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Mines

GEOCHEMICAL DATA FROM THE HOPEDALE BLOCK (NTS MAP AREAS 13M AND 13N), LABRADOR

A.M. Hinchey, H.A. Sandeman and H.E. Campbell

Open File LAB/1763

St. John's, Newfoundland
October, 2021

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SUMMARY

This Open File release consists of whole-rock geochemical data from 164 rock samples collected in NTS map areas 13M and 13N, Hopedale Block, Labrador. The geological context of these samples and a description of the regional geology are contained in Corrigan *et al.* (2018) and Hinchey and Corrigan (2019).

NOTES ON DATABASE

This data release contains whole-rock geochemical analyses of samples from lithological units collected within NTS map areas 13M and 13N (Figure 1) in 2017, 2018 and 2019. This open file release places the analytical data in the public domain; no interpretation of the data is included in this report.

The compilation includes the location in UTM coordinates (Zone 20, NAD 27) for each sample, a brief lithological description, and major-element and trace-element data (Appendix A). Unprocessed data for standards and duplicates are provided (Appendices B and C), along with Certified Reference Material values (Appendix D), 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. Trace elements were analyzed using ICP-OES following four-acid digestion, and by ICP-MS following lithium metaborate/tetraborate fusion; a few samples were analyzed for a longer period of time in the ICP-MS, resulting in lower detection limits. Silver was analyzed using ICP-OES following nitric acid digestion. Fluoride was analyzed using ISE. Trace elements were also analyzed with INAA by the external commercial laboratory Bureau Veritas. These analytical procedures are described in Finch *et al.* (2018).

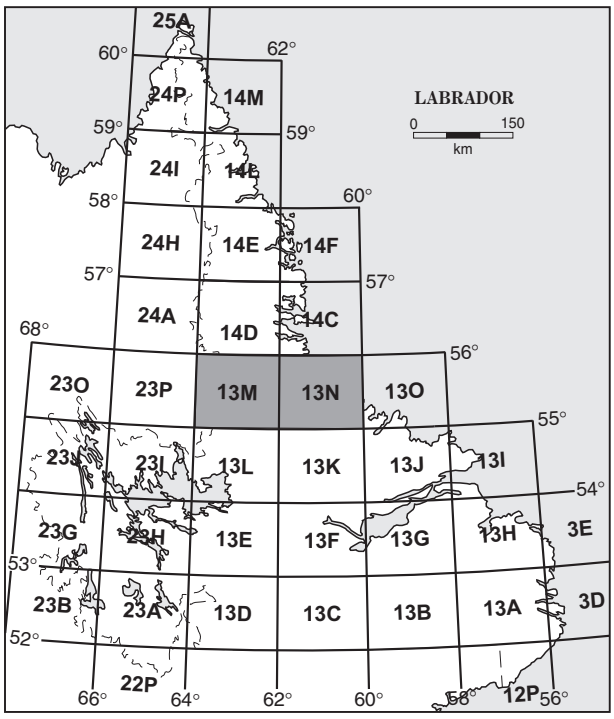

Figure 1. *Location map of the study area.*

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
Avg	Average value
Dup	Duplicate analysis
Fe_2O_3T	Total measured iron
GOI	Gain-on-ignition
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
LCL	Lower control limit
LOI	Loss-on-ignition
negative detection limit	Below detection limit
pct	Percent
ppm	Parts per million
ppb	Parts per billion
Rec Val	Recommended value
REE	Rare-earth elements
UCL	Upper control limit
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, Ba, Be, Sc, Zr	ICP-OES-FUS
Fe_2O_3	Calculation
FeO	Titration
LOI	Gravimetric
As, Cd, Co, Cu, Li, Mn, Ni, Pb, Rb, S, V, Zn	ICP-OES-4ACID
Ga, Ge, Sr, Y, Nb, Mo, Sn, Cs, La, Ce, Pr, Nd, Sm, Eu, Tb, Gd, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Tl, 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, W, U, Yb, Zr	INAA

REFERENCES

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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: Standards

Appendix C: Duplicates

Appendix D: Certified Reference Materials