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Miscellaneous Release—Data 336

Geochemical Data Related to a Study of Platinum Group Element Mineralization in Nipissing Gabbro Intrusions and the River Valley Intrusion, Sudbury Region, Southern Province

by L.S. Jobin-Bevans¹

This publication can be downloaded from

http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD336

This release contains whole-rock geochemical data and assay data; field photographs, photomicrographs and back-scatter electron microscope images; and a summary of the project results. All these data were collected as part of a study of platinum group element mineralization in Nipissing gabbro intrusions in the Southern Province in and around Sudbury, Ontario, between September 1996 and May 2004. This project (Project Unit 97-012) was a collaborative effort between the Ontario Geological Survey, the Department of Earth Sciences at Laurentian University in Sudbury and the Department of Earth Sciences at the University of Western Ontario in London, Ontario, in support of a PhD thesis study by the author (Jobin-Bevans 2004).

This release comprises 104 images (as *.jpg* files), 2 Microsoft[®] Excel[®] 2010 (*.xlsx*) workbook files and 6 documents in portable document format (*.pdf*).

Data are organized into 3 folders:

1. Geochemistry
2. Photographs
3. Presentations and Publications

¹ Caracle Creek International Consulting Inc. (Canada), 1545 Maley Drive, Ste. 2018, Sudbury, Ontario P3A 4R7

1. Geochemistry. This folder contains 2 Microsoft® Excel® 2010 (.xlsx) files.

MRD336_Nipissing Gabbro_Geochemical Data.xlsx consists of 15 worksheets that contains the results of whole-rock geochemical analyses of 218 samples collected as part of the project, of which 188 samples are from Nipissing gabbro intrusions. UTM co-ordinates are provided in North American Datum 1983 (NAD83), Zone 17.

Worksheet “Abbreviations” is an explanation of all abbreviations used in the workbook.

Worksheet “Sample Summary List” lists all samples collected as part of the project.

Note that not all samples were analyzed for geochemistry.

Worksheet “Raw NG Data 188” provides all of the geochemical data from 188 samples of Nipissing gabbro that were collected during the study.

Worksheet “Dikes” contains whole-rock geochemical data for 6 dikes sampled as part of the project.

Worksheet “Sedimentary Rocks” contains whole-rock geochemical data for 11 samples of metasedimentary rocks that were in direct contact with Nipissing gabbro intrusions.

Worksheet “Unsure NG-Sed” contains whole-rock geochemical data for 13 samples collected in the contact zone of Nipissing gabbro intrusions for which the protolith could not be readily established.

Worksheet “Final NG Data 188 Rock” provides the geochemical data from 188 samples of Nipissing gabbro that were used in the PhD thesis.

Worksheet “NG CIPW” presents the corresponding CIPW normative calculations for these 188 samples. A summary of these data were included in Appendices 1C and 1D in Jobin-Bevans (2004).

The subsequent worksheets are sorted versions of “Final NG Data 188 Rock”, and are provided for convenience.

Worksheet “Final NG Data 188 Area” has been sorted by area (i.e., intrusion).

Worksheets “NG Majors <1% S 152 ROCK” and “NG Majors <1% S 152 AREA” represent subsets of the data selected based on sulphide content and/or arranged by area.

Worksheets “NG Trace 188 AREA” and “NG Trace 188 CIPW” have been sorted on the basis of trace element ratios and/or CIPW determined rock names.

Worksheet “NG PGE <0.05% S 59 Area” has been sorted to include those samples that are essentially unmineralized.

Worksheet “NG PGE 24 High S” has been sorted to include those samples which are the most mineralized.

MRD336_River Valley_Geochemical Data.xlsx consists of 8 worksheets that contains the results of 44 whole-rock geochemical analyses and 175 platinum group element analyses of samples from the River Valley intrusion collected as part of the project. A summary of these data were included in Appendices 1E, 1F, 1G and 1H in Jobin-Bevans (2004).

Worksheet “Abbreviations” is an explanation of all abbreviations used in the workbook.

Worksheet “RVI Data Matrix-Fragment” presents data from matrix-fragments pairs from the mineralized zone of the River Valley Intrusion.

Worksheet “RVI CIPW Matrix-Fragment” presents the results from normative calculations for these matrix-fragment pairs and worksheet “RVI CIPW M-F Rock Names” gives the rock names for the samples based on the normative data.

Worksheet “RVI DDH-022 Group 1 Data” presents platinum group element data for diamond-drill hole RV-022 from the River Valley intrusion.

Worksheet “RVI DDH-022 Group 2 Data” presents whole-rock data from the same diamond-drill hole, with worksheet “RVI DDH-022 CIPW” presenting the results from normative calculations for these whole-rock samples and worksheet “RVI DDH-022 Names” giving the rock names for the samples based on the normative data.

2. Photographs. This folder contains 104 field photographs, photomicrographs and back-scatter scanning electron microscope images (as *.jpg* files), obtained during the project, and 1 portable document format (*.pdf*) file.

MRD336_Nipissing Gabbro_Photo Captions.pdf provides information about the photos. Station location information is given in UTM co-ordinates, NAD83, Zone 17; however, note that the UTM co-ordinates are for the approximate centre of the examined properties, and are not necessarily the exact site where the photograph was taken. Photographs 4-1 to 4-19, 5-1 to 5-7 and 6-1 to 6-14 appeared in Jobin-Bevans (2004).

3. Presentations and Publications. This folder contains 5 portable document format (*.pdf*) files of publications and presentations, published or presented between 1997 and 2004, related to this project.

MRD336_SoFW1997-19_Jobin-Bevans et al.pdf: An article (Jobin-Bevans, Keays and MacRae 1997), published in the Ontario Geological Survey *Summary of Field Work and Other Activities, 1997* volume, outlines the field work for this project (Project Unit 97-012) conducted in 1997.

MRD336_SoFW1998-33_Jobin-Bevans et al.pdf: An article (Jobin-Bevans, MacRae and Keays 1998), published in the Ontario Geological Survey *Summary of Field Work and Other Activities, 1998* volume, outlines the field work for this project (Project Unit 97-012) conducted in 1998.

MRD336_SoFW1999-33_Jobin-Bevans et al.pdf: An article (Jobin-Bevans, Keays and MacRae 1999), published in the Ontario Geological Survey *Summary of Field Work and Other Activities, 1999* volume, outlines the field work for this project (Project Unit 97-012) conducted in 1999.

MRD336_PhD Thesis Defence Presentation_Dec2004.pdf: Presentation by the author, as part of his PhD defense in December 2004, summarizing the major conclusions related to the project.

MRD336_Nipissing Gabbro Exploration Guidelines.pdf: A one-page document that summarizes the geochemical criteria that are associated with nickel-copper-platinum group element mineralization in Nipissing gabbro intrusions. The more criteria that are present in an examined intrusion, the greater likelihood that mineralization is present.

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References

- Jobin-Bevans, L.S. 2004. Platinum-group element mineralization in Nipissing gabbro intrusions and the River Valley intrusion, Sudbury region, Ontario; unpublished PhD thesis, University of Western Ontario, London, Ontario, 572p.
- Jobin-Bevans, L.S., Keays, R.R. and MacRae, N.D. 1997. Metallogenic potential of the Nipissing diabase: New approaches to ascertaining the mineral potential; *in* Summary of Field Work and Other Activities 1997, Ontario Geological Survey, Miscellaneous Paper 168, p.93-95.
- 1999. Cu-Ni-PGE in Nipissing diabase: Results from surface and core samples; *in* Summary of Field Work and Other Activities 1999, Ontario Geological Survey, Open File Report 6000, p.352-356.
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