



GEOPROCESS FILE - SUMMARY REPORT OGILVIE RIVER MAP AREA - NTS 116F (E1/2) and 116G

INTRODUCTION The GEOPROCESS File is a compilation of information and knowledge on geological processes and terrain hazards, including mass movement processes, permafrost, flooding risks, faults, seismic activity and recent volcanism, etc. Please refer to the GEOPROCESS File User Guide for more in-depth information on how the maps were developed, which other GEOPROCESS File maps are available, how to utilize this inventory and how to interpret the legend. Special interest should be taken in the detailed description of the terrain hazard map units. Appendices in the User Guide include summary papers on the geological framework, permafrost distribution, and Quaternary geology in Yukon and a list of comprehensive GEOPROCESS File references.

This report includes a brief discussion of the scope and limitations of the GEOPROCESS File compilation maps followed by summaries of the bedrock geology, surficial geology and terrain hazards for this NTS map area, and a list

Geological Processes and Terrain Hazard Compilation Maps

The GEOPROCESS File map units were drafted on the 1:250 000 topographic base maps through interpretation from bedrock geology maps, surficial geology maps and in some cases terrain hazard maps at various scales. The compilation maps have a confidence level reflecting the original source material. All materials used to produce the maps are listed in the references on each map. A file containing the documentation used to construct these maps is available at the Indian and Northern Affairs library in Whitehorse, Yukon. Areas for which no surficial geology or terrain hazard information is published were left unconformably overlain by 375-255 million year old Canol Formation black blank. Summary reports on surficial geology and terrain hazards for these map shale, McCann Hill chert, Nation River Formation mudstone and conglomerate; sheets were written by extrapolating the data from adjacent map sheets or smaller scale maps. Information from small scale (e.g., 1:1 000 000) maps was used for the summary reports, but not redrafted onto the 1:250 000 GEOPROCESS File maps.

The GEOPROCESS File compilation maps are intended as a first cut planning tool; the legend on the maps describes the general aspects of terrain hazards (also see below) and associated geological processes. These maps should never replace individual site investigations for planning of site specific features, such as buildings, roads, pits, etc.

Bedrock Geology Summaries

Each 1:250 000 NTS map area is described according to morphogeological belts and terranes defined by Gabrielse et al. (1991) and Wheeler et al. (1991). Bedrock geology (including structure) and mineral occurrences are briefly described and taken largely from the referenced, most recent 1:250 000 geological map with additional contributions from Wheeler and McFeely (1991), and Yukon MINFILE (1993). A summary paper ("A Geological Framework for Yukon") in Appendix A of the User Guide provides a framework and context for each of the bedrock summaries.

The level of knowledge and understanding of Yukon geology is constantly evolving with more detailed mapping and development of geological models. Names, ages and terrane affinities of rock units on the most recent 1:250 000 geological maps may, in some cases, now be considered incorrect. Thus information contained within some of the bedrock geology summaries may be out of date. Although much of the information reflects the knowledge at the time that the source map was published, additional information has been inserted whenever possible to assist the user in merging the information with current geological maps, concepts and understanding. The age ranges for similar packages of rocks may also vary between map areas since the actual rocks, or at least the constraints on their age, may vary between map areas.

THIS MAP IS ISSUED AS A PRELIMINARY GUIDE FOR WHICH THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WILL ACCEPT NO RESPONSIBILITY FOR ANY ERRORS, INACCURACIES OR OMISSIONS WHATSOEVER. EDITION: 2 PRINT DATE: 99/07/20

116 G & 116 F (E1/2) **CONTOUR INTERVAL 100 METRE Elevations in Metres above Mean Sea Level** North American Datum 1983 Transverse Mercator Projection **Universal Transvers Mercator Grid ZONE 7**

The Ogilvie River map area is in the Foreland Belt and is generally mountainous except for extensive upland pediments at the head of the Ogilvie River. The physiography is a typical reflection of Rocky Mountain-style bedrock

Mackenzie Platform as well as younger, non-marine clastic strata. Folds and thrust faults are common throughout the area and particularly large faults are responsible for bringing the oldest (deepest) rock units to the surface.

The Ogilvie River map area is mainly underlain by carbonate rocks of the

The oldest rocks in the map area belong to the pre-570 million year old Wernecke Supergroup. They are composed of Quartet Group slaty argillite and quartzite; Gillespie Lake Group siliceous dolomite, siltstone and quartzite; and Tindir Group shale, limestone and dolomite. This package is unconformably overlain by 530-390 million year old unnamed limestone and dolomite and Road River Group black shale and limestone; Michell Formation black shale, limestone and dolomite; and Ogilvie Formation limestone; which is Ford Lake shale, chert and limestone; Hart River Formation limestone, dolomite and chert; Ettrain Formation limestone, sandstone and conglomerate; Jungle

Creek Formation conglomerate, sandstone, mudstone, limestone and shale; and

overlain by 240-130 million year old black calcareous shale and limestone, and

Tahkandit Formation limestone and chert. These rocks are unconformably

Kingak Formation shale and siltstone. The aforementioned packages of rocks are generally marine in origin. They are unconformably overlain by dominantly non-marine clastic strata that includes 130-50 million year old sandstone, Mount Goodenough Formation shale, siltstone and sandstone; Biederman black argillite, siltstone and sandstone; Rat River Formation sandstone and shale; Kathul greywacke, conglomerate, sandstone and argillite; Eagle Plain Formation siltstone, sandstone, shale and conglomerate; and Monster Formation arkosic sandstone, mudstone and

parts of the map area. The bedrock structure in the area is dominated by typical fold and thrust belt geometry complicated by a right angle bend where the east-trending Mackenzie Fold Belt intersects with an unnamed north-trending fold belt.

conglomerate which are all predominant in the northwestern and northeastern

Mineral deposits and occurrences The Ogilvie map area hosts approximately 15 mineral occurrences, most of which are zinc-lead occurrences in limestone and shales, sedex showings, barite veins and copper-zinc veins. There is at least one known coal occurrence. The rocks in the central and northeastern parts of the map area have been explored for oil and gas with seismic surveys and three exploration

NOTE: A new digital compilation of Yukon Geology is now available by Steve Gordey and Andrew Makepeace (GSC Open File D3826 and/or DIAND Open File 1999-1(D)), and more recent MINFILE updates should also be verified (Yukon MINFILE, 2001).

Ogilvie Map Area - NTS 116F (E1/2) and 116G To be thorough, check the references for adjacent NTS map sheets and the General Reference List (See User Guide). Most of the following references should be available for viewing in the DIAND library on the third floor of the Elijah Smith building in Whitehorse.

OLGILVIE RIVER

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DAWSON

Index to Adjoining Sheets.

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