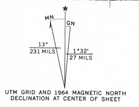
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Base from U.S. Geological Survey, 1964

10,000-foot grid based on
Connecticut coordinate system
1,000-metre Universal Transverse
Mercator grid ticks, zone 18



UTM GRID AND 1964 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

Textures mapped by W.H. Langer, C.J. Recny, and D.M. Koza, 1974

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

MAP SHOWING UNCONSOLIDATED MATERIALS, HARTFORD SOUTH QUADRANGLE, CONNECTICUT

By

William H. Langer, Christopher J. Recny, and Douglas M. Koza

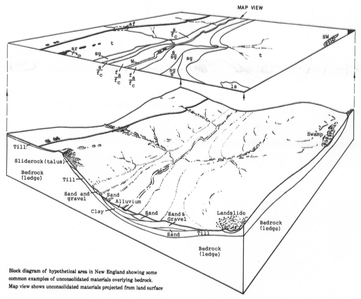
1976

MISCELLANEOUS FIELD STUDIES
MAP MF-487 F
LANGER AND OTHERS—UNCONSOLIDATED
MATERIALS, HARTFORD SOUTH QUAD., CONN.

This map describes the type, thickness, and distribution of unconsolidated materials. It is intended to serve as an aid in areal planning, reconnaissance evaluation, and identifying areas of potential economic deposits.

THIS MAP SHOULD NOT BE USED AS A SUBSTITUTE FOR ONSITE INVESTIGATION.

The map shows the distribution of particle sizes of the first materials of a significant thickness (generally greater than 3 feet (1 m)) occurring beneath the soil layer. The soil layer, commonly 1 or 2 feet (0.3-0.6 m) thick, is not mapped. *Bedrock (ledge)* is shown only where it is at or very near the land surface. Bedrock underlies the entire map area at various depths beneath the unconsolidated material (Ryder and Handman, 1973, and Handman and Byrnes, 1974). *Till (hardpan)* forms the mapped surface over large areas. In most parts of the quadrangle, it underlies other unconsolidated materials. *Stratified deposits* are composed of gravel, sand, silt, clay, and organic matter. They occur in layers and overlie till and (or) bedrock in most of the map area. Stratified deposits at the land surface are often underlain by stratified materials of different textures. These underlying materials have been shown on the map where they are known or inferred to occur. The diagram below shows the vertical relationships often encountered in unconsolidated materials in New England.



Block diagram of hypothetical area in New England showing some common examples of unconsolidated materials overlying bedrock. Map view shows unconsolidated materials projected from land surface

Most unconsolidated materials are mixtures of three particle-size classes defined in the diagram below. Coarse particles (stones) include granules, pebbles, cobbles, and boulders. Medium particles include all sand sizes except very fine sand. Fine particles include very fine sand, silt, and clay-sized particles.

PARTICLE-SIZE CLASSIFICATION USED IN THIS REPORT
Modified from Wentworth (1922)

Diameter of particles	10 256	2.5 64	1.16 4	.08 2	.04 1	.02 .5	.01 .25	.005 .125	.0025 .062	.00015 .004	inches millimetres
Boulders	Cobbles	Pebbles	Granules	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Clay	
Gravel-sized particles				Sand-sized particles				Silt and clay-sized particles			
COARSE				MEDIUM				FINE			

Materials mapping involves a visual estimate of particle-size distribution by a field geologist. Percentages of particle sizes may, therefore, differ somewhat in places from the limits defined in the map units below. Map units may also contain small lenses of material that differ in particle size from the main deposit.

EXPLANATION

g_f

GRAVEL

Particle sizes range from nearly 100 percent coarse particles with traces of fine particles to 50 percent coarse and 50 percent fine particles. May also contain minor amounts of medium particles. Coarse particles commonly are rounded to subangular fragments of reddish-brown siltstones and sandstones. Material may occur either as unlayered deposits of gravel and silt, or as layers of gravel and silt of variable thickness mixed with thin layers of silt and very fine sand

sg/sg_{th}

SAND AND GRAVEL DEPOSITS

Particle sizes range from 100 percent coarse particles to 25 percent coarse and 75 percent medium particles. May also contain minor amounts of fine particles. Material may occur as:

1) thin layers of well to poorly sorted sand interbedded with thin layers of well to poorly sorted gravel.
2) poorly sorted mixed layers of sand and gravel.
3) distinct pockets of well to poorly sorted sand, gravel, and sand and gravel.

sg, Undifferentiated sand and gravel deposits occurring as 1, 2, or 3 above

sg_{th}, Deposits occurring as 1 or 2 above, commonly 3 to 5 feet (1-1.5 m) thick, directly overlying till

s

SAND DEPOSITS

Particle sizes range from 25 percent coarse particles and 75 percent medium particles, through 100 percent medium particles, to 50 percent medium particles and 50 percent fine particles. Material commonly occurs as well to poorly sorted layers of varying thickness

$f/f_a/f_c$

VERY FINE SAND, SILT, AND CLAY DEPOSITS

Particle sizes range from 50 percent fine and 50 percent medium particles to 100 percent fine particles. May contain scattered coarse particles.

f, Well-sorted layers of very fine sand, silt, and (or) clay; or massive beds of very fine sand, silt, and (or) clay

f_a, Deposits of river alluvium, consisting mostly of very fine sand and silt with some organic material and scattered coarse particles

f_c, Massive beds consisting mostly of silt and (or) clay, locally with scattered coarse particles

sg/f_t sg/f sg/f_t g/f_t g/f s/f_c f_a/f_c

SUPERPOSED DEPOSITS

Areas where surface units are commonly less than 30 feet (9.1 m) thick and are known or inferred to overlie thicker stratified materials. Till is inferred to be present at depth beneath almost all stratified deposits; therefore, its presence is not shown by these symbols

t

TILL (HARDPAN) DEPOSITS

Reddish-brown till ranging from a crudely sorted, noncompact mixture of sand, silt, pebbles, and cobbles which may contain minor amounts of clay, to a nonsorted, compact mixture of silt and clay with some pebbles and cobbles. Till is present at depth beneath most unconsolidated materials in the map area

sr

SLIDEROCK (TALUS) DEPOSITS

Large angular rock fragments at the base of cliffs; locally contains smaller stones, organic matter, and silt

sw

SWAMP DEPOSITS

Generally dark, decomposed or partially decomposed organic material intermixed with varying amounts of sand, silt, and clay. Locally contains scattered stones. Swamp deposits are commonly underlain by the surrounding material

br

BEDROCK (LEDGE) OUTCROP

Bedrock (ledge) exposed at the surface; may be partially covered by thin soil

w

WATER BODIES

In general, lakes and ponds greater than 5 acres (2 hectares) in area, or streams wider than 200 feet (61 m)

af

ARTIFICIAL FILL

Shown only for roads, highways, dams, solid waste disposal, filled ponds and swamps, and other major construction. Additionally, in urban areas and other areas of dense development, fill of variable thickness and extent may overlie the natural materials shown on the map

CONTACTS

Surface contact between map units

Inferred position of concealed subsurface contact

POINT DATA

The purpose of point data is to provide additional subsurface information at specific locations. The materials information provided in the point data should not be applied to the entire map unit.

Locations of selected field observations

1• Auger hole; bank exposure

3× Pits, both active and inactive

Pits are numbered separately from other field observations; numbers are consecutive from north to south. See logs below for descriptions

Locations of selected wells and testholes

14• Testhole

12○ Water well

Numbers correspond by town to those on file with the U.S. Geological Survey, Water Resources Division, Hartford, Connecticut. Logs were published by Ryder and Weiss (1971).

ABBREVIATIONS

Texture	Color	Percent
b, boulders	brn, brown	and, 35-50 percent of sample
c, cobbles	red, red	sm, some, 20-35 percent of sample
p, pebbles	gr, gray	lit, little, 10-20 percent of sample
g, granules	yel, yellow	tr, trace, 0-10 percent of sample
vcs, very coarse sand	tan, tan	
cs, coarse sand	wh, white	
ms, medium sand	dk, dark	
fs, fine sand	pink, pink	
vfs, very fine sand		
sl, silt		
cl, clay		

LOGS

• FIELD OBSERVATIONS (AUGER HOLES; BANK EXPOSURES)

Number	Depth, in feet[1]	Thickness, in feet[1]	Description
6	0-3	3	artificial fill
	3-4 1/2	1 1/2	sl, tan
	4 1/2-7	2 1/2	p,c,b; sm cs
	7-10 1/2	3 1/2	silty, clayey till
7	0-1	1	sl; soil, gr
	1-2	1	fs-vfs; and sl; gr
	2-4	2	vfs and sl
8	0-6	6	vfs and sl; dk brn
9	0-1/2	1/2	topsoil
	1/2-2 1/2	2	fs-ms and sl
	2 1/2-3	1/2	ms-cs and p
	3-4	1	fs-ms and sl
10	0-2 1/2	2 1/2	fs and sl; yel
	2 1/2-4	1 1/2	fs, red to pink
	4-5 1/2	1 1/2	fs, brn to pink
11	0-2	2	ms-cs, sl; sm p; tan
	2-3 1/2	1 1/2	cs, pink
	3 1/2-4 1/2	1	ms, pink
12	0-3 1/2	3 1/2	vfs and sl, red
	3 1/2-4	1/2	p; sm ms
	4-9	5	ms, g,p; pink
13	0-2	2	sl and vfs
	2-3 1/2	1 1/2	cs, and g,p
	3 1/2-4	1/2	fs-ms
	4-4 1/2	1/2	ms
	4 1/2-5	1/2	ms-cs and g,p
14	0-1 1/2	1 1/2	soil
	1 1/2-2 1/2	1	cs; lit p
	2 1/2-4 1/2	2	fs-ms, pink
	4 1/2-5	1/2	cs-ms, and p,g
15	0-3	3	fs and sl; yel
	3-5	2	fs, pink

× FIELD OBSERVATIONS (PITS)

Number	Depth, in feet[1]	Thickness, in feet[1]	Description
1	0-15	15	p,g; sm sl; red
2	0-15	15	p,g; sm sl; lit s, red to pink
	15-20	5	ms-fs
	20-24	4	c, p; and sl
	24-30	6	p; sm fs-ms; sm sl
	30-33	3	vfs and sl; sm cl, red
3A[2]	0-4	4	fs-ms, pink
	4-7	3	p,g; lit c; tr ms
	7-10	3	ms
3B[2]	0-6	6	c; sm p; lit sl
4	0-4	4	ms; p; and sl
	4-20	16	ms-cs-fs; and p,g
5	0-6	6	p,c and ms-cs
	6-28	22	ms; pink and gr; interbedded
6	0-2	2	fs and sl
	2-3 1/2	1 1/2	ms-cs, and p, pink and wh
	3 1/2-6 1/2	3	ms-cs: tr p
	6 1/2-20	13 1/2	no record
	20-25	5	ms; pink
7	0-1/2	1/2	soil
	1/2-3	2 1/2	p,c and ms-cs
	3-23	20	cs,p and g; interbedded with sm fs-ms
	23-?	?	grading to ms-fs, pink
8	0-2	2	sl, tan
	2-12	10	p, ms and cs
	12-47	35	ms, pink
9	0-10	10	b,c; sm cs-vcs; red-brn
	10-25	15	p,g; ms-cs; tr c
	25-40	15	fs-ms; pink and wh; bedded

[1] 1 foot equals 0.3048 metre.
[2] Sample numbers 3A and 3B were taken from different locations within the same pit. The pit is labeled "3" on the map.

NOTE: Subsequent field checking indicates that this map supersedes Langer (1973) and Pessl and Hildreth (1972) where discrepancies occur along borders.

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LOGS

• FIELD OBSERVATIONS (AUGER HOLES; BANK EXPOSURES)

Number	Depth, in feet[1]	Thickness, in feet[1]	Description
1	0-3	3	artificial fill
	3-15	12	cl, red
2	0-5	5	p,c; sm sl
3	0-1	1	p; ms-cs
	1-6	5	sl; sm cl, red
4	0-5	5	p,c; sm sl, red
	5-9	4	p,g; sm sl; tr ms, red
5	0-6	6	p,c; sm sl; tr ms

Interior—Geological Survey, Reston, Va.—1976

For sale by Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202, price $.50