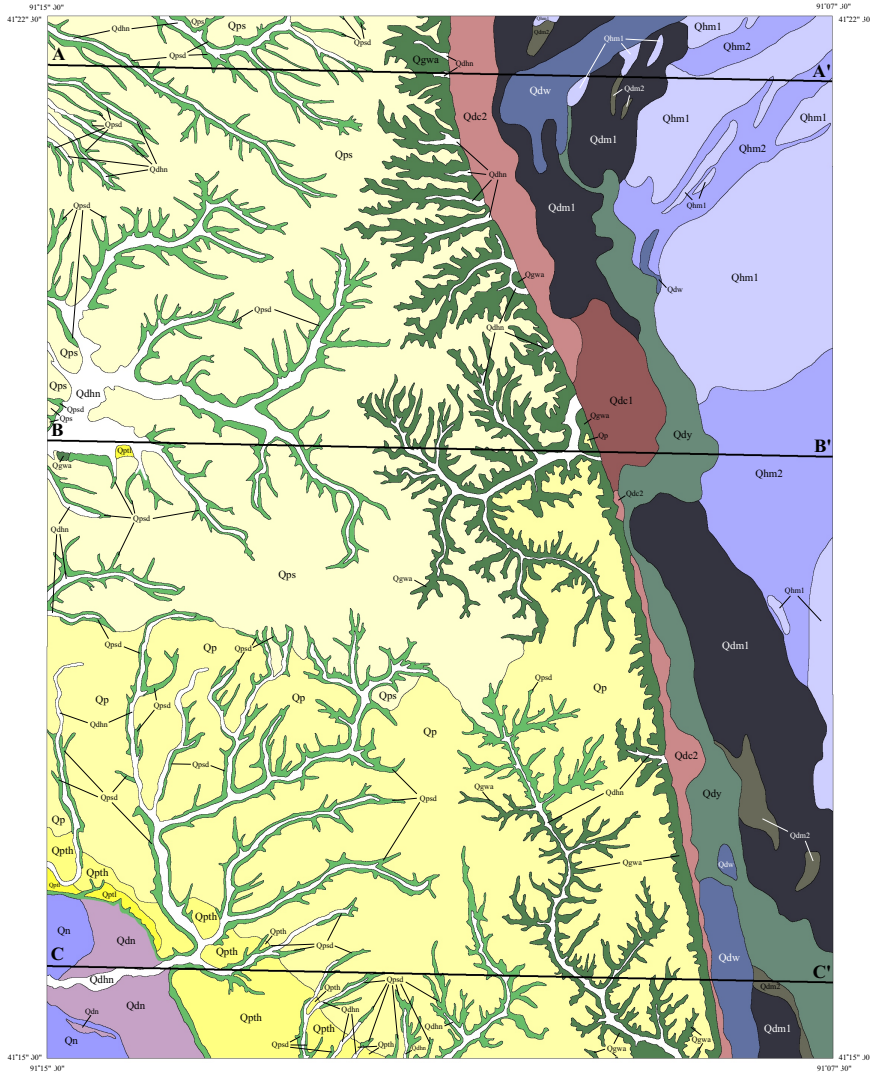


SURFICIAL GEOLOGIC MATERIALS OF THE LETTS QUADRANGLE, IOWA



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Larry J. Wilson, Director

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Description of Map Units

Holocene

- Qhm2 ALLUVIUM, silt loam, clay loam and sandy loam with thin beds of reddish brown silt clay at base, noncalcareous and one to two meters thick (DeForest Formation) over sand and pebbly sand of Henry Formation
- Qhm1 ALLUVIUM, silt loam and clay loam with 0.1 to 0.3 meter-thick zone of reddish brown silt clay laminae at base, noncalcareous and two to four meters thick (DeForest Formation) over sand and pebbly sand of Henry Formation
- Qdc1 ALLUVIUM, sandy loam and pebbly sand alluvial fan deposits, two to eleven meters thick (DeForest Formation, Corrington Member) over older Holocene alluvium
- Qdc2 ALLUVIUM AND COLLUVIUM, loam and pebbly loam alluvial fan and colluvial slope deposits, two to eleven meters thick (DeForest Formation, Corrington Member) over older Holocene alluvium
- Qdy ALLUVIUM, silt loam, clay loam, sandy loam, and organic-rich deposits in meander belts of anastrophing channels (DeForest Formation) over sand and pebbly sand of Henry Formation
- Qdw LAKE AND MARSH DEPOSITS, peat, muck and other organic-rich lacustrine and paludal deposits in abandoned Mississippi River channels (DeForest Formation) over sand and pebbly sand of Henry Formation
- Qdn ALLUVIUM, up to two meter thick silt loam and sandy loam (DeForest Formation) over sand and pebbly sand of Noah Creek Formation
- Qdhn ALLUVIUM, up to three meter thick loam and sandy loam (DeForest Formation) over sand and pebbly sand of Noah Creek Formation

Late Wisconsinan

- Qp LOESS, silt loam (Peoria Loess), buries Farmdale Soil developed in Roxana Silt or Sangamon Soil developed in till
- Qps LOESS, silt loam with interbedded colluvial sand (Peoria Loess), buries Sangamon Soil developed in till or erosion surface on till
- Qptl LOESS, silt loam (Peoria Loess), grades downward into silty, loamy, and sandy alluvium, Late Phase High Terrace of Iowa Cedar Valley
- Qpth LOESS, silt loam (Peoria Loess), buries Farmdale Soil developed in Roxana Silt and Sangamon Soil developed in clayey alluvium, Early Phase High Terrace of Iowa Cedar Valley
- Qtm1 OUTWASH SAND AND PEBBLY SAND, coarse to fine sand and pebbly sand mantled with up to 1.5 meters of colluvial sand, Kingstone Terrace complex in Mississippi Valley (Henry Formation, Muscatine Member)
- Qtm2 OUTWASH SAND AND PEBBLY SAND, coarse to fine sand and pebbly sand with thin gravel lenses within two meters of modern surface, mantled with thin sand sheet, Kingstone Terrace complex in Mississippi Valley (Henry Formation, Muscatine Member)
- Qt OUTWASH SAND AND PEBBLY SAND, sand and pebbly sand with gravel lenses at depth, Low Terrace of Iowa Cedar Valley (Noah Creek Formation)

Complexes (Holocene and Pleistocene)

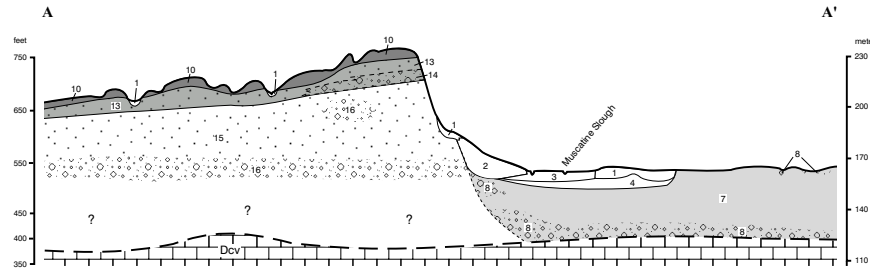
- Qpdw ALLUVIUM, LOESS, SAND, GLACIAL TILL (DeForest and Glasford formations, Peoria Loess)
- Qgwa LOESS, SAND, GLACIAL TILL (DeForest, Glasford, Wolf Creek, and Albion formations, Peoria Loess)

SCALE

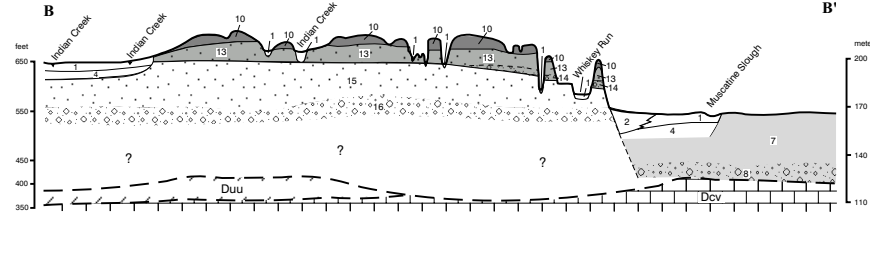
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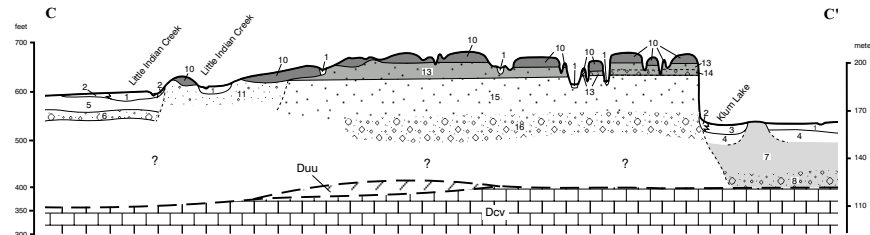
W - E section along
4,581,000 m N



W - E section along
4,576,000 m N



W - E section along
4,569,000 m N



Cross-section Key

Holocene

- 1 DeForest Formation; fine-grained alluvium
- 2 DeForest Formation, Corrington Member; alluvial fan and colluvial slope deposits
- 3 DeForest Formation; peat, muck, organic-rich clay and silt
- 4 DeForest and Henry formations; sand and gravel, channel deposits
- 5 DeForest and Noah Creek formations; sand and pebbly sand, channel deposits

Late Wisconsinan

- 6 Noah Creek Formation; sand and gravel, valley-train outwash
- 7 Henry Formation, Sabula and Muscatine members; sand and pebbly sand, valley-train outwash
- 8 Henry Formation; gravel, valley-train outwash
- 10 Peoria Loess and Roxana Silt; wind-blown silt and sand

Wisconsinan (?) and Illinoian

- 11 unnamed upward-fining alluvial fill with Sangamon Soil developed in upper part (Early Phase High Terrace of Iowa Cedar Valley)

Illinoian

- 13 Glasford Formation, Kellerville Member; glacial till
- 14 Glasford Formation, Kellerville Member; sand and gravel, proglacial outwash

Pre-Illinoian

- 15 Wolf Creek and Albion formations; glacial tills, associated sand, gravel and silts with limited distribution, and buried soils
- 16 Wolf Creek or Albion formations; sand and gravel

Devonian

- Duu Upper Devonian shale, undifferentiated
- Dcv Cedar Valley Group; carbonate rocks