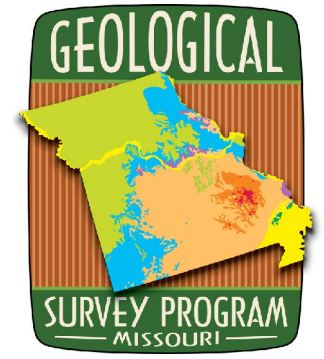
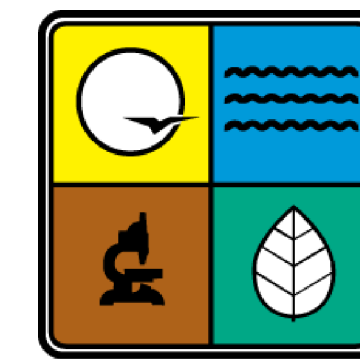


**SURFICIAL MATERIAL GEOLOGIC MAP OF THE CAHOKIA 7.5' QUADRANGLE
ST. LOUIS CITY, MISSOURI AND ILLINOIS**

Geology and Digital Compilation by
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**THIS MAP WAS PRODUCED UNDER A COOPERATIVE
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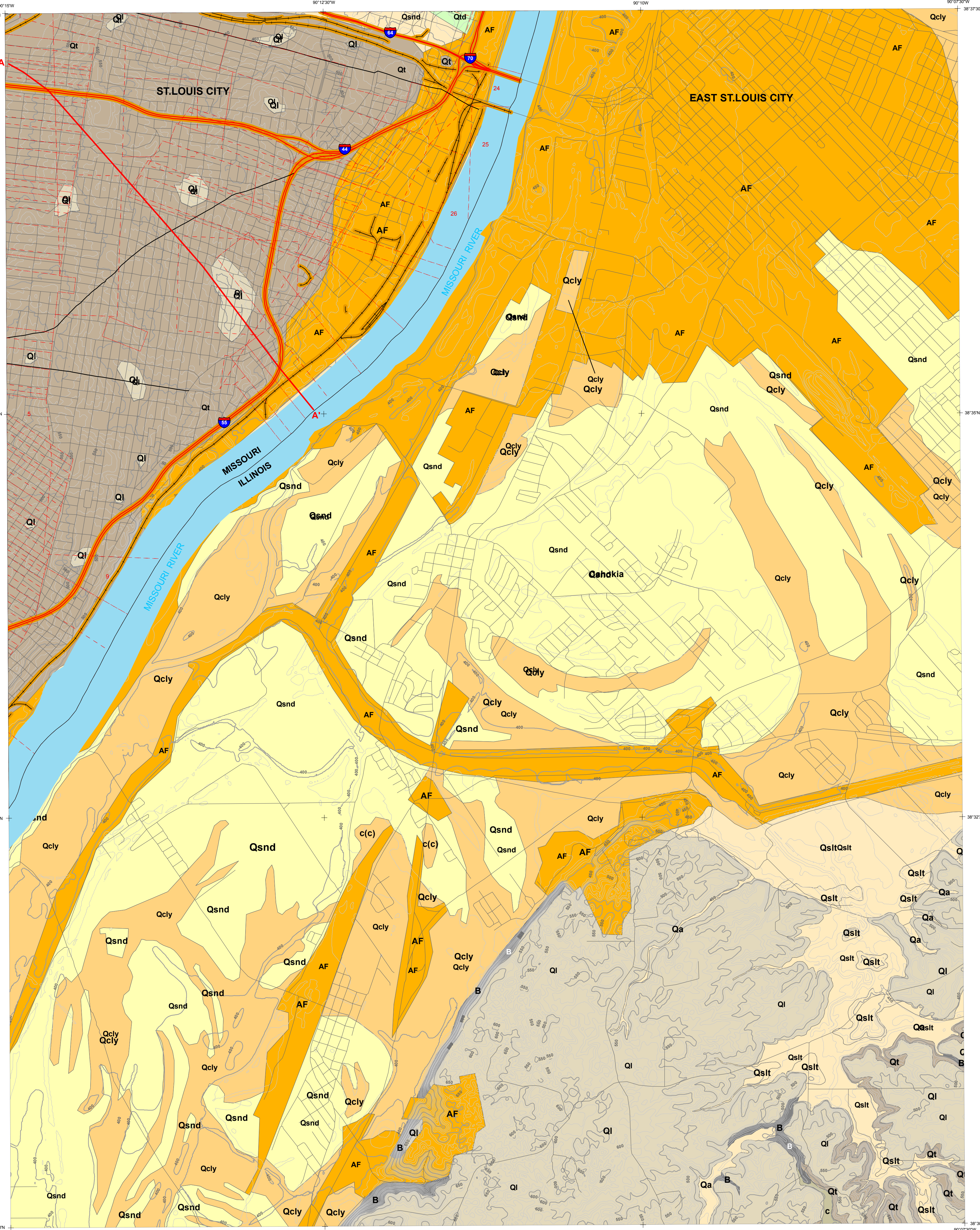
PHYSIOGRAPHY

The Cahokia quadrangle includes part of the large floodplain of the Mississippi River and loess covered uplands. The floodplain is greater than four miles wide in Illinois with only a small portion residing on this quadrangle in Missouri. The quadrangle lies within the Dissected Till Plains Section of the Central Lowland Province of the Interior Plains Physiographic Division. The lowest recorded elevation of just less than 400 feet mean sea level (msl) occurs along the edge of the Mississippi River. The highest elevation on the quadrangle in Missouri occurs on the loess covered uplands and is just over 570 feet msl in the northwest corner of the quadrangle. Total relief on the Cahokia quadrangle is approximately 300 feet.

DESCRIPTION OF MAP UNITS

- AF** **ARTIFICIAL FILL** – This unit comprises artificially emplaced fill material and is composed of a mixture of heterogeneous clay, silt, sand and gravel in various quantities. This unit may reach 40 feet in total thickness and comprises the material for highway and railroad beds and waste water treatment facility fill. This artificial fill has typically been placed on undisturbed materials.
- Qcly** **QUATERNARY CLAY-CAPPED ALLUVIUM** – This unit has been deposited by the Mississippi river. The approximate upper 15 feet of these deposits are composed predominantly of clay with variable amounts of silt and organic material. The material residing below the clay is predominantly sand and gravels to the top of bedrock and can be up to 120 feet thick near the large river. The water table is approximately five to 15 feet below ground surface here resulting in an interval of saturated sand and gravels greater than 100 feet thick.
- Qsilt** **QUATERNARY SILT-CAPPED ALLUVIUM** – This unit has been deposited by the Mississippi River and its tributaries. The approximate upper 15 feet of these deposits are composed predominantly of silt with variable amounts of clay and organic material. The material residing below the silt is predominantly sand and gravels to the top of bedrock and can reach 120 feet thick. The water table is approximately five to 15 feet below ground surface resulting in an interval of saturated sand and gravels greater than 100 feet thick.
- Qsnd** **QUATERNARY SAND-CAPPED ALLUVIUM** – This unit has been deposited by the Mississippi River and its tributaries. The composition of this unit is predominantly sand with variable amounts of clay, silt and organic material in the upper 15 feet. In the eastern portion of the map in Illinois. The thickness of this unit reaches 130 feet along the large rivers. The water table is approximately 15 feet below ground surface here resulting in an interval of saturated sand greater than 100 feet thick.
- Ql** **QUATERNARY LOESS** – This unit is a wind-blown deposit of silt and clayey silt with occasional pockets of clay, sand and gravel. The unit is composed of two separate loess layers, the Roxana below and the Peoria above (Goodfield, 1965). The total thickness of the two units may reach 70 feet. The Roxana is higher in clay content and may have a paleosol developed in the upper few feet. The contact between the two units forms a potential slide plane in areas of higher slope. The loess overlies Mississippian-age bedrock. The Mississippian units are limestone and shale creating unique environments. Where the loess is thin, the limestone may be karstic. Where the underlying unit is predominantly shale, water will perch destabilizing the contact zone. Where the loess rests upon shale, the slide potential is increased.
- Qt** **QUATERNARY TILL** – Deposits of clayey till are located in the northwestern portion of the quadrangle. The quaternary till was deposited as a drift blanket during glaciation north of the Missouri River. The till is a mixture of clay, silt, sand, gravel and cobbles that covers the bedrock surface. The till varies in thickness from 10 to 25 feet with the thickest deposits inland from the river and depressions in the bedrock surface.
- Qtd** **QUATERNARY TERRACE DEPOSIT** – The terrace deposits in the quadrangle are slightly different than previously mapped terrace deposits. All were deposited during fluvial events leaving the terrace above low flow stage of the river. However, the terrace deposits in this quadrangle have a lacustrine signature of sensitive organic clays approximately 20 feet below the surface. After high stage flow dropped to normal, low lying areas within the terrace were filled with organic clay material. This zone has a very low shear wave velocity and lies under many of our constructed surfaces.
- B** **BEDROCK** – The exposures in this quadrangle are typically found in areas of high topographic relief near tributaries or in quarries.

A—A' Line locates the placement of the cross section with end line symbols.



Produced by the Missouri Department of Natural Resources, Division of Geology and Land Survey, Geological Survey Program. Funded by the United States Geological Survey, National Earthquake Hazard Reduction Program, Award # 02BAP0012, 2009. Topography was derived from a USGS 10 meter Digital Elevation Model using contouring software. Features were edited to the USGS, NMA 2881 10 SW/1982, 1988, Cahokia 7.5' quadrangle and digital aerial photographs from 2007 and 2009. Field checked in 2010. Universal Transverse Mercator (UTM), Zone 15 North American Datum 1983 (NAD 83).
SCALE 1:24,000
Road and Contour Symbology
Interstate Highways
Missouri Highways
Light Duty Roads
Elevation Contour
Index Contour
Contour Interval 10 Feet

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