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These data accompany:

Preliminary Map P.3808, *Precambrian Geology of the Black Donald Lake Area, Grenville Province*.

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Users of OGS products are encouraged to contact those Aboriginal communities whose traditional territories may be located in the mineral exploration area to discuss their project.

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Miscellaneous Release—Data 350

**Geological, Geochemical and Geophysical Data Related to the Black Donald Lake Area, Grenville Province**

by M. Duguet

This publication can be downloaded from

[http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm\\_dir.asp?type=pub&id=MRD350](http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD350)

This digital data release contains field photographs, and whole-rock geochemical, magnetic susceptibility and scintillometer data collected as part of 1:20 000 scale mapping in the Black Donald Lake area (Project Unit 13-014) during the summer of 2014. Also included is a previously published article related to the project. This release comprises 176 photographs (as *.jpg* files), 2 Microsoft® Excel® 2013 (*.xlsx*) workbook files and 3 documents in portable document format (*.pdf*). These data augment Preliminary Map P.3808, *Precambrian Geology of the Black Donald Lake Area, Grenville Province*; the geological legend for the map is also provided.

Data are organized into 4 folders:

1. Geochemistry
2. Geology and Publication
3. Geophysics
4. Photographs

**1. Geochemistry.** This folder contains 1 Microsoft® Excel® 2013 (.xlsx) file.

*MRD350\_Black Donald Lake\_Geochemistry.xlsx* consists of 1 worksheet.

This worksheet also contains location data (“Easting”, “Northing”, and “Township”), “Rock Type”, and stratigraphic information, if known, for each sample collected; UTM co-ordinates are provided in North American Datum 1983 (NAD83), Zone 18.

“Whole rock data” worksheet contains 234 whole-rock geochemical analyses (including 11 duplicate analyses) acquired from 223 samples collected as part of this study during the summer of 2014. The geochemical analyses were performed at the Geoscience Laboratories (Geo Labs), Ontario Geological Survey, Sudbury. Sample descriptions and thin section descriptions (when available) are also provided; note: mineral abbreviations used in the worksheet are provided in this readme file. The methods used, lower detection limit for each method, and reported units for each method are included for each element (and oxide) listed.

**2. Geology and Publication.** This folder contains 2 portable document format (.pdf) files, one of which is a publication associated with this project.

*MRD350\_SoFW2014-14\_Duguet et al.pdf*: An article (Duguet, Whitney and Ma 2014), published in the Ontario Geological Survey *Summary of Field Work and Other Activities, 2014* volume, outlining the activities and results of field work for this project (Project Unit 13-014) during the summer of 2014.

*P3808\_Legend.pdf* is the general legend used as the base for Ontario Geological Survey Preliminary Map P.3808, *Precambrian Geology of the Black Donald Lake Area, Grenville Province* (Duguet, Ma and Whitney 2017). Material in the geochemistry file and the photograph captions file are cross-referenced to map codes in the legend.

**3. Geophysics.** This folder contains 1 Microsoft® Excel® 2013 (.xlsx) file.

*MRD350\_Black Donald Lake\_Geophysical Data.xlsx* contains 2 worksheets.

“Magnetic Susceptibility Data” worksheet provides magnetic susceptibility data from the study area collected during the summer of 2014.

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 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  $0.001 \times 10^{-3}$  SI units; the largest value is  $999 \times 10^{-3}$  SI units. Sample location information is given in UTM co-ordinates, Zone 18, NAD83.

“Scintillometer” worksheet contains ground gamma-ray scintillometer data collected from the study area during the summer of 2014.

Measurements were collected using an Exploranium® GR-130 MiniSpec gamma-ray spectrometer, serial number 4884, calibrated on July 15, 2003, using a NaI crystal and software version 501GEO. The instrument was stabilized daily, and data were recorded using the assay mode with a 5-minute count time. Quoted accuracy is 0.1% K, 0.4 ppm U, and 0.7 ppm Th for a sample with 2% K, 2 ppm U and 8 ppm Th. Sample location information is provided as UTM co-ordinates, NAD83, Zone 18. Easton (2009) provides precision and reproducibility data for the instrument.

**4. Photographs.** This folder contains 176 field photographs (as .jpg files) and 1 portable document format (.pdf) file. The photographs were taken during the summer of 2014 as part of the mapping project.

*MRD350\_Black Donald Lake\_Photo Captions.pdf* provides the station location, a brief photo description and identifies the scale used in the photo. Photo file names for the .jpg files are based on station location, e.g., 14MD040\_02-NW is photograph number 2 (“\_02”), from station MD040 in 2014, with the camera facing to the northwest. Station location information is given in UTM co-ordinates, Zone 18, NAD83.

## Mineral Abbreviations Used in Data Files

|            |               |           |                             |           |                                    |
|------------|---------------|-----------|-----------------------------|-----------|------------------------------------|
| al .....   | allanite      | fsp ..... | feldspar (undifferentiated) | py .....  | pyrite                             |
| ap .....   | apatite       | gr .....  | graphite                    | qtz ..... | quartz                             |
| aug .....  | augite        | grt ..... | garnet                      | scp ..... | scapolite                          |
| bt .....   | biotite       | hbl ..... | hornblende                  | sil ..... | sillimanite                        |
| cal .....  | calcite       | ilm ..... | ilmenite                    | spn ..... | sphene (titanite)                  |
| carb ..... | carbonate     | kfs ..... | potassium feldspar          | sul ..... | sulphide minerals<br>(unspecified) |
| chl .....  | chlorite      | mag ..... | magnetite                   | tr .....  | tremolite                          |
| cpx .....  | clinopyroxene | ms .....  | muscovite                   | zo .....  | zoisite                            |
| di .....   | diopside      | phl ..... | phlogopite                  | zr .....  | zircon                             |
| dol .....  | dolomite      | pl .....  | plagioclase                 |           |                                    |
| ep .....   | epidote       | po .....  | pyrrhotite                  |           |                                    |

## References

- Duguet, M., Ma, S. and Whitney, K. 2017. Precambrian geology of the Black Donald Lake area, Grenville Province; Ontario Geological Survey, Preliminary Map P.3808, scale 1:20 000.
- Duguet, M., Whitney, K. and Ma, S. 2014. Geology and mineral potential of the Black Donald Lake area, northeastern Central Metasedimentary Belt, Grenville Province; *in* Summary of Field Work and Other Activities, 2014, Ontario Geological Survey, Open File Report 6300, p.14-1 to 14-12.
- Easton, R.M. 2009. Characterization of rock units in the Grenville and Southern provinces by *in-situ* geophysical measurements and geochemistry; *in* Summary of Field Work and Other Activities, 2009, Ontario Geological Survey, Open File Report 6240, p.9-1 to 9-4.