GROUND-WATER AVAILABILITY IN CONNECTICUT

NATURAL RESOURCES CENTER, DEPARTMENT OF ENVIRONMENTAL PROTECTION
in cooperation with the UNITED STATES GEOLOGICAL SURVEY

1978

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EXPLANATION

GROUND-WATER AVAILABILITY

This map is a geologic and hydrologic guide to areas suitable for exploration for the development of ground-water resources.

Connecticut is underlain by two major types of water-bearing materials; bedrock and unconsolidated deposits. The entire state is underlain by either sedimentary or crystalline (igneous or metamorphic) bedrock which is discontinuously covered by unconsolidated stratified drift or till deposits.

An aquifer is a geologic formation or deposit that contains sufficient saturated permeable materials to yield usable quantities of water to wells. This map is based on an aquifer's ability to yield a given quantity of water to a well with no consideration of the quality of that water. Some aquifers have been rated low for yielding water that is unsuitable in quality for many uses. For example, aquifers in close proximity to Long Island Sound may contain water with undesirable concentrations of salinity.

Unconsolidated aquifers are shown on the large map (1:125,000). Bedrock aquifers are shown on the inset map (1:500,000). For reference, the bedrock aquifer contact lines are also shown on the large map.

UNCONSOLIDATED AQUIFERS

Stratified drift is the most productive source of ground water for individual wells in the state. The highest yields are generally obtained from the thick coarse-grained deposits located in major streams. Stratified drift occurs almost exclusively in stream valleys and lowlands. Till, popularly called "hardpan", forms a widespread but discontinuous cover over bedrock throughout most of the upland areas and extends beneath stratified drift in valleys and lowlands. At favorable locations, wells tapping till can provide small supplies for domestic use.

AREAS UNDERLAIN BY DEPOSITS KNOWN OR INFERRED TO BE CAPABLE OF YIELDING MODERATE TO VERY LARGE AMOUNTS OF WATER (50 - 2000 GALLONS PER MINUTE (3.15 - 126.18 LITERS PER SECOND)) TO INDIVIDUAL WELLS.

COARSE-GRAINED STRATIFIED DRIFT - composed dominantly of sand or sand and gravel. These deposits have a water saturated thickness of 10 feet (3.05 meters) or greater. Orange areas are thought to be coarse-grained but hydrogeologic data are incomplete and verification requires further investigation.

COARSE - GRAINED STRATIFIED DRIFT OVERLAIN BY FINE-GRAINED STRATIFIED DRIFT - composed dominantly of sand or sand and gravel overlain by fine to very fine sand, silt and clay. These deposits have a water saturated thickness of 10 feet (3.05 meters) or greater. In many areas data are insufficient to identify this unit and it may occur in more localities than shown.

AREAS UNDERLAIN BY DEPOSITS KNOWN TO BE CAPABLE OF YIELDING MODERATE TO LARGE AMOUNTS OF WATER (50 - 500 GALLONS PER MINUTE (3.15 - 31.55 LITRES PER SECOND)) TO INDIVIDUAL WELLS.

COARSE - GRAINED STRATIFIED DRIFT OVERLYING FINE-GRAINED STRATIFIED DRIFT - composed dominantly of sand or sand and gravel underlain by fine to very fine sand, silt and clay. These deposits have a water saturated thickness of 10 feet (3.05 meters) or greater. In many areas data are insufficient to identify this unit and it may occur in more localities than shown.

AREAS UNDERLAIN BY DEPOSITS KNOWN OR INFERRED TO BE CAPABLE OF YIELDING SMALL TO MODERATE AMOUNTS OF WATER (1 - 100 GALLONS PER MINUTE (0.06 - 6.31 LITERS PER SECOND)) TO INDIVIDUAL WELLS.

FINE-GRAINED STRATIFIED DRIFT - composed dominantly of fine to very fine sand, silt and clay. These deposits have a water saturated thickness of 10 feet (3.05 meters) or greater. Orange areas are thought to be fine-grained but hydrogeologic data are incomplete and verification requires further investigation.

TILL AND STRATIFIED DRIFT - composed of mixtures of gravel, sand, silt, and clay. This unit includes all areas of stratified drift that have a water saturated thickness of less than 10 feet (3.05 meters) and areas of exposed bedrock.

CONTACT - unconsolidated aquifer

CONTACT - bedrock aquifer

Bedrock aquifer contacts shown on large map for reference. See inset map for descriptions.

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Scale 1:125,000
1 inch equals approximately 2 miles

5 0 5 10 MILES
5 0 5 10 15 KILOMETERS

Contour interval 50 feet
NATIONAL GEODETIC VERTICAL DATUM OF 1929

BASE MAP SOURCE DATA

Compiled, edited, and published by the Geological Survey in cooperation with State of Connecticut agencies
1927 North American datum. Polyconic projection
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

COMPILED IN 1965
REVISED IN 1974

25,000-foot grid based on Connecticut coordinate system
10,000-metre Universal Transverse Mercator grid ticks,
zones 18 and 19

BEDROCK AQUIFERS

Scale 1:500,000
1 inch equals approximately 8 miles

10 0 10 Miles
10 0 10 Kilometres

EXPLANATION

Bedrock is the most commonly utilized source of ground water in the state. Most homes, shops, schools and other establishments that require only small to moderate amounts of water are supplied by individual wells drilled in bedrock. Yields of bedrock wells vary in greatness and reliability by variable thicknesses (1 to over 400 feet (0.31 to over 121.92 metres)) of unconsolidated deposits.

AREAS UNDERLAIN BY BEDROCK KNOWN OR INFERRED TO BE CAPABLE OF YIELDING SMALL TO LARGE AMOUNTS OF WATER (1 - 200 GALLONS PER MINUTE (0.06 - 12.63 LITERS PER SECOND)) TO INDIVIDUAL WELLS.

SEDIMENTARY ROCKS - such as sandstone, siltstone and shale that contain and transmit water in open fractures, pore spaces and bedding planes. The area of sedimentary rocks in western Conn. includes some interlayered basaltic rocks.

METAMORPHIC CARBONATE ROCKS - such as marble that contain and transmit water in open fractures.

AREAS UNDERLAIN BY BEDROCK KNOWN OR INFERRED TO BE CAPABLE OF YIELDING SMALL TO MODERATE AMOUNTS OF WATER (1 - 100 GALLONS PER MINUTE (0.06 - 6.31 LITERS PER SECOND)) TO INDIVIDUAL WELLS.

METAMORPHIC AND IGNEOUS CRYSTALLINE ROCKS - such as gneisses, schists, and granites that contain and transmit water in open fractures.

BASALT (trap rock) - contains and transmits water in open fractures and joint systems.

CONTACT - bedrock aquifers

Bedrock map data was compiled from published sources and from unpublished preliminary data by Leo M. Hall (carbonate rocks) and by Gross Valley (New Haven Water Company) (Gneissoid).