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Hastie, E.C.G. and Magnus, S.J. 2021. Geological, geochemical and petrographic data from Strey Township, western Schreiber–Hemlo greenstone belt, Wawa–Abitibi terrane, Superior Province, northwestern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 382.

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These data accompany:

Preliminary Map P.3846, *Precambrian Geology of Strey Township, Northwestern Ontario*.

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Miscellaneous Release—Data 382

**Geological, Geochemical and Petrographic Data from Strey Township, Western Schreiber–Hemlo Greenstone Belt, Wawa–Abitibi Terrane, Superior Province, Northwestern Ontario**

by E.C.G. Hastie and S.J. Magnus

This publication can be downloaded from

[http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm\\_dir.asp?type=pub&id=MRD382](http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD382)

This release contains field notes and data collected during the summer field seasons of 2015, 2016, 2017 and 2018 as part of 1:20 000 scale bedrock geology mapping in Strey Township (Project Unit NW-18-001). Whole-rock geochemical data and petrographic data are provided for collected samples. These data augment Preliminary Map P.3846, *Precambrian Geology of Strey Township, Northwestern Ontario* (Hastie and Magnus 2021); the legend for this map is also provided. This release comprises 3 Microsoft® Excel® for Office 365 (.xlsx) workbook files and 6 documents in portable document format (.pdf).

The mapping of Strey Township was undertaken concurrently with the mapping of Priske Township in 2018 under the same project number (Project Unit NW-18-001). This project was undertaken to improve on outdated bedrock maps in the western Schreiber–Hemlo greenstone belt. By gathering new field data and applying modern analytical techniques, the goal of this project and previous projects in the belt is to produce an updated genetic model for the greenstone belt that may be used as a framework for more detailed academic and mineral exploration activities. Inferences made about the depositional history of the supracrustal rocks and the structural history of the bedrock in the map area, based on field observations, whole rock geochemistry and U/Pb geochronology data, are summarized in the marginal notes for Preliminary Map P.3845 (Magnus 2021), in an Ontario Geological Survey *Summary of Field Work and Other Activities* article (Magnus and Hastie 2018), and in Open File Report 6357 (Magnus 2019).

Data are organized into 4 folders:

1. Field Data
2. Geology
3. Geochemistry
4. Petrography

**1. Field Data.** This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) workbook file, which contains raw data collected while working in the field, during the summers of 2015, 2016, 2017 and 2018, using a customized ESRI® ArcPad® application on portable computers (Trimble® Juno™ SB Handheld and Trimble® Juno™ 5 Handheld).

*MRD382\_Strey\_Field Data.xlsx* consists of 9 worksheets, labelled “Station”, “Structure”, “Volcanic Flow”, “Intrusive”, “Sediment”, “Volcanic Pyroclastic”, “Alteration”, “Metamorphic” and “Mineralization”. The “Station” worksheet includes brief descriptions of the observed outcrops and their surroundings, and the rock type (map) code associated with each station on the map (P.3846, Hastie and Magnus 2021). The “Alteration”, “Mineralization” and “Structure” worksheets provide descriptions of any alteration, mineralization and structural features observed at each of the stations described in the “Station” worksheet. Structure classification and symbol abbreviations in the “Structure” worksheet follow Jackson, Muir and Romkey (1995, 2010). The “Volcanic Flow”, “Volcanic Pyroclastic”, “Sediment”, “Intrusive” and “Metamorphic” worksheets contain descriptions of the mineral, rock and outcrop textures and relationships for each station. All of these worksheets provide the geographic co-ordinates for each data point (in Universal Transverse Mercator (UTM) co-ordinates in North American Datum 1983 (NAD83), zone 16).

**2. Geology.** This folder contains 1 portable document format (.pdf) file.

*P.3846\_Legend.pdf* is the general legend (rock codes) used on Ontario Geological Survey, Map P.3846, *Precambrian Geology of Strey Township, Northwestern Ontario*. Map codes in the Microsoft® Excel® files in the “Geochemistry”, “Petrography” and “Field Data” folders are cross-referenced to rock codes in the legend.

**3. Geochemistry.** This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) workbook file and 4 portable document format (.pdf) files.

*MRD382\_Strey\_Major and Trace Element Geochemistry.xlsx* consists of 6 worksheets that contain the results of all geochemical analyses performed at the Geoscience Laboratories (Geo Labs), Ontario Geological Survey, Sudbury. The samples are split into 5 worksheets, “2015 samples”, “2016 samples”, “2017 samples”, “2018 samples”, according to which year the samples were analyzed, and “Assay Results”, which contains all assay analyses from the map area. Worksheet “Abbreviations” lists abbreviations used throughout the workbook. The methods used, lower detection limit for each method, and reported units for each method are included for each element (and oxide) listed. These worksheets contain “Easting”, “Northing” and “Township” location data; UTM co-ordinates are provided in North American Datum 1983 (NAD 83), Zone 16. Each worksheet also contains descriptive data for each sample, including the rock composition, form, relative age, stratigraphic information, and geochemical affinities, which can all be useful for sorting the data.

*2015 Geo Labs Brochure.pdf* describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories for rocks analyzed during 2015.

*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.

*2018 Geo Labs Brochure.pdf* describes the analytical methods used at the Ontario Geological Survey Geoscience Laboratories for rocks analyzed during 2018.

**4. Petrography.** This folder contains 1 Microsoft® Excel® for Office 365 (.xlsx) workbook file.

*MRD382\_Strey\_Petrographic Data.xlsx* consists of 1 worksheet that contains a modal analysis for every sample collected during this study. Notes on the mineral and rock textures and relationships are included for each sample. For samples that contain a modal abundance reported under the column “other”, the known or speculated mineral is discussed in the “Description” column. This worksheet also contains the rock type for each sample based on the Total Alkalis versus Silica Diagram (LeMaitre 1989), cross-referenced from the geochemical data in this data release, along with rock type, form and stratigraphic information. The geographic co-ordinates for each sample are also provided (in Universal Transverse Mercator (UTM) co-ordinates in North American Datum 1983 (NAD83), Zone 16).

## Acknowledgments

This study focussed on the geology and geochemistry of the western Schreiber–Hemlo greenstone belt in Strey Township with the intent of interpreting a depositional (for supracrustal rocks), emplacement (for intrusive rocks) and structural history for this part of the belt. It is the intent of the authors that these data and interpretations be used as a broad framework upon which more detailed academic and mineral exploration activities may improve and expand.

The authors would like to thank the field crews from the summers of 2015 (Joseph Walker, Andrea Nywening, Matthew Hanewich and Lauren Madronich), 2016 (Kira Arnold, Mallory Metcalf, Lucas Wolfe and Haley Aldred), 2017 (Kira Arnold, Joshua Nguyen, Maddison Hodder and Gabrielle Klemt) and 2018 (Evelyn Moorhouse, Cassandra Powell, Mateo Dorado-Troughton, Rachel Bourassa, Jessica Verschoor and Shadman Islam) for their hard work and perseverance through the particularly rough terrain. The authors would like to thank the Richards family of Terrace Bay, who hosted the crew at their Jackfish Lake cottages on Highway 17 during the 2015–2018 field seasons, with special thanks to local prospector Wayne Richards, for all of his logistical aid and for sharing his abundance of local mineral exploration knowledge. Thanks to the people of Pic River and Pic Mobert First Nations communities for their gracious blessing and for allowing us to work on their traditional lands. Thanks also to Dorothy Campbell and Mark Puumala of the Resident Geologist Program Thunder Bay office for their help during this project.

Further information pertaining to this body of work is available through the authors.

## References

Jackson, S.L., Muir, T.L. and Romkey, S.W. 1995. A library of digital bedrock mapping symbols. Part 1: Figures and descriptions; Ontario Geological Survey, Open File Report 5909, 56p.

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