

EXPLANATION
See accompanying table for detailed descriptions and for engineering properties. Heavy border around box indicates unit present on this map. An asterisk (*) precedes the explanation for symbols not present on this sheet.

SURFICIAL DEPOSITS IN NORTHERN NEW JERSEY, SOUTHEASTERN NEW YORK, AND NEW ENGLAND

Qt	Till overlying bedrock
Qto	Younger ground moraine
Qwt	Till overlying sand and gravel
Qw	Younger ground moraine over outwash
Qsw	Strongly weathered till and gravel
Qsg	Older glacial deposits
Qng	Till grading longitudinally into sand and gravel
Qm	End moraines
Qo	Sand and gravel
Qs	Stratified glacial deposits and alluvium in valleys
Qp	Sand containing some gravel
Qd	Outwash plains
Qa	Sand
Qb	Beaches and dunes
Qc	Sand, silt, clay, gravel, and organic material
Qd	Alluvium. South of New York City, shown by stipple pattern
Qe	Silt, clay, and fine sand
Qf	Lake-bottom deposits
Qg	Silt, sand, clay, and organic material
Qh	Marshes, swamps, estuaries, and artificial fill

COASTAL PLAIN DEPOSITS IN PART OF MARYLAND, DELAWARE, THE DISTRICT OF COLUMBIA, AND IN VIRGINIA

Tcg	Chesapeake Group undivided
Tcj	Chiefly silty quartz sand, locally clayey
Tnj	Nanjemoy Formation
Tna	Glauconitic sand locally interbedded with dark silt
Taq	Aquia Formation
Tkm	Glauconitic quartz sand; includes Brightseat Formation at base
Tkm	Manassas Formation
Tkm	Glauconitic, silty quartz sand
Tma	Matawan Formation
Tmg	Clayey micaceous silt, somewhat glauconitic
Tm	Magothy Formation
Tm	Interbedded clayey silt and quartz sand, locally very lignitic
Tpa	Patuxent Formation
Tpa	Interbedded clay, sand, and gravel; clays vary in color from red to black
Tar	Arundel Formation
Tar	Very clayey and dark-colored silt, locally contains abundant siderite layers
Tpx	Patuxent Formation
Tpx	Interbedded gravel, sand, and clay; clays vary in color from red to black
Tpo	Potomac Group
Tpo	Interbedded arenaceous sand and clay
Tpo	Consists of Patuxent and Arundel Formations where Arundel Formation is absent

COASTAL PLAIN DEPOSITS IN PART OF MARYLAND, DELAWARE, NEW JERSEY, AND ON LONG ISLAND

Tch	Cohansey Sand
Tch	Chiefly quartz sand, with some clay and gravel
Tkw	Kirkwood Formation
Tkw	Chiefly fine-grained quartz sand; very clayey in southern New Jersey
Tms	Manassas Formation
Tms	Glauconitic sand; mostly somewhat quartzose, locally very clayey
Tvt	Vincetown Formation
Tvt	Glauconitic quartz sand; locally very calcareous
Tht	Hornertown Sand
Tht	Glauconitic sand
Tkb	Red Bank Sand
Tkb	Chiefly quartz sand; base is very silty and locally glauconitic
Tks	Navesink Formation
Tks	Clayey, silty glauconitic sand
Tmt	Mount Laurel Sand
Tmt	Glauconitic quartz sand, pebbly at top
Tkw	Wenonah Formation
Tkw	Silty and glauconitic quartz sand
Tmt	Marshalltown Formation
Tmt	Quartzose glauconitic sand
Tkt	Englishtown Formation
Tkt	Glauconitic quartz sand; consists of laminated sequences in the north and massive silty sand in the south
Twb	Woodbury Clay
Twb	Very clayey and somewhat micaceous silt
Tmv	Merchantville Formation
Tmv	Chiefly clayey silt and glauconitic to quartzose sand
Tmg	Magothy Formation
Tmg	Thin-bedded interstratifications of clay and sand; very lignitic
Tz	Raritan Formation
Tz	Chiefly cross-bedded quartz sand interbedded with thick beds of silt; locally laminated
Tp	Potomac Group
Tp	Interbedded sand, gravelly sand, and clay

CRETACEOUS

QUATERNARY

TERTIARY

CRETACEOUS

Lowland deposits
Base 0 to -200 feet elevation

Intermediate deposits
Base 0 to -100 feet elevation

Upland deposits
Base ranges from 100 to 200 feet elevation

Terrace deposits of varying thickness overlying Coastal Plain deposits and bedrock

Silt or clay within or beneath permeable surficial deposits; on Long Island, Staten Island, and in adjacent New Jersey, also includes Coastal Plain deposits beneath surficial deposits

Contact
Dotted where concealed

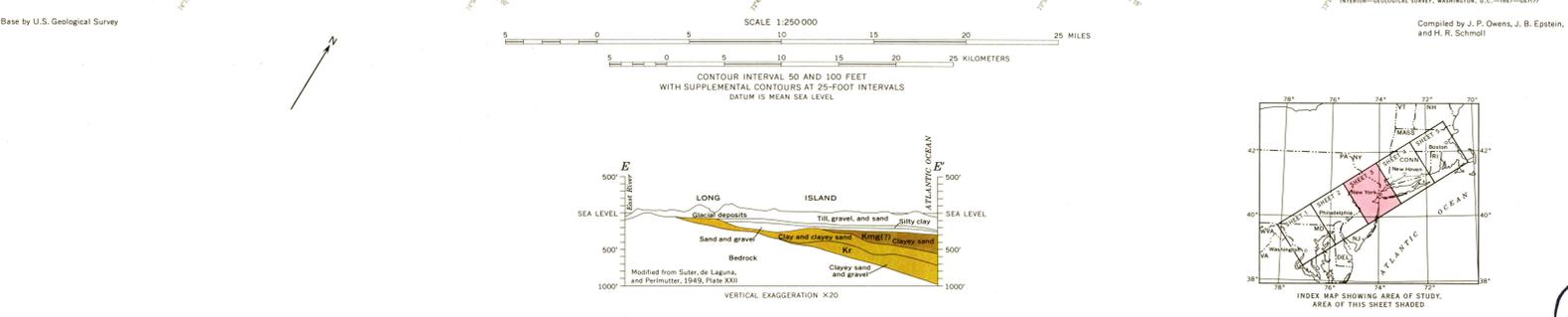
Thalweg of buried valley
Number shows elevation of valley bottom, in feet, above or below sea level where data available. Dashed where approximately located

Approximate boundary between fresh and salty ground water in the Potomac-Raritan-Magothy aquifers
Shows maximum advance of salt water in the Coastal Plain

Line of section
E-E' Through Coastal Plain deposits; sections shown on sheets 1, 2, 3, and 4
L-L' Through surficial deposits; sections shown on sheet 6

Contour on bottom of Long Island Sound
Contour drawn from depth-of-water data on U.S. Coast and Geodetic Survey charts 1211-1213. Contour interval 50 feet. Datum is mean low water

Contours on surface of bedrock or Coastal Plain deposits beneath Long Island Sound
Contours modified from those drawn by Mariel Smith from sparker traverses by the Lamont Geological Observatory, Palisades, New York. Contour interval 100 feet. Datum is mean low water



**ENGINEERING GEOLOGY OF THE NORTHEAST CORRIDOR, WASHINGTON, D.C., TO BOSTON, MASSACHUSETTS
COASTAL PLAIN AND SURFICIAL GEOLOGY**

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United States (Northeast Corridor). Geol. 1:250,000. 1967.
sheet 3, cap. 2.



M(200)
1-514-B
SHEET-3
CZ

