



Department of Environment and Conservation
Department of Natural Resources

Map No. 1a
SURFICIAL GEOLOGY
Eastern Newfoundland

- Exposed Bedrock:** exposed bedrock with little or no sediment or vegetation cover; patches of till and other surficial sediment present but rare; topography and relief variable, and bedrock controlled
- Concealed Bedrock:** bedrock, mainly concealed by vegetation; patches of till, sand and gravel, and bog (commonly less than 1.5 m thick) and exposed bedrock are common, but form less than 50% of the unit
- Diamicton Veneer:** thin (less than 1.5m) discontinuous sheet of diamicton (poorly sorted sediment containing grain sizes from clay to boulders) overlying bedrock; patches of exposed bedrock and thicker sediment cover common; diamicton generally contains from 20% to 50% matrix (sand size or finer), and 80% to 10% clasts (greater than sand size); matrices generally dominated by sand with less than 20% silt and clay; maximum clast sizes from 1 to 2 m diameter; but clasts mostly granules (0.2 to 0.4cm diameter); relief and topography variable and bedrock controlled
- Ridged Diamicton:** a blanket of diamicton, 1.5 to 20m thick, with a topography consisting of streamlined elongate ridges 1.5 to 20m high, and 0.2 to 500m long; diamicton is of similar composition to diamicton veneer; this unit was likely deposited under actively flowing ice, with the long axis of ridges either parallel or perpendicular to ice flow
- Hummocky Diamicton:** a blanket of diamicton, 1.5 to 15m thick having irregular hummocky topography and relief of 2 to 10m; hummocks are mainly composed of diamicton, but some may contain poorly sorted sand and gravel; diamicton is of similar composition to diamicton veneer; bog is commonly found in low areas between hummocks; this unit was mainly deposited by ice disintegration and stagnation during deglaciation
- Diamicton Blanket:** similar to diamicton veneer; any deposit greater than 1.5m thick; minor irregularities of the underlying units are masked but the major topographic form is still evident
- Glaciofluvial Gravel and Sand:** poor to well sorted sand and gravel, 1.5 to 50m thick, having a diverse surface topography; gravel is pebble to cobble sized, and forms 50 to 95% of the sediment; the unit includes eskers (sinuous, elongate ridges 3 to 15m high, and up to 5km long); kames (moderated to steep sided mounds up to 15m high, and outwash plains (plains with low relief, and a channelled surface, 3 to 20m thick, and up to 10km long)
- Marine clay, sand, gravel and diamicton:** this unit consists of a wide range of sediment types, deposited in a marine or glaciomarine environment; moderate to well sorted gravel and sand, up to 50 m thick, found in marine terraces and raised beaches; well sorted silt and clay, up to 90m thick, are found in ice distal glaciomarine deposits with most of the sediment lying below modern sea level; all of these sediments have been raised to their present elevation by isostatic rebound, resulting in relative sea level fall since deglaciation
- Fluvial:** low relief plains with channelled surfaces close to modern rivers, consisting of moderate to well sorted gravel, sand, silt and clay, deposited in modern river systems
- Colluvium:** a mixture of rock debris and unconsolidated sediment deposited by mass movement forming aprons at the base of steep slopes
- Bog:** accumulations of degraded organic matter deposited in poorly drained low-lying areas

UNIT A

UNIT B

SYMBOLS

- Geological Boundary (assumed)
- Esker

SURFICIAL HYDROSTRATIGRAPHIC UNITS

Unit A - Till Deposits
Well yields range from 1.5 litres per minute (L/min) to 227 L/min and averaged 59 L/min. Well depths range from 1.5 metres (m) to 45 m. Includes data from a large number of wells completed in sand or gravel layers within till deposits. Yields from wells completed in till without sand or gravel lenses are likely to be significantly smaller.

Unit B - Sand and Gravel Deposits
Well yields range from 2 L/min to 270 L/min and averaged 54 L/min. Well depths range from 4.6 m to 40 m.

Elevation in feet above mean sea level. Contour interval approximately 100 feet

REFERENCE:
1:250,000 Surficial Geology -Liverman, D.G.E and Taylor, D.M 1990: Surficial geology of insular Newfoundland; preliminary version: Newfoundland Department of Mines and Energy, Geological Survey Branch Map 90-08

