



- DESCRIPTION OF MAP UNITS**
- Qal Alluvium, moderna (Holocene)**
Silty clay and sandy silt with minor sand and sparse gravel; thickness 10 to 30 feet (3 to 10 m); found along banks of Ohio River and in floodplains along streams tributary to the Ohio River; deposited by modern historic stream processes; deposit is inset into adjacent map units; contact with adjacent units varies from sharp to poorly defined, mapped on the basis of topographic expression.
 - Qao Alluvium, natural levee deposits (Holocene)**
Sand and silt; deposited in levee ridges or overwash deposits on floodplains of major rivers (Qafp) and on the Ohio River low overwash terraces (Qot1); grades into adjacent floodplain deposits; typically sandier than adjacent floodplain deposits.
 - Qafp Alluvium, Ohio River floodplain (Holocene)**
Sand, silt, fine gravel, and clay; surface mantled by silty clay and sandy silt; surface forms the lowest well-developed terrace along the Ohio River; 30 to 45 feet (10 to 15 m) thick; overlies sand and gravel deposits of older overwash deposits; contact is sharp, drawn at scarp of next higher terrace; estimated to range in age up to 6,500 years.
 - Qot10 Outwash, Ohio River scrollwork terrace (Pleistocene - Holocene)**
Fine to coarse sand and gravel, with local lenses of silt and clay; gravel includes chert, quartzite, sandstone, siltstone, igneous and metamorphic rocks, limestone, and coal; lithologically similar to adjacent outwash terraces; surface mantled with alluvial silty sand and sandy silt; 30 to 45 feet (10 to 15 m) thick; surface forms well-developed, swell-and-swale topography on Ohio River low terrace; deposited as glacial outwash reworked during postglacial adjustment of the Ohio River; overlies older outwash deposits (Qot3); contact is approximate, inferred from surface topography.
 - Qas3 Alluvium, young slough (Holocene), abandoned Green River channel (Pleistocene - Holocene)**
Silty sand, clayey silt, and silty clay; 30 to 45 feet (10 to 15 m) thick; forms sinuous, low-lying trough (Katie Meadow Slough); represents an abandoned channel of Green River as it migrated across the low terrace (Qot1g); overlies older outwash deposits (Qot3); contact sharp, identified by surface topography; floods frequently.
 - Qot1g Outwash, Green River scrollwork terrace (Pleistocene - Holocene)**
Fine to coarse sand and gravel, with local lenses of silt and clay; gravel includes chert, quartzite, sandstone, siltstone, limestone, and coal; lithologically similar to adjacent outwash terraces; surface mantled with alluvial silty sand and sandy silt; 30 to 45 feet (10 to 15 m) thick; surface forms well-developed, swell-and-swale topography on Ohio River low terrace; deposited as point bar deposits of glacial outwash reworked by meandering postglacial Green River; overlies older outwash deposits (Qot3); contact is approximate, inferred from surface topography.
 - Qot1 Outwash, low terrace (Pleistocene - Holocene)**
Fine to coarse sand and gravel, with local lenses of silt and clay; gravel includes chert, quartzite, sandstone, siltstone, igneous and metamorphic rocks, limestone, and coal; lithologically similar to adjacent outwash terraces (Qot3); surface mantled with alluvial silty sand and sandy silt; 30 to 45 feet (10 to 15 m) thick; surface forms well-developed, low-relief terrace along Ohio River valley; deposited as glacial outwash reworked by post-glacial Ohio River; overlies older outwash deposits (Qot3); contact is sharp, drawn at scarp of next higher terrace or upland.
 - Qel Loess (Pleistocene - Holocene)**
Silty, clayey silt, and fine sand deposited by wind; typically massive; unit thickest (up to 40 feet) near Ohio River valley and thins gradually to the south; mantles bedrock upland; not mapped where locally found on lacustrine terrace (Qit) and high outwash terraces (Qot3); estimated to range in age from 22,500 to 10,000 years old based on new radiocarbon luminescence dates (Newell et al., 2005; others, pers. comm.); locally includes thin layers of loess inferred to be older than 30,000 years.
 - Qes Sand dunes (Pleistocene - Holocene)**
Very fine to fine sand; locally contains lenses of clayey silt; thickness uncertain, base not observed; deposited by wind in long, linear ridges; mantled by loess up to 15 ft (5 m) thick.
 - Qas4 Alluvium, slough (Holocene), abandoned Green River channel (Pleistocene)**
Clayey silt, silty clay, and silty sand; 30 to 45 feet (10 to 15 m) thick; forms sinuous, low-lying trough inset into Green River paleovalley (Qapg); represents an abandoned channel of Green River as it migrated across the high terrace (Qot3); overlies older outwash (Qot3); contact sharp, identified by surface topography; floods occasionally.
 - Qapg Green River paleovalley (Pleistocene)**
Silty sand, clayey silt, and silty clay with minor chert gravel; 30 to 45 feet (10 to 15 m) thick; includes Beds at Hubert Court of Ray (1965); forms broad, linear trough inset into and overlying deposits of adjacent high outwash terrace (Qot3) and lacustrine terrace (Qit); represents abandoned Pleistocene paleovalley of the Green River; contact is sharp, drawn at scarp of adjacent high outwash or lacustrine terrace; wood from about 40 feet deep has been radiocarbon dated to 23,150 ±500 ypb (Ray, 1965).
 - Qit Lacustrine terrace (Pleistocene)**
Clayey silt and silty clay; 30 to 45 feet (10 to 15 m) thick; thicker in tributary valleys; overlying complex deposits of sand, silt, clay and minor gravel; locally mantled by loess (Qel, not mapped); forms prominent low-relief terrace in tributary valleys and sheltered portions of Ohio River valley; unit deposited in lacustrine and slackwater environments associated with alluviation of the Ohio River valley by glacial outwash and resulting impoundment of tributary valleys; underlying material is of apparent mixed fluvial and fluvio-lacustrine origin; contact with fluvial units is sharp, and drawn on scarps separating adjacent terraces; contact with collan and upland units (Qel, Qes) is gradational and approximate, inferred by surface topography; estimated to range in age from >23,000 to 18,000 years old.
 - Qitm Marginal lacustrine deposits (Pleistocene)**
Clayey silt, silt, and fine sand; thickness uncertain; surface forms moderate slope and benched upland areas bordering lacustrine deposits (Qit); represents complex transition between lacustrine deposits and loess mantling upland; deposits include loess, loess-derived silt/clay, colluvium, lacustrine silt and clay, and lacustrine shoreline deposits; contacts gradational and approximate, mapped on the basis of topographic expression.
 - Qot3 Outwash, high terrace (Pleistocene)**
Fine to coarse sand and gravel, with local lenses of silt and clay; gravel includes chert, quartzite, sandstone, siltstone, igneous and metamorphic rocks, limestone, and coal; lithologically similar to adjacent outwash terraces; surface mantled with collan and alluvial silty sand and sandy silt; up to 170 feet (52 m) thick; surface forms well-developed, dissected terrace along Ohio River valley; deposited as glacial outwash; represents maximum valley filling by glacial outwash valley train deposits; overlies bedrock (Pz) or older pre-glacial alluvial deposits (not shown); contact is sharp, drawn at scarp of adjacent terrace or upland; age estimated to be 120,000 to 22,000 years old.
 - Pz Bedrock (Pennsylvanian)**
Consolidated shale, sandstone, coal, and overlying poorly sorted regolith, comprising the core of the uplands in the study area; includes areas of loess thinner than 3 ft (1 m).
 - af1 Artificial fill, engineered fill (Modern)**
Unconsolidated material used as fill for the construction of roads, railroads (not mapped), or buildings (not mapped).
 - af2 Artificial fill, mine spoil (Modern)**
Disturbed bedrock and regolith produced from coal mining operations or loess borrow pits
 - New water (Modern)**
Areas of former land which have been removed by active erosion or dredging since the completion of topographic mapping.

- EXPLANATION**
- State boundary
 - River bank
 - Contact, observed
 - Contact, approximately located
 - Contact, inferred
 - Faults (concealed)
 - Railroads
 - Roads
 - Parkway or Federal highway
 - State highway
 - County roads, city streets
 - Surface observations
 - Landform and soil
 - Contact, observed
 - Landform only
 - Lithologic data
 - New data, this study
 - KGS databases
 - Abandoned shale pit
 - Abandoned mine shaft
 - Geochronology locations
 - Cross section location
 - Seismic refraction profile

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Topographic base from USGS Tagged Vector Contour file for Owensboro West quadrangle.
Highway locations from Kentucky Transportation Cabinet digital files.
Universal Transverse Mercator projection, zone 16, North American Datum of 1927.

