SURFICIAL GEOLOGY OF THE ROCKY HILL QUADRANGLE, SOMERSET AND MERCER COUNTIES, NEW JERSEY

**MAP UNITS**

- **Contact**—Contacts of alluvium and lower terrace deposits are well-defined by landforms and are drawn from 1:12,000 scale aerial stereophotos. Contacts of other units are shown.
- **Bedrock strike ridge**—Low ridge parallel to strike of bedrock. Drawn from airphotos.
- **Raritan river terraces**—Terraces along the upper Raritan River. Drawn from airphotos.
- **Pensauken lag**—Pebbles and a few cobbles of quartz, quartzite, and chert left from erosion of the Pensauken Formation. Only concentrated lags are mapped; sparsely distributed lag pebbles are widespread below 150 feet in elevation in the Millstone Valley.
- **Quarried rock, and stripped surficial material** occur within perimeter.

**MAP SYMBOLS**

- Small arrows indicate alluvial and terrace deposits and are used to show the orientation and extent of alluvial and terrace deposits.
- Arrows indicate slope or strike direction, and are used to show the orientation and extent of slope or strike direction.

**Bedrock**

- **Weathered diabase**—Silty clay to clayey sand; yellow, reddish yellow, light gray; some to many angular to subrounded pebbles, cobbles, and small boulders of diabase. On Rocky Hill, below 330 feet in elevation, a few quartz, quartzite, and chert pebbles and cobbles left from erosion of a late Miocene formation. As much as 20 feet thick.

**Surficial Deposits**

- **Alluvium (Holocene and late Pleistocene)**—Sand, silt, minor clay; yellowish brown, reddish brown, dark brown to black; as much as 20 feet thick. Deposited in floodplains, channels, and groundwater seepage areas.
- **Alluvium and boulder lag (Holocene and late Pleistocene)**—Silt, sand, minor clay and organic matter, dark brown, brown, very pale brown, with many rounded to subrounded boulders and cobbles of diabase and, locally, hornfels. As much as 10 feet thick (estimated). Deposited in floodplains, channels, and ground-water seepage areas on Sourland Mountain and Rocky Hill. Boulders are residues from winnowing of weathered diabase.
- **Alluvial fan deposits (Holocene and late Pleistocene)**—Sand, silt; reddish brown, brown; and pebble gravel. As much as 15 feet thick. Forms small fans at mouths of steep streams.
- **Eolian deposits (late Pleistocene and Holocene)**—Fine-to-medium sand, very pale brown to reddish yellow; pebble gravel and minor cobble gravel. Sand is chiefly quartz and red and gray shale. As much as 15 feet thick.
- **Shale colluvium (late Pleistocene)**—Sandy, clayey silt; reddish brown, brown, gray; many angular chips and fragments of shale and, locally, hornfels. As much as 10 feet thick. Deposited by downslope movement.
- **Diabase colluvium (middle and late Pleistocene)**—Sandy, clayey silt to sandy, silty clay; reddish and, locally, gray hornfels. As much as 25 feet thick. Deposited by downslope movement of weathered material.
- **Pensauken formation (Pliocene)**—Clay, sand, and silt; reddish yellow; pebble gravel and minor cobble gravel. As much as 15 feet thick. Deposited in a dissected river plain.
- **Penlak Formation (Pliocene)**—Clay, silt, and sand; reddish yellow; pebble gravel and minor cobble gravel. As much as 15 feet thick. Deposited in a dissected river plain.
- **Pulaski sandy deposit (Pleistocene)**—Sand, silt, and clay; reddish brown, brown; pebble gravel and minor cobble gravel. As much as 15 feet thick. Deposited in a dissected river plain.
- **Vigil formation (Miocene)**—Clay, sand, and silt; reddish yellow; pebble gravel and minor cobble gravel. As much as 15 feet thick. Deposited in a dissected river plain.
- **Weathered diabase**—Silty clay to clayey sand; yellow, reddish yellow, light gray; some to many angular chips and fragments of shale and, locally, hornfels, and, below 150 feet in elevation in the Millstone Valley. As much as 20 feet thick.

**Age of Unit Indicated in Parentheses. For Units spanning more than one Period, Principal Age is Listed First.**

**MAP REVISIONS**

- Age and thickness of units were determined from their stratigraphic relations and from the work of other geologists of the area.
- Such revisions were based on the geologic maps and field data of the New Jersey Geological Survey, U.S. Geological Survey, and other organizations.

**MAPMENTS**

- The map was prepared in cooperation with the New Jersey Geological Survey, U.S. Geological Survey, and other organizations.

**MAP REFERENCES**

- Alluvial deposits shown.
- Surficial deposits shown.
- Bedrock deposits shown.

**NOTE**

- This map is a revision of the geologic map of the Rocky Hill quadrangle, published in 1970 by the New Jersey Geological Survey. The revision is based on updated field data and aerial photography.