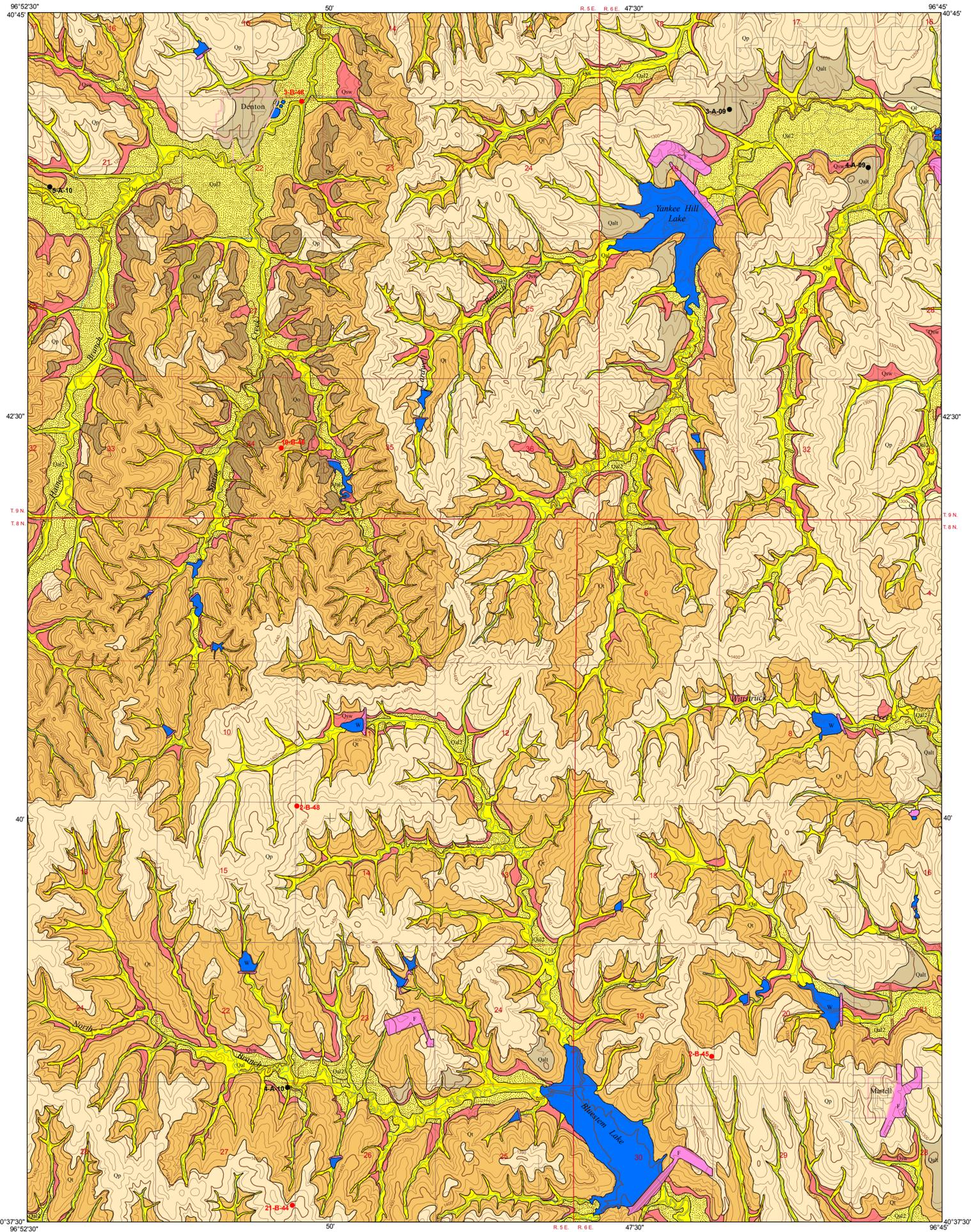


Surficial Geology of the Denton 7.5 Minute Quadrangle, Nebraska

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Description of Mapping Units:

Qal Quaternary alluvium, Latest Holocene to modern

Clayey to silty-clay with local gravels eroded from till

Alluvial deposits of Late Holocene to modern age in the Haines Branch, Cardwell Branch and North Branch of Salt Creek. These fills are generally less than 5m (15ft) thick.

Qal2 Proximal alluvial/floodplain deposits of major tributaries of salt creek, Middle Pleistocene(?) to modern

Silty to gravelly sand derived from nearby sediments.

This unit consists of alluvium deposited in the wide valley bottoms of the Haines Branch, Cardwell Branch and the North Branch of Salt Creek. Although these sediments are proximal to the Qal sediments they were deposited as alluvium or floodplain deposits prior to the more recent (past 100 years?) incision of the stream channels. The sediments are up to 10 meters (33 feet) in thickness.

Qalt Loess Covered Alluvial Terrace

Silt to silty clay overlying sandy and silty alluvium at depth

Higher and older alluvial terrace fills of the Haines Branch, Cardwell Branch and North Branch of Salt Creek. Terrace treads are generally 10 meters (33 feet) above the modern stream levels. Terrace treads are covered with ~4.5 meters (~15 feet) of Peoria and Gilman Canyon loess. Deposits of reddish material that resemble Loveland Loess is locally found stratigraphically below the Gilman Canyon Loess. These reddish sediments are interpreted as slopewash or alluvial fans that were likely sourced from Loveland Loess higher in the landscape. Terrace fills are Middle to Late Pleistocene in age.

Op Peoria Loess, Late Pleistocene

Silt to silty clay.

Late Pleistocene aged loess. Peoria Loess thickness ranges from 3 to 7 meters (10 to 23 feet) in the mapping area. Peoria Loess is the primary parent material for upland soils. Peoria Loess is generally underlain by Gilman Canyon Formation, a dark brown or black colored loess unit that is ~1 meter (~3 feet) in thickness. The Gilman Canyon Formation is locally underlain by early Pleistocene age Loveland Loess, particularly in the northeastern portion of the mapping area. Loveland Loess is of varying thickness.

Ql Loveland Loess, Middle-Pleistocene

Silty clay to clayey silt

Several exposures of Loveland loess are mapped in the northeastern part of the mapping area. Loveland Loess is of varying thickness in the mapping area, and is found overlying other silty sediments or glacial deposits in the study area. Loveland loess is distinguished from other loess units by its characteristic reddish to pinkish color.

Qsw Slopewash, Late Pleistocene to Holocene

Silty, clayey, and locally sandy

Sediments located at the bottom of slopes. Generally slopewash is sourced from adjacent loess or till deposits that are located upslope. Slopewash deposits are commonly less than 3 meters (10 feet) thick.

Qo Outwash, pre-Illinoian; Middle Pleistocene

Sand to gravelly sand

Outwash of pre-Illinoian age is generally moderately well-sorted medium to fine sandy deposits that are locally gravel-rich. These deposits were locally deflated by winds in the late Quaternary.

Qt Glacial Till, pre-Illinoian; Middle Pleistocene

Gravelly-clay

Pre-Illinoian till is locally exposed at the ground surface or covered by varying thicknesses of up to 3 to 7 meters (10 to 23 feet) of quaternary loess. Glacial till in the mapping region is generally clay-rich sediment containing varying quantities of cobbles and pebbles. The upper portions of till deposits often have secondary deposits of carbonates (white) and iron staining (orange). Specific till locations can locally be bluish gray clay with gravel or brownish clay with varying amounts of sand and gravel.

F Fill

Built up areas, dams, pits and other man-made deposits.

W Water

● Modern test hole location

Test hole locations drilled during the 2009-2010 mapping season

● Historic test hole location

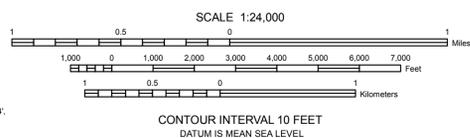
Test holes drilled by Nebraska Geological Survey. The last two digits of the test hole name represent the year drilled

□ City or town boundary

Projection: UTM zone 14 North, NAD83

Contours from the Nebraska Department of Natural Resources, compiled from USGS 7.5 minute topographic quadrangles

Additional base data derived from 2005 second edition TIGER/line files



Pleasant Dale	Emerald	Lincoln
Crete North	Denton	Roca
Crete South	Hallam	Cortland

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.