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Suggested Readings Ozyer, C.A. and Hicock, S.R., 2002. Glacial landforms and preliminary chronology of ice-movement in the Arrowsmith River map area, Nunavut; Geological Survey of Canada, Current Research 2002-C10, 10 p.

This new surficial geology map product represents the conversion of Open File 4281 (Ozyer, 2004) and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3.14) (Deblonde et se servant du Modèle de données pour les formations al., 2018). All geoscience knowledge and information from Open File 4281 that conformed to the SDM were maintained during the conversion process. Additional material such as marginal notes which may exist on the original map, are not included here. Supplementary, limited legacy information was added to complement the converted geoscience data. This consists of glacial striations and roches moutonnées from McMartin et al. (2003). It is identified in the accompanying geodatabase. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management, and dissemination of geological map information in a dans la géodatabase de la carte. Le but de la structured and consistent manner. This provides an conversion de cartes publiées antérieurement suivant

information to appear on new surficial geology maps.

Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion du Dossier public 4281 (Ozyer, 2004) et de sa légende, en superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique du Dossier public 4281 qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Des éléments additionnels tels que des notes marginales qui pourraient être présents sur la carte originale ne sont pas inclus ici. Une quantité limitée de données existantes a été ajoutée en complément aux données géoscientifiques converties. Il s'agit de données sur des stries glaciaires et des roches moutonnées tirées de McMartin et al. (2003). Ces données sont identifiées effective knowledge-management tool designed around un langage scientifique commun et une légende a geodatabase which can expand following the type of commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes de la géologie des formations

National Topographic System reference and index to adjoining published Geological Survey of Canada maps

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NATURAL RESOURCES CANADA **GEOLOGICAL SURVEY OF CANADA CANADIAN GEOSCIENCE MAP 397 CANADA-NUNAVUT GEOSCIENCE OFFICE OPEN FILE MAP 2023-01**

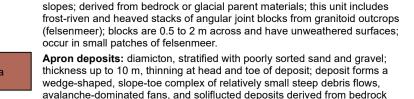
SURFICIAL GEOLOGY ARROWSMITH



GSC CANADIAN GEOSCIENCE MAP 397 • CNGO OPEN FILE MAP 2023-01

04 06 08 10 12 14

PERIGLACIAL ENVIRONMENT COLLUVIAL DEPOSITS: unconsolidated debris (diamicton), poorly sorted;



typically less than 1 m, but can reach thicknesses up to 2 m; deposited on

ickness up to 10 m, thinning at head and toe of deposit; deposit forms a vedge-shaped, slope-toe complex of relatively small steep debris flows, valanche-dominated fans, and soliflucted deposits derived from bedrock

Colluvial veneer: colluvial materials; less than 1 m thick; forming discontinuous sheets.

Colluvial blanket: diamicton; thickness greater than 1 m; a mantle of colluvial material.

Colluvial deposits, undifferentiated: colluvium; varied thickness; too small to be represented at the scale of mapping; complex consists primarily of colluvial units but may have relatively small pockets of alluvial, till, and glaciolacustrine, and/or glaciofluvial sediments; appear only as secondary unit in complex polygons. POSTGLACIAL ENVIRONMENT

ALLUVIAL SEDIMENTS: silt, sand and gravel; deposited by streams either within channels or as overbank deposits; deposits are usually stratified and moderately to well sorted, with the exception of some alluvial fan sediments. Floodplain sediments: predominanty sands and gravels; may be locally overlain by or include lacustrine silt, clay and minor peat and organic silt deposited in abandoned channels and along floodplain margins; thicknesses from 1 to 5 m; typically form plains within approximately 1 m of present stream level; various saturated soil patterns from the topographic base may appear

Terraced sediments: sand and gravel with minor silt, massive to stratified, moderately to well sorted; thickness ranges from sporadic cover on bedrock to several metres; sediments are of floodplain origin and presently isolated from flooding by stream incision.

HOLOCENE AND LATE PLEISTOCENE (WISCONSINAN)

PROGLACIAL AND GLACIAL ENVIRONMENT GLACIOLACUSTRINE SEDIMENTS: sand, silt, and clay, stratified; thickness ranges from 1 to 10 m; deposited in lakes dammed by glacier ice; distally deposited glaciolacustrine sediments typically overlie plains or gently rolling terrain; proximally deposited glaciolacustrine sediments may overlie ridges, hummocky, or pitted terrain caused by subsequent meltout. Deltaic sediments: sand and rounded gravels, cross-stratified; varied thickness; a scarp or face with a low-relief mantle associated with glaciofluvial

deposition into a glaciolacustrine environment. aciolacustrine blanket: clay, silt, and sand; well stratified; thickness ranges om 1 to greater than 20 m; local relief is less than 1 m (plain) and masks the Glaciolacustrine sediments, undifferentiated: glaciolacustrine complex; varied

Major moraine ridge

primarily of glaciolacustrine sediments, but may have relatively small pockets of alluvial, colluvial, till, and/or glaciofluvial sediments. GLACIOFLUVIAL SEDIMENTS: sand and gravel with minor silt and diamicton, well stratified to massive, ranging from well to poorly sorted; deposited by streams flowing away from, or in contact, with glacier ice; strata are commonly deformed due to syndepositional collapse from the meltout of supporting ice.

Outwash plain sediments: sand and rounded gravels; moderately to well sorted,

thickness; units are too small to be represented at the scale of mapping; consist

cross-stratified; 1 to 20 m thick; low-relief mantle. Glaciofluvial terraced sediments: sand and rounded gravels; moderately to well sorted, cross-stratified; varied thickness; include a scarp or face with a low-relief outwash mantle.

Glaciofluvial hummocky sediments: primarily sand and gravel; poorly sorted; from 5 to 15 m thick; ice-contact deposits; complex arrangement of slopes extending from rounded depressions, to irregular conical mounds, and includes

are less than 1 m; may occur in patches or gravel lag over rock.

Glaciofluvial sediments, undifferentiated: glaciofluvial complex; varied thickness; units are too small to be represented at the scale of mapping; consists primarily of glaciofluvial sediments, but may have relatively small pockets of alluvial, colluvial, till, and/or glaciolacustrine sediments...

Glaciofluvial veneer: gravel, sand, and silt; stratified to massive; thicknesses

GLACIAL SEDIMENTS (TILL): diamicton (granule to boulder-size clasts suspended in a poorly sorted clay to sand matrix); grey to dark brown; Laurentide till; deposited directly by glacial ice; redeposition directly from glacial ice is by 1 m to greater than 20 m.

boundaries between glacial-ice regimes.

areas have large frost polygons and stone nets.

underlying rock structure.

(see Sandeman et al., 2001a, b).

Geological contact:

>>>>>> Esker, paleoflow direction known

Approximate

Beach crest

Kame

sediment gravity flow and/or ductile deformation; contrasting vegetation cover reflecting compositional differences of till sediments; thicknesses range from Hummocky till: diamicton, stratified to massive, and interstratified glaciofluvial gravel and sand; stratification often exhibits syndepositional deformation features aused by slumping or ice meltout; varied thickness; may contain varied amounts of ice-walled glaciofluvial and glaciolacustrine sediments; forms hummocky

GLACIAL ENVIRONMENT

surface (kame and kettle topography); in places, the unit may exhibit prominent

Fluted, rolling till: diamicton; thickness is greater than 5 m; surface morphology

masks underlying topography; some areas have large ice-wedge polygons and

Till plain: diamicton; thickness is greater than 5 m; surface morphology forms a plain with less than 2 m of relief; generally masks underlying topography; some

Till veneer: diamicton; less than 1 m thick; occurs in patches over rock and is

Till blanket: diamicton; thicknesses generally from 1 to 5 m; surface morphology conforms to underlying bedrock topography; may exhibit crag-and-tails, flutes,

and/or roches moutonnées; some areas have large ice-wedge polygons and

Till, undifferentiated: till complex; units are too small to be presented at the

scale of mapping; varied thickness; may contain relatively small pockets of

Bedrock, undifferentiated: bare, coherent outcrop of various lithologies;

locally glacial polished and striated or sculpted by glaciofluvial processes

alluvial, colluvial, glaciofluvial, and/or glaciolacustrine sediments.

Complex units: two map-unit designators separated by a dot (.) are used where the surficial

cover forms a complex area and the units are too small to be mapped individually (e.g. Cv.Tb

Stratigraphic relationship: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. Tv/R indicates till veneer

Drumlinoid ridge, groove, fluting, length not mapped to scale

Fluted bedrock, direction unknown, well defined, length not mapped to scale

designates an area of colluvial veneer with numerous small deposits of till blanket). The

map-unit polygon is coloured according to the dominant unit and labeled in descending

overlying bedrock). The map-unit polygon is coloured according to the overlying unit.

Minor meltwater channel, paleoflow direction unspecified

Drumlin, length not mapped to scale

Crag-and-tail, length not mapped to scale

Roche moutonnée, length not mapped to scale

Poorly defined, ice-flow direction unknown

Well defined, ice-flow direction unknown

Crossed striations, 1 = oldest, 4 = youngest

Well defined, ice-flow direction known

interspersed with rock outcrop; deposits are thin enough to reveal details of

forms gently rolling plains with 1 to 3 m of relief; may exhibit flutes; generally

ridges marking major recessional ice margins, or diffuse zones marking

Geological Survey of Canada, 2023. Surficial geology, Arrowsmith River south, Nunavut, NTS 56-O south; Geological Survey of Canada, Canadian Geoscience Map 397 (Surficial Data Model v. 2.3.14 conversion of OF 4281); Canada-Nunavut Geoscience Office, Open File Map 2023-01, scale 1:100 000. https://doi.org/10.4095/314543

Geological Survey of Canada Canadian Geoscience Maps

Author: Geological Survey of Canada Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018). Geological data conversion by D.E. Kerr, 2016 and 2018 Geology has been spatially adjusted to fit the updated base.

Geomatics by J. Kingsley Scientific editing by L. Ewert Joint initiative of the Geological Survey of Canada and the Canada-Nunavut Geoscience Office, conducted under the auspices of the Information Management Project as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

SURFICIAL GEOLOGY ARROWSMITH RIVER SOUTH Nunavut NTS 56-O south

1:100 000

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications Elevations in metres above mean sea level Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 2023, 10°38'W, decreasing 23.2' annually Readings vary from 12°15'W in the NE corner to 9°00'W in the SW corner of the map.

information from users (gscpublications-cgcpublications@nrcan-rncan.gc.ca). Data may include additional observations not portrayed on this map. See map info document accompanying the downloaded data for more information about this publication. This publication is available for free download through GEOSCAN

This map is not to be used for navigational purposes.

CANADIAN GEOSCIENCE MAP 397

GEOLOGICAL SURVEY OF CANADA