DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I–742

The purpose of this map is to provide information on the configuration of the bedrock surface and on the general texture of the overlying unconsolidated deposits for foundation engineers, hydrologists, planners, and others requiring a knowledge of subsurface conditions. The unconsolidated deposits are classified on the map in four textural categories. Each of the four categories refers to the dominant texture of the entire thickness of unconsolidated deposits, not to the texture of the near-surface deposits. The thickness of unconsolidated deposits may be approximated by subtracting the bedrock altitude from the land-surface altitude. The map is based on data collected during a water resources investigation of the basin (Williams, Farrell, and Willey, 1972), published geologic maps shown in the index map, and on the senior author's geologic reconnaissance mapping. The subsurface data include domestic and municipal wells, test wells, and borings, including more than 200 auger holes drilled by the Geological Survey (Williams and Willey, 1970). Seismic refraction data were used where available. Although the data are reliable and closely spaced in a few areas, much of the basin lacks the data necessary to show the details of the bedrock topography and of stratigraphic changes in the unconsolidated deposits. The map, therefore, is intended to show only the general subsurface conditions to be expected and is not intended to supplant standard test drilling used in hydrologic investigations and in foundation engineering.

The bedrock surface, except where exposed at the present land surface, is mantled by an average thickness of about 15 feet of till that was deposited as glaciers moved southeastward and southward across the basin. Some of the preglacial stream valleys in bedrock were undoubtedly scoured by the glacier during its advance. These bedrock valleys were the loci of deposition of thick stratified deposits laid down during the retreat of the glaciers. Many of these valleys and smaller depressions in the surface of the till were filled by temporary ponds and large lakes. The characteristic stratified deposits, therefore, are glaciolacustrine bottom sediments and deltaic deposits in which the materials range from sand or gravel near the surface to fine sand, silt, and clay at depth. Deposits of outwash sand and gravel that are consistently coarse with depth are limited to the northern part of the basin and to certain uplands in the central part of the basin. Because of newly obtained subsurface information, geologic interpretations of the stratified deposits in some of the earlier geologic reports have been altered. With acquisition of additional subsurface data, the writers expect that refinements in detail will be made and that in some areas reinterpretations of bedrock configuration and texture of the deposits may be necessary.

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Base from U.S. Geological Survey 1:24,000 quadrangle maps; see index below

INDEX TO GEOLOGIC MAPPING

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BEDROCK GEOLOGIC MAP

EXPLANATION

Nonmarine sedimentary rocks of the Narragansett and Norfolk basins
Chiefly Rhode Island Formation consisting of feldspathic sandstone, shale, siltstone, pebble to boulder conglomerate, and local coal beds; underlain by basal Pondville Conglomerate and red beds of Wamsutta Formation in Norfolk and northern border of Narragansett basins and overlain by Dighton Conglomerate in southwestern part of map area

Volcanic rocks
Altered lava flows of rhyolitic or quartz latite in Brockton area

Granitic rocks
Chiefly medium to coarse grained Dedham Granodiorite which is locally porphyritic and in northeast part of area is gneissic. Includes porphyritic microgranite in the Brockton area and more basic igneous rocks along the northern boundary of Narragansett basin-such as Salem Gabbrodiorite

Approximate contact

Basin boundary

Bedrock map based on published descriptions referred to in index to geologic mapping and on additional mapping and subsurface information

PENNSYLVANIAN

PRE-PENNSYLVANIAN

EXPLANATION

Sandy gravel
Dominantly stratified beds and lenses of well-sorted fine to coarse sandy gravel; includes numerous beds and lenses of sand, silt, and clay

Sand
Dominantly stratified beds and lenses of well-sorted fine to coarse sand; includes some beds and lenses of gravel, silt, and clay

Fine sand, silt, and clay
Dominantly stratified beds and lenses of fine to very fine sand, silt, and clay; includes few beds and lenses of gravel and medium to coarse sand

Till
Unstratified, poorly sorted mixture of silt, sand, angular to rounded pebbles, cobbles, and boulders forming a mantle of glacial till on bedrock; near margin of unit and locally elsewhere till is mantled by thin stratified gravel, sand, silt, and clay

Approximate contact

Bedrock outcrops

Approximate bedrock contact
(See inset map for identification of bedrock lithology)

100
Bedrock contour
Shows altitude of bedrock surface. Dashed where beneath bodies of water. Contour interval 25 feet. Datum is mean sea level

89
Control point
Number is altitude of bedrock surface, in feet above or below mean sea level

22
Control point
Number is altitude of bottom of hole that did not reach bedrock surface, in feet above or below mean sea level

Basin boundary

SCALE 1:48 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

LOCATION OF TAUNTON RIVER BASIN

INDEX MAP OF MASSACHUSETTS

BEDROCK TOPOGRAPHY AND TEXTURE OF UNCONSOLIDATED DEPOSITS, TAUNTON RIVER BASIN, SOUTHEASTERN MASSACHUSETTS

By
J. R. Williams and R. E. Willey

1973

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For sale by U. S. Geological Survey, price 75 cents