MINERALS AND ENERGY BRANCH

REPORT OF ACTIVITIES

1999

REPORT ME 2000-1

Eds. D. R. MacDonalD AND K. A. Mills

NOVASCOTIA

Natural Resources
REPORT OF ACTIVITIES

1999

REPORT ME 2000-1
Eds. D. R. MacDonald and K. A. Mills

NOVASCOTIA
Natural Resources

Honourable Ernest L. Fage
Minister

D.J. Graham
Deputy Minister

Halifax, Nova Scotia
2000
Cover photo

Photograph of a gold nugget from the Whin Vein in the Blueberry Hill Mine, Tangier Gold District. This grain was one of many recovered from a 75 kg face sample of the 12-55 south-drift-west heading in April 1999. The calculated grade from this 45 cm wide chip sample across ~5 m of exposed face was 70.85 g Au/t. Much of the gold at Tangier, like this grain, has high fineness (~97% Au, ~3% Ag) and displays crystalline, wire, flake and massive textures hosted in clear to white massive quartz in bedding-parallel veins. Open spaces are still apparent within the grain. This gold grain shows minor deformation in the centre of the photo which is not apparent in the attached quartz. The image was taken with a Nikon SMU-U binocular microscope. The long dimension of the grain is 2.7 mm.

Editors: D. R. MacDonald
K. A. Mills

Word Processing: B. L. MacDonald

Cartography: J. Campbell
W. Burt
P. Belliveau
C. Phillips
P. Fraser
J. Webster
E. McNamara

Photography: C. Murphy

Publications of the Nova Scotia Department of Natural Resources are available through the departmental library at:

1701 Hollis Street, 3rd Floor
Halifax, Nova Scotia
B3J 2T9
902-424-8633
# Table of Contents

**Minerals and Energy Branch Activities**

Overview of the Geology and Mineral Resources of the Western Part of the Windsor (Kennetcook) Basin, Wolfville - Windsor Area (NTS 21H/01 and part of 21A/16), Hants and Kings Counties, Nova Scotia - *R. C. Boehner, R. G. Moore and C. Kennedy* ................................................................. 1

Paleozoic Basin Research - *J. H. Calder* .................................................................................................................. 13


Geological Mapping and Mineral Inventory Studies in the Marble Mountain - Kennedys Big Brook Area (NTS 11F/14), Cape Breton Island, Nova Scotia - *G. J. DeMont, M. A. MacDonald and P. W. Finck* ................................................................. 21

Stimulating the Mineral Industry with Prospector Assistance - *H. V. Donohoe, Jr.* .................................................... 29

Digital Information Services - *B. E. Fisher, J. C. Poole and J. S. Saunders* ............................................................... 35

Mesozoic Stratigraphy and Kaolin Exploration in the Sibley Road Area (NTS 11E/03), Halifax County - *M. X. Gillis and R. R. Stea* ........................................................................................................................................ 41

C-horizon Till and Stream Sediment Geochemical Survey, Kennedys Big Brook (NTS 11F/14), Inverness County - *T. A. Goodwin* ................................................................................................................................. 47

Musquodoboit Batholith Project and the Geology of NTS Map Area 11D/15 (Tangier) - *L. J. Ham* ......................... 53

Eastern Shore Compilation Project - *L. J. Ham* ........................................................................................................ 59

Mineral Resource Land-use Information and Policy - *D. B. Hopper and F. J. Bonner* .................................................. 63

Geology of the Wittenburg Mountain Slate Belt, Centre Musquodoboit Area (NTS 11E/03), Nova Scotia - *R. J. Horne, M. S. King and P. Young* ............................................................................................................ 67

Geology of the Weymouth - Church Point Area (NTS 21A/05 and 21B/08), Southwest Nova Scotia - *R. J. Horne, C. E. White, C. Muir, M. D. Young and M. S. King* .................................................................................................................. 75

Wall-rock Alteration and Structurally Controlled Mineralization at the Brockfield Barite Deposit (NTS 11E/06), Colchester County, Nova Scotia - *D. J. Kontak* .................................................................................................................... 93

Nature of Zeolite Distribution in the North Mountain Basalt, Southern Nova Scotia: Field and Geochemical Studies - *D. J. Kontak* ........................................................................................................................................ 105

Petrological Studies of Aplitic-Pegmatite Sheets, West Dover - Peggys Cove Region (NTS 11D/05) of the South Mountain Batholith, Nova Scotia - *D. J. Kontak and J. Dostal* ................................................................................. 125

Geoscience Editing and Publishing - *D. R. MacDonald, B. L. MacDonald, K. A. Mills, J. S. Saunders and A. Miller* ........................................................................................................................................... 143

Drill Core Library Programs in 1999 - J. M. McMullin, D. Weir and J. Horton .......................................................... 157
A Prospecting Model for Recognition of VLF-EM Signatures in Macumber Formation Rocks in the Walton Area (NTS 21H/01), Hants County - R. F. Mills .......................................................... 161
The Lower Caledonia Beryl Pegmatite (NTS 11E/08), Guysborough County, Nova Scotia - G. A. O'Reilly .......... 175
Mineral Inventory Activities for 1999 - G. A. O'Reilly and G. J. DeMont .......................................................... 183
Aggregate Program - G. Prime .......................................................... 187
The Tangier Gold Deposit (NTS 11D/15A): Underground Gold Assay Results from the Whin Vein - P. K. Smith .......................................................... 189

External Abstracts and Conference Presentations

Superimposition of Quartz-carbonate-talc Sinter Deposits with Massive Sulphide Mineralization in a 650 Ma Hydrothermal Sea Floor Setting at Stirling, Southeast Cape Breton Island, Nova Scotia - Daniel J. Kontak .......................... 200
New Constraints on the Age and Origin of the Dunbrack Pb-Cu-Zn-Ag Deposit, Musquodoboit Batholith, Southern Nova Scotia - Daniel J. Kontak, Kevin Ansdell, and Douglas Archibald .......................................................... 201
Occurrence of Microgarnets Coring Plagioclase Crystals in Granodiorite of the South Mountain Batholith, Nova Scotia - L. Ransom, B. Murphy and E. J. Kontak .......................... 202
Evidence for a ~13 ka Glacier Advance in Atlantic Canada - R. R. Stee .......................................................... 203
Using Whole Rock Geochemistry to Locate the Source of Igneous Erratics from Drumlins on the Atlantic Coast of Nova Scotia - R. R. Stee and G. Pe-Piper .......................................................... 204
Preliminary Geological Map of the Digby Area, Nova Scotia - Chris White, Rick Home, Catherine Muir and James Hunter .......................................................... 205

Appendix 1 - Mining industry Activity in Nova Scotia, 1998 .................................................................................... 207
Appendix 2 - Minerals and Energy Branch Geoscience Maps and Publications for Sale ........................................... 223
Appendix 3 - Minerals and Energy Branch Digital Geoscience Data for Sale ......................................................... 263