



Surficial Geologic Map and Cross-Sections of the Sutton 7.5-minute Quadrangle, Vermont

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Explanation

Lakes and Ponds: Willoughby bathymetry contours in meter.

af Artificial Fill: Artificially-emplaced material along road beds, embankments and in developed areas. Material varies from natural sand, gravel, or till to various artificial waste materials. Thickness varies.

Hw Wetlands Deposits: Accumulations of organic matter and/or clastic sediment in low-lying areas. Includes a wide variety of wetland types. Commonly overlying other deposits such as alluvium, lacustrine sediment, or till.

Ha Alluvium: Silt, sand, and gravel deposited by modern streams. Includes stream channel, bar, and floodplain deposits. Wetland deposits are common within these areas and are not distinguished. Thickness is generally equal to the maximum depth of the adjacent stream channel.

Hat Hat Alluvial Terrace Deposits: Silt, sand, and gravel deposited on terraces above the modern floodplains of streams. They are composed of a variety of channel, bar, and floodplain deposits. May include late Pleistocene alluvial sediment deposited onto freshly-drained glacial lake bottoms before the main stream and its tributaries incised down into the lacustrine deposits.

Haf Haf Alluvial Fan: Boulder, cobble, and pebble gravel, pebbly sand, and diamict deposited at sites where steep, stream gradients are sharply reduced. Holocene alluvial fans (Haf) are common at the mouths of steep tributaries where they meet the main stream.

Hc Colluvium Deposits: Fans or aprons of slope-wash sediment (debris flows) that have accumulated at the base of steep cliffs/slopes. Thickness is highly variable.

Hld Hld Modern Delta Deposits: Well-sorted sand and gravel deposited in a present-day lake at the mouth of a tributary stream.

Plf Plf Lacustrine Sediments, Fine-grained: Clay, silt, and very-fine to fine sand deposited in quiet-water environments of a glacial lake. Commonly laminated.

Plo Plo Subaqueous Outwash Deposits: Well-sorted sand and gravel deposited in subaqueous fans within glacial lakes at and near esker tunnel mouths. Sediment deposited close to tunnel mouth is coarse-grained, distal sediments finer-grained. Grades into Plf sediments.

Pld Pld Glacial Lake Delta: Well-sorted sand and gravel deposited in a glacial lake at the mouth of a tributary stream. Includes topset, foreset, and proximal bottomset beds if exposures permit.

Po Po Glacial Outwash Sediments: Glacial meltwater deposits composed of stratified sand and gravel deposited in streams in locations out beyond the glacial margin.

Pik Pik Kame Deposits: Composed primarily of stratified sand and gravel, deposited between an ice-sheet and the adjacent side of the valley. Sediment is derived primarily from meltwater, with variable contributions from the valley sides. May include subaqueous grain flows and debris flows.

Pie Pie Esker Sediments: Elongate ridge of ice-contact stratified sand and gravel deposited by glacial meltwater streams in tunnels within or beneath the glacial ice.

Pi Pi Ice Contact Sediments, Undifferentiated: Unsorted to poorly-sorted stratified sand, gravel, and silt deposited in contact with glacial ice. Surface may contain scattered kettle holes formed by melting of buried ice blocks or be a highly complex kame and kettle topography.

Ptm Ptm Moraine Deposits: Hummocks and ridges composed primarily of till with variable amounts of stratified sand and gravel. Intervening basins are common and are frequently filled with wetland sediments. Deposited along the ice margin, by direct melting of glacial ice, debris flows, and minor ice advance. Solifluction landforms are sometimes present.

Pt Pt Glacial Till: Very dense to loose, unsorted to very poorly sorted material deposited directly from glacial ice. Contains a wide range of grain sizes, from clay or silt up to large boulders. Matrix commonly dominated by the silt or sand fraction. Surface boulders are generally common. Thickness is highly variable, from less than 3 meters to greater than 30 meters.

Field Sites

Surficial Field Site

Bedrock Outcrop

Water Well

Glacial Striation

Geologic Cross sections

Landslide Scarp

Rock Quarry

Gravel Pit

Projection of Glacial Lake Shorelines

Ice-Marginal Channel

Lake Outlet Channel

Abandoned Stream Channel

Kettle

Moraine Ridges

Esker Ridgeline

Streamlined Till Ridges

Road Centerline

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