2005

Geologic Map and Topographic Profile of the Elm Creek West Quadrangle, Nebraska

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U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

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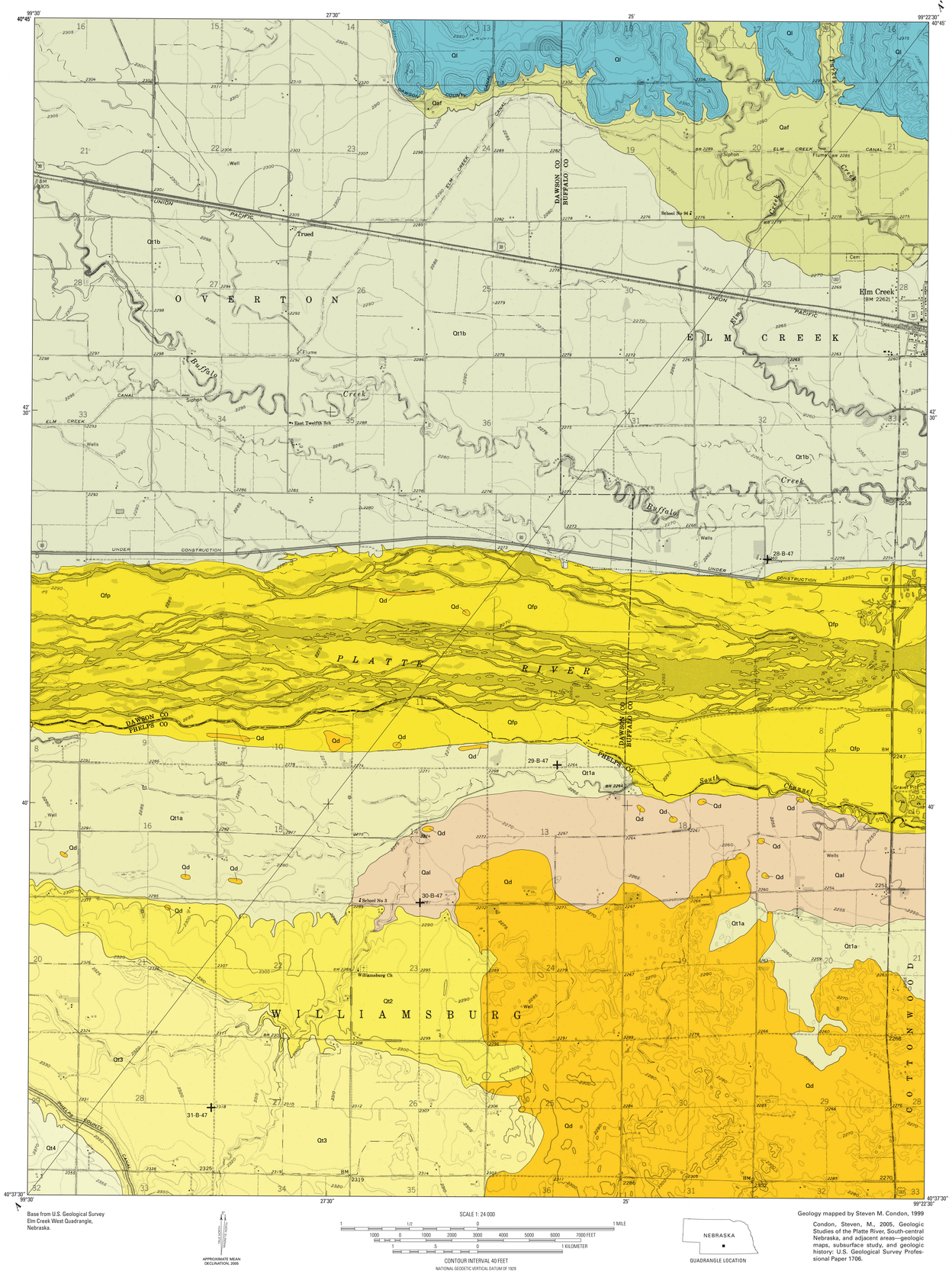
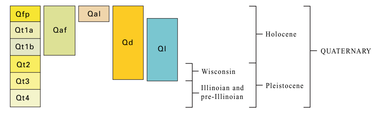
PLATE 1 OF 2



CORRELATION OF MAP UNITS



Description of map units

Qfp **Floodplain deposits (Holocene)**—Lowest floodplain and island areas of the Platte River. Deposits of this unit are mostly poorly sorted and clast supported. They consist of unconsolidated gravel in a sandy or silty matrix interbedded with or overlain by sandy silt and silty sand. Clasts are round to subangular and are composed of plutonic, metamorphic, and sedimentary rock types. Outside the active channels, many soil types are at the surface of this unit, including Gothenburg soils or comparable Loamy alluvial beds, Platte loam or comparable Platte soils, Gibbon loam, Lex loam, Alda loam, Leshara and Gibbon silt loam, Platte-Alda complex, and Platte-Wann complex. The Gothenburg soil and corresponding Loamy alluvial beds are the most abundant soil types recognized where Qfp is mapped

Qaf **Alluvial fan deposits (Holocene)**—An apron of alluvium derived from and deposited at the base of the loess hills in the northeastern part of the map. The unit extends southward over the Qt1b terrace. Soil types consist of Uly-Holdrege-Coly silt loams, Hobbs silt loam, Cozad silt loam, and Hord silt loam

Qal **Alluvium (Holocene)**—Thin veneer of alluvium derived mainly from stream that enters the map from the south in section 34, T. 8 N., R. 19 W. Soil types consist primarily of Wann loam and lesser amounts of Leshara silt loam and Hord silt loam. Overlies terrace Qt1a and northern edge of dune field Qd in the southeastern part of the quadrangle

Qd **Dune deposits (Holocene and Pleistocene)**—Main dune area in southeast part of the map consists of wind-deposited dune sand and sheet sand intermixed with alluvial material in drainages. Soil types are heterogeneous, and include Valentine loamy sand, the Anselmo series, Kenesaw silt loam, and Kenesaw-Coly silt loam. Small areas of Qd mapped in and south of the Platte River channel are composed of small dunes and sandy zones intermixed with other soil types. Dunes in the main area of deposition have relief of as much as 40 ft. Dunes in other areas have relief of 10 ft or less. Eolian deposits in the southeast part of the map overlie and obscure older terrace deposits

Ql **Loess (Pleistocene and Holocene)**—Loess that forms hills at the northeast corner of the map. Soil types are mainly Uly silt loam, Coly silt loam, Holdrege silt loam, and Uly and Holdrege silt loams, combined. Loess probably consists of the Pleistocene Peoria Loess and the Holocene Bignell Loess

Qt1a **Terrace 1a deposits (Holocene)**—Deposits of the first terrace above the Platte River floodplain on the south side of the river. Two areas of this terrace were mapped; (1) immediately adjacent to the Platte River floodplain (Qfp), in the western and central parts of the map, and (2) immediately south of the Qal unit, about 0.75 mile south of the river floodplain in the eastern part of the map. In the first area the surface is cut by numerous small abandoned stream channels; low areas are boggy and hold standing water in the spring. The second area is slightly drier, and has sandier soils. In the first area soil types are mainly saline Leshara silt loam, Leshara silt loam, Grigston silt loam, and Wann loam. Soils in the second area are Anselmo fine sandy loam, Meadin loamy sand, Meadin silt loam, and O'Neill fine sandy loam. This terrace stands at an average of 5 ft above the floodplain

Qt1b **Terrace 1b deposits (Holocene)**—Deposits of the first terrace above the Platte River floodplain on the north side of the river. This terrace is somewhat higher and better drained, and may be slightly older than the Qt1a terrace on the south side of the river. This was the only terrace identified between the river and the loess hills on the north side of the river, and thus covers a significant portion of the map (about 24 square miles). A large number of soil types occur on this terrace, including the Cozad series, Gosper series, Hord series, Rusco silt loam, and Wood River series. This terrace stands at an average of 7.5 ft above the floodplain

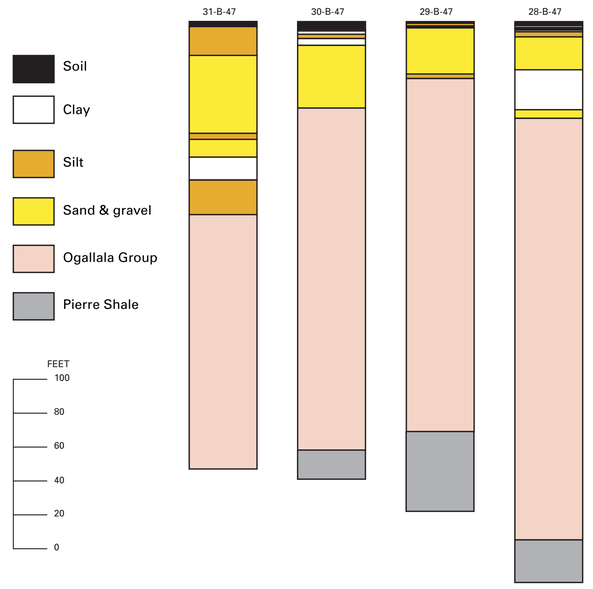
Qt2 **Terrace 2 deposits (Holocene? and Pleistocene)**—Deposits of the second terrace above the Platte River floodplain on the south side of the river. In plan view, this terrace is triangular, wedging out because of erosion by the Platte River just to the west of the map boundary. The terrace widens eastward to about the middle of the quadrangle; in the southeast part of the map the terrace is mantled by dune deposits of Qd. The northern edge of the terrace is defined by a topographic break and by a change to the soil types Kenesaw silt loam and Kenesaw and Coly silt loams. Soil types over most of this terrace are Hord silt loam. Kenesaw silt loam occurs mainly along the eastern edge of exposure. This terrace stands at an average of 45 ft above the floodplain

Qt3 **Terrace 3 deposits (Pleistocene)**—Deposits of the third terrace above the Platte River floodplain on the south side of the river. In plan view this terrace narrows to the west and was removed by Platte River erosion in about the middle of the adjacent Overton quadrangle. The terrace widens to the southeast and is partially mantled by dune deposits in the south-central part of the map. The southern edge of the terrace trends generally east-west just south of the map boundary. Soils on this terrace are the same as those on the Qt2 terrace. A change to Kenesaw silt loam and Kenesaw and Coly silt loams mark the northern edge of the terrace. The majority of the terrace surface is composed of Hord silt loam, with some Kenesaw silt loam along the eastern-most exposures. This terrace stands at an average of 50 ft above the floodplain

Qt4 **Terrace 4 deposits (Pleistocene)**—Deposits of the fourth terrace above the Platte River floodplain. Only a small part of this terrace occurs in the Elm Creek West quadrangle, in the southwest corner of the map. Soil type is Holdrege silt loam. This terrace stands at an average of 97.5 ft above the floodplain

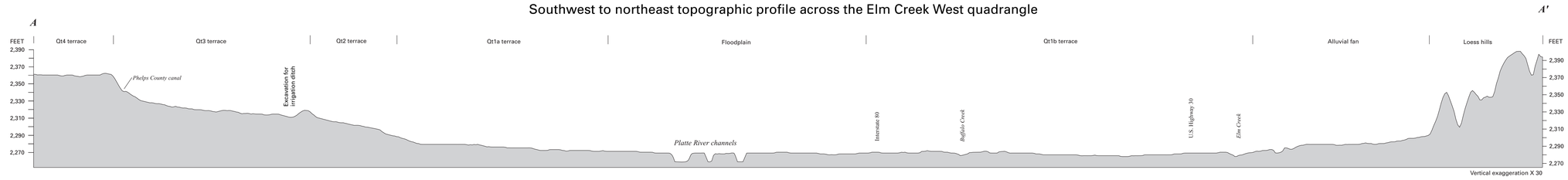
Contact

Location of test well



Graphical representations of test wells in the Elm Creek West quadrangle

Southwest to northeast topographic profile across the Elm Creek West quadrangle



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