FGDC-STD-006

Soil Geographic Data Standard

Soil Data Subcommittee
Federal Geographic Data Committee

September 1997

Federal Geographic Data Committee
Department of Agriculture - Department of Commerce - Department of Defense - Department of Energy
Department of Housing and Urban Development - Department of Interior - Department of State
Department of Transportation - Environmental Protection Agency
Federal Emergency Management Agency - Library of Congress
National Aeronautics and Space Administration - National Archives and Records Administration
Tennessee Valley Authority

Federal Geographic Data Committee

Established by Office of Management and Budget Circular A-16, the Federal Geographic Data Committee (FGDC) promotes the coordinated development, use, sharing, and dissemination of geographic data.

The FGDC is composed of representatives from the Departments of Agriculture, Commerce, Defense, Energy, Housing and Urban Development, the Interior, State, and Transportation; the Environmental Protection Agency; the Federal Emergency Management Agency; the Library of Congress; the National Aeronautics and Space Administration; the National Archives and Records Administration; and the Tennessee Valley Authority. Additional Federal agencies participate on FGDC subcommittees and working groups. The Department of the Interior chairs the committee.

FGDC subcommittees work on issues related to data categories coordinated under the circular. Subcommittees establish and implement standards for data content, quality, and transfer; encourage the exchange of information and the transfer of data; and organize the collection of geographic data to reduce duplication of effort. Working groups are established for issues that transcend data categories.

For more information about the committee, or to be added to the committee's newsletter mailing list, please contact:

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SOIL GEOGRAPHIC DATA STANDARD

1. Introduction

The Soil Geographic Data Standard is composed of several components that describe a data content standard.

1.1 Purpose

The purpose of this standard is to standardize the names, definitions, ranges of values, and other characteristics of soil survey map attribute data developed by the National Cooperative Soil Survey (NCSS). The NCSS is the body composed of the various federal, state, and local units of government who work cooperatively to develop the soil survey of all lands in the United States.

The soil attribute data associated with soil maps include the physical and chemical properties of the various soils being described, interpretative information, the arrangement of these soils into the soil map units identified on the soil maps, and information about the soil map units themselves. The attribute data have no spatial relationship until they are linked to the maps via the map unit symbol and other unique identifiers. However, there is information included linking the soil data to geographical areas such as counties, states, major land resource areas, and soil survey areas.

The USDA-Natural Resources Conservation Service (former Soil Conservation Service) has been identified by the Federal Geographic Data Committee to coordinate the development of standards for the transfer of soil data. A representative of this agency serves as chairman of the FGDC Soil Data Subcommittee.

When adopted, this standard should facilitate the transfer and use of soil data. It will allow users of such data to receive data in a common format, no matter who the developer of the data is. It will allow much more data to be available to a more diverse group of users.

1.2 Scope

This standard applies to the tabular data associated with the soil survey maps developed by the National Cooperative Soil Survey at scales of about 1:12,000 to 1:30,000. It contains data of and about soil map units and map unit components.

The standard does not pertain to data gathered at a specific location -- point or site data. Standards for point/site data will likely be developed at a future time. Point data are used to develop the ranges for map unit components. As data is gathered while conducting a soil survey, the data from individual points are classified using accepted procedures and grouped or aggregated into similar soil types. The various soil types become components of map units.

The standard references and builds on some long established standards including SOIL TAXONOMY, THE SOIL SURVEY MANUAL, and THE SOIL SURVEY LABORATORY METHODS MANUAL. Soil Taxonomy is the comprehensive classification system by which soils are classified based on their physical and chemical properties. It is used throughout the US and several foreign countries. Other classification systems, such as the American Association of State Highway and Transportation Officials (AASHTO), and the Unified Soil Classification System (USCS) are also used. The AASHTO and Unified systems are based more on engineering related properties. Data elements are included to identify the AASHTO and USCS classification for each soil horizon included in the data base. The two manuals contain procedures to be used in the field and lab to develop standard soil information. The NRCS National Soil Survey Handbook provides additional guidance.

These existing standards have been accepted by the National Cooperative Soil Survey as the standards by which soil survey work will be done. The procedures contained in these standards have been used in excess of 30 years, and have been modified and improved during this time period as the need was identified.

1.3 Limits

This standard is limited to data associated with soil maps and associated attribute data (aggregated data), generally at scales of about 1:12,000 to 1:30,000. As presented at this time, the standard does not contain information dealing with the description of landforms and landscapes, or vegetation related to soil map units. This information will be added at a future time once the respective interagency groups complete work on these subjects. The standard classification of vegetation types developed by the FGDC Vegetation Subcommittee will likely be incorporated also.

It should be understood that the list of data elements included in the standard will likely be modified and/or added to as new or additional data are identified as being needed for various uses. These modifications will be submitted for acceptance when necessary, and advertised to known users of the standard.

An additional part of the standard will likely be developed to deal with point or site data (pedon descriptions and laboratory analyses). Other additions may also be developed for data to accompany soil maps at other scales.

1.4 Development Process

This standard is the result of a cooperative effort. Initial meetings were held in the Fall of 1992 with progress being made since that time. A work group under of the FGDC Soils Subcommittee composed of representatives of several federal agencies and universities developed much of the proposed standard. Agencies involved include the Natural Resources Conservation Service, Forest Service, Bureau of Land Management, Environmental Protection Agency, Agricultural Research Service, and the Agricultural Experiment Stations. The proposed standard was then reviewed and accepted by the NCSS Standards Committee and the FGDC Soils Subcommittee.

1.5 Maintenance

A team has been approved and members appointed by the FGDC Soils Subcommittee to maintain and enhance this standard. The Natural Resources Conservation Service is the lead agency responsible for maintenance.

Membership is as follows:

Jim Fortner, NRCS, Lincoln, NE, (team leader)
Russ Kelsea, NRCS, Lincoln, NE
Jim Keys, USFS, Atlanta, GA
Scott Davis, BLM, Denver, CO
Wayne Hudnall, LSU, Baton Rouge, LA
John Doran, ARS, Lincoln, NE
William McMahon, DMA-DOD, Fairfax, VA
Craig Palmer, EPA, Las Vegas, NV

Other agencies/entities such as the U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Bureau of Reclamation, Bureau of Mines, Biological Survey, and U.S. Park Service will be contacted for input related to data relative to their specialty, on an as-needed basis. The existing NCSS work planning processes and state contacts will be utilized to allow for input from other concerned parties.

This team will use the following procedures to process proposals to modify or add to the standard:

- Each team member will receive, review and organize proposals originating within their respective agency/entity. They will then forward a recommendation for action to the team leader.

- The existing NCSS Work Planning Conference structure, and state contacts, will be used to allow for input from industry, non-industrial landowners, and non-traditional users to the team.

- The team leader will route the proposal along with the originating agency's recommendation to team members for review and recommendation.

- The team will make the final decision. Each represented agency will have equal voting rights -- one vote per agency/entity.

- An appeal procedure will be established to allow for direct presentation of proposals to the team leader.

- A feedback and tracking mechanism will be established to ensure that originators of proposals are informed of actions taken on their proposals.

- A minimum standard for documentation to accompany all proposals will be established.

- A mechanism to get input and/or review of proposals from agencies not represented on the team will be established.

- A scheme to ensure timely review and processing of proposals will be established.

- The data set will be maintained by the Natural Resources Conservation Service staff.

2. Content of the Standard

The standard contains a listing of data elements used to store the various physical, chemical, and interpretive data associated with soils described in a soil survey. Soil surveys are structured to cover a specific geographic portion of the United States. This geographic area is portrayed by the area object in the database.

A printout of the data dictionary of the data elements is included which contains the name, definition, field length, data type, precision, allowable ranges or entries as is appropriate, and whether or not it is reported with a High, Low, and Representative Value (RV) for each data element.

Included in the list of data elements are various pairs that end with “iid” and “iid_ref” which have the same definition. The definitions are generic in nature explaining what the “iid” and “iid_ref” numbers represent. The definitions are not specific to the particular data elements listed. These elements serve as links between the various tables to maintain referential integrity among the data.

The following documents are provided to detail the content of the standard and to show the relationships among the data:

- An Entity Relationship Model which lists the various tables in the database, and their relationship to one another. The purpose of the model is only to demonstrate the relationships between the data, not to specify any particular structure of the database. The relationships within the data is very important in order to properly utilize the data as it is intended.
- A listing of the table names in the data base with data elements contained in each.

- A listing of the soil property and interpretative data elements included in the data base. This list matches those contained in the data dictionary printout (Item 5 below).
- A listing of descriptions/definitions for some of the choices listed for various data elements. This is not a complete list at this time as all definitions have not been entered into the data dictionary data base. Other definitions may also be found in the Soil Survey Manual or the National Soil Survey Handbook references.
- A computer printout of the data dictionary.

2.1 SOIL GEOGRAPHIC DATA STANDARD DATA ELEMENTS

aashto_group_classification

aashto_group_index

area_acres

area_iid

area_iid_ref

area_name

area_overlap_acres

area_symbol

area_type_database_iid_ref

area_type_iid

area_type_iid_ref

area_type_name

available_water_capacity

bulk_density_one_tenth_bar

bulk_density_one_third_bar

calcium_carbonate_equivalent

cation_exch_capcty_nh4oacph7

chor_aashto_iid

chor_fragments_iid

chor_texture_group_iid

chor_texture_group_iid_ref

chor_texture_iid

chor_texture_iid_ref

chor_texture_modifier_iid

chor_unified_iid

chorizon_iid

chorizon_iid_ref

clay_total_separate

comp_crop_yield_iid

comp_interp_iid

comp_interp_iid_ref

comp_interp_reason_iid

comp_month_iid

comp_month_iid_ref

comp_restrictions_iid

comp_soil_moisture_iid

comp_soil_temperature_iid

comp_surface_fragments_iid

comp_tax_fam_other_iid

comp_tax_moisture_class_iid

component_iid

component_iid_ref

component_kind

component_name

component_percent

correlation_date

correlation_iid

corrosion_concrete

corrosion_uncoated_steel

critical_shear_stress

crop_name

crop_yield_units

data_mapunit_description

data_mapunit_iid

data_mapunit_iid_ref

dmu_crop_yield_iid

dmu_database_iid_ref

drainage_class

effective_cation_exch_capcty

electrical_conductivity

elevation

erosion_accelerated_kind

erosion_class

excavation_difficulty_class

extractable_acidity

extractable_aluminum

farmland_classification

flooding_duration_class

flooding_frequency_class

fragment_kind

fragment_roundness

fragment_rupture_resist_cem

fragment_shape

fragment_size

fragment_volume

free_iron_oxides

gypsum

horizon_depth_to_bottom

horizon_depth_to_top

hydric_condition

hydrologic_group

initial_subsidence

interpretation_kind

interpretation_rating

interpretation_restriction

interrill_erodibility_factor

irrigated_capability_class

irrigated_capability_subclass

irrigated_crop_yield

legend_area_overlap_iid

legend_area_overlap_iid_ref

legend_database_iid_ref

legend_iid

legend_iid_ref

linear_extensibility_percent

liquid_limit

mapunit_acres

mapunit_area_overlap_iid

mapunit_constituent_acres

mapunit_iid

mapunit_iid_ref

mapunit_kind

mapunit_name

mapunit_status

mapunit_symbol

mean_annual_air_temperature

mean_annual_frost_free_days

mean_annual_precipitation

month

nonirr_capability_class

nonirr_capability_subclass

nonirr_crop_yield

organic_matter_percent

particle_density

ph_01m_cacl2

ph_1_1_water

plasticity_index

ponding_depth

ponding_duration_class

ponding_frequency_class

potential_frost_action

representative_dmu

restriction_depth_to_bottom

restriction_depth_to_top

restriction_hardness

restriction_kind

restriction_thickness

rill_erodibility_factor

rock_frag_3_to_10_in

rock_frag_greater_than_10_in

runoff

sand_coarse_separate

sand_fine_separate

sand_medium_separate

sand_total_separate

sand_very_coarse_separate

sand_very_fine_separate

sat_hydraulic_conductivity

sieve_number_10

sieve_number_200

sieve_number_4

sieve_number_40

silt_coarse_separate

silt_fine_separate

silt_total_separate

slope_aspect

slope_gradient

slope_length_usle

sodium_adsorption_ratio

soil_erodibility_factor_rf

soil_erodibility_factor_whole

soil_moist_depth_to_bottom

soil_moist_depth_to_top

soil_moisture_status

soil_slippage_potential

soil_survey_area_status

soil_temp_depth_to_bottom

soil_temp_depth_to_top

soil_temperature_mean_monthly

stratified_textures_flag

surface_frag_cover_percent

surface_frag_kind

surface_frag_roundness

surface_frag_rup_resist_cem

surface_frag_shape

surface_frag_size

t_factor

taxonomic_classification_name

taxonomic_family_mineralogy

taxonomic_family_other

taxonomic_family_particle_size

taxonomic_family_reaction

taxonomic_family_temp_class

taxonomic_great_group

taxonomic_moisture_class

taxonomic_moisture_subclass

taxonomic_order

taxonomic_subgroup

taxonomic_suborder

taxonomic_temp_regime

terms_used_in_lieu_of_texture

texture_class

texture_modifier

texture_modifier_and_class

total_subsidence

unified_soil_classification

water_fifteen_bar

water_one_tenth_bar

water_one_third_bar

wildlife_habitat_coniferous

wildlife_habitat_grain

wildlife_habitat_grass

wildlife_habitat_hardwood

wildlife_habitat_herbaceous

wildlife_habitat_openland

wildlife_habitat_rangeland

wildlife_habitat_shallow_water

wildlife_habitat_shrub

wildlife_habitat_wetland

wildlife_habitat_wetland_plant

wildlife_habitat_woodland

wind_erodibility_group

wind_erodibility_index

woodland_equipment_rating

woodland_erosion_rating

woodland_plant_competition

woodland_production_class

woodland_seedling_mortality

woodland_windthrow_hazard

2.2 DATA DICTIONARY

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
aashto_group_classification	aashtocl	choice					

DEFINITION
A system that classifies soils according to those properties that affect roadway construction and maintenance. Soils are classified into seven basic groups plus eight subgroups, for a total of fifteen for mineral soils. Another class for organic soils is used. The groups are based on determinations of particle-size distribution, liquid limit, and plasticity index. The group classification, including group index, is useful in determining the relative quality of the soil material for use in earthwork structures, particularly embankments, subgrades, subbases, and bases.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED

CODE	NASIS CODE
n	a-1
n	a-1-a
n	a-1-b
n	a-2
n	a-2-4
n	a-2-5
n	a-2-6
n	a-2-7
n	a-3
n	a-4
n	a-5
n	a-6
n	a-7
n	a-7-5

n a-7-6
n a-8

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
aashto_group_index	aashind	integer		0.00	120.00		

DEFINITION
The empirical group index formula devised for approximately within-group evaluation of the "clayey granular materials" and the "silty-clay materials".

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_acres	areaacres	integer	acres				

DEFINITION
The acreage total of all land and water areas in the specified geographic area.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_iid	areaiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_iid_ref	areaiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_name	areaname	string					135

DEFINITION
The name given to the specified geographic area.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_overlap_acres	areaovacres	integer	acres				

DEFINITION
The area overlap of two geographic regions, in acres.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_symbol	areasymbol	string					20

DEFINITION
A symbol that uniquely identifies a single occurrence of a particular type of area (e.g Lancaster Co., Nebraska is NE109).

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_type_database_iid_ref	atdbiidref	integer					

DEFINITION
The number of the database that created a particular entity. Entities include area types, legends, and data mapunits. In the NASIS system, each database is assigned its own unique database ID.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_type_iid	areatypeiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_type_iid_ref	areatypeiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table

(component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
area_type_name	areatypename	string			45		

DEFINITION
The name of a particular type of area. Area type names include "state", "county", "mlra", etc.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
available_water_capacity	awc	float	cm/cm	0.00	0.70	2	

DEFINITION
The volume of water that an increment of soil depth, inclusive of fragments, can store that is available to plants. AWC is commonly estimated as the difference between the water contents at 1/10 or 1/3 bar (field capacity) and 15 bars (permanent wilting point) tension.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
bulk_density_one_tenth_bar	dbtenthbar	float	g/cm3	0.02	2.60	2	

DEFINITION
The oven dried weight of the less than 2 mm soil material per unit volume of soil at a water tension of 1/10 bar.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
bulk_density_one_third_bar	dbthirdbar	float	g/cm3	0.02	2.60	2	

DEFINITION
The oven dry weight of the less than 2 mm soil material per unit volume of soil at a water tension of 1/3 bar.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
calcium_carbonate_equivalent	caco3	integer	percent	0.00	110.00		

DEFINITION
The quantity of Carbonate (CO3) in the soil expressed as CaCO3 and as a weight percentage of the less than 2 mm size fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
cation_exch_capcty_nh4oacph7	cec7	float	meq/100g	0.00	400.00	1	

DEFINITION

The amount of readily exchangeable cations that are electrically adsorbed to neagative charges in the soil, soil constituent, or other material, at pH 7.0, as estimated by the ammonium acetate method.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_aashto_iid	chaashtoiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

chor_fragments_iid chfragsiid integer

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_texture_group_iid	chtgiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_texture_group_iid_ref	chtgiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_texture_iid	chtiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_texture_iid_ref	chtiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_texture_modifier_iid	chtexmodiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table

(component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chor_unified_iid	chunifiediid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

chorizon_iid chiid integer

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
chorizon_iid_ref	chiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
clay_total_separate	claytotal	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles less than 0.002mm in equivalent diameter as a weight percentage of the less than 2.0mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_crop_yield_iid	cocropyldiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_interp_iid	coiiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_interp_iid_ref	coiiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_interp_reason_iid	coireasoniid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_month_iid	comonthiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_month_iid_ref	comonthiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_restrictions_iid	corestrictiid	integer					

DEFINITION

The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_soil_moisture_iid	cosoilmoistiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_soil_temperature_iid	cosoiltempiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_surface_fragments_iid	cosurffragsiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity

(area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
comp_tax_fam_other_iid	cotaxfoiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

comp_tax_moisture_class_iid cotaxmciid integer

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
component_iid	coiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
component_iid_ref	coiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
component_kind	compkind	choice					

DEFINITION
Identifies the kind of component of the mapunit. Examples are series and miscellaneous areas.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

n	family
n	miscellaneous area
n	series
n	taxadjunct
n	taxon above family
y	variant

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
component_name	compname	string					60

DEFINITION
Name assigned to a component based on its range of properties.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
component_percent	comppct	integer	percent	0.00	100.00		

DEFINITION
The percentage of the component of the mapunit.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
correlation_date	cordate	date/time					

DEFINITION
The date expressed as MMYY of final correlation of the soil survey area.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
correlation_iid	corriid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table

(component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
corrosion_concrete	corcon	choice					

DEFINITION
Susceptibility of concrete to corrosion when in contact with the soil.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	high
n	low
n	moderate

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

corrosion_uncoated_steel corsteel choice

DEFINITION
Susceptibility of uncoated steel to corrosion when in contact with the soil.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	high
n	low
n	moderate

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
critical_shear_stress	taucfact	choice	Pa				

DEFINITION
The hydraulic shear that must be exceeded before rill erosion can occur.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	To be assigned

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE

DATA ELEMENT NAME	NAME	TYPE	MEASURE	VALUE	VALUE	PRECISION	LENGTH
crop_name	cropname	choice					

DEFINITION
The common name for the crop.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
n	african stargrass
n	alfalfa hay
n	alfalfa seed
n	almonds
n	apples
n	apricots
n	artichokes
n	asparagus
n	avocados
n	bahiagrass
n	bahiagrass hay
n	bananas
n	barley
n	barley-fallow
n	beans, dry lima
n	beans, dry pinto
n	beans, other dry
n	beans, snap
n	beans, unshelled lima
n	beets
n	bentgrass seed
n	bermudagrass-clover hay
n	bermudagrass-fescue hay
n	big bluestem
n	blackberries

n blueberries
n bluegrass seed
n bluegrass-ladino
n bluegrass-ladino hay
n bluegrass-trefoil
n bluegrass-trefoil hay
n bluegrass-white clover
n bluegrass-white clover hay
n breadfruit
n broccoli
n bromegrass hay
n bromegrass-alfalfa
n bromegrass-alfalfa hay
n bromegrass-alsike
n bromegrass-alsike hay
n bromegrass-ladino
n broomcorn
n brussel sprouts
n buckwheat
n buffel grass
n cabbage
n cabbage, chinese
n cabbage, mustard
n canarygrass hay
n canarygrass-alsike
n canarygrass-alsike hay
n canarygrass-ladino
n canarygrass-ladino hay
n canola, spring
n canola, winter
n cantaloupe
n carrots
n cassava
n cauliflower
n causian bluegrass
n celery
n cherries

n clover seed
n coconuts
n coffee
n common bermudagrass
n common bermudagrass hay
n common ryegrass seed
n cool season grass
n corn
n corn silage
n corn, sweet
n cotton lint
n cotton lint, pima
n cowpeas
n cranberries
n crested wheatgrass
n crested wheatgrass-alfalfa hay
n cucumbers
n fescue
n filberts
n fine fescue seed
n flax
n garlic
n garrisongrass
n grain sorghum
n grapefruit
n grapes, table
n grapes, wine
n grass hay
n grass, seed
n grass-clover
n grass-legume hay
n green chop
n green needlegrass
n guinea grass
n hay crops, annuals
n hops
n improved bermudagrass

- n improved bermudagrass hay
- n indiangrass
- n introduced bluestem
- n johnsongrass
- n kentucky bluegrass
- n kleingrass
- n legume hay
- n lemons
- n lentils, dry
- n lettuce
- n limes
- n loganberries
- n macadamia nuts
- n mangos
- n merkergrass
- n millet
- n mint, distillate
- n molassesgrass
- n mungbeans
- n oats
- n oats, hay
- n olives
- n onions
- n onions, green
- n oranges
- n orchardgrass
- n orchardgrass hay
- n orchardgrass seed
- n orchardgrass-alfalfa
- n orchardgrass-alfalfa hay
- n orchardgrass-alsike
- n orchardgrass-alsike hay
- n orchardgrass-ladino
- n orchardgrass-ladino hay
- n orchardgrass-lespedeza
- n orchardgrass-lespedeza hay
- n orchardgrass-red clover

n orchardgrass-red clover hay
n orchardgrass-trefoil
n orchardgrass-trefoil hay
n pangolagrass
n papaya
n paragrass
n pasture
n peaches
n peanuts
n pears
n pears, winter
n peas, canning
n peas, dry
n peas, green
n pecans
n pepper, black
n peppers
n peppers, dry chili
n peppers, fresh chili
n peppers, green
n perennial ryegrass seed
n permanent pasture, improved
n permanent pasture, unimproved
n pigeonpeas
n pineapple
n pineapple, ratoon
n pistachios
n plantains
n plums
n potatoes, irish
n prunes
n prunes, dry
n pubescent wheatgrass
n pumpkins
n raisins
n raspberries
n red clover hay

n red clover seed
n reed canarygrass
n rice
n rye
n rye grazeout
n safflower
n small grains grazeout
n small grains hay
n small grains silage
n smooth bromegrass
n sorghum grazed
n sorghum hay
n sorghum silage
n soybeans
n spinach
n strawberries
n strawberries, plants
n sugar beets
n sugarcane
n sugarcane, 18 month
n sugarcane, ratoon
n sugarcane, spring
n sunflower
n sweet potatoes
n switchgrass
n tall fescue
n tall fescue hay
n tall fescue seed
n tall fescue-alfalfa
n tall fescue-alfalfa hay
n tall fescue-alsike
n tall fescue-alsike hay
n tall fescue-ladino
n tall fescue-ladino hay
n tall fescue-lespedeza
n tall fescue-lespedeza hay
n tall fescue-red clover

n tall fescue-red clover hay
n tall wheatgrass
n tangelos
n tangerines
n taniers
n taro
n timothy-alfalfa
n timothy-alfalfa hay
n timothy-alsike
n timothy-alsike hay
n timothy-red clover hay
n tobacco
n tomatoes
n trefoil hay
n trefoil-grass
n trefoil-grass hay
n walnuts
n warm season grass
n watermelons
n weeping lovegrass
n wheat
n wheat grazeout
n wheat, oct-mar
n wheat, spring
n wheat, spring-fallow
n wheat, winter
n wheat, winter-fallow
n yams

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
crop_yield_units	yldunits	choice					

DEFINITION
Crop yield units per unit area for the specified crop.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
n	100 pounds
n	animal unit months
n	boxes
n	bushels
n	crates
n	pounds
n	sacks
n	thousands
n	tons

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
data_mapunit_description	dmudesc	string			60		

DEFINITION
A short text field used to describe a data mapunit.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
data_mapunit_iid	dmuiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
data_mapunit_iid_ref	dmuiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
dmu_crop_yield_iid	dmucrpyldiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
dmu_database_iid_ref	dmudbiidref	integer					

DEFINITION
The number of the database that created a particular entity. Entities include area types, legends, and data mapunits. In the

NASIS system, each database is assigned its own unique database ID.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
drainage_class	drainagecl	choice					

DEFINITION
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.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	excessively
n	moderately well
n	poorly
n	somewhat excessively
n	somewhat poorly
n	very poorly
n	well

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
effective_cation_exch_capcty	ecec	float	meq/100g	0.00	400.00	1	

DEFINITION
The sum of exchangeable cations plus extractable acidity that a soil, soil constituent or other material can adsorb.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
electrical_conductivity	ec	float	mmhos/cm	0.00	15000.00	1	

DEFINITION
The electrolytic conductivity of an extract from saturated soil paste, normally expressed in units of decisiemens per meter or mmhos per centimeter at 25 degrees C. (SSSA, 1987, Gloss. of Soil Sci. Terms)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
elevation	elev	integer	meters	-300.00	8550.00		

DEFINITION
The height above mean sea level for the site.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
excavation_difficulty_class	excavdifcl	choice					

DEFINITION
A class of soil materials similar with respect to difficulty in making an excavation. In most instances, excavation difficulty is related to and controlled by a water state. (SSM)

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED

CODE	NASIS CODE
n	extremely high

n high
n low
n moderate
n very high

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
extractable_acidity	extracid	float	meq/100g	0.00	250.00	1	

DEFINITION
A measure of soil exchangeable hydrogen ions that may become active by cation exchange. Useful in assessing potential lime needs for acid soils. (SSIR #1, method 6H5a and NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
extractable_aluminum	extral	float	meq/100g	0.00	150.00	1	

DEFINITION
The amount of aluminum extracted in 1 normal potassium chloride using the following laboratory method: 55ml of 1 normal potassium chloride is extracted through 2.5 grams of soil sample. The extract is analyzed by use of an atomic absorption spectrometer or similar instrument. (SSIR #1 method 6G9a and NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
farmland_classification	farmlndcl	choice					

DEFINITION
The farmland classification of the mapunit. Includes prime farmland, farmland of statewide importance, and farmland of local importance.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n	0
n	1
n	2
n	3
n	30
n	4
n	5
n	50
n	6
n	7
n	70
n	8
n	9

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
flooding_duration_class	floddurcl	choice					

DEFINITION
Average duration of inundation per flood occurrence and expressed as a class. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	brief
n	extremely brief
n	long
n	very brief
n	very long

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
flooding_frequency_class	flodfreqcl	choice					

DEFINITION
The annual probability of a flood event expressed as a class. (SSM).

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n frequent
n none
n occasional
n rare
n very frequent
n very rare

==========

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
fragment_kind	fragkind	choice					

DEFINITION
The lithology/composition of the 2mm or larger fraction of the soil.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED
CODE NASIS CODE

y aa
y acidic-ash
n andesite
y andesitic-ash
n arkose
n basalt
y basaltic-ash
y basic-ash
n chalk
n charcoal
n chert

n	cinders
n	coal
n	conglomerate, calcareous
n	conglomerate, noncalcareous
n	conglomerate, unspecified
n	diorite
n	dolostone
y	ejecta-ash
n	gabbro
y	glauconite
n	gneiss
y	gneiss-acidic
y	gneiss-basic
n	granite
n	graywacke
n	gypsum
n	hornfels
n	igneous, acid
n	igneous, basic
n	igneous, coarse crystal
n	igneous, fine crystal
n	igneous, intermediate
n	igneous, ultrabasic
n	igneous, unspecified
y	interbedded sedimentary
n	limestone, arenaceous
n	limestone, argillaceous
n	limestone, cherty
n	limestone, phosphatic
n	limestone, unspecified
y	limestone-sandstone
y	limestone-sandstone-shale
y	limestone-shale
y	limestone-siltstone
n	marble
y	marl
n	metaconglomerate

n	metamorphic, unspecified
y	mixed
n	mixed calcareous
n	mixed igneous-metamorphic
n	mixed igneous-metamorphic-sedimentary
n	mixed igneous-sedimentary
n	mixed metamorphic-sedimentary
n	mixed noncalcareous
n	obsidian
y	pahoehoe
n	phyllite
n	pumice
n	pyroclastic, unspecified
n	quartzite
n	rhyolite
n	sandstone, calcareous
n	sandstone, noncalcareous
n	sandstone, unspecified
y	sandstone-shale
y	sandstone-siltstone
n	schist, acidic
n	schist, basic
n	schist, unspecified
n	scoria
n	sedimentary, unspecified
n	serpentinite
n	shale, acid
n	shale, calcareous
n	shale, clayey
n	shale, noncalcareous
n	shale, unspecified
y	shale-siltstone
n	siltstone, calcareous
n	siltstone, noncalcareous
n	siltstone, unspecified
n	slate
n	tuff breccia

n	tuff, acidic
n	tuff, basic
n	tuff, unspecified
n	volcanic bombs
n	volcanic breccia, acidic
n	volcanic breccia, basic
n	volcanic breccia, unspecified
n	wood

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
fragment_roundness	fraground	choice					

DEFINITION
An expression of the sharpness of edges and corners of fragments. (Sedimentary Rocks, Pettijohn, 1957)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	angular
n	rounded
n	subangular
n	subrounded
n	well rounded

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

fragment_rupture_resist_cem fragruprescem choice

DEFINITION
The rupture resistance of a fragment of specified size that has been air dried and then submerged in water. (SSM)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	extremely weakly
n	indurated
n	moderately
y	moderately cemented
n	noncemented
n	strongly
y	strongly cemented
n	very strongly
n	very weakly
n	weakly
y	weakly cemented

==========

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
fragment_shape	fragshp	choice					

DEFINITION
A description of the overall shape of the fragment.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE

n flat
n nonflat

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
fragment_size	fragsize	integer	mm	2.00	3000.00		

DEFINITION
Size based on the multiaxial dimensions of the fragment fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
fragment_volume	fragvol	integer	percent	0.00	100.00		

DEFINITION
The volume percentage of the horizon occupied by the 2mm or larger fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
free_iron_oxides	freeiron	float	percent	0.00	99.99	2	

DEFINITION
The secondary iron oxides such as geothite, hematite, ferrihydrite, lepidocrocite and maghemite. This form of iron may occur as discrete particles, coatings on other particles, or as cementing agents between soil mineral grains. It is measured as the amount extracted by dithionite-citrate. (SSIR #1 method 6C2B and NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
gypsum	gypsum	integer	percent	0.00	120.00		

DEFINITION
The quantity of CaSO4.2H2O reported as a weight percentage of the less than 20 mm size fraction. (SSIR1, 1984)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
horizon_depth_to_bottom	hzdepb	integer	cm	0.00	9999.00		

DEFINITION
The measured depth from the soil surface to the lower boundary of the soil horizon.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
horizon_depth_to_top	hzdept	integer	cm	0.00	9999.00		

DEFINITION
The measured depth from the soil surface to the upper boundary of the soil horizon.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
hydric_condition	hydricon	choice					

DEFINITION
Natural condition of the soil component.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	farmable
n	neither
n	wooded

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
hydrologic_group	hydgrp	choice					

DEFINITION
A group of soils having the same runoff potential under similar storm and cover conditions. Examples are A and A/D. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	a
n	a/d
n	b
n	b/d
n	c
n	c/d
n	d

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
initial_subsidence	initsub	integer	cm	0.00	999.00		

DEFINITION
About one half the depth of the maximum possible loss of surface elevation from the drainage of wet soils having organic layers or semifluid mineral layers. (NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
interpretation_kind	interpkind	choice					

DEFINITION
Specific uses in which soils are rated. These uses include building site development, construction materials, recreational development, sanitary facilities, waste management, water management, and water quality. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	camp areas
n	daily cover for landfill
n	drainage
n	dwellings with basements
n	dwellings without basements
n	embankments, dikes, and levees
n	excavated ponds (aquifer-fed)
n	grassed waterways
n	gravel source
n	hydric soil rating
n	irrigation
n	lawns, landscaping, and golf fairways
n	local streets and roads
n	paths and trails
n	picnic areas
n	playgrounds
n	pond reservoir area
n	roadfill
n	sand source
n	sanitary landfill (area)
n	sanitary landfill (trench)
n	septic tank absorption fields
n	sewage lagoons
n	shallow excavations
n	small commercial buildings
n	terraces and diversions
n	topsoil source

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
interpretation_rating	interprating	choice					

DEFINITION
The rating of a soil for a specified use. Each rating is made using the most limiting criteria for that soil. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	favorable
n	good
n	improbable
n	limitation
n	moderate
n	no
n	poor
n	probable
n	severe
n	slight
n	unranked
n	unsuited
n	yes

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

interpretation_restriction interprestrict choice

DEFINITION
Restrictive features that may limit management alternatives where the soil being rated has a limitation for a specified use. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	1
n	2a
n	2b1
n	2b2
n	2b3
n	3
n	4
n	area reclaim
n	cemented pan
n	complex slope
n	compressible
n	corrosive
n	cutbanks cave
n	deep to water
n	dense layer
n	depth to rock
n	droughty
n	dusty
n	erodes easily
n	excess fines
n	excess gypsum
n	excess humus
n	excess lime
n	excess salt
n	excess sodium

n excess sulfur
n fast intake
n favorable
n flooding
n fragile
n frost action
n hard to pack
n large stones
n low strength
n no water
n not needed
n percs slowly
n permafrost
n piping
n pitting
n ponding
n poor filter
n poor outlets
n rooting depth
n salty water
n seepage
n shrink-swell
n slippage
n slope
n slow intake
n slow refill
n small stones
n soil blowing
n subsides
n thin layer
n too acid
n too arid
n too clayey
n too sandy
n unstable fill
n variable
n wetness

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
interrill_erodibility_factor	kifact	choice	kg/sec/m4				

DEFINITION
A measure of the susceptibility of a soil to detachment and transport by water.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	To be assigned.

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
irrigated_capability_class	irrcapcl	choice					

DEFINITION
The broadest category in the land capability classification system for irrigated soils. The groupings of soils is done primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. (Land-capability Classification, Ag. Handbook #210)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE

n	1
n	2
n	3
n	4
n	5
n	6
n	7
n	8

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
irrigated_capability_subclass	irrcapscl	choice					

DEFINITION
The second category in the land capability classification system for irrigated soils. The groupings of soils is done primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. (Land Capability Classification, Ag Handbook #210)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	c
n	e
n	s
n	w

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
irrigated_crop_yield	irryield	float		0.00	9999.99	2	

DEFINITION
The expected yield per acre of the specific crop with irrigation. Defined as the yield per acre expected in an average year under a high level of management.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
legend_area_overlap_iid	lareaoviid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
legend_area_overlap_iid_ref	lareaoviidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
legend_database_iid_ref	ldbiidref	integer					

DEFINITION
The number of the database that created a particular entity. Entities include area types, legends, and data mapunits. In the NASIS system, each database is assigned its own unique database ID.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
legend_iid	liid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
legend_iid_ref	liidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
linear_extensibility_percent	lep	float	percent	0.00	30.00	1	

DEFINITION
The linear expression of the volume difference of natural soil fabric at 1/3 or 1/10 bar water content and oven dryness. The volume change is reported as percent change for the whole soil.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
liquid_limit	ll	float	percent	0.00	400.00	1	

DEFINITION
The water content in percent of a soil at the arbitrarily defined boundary between the liquid and plastic states. (ASTM Designations D 4318-93)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
major_land_resource_area	mlra	choice					

DEFINITION
A symbol used to identify the information available about a part of the U.S. as a resource for farming, ranching, forestry, engineering, recreation and other uses. Presented in narrative and map form for the entire U.S. (Agriculture Handbook 296. Land Resource Regions and Major Land Resource Areas of The United States)

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED
CODE NASIS CODE

n 1
n 10
n 100
n 101
n 102a
n 102b
n 103
n 104
n 105
n 106
n 107

n 108
n 108a
n 108b
n 108c
n 108d
n 109
n 10a
n 11
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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_acres	muacres	integer	acres				

DEFINITION
The number of acres of a particular mapunit.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_area_overlap_iid	muareaoviid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_constituent_acres	muconacres	integer	acres				

DEFINITION
The portion of acres of a map unit linked to a data map unit that is a part or the whole of a correlated map unit.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_iid	muiid	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_iid_ref	muiidref	integer					

DEFINITION
The record ID (an integer number) of a particular record (component record, horizon record, etc.) in a particular table (component table, horizon table, etc.). A record ID is not sufficient in and of itself to uniquely identify a record in a table. Each record in a table is uniquely identified by the combination of a record ID and the ID of the database in which the entity (area type, legend or data mapunit), of which the record is a member, was created.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_kind	mukind	choice					

DEFINITION
Code identifying the kind of mapunit. Example: C - consociation.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	association
n	complex
n	consociation
n	undifferentiated group

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_name	muname	string					175

DEFINITION
Correlated name of the mapunit (recommended name or field name for surveys in progress).

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_status	mustatus	choice					

DEFINITION

Identifies the current status of the map unit.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	additional
n	approved
n	correlated
n	provisional

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mapunit_symbol	musym	string			6		

DEFINITION
The symbol used to uniquely identify the soil mapunit in the soil survey.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mean_annual_air_temperature	airtempa	integer	degrees c	-10.00	50.00		

DEFINITION
The mean daily temperature (MDT) is the basic climatic unit (daily maximum + daily minimum/2 = MDT). The mean monthly temperature is the mean of the daily values for a month and in practice, the mean annual air temperature (MAAT) is the mean of the 12 monthly values. (USDA, 1941, Climate & Man and NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mean_annual_frost_free_days	ffd	integer	days	0.00	365.00		

DEFINITION
The mean number of days from the last date in the spring to have a daily low air temperature less than 0 degrees C. to the first day in the autumn to have a daily low air temperature less than 0 degrees C. The quantity will be annual as a thirty year mean. The expression is 'MEAN ANNUAL FROST FREE DAYS'. (NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

	SHORT	DATA	UNIT OF	MINIMUM	MAXIMUM

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
mean_annual_precipitation	map	integer	mm	0.00	8000.00		

DEFINITION
The amount of rain, snow, or hail that has fallen at a given place in a given period of time and expressed as millimeters of water. The amounts will be annual as a thirty year mean. The expression is 'MEAN ANNUAL PRECIPITATION', abbr. MAP. (Flexner, S.B. and L.C. Hauck, 1987, Random House Dictionary of the English Language)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
month	month	choice					

DEFINITION
One of the twelve months of the year.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	apr
n	aug
n	dec
n	feb
n	jan

n	jul
n	jun
n	mar
n	may
n	nov
n	oct
n	sep

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
nonirr_capability_class	nirrcapcl	choice					

DEFINITION
The broadest category in the land capability classification system for nonirrigated soils. The grouping of soils is done primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. (Land-Capability Classification, Ag. Handbook #210)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	1
n	2
n	3
n	4
n	5
n	6
n	7
n	8

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
nonirr_capability_subclass	nirrcapscl	choice					

DEFINITION
The second category in the land capability classification system for nonirrigated soils. The groupings of soils is done primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. (Land-Capability Classification, Ag. Handbook #210)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	c
n	e
n	s
n	w

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
nonirr_crop_yield	nonirryield	float		0.00	9999.99	2	

DEFINITION
The expected yield per acre of the specific crop without supplemental irrigation. Defined as the yield per acre expected in an average year under a high level of management.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
organic_matter_percent	om	float	percent	0.00	100.00	2	

DEFINITION
The amount by weight of decomposed plant and animal residue expressed as a weight percentage of the less than 2 mm soil material.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
particle_density	partdensity	float	g/cm3	1.00	5.00	2	

DEFINITION
Mass per unit of volume (not including pore space) of the solid soil particle either mineral or organic. Also known as specific gravity.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
ph_01m_cacl2	ph01mcacl2	float		1.80	11.00	1	

DEFINITION
The negative logarithm to the base of 10 of the hydrogen ion activity in the soil using the 0.01M $CaCl_2$ method. A numerical expression of the relative acidity or alkalinity of a soil sample. (SSM)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
ph_1_1_water	ph1to1h2o	float		1.80	11.00	1	

DEFINITION
The negative logarithm to the base of 10 of the hydrogen ion activity in the soil using the 1:1 soil-to-water ratio method. A numerical expression of the relative acidity or alkalinity of a soil sample. (SSM)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
plasticity_index	pi	float	percent	0.00	130.00	1	

DEFINITION
The numerical difference between the liquid limit and plastic limit. (SSSA, 1987, Gloss. of Soil Sci. Terms)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
ponding_depth	ponddep	integer	cm	0.00	185.00		

DEFINITION
The depth of surface water ponding on the soil.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
ponding_duration_class	ponddurcl	choice					

DEFINITION
The average duration, or length of time, of the ponding occurrence. (NSSH)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	brief
n	long
n	very brief
n	very long

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
ponding_frequency_class	pondfreqcl	choice					

DEFINITION
The number of times ponding occurs over a period of time. (SSM)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	frequent
n	none
n	occasional
n	rare

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
potential_frost_action	frostact	choice					

DEFINITION

An interpretation rating of the susceptibility of the soil to frost heaving.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	high
n	low
n	moderate
n	none

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

representative_dmu repdmu boolean

DEFINITION
Indicates whether or not a particular data mapunit is representative for a particular mapunit. Only one data mapunit may be representative for a mapunit.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
restriction_depth_to_bottom	resdepb	integer	cm	0.00	9999.00		

DEFINITION
The depth from the soil surface to the lower boundary of the restrictive layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
restriction_depth_to_top	resdept	integer	cm	0.00	9999.00		

DEFINITION
The depth from the soil surface to the upper boundary of the restrictive layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
restriction_hardness	reshard	choice					

DEFINITION
The rupture resistance of air dried and then submerged block-like specimens. (SSM)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	extremely weakly
n	indurated
n	moderately
y	moderately cemented
n	noncemented
n	strongly
y	strongly cemented
n	very strongly
n	very weakly

n	weakly
y	weakly cemented

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
restriction_kind	reskind	choice					

DEFINITION
A nearly continuous layer that has one or more physical or chemical property(ies) which significantly reduces soil water, roots, and air permeability or increases excavation difficulty. (NSSH)

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
n	abrupt textural change
n	bedrock (lithic)
n	bedrock (paralithic)
n	dense material
n	duripan
n	fragipan
n	natric
n	ortstein
n	permafrost
n	petrocalcic
n	petroferric
n	petrogypsic
n	placic
n	plinthite
n	salic
n	strongly contrasting textural stratification
n	sulfuric

y undefined

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
restriction_thickness	resthk	integer	cm	0.00	999.00		

DEFINITION
The distance from the top to bottom of a restrictive layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
rill_erodibility_factor	krfact	choice	sec/m				

DEFINITION
A measure of the susceptibility of a soil to detachment by flowing water.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n To be assigned.

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
rock_frag_3_to_10_in	frag3to10	integer	percent	0.00	100.00		

DEFINITION
The percent by weight of the horizon occupied by rock fragments 3 to 10 inches in size.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
rock_frag_greater_than_10_in	fraggt10	integer	percent	0.00	100.00		

DEFINITION
The percent by weight of the horizon occupied by rock fragments greater than 10 inches in size.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_coarse_separate	sandco	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.5mm to 1.0mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_fine_separate	sandfine	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.10 to 0.25mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_medium_separate	sandmed	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.25mm to 0.5mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_total_separate	sandtotal	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.05mm to 2.0mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_very_coarse_separate	sandvc	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 1.0mm to 2.0mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sand_very_fine_separate	sandvf	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.05 to 0.10mm in equivalent diameter as a weight percentage of the less than 2 mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sat_hydraulic_conductivity	ksat	float	um/s	0.00	705.00	4	

DEFINITION
The amount of water that would move vertically through a unit area of saturated soil in unit time under unit hydraulic gradient.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sieve_number_10	sieveno10	float	percent	0.00	100.00	1	

DEFINITION
Soil fraction passing a number 10 sieve (2.00mm square opening) as a weight percentage of the less than 3 inch (76.4mm) fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sieve_number_200	sieveno200	float	percent	0.00	100.00	1	

DEFINITION
Soil fraction passing a number 200 sieve (0.074mm square opening) as a weight percentage of the less than 3 inch (76.4mm) fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sieve_number_4	sieveno4	float	percent	0.00	100.00	1	

DEFINITION
Soil fraction passing a number 4 sieve (4.70mm square opening) as a weight percentage of the less than 3 inch (76.4mm) fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sieve_number_40	sieveno40	float	percent	0.00	100.00	1	

DEFINITION
Soil fraction passing a number 40 sieve (0.42mm square opening) as a weight percentage of the less than 3 inch (76.4mm) fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
silt_coarse_separate	siltco	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles ranging in size from 0.02mm to 0.05mm in equivalent diameter as a weight percentage of the less than 2.0mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
silt_fine_separate	siltfine	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles ranging in size from 0.002 to 0.02mm in equivalent diameter as a weight percentage of the less than 2.0mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
silt_total_separate	silttotal	float	percent	0.00	100.00	1	

DEFINITION
Mineral particles 0.002 to 0.05mm in equivalent diameter as a weight percentage of the less than 2.0mm fraction.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
slope_aspect	aspect	integer	degrees	0.00	360.00		

DEFINITION
The dominant direction the slope of the soil is facing in degrees. (SSM)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
slope_gradient	slope	integer	percent	0.00	999.00		

DEFINITION
The difference in elevation between two points, expressed as a percentage of the distance between those points. (SSM)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
slope_length_usle	slopelenusle	integer	meters	0.00	4000.00		

DEFINITION
The distance 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. (Predicting Rainfall Erosion Losses a Guide to Conservation Planning, Agr. Handbook #537, USDA, 1978).

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
sodium_adsorption_ratio	sar	integer		0.00	9999.00		

DEFINITION
A ratio for soil extracts and irrigation waters used to express the relative activity of sodium ions in exchange reactions with the soil. It is calculated from: SAR = Na+/sqrt((Ca2+ + Mg2+)/2), where Na+, Ca2+, and Mg2+ represent concentrations of the cations in millimoles per liter. (USDA Handbook No. 60)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_erodibility_factor_rf	kffact	choice					

DEFINITION
An erodibility factor which quantifies the susceptibility of soil particles to detachment by water.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	.02
n	.05
n	.10
n	.15
n	.17
n	.20
n	.24
n	.28
n	.32
n	.37
n	.43
n	.49
n	.55
n	.64

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_erodibility_factor_whole	kwfact	choice					

DEFINITION
An erodibility factor which quantifies the susceptibility of soil particles to detachment and movement by water. This factor is adjusted for the effect of rock fragments.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	.02
n	.05
n	.10
n	.15
n	.17
n	.20
n	.24
n	.28
n	.32
n	.37
n	.43
n	.49
n	.55
n	.64

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_moist_depth_to_bottom	soimoistdepb	integer	cm	0.00	9999.00		

DEFINITION
The measured depth from the soil surface to the lower boundary of the moisture layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_moist_depth_to_top	soimoistdept	integer	cm	0.00	9999.00		

DEFINITION
The measured depth from the soil surface to the upper boundary of the moisture layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_moisture_status	soimoiststat	choice					

DEFINITION
The mean monthly soil water state at a specified depth.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	dry
y	frozen
n	moist
y	saturation
n	wet

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_survey_area_status	ssastatus	choice					

DEFINITION
Identifies the program operational status for the soil survey. Examples are Published and Project.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	nonproject
n	out-of-date
n	project
n	published
n	update

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_temp_depth_to_bottom	soitempdepb	integer	cm	0.00	9999.00		

DEFINITION
The measured depth from the soil surface to the lower boundary of the soil temperature layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_temp_depth_to_top	soitempdept	integer	cm	0.00	9999.00		

DEFINITION
The depth from the soil surface to the upper boundary of the soil temperature layer.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
soil_temperature_mean_monthly	soitempmm	integer	degrees c	-10.00	50.00		

DEFINITION
The mean monthly soil temperature at a specified depth.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
stratified_textures_flag	stratextsflag	boolean					

DEFINITION
A boolean flag that when set (Y) indicates that the textures that comprise a particular texture group, are stratified.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
surface_frag_cover_percent	sfragcov	float	percent	0.00	80.00	2	

DEFINITION
Surface cover by fragments 2 mm or larger, expressed as a percent. (SSM)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
surface_frag_kind	sfragkind	choice					

DEFINITION
The lithology/composition of the surface fragments 2mm or larger in size.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
y	aa
y	acidic-ash

n	andesite
y	andesitic-ash
n	arkose
n	basalt
y	basaltic-ash
y	basic-ash
n	chalk
n	charcoal
n	chert
n	cinders
n	coal
n	conglomerate, calcareous
n	conglomerate, noncalcareous
n	conglomerate, unspecified
n	diorite
n	dolostone
y	ejecta-ash
n	gabbro
y	glauconite
n	gneiss
y	gneiss-acidic
y	gneiss-basic
n	granite
n	graywacke
n	gypsum
n	hornfels
n	igneous, acid
n	igneous, basic
n	igneous, coarse crystal
n	igneous, fine crystal
n	igneous, intermediate
n	igneous, ultrabasic
n	igneous, unspecified
y	interbedded sedimentary
n	limestone, arenaceous
n	limestone, argillaceous
n	limestone, cherty

n	limestone, phosphatic
n	limestone, unspecified
y	limestone-sandstone
y	limestone-sandstone-shale
y	limestone-shale
y	limestone-siltstone
n	marble
y	marl
n	metaconglomerate
n	metamorphic, unspecified
y	mixed
n	mixed calcareous
n	mixed igneous-metamorphic
n	mixed igneous-metamorphic-sedimentary
n	mixed igneous-sedimentary
n	mixed metamorphic-sedimentary
n	mixed noncalcareous
n	obsidian
y	pahoehoe
n	phyllite
n	pumice
n	pyroclastic, unspecified
n	quartzite
n	rhyolite
n	sandstone, calcareous
n	sandstone, noncalcareous
n	sandstone, unspecified
y	sandstone-shale
y	sandstone-siltstone
n	schist, acidic
n	schist, basic
n	schist, unspecified
n	scoria
n	sedimentary, unspecified
n	serpentinite
n	shale, acid
n	shale, calcareous

n	shale, clayey
n	shale, noncalcareous
n	shale, unspecified
y	shale-siltstone
n	siltstone, calcareous
n	siltstone, noncalcareous
n	siltstone, unspecified
n	slate
n	tuff breccia
n	tuff, acidic
n	tuff, basic
n	tuff, unspecified
n	volcanic bombs
n	volcanic breccia, acidic
n	volcanic breccia, basic
n	volcanic breccia, unspecified
n	wood

==========

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
surface_frag_roundness	sfraground	choice					

DEFINITION
An expression of the sharpness of edges and corners of surface fragments. (Sedimentary Rocks, Pettijohn, 1957)

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	angular
n	rounded
n	subangular

n	subrounded
n	well rounded

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
surface_frag_rup_resist_cem	sfragrupcem	choice					

DEFINITION
The rupture resistance of a surface fragment of specified size that has been air dried and then submerged in water. (SSM)

AGGREGATION METHOD IS RV.

ARCHIVED CODE	NASIS CODE
n	extremely weakly
n	indurated
n	moderately
y	moderately cemented
n	noncemented
n	strongly
y	strongly cemented
n	very strongly
n	very weakly
n	weakly
y	weakly cemented

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

surface_frag_shape sfragshp choice

DEFINITION
A description of the overall shape of the surface fragment.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED
CODE NASIS CODE

n flat
n nonflat

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
surface_frag_size	sfragsize	integer	mm	2.00	3000.00		

DEFINITION
Size based on the multiaxial dimensions of the surface fragment.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

t_factor	tfact	integer	tons/acre/yr	1.00	5.00

DEFINITION
Soil loss tolerance factor. The maximum rate of soil erosion that will permit a high level of crop production.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_classification_name	taxclname	string			120		

DEFINITION
A concantenation of the Soil Taxonomy subgroup and family for a soil (long name).

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_family_mineralogy	taxminalogy	choice					

DEFINITION
Mineralogy classes are used as family differentiae. They are based on the approximate mineralogical composition of selected size fractions of the same segment of the soil (control section) that is used for application of particle-size classes. (Soil Taxonomy)

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
n	allitic
n	calcareous
n	carbonatic
n	chloritic
y	clastic
n	coprogenous
n	diatomaceous
n	ferrihumic
n	ferritic
n	ferruginous
n	gibbsitic
n	glauconitic
n	gypsic
n	halloysitic
n	illitic
n	illitic (calcareous)
n	kaolinitic
n	marly
n	micaceous
n	micaceous (calcareous)
n	mixed
n	mixed (calcareous)
n	montmorillonitic
n	montmorillonitic (calcareous)
n	not used
n	oxidic

y	sepiolitic
n	serpentinitic
n	sesquic
n	siliceous
n	siliceous (calcareous)
y	unclassified
n	vermiculitic
n	vermiculitic (calcareous)

==========

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_family_other	taxfamother	choice					

DEFINITION
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. (Soil Taxonomy)

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED

CODE	NASIS CODE
n	coated
n	cracked
y	level
n	micro
n	not used
n	ortstein
y	ortstein & shallow
n	shallow
y	shallow & coated
y	shallow & uncoated

y	sloping
y	unclassified
n	uncoated

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_family_particle_size	taxpartsize	choice					

DEFINITION
Particle-size classes are used as family differentiae. Particle-size refers to grain-size distribution of the whole soil and is not the same as texture. (Soil Taxonomy).

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	ashy
n	ashy over clayey
n	ashy over loamy
n	ashy over loamy-skeletal
n	ashy over medial
n	ashy over medial-skeletal
n	ashy over pumiceous or cindery
n	ashy over sandy or sandy-skeletal
n	ashy-pumiceous
n	ashy-skeletal
n	ashy-skeletal over fragmental or cindery
n	cindery
n	cindery over loamy
n	cindery over medial
n	cindery over medial-skeletal
y	cindery over sandy or sandy-skeletal

n	clayey
n	clayey over fine-silty
n	clayey over fragmental
n	clayey over loamy
n	clayey over loamy-skeletal
n	clayey over sandy or sandy-skeletal
n	clayey-skeletal
n	clayey-skeletal over sandy or sandy-skeletal
n	coarse-loamy
n	coarse-loamy over clayey
n	coarse-loamy over fragmental
n	coarse-loamy over sandy or sandy-skeletal
n	coarse-silty
n	coarse-silty over clayey
y	coarse-silty over fragmental
n	coarse-silty over sandy or sandy-skeletal
n	fine
n	fine-loamy
n	fine-loamy over clayey
n	fine-loamy over fragmental
n	fine-loamy over sandy or sandy-skeletal
n	fine-silty
n	fine-silty over clayey
n	fine-silty over fragmental
n	fine-silty over sandy or sandy-skeletal
n	fragmental
n	hydrous
n	hydrous over clayey
n	hydrous over clayey-skeletal
n	hydrous over fragmental
n	hydrous over loamy
n	hydrous over loamy-skeletal
n	hydrous over sandy or sandy-skeletal
n	hydrous-pumiceous
n	hydrous-skeletal
n	loamy
n	loamy over pumiceous or cindery

n	loamy over sandy or sandy-skeletal
n	loamy-skeletal
n	loamy-skeletal or clayey-skeletal
n	loamy-skeletal over clayey
n	loamy-skeletal over fragmental
n	loamy-skeletal over sandy or sandy-skeletal
n	medial
n	medial over ashy
n	medial over clayey
n	medial over clayey-skeletal
n	medial over fragmental
n	medial over hydrous
n	medial over loamy
n	medial over loamy-skeletal
n	medial over pumiceous or cindery
n	medial over sandy or sandy-skeletal
y	medial over thixotropic
n	medial-pumiceous
n	medial-skeletal
n	medial-skeletal over fragmental or cindery
n	not used
n	pumiceous
n	pumiceous or ashy-pumiceous over loamy
n	pumiceous or ashy-pumiceous over medial
n	pumiceous or ashy-pumiceous over medial-skeletal
n	pumiceous or ashy-pumiceous over sandy or sandy-skeletal
n	sandy
n	sandy or sandy-skeletal
n	sandy over clayey
n	sandy over loamy
n	sandy-skeletal
y	sandy-skeletal over clayey
n	sandy-skeletal over loamy
y	thixotropic
y	thixotropic over fragmental
y	thixotropic over loamy
y	thixotropic over loamy-skeletal

y	thixotropic over sandy or sandy-skeletal
y	thixotropic-skeletal
y	unclassified
n	very-fine

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_family_reaction	taxreaction	choice					

DEFINITION
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. (Soil Taxonomy)

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	acid
n	allic
n	dysic
n	euic
n	nonacid
y	noncalcareous
n	not used
y	unclassified

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

taxonomic_family_temp_class taxtempcl choice

DEFINITION
The taxonomic family temperature class used to construct the official classification name. It may be null when the taxonomic family temperature class is embedded in the classification name. The true taxonomic family temperature class is recorded in a different data element.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	frigid
n	hyperthermic
n	isofrigid
n	isohyperthermic
n	isomesic
n	isothermic
n	mesic
n	not used
n	thermic
y	unclassified

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_great_group	taxgrtgroup	choice					

DEFINITION
The third level of Soil Taxonomy. The category is below the suborder and above the subgroup.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	acraquox
y	acrohumox
n	acroperox
y	acrorthox
n	acrotorrox
n	acrudox
n	acrustox
n	agrudalfs
n	alaquods
n	albaqualfs
n	albaquults
n	alorthods
y	andaquepts
n	anthracambids
n	aquicambids
n	aquisalids
y	arents
n	argialbolls
n	argiaquolls
n	argiborolls
n	argicryids
n	argidurids
n	argigypsids
n	argiudolls
n	argiustolls
n	argixerolls
n	borofibrists
n	borofolists
n	borohemists
n	borosaprists
n	calciaquerts
n	calciaquolls
n	calciargids
n	calciborolls
n	calcicryids

n	calcigypsids
y	calciorthids
n	calcitorrerts
n	calciudolls
n	calciusterts
n	calciustolls
n	calcixererts
n	calcixerolls
y	camborthids
y	chromoxererts
y	chromuderts
y	chromusterts
y	cryandepts
n	cryaquands
n	cryaquents
n	cryaquepts
n	cryaquods
n	cryaquolls
n	cryoboralfs
n	cryoborolls
n	cryochrepts
n	cryofibrists
n	cryofluvents
n	cryofolists
n	cryohemists
y	cryohumods
n	cryopsamments
n	cryorthents
y	cryorthods
n	cryosaprists
n	cryumbrepts
y	durandepts
n	duraqualfs
n	duraquands
n	duraquerts
n	duraquods
n	duraquolls

y	durargids
n	duricryods
n	durihumods
n	durixeralfs
n	durixererts
n	durixerolls
n	durochrepts
y	durorthids
n	durorthods
n	durudands
n	durustalfs
n	durustands
n	durustolls
y	dystrandepts
n	dystraquerts
n	dystrochrepts
n	dystropepts
n	dystruderts
n	dystrusterts
n	endoaqualfs
n	endoaquands
n	endoaquents
n	endoaquepts
n	endoaquerts
n	endoaquods
n	endoaquolls
n	endoaquults
n	epiaqualfs
n	epiaquands
n	epiaquents
n	epiaquepts
n	epiaquerts
n	epiaquods
n	epiaquolls
n	epiaquults
y	eutrandepts
n	eutraquox

n	eutroboralfs
n	eutrochrepts
n	eutropepts
n	eutroperox
y	eutrorthox
n	eutrotorrox
n	eutrudox
n	eutrustox
y	ferrods
n	ferrudalfs
n	fluvaquents
n	fragiaqualfs
n	fragiaquepts
n	fragiaquods
n	fragiaquults
n	fragiboralfs
n	fragihumods
n	fragiochrepts
n	fragiorthods
n	fragiudalfs
n	fragiudults
n	fragiumbrepts
n	fragixeralfs
n	fraglossudalfs
n	fulvicryands
n	fulvudands
n	gelicryands
y	gibbsiaquox
y	gibbsihumox
y	gibbsiorthox
n	glossaqualfs
n	glossoboralfs
n	glossudalfs
n	gypsiargids
n	gypsicryids
y	gypsiorthids
n	gypsitorrerts

n	gypsiusterts
n	halaquepts
y	haplaquands
y	haplaquents
y	haplaquepts
y	haplaquods
y	haplaquolls
n	haplaquox
n	haplargids
n	haploborolls
n	haplocalcids
n	haplocambids
n	haplocryands
n	haplocryerts
n	haplocryids
n	haplocryods
n	haplodurids
n	haplogypsids
n	haplohumods
y	haplohumox
n	haplohumults
n	haploperox
n	haplorthods
y	haplorthox
n	haplosalids
n	haplotorrerts
n	haplotorrox
n	haploxeralfs
n	haploxerands
n	haploxererts
n	haploxerolls
n	haploxerults
n	hapludalfs
n	hapludands
n	hapluderts
n	hapludolls
n	hapludox

n	hapludults
n	haplumbrepts
n	haplustalfs
n	haplustands
n	haplusterts
n	haplustolls
n	haplustox
n	haplustults
n	humaquepts
n	humicryerts
n	humicryods
n	humitropepts
y	hydrandepts
n	hydraquents
n	hydrocryands
n	hydrudands
n	kandiaqualfs
n	kandiaquults
n	kandihumults
n	kandiperox
n	kandiudalfs
n	kandiudox
n	kandiudults
n	kandiustalfs
n	kandiustox
n	kandiustults
n	kanhaplaquults
n	kanhaplohumults
n	kanhapludalfs
n	kanhapludults
n	kanhaplustalfs
n	kanhaplustults
n	luvifibrists
n	luvihemists
n	medifibrists
n	medifolists
n	medihemists

n	medisaprists
n	melanaquands
n	melanocryands
n	melanoxerands
n	melanudands
y	nadurargids
n	natralbolls
n	natraqualfs
n	natraquerts
n	natraquolls
n	natrargids
n	natriboralfs
n	natriborolls
n	natridurids
n	natrigypsids
n	natrixeralfs
n	natrixerolls
n	natrudalfs
n	natrustalfs
n	natrustolls
y	ochraqualfs
y	ochraquox
y	ochraquults
n	paleaquults
n	paleargids
n	paleboralfs
n	paleborolls
n	palehumults
y	paleorthids
n	paleudalfs
n	paleudolls
n	paleudults
n	paleustalfs
n	paleustolls
n	paleustults
n	palexeralfs
n	palexerolls

n	palexerults
y	pelloxererts
y	pelluderts
y	pellusterts
n	petroargids
n	petrocalcids
n	petrocambids
n	petrocryids
n	petrogypsids
y	placandepts
n	placaquands
n	placaquepts
n	placaquods
n	placocryods
n	placohumods
n	placorthods
n	placudands
n	plaggepts
n	plinthaqualfs
n	plinthaquepts
n	plinthaquox
n	plinthaquults
n	plinthohumults
n	plinthoxeralfs
n	plinthudults
n	plinthustalfs
n	plinthustults
n	psammaquents
n	quartzipsamments
n	rendolls
n	rhodoxeralfs
n	rhodudalfs
n	rhodudults
n	rhodustalfs
n	rhodustults
n	salaquerts
n	salicryids

n	salitorrerts
y	salorthids
n	salusterts
y	sideraquods
y	sombrihumox
n	sombrihumults
y	sombriorthox
n	sombriperox
n	sombritropepts
n	sombriudox
n	sombriustox
n	sphagnofibrists
n	sulfaquents
n	sulfaquepts
n	sulfihemists
n	sulfisaprists
n	sulfochrepts
n	sulfohemists
n	sulfosaprists
y	torrerts
n	torriarents
n	torrifluvents
n	torriorthents
n	torripsamments
y	torrox
y	tropaqualfs
y	tropaquents
n	tropaquepts
y	tropaquods
y	tropaquults
n	tropofibrists
n	tropofluvents
n	tropofolists
n	tropohemists
y	tropohumods
y	tropohumults
n	tropopsamments

n	troporthents
y	troporthods
n	troposaprists
y	tropudalfs
y	tropudults
n	udarents
n	udifluvents
n	udipsamments
n	udivitrands
n	udorthents
n	umbraqualfs
y	umbraquox
n	umbraquults
y	umbriorthox
n	ustarents
n	ustifluvents
n	ustipsamments
n	ustivitrands
n	ustochrepts
n	ustorthents
n	ustropepts
n	vermiborolls
n	vermudolls
n	vermustolls
y	vitrandepts
n	vitraquands
n	vitricryands
n	vitritorrands
n	vitrixerands
n	xerarents
n	xerochrepts
n	xerofluvents
n	xeropsamments
n	xerorthents
n	xerumbrepts

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_moisture_class	taxmoistcl	choice					

DEFINITION
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.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED

CODE	NASIS CODE
n	aquic
n	aridic (torric)
n	peraquic
n	perudic
n	udic
n	ustic
n	xeric

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_moisture_subclass	taxmoistscl	choice					

DEFINITION
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.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	aeric
n	anthraquic
n	aquic
n	aridic (torric)
n	oxyaquic
n	typic
n	udic
n	ustic
n	xeric

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_order	taxorder	choice					

DEFINITION
The code for the highest level in soil taxonomy.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	alfisols
n	andisols
n	aridisols
n	entisols
n	histosols

n	inceptisols
n	mollisols
n	oxisols
n	spodosols
n	ultisols
n	vertisols

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_subgroup	taxsubgrp	choice					

DEFINITION
The fourth level of Soil Taxonomy. The category is below great group and above family.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED

CODE	NASIS CODE
n	abruptic argiaquolls
n	abruptic argiborolls
n	abruptic argiduridic durixerolls
n	abruptic argidurids
y	abruptic aridic argiborolls
y	abruptic aridic durixerolls
n	abruptic cryic paleborolls
n	abruptic cryoborolls
y	abruptic durargids
n	abruptic durixeralfs
y	abruptic durixerolls
n	abruptic haplic durixeralfs
n	abruptic paleboralfs
n	abruptic paleborolls

n	abruptic udic argiborolls
n	abruptic xeric argidurids
y	abruptic xerollic durargids
n	acraquoxic duraquands
n	acraquoxic kandiaquults
n	acraquoxic melanaquands
y	acric kandiaquults
y	acric plinthic
n	acrudoxic durudands
n	acrudoxic fulvudands
n	acrudoxic haplocryands
n	acrudoxic hapludands
n	acrudoxic hydric fulvudands
n	acrudoxic hydric hapludands
n	acrudoxic hydric melanudands
n	acrudoxic hydric placudands
n	acrudoxic hydrudands
n	acrudoxic kandiudults
n	acrudoxic kanhapludults
n	acrudoxic melanudands
n	acrudoxic placudands
n	acrudoxic plinthic kandiudults
n	acrudoxic thaptic hapludands
n	acrudoxic thaptic hydrudands
n	acrudoxic ultic fulvudands
n	acrudoxic ultic hapludands
n	acrudoxic vitric melanudands
n	acrustoxic kandiustults
n	acrustoxic kanhaplustults
n	aeric acraquox
n	aeric alaquods
n	aeric albaqualfs
n	aeric albaquults
y	aeric andaquepts
y	aeric arenic
n	aeric calciaquerts
n	aeric calciaquolls

n	aeric chromic vertic epiaqualfs
n	aeric cryaquepts
n	aeric duraquerts
n	aeric dystraquerts
n	aeric endoaqualfs
n	aeric endoaquents
n	aeric endoaquepts
n	aeric endoaquerts
n	aeric endoaquults
n	aeric epiaqualfs
n	aeric epiaquents
n	aeric epiaquepts
n	aeric epiaquerts
n	aeric epiaquults
n	aeric eutraquox
n	aeric fluvaquents
n	aeric fragiaqualfs
n	aeric fragiaquepts
n	aeric fragiaquults
n	aeric glossaqualfs
y	aeric grossarenic
n	aeric halaquepts
y	aeric haplaquents
y	aeric haplaquepts
y	aeric haplaquods
n	aeric haplaquox
n	aeric humaquepts
n	aeric humic cryaquepts
n	aeric kandiaqualfs
n	aeric kandiaquults
n	aeric kanhaplaquults
y	aeric mollic
y	aeric ochraqualfs
y	aeric ochraquults
n	aeric paleaquults
n	aeric plinthaquox
n	aeric tropaquepts

y	aeric tropaquods
n	aeric tropic fluvaquents
n	aeric umbric epiaqualfs
n	aeric umbric kandiaqualfs
n	aeric umbric kanhaplaquults
y	aeric umbric ochraqualfs
n	aeric vertic albaqualfs
n	aeric vertic epiaqualfs
y	aeric xeric
n	albaquic fragiudalfs
n	albaquic hapludalfs
n	albaquic paleudalfs
n	albaquultic hapludalfs
y	albic argiborolls
n	albic argixerolls
n	albic cryoborolls
n	albic glossic natraqualfs
n	albic natraqualfs
n	albollic argiborolls
n	alfic alaquods
n	alfic alorthods
y	alfic andeptic
n	alfic arenic alaquods
y	alfic arenic haplaquods
n	alfic cryochrepts
y	alfic cryopsamments
n	alfic cryorthents
n	alfic epiaquods
n	alfic fragiorthods
y	alfic haplaquods
n	alfic haplorthods
n	alfic haploxerands
n	alfic hapludands
n	alfic haplustands
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y	alfic ustipsamments
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n	alic dystruderts
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y	andaqueptic fluvaquents
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y	andeptic cryorthents
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y	andeptic haplohumults
y	andeptic palehumults
y	andeptic udorthents

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n	andic fragiumbrepts
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n	andic haplohumults

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n	andic udifluvents
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n	andic xerofluvents
n	andic xerorthents
n	andic xerumbrepts

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n	anionic acrustox
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n	anionic aquic acrustox
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n	anthraquic ustorthents
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n	anthropic kanhaplohumults
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n	aquic ustipsamments
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n	argic ustic quartzipsamments
n	argic ustipsamments
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n	argic xeropsamments

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y	borollic natrargids
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y	borollic paleorthids
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n	calcic cryoborolls
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n	calcic vitritorrands
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n	cambidic haplodurids

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n	chromic durixererts
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n	chromic dystrusterts
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n	chromic haplocryerts
n	chromic haplotorrerts
n	chromic haploxererts
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n	chromic haplusterts
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n	chromic salusterts
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n	cumulic haplustolls
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n	cumulic vertic epiaquolls
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n	duric petrocryids

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n	durinodic haplargids
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y	durixerollic haplargids
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y	durixerollic natrargids
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y	durorthidic torriorthents

y	durorthidic torripsamments
y	durorthidic ustorthents
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y	durorthidic xeric torriorthents
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y	durorthidic xerofluvents
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n	eutropeptic rendolls
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n	fluventic dystropepts
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n	fluventic haplumbrepts
n	fluventic haplustolls

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n	halic haplusterts
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y	haplaquodic

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n	hemic terric medisaprists
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n	hemic terric troposaprists
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n	humic rhodic kandiustox
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n	inceptic eutrustox
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n	kandic plinthaquults

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n kandiudalfic eutrudox
n kandiustalfic eutrustox
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n kanhaplic haplustults
n kanhaplic rhodustalfs
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n leptic calciusterts
n leptic calcixererts
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n leptic dystruderts
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n leptic endoaquerts
n leptic epiaquerts
n leptic gypsiusterts
n leptic haplogypsids
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n leptic haploxererts
n leptic hapluderts
n leptic haplusterts
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n leptic natrustolls
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n leptic salitorrerts
n leptic salusterts
n leptic udic haplusterts
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n limnic tropohemists
n limnic troposaprists
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n	lithic acrudox
n	lithic acrustox
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n	lithic sombriustox

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n	oxyaquic cryofluvents
n	oxyaquic cryopsamments
n	oxyaquic cryorthents
n	oxyaquic cryumbrepts
n	oxyaquic duricryods

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n oxyaquic dystropepts
n oxyaquic dystruderts
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n oxyaquic eutrochrepts
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n oxyaquic fragiorthods
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n oxyaquic haplocryods
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n oxyaquic humitropepts
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n oxyaquic kandiudults
n oxyaquic kanhapludalfs
n oxyaquic kanhapludults
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n oxyaquic paleborolls
n oxyaquic paleudalfs
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n oxyaquic paleustalfs
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n oxyaquic torrifluvents

n oxyaquic torriorthents
n oxyaquic tropopsamments
n oxyaquic udifluvents
n oxyaquic udipsamments
n oxyaquic udorthents
n oxyaquic ustifluvents
n oxyaquic ustipsamments
n oxyaquic ustorthents
n oxyaquic ustropepts
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n oxyaquic xeropsamments
n oxyaquic xerorthents
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n	petroferric eutrotorrox
n	petroferric eutrudox
n	petroferric eutrustox
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n	petroferric kandiustox
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n	petroferric sombriustox

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n	plinthaquic kandiudults
n	plinthaquic kandiustox

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n psammentic glossoboralfs
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n psammentic paleustalfs
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n psammentic rhodustults
n quartzipsammentic haplumbrepts
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n rhodic acrudox
n rhodic acrustox
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n rhodic eutrudox
n rhodic eutrustox
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n rhodic haplustox
n rhodic kandiperox

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n	ruptic-lithic haplustolls
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y	ruptic-lithic-xerochreptic haploxerults
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n	salidic haplustolls
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n	salidic sulfaquepts
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y	salorthidic sulfaquepts
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y	sombrihumic

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n	thaptic melanudands
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n	thaptic ustivitrands
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n	torrifluventic ustochrepts

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n	udertic paleustalfs
n	udertic paleustolls

n	udertic ustochrepts
n	udic argiborolls
n	udic argiustolls
n	udic calciborolls
n	udic calciusterts
n	udic calciustolls
y	udic chromusterts
n	udic durixererts
n	udic dystrusterts
y	udic eutrandepts
n	udic gypsiusterts
n	udic haploborolls
n	udic haploxererts
n	udic haplustalfs
n	udic haplusterts
n	udic haplustolls
n	udic kandiustalfs
n	udic kandiustults
n	udic kanhaplustalfs
n	udic kanhaplustults
n	udic natriborolls
n	udic paleustalfs
n	udic paleustolls
y	udic pellusterts
n	udic rhodustalfs
n	udic ustifluvents
n	udic ustochrepts
n	udic ustorthents
n	udic vermiborolls
n	udifluventic ustochrepts
n	udollic albaqualfs
n	udollic endoaqualfs
n	udollic epiaqualfs
y	udollic ochraqualfs
y	udorthentic chromusterts
n	udorthentic haploborolls
n	udorthentic haplustolls

y	udorthentic pellusterts
n	udoxic quartzipsamments
n	ultic alaquods
n	ultic alorthods
n	ultic argixerolls
n	ultic epiaquods
n	ultic fragiorthods
y	ultic haplaquods
y	ultic haplohumods
n	ultic haplorthods
n	ultic haploxeralfs
n	ultic haploxerands
n	ultic haploxerolls
n	ultic hapludalfs
n	ultic hapludands
n	ultic haplustalfs
n	ultic haplustands
n	ultic hydrudands
n	ultic melanudands
n	ultic paleustalfs
n	ultic palexeralfs
n	ultic palexerolls
y	ultic tropudalfs
n	ultic udarents
n	ultic udivitrands
y	ultic vitric
y	ultic vitric haploxerands
n	ultic vitricryands
n	ultic vitrixerands
n	umbreptic eutroperox
n	umbreptic eutrudox
n	umbreptic eutrustox
n	umbreptic fragiudalfs
n	umbric dystrochrepts
n	umbric endoaqualfs
n	umbric endoaquods
n	umbric epiaqualfs

n	umbric epiaquods
n	umbric fragiaqualfs
n	umbric fragiaquults
n	umbric fragiochrepts
y	umbric haploxerands
y	umbric haplustands
n	umbric kandiaqualfs
n	umbric kandiaquults
n	umbric kanhaplaquults
y	umbric ochraqualfs
n	umbric paleaquults
y	umbric vitrandepts
y	umbric vitrixerands
n	ustalfic argiustolls
y	ustalfic durargids
y	ustalfic haplargids
y	ustalfic paleargids
n	ustalfic petrocalcids
n	ustandic humitropepts
n	ustandic kandihumults
n	ustandic kanhaplohumults
n	ustertic argiborolls
n	ustertic calciargids
y	ustertic camborthids
n	ustertic haplargids
n	ustertic haplocambids
n	ustertic torrifluvents
n	ustertic torriorthents
n	ustic aquicambids
n	ustic argicryids
n	ustic argidurids
n	ustic argigypsids
n	ustic calciargids
n	ustic calcicryids
n	ustic calcigypsids
n	ustic duraquerts
n	ustic durochrepts

n	ustic dystraquerts
n	ustic dystropepts
n	ustic endoaquerts
n	ustic epiaquerts
n	ustic gypsiargids
n	ustic haplargids
n	ustic haplocalcids
n	ustic haplocambids
n	ustic haplocryids
n	ustic haplodurids
n	ustic haplogypsids
n	ustic haplohumults
n	ustic humitropepts
n	ustic kandihumults
n	ustic kanhaplohumults
n	ustic natrargids
n	ustic natrigypsids
n	ustic paleargids
n	ustic palehumults
n	ustic petroargids
n	ustic petrocalcids
n	ustic petrocambids
n	ustic petrocryids
n	ustic petrogypsids
n	ustic quartzipsamments
n	ustic salaquerts
n	ustic torrifluvents
n	ustic torriorthents
n	ustic torripsamments
y	ustic tropohumults
n	ustifluventic haplocambids
y	ustivitrandic camborthids
y	ustivitrandic durargids
y	ustivitrandic durorthids
y	ustochreptic calciorthids
y	ustochreptic camborthids
y	ustochreptic durorthids

y	ustochreptic paleorthids
y	ustollic calciorthids
y	ustollic camborthids
y	ustollic durorthids
y	ustollic eutrandepts
y	ustollic haplargids
y	ustollic natrargids
y	ustollic paleargids
y	ustollic paleorthids
n	ustoxic dystropepts
n	ustoxic humitropepts
n	ustoxic quartzipsamments
y	ustoxic tropohumults
n	vermic calcixerolls
n	vermic haploxerolls
n	vermic hapludolls
n	vermic udorthents
n	vermic ustorthents
n	vertic albaqualfs
n	vertic albaquults
n	vertic argialbolls
n	vertic argiaquolls
n	vertic argiborolls
n	vertic argicryids
n	vertic argidurids
n	vertic argigypsids
n	vertic argiudolls
n	vertic argiustolls
n	vertic argixerolls
n	vertic calciargids
n	vertic calciudolls
n	vertic calciustolls
n	vertic calcixerolls
y	vertic camborthids
n	vertic cryaquepts
n	vertic cryaquolls
n	vertic cryoboralfs

n	vertic cryoborolls
n	vertic duraquolls
y	vertic durargids
n	vertic durixeralfs
n	vertic durixerolls
n	vertic dystropepts
n	vertic endoaquepts
n	vertic endoaquolls
n	vertic epiaqualfs
n	vertic epiaquepts
n	vertic epiaquolls
n	vertic epiaquults
n	vertic eutroboralfs
n	vertic eutrochrepts
n	vertic eutropepts
n	vertic fluvaquents
n	vertic halaquepts
y	vertic haplaquepts
y	vertic haplaquolls
n	vertic haplargids
n	vertic haploborolls
n	vertic haplocalcids
n	vertic haplocambids
n	vertic haplocryids
n	vertic haploxeralfs
n	vertic haploxerolls
n	vertic hapludalfs
n	vertic hapludolls
n	vertic hapludults
n	vertic haplustalfs
n	vertic haplustolls
n	vertic humitropepts
y	vertic nadurargids
n	vertic natraqualfs
n	vertic natraquolls
n	vertic natrargids
n	vertic natriborolls

n	vertic natridurids
n	vertic natrigypsids
n	vertic natrixeralfs
n	vertic natrixerolls
n	vertic natrudalfs
n	vertic natrustalfs
n	vertic natrustolls
y	vertic ochraqualfs
n	vertic paleaquults
n	vertic paleargids
n	vertic paleborolls
n	vertic paleudalfs
n	vertic paleudolls
n	vertic paleudults
n	vertic paleustalfs
n	vertic paleustolls
n	vertic palexeralfs
n	vertic palexerolls
n	vertic rendolls
n	vertic torrifluvents
n	vertic torriorthents
n	vertic tropaquepts
n	vertic ustifluvents
n	vertic ustochrepts
n	vertic ustorthents
n	vertic ustropepts
n	vertic xerochrepts
n	vertic xerofluvents
n	vitrandic aquicambids
n	vitrandic argiborolls
n	vitrandic argicryids
n	vitrandic argidurids
n	vitrandic argigypsids
n	vitrandic argiudolls
n	vitrandic argiustolls
n	vitrandic argixerolls
n	vitrandic calciargids

n vitrandic calcicryids
n vitrandic calcigypsids
n vitrandic calcixerolls
n vitrandic cryoboralfs
n vitrandic cryoborolls
n vitrandic cryochrepts
n vitrandic cryofluvents
n vitrandic cryopsamments
n vitrandic cryorthents
n vitrandic cryumbrepts
n vitrandic durixerolls
n vitrandic durochrepts
n vitrandic dystrochrepts
n vitrandic dystropepts
n vitrandic eutroboralfs
n vitrandic eutrochrepts
n vitrandic eutropepts
n vitrandic fragiboralfs
n vitrandic fragiochrepts
n vitrandic fragiumbrepts
n vitrandic fragixeralfs
n vitrandic glossoboralfs
n vitrandic glossudalfs
n vitrandic gypsiargids
n vitrandic gypsicryids
n vitrandic haplargids
n vitrandic haploborolls
n vitrandic haplocalcids
n vitrandic haplocambids
n vitrandic haplocryids
n vitrandic haplodurids
n vitrandic haplogypsids
n vitrandic haploxeralfs
n vitrandic haploxerolls
n vitrandic hapludalfs
n vitrandic hapludolls
n vitrandic haplumbrepts

n	vitrandic haplustolls
n	vitrandic humitropepts
n	vitrandic natrargids
n	vitrandic natridurids
n	vitrandic natrigypsids
n	vitrandic paleargids
n	vitrandic paleboralfs
n	vitrandic palexeralfs
n	vitrandic petrocalcids
n	vitrandic petrocambids
n	vitrandic petrogypsids
n	vitrandic torrifluvents
n	vitrandic torriorthents
n	vitrandic torripsamments
n	vitrandic troporthents
n	vitrandic udifluvents
n	vitrandic udorthents
n	vitrandic ustochrepts
n	vitrandic xerochrepts
n	vitrandic xerofluvents
n	vitrandic xeropsamments
n	vitrandic xerorthents
n	vitrandic xerumbrepts
n	vitric fulvicryands
n	vitric haplocryands
y	vitric haploxerands
n	vitric hapludands
n	vitric haplustands
n	vitric melanocryands
n	vitric melanudands
n	vitric placudands
n	vitritorrandic argiustolls
n	vitritorrandic argixerolls
n	vitritorrandic durixerolls
n	vitritorrandic haploxerolls
n	vitritorrandic haplustolls
n	vitrixerandic aquicambids

n	vitrixerandic argicryids
n	vitrixerandic argidurids
n	vitrixerandic argigypsids
n	vitrixerandic calciargids
n	vitrixerandic calcicryids
n	vitrixerandic calcigypsids
y	vitrixerandic camborthids
y	vitrixerandic durargids
y	vitrixerandic durorthids
n	vitrixerandic gypsiargids
n	vitrixerandic gypsicryids
n	vitrixerandic haplargids
n	vitrixerandic haplocalcids
n	vitrixerandic haplocambids
n	vitrixerandic haplocryids
n	vitrixerandic haplodurids
n	vitrixerandic haplogypsids
n	vitrixerandic natrargids
n	vitrixerandic natridurids
n	vitrixerandic natrigypsids
n	vitrixerandic paleargids
n	vitrixerandic petrocalcids
n	vitrixerandic petrocambids
n	vitrixerandic petrogypsids
n	vitrixerandic torrifluvents
y	vitrustandic
n	xanthic acroperox
n	xanthic acrudox
n	xanthic acrustox
n	xanthic eutroperox
n	xanthic eutrudox
n	xanthic eutrustox
n	xanthic haploperox
n	xanthic hapludox
n	xanthic haplustox
n	xanthic kandiperox
n	xanthic kandiudox

n	xanthic kandiustox
y	xeralfic haplargids
y	xeralfic paleargids
n	xeralfic petrocalcids
n	xerertic argialbolls
n	xerertic calciargids
y	xerertic camborthids
n	xerertic haplargids
n	xerertic haplocambids
n	xerertic torriorthents
n	xeric aquicambids
n	xeric argialbolls
n	xeric argicryids
n	xeric argidurids
n	xeric argigypsids
n	xeric calciargids
n	xeric calcicryids
n	xeric calcigypsids
y	xeric durandepts
n	xeric duraquerts
n	xeric endoaquerts
n	xeric epiaquerts
n	xeric gypsiargids
n	xeric haplargids
n	xeric haplocalcids
n	xeric haplocambids
n	xeric haplocryands
n	xeric haplocryids
n	xeric haplodurids
n	xeric haplogypsids
n	xeric haplohumults
n	xeric kandihumults
n	xeric kanhaplohumults
n	xeric natrargids
n	xeric natridurids
n	xeric natrigypsids
n	xeric paleargids

n	xeric palehumults
n	xeric petroargids
n	xeric petrocalcids
n	xeric petrocambids
n	xeric petrocryids
n	xeric petrogypsids
n	xeric quartzipsamments
n	xeric torrifluvents
n	xeric torriorthents
n	xeric torripsamments
n	xeric vitricryands
n	xerifluventic haplocambids
y	xerochreptic calciorthids
y	xerochreptic camborthids
y	xerochreptic durorthids
n	xerochreptic haplodurids
y	xerochreptic paleorthids
y	xerollic calciorthids
y	xerollic camborthids
y	xerollic durargids
y	xerollic durorthids
y	xerollic haplargids
y	xerollic nadurargids
y	xerollic natrargids
y	xerollic paleargids
y	xerollic paleorthids

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_suborder	taxsuborder	choice					

DEFINITION
The second level of Soil Taxonomy. This category is below the order and above the great group.

AGGREGATION METHOD IS not applicable to this data element.

ARCHIVED CODE	NASIS CODE
n	albolls
y	andepts
n	aqualfs
n	aquands
n	aquents
n	aquepts
n	aquerts
n	aquods
n	aquolls
n	aquox
n	aquults
n	arents
n	argids
n	boralfs
n	borolls
n	calcids
n	cambids
n	cryands
n	cryerts
n	cryids
n	cryods
n	durids
y	ferrods
n	fibrists
n	fluvents
n	folists
n	gypsids
n	hemists
n	humods
y	humox
n	humults

n	ochrepts
n	orthents
y	orthids
n	orthods
y	orthox
n	perox
n	plaggepts
n	psamments
n	rendolls
n	salids
n	saprists
n	torrands
n	torrerts
n	torrox
n	tropepts
n	udalfs
n	udands
n	uderts
n	udolls
n	udox
n	udults
n	umbrepts
n	ustalfs
n	ustands
n	usterts
n	ustolls
n	ustox
n	ustults
n	vitrands
n	xeralfs
n	xerands
n	xererts
n	xerolls
n	xerults

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
taxonomic_temp_regime	taxtempregime	choice					

DEFINITION
Soil temperature classes used as family differentiae in all orders. The names are used as family modifiers unless the name of a higher taxon carries the same limitation, in which case the code is a non-print option (Soil Taxonomy).

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	cryic
y	cryic(pdpcode)
n	frigid
n	hyperthermic
n	isofrigid
n	isohyperthermic
n	isomesic
n	isothermic
n	mesic
n	pergelic
y	pergelic(pdpcode)
n	thermic

==========

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
terms_used_in_lieu_of_texture	lieutex	choice					

DEFINITION

Used in a way similar to textural terms. Values include organic materials, materials coarser than 2 mm, or materials that limit root penetration.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED

CODE	NASIS CODE
y	apum
y	ashy
y	ask
n	br
n	by
n	cb
y	ce
y	cem
y	cind
n	cn
y	cndy
y	cpf
y	de
n	dur
n	fl
y	frag
n	g
y	gyp
n	hpm
y	hpum
y	hsk
y	hydr
y	ind
y	marl
n	mat
y	medl
n	mpm
n	mpt
y	mpum

y	msk
n	muck
n	or
n	pby
n	pc
n	pcb
n	pcn
n	peat
n	pf
n	pfl
n	pg
n	pgp
n	pl
n	pst
y	pum
y	sg
n	spm
n	st
y	uwb
y	var
n	w
y	wb

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
texture_class	texcl	choice					

DEFINITION
Name for the relative portions of the various size groups of individual mineral soil grains less than 2 millimeters equivalent diameter in a mass of soil, expressed as classes, based on the USDA system of particle sizes.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED CODE	NASIS CODE
n	c
n	cl
n	cos
n	cosl
n	fs
n	fsl
n	l
n	lcos
n	lfs
n	ls
n	lvfs
n	s
n	sc
n	scl
n	si
n	sic
n	sicl
n	sil
n	sl
n	vfs
n	vfsl

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
texture_modifier	texmod	choice					

DEFINITION
A term appended to basic texture class name to denote the presence of a condition or component other than sand, silt, or clay.

AGGREGATION METHOD IS a repeating group with no High, Low, RV.

ARCHIVED CODE	NASIS CODE
n	ashy
n	by
n	byv
n	byx
n	cb
n	cbv
n	cbx
n	cn
n	cnv
n	cnx
n	cop
n	dia
n	fl
n	flv
n	flx
n	gr
n	grc
n	grf
n	grm
n	grv
n	grx
n	gs
n	gyp
n	hb
n	hydr
n	medl
n	mk
n	mr
n	ms
n	pby
n	pbyv
n	pbyx
n	pcb

n pcbv
n pcbx
n pcn
n pcnv
n pcnx
n pf
n pfl
n pflv
n pflx
n pgr
n pgrv
n pgrx
n pst
n pstv
n pstx
n pt
n sr
n st
n stv
n stx
n wd

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DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
texture_modifier_and_class	texture	string			30		

DEFINITION
Name for the concatenation of TEXTURE_MODIFIER and TEXTURE_CLASS.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
total_subsidence	totalsub	integer	cm	0.00	999.00		

DEFINITION
The maximum possible loss of surface elevation from the drainage of wet soils having organic layers or semifluid mineral layers. (NSSH)

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
unified_soil_classification	unifiedcl	choice					

DEFINITION
A system for classifying mineral and organo-mineral soils for engineering purposes based on particle size characteristics, liquid limit, and plasticity index.

AGGREGATION METHOD IS a repeating group with RV.

ARCHIVED

CODE	NASIS CODE
n	ch
n	cl
n	cl-a
n	cl-k
n	cl-ml
n	cl-o
n	cl-t
n	gc
n	gc-gm
n	gm
n	gp
n	gp-gc
n	gp-gm
n	gw
n	gw-gc
n	gw-gm
n	mh
n	mh-a
n	mh-k
n	mh-o
n	mh-t
n	ml
n	ml-a
n	ml-k
n	ml-o
n	ml-t
n	oh
n	oh-t
n	ol
n	pt
n	sc
n	sc-sm
n	sm
n	sp
n	sp-sc

n	sp-sm
n	sw
n	sw-sc
n	sw-sm

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
water_fifteen_bar	wfifteenbar	float	percent	0.00	220.00	1	

DEFINITION
The water content at 15 bar (1500 kPa) soil matric potential, expressed as a percentage of the less than 2 mm, oven-dry soil by weight.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED

CODE	NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
water_one_tenth_bar	wtenthbar	float	percent	0.00	999.00	1	

DEFINITION
The water content at 1/10 bar (10 kPa) soil matric potential, expressed as a percentage of the less than 2 mm, oven-dry soil by weight.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
water_one_third_bar	wthirdbar	float	percent	0.00	999.00	1	

DEFINITION
The water content at 1/3 bar (33 kPa) soil matric potential, expressed as a percentage of the less than 2 mm, oven-dry soil by weight.

AGGREGATION METHOD IS High, Low, and RV.

ARCHIVED
CODE NASIS CODE

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_coniferous	wlconiferous	choice					

DEFINITION

Suitability of the soil to produce the wildlife element coniferous trees.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_grain	wlgrain	choice					

DEFINITION
Suitability of the soil to produce the wildlife element grain.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

SHORT	DATA	UNIT OF	MINIMUM	MAXIMUM

DATA ELEMENT NAME	NAME	TYPE	MEASURE	VALUE	VALUE	PRECISION	LENGTH
wildlife_habitat_grass	wlgrass	choice					

DEFINITION
Suitability of the soil to produce the wildlife element grass.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_hardwood	wlhardwood	choice					

DEFINITION
Suitability of the soil to produce the wildlife element hardwood trees.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_herbaceous	wlherbaceous	choice					

DEFINITION
Suitability of the soil to produce the wildlife element herbaceous plants.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_openland	wlopenland	choice					

DEFINITION
Suitability of the soil to support the habitat requirements for openland wildlife.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE

n fair
n good
n poor
n very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_rangeland	wlrangeland	choice					

DEFINITION
Suitability of the soil to support the habitat requirements for rangeland wildlife.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n fair
n good
n poor
n very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_shallow_water	wlshallowwat	choice					

DEFINITION
Suitability of the soil to support the habitat element shallow water.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_shrub	wlshrub	choice					

DEFINITION
Suitability of the soil to produce the wildlife habitat element shrub.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_wetland	wlwetland	choice					

DEFINITION
Suitability of the soil to support the habitat elements for wetland wildlife.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_wetland_plant	wlwetplant	choice					

DEFINITION
Suitability of the soil to produce the wildlife habitat element wetland plant.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wildlife_habitat_woodland	wlwoodland	choice					

DEFINITION
Suitability of the soil to produce the habitat elements for woodland wildlife.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	fair
n	good
n	poor
n	very poor

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wind_erodibility_group	weg	choice					

DEFINITION
Groupings of soils having similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	1
n	2
n	3
n	4
n	4L
n	5
n	6
n	7
n	8

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
wind_erodibility_index	wei	choice	tons/acre/yr				

DEFINITION
A value in tons/acre/year that is a factor in calculating soil loss by wind. The values are related to WEG.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	0
n	134
n	160
n	180
n	220
n	250
n	310
n	38
n	48

n	56
n	86

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
woodland_equipment_rating	wdequiprtg	choice					

DEFINITION
Woodland limitation rating for the use of equipment, year round or seasonal.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	moderate
n	severe
n	slight

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
woodland_erosion_rating	wderosionrtg	choice					

DEFINITION
Woodland limitation rating identifying the probability that damage may occur as a result of site preparation and following cutting operations where soil is exposed.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n moderate
n severe
n slight

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
woodland_plant_competition	wdplantcompetn	choice					

DEFINITION
Woodland limitation rating for the likelihood of the invasion or growth of undesirable species when openings are made in the canopy.

AGGREGATION METHOD IS RV.

ARCHIVED
CODE NASIS CODE

n moderate
n severe
n slight

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
woodland_seedling_mortality	wdseedmortlty	choice					

DEFINITION

Woodland limitation rating identifying the probability of death of naturally occurring or planted tree seedlings as influenced by kinds of soil or topographic conditions.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	moderate
n	severe
n	slight

DATA ELEMENT NAME	SHORT NAME	DATA TYPE	UNIT OF MEASURE	MINIMUM VALUE	MAXIMUM VALUE	PRECISION	LENGTH
woodland_windthrow_hazard	wdwindthrowhzd	choice					

DEFINITION
Woodland limitation rating identifying the windthrow hazard. Windthrow is the likelihood of trees being uprooted by wind as a result of insufficient depth of the soil to give adequate root anchorage.

AGGREGATION METHOD IS RV.

ARCHIVED

CODE	NASIS CODE
n	moderate
n	severe
n	slight

2.3 Soil Geographic Standard Choice Definitions

Table Name	Data Element Name	Choice	Choice Definition
chorizon	**excavation_difficulty_class**		
		extremely high	Excavation cannot be accomplished in a resonable time period with a backhoe mounted on a 40 to 60 kW (50-80 hp) tractor.
		high	Excavation with a spade can be accomplished with difficulty. Excavation is easily possible with a full length pick, using an over-the-head swing.
		low	Excavations can be made with a spade using arm-applied pressure only. Neither application of impact energy nor application of foot pressure is necessary.
		moderate	Excavation can be accomplished quite easily by application of impact energy with a spade or by foot applied pressure.
		very high	Excavation with a full length pick using an over-the-head swing is moderately to markedly difficult. Excavation is possible in a reasonable period of time with a backhoe mounted on a 40 to 60 kW (50-80 hp) tractor.
chorizon_aashto	**aashto_group_classification**		
		a-1	Granular materials (35% or less passing No. 200 sieve), silty or clayey gravel and sand.
		a-2	Granular materials (35% or less passing No. 200), silty or clayey gravel and sand.
		a-3	Granular materials (35% or less passing No. 200), fine sand.
		a-4	Silt-Clay materials (more than 35% passing NO. 200), silty soils.
		a-5	Silt-Clay Materials (more than 35% passing No. 200), clayey soils.
		a-6	Silt-Clay materials (more than 35% passing No. 200) clayey soils.
		a-7	Silt-Clay materials (more than 35% passing No. 200), clayey soils.
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
chorizon_fragments	**fragment_roundness**		

		angular	Strongly developed faces with sharp edges (SSM).
		rounded	Flat faces absent or nearly absent with all corners rounded (SSM).
		subrounded	Detectable flat faces with well-rounded corners (SSM).
	fragment_rupture_resist_cem		
		extremely weakly	Stress applied ranges from 8 to 20 newtons. (SSM)
		indurated	Stress applied is greater than or equal 3 joules. (SSM)
		moderately	Stress applied ranges from 80 to 160 newtons. (SSM)
		moderately cemented	Stress applied ranges from 80 to 800 newtons. (SSM)
		noncemented	Stress applied ranges from 0 to 8 newtons. (SSM)
		strongly	Stress applied ranges from 160 to 800 newtons. (SSM)
		strongly cemented	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very strongly	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very weakly	Stress applied ranges from 20 to 40 newtons. (SSM)
		weakly	Stress applied ranges from 40 to 80 newtons. (SSM)
		weakly cemented	Stress applied ranges from 8 to 80 newtons. (SSM)
chorizon_texture	**terms_used_in_lieu_of_texture**		
		apum	Ashy-pumiceous
		ashy	Ashy
		ask	Ashy-skeletal
		br	Bedrock
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		by	Boulders
		cb	Cobbles

Table Name	Data Element Name	Choice	Choice Definition
		ce	Coprogenous earth
		cem	Cemented
		cind	Cinders
		cn	Channers
		cndy	Cindery
		cpf	Consolidated permafrost (ice rich)
		de	Diatomaceous earth
		dur	Duripan
		fl	Flagstones
		frag	Fragmental material
		g	Gravel
		gyp	Gypsiferous material
		hpm	Highly decomposed plant material
		hpum	Hydrous-pumiceous
		hsk	Hydrous-skeletal
		hydr	Hydrous
		ind	Indurated
		marl	Marl
		mat	Material
		medl	Medial
		mpm	Moderately decomposed plant material
		mpt	Mucky peat

		mpum	Medial-pumiceous
		msk	Medial-skeletal
		muck	Muck
		or	Ortstein
		pby	Paraboulders
		pc	Petrocalcic
		pcb	Paracobbles
		pcn	Parachanners
		peat	Peat
		pf	Petroferric
		pfl	Paraflagstones
		pg	Paragravel
		pgp	Petrogypsic
		pl	Placic
		pst	Parastones
		pum	Pumiceous
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		sg	Sand and gravel
		spm	Slightly decomposed plant material
		st	Stones
		uwb	Unweathered bedrock
		var	Variable
		w	Water

		wb	Weathered bedrock
	texture_class		
		c	Clay
		cl	Clay loam
		cos	Coarse sand
		cosl	Coarse sandy loam
		fs	Fine Sand
		fsl	Fine sandy loam
		l	Loam
		lcos	Loamy coarse sand
		lfs	Loamy fine sand
		ls	Loamy sand
		lvfs	Loamy very fine sand
		s	Sand
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		sc	Sandy clay
		scl	Sandy clay loam
		si	Silt
		sic	Silty clay
		sicl	Silty clay loam
		sil	Silt loam
		sl	Sandy loam
		vfs	Very fine sand

		vfsl	Very fine sandy loam
chorizon_texture_modifier	**texture_modifier**		
		ashy	Ashy
		by	Bouldery
		byv	Very bouldery
		byx	Extremely bouldery
		cb	Cobbly
		cbv	Very cobbly
		cbx	Extremely cobbly
		cn	Channery
		cnv	Very channery
		cnx	Extremely channery
		cop	Coprogenous
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		dia	Diatomaceous
		fl	Flaggy
		flv	Very flaggy
		flx	Extremely flaggy
		gr	Gravelly
		grc	Coarse gravelly
		grf	Fine gravelly
		grm	Medium gravelly
		grv	Very gravelly
		grx	Extremely gravelly

		gs	Grassy
		gyp	Gypsiferous
		hb	Herbaceous
		hydr	Hydrous
		medl	Medial
		mk	Mucky
		mr	Marly
		ms	Mossy
		pby	Parabouldery
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		pbyv	Very parabouldery
		pbyx	Extremely parabouldery
		pcb	Paracobbly
		pcbv	Very paracobbly
		pcbx	Extremely paracobbly
		pcn	Parachannery
		pcnv	Very parachannery
		pcnx	Extremely parachannery
		pf	Permanently frozen
		pfl	Paraflaggy
		pflv	Very paraflaggy
		pflx	Extremely paraflaggy

		pgr	Paragravelly
		pgrv	Very paragravelly
		pgrx	Extremely paragravelly
		pst	Parastony
		pstv	Very parastony
		pstx	Extremely parastony
		pt	Peaty
		sr	Stratified
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		st	Stony
		stv	Very stony
		stx	Extremely stony
		wd	Woody
chorizon_unified	**unified_soil_classification**		
		ch	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay.
		cl	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay.
		gc	COARSE-GRAINED SOILS, Gravels, gravel with fines, Clayey Gravel.
		gm	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel
		gp	COARSE-GRAINED SOILS, Gravels, clean gravels, Poorly Graded Gravel.
		gw	COARSE-GRAINED SOILS, Gravels, clean gravels, Well-Graded Gravel.
		mh	FINE-GRAINED SOILS, Silts and clays, (liquid limit is 50% or more), Elastic Silt.

Table Name	Data Element Name	Choice	Choice Definition
		ml	FINE-GRAINED SOILS, Silts and clays, (liquid limit is less than 50%), Silt.
		oh	FINE-GRAINED SOILS, Silts and clays, (liquid limit is 50% or more), Organic Clay or Organic Silt
		ol	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Organic Clay or Organic Silt.
		pt	Highly organic soils, Peat.
		sc	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand.
		sm	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.
		sp	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly Graded Sand,
		sw	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded Sand.
component	**hydrologic_group**		
		a	Low runoff potential.
		a/d	Low runoff potential when drained and high runoff potential undrained.
		b	Moderately low runoff potential.
		b/d	Moderately low runoff potential when drained and high runoff potential undrained.
		c	Moderately high runoff potential.
		c/d	Moderately high runoff potential when drained and high runoff potential undrained.
		d	High runoff potential.
	irrigated_capability_class		
		1	Soils in Class 1 have few limitations that restrict their use.
		2	Soils in Class 2 have some limitations that reduce the choice of plants or require moderate conservation practices.

Table Name	Data Element Name	Choice	Choice Definition
		3	Soils in Class 3 have severe limitations that reduce the choice of plants or require special conservation practices, or both.
		4	Soils in Class 4 have very severe limitations that restrict the choice of plants, require very careful management, or both.
		5	Soils in Class 5 have little or no erosion hazard, but have other limitations impractical to remove that limit their use.
		6	Soils in Class 6 have very severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, etc.
		7	Soils in Class 7 have very severe limitations that make them unsuited to cultivation and that restrict their use to grazing, etc.
		8	Soils (and landforms) in Class 8 have limitations that preclude their use for commercial plant production and restrict their use.
	irrigated_capability_subclass		
		c	climate condition
		e	erosion
		s	soil limitations within the rooting zone
		w	excess water
	nonirr_capability_class		
		1	Soils in Class 1 have few limitations that restrict their use.
		2	Soils in Class 2 have some limitations that reduce the choice of plants or require moderate conservation practices.
		3	Soils in Class 3 have severe limitations that reduce the choice of plants or require special conservation practices, or both.
		4	Soils in Class 4 have very severe limitations that restrict the choice of plants, require very careful management, or both.
		5	Soils in Class 5 have little or no erosion hazard, but have other

Table Name	Data Element Name	Choice	Choice Definition
			limitations impractical to remove that limit their use.
		6	Soils in Class 6 have very severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, etc.
		7	Soils in Class 7 have very severe limitations that make them unsuited to cultivation and that restrict their use to grazing, etc.
		8	Soils (and landforms) in Class 8 have limitations that preclude their use for commercial plant production and restrict their use.
	nonirr_capability_subclass		
		c	climate condition
		e	erosion
		s	soil limitations within the rooting zone
		w	excess water
	soil_slippage_potential		
		high	High potential of slippage.
		low	Low potential of slippage.
		medium	Medium potential of slippage.
		moderately high	Moderately high hazard of slippage.
		moderately low	Moderately low hazzard of slippage.
	wind_erodibility_group		
		1	Surface texture - VFS, FS, S, COS. Percent aggregates - 1, Wind erodibility index - 310 t/a/yr.
		2	Surface texture - LVFS, LFS, LCOS, Sapric Material (Muck). Percent aggregates - 10. Wind erodibility index - 134 t/a/yr.
		3	Surface texture - VFSL, FSL, SL, COSL. Percent aggregates - 25.

Table Name	Data Element Name	Choice	Choice Definition
			Wind erodibility index - 86 t/a/yr.
		4	Surface texture - C, SIC, noncalcareous CL, SICL (>35% clay). Percent aggregates - 25. Wind erodibility index - 86 t/a/yr.
		4L	Surface texture - calcareous L, SIL, CL, SICL. Percent aggregates - 25. Wind Erodibility Index - 86 t/a/yr.
		5	Surface texture - noncalcareous L/SIL (<20% clay), SCL, SC. Percent aggregates - 40. Wind Erodibility Index - 56 t/a/yr.
		6	Surface texture - noncalcareous L/SIL (>20% CLAY), CL (<35% CLAY). Percent aggregates - 45. Wind Erodibility Index - 48 t/a/yr.
		7	Surface texture - SI, noncalcareous SICL (<35% clay). Percent aggregates - 50. Wind Erodibility Index - 48 t/a/yr.
		8	Erosion not a problem.
	wind_erodibility_index		
		0	Soils not susceptible to wind erosion due to coarse fragments on the surface or wetness.
		134	Loamy very fine sand, loamy fine sand, loamy sand, loamy coarse sand, or sapric organic soil material. Dry soil aggregates more than .84 mm are 10 to 25 percent by weight.
		160	Very fine sand, fine sand, sand, or coarse sand. Dry soil aggregates more than .84 mm are 7 to 10 percent by weight.
		180	Very fine sand, fine sand, sand, or coarse sand. Dry soil aggregates more than .84 mm are 5 to 7 percent by weight.
		220	Very fine sand, fine sand, sand, or coarse sand. Dry soil aggregates more than .84 mm area 3 to 5 percent by weight.
		250	Very fine sand, fine sand, sand, or coarse sand. Dry soil aggregates more than .84 mm are 1 percent by weight.
		310	Very fine sand, fine sand, sand, or coarse sand. Dry soil
Table Name	**Data Element Name**	**Choice**	**Choice Definition**

			aggregates more than .84 mm are 1 percent by weight.
		38	Silt, noncalcareous silty clay loam that has less than 35 percent clay content, and fibric organic soil material. Dry soil aggregates more than .84 mm are more than 50 percent by weight.
		48	Noncalcareous loam and silt loam that has more than 20 percent clay content or noncalcareous clay loam that has less than 35 percent clay content. Dry soil aggregates more than .84 mm are 45 to 50 percent by weight.
		56	Noncalcareous loam and silt loam that has less than 20 percent clay content or sandy clay loam, sandy clay, and hemic organic soil materials. Dry soil aggregates more than .84 mm are 40 to 45 percent by weight.
		86	Very fine sandy loam, fine sandy loam, sandy loam, coarse sandy loam, or ash material. Clay, silty clay, noncalcareous clay loam, or noncalcareous silty clay loam that has more than 35 percent clay content. Calcareous loam and silt loam or calcareous clay loam and silty clay loam. Dry soil aggregates more than .84 mm are 25 to 40 percent by weight.
component_crop_yield	**crop_yield_units**		
		100 pounds	100 pounds/acre
		animal unit months	Animal unit months/acre
		boxes	Boxes/acre
		bushels	Bushels/acre
		crates	Crates/acre
		pounds	Pounds/acre
		sacks	Sacks/acre
		thousands	Thousands/acre
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		tons	Tons/acre

Table Name	Data Element Name	Choice	Choice Definition
component_interp	**interpretation_rating**		
		no	Soil does not meet the requirements for a hydric soil.
		unranked	Soil has not been ranked with hydric criteria.
		yes	Soil meets the requirement for a hydric soil.
component_month	**flooding_duration_class**		
		brief	2 days to 7 days
		extremely brief	0.1 to 4 hours
		long	7 days to 30 days
		very brief	4 hours to 48 hours
		very long	More than 30 days
	flooding_frequency_class		
		frequent	Flooding is likely to occur often, more than 50 percent chance of flooding in any year (at least 50 times in 100 years).
		none	Flooding is not likely to occur.
		occasional	Flooding is expected infrequently, 5 to 50 percent chance in any year, (5 to 50 times in 100 years).
		rare	Flooding is unlikely but possible under usual weather conditions; 1 to 5 percent chance in any year (1 to 5 times in 100 years).
		very frequent	Flooding is likey to occur very often under usual weather conditions; more than 50 percent chance in all months or any year.
		very rare	Flooding is very unlikely but is possible under unusual weather conditions; less than 1 percent chance in any year (less than 1 time in 100 years, but more than 1 time in 500 years).
	ponding_duration_class		
		brief	2 days to 7 days
		long	7 days to 30 days
		very brief	4 hours to 48 hours

		very long	More than 30 days
component_restrictions	**restriction_hardness**		
		extremely weakly	Stress applied ranges from 8 to 20 newtons. (SSM)
		indurated	Stress applied is greater than or equal 3 joules. (SSM)
		moderately	Stress applied ranges from 80 to 160 newtons. (SSM)
		moderately cemented	Stress applied ranges from 80 to 800 newtons. (SSM)
		noncemented	Stress applied ranges from 0 to 8 newtons. (SSM)
		strongly	Stress applied ranges from 160 to 800 newtons. (SSM)
		strongly cemented	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very strongly	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very weakly	Stress applied ranges from 20 to 40 newtons. (SSM)
		weakly	Stress applied ranges from 40 to 80 newtons. (SSM)
		weakly cemented	Stress applied ranges from 8 to 80 newtons. (SSM)
component_soil_moisture	**soil_moisture_status**		
		dry	>= 15 bar suction.
		moist	< 15 bar to >= 0.01 bar (or 0.005 for coarse soils) suction.
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		wet	< 0.01 bar (or 0.005 for coarse soils) suction; free water present (satiated wet).
component_surface_fragments	**surface_frag_roundness**		
		angular	Strongly developed faces with sharp edges (SSM).
		rounded	Flat faces absent or nearly absent with all corners rounded (SSM).
		subrounded	Detectable flat faces with well-rounded corners (SSM).

	surface_frag_rup_resist_cem		
		extremely weakly	Stress applied ranges from 8 to 20 newtons. (SSM)
		indurated	Stress applied is greater than or equal 3 joules. (SSM)
		moderately	Stress applied ranges from 80 to 160 newtons. (SSM)
		moderately cemented	Stress applied ranges from 80 to 800 newtons. (SSM)
		noncemented	Stress applied ranges from 0 to 8 newtons. (SSM)
		strongly	Stress applied ranges from 160 to 800 newtons. (SSM)
		strongly cemented	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very strongly	Stress applied ranges from 800 newtons to 3 joules. (SSM)
		very weakly	Stress applied ranges from 20 to 40 newtons. (SSM)
		weakly	Stress applied ranges from 40 to 80 newtons. (SSM)
		weakly cemented	Stress applied ranges from 8 to 80 newtons. (SSM)
data_mapunit	**farmland_classification**		
		0	Not prime farmland.
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		1	All areas are prime farmland.
		2	Only drained areas are prime farmland.
		3	Only areas protected from flooding or not frequently flooded during the growing season are prime farmland.
		30	Areas are farmland of statewide importance.
		4	Only irrigated areas are prime farmland.
		5	Only drained areas that are either protected from flooding or not frequently flooded during the growing season are prime farmland.

		50	Areas are farmland of local importance.
		6	Only irrigated areas that have been drained are prime farmland.
		7	Only irrigated areas that are either protected from flooding or not frequently flooded during the growing season are prime farmland.
		70	Areas are farmland of unique importance.
		8	When subsoiled (completely remove root inhibiting soil layer), areas are prime farmland.
		9	Only irrigated areas that the product of I (soil erodibility) and C (climate factor) does not exceed 60 are prime farmland.
data_mapunit_crop_yield	**crop_yield_units**		
		100 pounds	100 pounds/acre
		animal unit months	Animal unit months/acre
		boxes	Boxes/acre
		bushels	Bushels/acre
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
		crates	Crates/acre
		pounds	Pounds/acre
		sacks	Sacks/acre
		thousands	Thousands/acre
		tons	Tons/acre
legend	**soil_survey_area_status**		
		nonproject	Soil survey that has has no publication and is not in project status.
		out-of-date	Soil survey does not meet the current needs of users.
		project	Soil survey with a signed Memorandum of Understanding and is

			ongoing.
		published	Modern published soil survey that meets the current needs of users.
		update	Soil survey in process of being updated.
mapunit	**mapunit_kind**		
		association	Two or more dissimilar soils that occur in a regularly repeating pattern that could have been separated at the scale of field mapping, but were not separated due to the intended purpose of the survey.
		complex	Two or more dissimilar soils that occur in a regularly repeating pattern, that cannot be separated at the scale of field mapping.
		consociation	At least seventy-five percent (75%) of the map unit is within the range of the soil providing the name of the unit, and closely similar soils.
		undifferentiated group	Two or more similar soils that are not always geographically associated, and are mapped together due to them having the same or very similar use and management concerns.
Table Name	**Data Element Name**	**Choice**	**Choice Definition**
	mapunit_status		
		additional	A map unit that has been used in the soil survey area, but that has been combined with another unit in the survey.
		approved	A map unit on the current, signed field review report for the survey area.
		correlated	A map unit on the signed final correlation document.
		provisional	A map unit used by the soil survey party leader, but that have not been officially approved for use.

2.4 Data Element to Table Relationships

Table Name	Data Element Name	Type
area	area_acres	integer
area	area_iid	integer
area	area_name	string
area	area_symbol	string
area	area_type_database_iid_ref	integer
area	area_type_iid_ref	integer
area_text	area_iid_ref	integer
area_text	area_type_database_iid_ref	integer
area_type	area_type_database_iid_ref	integer
area_type	area_type_iid	integer
area_type	area_type_name	string
chorizon	aashto_group_index	integer
chorizon	available_water_capacity	float
chorizon	bulk_density_one_tenth_bar	float
chorizon	bulk_density_one_third_bar	float
chorizon	calcium_carbonate_equivalent	integer
chorizon	cation_exch_capcty_nh4oacph7	float
chorizon	chorizon_iid	integer
chorizon	clay_total_separate	float
chorizon	component_iid_ref	integer
chorizon	critical_shear_stress	choice
chorizon	dmu_database_iid_ref	integer
chorizon	effective_cation_exch_capcty	float
chorizon	electrical_conductivity	float
chorizon	excavation_difficulty_class	choice
chorizon	extractable_acidity	float
chorizon	extractable_aluminum	float
chorizon	free_iron_oxides	float
chorizon	gypsum	integer
chorizon	horizon_depth_to_bottom	integer
chorizon	horizon_depth_to_top	integer
chorizon	interrill_erodibility_factor	choice
chorizon	linear_extensibility_percent	float
chorizon	liquid_limit	float
chorizon	organic_matter_percent	float
chorizon	particle_density	float
chorizon	ph_01m_cacl2	float
chorizon	ph_1_1_water	float
chorizon	plasticity_index	float
chorizon	rill_erodibility_factor	choice
chorizon	rock_frag_3_to_10_in	integer
chorizon	rock_frag_greater_than_10_in	integer
chorizon	sand_coarse_separate	float
chorizon	sand_fine_separate	float
chorizon	sand_medium_separate	float
chorizon	sand_total_separate	float
chorizon	sand_very_coarse_separate	float
chorizon	sand_very_fine_separate	float
chorizon	sat_hydraulic_conductivity	float
chorizon	sieve_number_10	float
chorizon	sieve_number_200	float
chorizon	sieve_number_4	float
chorizon	sieve_number_40	float
chorizon	silt_coarse_separate	float
chorizon	silt_fine_separate	float
chorizon	silt_total_separate	float
chorizon	sodium_adsorption_ratio	integer

Table Name Data Element Name Type

chorizon	soil_erodibility_factor_rf	choice
chorizon	soil_erodibility_factor_whole	choice
chorizon	water_fifteen_bar	float
chorizon	water_one_tenth_bar	float
chorizon	water_one_third_bar	float
chorizon_aashto	aashto_group_classification	choice
chorizon_aashto	chor_aashto_iid	integer
chorizon_aashto	chorizon_iid_ref	integer
chorizon_aashto	dmu_database_iid_ref	integer
chorizon_desgn_suffix	chorizon_iid_ref	integer
chorizon_desgn_suffix	dmu_database_iid_ref	integer
chorizon_fragments	chor_fragments_iid	integer
chorizon_fragments	chorizon_iid_ref	integer
chorizon_fragments	dmu_database_iid_ref	integer
chorizon_fragments	fragment_kind	choice
chorizon_fragments	fragment_roundness	choice
chorizon_fragments	fragment_rupture_resist_cem	choice
chorizon_fragments	fragment_shape	choice
chorizon_fragments	fragment_size	integer
chorizon_fragments	fragment_volume	integer
chorizon_pores	chorizon_iid_ref	integer
chorizon_pores	dmu_database_iid_ref	integer
chorizon_text	chorizon_iid_ref	integer
chorizon_text	dmu_database_iid_ref	integer
chorizon_texture	chor_texture_group_iid_ref	integer
chorizon_texture	chor_texture_iid	integer
chorizon_texture	dmu_database_iid_ref	integer
chorizon_texture	terms_used_in_lieu_of_texture	choice
chorizon_texture	texture_class	choice
chorizon_texture_group	chor_texture_group_iid	integer
chorizon_texture_group	chorizon_iid_ref	integer
chorizon_texture_group	dmu_database_iid_ref	integer
chorizon_texture_group	stratified_textures_flag	boolean
chorizon_texture_group	texture_modifier_and_class	string
chorizon_texture_modifier	chor_texture_iid_ref	integer
chorizon_texture_modifier	chor_texture_modifier_iid	integer
chorizon_texture_modifier	dmu_database_iid_ref	integer
chorizon_texture_modifier	texture_modifier	choice
chorizon_unified	chor_unified_iid	integer
chorizon_unified	chorizon_iid_ref	integer
chorizon_unified	dmu_database_iid_ref	integer
chorizon_unified	unified_soil_classification	choice
component	component_iid	integer
component	component_kind	choice
component	component_name	string
component	component_percent	integer
component	corrosion_concrete	choice
component	corrosion_uncoated_steel	choice
component	data_mapunit_iid_ref	integer
component	dmu_database_iid_ref	integer
component	drainage_class	choice
component	elevation	integer
component	erosion_class	choice
component	hydric_condition	choice
component	hydrologic_group	choice
component	initial_subsidence	integer
component	irrigated_capability_class	choice
component	irrigated_capability_subclass	choice
component	mean_annual_air_temperature	integer
component	mean_annual_frost_free_days	integer
component	mean_annual_precipitation	integer
component	nonirr_capability_class	choice
Table Name	**Data Element Name**	**Type**
component	nonirr_capability_subclass	choice
component	potential_frost_action	choice

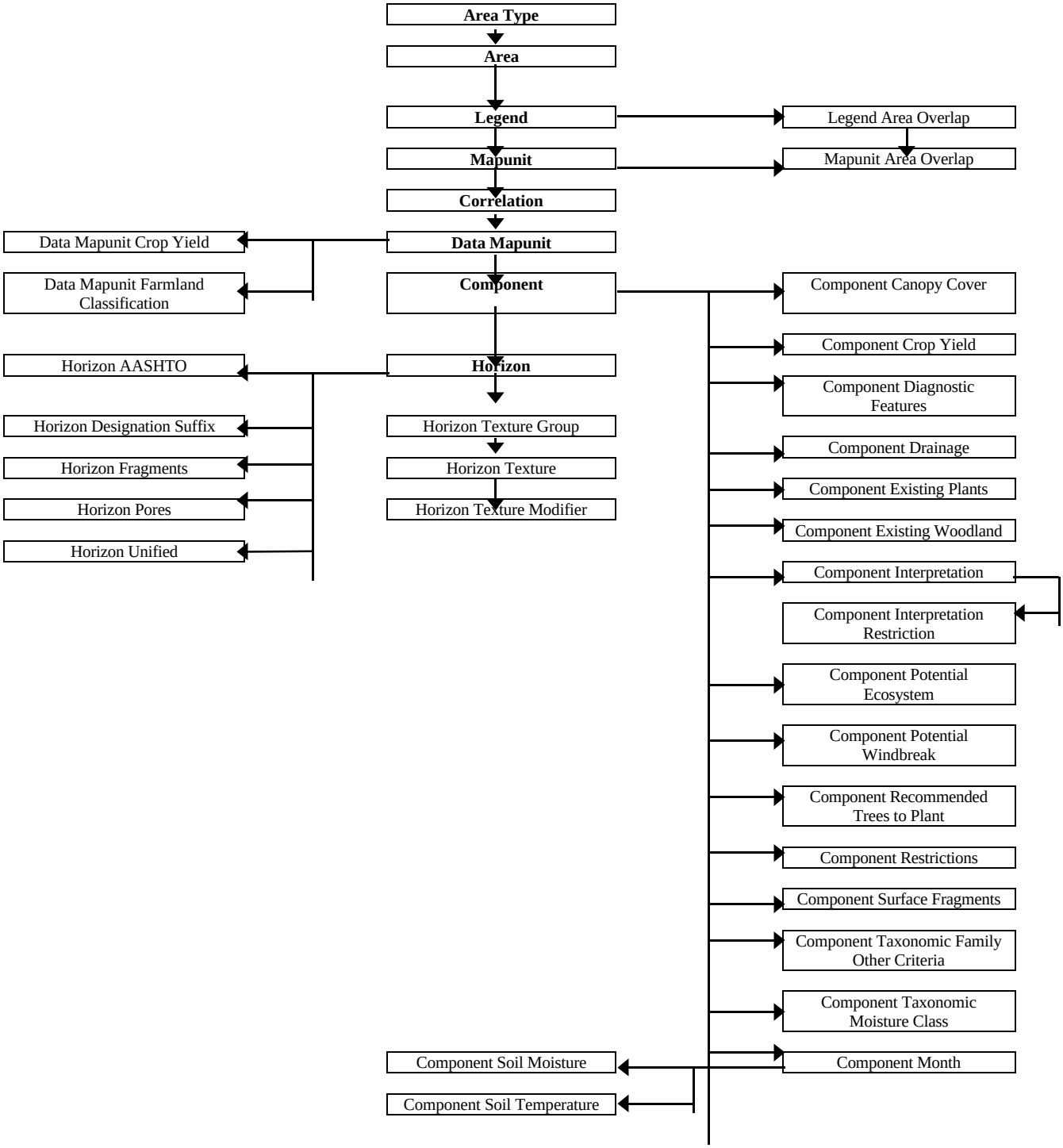
component	runoff	choice
component	slope_aspect	integer
component	slope_gradient	integer
component	slope_length_usle	integer
component	soil_slippage_potential	choice
component	t_factor	integer
component	taxonomic_classification_name	string
component	taxonomic_family_particle_size	choice
component	taxonomic_family_reaction	choice
component	taxonomic_family_temp_class	choice
component	taxonomic_great_group	choice
component	taxonomic_moisture_subclass	choice
component	taxonomic_order	choice
component	taxonomic_subgroup	choice
component	taxonomic_suborder	choice
component	taxonomic_temp_regime	choice
component	total_subsidence	integer
component	wildlife_habitat_coniferous	choice
component	wildlife_habitat_grain	choice
component	wildlife_habitat_grass	choice
component	wildlife_habitat_hardwood	choice
component	wildlife_habitat_herbaceous	choice
component	wildlife_habitat_openland	choice
component	wildlife_habitat_rangeland	choice
component	wildlife_habitat_shallow_water	choice
component	wildlife_habitat_shrub	choice
component	wildlife_habitat_wetland	choice
component	wildlife_habitat_wetland_plant	choice
component	wildlife_habitat_woodland	choice
component	wind_erodibility_group	choice
component	wind_erodibility_index	choice
component	woodland_equipment_rating	choice
component	woodland_erosion_rating	choice
component	woodland_plant_competition	choice
component	woodland_seedling_mortality	choice
component	woodland_windthrow_hazard	choice
component_canopy_cover	component_iid_ref	integer
component_canopy_cover	dmu_database_iid_ref	integer
component_crop_yield	comp_crop_yield_iid	integer
component_crop_yield	component_iid_ref	integer
component_crop_yield	crop_name	choice
component_crop_yield	crop_yield_units	choice
component_crop_yield	dmu_database_iid_ref	integer
component_crop_yield	irrigated_crop_yield	float
component_crop_yield	nonirr_crop_yield	float
component_diagnostic_features	component_iid_ref	integer
component_diagnostic_features	dmu_database_iid_ref	integer
component_erosion_accelerated	component_iid_ref	integer
component_erosion_accelerated	dmu_database_iid_ref	integer
component_erosion_accelerated	erosion_accelerated_kind	choice
component_existing_plants	component_iid_ref	integer
component_existing_plants	dmu_database_iid_ref	integer
component_existing_woodland	component_iid_ref	integer
component_existing_woodland	dmu_database_iid_ref	integer
component_existing_woodland	woodland_production_class	integer
component_interp	comp_interp_iid	integer
component_interp	component_iid_ref	integer
component_interp	dmu_database_iid_ref	integer
component_interp	interpretation_kind	choice
component_interp	interpretation_rating	choice
Table Name	**Data Element Name**	**Type**
component_interp_restriction	comp_interp_iid_ref	integer
component_interp_restriction	comp_interp_reason_iid	integer
component_interp_restriction	dmu_database_iid_ref	integer
component_interp_restriction	interpretation_restriction	choice

component_landform	component_iid_ref	integer
component_landform	dmu_database_iid_ref	integer
component_month	comp_month_iid	integer
component_month	component_iid_ref	integer
component_month	dmu_database_iid_ref	integer
component_month	flooding_duration_class	choice
component_month	flooding_frequency_class	choice
component_month	month	choice
component_month	ponding_depth	integer
component_month	ponding_duration_class	choice
component_month	ponding_frequency_class	choice
component_parent_material	dmu_database_iid_ref	integer
component_parent_material_grp	component_iid_ref	integer
component_parent_material_grp	dmu_database_iid_ref	integer
component_potential_ecosystem	component_iid_ref	integer
component_potential_ecosystem	dmu_database_iid_ref	integer
component_potential_windbreak	component_iid_ref	integer
component_potential_windbreak	dmu_database_iid_ref	integer
component_restrictions	comp_restrictions_iid	integer
component_restrictions	component_iid_ref	integer
component_restrictions	dmu_database_iid_ref	integer
component_restrictions	restriction_depth_to_bottom	integer
component_restrictions	restriction_depth_to_top	integer
component_restrictions	restriction_hardness	choice
component_restrictions	restriction_kind	choice
component_restrictions	restriction_thickness	integer
component_soil_moisture	comp_month_iid_ref	integer
component_soil_moisture	comp_soil_moisture_iid	integer
component_soil_moisture	dmu_database_iid_ref	integer
component_soil_moisture	soil_moist_depth_to_bottom	integer
component_soil_moisture	soil_moist_depth_to_top	integer
component_soil_moisture	soil_moisture_status	choice
component_soil_temperature	comp_month_iid_ref	integer
component_soil_temperature	comp_soil_temperature_iid	integer
component_soil_temperature	dmu_database_iid_ref	integer
component_soil_temperature	soil_temp_depth_to_bottom	integer
component_soil_temperature	soil_temp_depth_to_top	integer
component_soil_temperature	soil_temperature_mean_monthly	integer
component_surface_fragments	comp_surface_fragments_iid	integer
component_surface_fragments	component_iid_ref	integer
component_surface_fragments	dmu_database_iid_ref	integer
component_surface_fragments	surface_frag_cover_percent	float
component_surface_fragments	surface_frag_kind	choice
component_surface_fragments	surface_frag_roundness	choice
component_surface_fragments	surface_frag_rup_resist_cem	choice
component_surface_fragments	surface_frag_shape	choice
component_surface_fragments	surface_frag_size	integer
component_tax_fam_mineralogy	component_iid_ref	integer
component_tax_fam_mineralogy	dmu_database_iid_ref	integer
component_tax_fam_mineralogy	taxonomic_family_mineralogy	choice
component_tax_fam_other	comp_tax_fam_other_iid	integer
component_tax_fam_other	component_iid_ref	integer
component_tax_fam_other	dmu_database_iid_ref	integer
component_tax_fam_other	taxonomic_family_other	choice
component_tax_moisture_class	comp_tax_moisture_class_iid	integer
component_tax_moisture_class	component_iid_ref	integer
component_tax_moisture_class	dmu_database_iid_ref	integer
component_tax_moisture_class	taxonomic_moisture_class	choice

Table Name	**Data Element Name**	**Type**
component_text	component_iid_ref	integer
component_text	dmu_database_iid_ref	integer
component_trees_to_plant	component_iid_ref	integer
component_trees_to_plant	dmu_database_iid_ref	integer
correlation	correlation_iid	integer
correlation	data_mapunit_iid_ref	integer

correlation	dmu_database_iid_ref	integer
correlation	legend_database_iid_ref	integer
correlation	mapunit_constituent_acres	integer
correlation	mapunit_iid_ref	integer
correlation	representative_dmu	boolean
data_mapunit	data_mapunit_description	string
data_mapunit	data_mapunit_iid	integer
data_mapunit	dmu_database_iid_ref	integer
data_mapunit	farmland_classification	choice
data_mapunit_crop_yield	crop_name	choice
data_mapunit_crop_yield	crop_yield_units	choice
data_mapunit_crop_yield	data_mapunit_iid_ref	integer
data_mapunit_crop_yield	dmu_crop_yield_iid	integer
data_mapunit_crop_yield	dmu_database_iid_ref	integer
data_mapunit_crop_yield	irrigated_crop_yield	float
data_mapunit_crop_yield	nonirr_crop_yield	float
data_mapunit_text	data_mapunit_iid_ref	integer
data_mapunit_text	dmu_database_iid_ref	integer
legend	area_iid_ref	integer
legend	area_type_database_iid_ref	integer
legend	area_type_iid_ref	integer
legend	correlation_date	date/time
legend	legend_database_iid_ref	integer
legend	legend_iid	integer
legend	soil_survey_area_status	choice
legend_area_overlap	area_iid_ref	integer
legend_area_overlap	area_overlap_acres	integer
legend_area_overlap	area_type_database_iid_ref	integer
legend_area_overlap	area_type_iid_ref	integer
legend_area_overlap	legend_area_overlap_iid	integer
legend_area_overlap	legend_database_iid_ref	integer
legend_area_overlap	legend_iid_ref	integer
legend_text	legend_database_iid_ref	integer
legend_text	legend_iid_ref	integer
mapunit	legend_database_iid_ref	integer
mapunit	legend_iid_ref	integer
mapunit	mapunit_acres	integer
mapunit	mapunit_iid	integer
mapunit	mapunit_kind	choice
mapunit	mapunit_name	string
mapunit	mapunit_status	choice
mapunit	mapunit_symbol	string
mapunit_area_overlap	area_overlap_acres	integer
mapunit_area_overlap	legend_area_overlap_iid_ref	integer
mapunit_area_overlap	legend_database_iid_ref	integer
mapunit_area_overlap	legend_iid_ref	integer
mapunit_area_overlap	mapunit_area_overlap_iid	integer
mapunit_area_overlap	mapunit_iid_ref	integer
mapunit_history	legend_database_iid_ref	integer
mapunit_history	mapunit_iid_ref	integer
mapunit_text	legend_database_iid_ref	integer
mapunit_text	mapunit_iid_ref	integer

2.5 ENTITY RELATIONSHIP MODEL



3. REFERENCES

The following are sources of National Cooperative Soil Survey Standards that support the SOIL GEOGRAPHIC DATA STANDARD and serve as background information on the various aspects of soil survey:

NSSH National Soil Survey Handbook, USDA Natural Resources Conservation Service, 1996

SSM Soil Survey Manual, Ag. Handbook 18, Soil Survey Division Staff, USDA, 1993

Keys to Soil Taxonomy, USDA Natural Resources Conservation Service, Seventh Edition, 1996

NASIS Natural Resources Conservation Service, National Soil Information System

Questions related to the specifics of this standard should be directed to:

Jim R. Fortner
100 Centennial Mall North
Federal Bldg., Rm. 152
Lincoln, Nebraska 68508-3866

phone number: 402-437-5755
FAX: 402-437-5336
E-mail: jfortner@ nssc.nrcs.usda.gov

For information on obtaining copies of these reference documents or information about them, please contact the NRCS-National Soil Survey Center at 402-437-5499.

4. METADATA EXAMPLE -- A Normative Annex

(from NSSH Part 647)

The following is an example of a completed metadata template, and a description of each field, that would accompany soil map data. This template was developed to accompany the digital soil maps. It was developed to meet the standards outlined by the FGDC metadata standard. The metadata template will likely be modified in the future to better explain the attribute information that will accompany the digital map files.

Identification Information

Citation
Originator: U.S. Department of Agriculture, Natural Resources Conservation Service
Publication Date: ___(1)___
Title: Soil Survey Geographic (SSURGO) data base for _____(2)_____
Publication Information
Publication Place: Fort Worth, Texas
Publisher: U.S. Department of Agriculture, Natural Resources Conservation Service

Description
Abstract: This data set is a digital soil survey and is the most detailed level of soil geographic data developed by the National Cooperative Soil Survey. The information was collected by digitizing maps, by compiling information onto a planimetric correct base and digitizing, or by revising digitized maps using remotely sensed and other information.

This data set consists of georeferenced digital map data and computerized attribute data. The map data are in a __(3)__ minute quadrangle format and include a detailed, field verified inventory of soils and nonsoil areas that normally occur in a repeatable pattern on the landscape and that can be cartographically shown at the scale mapped. Sometimes a special soil features layer (point and line features) is included. This layer displays the location of features too small to delineate at the mapping scale, but they are large enough and contrasting enough to significantly influence use and management. The soil map units are linked to attributes in the Map Unit Interpretations Record relational data base, which gives the proportionate extent of the component soils and their properties.

Purpose: SSURGO depicts information about soil features on or near the surface of the Earth. These data were collected as part of the National Cooperative Soil Survey.

Supplemental Information: Digital versions of hydrography, cultural features, and other associated layers that are not part of the SSURGO data set may be available from the primary organization listed in the Point of Contact.

Time Period of Content
Single Date/Time
Calendar Date: ____(4)_____
Currentness Reference: publication date

Status
Progress: Complete
Maintenance and Update Frequency: As needed

Spatial Domain
Bounding Coordinates
West Bounding Coordinate: _____(5)_____
East Bounding Coordinate: _____(6)_____
North Bounding Coordinate: _____(7)_____
South Bounding Coordinate: _____(8)_____

Keywords
Theme
Theme Keyword Thesaurus: None
Theme Keyword: soil survey
Theme Keyword: soils
Theme Keyword: Soil Survey Geographic
Theme Keyword: SSURGO
Place
Place Keyword Thesaurus: Counties and County Equivalents of the States of the United States and the District of Columbia (FIPS Pub 6-3)
Place Keyword: _____(9)_____

Place Keyword Thesaurus: Counties and County Equivalents of the States of the United States and the District of Columbia (FIPS Pub 6-3)
Place Keyword: _____(10)_____

Place Keyword Thesaurus: USGS Topographic Map Names Data Base
Place Keyword: _____(11)_____
Place Keyword: _____(11)_____
Place Keyword: _____(11)_____
Place Keyword: _____(11)_____
Place Keyword: _____(11)_____

Access Constraints: None

Use Constraints: The U.S. Department of Agriculture, Natural Resources Conservation Service, should be acknowledged as the data source in products derived from these data.

This data set is not designed for use as a primary regulatory tool in permitting or citing decisions, but may be used as a reference source. This is public information and may be interpreted by organizations, agencies, units of government, or others based on needs; however, they are responsible for the appropriate application. Federal, State, or local regulatory bodies are not to reassign to the Natural Resources Conservation Service any authority for the decisions that they make. The Natural Resources Conservation Service will not perform any evaluations of these maps for purposes related solely to State or local regulatory programs.

Photographic or digital enlargement of these maps to scales greater than at which they were originally mapped can cause misinterpretation of the data. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale. The depicted soil boundaries, interpretations, and analysis derived from them do not eliminate the need for onsite sampling, testing, and detailed study of specific sites for intensive uses. Thus, these data and their interpretations are intended for planning purposes only. Digital data files are periodically updated. Files are dated, and users are responsible for obtaining the latest version of the data.

Point of Contact
Contact Organization Primary
Contact Organization: U.S. Department of Agriculture, Natural Resources Conservation Service
Contact Position: State Soil Scientist
Contact Address
Address Type: mailing address
Address: _____(12)_____
City: _____(13)_____
State or Province: _____(14)_____
Postal Code: _____(15)_____
Contact Voice Telephone: _____(16)_____
Contact Facsimile Telephone: _____(17)_____
Contact TDD/TTY Telephone: 202 720 7808

Cross Reference:
Citation
Originator: U.S. Department of Agriculture, _____(18)_____
Publication Date: _____(19)_____
Title: Soil Survey of _____(20)_____
Geospatial Data Presentation Form: text, table, map
Description
Abstract: This soil survey contains information that can be applied in managing farms and wetlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Purpose: This soil survey depicts information about soil features on or near the surface of the Earth. These data were collected as part of the National Cooperative Soil Survey.

Data Quality Information

Attribute Accuracy
Attribute Accuracy Report: Attribute accuracy is tested by manual comparison of the source with hard copy plots and/or symbolized display of the map data on an interactive computer graphic system. Selected attributes that cannot be visually verified on plots or on screen are interactively queried and verified on screen. In addition, the attributes are tested against a master set of valid attributes. All attribute data conform to the attribute codes in the signed classification and correlation document and amendment(s) and are current as of the date of digitizing.

Logical Consistency Report: Certain node/geometry and topology GT-polygon/chain relationships are collected or generated to satisfy topological requirements (the GT-polygon corresponds to the soil delineation). Some of these requirements include: chains must begin and end at nodes, chains must connect to each other at nodes, chains do not extend through nodes, left and right GT-polygons are defined for each chain element and are consistent throughout, and the chains representing the limits of the file (neatline) are free of gaps. The tests of logical consistency are performed using vendor software. The neatline is generated by connecting the

explicitly entered four corners of the digital file. All data outside the enclosed region are ignored and all data crossing these geographically straight lines are clipped at the neatline. Data within a specified tolerance of the neatline are snapped to the neatline. Neatline straightening aligns the digitized edges of the digital data with the generated neatline (i.e., with the longitude/latitude lines in geographic coordinates). All internal polygons are tested for closure with vendor software and are checked on hard copy plots. All data are checked for common soil lines (i.e., adjacent polygons with the same label). Quadrangles are edge matched within the soil survey area and edge locations generally do not deviate from centerline to centerline by more than 0.01 inch.

Completeness Report: A map unit is a collection of areas defined and named the same in terms of their soil and/or nonsoil areas. Each map unit differs in some respect from all others in a survey area and is uniquely identified. Each individual area is a delineation. Each map unit consists of one or more components.

Soil scientists identify small areas of soils or nonsoil areas (special soil features) that have properties and behavior significantly different than the named soils in the surrounding map unit. Other inclusions that have a minimal effect on use and management, or those that could not be precisely located, were not mapped.

Specific limits were established on the classification of soils, design and name of map units, location of special soil features, and the percentages of allowable inclusions. These limits are outlined in Agricultural Handbook 18, Soil Survey Manual, 1993, USDA, SCS; Agricultural Handbook 436, Soil Taxonomy, Soil Survey Staff, 1975, USDA, SCS; and all Amendments; Keys to Soil Taxonomy, Soil Survey Staff, (current issue); National Soil Survey Handbook, title 430-VI, 1996.

The actual composition and interpretive purity of the map unit delineations were based on statistical analysis of field observations and transect data. Adherence to National Cooperative Soil Survey standards and procedures is based on peer review, quality control, and quality assurance. Quality control is outlined in the memorandum of understanding for the soil survey area and in documents that reside with the Natural Resources Conservation Service state soil scientist. Four kinds of map units are used in soil surveys: consociations, complexes, associations, and undifferentiated groups.

Consociations - Consociations are named for the dominant soil. In a consociation, delineated areas are dominated by a single soil taxon and similar soils. At least one half of the pedons in each delineation are of the same soil component so similar to the named soil that major interpretations are not affected significantly. The total amount of dissimilar inclusions of other components in a map unit generally does not exceed about 15 percent if limiting and 25 percent if nonlimiting. A single component of a dissimilar limiting inclusion generally does not exceed 10 percent if very contrasting.

Complexes and associations - Complexes and associations are named for two or more dissimilar components with the dominant component listed first. They occur in a regularly repeating pattern. The major components of a complex cannot be mapped separately at a scale of about 1:24,000. The major components of an association can be separated at a scale

of about 1:24,000. In each delineation of either a complex or an association, each major component is normally present, though their proportions may vary appreciably from one delineation to another. The total amount of inclusions in a map unit that are dissimilar to any of the major components does not exceed 15 percent if limiting and 25 percent if nonlimiting. A single kind of dissimilar limiting inclusion usually does not exceed 10 percent.

Undifferentiated groups - Undifferentiated groups consist of two or more components that do not always occur together in the same delineation, but are included in the same named map unit because use and management are the same or similar for common uses. Every delineation has at least one of the major components and some may have all of them. The same principles regarding proportion of inclusions apply to undifferentiated groups as to consociations.

Minimum documentation consists of three complete soil profile descriptions that are collected for each soil added to the legend, one additional per 3,000 acres mapped; three 10 observation transects for each map unit, one additional 10 point transect per 3,000 acres.

A defined standard or level of confidence in the interpretive purity of the map unit delineations is attained by adjusting the kind and intensity of field investigations. Field investigations and data collection are carried out in sufficient detail to name map units and to identify accurately and consistently areas of about ___(21)___ acres.

Positional Accuracy

Horizontal Positional Accuracy

Horizontal Positional Accuracy Report: The accuracy of these digital data is based upon their compilation to base maps that meet National Map Accuracy Standards. The difference in positional accuracy between the soil boundaries and special soil features locations in the field and their digitized map locations is unknown. The locational accuracy of soil delineations on the ground varies with the transition between map units.

For example, on long gently sloping landscapes the transition occurs gradually over many feet. Where landscapes change abruptly from steep to level, the transition will be very narrow. Soil delineation boundaries and special soil features generally were digitized within 0.01 inch of their locations on the digitizing source. The digital map elements are edge matched between data sets. The data along each quadrangle edge are matched against the data for the adjacent quadrangle. Edge locations generally do not deviate from centerline to centerline by more than 0.01 inch.

Lineage

Source Information

Source Citation

Originator: _____(22)_____

Publication Date: ___(23)___

Title: _____(24)_____

Geospatial Data Presentation Form: _____(25)_____

Publication Information

Publication Place: _____(26)_____

Publisher: _____(27)_____
Source Scale Denominator: ___(28)___
Type of Source Media: ___(29)___
Source Time Period of Content
Single Date/Time
Calendar Date: ___(30)___
Source Currentness Reference: _____(31)_____
Source Citation Abbreviation: _____(32)_____
Source Contribution: _____(33)_____
Source Citation
Originator: _____(22)_____
Publication Date: ___(23)___
Title: _____(24)_____
Geospatial Data Presentation Form: _____(25)_____
Publication Information
Publication Place: _____(26)_____
Publisher: _____(27)_____
Source Scale Denominator: ___(28)___
Type of Source Media: ___(29)___
Source Time Period of Content
Range of Dates/Times
Beginning Date: ___(30a)___
Ending Date: ___(30b)___
Source Currentness Reference: _____(31) _____
Source Citation Abbreviation: _____(32)_____
Source Contribution: _____(33) _____

Process Step
Process Description: _____(34) _____
Process Date: ___(35)___
Source Used Citation Abbreviation: _____(36)_____

Process Step
Process Description: _____(34) _____
Process Date: ___(35)___
Source Used Citation Abbreviations: _____(36)_____

Spatial Data Organization Information

Direct Spatial Reference Method: Vector

Spatial Reference Information

Horizontal Coordinate System Definition
Planar
Grid Coordinate System Name: Universal Transverse Mercator
Universal Transverse Mercator

UTM Zone Number: ___(37)___
Transverse Mercator
Scale Factor at Central Meridian: 0.9996
Longitude of Central Meridian: ___(38)___
Latitude of Projection Origin: 0.0
False Easting: 500000
False Northing: 0.0
Planar Coordinate Information
Planar Coordinate Encoding Method: coordinate pair
Coordinate Representation
Abscissa Resolution: ___(39)___
Ordinate Resolution: ___(40)___
Planar Distance Units: meters
Geodetic Model
Horizontal Datum Name: ___(41)___
Ellipsoid Name: ___(42)___
Semi-major Axis: ___(43)___
Denominator of Flattening Ratio: ___(44)___

Entity and Attribute Information

Overview Description

Entity and Attribute Overview: Map Unit Delineations are closed polygons that may be dominated by a single soil or nonsoil component plus allowable similar or dissimilar soils, or they can be geographic mixtures of groups of soils or soils and nonsoil areas.

The map unit symbol uniquely identifies each closed delineation map unit. Each symbol is linked to a map unit name. The map unit symbol is also the key for linking information in the Map Unit Interpretations Record tables. The map unit symbols are not carried within the modified Digital Line Graph file; however, they are made available in a companion attribute file. The attribute file links the minor codes in the Digital Line Graph files to the map unit symbols.

Map Unit Delineations are described by the Map Unit Record data base. This attribute data base gives the proportionate extent of the component soils and the properties for each soil. The data base contains both estimated and measured data on the physical and chemical soil properties and soil interpretations for engineering, water management, recreation, agronomic, woodland, range, and wildlife uses of the soil.

Special features are described in the feature table. It includes a feature label, feature name, and feature definition for each special and ad hoc feature in the survey area.

Entity and Attribute Detail Citation

U.S. Department of Agriculture. 1975. Soil Taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436.

U.S. Department of Agriculture. 1992. Keys to Soil Taxonomy. Soil Surv. Staff, Soil Conserv. Serv.

U.S. Department of Agriculture. 1993. National Soil Survey Handbook, title 430-VI. Soil Surv. Staff, Natural Resources Conservation Service.

U.S. Department of Agriculture. 1993. Soil Survey Manual. Soil Surv. Staff, U.S. Dep. Agric. Handb. 18.

U.S. Department of Agriculture. 1994. Soil Survey Geographic (SSURGO) Data Base: Data use information. Soil Conserv. Serv.

U.S. Department of Agriculture. State Soil Survey Database Data Dictionary. Soil Conserv. Serv.

Detail Description

Entity Type

Entity Type Label: Special Soil Features

Entity Type Definition: Special Soil Features represent soil, nonsoil, or landform features that are too small to be digitized as soil delineations (area features).

Entity Type Definition Source: U.S. Department of Agriculture. 1993. Soil Survey Manual. Soil Surv. Staff, U.S. Dep. Agric. Handb. 18.

Attribute

Attribute Label: Special Soil Features Codes

Attribute Definition: Special Soil Features Codes represent specific Special Soil Features. These features are identified with a major code, a minor code, and a descriptive label. The codes and label are assigned to the point or line assigned to represent the feature on published maps.

Attribute Definition Source: U.S. Department of Agriculture. 1993. Soil Survey Manual. Soil Surv. Staff, U.S. Dep. Agric. Handb. 18; U.S. Department of Agriculture. 1993. National Soil Survey Handbook, title 430-VI, part 647. Soil Conserv. Serv.

Attribute Domain Values

Codeset Name: Classification and Correlation of the Soils of _____(45)_____

Codeset Source: U.S. Department of Agriculture, Natural Resources Conservation Service

Distribution Information

Distributor
Contact Organization Primary
Contact Organization: U.S. Department of Agriculture, Natural Resources Conservation Service, National Cartography and Geospatial Center
Contact Address
Address Type: mailing address
Address: P.O. Box 6567
City: Fort Worth
State or Province: Texas
Postal Zone: 76115
Contact Voice Telephone: 800 672 5559
Contact Facsimile Telephone: 817 334 5469

Resource Description: _____(46)_____ SSURGO

Distribution Liability: Although these data have been processed successfully on a computer system at the U.S. Department of Agriculture, no warranty expressed or implied is made by the Agency regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. The U.S. Department of Agriculture will warrant the delivery of this product in computer readable format, and will offer appropriate adjustment of credit when the product is determined unreadable by correctly adjusted computer input peripherals, or when the physical medium is delivered in damaged condition. Request for adjustment of credit must be made within 90 days from the date of this shipment from the ordering site.

The U.S. Department of Agriculture, nor any of its agencies are liable for misuse of the data, for damage, for transmission of viruses, or for computer contamination through the distribution of these data sets. The U.S. Department of Agriculture prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs.)

Standard Order Process
Digital Form
Digital Transfer Information
Format Name: DLG
Format Version Date:___(47)___
Format Specification: Optional
Format Content Information: spatial and keys
Transfer Size: ___(48)___
Digital Transfer Option
Offline Option
Offline Media: CD-ROM
Recording Format: ISO 9660 Level 1
Digital Form
Digital Transfer Information
Format Name: ASCII

Format Content Information: keys and attributes
Transfer Size: ___(49)___
Digital Transfer Option
Offline Option
Offline Media: CD-ROM
Recording Format: ISO 9660 Level 1

Fees: The charge is $50 for a CD-ROM that contains one or more data sets. A data set is one soil survey area in (50) quadrangle format and includes both spatial and attribute data.

Ordering Instructions: Call or write to organizations listed under Distributor. Spatial line data and locations of special feature symbols are in DLG-3 optional format. Digital line graph files contain major and minor code pairs in area and line records. A conversion legend is provided for each digital line graph file. Soil map symbols and special feature labels are available in a companion ASCII attribute file. The Map Unit Interpretations Record attribute soil data are available in variable length, tab delimited, ASCII file format.

Turnaround: 10 working days

Metadata Reference Information

Metadata Date: ___(51)___
Metadata Review Date: ___(52)___
Metadata Contact
Contact Organization Primary
Contact Organization: U.S. Department of Agriculture, Natural Resources Conservation Service
Contact Position: State Soil Scientist
Contract Address
Address Type: mailing address
Address: _____(53)_____
City: _____(54)_____
State or Province: __(55)__
Postal Code: __(56)__
Contact Voice Telephone: _____(57)_____
Contact Facsimile Telephone: _____(58)_____
Metadata Standard Name: Content Standards for Digital Geospatial Metadata
Metadata Standard Version: ___(59)___

Explanation of Template Metadata Numbered Elements

[Unless otherwise noted, all references refer to Federal Geographic Data Committee. 1994. Content standards for digital geospatial metadata (June 8). Federal Geographic Data Committee. Washington, DC.]

Numbers in Identification Information section

1 Publication Date - the date when the data set is published or otherwise made available for release. Enter the year the data are submitted for archiving and distribution. Enter the year in the date format YYYY. Example is Publication Date: 1994. Reference is from p. 49, sec. 8.2.

2 Title - the name by which the data set is known. Enter the complete name of the soil survey area as defined in the memorandum of understanding. Example is Polk County, Iowa. Reference is from p. 47, sec. 8.4.

3 Quadrangle Format - Enter either 7.5 for full quadrangle format or 3.75 for quarter quadrangle format.

4 Calendar Date - the year. Enter the year the data set is submitted for archiving and distribution. This entry is the same as the one from item 1. Enter the year in the date format YYYY. Example is Calendar Date: 1994. Reference is from p. 49, sec. 9.1.1.

Bounding Coordinates - the limits of coverage of a data set expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most. The bounding coordinates are for the soil survey area.

5 West Bounding Coordinate - western-most coordinate of the limit of coverage expressed in longitude. Enter the coordinate in decimal degrees. Example is West Bounding Coordinate: -93.750. Reference is from p. 3.

6 East Bounding Coordinate - eastern-most coordinate of the limit of coverage expressed in longitude. Enter the coordinate in decimal degrees. Example is East Bounding Coordinate: -93.250. Reference is from p. 3.

7 North Bounding Coordinate - northern-most coordinate of the limit of coverage expressed in latitude. Enter the coordinate in decimal degrees. Example is North Bounding Coordinate: 41.750. Reference is from p. 3.

8 South Bounding Coordinate - southern-most coordinate of the limit of coverage expressed in latitude. Enter the coordinate in decimal degrees. Example is South Bounding Coordinate: 41.375. Reference is from p. 3.

9 Place Keyword - the name of the state that the data set is in. Enter multiple states as separate entries. Reference is from p. 4. Example:

Place Keyword: Nevada

Place Keyword: Utah

10 Place Keyword - the name of the county that the data set is in. Enter multiple counties as separate entries. Reference is from p. 4. Example:
Place Keyword: Rains County
Place Keyword: Hopkins County

11 Place Keyword - the name of the quadrangle in the data set. Enter the USGS quadrangle name from the National Topographic Map Names data base. The quadrangle numbers are available from the SSURGO Support Section, National Cartography and Geospatial Center. The quadrangle names are also in the Soil Survey Schedule quadnames table that resides as a part of the State Soil Survey Database in the NRCS state office. Enter all quadrangles that make up the soil survey area and enter each as a separate entry. Reference is from p. 4. Example:
Place Keyword: Pleasantville Quadrangle (s4109338)
Place Keyword: Hartford Quadrangle (s4109337)

12 Address - an address line for the address. Example is Address: 210 Walnut Street, Suite 693. Reference is from p. 52, sec. 10.4.2.

13 City - the city of the address. Example is City: Des Moines. Reference is from p. 52, sec. 10.4.3.

14 State or Province - the state or province of the address. Example is State or Province: Iowa. Reference is from p. 52, sec. 10.4.4.

15 Postal Code - the ZIP or other postal code of the address. Example is Postal Code: 50309¯2180. Reference is from p. 52, sec. 10.4.5.

16 Contact Voice Telephone - the telephone number by which individuals can speak to the organization or individual. Example is Contact Voice Telephone: 402 437 5423. Reference is from p. 52, sec. 10.5.

17 Contact Facsimile Telephone - the telephone number of a facsimile machine of the organization or individual. Example is Contact Facsimile Telephone: 402 437 5336. Reference is from p. 52, sec. 10.7.

18 Originator - the name of an organization that developed the data set. This is the name from the published document. Example is Originator: Natural Resources Conservation Service or Originator: Soil Conservation Service. Reference is from p. 47, sec. 8.1.

19 Publication Date - the date when the data set is published or otherwise made available for release. Enter the year the data is submitted for archiving and distribution. Enter the year in the date format YYYY. Example is Publication Date: 1994. Reference is from p. 49, sec. 8.2.

20 Title - the name by which the data set is known. Enter the complete name of the soil survey area as defined in the memorandum of understanding. Example is Polk County, Iowa. Reference is from p. 47, sec. 8.4.

21 Minimum Size Delineation - the minimum size of map unit delineation as defined in the memorandum of understanding for the data set. Enter the size in acres. Example is 2.

Numbers in Data Quality Information section

The Spatial Data Transfer Standard Data Quality Report consists of five parts covering lineage, positional accuracy, attribute accuracy, logical consistency, and completeness. The Data Quality Report is presented in part 1, section 3 of the Spatial Data Transfer Standard.

22 Originator - the name of an organization or individual that developed the data set. Example is Originator: U.S. Geological Survey. Reference is from p. 47, sec. 8.1.

23 Publication Date - the date when the data set is published or otherwise made available for release. Enter the year in the date format YYYY. Example is Publication Date: 1983. Reference is from p. 47, sec. 8.2.

24 Title - the name by which the data set is known. Example is Title: Soil Survey of Polk County, Iowa. Reference is from p. 47, sec. 8.4.

25 Geospatial Data Presentation Form - the mode in which the geospatial data is presented. Example is Geospatial Data Presentation Form: Topographic quadrangle map. Reference is from p. 48, sec. 8.6.

26 Publication Place - the name of the city and state where the data set was published or released. Example is Publication Place: Reston, Virginia. Reference is from p. 48, sec. 8.8.1.

27 Publisher - the name of the individual or organization that published the data set. Example is Publisher: U.S. Geological Survey. Reference is from p. 48, sec. 8.8.2.

28 Source Scale Denominator - the denominator of the representative fraction on a map. Example is Source Scale Denominator: 12000. Reference is from p. 12, sec. 2.5.1.2.

29 Type of Source Media - the medium of the source data set. Example is Type of Source Media: stable-base material. Reference is from p. 12, sec. 2.5.1.3.

Single Date/Time - this is a single element and must be followed with the element Calendar Date.

30 Calendar Date - the year. Enter the year in the date format YYYY. Example is Calendar Date: 1960. Reference is from p. 49, sec. 9.1.1.

Range of Dates/Times - this is a compound element and must be followed with the elements Beginning Date and Ending Date.

30a Beginning Date - the first year of the event. Enter the year in the date format YYYY. Example is Beginning Date: 1989. Reference is from p. 49, sec. 9.3.1.

30b Ending Date - the last year for the event. Enter the year in the date format YYYY. Example is Ending Date: 1992. Reference is from p. 49, sec. 9.3.3.

31 Source Currentness Reference - the basis on which the source time period of content information of the source data set is determined. Example is Source Currentness Reference: publication date. Reference is from p. 12, sec. 2.5.1.4.1.

32 Source Citation Abbreviation - the short-form alias for the Source Citation. For example, Source Citation Abbreviation: NRCS1. Reference is from p.12, sec. 2.5.1.5.

33 Source Contribution - brief statement identifying the information contributed by the source to the data set. Example is Source Contribution: digitizing source. Reference is from p. 12, sec. 2.5.1.6.

34 Process Description - an explanation of the event and related parameters or tolerances. Reference is from p. 12, sec. 2.5.2.1.

35 Process Date - the date when the event was completed. Enter the year in the date format YYYY. Example is Process Date: 1993. Reference is from p. 12, sec. 2.5.2.3.

36 Source Used Citation Abbreviation - The Source Citation Abbreviation of a data set used in the processing step. For example, Source Used Citation Abbreviation: NRCS1. Reference is from p. 12, sec. 2.5.2.2.

Numbers in Spatial Reference Information section

37 UTM Zone Number - identifier for the UTM zone. If the soil survey area is covered by multiple zones, enter each as a separate entry. Reference is from p. 28, sec. 4.1.2.2.2.1. Example:

UTM Zone Number: 15
UTM Zone Number: 16

38 Longitude of Central Meridian - the line of longitude at the center of a map projection generally used as the basis for constructing the projection. Each UTM zone covers 6 degrees in longitude. Example is UTM zone 13 that begins at -102 degrees and ends at -108 degrees. The longitude of central meridian is the center of the zone, or -105. Reference is from p. 25, sec. 4.1.2.1.2.2.

39 Abscissa Resolution - the (nominal) minimum distance between the x or column values of two adjacent points, expressed in Planar Distance Units of measure. The resolution is

dependent upon the source map scale. Example is Abscissa Resolution: .305. Reference is from p. 29, sec. 4.1.2.4.2.1.

Scale	Abscissa Resolution
1:12,000	.305
1:15,840	.402
1:20,000	.51
1:24,000	.61

40 Ordinate Resolution - the (nominal) minimum distance between the y or row values of two adjacent points, expressed in Planar Distance Units of measure. The resolution is dependent upon the source map scale. Example is Ordinate Resolution: .305. Reference is p. 29, sec. 4.1.2.4.2.2.

Scale	Ordinate Resolution
1:12,000	.305
1:15,840	.402
1:20,000	.51
1:24,000	.61

41 Horizontal Datum Name - the identification given to the reference system used for defining the coordinates of points. Example is Horizontal Datum Name: North American Datum of 1983 or Horizontal Datum Name: North American Datum of 1927. Reference is from p. 30, sec. 4.1.4.1.

42 Ellipsoid Name - identification given to established representations of the Earth‹s shape. Example is Ellipsoid Name: Geodetic Reference System 80. Reference is from p. 31, sec. 4.1.4.2.

Datum Name	Ellipsoid Name
North American Datum of 1983	Geodetic Reference System 80
North American Datum of 1927	Clarke 1866

43 Semi-major Axis - radius of the equatorial axis of the ellipsoid. Example is Semi-major Axis: 6378137.0. Reference is from p. 31, sec. 4.1.4.3.

Ellipsoid Name	Semi-major Axis
Geodetic Reference System 80	6378137.0
Clarke 1866	6378206.4

44 Denominator of Flattening Ratio - the denominator of the ratio of the difference between the equatorial and polar radii of the ellipsoid when the numerator is set to 1. Example is Denominator of Flattening Ratio: 298.257. Reference is from p. 31, sec. 4.1.4.4.

Denominator of Ellipsoid Name	Flattening Ratio
Geodetic Reference System 80	298.257
Clarke 1866	294.98

45 Codeset Name - the name of the soil survey area as it appears in the title of the soil classification and correlation document. Example is Polk County, Iowa.

Numbers in Distribution Information section

46 Resource Description - the identifier by which the distributor knows the data set. For example,

Resource Description: Polk Country, Iowa SSURGO. Reference is from p. 38, sec. 6.6.

47 Format Version Date - the date of the version of the format. The date is in line 1 of the DLG header. Enter the date in the format YYYYMMDD. For example, Format Version Date: 19920508. Reference is from p. 40, sec. 6.4.2.1.3

48 Transfer Size - the size, or estimated size, of the transferred data set in megabytes. This is the sum for all DLGs in the data set. Example is Transfer Size: 14.4. Reference is from p. 40, sec. 6.4.2.1.7.

49 Transfer Size - the size, or estimated size, of the transferred data set in megabytes. This is the sum for all attribute tables in the data set. Example is Transfer Size: 0.4. Reference is from p. 40. sec. 6.4.2.1.7.

50 Quadrangle Format - Enter full or quarter.

Numbers in Metadata Reference Information section

51 Metadata Date - the date that the metadata were created or last updated. Enter the date in the format YYYYMMDD. For example, Metadata Date: 19940311. Reference is from p. 45, sec. 7.1.

52 Metadata Review Date - the date of the latest review of the metadata entry. This is the date of the NCG review. The date is entered in the format YYYYMMDD. For example, Metadata Review Date: 19940329. Reference is from p. 45, sec. 7.2

53 Address - an address line for the address. Example is Address: 210 Walnut Street, Suite 693. Reference is from p. 52, sec. 10.4.2.

54 City - the city of the address. Example is City: Des Moines. Reference is from p. 52, sec. 10.4.3.

55 State or Province - the state or province of the address. Example is State or Province: Iowa. Reference is from p. 52, sec. 10.4.4.

56 Postal Code - the ZIP or other postal code of the address. Example is Postal Code: 50309-2180. Reference is from p. 52, sec. 10.4.5.

57 Contact Voice Telephone - the telephone number by which individuals can speak to the organization or individual. Example is Contact Voice Telephone: 402 437 5423. Reference is from p. 52, sec. 10.5.

58 Contact Facsimile Telephone - the telephone number of a facsimile machine of the organization or individual. Example is Contact Facsimile Telephone: 402 437 5336. Reference is from p. 52, sec. 10.7.

59 Metadata Standard Version - identification of the version of the metadata standard used to document the data set. Enter the date in the format: YYYYMMDD. For example, the current Metadata Standard Version is: 19940608. Reference is from p. 45, sec. 7.6.