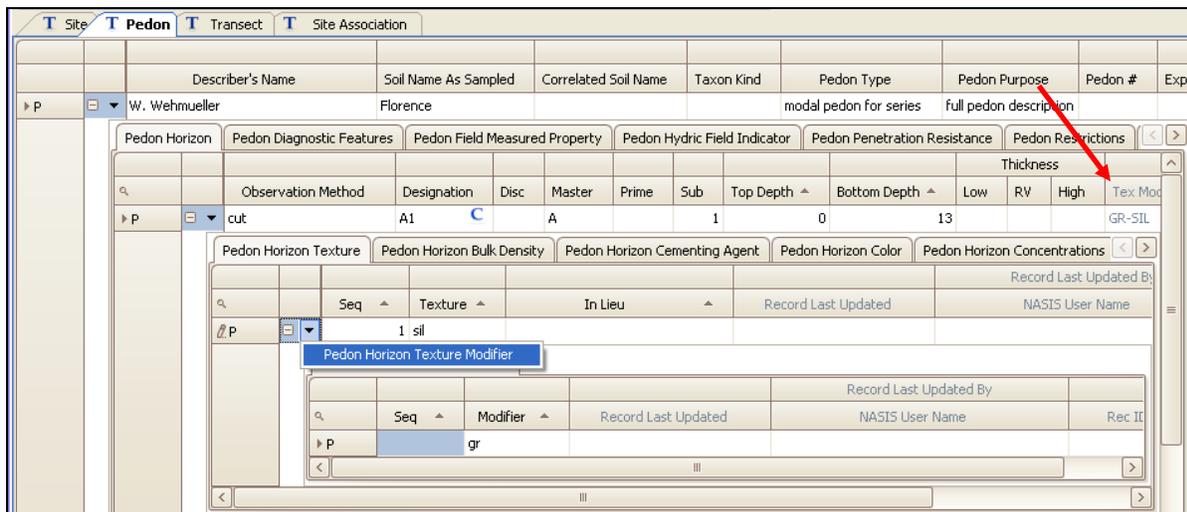
11. The Pedon Horizon Texture Modifier table is displayed. The texture modifier and class column ("Tex Mod & Class") in the Pedon Horizon table (see red arrow in the image above) is a calculated field based on the texture term in the Pedon Horizon Texture table and the textural modifier in the Pedon Horizon Texture Modifier table.

Examining the Link Between Pedons and Components

Pedons are linked to a component. The component should be within the data mapunit where the pedon was described. The following steps require the linked component to be in the local database. The pedon is linked to a component through the Component Pedon table.

1. Load the component into the selected set.

2. Verify that the data mapunit is checked out and open the Component Pedon child table.

3. Use the choice list to select the appropriate pedon(s) to be linked to the component. This choice list is controlled by the pedons stored in the local database. After selecting the pedons, identify the one pedon that is the "representative" pedon for the taxonomic unit description. All other pedons are documentation supporting the component ranges.

Examining the Transect Tables

The Transect table is used to capture and manage the transect information (kind, selection method, delineation size, and direction). The Transect Text table allows entry of related notes. Transects are created in the Transect Object table but the individual transect stops are recorded in the Pedon table. Enter the information in the Transect table then populate the Pedon table. Enter the stop number and the interval in the Pedon table.

1. Open the Transect table to view this table and its child tables. Notice the child tables named Transect Estimated Composition and Transect Text.
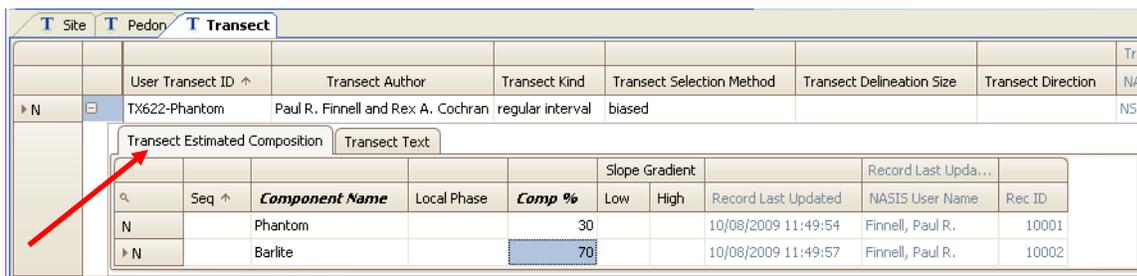
2. Use the "View Information" menu option or toolbar button to examine the information in each table or column.

The "Load Related for Selected Rows" function can be used to load the pedons from the local database into the selected set for those pedons linked to the specific transect. If the pedons are in the selected set, then the "Find Related for Selected Rows" function can be used to find the specific pedons in the Pedon table.

3. Highlight a transect record in the Transect table and choose either function. Choose the Pedon table from the "Load Related" choice list.
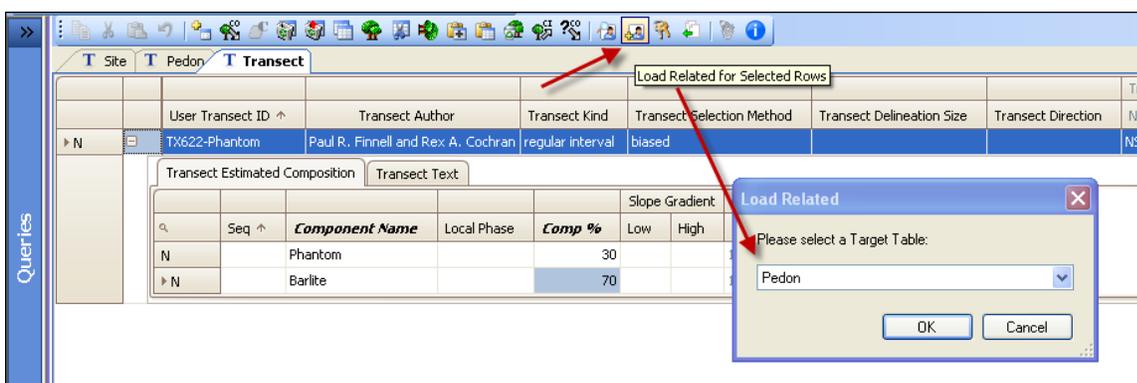
4. Return to the Pedon table.

		Transect						
		User Transect ID	Transect Author	Transect Rec ID	Transect Stop Nu... ↑	Transect Interval	User Pedon ID	Soil Name As Sampled
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	1	161.0	582-TX622-001	Phantom
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	2	161.0	582-TX622-002	Phantom-like
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	3	161.0	582-TX622-003	Phantom
▶ P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	4	161.0	582-TX622-004	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	5	161.0	582-TX622-005	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	6	161.0	582-TX622-006	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	7	161.0	582-TX622-007	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	8	161.0	582-TX622-008	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	9	161.0	582-TX622-009	Barlite
P	⊞	TX622-Phantom	Paul R. Finnell and Rex A. Cochran	70259	10	161.0	582-TX622-010	Barlite

NOTE: This view of the Pedon table has been modified. The Transect band was moved to the left side of the table. The Transect band includes the three columns from the Transect table identifying the "User Transect ID," authors, and "Transect RecID." In addition, the "Transect Stop Number" and the "Transect Interval" found in the Pedon table were moved to columns in association with the soil name.

Examining the Site Association Tables

The Site Association table is used to record natural or artificial groupings of sites (e.g., research sites, project sites, RaCA sites, etc.). The purpose of the Site Association table is to efficiently query a set of sites. Types of association may be created as needed by the user. The Site Association Site table records the identifier of a site that is a member 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.

To explain the use of the Site Association Object:

1. In the Queries Explorer, choose the national query "Site Association by Site Association ID" and run it against the national database. Choose the parameters in the following image.

2. The local database setup appears. Change to the Site Association tab.
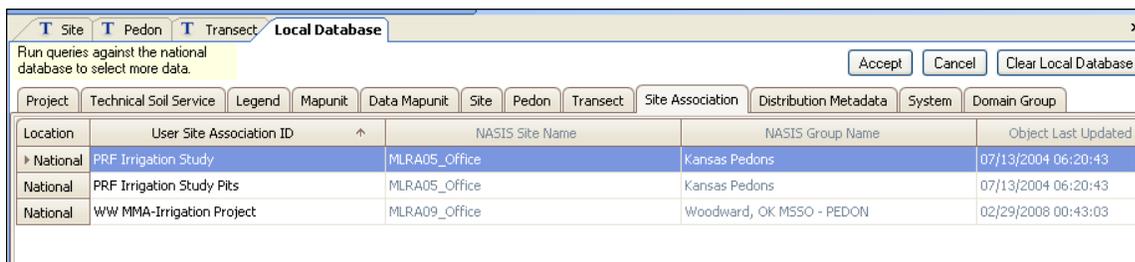
3. Choose "Accept" to download the results to the local database.

4. Run the query on the local database to load the results into the selected set. Use the parameters in the following image to verify proper results.

5. From the Table Explorer Panel, open the Site Association table. Then open the child table to view the Site Association Site table.

This example presents one method in using the Site Association table to group sites within a similar management project. This particular site association groups those pedons that were collected during the study of the influence of irrigation on soil development. Using a site association manages all the sites for quick access.

Process Steps for Entering Point Data

1. Open the Site table and populate a row.
2. Open the Site Observation table and populate a row (date must be entered).
3. Open the Pedon table, insert a row, and use the choice list to link it to the site and site observation that was created in steps 1 and 2.
4. Populate the Pedon table.
5. Open the Pedon Horizon table and enter all horizons before leaving the table.
6. Open a Pedon Horizon child table and populate all horizons before moving to the next child table.

If the pedon is part of a transect, populate the Transect table first. This allows each pedon to be linked to the transect as the pedon is entered.

If the point data is part of a site association, create the site association after the sites are complete. Either copy all sites and paste into the Site Association Site table or populate the sites using the choice list found in the Site Association Site table.

"User Site ID" and "User Pedon ID" are populated using the format set forth on page 2 of the "Soil Survey Laboratory Information Manual" (available at ftp://ftp-fc.sc.egov.usda.gov/NSSC/Lab_Info_Manual/ssir45.pdf).