

# Surficial Geologic Materials of Linn County, Iowa

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Prepared by  
Deborah J. Quade  
E. Arthur Bettis III  
Greg A. Ludvigson  
James D. Gigliano  
Maureen K. Slaughter

Energy and Geological Resources Division  
Geological Survey Bureau

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Larry J. Wilson, Director

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## LEGEND

### Description of Map Units

#### HOLOCENE

- Qal** ALLUVIUM (DeForest Formation) -- One to four meters of massive to weakly stratified, grayish brown to brown loam, silt loam, clay loam, or loamy sand overlying less than three meters of poorly to moderately well sorted, massive to moderately well stratified, coarse to fine feldspathic quartz sand, pebbly sand, and gravel in small valleys and more than three meters of pre-Wisconsin or late Wisconsin Noah Creek Formation sand and gravel. Unit also includes colluvial deposits derived from adjacent map units. Seasonally high water tables occur in this map unit.
- Qdb** MUCK AND PEAT (DeForest Formation, Woden Member) -- One to six meters of black to brown muck, peat, and other organic-rich deposits in fens and marshes. Massive to well stratified at depth. Overlies sand and gravel and/or massive, fractured, loamy glacial till of the Wolf Creek or Alburnett formations. High water tables occur in this map unit.

#### WISCONSINAN

- Qpl** LOESS AND INTERCALATED EOLIAN SAND (Peoria Silt) -- Two to seven meters of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted, feldspathic quartz sand. Grades downward to poorly to moderately well sorted, moderately to well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium, or in some places the eolian sediments overlie a clayey Farmdale/Sangamon Geosol developed in alluvium. These alluvial fills are beneath the Late Phase High Terrace (no paleosol beneath the loess) and Early Phase High Terrace (paleosol beneath the loess) of the Iowa Cedar Basin.
- Qps1** LOESS AND INTERCALATED EOLIAN SAND (Peoria Silt) -- Two to ten meters of yellowish brown to gray, massive, fractured, noncalcareous grading downward to calcareous silt loam and intercalated fine to medium, well sorted, feldspathic quartz sand. Sand is most abundant in lower part of eolian package. Overlies massive, fractured, loamy glacial till of the Wolf Creek or Alburnett formations with or without intervening clayey Farmdale/Sangamon Geosol.
- Qps2** EOLIAN SAND (Peoria Silt - sand facies) -- Two to fifteen meters of yellowish brown to gray, moderately to well stratified noncalcareous or calcareous, fine to medium, well sorted, feldspathic quartz sand. May contain interbeds of yellowish brown to gray, massive, silt loam loess. Overlies eroded, massive, fractured, loamy glacial till or fractured Devonian-age carbonate bedrock.
- Qps4** LOESS SHALLOW TO SAND AND GRAVEL (Peoria Silt) -- One to two meters of yellowish brown, massive, noncalcareous silt loam. Overlies pebbly sand and gravel erosion surface sediment that is one to three meters thick, which, in turn, overlies eroded massive, fractured, firm, loamy glacial till of the Wolf Creek or Alburnett formations. Seasonally high water table may occur in this map unit.
- Qwa1** SAND AND GRAVEL SHALLOW TO TILL (Unnamed erosion surface sediment) -- One to three meters of yellowish brown to gray, massive to weakly stratified, noncalcareous, medium to coarse, poorly sorted feldspathic pebbly quartz sand with intercalated gravel and loam. Overlies massive, fractured, firm, loamy glacial till of the Wolf Creek or Alburnett formations. Deposits in this mapping unit are derived primarily from erosion of glacial till in the adjacent drainage basin. Seasonally high water table may occur in this map unit.
- Qwa2** LOAMY AND SANDY SEDIMENT SHALLOW TO GLACIAL TILL (Unnamed erosion surface sediment) -- One to three meters of yellowish brown to gray, massive to weakly stratified, well to poorly sorted loamy, sandy and silty erosion surface sediment. Map unit includes some areas mantled with less than two meters of Peoria Silt (loess). Overlies massive, fractured, firm glacial till of the Wolf Creek and Alburnett formations. Seasonally high water table may occur in this map unit.

#### WISCONSINAN AND PRE-ILLINOIAN

##### Complexes

- Qnw** SAND AND GRAVEL (Noah Creek, Wolf Creek, and Alburnett formations) -- More than three meters of yellowish brown to gray, poorly to well sorted, massive to well stratified, coarse to fine feldspathic quartz sand, pebbly sand and gravel. In places mantled with one to three meters of fine to medium, well-sorted feldspathic quartz sand derived from wind working of the alluvium. This unit also includes exhumed intertil sand and gravel of the Wolf Creek and Alburnett Formation. Seasonally active seeps may occur in these intertil settings. Elsewhere the unit encompasses deposits that accumulated during the Wisconsin Episode.

#### DEVONIAN

- Du** FRACTURED CARBONATE BEDROCK -- Interbedded limestones and dolostones. Locally developed as bedrock aquifer.

#### SILURIAN

- Su** FRACTURED CARBONATE BEDROCK -- Variably porous and cherty dolostone. Regional bedrock aquifer.

- [Hatched]** FRACTURED CARBONATE BEDROCK -- Areas where Devonian and Silurian bedrock are less than 25 feet below the land surface.

#### Anthropogenic Units

- Qq** QUARRIES AND PITS -- Limestone quarries and sand and gravel pits. Extent as of 1990 shown.
- Qi** CUT AND FILL -- Areas of cut and fill associated with major highways, airports and retail and industrial developments. Deposits within this map unit are similar to those in adjacent map units but may have significant mantles of fill or deep cuts that expose underlying deposits. Less extensive deposits occur along all roads and in developed areas throughout the county. Extent as of 1990 shown.
- W** WATER -- Rivers, lakes and small ponds formed by blockage of drainageways and river channels. Most ponds are constructed, but a few were formed naturally when existing drainageways were blocked by migration of sand dunes.

