

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

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All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
067LO: PLEASANT SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES	PLEASANT	Yes	playa	3	NO	NO	YES
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
067OF: OTERO FINE SANDY LOAM, 4 TO 12 PERCENT SLOPES	OTERO	No	fan remnant	---	---	---	---
067OG: OTERO-SCHAMBER COMPLEX, 5 TO 20 PERCENT SLOPES	OTERO	No	fan remnant	---	---	---	---
	SCHAMBER	No	fan remnant, paleoterrace	---	---	---	---
067SA: SATANTA FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
	PLEASANT	Yes	playa	3, 2B3	YES	NO	YES
067SB: SATANTA FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
067TF: VALENT FINE SAND, 5 TO 20 PERCENT SLOPES	VALENT	No	dune, paleoterrace	---	---	---	---
067TV: VALENT-VONA LOAMY FINE SANDS, 3 TO 15 PERCENT SLOPES	VALENT	No	dune, paleoterrace	---	---	---	---
	VONA	No	dune, paleoterrace	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
067UE: ULYSSES-COLBY SILT LOAMS, 1 TO 3 PERCENT SLOPES, ERODED	ULYSSES	No	plain	---	---	---	---
	COLBY	No	hillslope	---	---	---	---
067VO: VONA LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	VONA	No	dune, paleoterrace	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
081OG: OTERO-SCHAMBER COMPLEX, 5 TO 15 PERCENT SLOPES	OTERO	No	fan remnant	---	---	---	---
	SCHAMBER	No	fan remnant, paleoterrace	---	---	---	---
1044: ATCHISON CLAY LOAM, 3 TO 6 PERCENT SLOPES	ATCHISON	No	fan remnant	---	---	---	---
	OTERO	No	fan remnant	---	---	---	---
1046: ATCHISON LOAM, 1 TO 3 PERCENT SLOPES	ATCHISON	No	fan remnant	---	---	---	---
	OTERO	No	fan remnant	---	---	---	---
	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
1182: BELFON LOAM, 0 TO 1 PERCENT SLOPES	BELFON	No	paleoterrace	---	---	---	---
	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
	RICHFIELD	No	plain	---	---	---	---
1184: BIGBOW FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	BIGBOW	No	paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	BELFON	No	paleoterrace	---	---	---	---
1185: BIGBOW LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES	BIGBOW	No	paleoterrace	---	---	---	---
	BELFON	No	paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
1504: DALHART FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	BIGBOW SATANTA	No	paleoterrace	---	---	---	---
		No	paleoterrace, sand sheet	---	---	---	---
1505: DALHART FINE SANDY LOAM, 1 TO 4 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	EVA	No	dune, paleoterrace	---	---	---	---
1506: DALHART LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	BIGBOW SATANTA	No	paleoterrace	---	---	---	---
		No	paleoterrace, sand sheet	---	---	---	---
1558: DALHART LOAMY FINE SAND, 2 TO 4 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	BIGBOW EVA	No	paleoterrace	---	---	---	---
		No	dune, paleoterrace	---	---	---	---
1559: DALHART-EVA LOAMY FINE SANDS, 3 TO 9 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	EVA	No	dune, paleoterrace	---	---	---	---
	OPTIMA	No	dune, paleoterrace	---	---	---	---
1670: EVA LOAMY FINE SAND, 1 TO 3 PERCENT SLOPES	EVA	No	dune, paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
1671: EVA-OPTIMA LOAMY FINE SANDS, 5 TO 15 PERCENT SLOPES	EVA	No	dune, paleoterrace	---	---	---	---
	OPTIMA	No	dune, paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
1672: EVA LOAMY FINE SAND, 3 TO 9 PERCENT SLOPES	EVA	No	dune, paleoterrace	---	---	---	---
	OPTIMA	No	dune, paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
1723: FETERITA CLAY, 0 TO 1 PERCENT SLOPES	FETERITA	Yes	playa	2B3,3	YES	NO	YES
1979: HAVERSON FINE SANDY LOAM, OCCASIONALLY FLOODED	HAVERSON	No	flood plain	---	---	---	---
	GLENBERG	No	flood plain	---	---	---	---
	HAPPYDITCH	No	flood plain	---	---	---	---
1980: HAPPYDITCH LOAMY SAND, 0 TO 2 PERCENT SLOPES, RARELY FLOODED	HAPPYDITCH	No	flood plain	---	---	---	---
	GLENBERG	No	flood plain	---	---	---	---
1981: HAPPYDITCH SAND, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED	HAPPYDITCH	No	flood plain	---	---	---	---
	GLENBERG	No	flood plain	---	---	---	---
1984: HAPPYDITCH LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED	HAPPYDITCH	No	flood plain	---	---	---	---
	GLENBERG	No	flood plain	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
3047: OPTIMA LOAMY FINE SAND, 2 TO 6 PERCENT SLOPES	OPTIMA	No	dune, paleoterrace	---	---	---	---
	EVA	No	dune, paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
3048: OPTIMA LOAMY FINE SAND, 6 TO 15 PERCENT SLOPES	OPTIMA	No	dune, paleoterrace	---	---	---	---
	EVA	No	dune, paleoterrace	---	---	---	---
	DALHART	No	paleoterrace, sand sheet	---	---	---	---
3415: SATANTA LOAM, 0 TO 1 PERCENT SLOPES	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
	BELFON	No	paleoterrace	---	---	---	---
3506: SHORE LOAM, RARELY FLOODED	SHORE	No	flood plain	---	---	---	---
	SATANTA	No	paleoterrace, sand sheet	---	---	---	---
	WAGONBED	No	plain	---	---	---	---
3725: ULYSSES SILT LOAM, 0 TO 1 PERCENT SLOPES	ULYSSES	No	plain	---	---	---	---
	RICHFIELD	No	plain	---	---	---	---
	WAGONBED	No	plain	---	---	---	---
3969: WAGONBED SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPES	WAGONBED	No	plain	---	---	---	---
	ULYSSES	No	plain	---	---	---	---
	RICHFIELD	No	plain	---	---	---	---
Bo: VALENT FINE SAND, 5 TO 15 PERCENT SLOPES	VALENT	No	blowout, dune, paleoterrace	---	---	---	---
CIR: CIMARRON RIVER CHANNEL	CIMARRON RIVER	Unranked	---	---	---	---	---
Cm: COLBY LOAM, 5 TO 12 PERCENT SLOPES	COLBY	No	break	---	---	---	---
Da: DALHART FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Db: DALHART FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Df: DALHART LOAMY FINE SAND, 0 TO 3 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Dx: DALHART-OTERO FINE SANDY LOAMS, 1 TO 4 PERCENT SLOPES	DALHART	No	paleoterrace, sand sheet	---	---	---	---
	OTERO	No	fan remnant	---	---	---	---
Go: GOSHEN SILT LOAM, RARELY FLOODED	GOSHEN	No	swale	---	---	---	---
	PLEASANT	Yes	depression	2B3	YES	NO	NO
Lf: LINCOLN SOILS, OCCASIONALLY FLOODED	LINCOLN	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Lo: PLEASANT CLAY LOAM, 0 TO 1 PERCENT SLOPES	PLEASANT	Yes	playa	3	NO	NO	YES

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				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Lp: PLEASANT FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	PLEASANT	Yes	playa	3	NO	NO	YES
Ma: PENDEN CLAY LOAM, 0 TO 1 PERCENT SLOPES	PENDEN	No	plain	---	---	---	---
Mb: PENDEN CLAY LOAM, 1 TO 3 PERCENT SLOPES	PLEASANT	Yes	depression	2B3	YES	NO	NO
Mx: PENDEN-OTERO COMPLEX, 1 TO 6 PERCENT SLOPES	PENDEN	No	plain	---	---	---	---
My: MANTER FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	OTERO	No	hillslope	---	---	---	---
	OTERO	No	fan remnant	---	---	---	---
	MANTER	No	paleoterrace, sand sheet	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Ot: OTERO FINE SANDY LOAM, 5 TO 12 PERCENT SLOPES	OTERO	No	fan remnant	---	---	---	---
Ra: SATANTA LOAM, 0 TO 1 PERCENT SLOPES	SATANTA	No	plain	---	---	---	---
Rb: HAXTUN LOAMY FINE SAND, 0 TO 1 PERCENT SLOPES	PLEASANT	Yes	playa	2B3	YES	NO	NO
	HAXTUN	No	plain	---	---	---	---
Rm: RICHFIELD SILT LOAM, 0 TO 1 PERCENT SLOPES	RICHFIELD	No	plain	---	---	---	---
	PLEASANT	Yes	depression	2B3	YES	NO	NO
Rx: RICHFIELD-ULYSSES LOAMS, 0 TO 1 PERCENT SLOPES	RICHFIELD	No	plain	---	---	---	---
	ULYSSES	No	plain	---	---	---	---
	PLEASANT	Yes	depression	2B3	YES	NO	NO
Tf: VALENT FINE SAND, 10 TO 25 PERCENT SLOPES	VALENT	No	dune, paleoterrace	---	---	---	---
Ua: ULYSSES SILT LOAM, 0 TO 1 PERCENT SLOPES	ULYSSES	No	plain	---	---	---	---
	PLEASANT	Yes	depression	2B3	YES	NO	NO
Ub: ULYSSES SILT LOAM, 1 TO 3 PERCENT SLOPES	ULYSSES	No	plain	---	---	---	---
Ue: ULYSSES-COLBY COMPLEX, 1 TO 3 PERCENT SLOPES, ERODED	ULYSSES	No	plain	---	---	---	---
	COLBY	No	break	---	---	---	---
Vo: VONA LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	VONA	No	dune, paleoterrace	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
Vx: VONA-VALENT LOAMY FINE SANDS, 3 TO 20 PERCENT SLOPES	VONA	No	dune, paleoterrace	---	---	---	---
	VALENT	No	dune, paleoterrace	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	depression	2B3	YES	NO	NO
W: WATER	WATER	Unranked	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.

Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:
  - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
  - b. poorly drained or very poorly drained and have either:
    - (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils
    - (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
    - (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
3. Soils that are frequently ponded for long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.

