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GEOCHEMICAL DATA FROM THE SILVER MOUNTAIN MAP AREA (NTS 12H/11), SOUTHERN LONG RANGE INLIER, NEWFOUNDLAND

A.M. Hinchey

Open File 012H/11/2328

St. John's, Newfoundland
June, 2021

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SUMMARY

This Open File release consists of whole-rock geochemical data from 153 rock samples collected in the Silver Mountain map area (NTS 12H/11), Southern Long Range Inlier, Newfoundland (Figure 1). The geological context of these samples and a description of the regional geology are contained in Hinchey (2010).

NOTES ON THE DATABASE

This data release contains whole-rock geochemical analyses of lithological units collected by the author in 2009. This open file places data in the public domain; no interpretation of the data is included in this report.

The compilation includes for each sample the location in UTM coordinates (Zone 21, NAD 27), a brief lithological description, and major-element and trace-element data (Appendix A). Unprocessed data for several standards and duplicates are provided (Appendices B through G) and may be used by the reader to assess the accuracy and precision of the analyzed data. The data are available in comma separated value format (.csv files) from the Geofiles website link (*see* Appendices). A list of abbreviations used in the report is provided in Table 1.

The analytical methods used for each element are listed in Table 2. The Geochemical Laboratory of the Geological Survey of Newfoundland and Labrador analyzed most of the major elements using ICP-OES following lithium metaborate fusion. FeO was measured by the titration method and LOI by the gravimetric method. Most of the trace elements were analyzed using ICP-OES following four-acid digestion. Silver was analyzed using ICP-OES following nitric acid digestion. INAA of trace elements was done by Bureau Veritas, an external commercial laboratory. These analytical procedures are described in Finch *et al.* (2018). Fluoride was analyzed using ISE as described in Wagenbauer (1983). Trace elements, including REE, were also analyzed by the external commercial laboratory Activation Laboratories, using ICP-MS following lithium metaborate/tetraborate fusion.

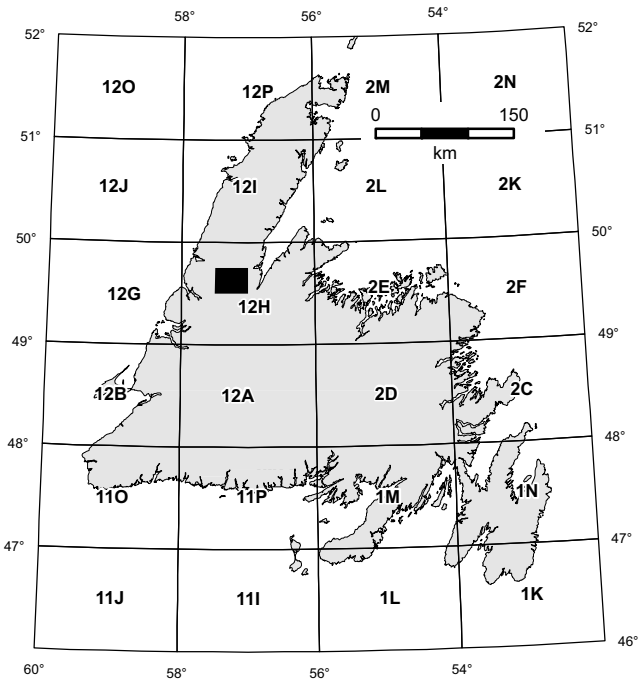

Figure 1. *Location map of the study area.*

A code of -99, reported for a given element, indicates that it was not analyzed. All other negative numbers indicate the concentration of the specific element in the sample was below the detection limit. Major elements are reported in weight percent, and trace elements are reported in ppm or ppb.

Table 1. List of abbreviations

Abbreviation	Explanation
-99	Sample not analyzed for that element
Fe_2O_3T	Total measured iron
ICP-OES-4ACID	Inductively Coupled Plasma Optical Emission Spectrometry following HF-HCl-HNO_3-$HClO_4$ acid digestion
ICP-OES-FUS	Inductively Coupled Plasma Optical Emission Spectrometry following lithium metaborate/tetraborate fusion
ICP-OES-HNO_3	Inductively Coupled Plasma Optical Emission Spectrometry following nitric acid digestion
ICP-MS-FUS	Inductively Coupled Plasma Mass Spectrometry following lithium metaborate/tetraborate fusion
INAA	Instrumental Neutron Activation Analysis
ISE	Ion-selective electrode
LOI	Loss-on-ignition
negative detection limit	Below detection limit
pct	Percent
ppm	Parts per million
ppb	Parts per billion
REE	Rare-earth elements
wt_pct	Weight percent

Table 2. Analytical methods for the elements

Element	Analytical Method
SiO_2, Al_2O_3, Fe_2O_3T, MgO, CaO, Na_2O, K_2O, TiO_2, MnO, P_2O_5, Cr, Zr, Ba	ICP-OES-FUS
Fe_2O_3	Calculation
FeO	Titration
LOI	Gravimetric
As, Ba, Be, Cd, Ce, Co, Cr, Cu, Dy, Fe, La, Li, Mn, Mo, Nb, Ni, P, Pb, Rb, Sc, Sr, Ti, V, Y, Zn	ICP-OES-4ACID
V, Cr, Co, Ni, Cu, Zn, Ga, Ge, As, Rb, Sr, Y, Zr, Nb, Mo, Ag, In, Sn, Sb, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Tl, Pb, Bi, Th, U	ICP-MS-FUS
Ag	ICP-OES-HNO_3
F	ISE
Sb, As, Ba, Br, Ce, Cs, Cr, Co, Eu, Au, Hf, Fe, La, Lu, Mo, Rb, Sm, Sc, Se, Na, Ta, Tb, Th, W, U, Yb, Zr	INAA

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APPENDICES

Appendices are available as digital comma-separated value files (.csv) through this link.

Appendix A: Major Element and Trace Element Data

Appendix B: Major Element ICP-OES Standards and Duplicates

Appendix C: Trace Element ICP-OES Standards and Duplicates

Appendix D: Trace Element ICP-MS Standards and Duplicates

Appendix E: Fluoride ISE Standards and Duplicates

Appendix F: Silver ICP-OES Standards and Duplicates

Appendix G: Trace Elements INAA Standards