Surficial Geology of the Wynot 7.5 Minute Quadrangle, Nebraska

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Description of Mapping Units:

Alluvial fan (Holocene)
Silt, fine sandy silt, and sand.

Alluvial fans along the valley margins. They are composed of massive to thin-beded silt, fine sand, and fine gravelly silt, often with buried soils.

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

Clastic/Alluvial Fan Complex (Holocene)
Silt, fine sandy silt, and sand and gravel.

This mapping unit includes complexes of two or more fans with composition similar to Unit Qal above. The merged fans complexes are discontinuous due to meandering stream erosion. The fans complexes occur on the margins of the Bow Creek valley, where tributary streams enter the valley bottom.

Silt: fine sandy silt, and sand and gravel.

These sediments were deposited by streams and are found in small tilliferous valleys drained by the sub-drainage. The alluvial fans and the valley bottom are not segregated from the adjacent alluvial fans, slope wash and small alluvial fans. The deposits may be massive or thin-beded.

Silty allochthon sourced primarily from Pienia Loess.

Quaternary alluvial fans of small tributary valleys (Holocene through Modern)

Silt: clay, silt, fine sandy silt, and gravel.

This mapping unit is composed of alluvium and alluvial fan deposits along much of the Bow Creek valley margin. Individual fans merge with a valley and thus cannot be meaningfully separated from the alluvial fans at this scale. The alluvial fans are composed of silt and sand, the source material is Pienia Loess, and sandy to gravelly where the source area is a glacial outwash.

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Silty allochthon sourced primarily from glacial outwash.

Quaternary alluvial fans of Bow Creek valley bottoms (Late Holocene to Modern)

Silt: clay, silt, sand, and gravel.

Qal represents the modern channel and fluvial plain of Bow Creek. Flow is coarse sand or gravel, and channel deposits along many reaches of the modern channel. Sand and gravel lenses are common near the towns of Wynot and Hastings along the course of the map. The modern Bow Creek fanplain complexes are derived from the Bow Creek valley bottom. Many smaller fan complexes are present in the mapping area. The modern Bow Creek fanplain complexes are derived from the Bow Creek valley bottom and are thin-beded. The deposits may be massive or thin-beded.

Alluvial (Middle to Pleistocene to Recent)

Silt, silty clay, silt, and silt loam.

This mapping unit is a complex of alluvium and alluvial fan deposits along southern Nebraska (Nebrode, McPherson) bedrock. The deposits range from less than 1 meter to approximately 5 meters thick. Small exposures of the Nebraska Formation occur throughout the area occupied by this mapping unit, but most cannot be mapped at this scale.

Low Terraces (Late Pleistocene to Holocene)

Silt: clay, silt, and silty clay. Gravel: silty clay to gravel. Deposits are thin-beded and gravel.

This mapping unit is composed of remnant terrace surfaces throughout the Bow Creek valley bottom. Many small residual remnants are present but cannot be mapped at this scale. The low terrace silts are part of two Holocene stratigraphic units: either the Honey Creek Member (Middle to Late Holocene) or the Grand Island Member (Early to Middle Holocene) of the Dismal River Formation. The deposits are not as thick or massive as those of the Honey Creek Member, but are higher (approximately 1 meter) than the Honey Creek Member terrace silts. Although conspicuous in the field, the two silts cannot be separately mapped at this scale. Both deposits include sand and gravel in other localities due to their pedogenically sandy source materials.

Alluvial terraces (Late Pleistocene)

Silt: sand, and gravel.

These low Pleistocene terraces are small residual remnants which occur along the valley margins in locations above the low terraces and alluvial fan deposits. They are also a source of sand and gravel for quarry operations.