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These data accompany:

Preliminary Map P.3843, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt, Northwestern Ontario—West Sheet*, scale 1:50 000.

Preliminary Map P.3844, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt, Northwestern Ontario—East Sheet*, scale 1:50 000.

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Miscellaneous Release—Data 380

Geological, Geochemical and Geophysical Data Related to the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt, Northwestern Ontario

by B. Azar

This publication can be downloaded from

http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD380

This digital release consists of geochemical data, magnetic susceptibility data, geological information, structural data and selected field photographs for the Makokibatan Lake area in the Fort Hope–Miminiska greenstone belt, which were collected during the 2016 field season and a three-week period in 2017. This release contains whole-rock geochemistry (major element, trace element, rare earth element), assay data and quality control information, magnetic susceptibility data, drill hole data and field notes. These data augment the associated Preliminary Maps: P.3843, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt, Northwestern Ontario—West Sheet* (scale 1:50 000); and P.3844, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt, Northwestern Ontario—East Sheet* (scale 1:50 000). The shared marginal notes and geological legend from these Preliminary maps are also provided and are available as 2 separate portable document format (.pdf) files. Additional information includes the associated *Summary of Field Work and Other Activities* article from 2016; and a poster and presentation that were presented at the 2017 Ontario Prospectors Exploration Showcase (OPES) in Thunder Bay, Ontario, available as portable document format (.pdf) files. Location data are provided in the Universal Transverse Mercator (UTM) projection and grid system, North American Datum 1983 (NAD83), Zone 16. This release consists of 5 Microsoft® Excel® for Office 365 (.xlsx) format files; 190 photographs (.jpg format files), and 8 portable document format (.pdf) files.

CONTENTS

The data are organized into 7 folders, as follows.

- Drill Holes
- Field Notes
- Geochemistry
- Geology
- Magnetic Susceptibility
- Photographs
- Poster, Presentation and Publications

Drill Holes. This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) file providing relevant information about all the recorded drill holes in Makokibatan Lake area.

MRD380_Makokibatan_Drill_Holes.xlsx. This file contains 1 worksheet. Worksheet, “Drill_Holes” contains all the relevant information about bedrock or overburden drill holes presented on the map sheets including location data, whether the hole intersected bedrock, company information, azimuth and dip, assessment information, bedrock interpretation, and more. Location information is given in UTM co-ordinates, NAD83, Zone 16.

Field Notes. This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) file providing all the field notes collected during the 2016 and 2017 field seasons.

MRD380_Makokibatan_rocktype_descriptions.xlsx. This file contains 1 worksheet, “Rock_Type” providing field notes taken at every outcrop and recorded using a Trimble® handheld Global Positioning System (GPS) device. Notes have been edited to remove abbreviations and spelling errors, but otherwise are the original observations taken in real time and may contain typos and incomplete sentences as a result. Some of the interpretations changed with geochemical information and additional review; these changes are reflected in this document and a brief note accompanies where re-interpretation of a rock type occurred. Location information is given in UTM co-ordinates, NAD83, Zone 16.

Geochemistry. This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) file providing all the geochemical results from the 2016 and 2017 field seasons and 2 portable document format (.pdf) describing laboratory methods. Quality control issues for specific samples are noted in the spreadsheet with the data.

MRD380_Makokibatan_Geochemistry.xlsx. This file contains 3 worksheets: Worksheet, “Assay” contains assay data of the study area and worksheet, “Whole Rock”, contains whole-rock chemical data for each mapped area. The worksheet “Abbreviations” provides an explanation for the abbreviations and acronyms used in the 4th row of the “Whole Rock” and “Assay” worksheets called METHODS, and explains all additional abbreviations used in the workbook. Additional methods that were used in sample preparation are included in “Abbreviations” but are not represented on the other 2 worksheets. Samples were processed by the Geoscience Laboratories (Geo Labs), Ontario Geological Survey, Sudbury, Ontario. Sample location information is given in UTM co-ordinates, NAD83, Zone 16.

2016 Geo Labs Brochure.pdf describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories for rocks analyzed during 2016.

2017 Geo Labs Brochure.pdf describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories for rocks analyzed during 2017.

Geology. This folder contains 3 portable document format (.pdf) files.

P3843+P3844_Makokibatan_Legend_Geology.pdf is the common geological legend extracted from the Ontario Geological Survey (OGS) Preliminary Maps P.3843 and P.3844, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt (West and East sheets, respectively)*. Rock descriptions in the geochemical data set *MRD380_Makokibatan_Geochemistry.xlsx* refer to rock units in this legend.

P3843+P3844_Makokibatan_Marginal Notes.pdf provides additional information on the geology of the study area comprising the marginal notes common to both the Ontario Geological Survey (OGS) Preliminary Maps P.3843 and P.3844, *Precambrian Geology of the Makokibatan Lake Area, Fort Hope–Miminiska Greenstone Belt (West and East sheets, respectively)*.

MRD380_Makokibatan_Petrography.pdf is a summary of the observations for all of the thin sections reviewed for the study area in 2016 and also includes descriptions for samples collected outside of the Makokibatan Lake area, *see* Azar and Rudolph (2018). The thin section descriptions are listed in alphabetical order and include modal abundances of the mineralogy.

Magnetic Susceptibility. This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) file.

MRD380_Makokibatan_Magnetic_Susceptibility.xlsx contains 2 worksheets.

The “Makokibatan” worksheet contains magnetic susceptibility data from the study area collected during the summers of 2016 and 2017. Measurements were collected using Exploranium® KT-10 magnetic susceptibility meters. Magnetic susceptibility is defined as the degree to which a substance can be magnetized and, in this case, is expressed as the ratio of the intensity of magnetization (k) to the ratio of the Earth’s magnetic field to the magnetic field induced by the susceptibility meter. The readings (k) are expressed as 10^{-3} times the SI unit for susceptibility and are dimensionless. The minimum value that can be recorded by the meter is 0.01×10^{-3} SI units; the largest value is 999×10^{-3} SI units. Location information is given in UTM co-ordinates, NAD83, Zone 16.

The “Missing Readings” worksheet contains a list of 36 units that are described in the *MRD380_Makokibatan_rocktype_descriptions.xlsx* listed under “Field Notes” that did not have corresponding magnetic susceptibility measurements.

Photographs. This folder contains 1 photograph folder (as .jpg files) and 1 Microsoft® Excel® for Office 365 (.xlsx) file.

MRD380_Makokibatan_Photo_Captions.xlsx contains 1 worksheet.

The “Photo_Captions” worksheet provides descriptions and location information for the 2016 and 2017 Makokibatan Lake area photos.

The folder, “Photographs Makokibatan Lake” contains 190 selected photographs from the study area. Photo file names for the .jpg files are based on station location and number of photographs taken at that station. Station location information is given in UTM co-ordinates, NAD83, Zone 16.

Poster, Presentation and Publications. This folder contains 3 portable document format (.pdf) files.

OPES_Poster_Makokibatan_Azar_2016.pdf is a poster entitled “Bedrock Mapping in the Far North” presented at the Ontario Prospectors Exploration Showcase (OPES) in Thunder Bay, Ontario, April 4-6, 2016.

OPES_Talk_Makokibatan_Azar_2017.pdf contains 26 slides from a presentation entitled “Geology and Mineral Potential of the Makokibatan Lake Area, Fort Hope Greenstone Belt” given at the Ontario Prospectors Exploration Showcase (OPES) in Thunder Bay, Ontario on April 5th, 2017. The presentation was 20 minutes long and was meant to highlight the findings and mineral potential of the Makokibatan Lake area.

Summary of Field Work 2016 6323-03 Azar.pdf is the *Summary of Field Work and Other Activities* article written in 2016 after the field season. This article may be referenced as shown below.

Azar, B. 2016. Preliminary results from geological mapping in the Makokibatan Lake area, Fort Hope–Miminiska greenstone belt, eastern Uchi Subprovince; *in* *Summary of Field Work and Other Activities*, 2016, Ontario Geological Survey, Open File Report 6323, p.3-1 to 3-9.

REFERENCES

- Azar, B. and Bellrose, J.R. 2021. Precambrian geology of the Makokibatan Lake area, Fort Hope–Miminiska greenstone belt, northwestern Ontario—west sheet; Ontario Geological Survey, Preliminary Map P.3843, scale 1:50 000.
- Azar, B. and Bellrose, J.R. 2021. Precambrian geology of the Makokibatan Lake area, Fort Hope–Miminiska greenstone belt, northwestern Ontario—east sheet; Ontario Geological Survey, Preliminary Map P.3844, scale 1:50 000.
- Azar, B. and Rudolph, N. 2018. Precambrian geology of the Eabamet Lake area, Fort Hope–Miminiska greenstone belt—north sheet; Ontario Geological Survey, Preliminary Map P.3824, scale 1:50 000.