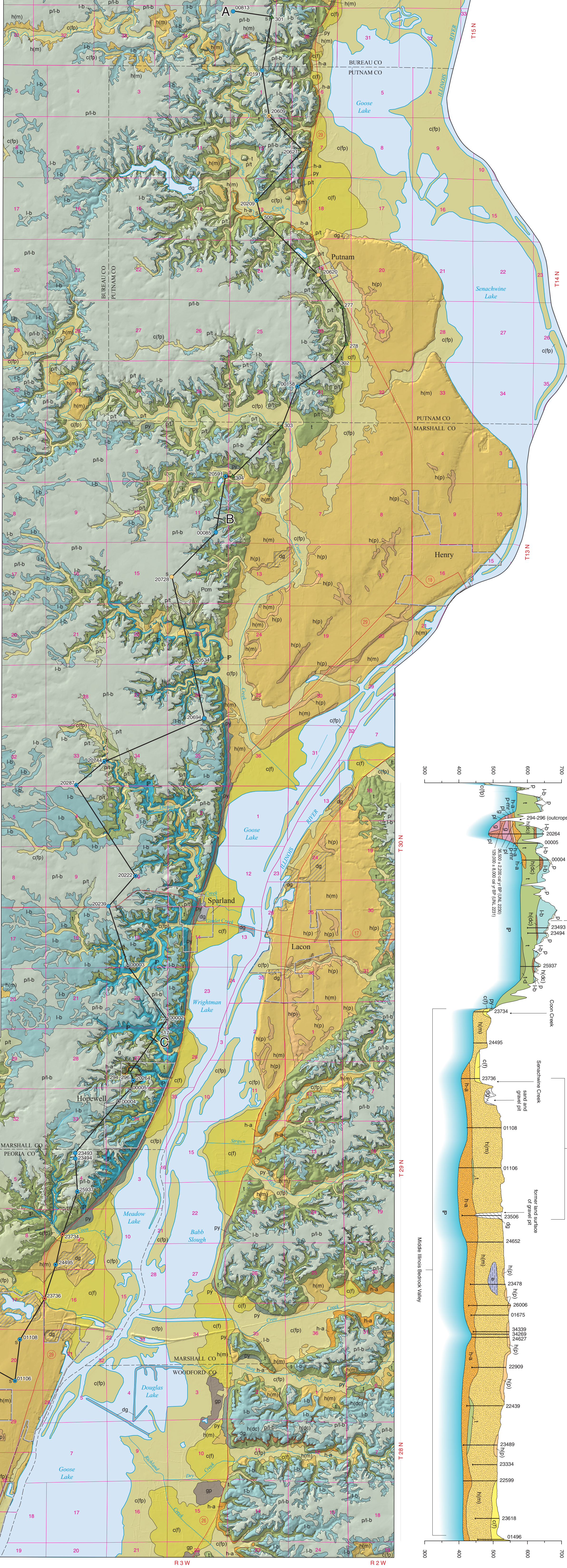
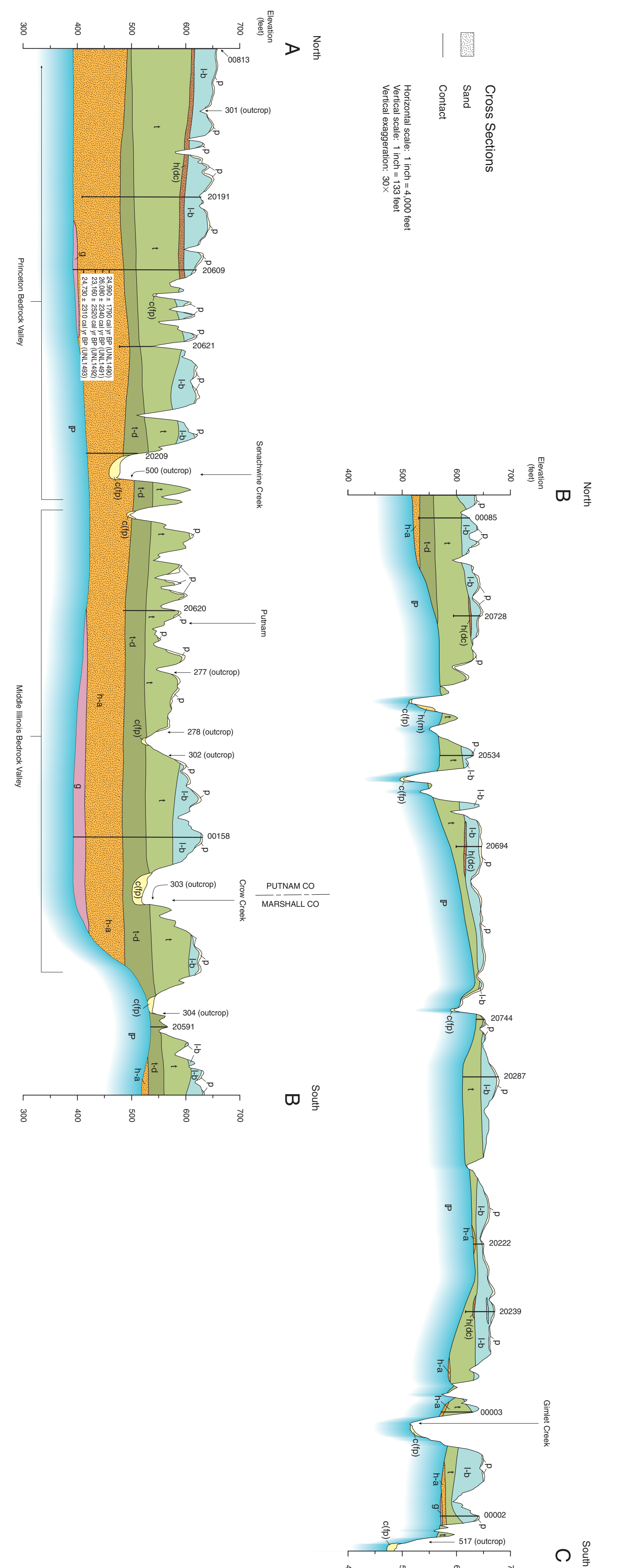


SURFICIAL GEOLOGY OF THE MIDDLE ILLINOIS RIVER VALLEY

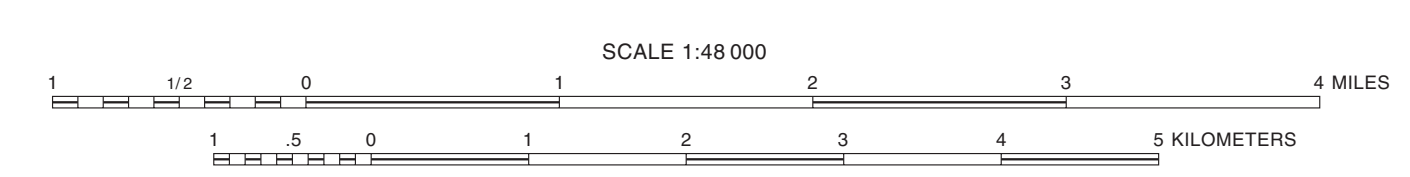
BUREAU, MARSHALL, PEORIA, PUTNAM, AND WOODFORD COUNTIES, ILLINOIS

E. Donald McKay III, Richard C. Berg, Andrew J. Stumpf, and C. Pius Weibel
 2010



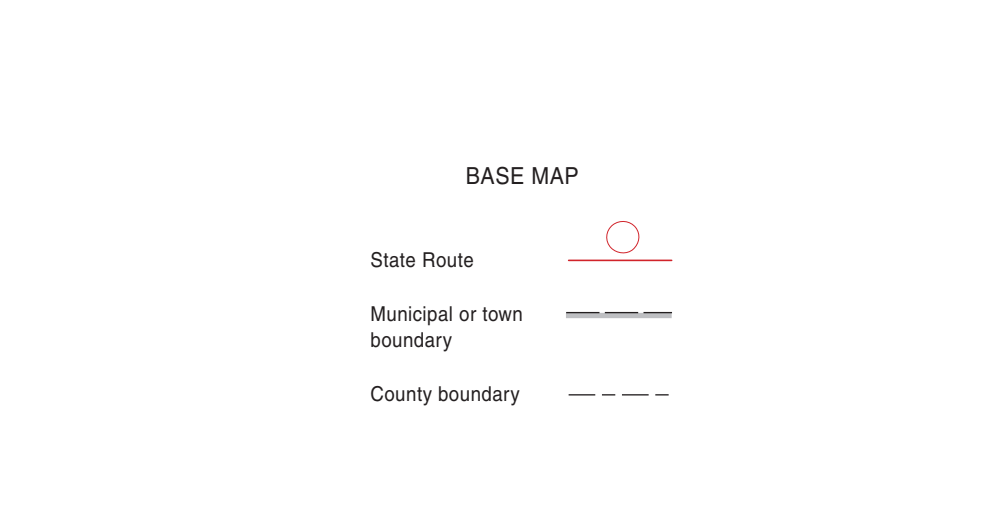
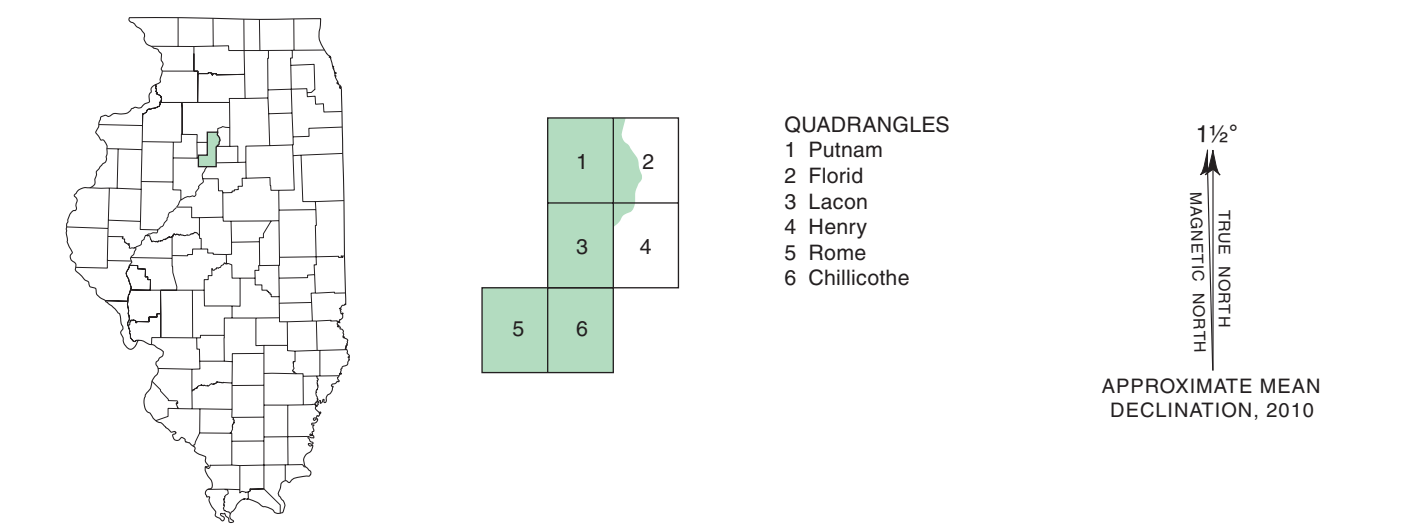
Geologic material description	Unit	Occurrence and interpretation
HUDSON EPISODE (0 to ~12,000 years before present B.P.)		
Areas of disturbed earth and/or removed earth: gran size ranges from clay to gravel and may include waste or other rubble	disturbed (dq)	Deposits disturbed or modified by human activity in gravel pits, coal mine spoil banks, earthen dams, other excavations, and landfills
Peat, organic silt, and muck, stratified: dark gray to black, soft and compressible; may be interbedded with silt, fine sand, and clay; overlies Cahokia Formation; less than 5 feet thick	Grayslake Peat (gp)	Peat; organic-rich deposits in abandoned channels, shallow oxbow lakes, and low-lying depressions on modern floodplain of Illinois River; subject to frequent flooding
Silt and clay with local surface occurrences of sand and gravel: typically grades at depth to sand and gravel, which may be indistinguishable from Henry Formation; stratified; brownish gray to gray; 5 to 50 feet thick	Cahokia Formation floodplain facies (cfp)	Alluvium (river sediment): postglacial outwash deposits on floodplains, natural levees, and in backwater lakes; coarse deposits in channels, point bars, and tributary streams
Silt and silty clay, interbedded with the sand, and locally gravel and redeposited bedrock clasts: brownish to moderately silty gray; calcareous or non-calcareous; typically overlies Cahokia or Henry Formations; 5 to 30 feet thick	Cahokia Formation alluvial fan facies (cft)	Alluvial fan deposits: postglacial stream sediment derived largely from erosion of loess and fill and deposited in fans where streams and ravines emerge from uplands onto low-slope valley floors; subject to flooding
Silt, clay, sand, gravel, and diamictic: unstratified to crudely stratified; yellowish brown to brownish gray; may include bedrock clasts; overlies Cahokia, Henry, or older glacial drift or bedrock; 5 to 25 feet thick	Pepton Formation (py)	Slopeswash, talus, rockfall, and slump deposits: on or at base of steep slopes in small collecting fans along Illinois River valley; postglacial; may be poorly consolidated and unstable
WISCONSIN EPISODE (~12,000 to 75,000 years B.P.)		
Silt, silt loam, and silty clay loam: unstratified to massive; yellowish brown to grayish brown; soft; lower part calcareous and may contain fossil snails; conformably overlies Balesstown Member, Taskiwa Formation, or Henry Formation; 5 to 15 feet thick	Peoria Silt (cross section only) (p)	Loess: proglacial wind-transported silt derived by wind erosion from source surfaces in Illinois River valley; blankets uplands, decreasing in thickness with greater distance from valley; generally absent from terraces, floodplains, and alluvial fans along Illinois River and from steep slopes
Silt and clay: stratified to massive; gray to olive-green; calcareous; may contain beds of diamictic, sand, or gravel and wood fragments and shells; typical thickness 5 to 40 feet	Equality Formation (cross section only) (e)	Proglacial and postglacial lake deposits: fill channels or depressions on outwash plains; may intertongue or be overlain by alluvial and slopeswash deposits
Sand, very fine to fine, well sorted, and loose: weakly stratified; yellowish brown to grayish brown; calcareous in lower part; conformably overlies Henry Formation; 5 to 15 feet thick	Henry Formation (Parkland facies) (hpi)	Sand dunes, dune fields, and sheet deposits of sand: formed by the wind; redeposited locally on Illinois River valley terraces and uplands; proglacial and postglacial origins
Sand and gravel with cobbles and boulders: stratified; yellowish brown to grayish brown; calcareous; usually clean and moderately well sorted; occasional beds of silt and clay; unconformably overlies older sand and gravel deposits; glacial diamictic, or bedrock; 10 to 20 feet thick in uplands and tributaries and 10 to 30 feet thick in Illinois River valley	Henry Formation (Mackinaw facies) (hnm)	Fluvial (river-deposited) and ice-marginal outwash deposits: in former bars and channels, and locally in terraces and tributaries to Illinois River; deposited gradually by meltwater from distant glaciers; not consistently differentiable from Peaton Formation where intervening tills are absent
Pebbly silty clay loam diamictic: unstratified; olive-brown (oxidized) to grayish brown (unoxidized); firm to hard; compact; calcareous; massive to jointed; some cobbles; few boulders; discontinuous beds of sand, gravel, silt, or clay unconformably overlies Dry Creek tongue, Taskiwa Formation, or older units; 5 to 35 feet thick	Balesstown Member Lamont Formation (lb)	Till and associated sediment: derived directly from glacial ice; deposited in gullies, excavations, and along steep slopes where overlying the Eureka Moraine (cross section C-D); occurs east of the western edge of the Eureka Moraine (cross section C-D); redeposited locally on Illinois River valley and tributary valleys where removed by postglacial erosion
Sand and gravel with cobbles: poorly sorted; yellowish brown to grayish brown; calcareous; cemented in places with calcite; grades laterally into fine-grained stratified sediments; unconformably overlies Taskiwa Formation; 5 to 20 feet thick	Dry Creek tongue Henry Formation (hds)	Fluvial and ice-marginal outwash deposits: in channel fills and along former glacial margins; exposed on steep slopes where overlying Peoria Silt and Balesstown Member have been eroded; occurs throughout the uplands of the area and locally in the Illinois River valley where not removed by postglacial erosion; may include Pepton Formation deposits that were too small to be mapped at this scale
Pebbly loam diamictic: unstratified; reddish brown (oxidized) to dark brownish gray with distinctive reddish cast (unoxidized); firm to hard; calcareous; some cobbles; few boulders; includes discontinuous beds of stratified sand, silt, or clay; lower 20 to 30 feet commonly more silty than upper part; usually lacks reddish cast and may contain dispersed wood fragments and gastropod shells; unconformably overlies Ashmore Tongue, Morton Tongue, Roxana Silt, or older deposits; 25 to 150 feet thick	Taskiwa Formation (t)	Till and associated sediment derived directly from glacial ice: exposed in gullies, excavations, and along steep slopes where overlying Peoria Silt and Balesstown Member have been eroded; occurs throughout the uplands of the area and locally in the Illinois River valley where not removed by postglacial erosion; may include Pepton Formation deposits that were too small to be mapped at this scale
Fine to coarse sand, sand and gravel: occasional cobbles; yellowish brown to grayish brown; calcareous; few boulders; water saturated; occasional armored "bill balls" in the upper part; calcite cemented in places; overlies Morton Tongue, Peaton Formation, Roxana Silt, or bedrock; 5 to 100 feet thick	Ashmore Tongue Henry Formation (h-a)	Fluvial and ice-marginal outwash deposits: in former bars and channels of Ancient Mississippi River; deposited by meltwater from advancing Wisconsin Episode glaciers in the Pinon and Middle Illinois Bedrock Valleys (Berg et al. 2006); also sheets and channel fills beneath Taskiwa diamictic; widespread in subsurface; differentiable from underlying Peaton Formation where intervening tills are absent
Silt and silt loam: massive to crudely stratified; yellowish brown (oxidized) to brownish gray (unoxidized); calcareous; compact and in places jointed; may contain fossil snails, humus, and/or wood; conformably overlies the Roxana Silt; 3 to 6 feet thick	Morton Tongue Peoria Silt and Roxana Silt (cross section only) (pmr)	Loess: Morton Tongue of Peoria Silt (upper part of map unit); proglacial eolian dust deposited on a former land surface; includes peat where deposited in poorly drained areas or silty slopeswash sediment where deposited on or near slope; originally widespread but only locally preserved in subsurface
Silt, silt loam, and sandy silt: massive to crudely stratified; reddish brown (oxidized) to gray or greenish gray (grayed) or black; leached to weakly calcareous; often containing humus, wood, or peat (Roben Member); conformably overlies Peaton Formation or Roxana Silt; 3 to 8 feet thick	Peaton Formation (cross section only) (p)	Fluvial and ice-marginal outwash deposits: in former bars and channels of Ancient Mississippi River and on uplands; deposited by meltwater from Illinois Episode glaciers; occurs above and intertongues with Glasford Formation; three tongues are widespread in the subsurface; Ancient Mississippi River valley but are differentiable from one another or from Ashmore Member only where intervening Illinois Episode tills are present
Fine to coarse sand, sand and gravel, and cobbles: yellowish brown to grayish brown; calcite cemented in places; unconformably overlies and intertongues with Roxana Silt, Peaton Member, or Kelleysville Member; may overlie bedrock; upper part weathered in profile of Sangamon Geosol; 2 to 20 feet thick	Glasford Formation (cross section only) (g)	Till and associated subglacial and ice-marginally deposited sediment: derived directly from glacial ice; widespread but discontinuous, having been largely removed by subsurface erosion and glacial erosion; well exposed in portions of Rattlesnake Hollow, Marshall County, Sec. 27, T12N, R9E (McKay et al. 2008)
Pebbly loam to silty clay loam diamictic: some cobbles; few boulders; unstratified; yellowish brown (oxidized) to dark brownish gray (unoxidized); calcareous; firm to hard; discontinuous beds of sand, silt, or clay; conspicuous coal clasts; intertongues with Peaton Formation and overlies older deposits or bedrock; upper part weathered in profile of Sangamon Geosol; 5 to 15 feet thick		
ILLINOIS EPISODE (~130,000 to 200,000 years B.P.)		
Shale, clay, sandstone, limestone, coal	Carbonate and Modesto Formations (p)	Lithified marine, estuarine, deltaic, fluvial, and swamp deposits
PRE-QUATERNARY DEPOSITS		
PENNSYLVANIAN PERIOD (~280 to 315 million years B.P.)		

Base map compiled by Illinois State Geological Survey from digital and paper data provided by the United States Geological Survey.
 North American Datum of 1983 (NAD 83)
 Projection: Transverse Mercator
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Geology based on field work by E. Donald McKay III, Richard C. Berg, C. Pius Weibel, and Andrew J. Stumpf, 2001-2007, and compiled from 1:24,000 scale maps (McKay et al. 2007a, 2007b, 2007c; Stumpf 2010).
 Digital cartography by Jennifer E. Carrell and Jane E.J. Dornier, Illinois State Geological Survey.

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A—B Line of cross section
 Note: The county number is a portion of the 12-digit API number file in the ISGS Geographical Records Unit. Online well and boring records are available from the ISGS Web site.