

SURFICIAL MATERIAL GEOLOGIC MAP OF THE GRANITE CITY 7.5' QUADRANGLE ST. LOUIS CITY AND COUNTY, MISSOURI

Geology and Digital Compilation by
Scott Kaden and Edith Starbuck

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
GEOLOGICAL SURVEY PROGRAM
P.O. BOX 250, ROLLA, MO 65402-0250
573-368-2100

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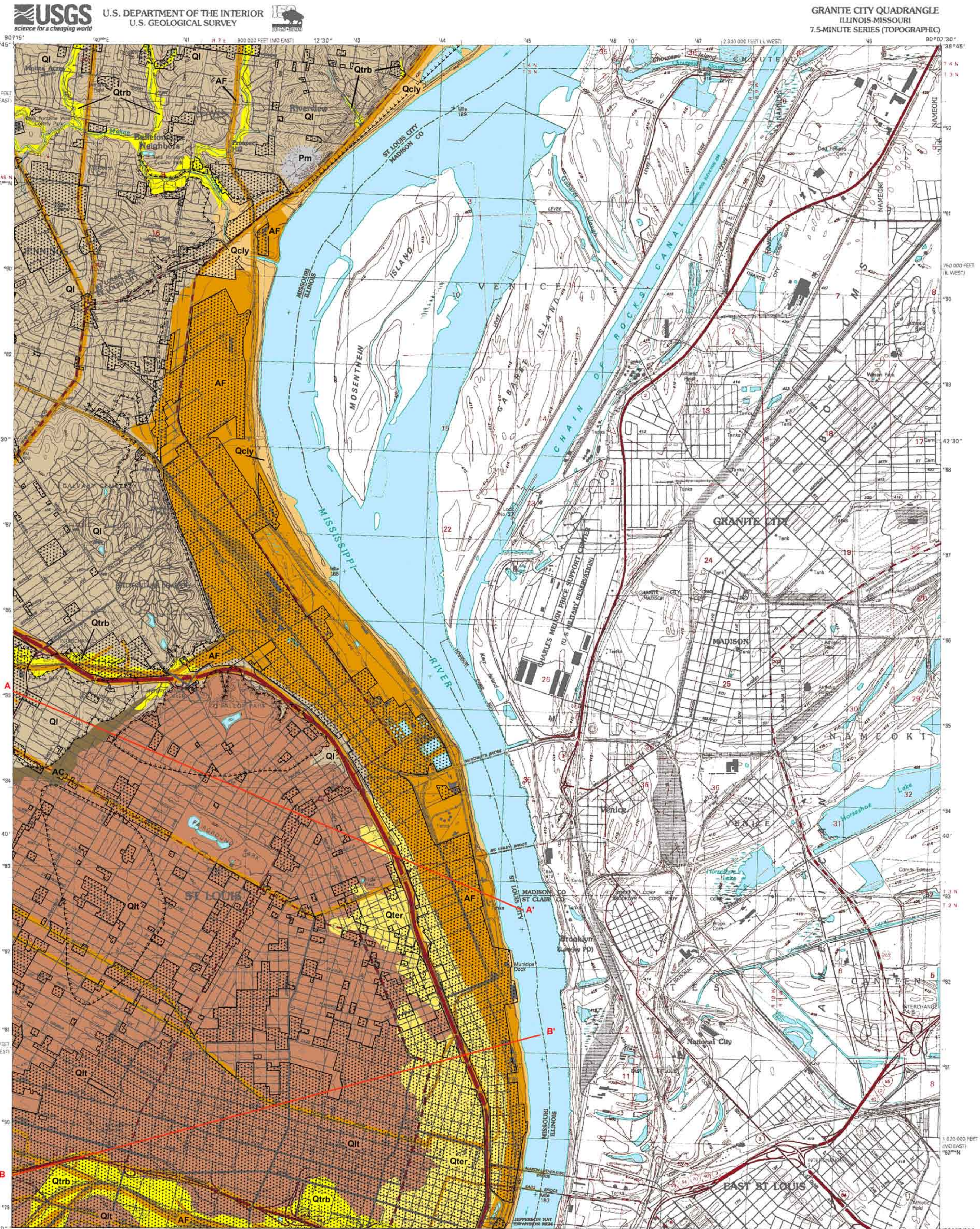
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PHYSIOGRAPHY
The city of St. Louis covers a large part of the Missouri portion of the Granite City quadrangle. Much of the topography of the city of St. Louis has been strongly modified from its natural state. The Mississippi River floodplain, terraces and the adjacent upland area have been affected. The Granite City quadrangle includes part of a large floodplain to the east of the Mississippi River in Illinois, with only a narrow strip of alluvium on the Missouri side between the bluff and the river. The Missouri portion of the floodplain reaches its greatest width of approximately 4,700 feet near the center of the map and narrows to less than 1,000 feet at the southern border and less than 500 near the northern border of the map. During the later part of the Pleistocene Epoch, the gently rolling upland surfaces were blanketed by wind-blown silt (loess). This loess covers pre-glacial topography developed on Pennsylvanian- and Mississippian-age rocks, as well as the large Pleistocene-age lacustrine terrace in the south-central part of the quadrangle. 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 slightly less than 400 feet mean sea level (msl) occurs along the edge of the Mississippi River at St. Louis. Elevations of nearly more than 550 feet msl occur in both the center of the southwest quarter of the quadrangle and slightly more than 500 feet msl occur in the center of the Granite City quadrangle is approximately 155 feet.

- AF** ARTIFICIAL FILL
This unit is composed of artificially emplaced fill material and is composed of a mixture of heterogeneous clay, silt, sand, gravel and demolition or quarry waste in various quantities. This unit may reach 40 feet in total thickness and comprises the material for levees, road and railroad beds, sanitary landfills and built up industrial areas in the floodplain behind levees. This artificial fill has typically been placed on undisturbed materials.
 - AC** ABANDONED CHANNEL FILL
This unit is described as a remnant of a former drainage which no longer supports a surface stream. Due to the growth of the city, artificial fill has been emplaced in the valley and overlies alluvial 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 to the top of bedrock. In the southern portion of the map, near the Eads Bridge, the thickness of this unit reaches 80 feet. The water table is approximately 15 feet below ground surface resulting in an interval of saturated sand greater than 65 feet thick. This unit is included in the cross sections as Quaternary alluvium.
 - Qtrb** QUATERNARY TRIBUTARY ALLUVIUM
This unit has been deposited by smaller tributaries in the uplands. This alluvium consists of clay, silt, sand, gravel and organic material and may reach 20 feet in thickness at the mouth of the tributaries. This unit is included in the cross sections as Quaternary alluvium.
 - Ql** QUATERNARY LOESS
This unit is a wind-blown deposit of silt and clayey silt. Local pockets of till or alluvium composed of clay, sand and gravel are also included in the unit. The unit is composed of two separate loess layers, the Roxana, below and the Peoria above. 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 bedrock of both Mississippian- and Pennsylvanian-age. The Pennsylvanian units are predominantly shale with additional thin units of limestone and sandstone. Where the loess rests upon shale, the slide potential is increased. The approximate contact between the Mississippian and Pennsylvanian units is defined by a dashed line.
 - Qter** QUATERNARY ALLUVIAL TERRACE
This unit consists of a sandy alluvial material underlying a thin layer of Peoria/Roxana loess. It is believed that this alluvium represents a terrace deposit resulting from the damming of the Mississippi River by glacial ice sheets (Goodfield, 1965).
 - Qit** QUATERNARY LOESS UNDERLAIN BY TILL
Deposits of clayey till are found in the southwest quarter of the quadrangle and are known as the Mill Creek Till (Goodfield, 1965). This unit lies directly on bedrock, reaches a maximum thickness of four feet, and overlies by up to 20 feet of Peoria/Roxana loess.
 - Pm** PENNSYLVANIAN MARMATON GROUP
On the Granite City 7.5' quadrangle, the Marmaton Group consists of shale and limestone. In the north-central portion of the map, shale of the lower Marmaton was quarried for use at a local cement plant. This plant railed limestone from the Ft. Bellefontaine Quarry on the Columbia Bottom 7.5' quadrangle which was used to manufacture cement.
- The pattern of diagonal lines denotes areas where surficial materials have been removed, altered or filled to an unknown depth in residential and commercial developments. These areas are predominantly within the upland loess areas.
- The dashed line with tick marks indicates the approximate contact between Mississippian- and Pennsylvanian-age bedrock underlying the Peoria and Roxana loess (Ql) and Quaternary Till (Qit). Tick marks are on the Pennsylvanian side of the line.
- A—A'** Lines locate the placement of the cross sections with end line symbols

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Produced by the United States Geological Survey
Topography compiled 1952. Planimetry derived from imagery taken 1990 and other sources. Photomosaic using imagery dated 1998; no major culture or drainage changes observed. PLSS and survey control current as of 1954. Boundaries, when they cooperate, verified 1999.
North American Datum of 1983 (NAD 83). Projection and 1000-meter grid. Universal Transverse Mercator, zone 15. 10 000-foot ticks. Illinois (west zone) and Missouri (east zone) Coordinate Systems of 1983.
North American Datum of 1927 (NAD 27) is shown by dashed corner ticks. The values of the shift between NAD 83 and NAD 27 for 7.5-minute intersections are obtainable from National Geologic Survey NADCON software.
Contours that conflict with revised plimetry are dashed. There may be private inholdings within the boundaries of the National or State reservations shown on this map.

SCALE 1:24,000

CONTOUR INTERVAL 10 FEET
SURFICIAL MATERIALS CONTOUR INTERVAL 10 FEET
NATIONAL GRID VERTICAL DATUM OF 1929
THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 25086, DENVER, COLORADO 80225
AND ILLINOIS GEOLOGICAL SURVEY, CHAMPAIGN, ILLINOIS 61820
AND DIVISION OF GEOLOGY AND LAND SURVEY,
MISSOURI DEPARTMENT OF NATURAL RESOURCES, ROLLA, MISSOURI 65401
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

GRANITE CITY, IL-MO
1998
NADA 250 is the SERIES 1563

