GEOLOGICAL SURVEY OF CANADA — COMMISSION GÉOLOGIQUE DU CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES

SURFICIAL GEOLOGY, ARNPRIOR, ONT. AND QUE. 31 F/8 E½

SCALE 1:50,000

LEGEND

SURFICIAL DEPOSITS AND TERRAIN FEATURES

QUATERNARY

POSTGLACIAL -- 10,000 years BP to present

13 — Organic deposits: muck and peat; mainly peat bogs and poorly drained areas supporting fen, swamp, marsh and meadow vegetation

12 — Alluvial deposits: stratified sand, silty sand, silt and silty clay; includes fluvial deposits, sand bars and spits of modern floodplain of present streams

11 — Landslide deposits: marine clay, silty clay, silt and marine, deltaic, estuarine and fluvial sand; aprons and fans of hummocky topography underlain by tilted or slumped blocks of clay with or without a thin capping of fine sand; includes deposits spread out over the floors and terraces of the abandoned Ottawa River channels and along the valley sides of present day streams; resulting from slope failures along the abandoned channel and terrace bluffs or along the active present day valley bluffs

10 — Aeolian deposits: uniform, fine-grained, buff sand; derived from marine, deltaic, estuarine or river channel sands laid down in the Champlain Sea and in the fluvial channels and terraces of the early Ottawa River that were subsequently reworked and blown by wind into dunes; this unit is used where the flat surface of the original deposit has been completely transformed into hummocky topography

9 — Estuarine and river channel and terrace deposits: stratified, buff, medium sand, unfossiliferous; fluvial deposits on the floors of former estuarine and river channels and terraces of the early Ottawa River; locally the upper part of this sand has been reworked by wind into low dunes; the estuarine environment progressively replaced the marine environment and was itself replaced by the river environment as the Champlain Sea withdrew from the map-area

8 — Eroded and/or modified marine deposits: mainly marine clay as described in unit 5, but locally overlain by a thin layer of alluvial silt and silty clay; estuarine and river channel floors and terraces of the ancestral Ottawa River cut in marine clay following emergence of the map-area above the level of the Champlain Sea

MARINE - CHAMPLAIN SEA 12,800 to 10,000 years BP approx.

7 — Marine beach deposits: gravel and sand, fossiliferous; derived mainly from the reworking by the Champlain Sea of older glacial or glacio-fluvial deposits; includes abandoned raised beaches, bars, spits, beach ridges, boulder beaches and boulder pavements; in most of the map-area where the Paleozoic bedrock outcrops these abandoned shoreline features rest directly on the limestone surface and the raised beaches are nearly entirely composed of limestone or dolomite slabs and shingles derived from the local bedrock

6 — Marine sand: uniform, fine-grained, buff to grey sand, fossiliferous; shallow-water facies of off-shore sediments of the Champlain Sea; upper part of this sand is buff and has often been reworked by wind into low dunes; when exposed in fresh cuts below the chemically weathered zone this sand is grey in colour

5 — Marine clay: blue-grey clay, silty clay and silt, calcareous, fossiliferous; deep-water facies of off-shore sediments of the Champlain Sea; locally this unit is overlain by a thin layer of sand

MARINE-GLACIAL - 12,800 to 10,000 and 12,800 years BP and/or older

4 — Marine beach deposits overlying ice-contact and/or ice-frontal outwash deposits: gravel and sand, fossiliferous, underlain by unfossiliferous deposits of well sorted and bedded gravels, cobbles and sands; in some places these contain boulder barricades or ramparts and local lenses or pockets of till

GLACIAL-LATE OR CLASSICAL WISCONSIN - 12,800 years BP and/or older

3 — Modified hummocky and/or rolling morainic deposits: compact, grey to brown when leached and oxidized, calcareous, sandy till; surface topography hummocky but till washed and winnowed by the marine waters of the Champlain Sea and later by the estuarine and fluvial waters of the ancestral Ottawa River in the northern part of the map-area

2 — Drumlinized glacial deposits: compact, grey to brown when leached and oxidized, calcareous, sandy glacial till; drumlinized surface topography modified by the marine waters of the Champlain Sea during the postglacial submergence

1 — Bevelled or modified till deposits: compact, grey to brown when leached and oxidized, calcareous (siliceous in Precambrian basement parts of the map-area), sandy glacial till; topography flat to gently rolling with surface materials reworked and winnowed by the marine waters of the Champlain Sea and by the estuarine and fluvial waters of the ancestral Ottawa River; includes bouldery, washed till on slopes and on abandoned channel floors which grades downwards into unmodified till

BEDROCK AREAS

PALEOZOIC

R — Limestone, dolomite and/or sandstone: mainly bare limestone, dolomite and sandstone - and locally shale-bedrock; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1m. (3') thick, most commonly consisting of washed and reworked glacial till and limestone, dolomite or sandstone slabs and shingles; limestone, dolomite and sandstone normally occur as tabular outcrops

PRECAMBRIAN

R — Intrusive and metamorphic rocks: mainly bare, hummocky or rolling areas composed of crystalline intrusive and metamorphic rocks of Precambrian age; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1m. (3') thick; this cover commonly consists of washed and reworked glacial till which in many places has been reduced to a sprinkle of glacial erratics resting directly on the bedrock

.... Geological boundary

.... Bedrock scarps

.... Direction of ice movement indicated by drumlin

.... Former strandline positions of Champlain Sea indicated by flights of abandoned marine beaches

.... Ridge crests of sand dunes

.... Estuarine and river channel bluffs cut in marine clay

.... Fluvial channel scars showing flow direction in abandoned estuarine and river channels and terraces

.... Head scarp of landslide

.... Ridge crests of tilted or slumped blocks of clay and sand in landslide areas

.... Abandoned postglacial river channels; valley walls, gullies and present day drainage ways; includes some man-made field and road side drainage ditches

Ⓕ .... Fossil locality

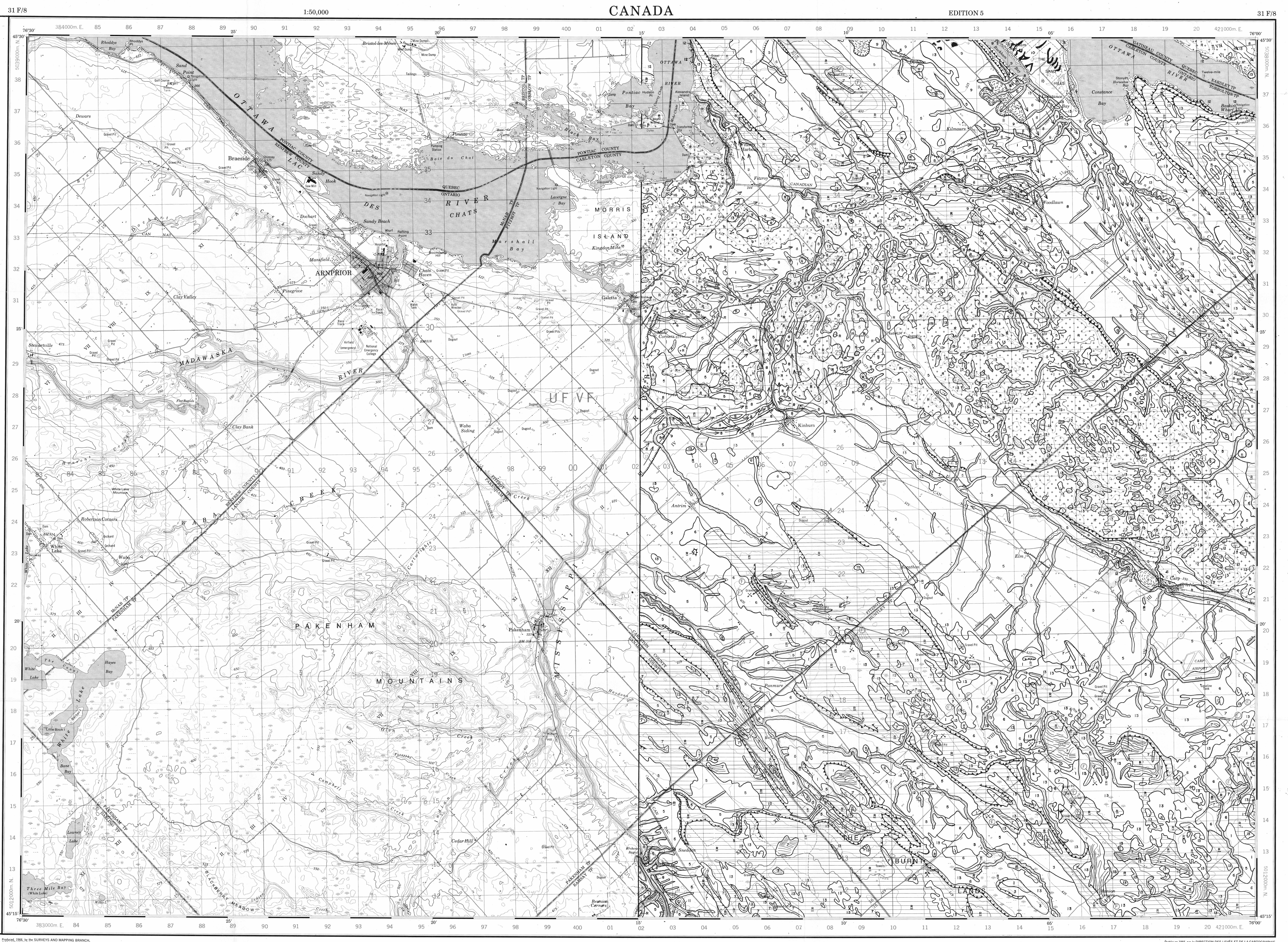
× .... Gravel or sand pit

⚒ .... Bedrock quarry

GEOLOGY BY S.H. RICHARD 1971, 72, 73, 74

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada.

OPEN FILE
DOSSIER PUBLIC
362
SEPT 1976
GEOLOGICAL SURVEY
COMMISSION GÉOLOGIQUE
OTTAWA



ARNPRIOR
ONTARIO-QUÉBEC
Scale 1:50,000 Échelle