DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
RHODE ISLAND WATER RESOURCES BOARD

WATER RESOURCES INVESTIGATIONS 18-74
PLATE 1

GEOHYDROLOGIC MAP OF THE BRANCH RIVER BASIN, RHODE ISLAND

Providence, Rhode Island

EXPLANATION

TRANSMISSIVITY OF THE STRATIFIED-DRIFT AQUIFER

Uncolored areas are either till and bedrock or unsaturated stratified drift. To convert values given in feet squared per day to gallons per day per foot, multiply by 7.48.

Feet squared per day	Meters squared per day
0-2500	0-230
2500-5000	230-460
5000-8000	460-740
>8000	>740

40 — LINE OF EQUAL SATURATED THICKNESS
Dashed where control points are sparse
Interval 20 feet

S — Well at which transmissivity estimated from specific capacity data

L — Well or boring at which transmissivity estimated from lithologic log

R — Well with continuous water-level recorder

Nsm 310 — Well and U.S. Geological Survey town number referred to in report

1-1115 — Continuous-record gaging station and identification number

Area where till is 40 feet (12 m) or more thick

Area where till is 40 feet (12 m) or more thick and reportedly underlain by stratified sand and gravel

BOUNDARY OF MODEL AQUIFER

SUBBASIN BOUNDARY

BASIN BOUNDARY

POTENTIAL YIELDS[1] OF WELLS FOR INDICATED COMBINATIONS OF SATURATED THICKNESS AND TRANSMISSIVITY (See page v for metric conversion factors.)

SATURATED THICKNESS IN FEET	TRANSMISSIVITY, IN FEET SQUARED PER DAY			
	0-2500	2500-5000	5000-8000	>8000
	YIELD, IN GALLONS PER MINUTE			
0 - 20	0 - 50	0 - 100	---	---
20 - 40	0 - 75	50 - 200	75 - 300	150 - 400
40 - 60	0 - 100	75 - 300	100 - 400	300 - 600
60 - 80	---	100 - 400	300 - 500	400 - 700
80 - 100	---	---	400 - 700	500 - 900

[1]Calculated for a pumping period of 200 days assuming (1) withdrawal is entirely from storage in an aquifer of infinite areal extent, (2) specific yield of the aquifer is 0.2, (3) well diameter is 1 foot, (4) available drawdown is three-fourths of the saturated thickness, and (5) well is carefully constructed and developed. Computed drawdowns for indicated pumping rates included adjustments for effects of aquifer dewatering, partial penetration of the aquifer by the well screen, and well entrance losses.

MAP VALUES OF SATURATED THICKNESS AND TRANSMISSIVITY MAY BE USED IN CONJUNCTION WITH ABOVE TABLE TO ESTIMATE RANGE OF POTENTIAL YIELDS OBTAINABLE FROM A WELL AT A PROPOSED SITE. THE TABLE IS INTENDED ONLY AS A GUIDE AND SHOULD NOT BE USED AS A SUBSTITUTE FOR EXPLORATORY TEST DRILLING.

SCALE 1:24,000

1 ½ 0 1 MILE

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

DATUM IS MEAN SEA LEVEL

Base from U.S. Geological Survey, 1:24,000
Blackstone, 1953; Oxford, 1953; Uxbridge, 1953; Georgiaville, 1954; Chepachet, 1955; Clayville, 1955; and Thompson, 1955.