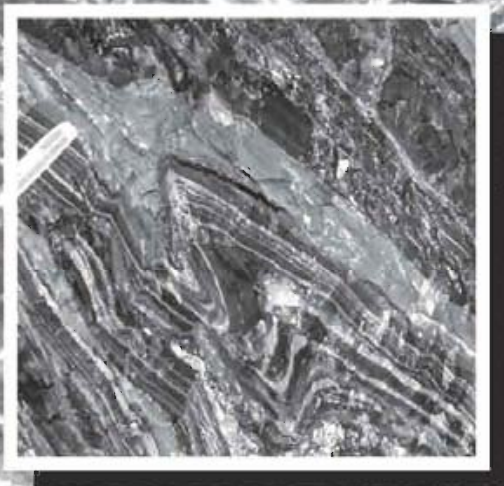


Geological Fieldwork 2003

A Summary of Field Activities
and Current Research



Paper 2004-1



**BRITISH
COLUMBIA**

Ministry of Energy and Mines

Geosciences, Research and Development Branch

GEOLOGICAL FIELDWORK 2003

**A Summary of Field Activities and
Current Research**

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Mines and Minerals Division
Geosciences, Research and Development Branch

Parts of this publication may be quoted or reproduced if source and authorship is acknowledged. The following is the recommended format for referencing individual works contained in this publication:

Alldrick, D.J., Stewart, M.L., Nelson, J.L. and Simpson, K.A. (2004): Tracking the Eskay Rift through northern British Columbia - Geology and Mineral Occurrences of the upper Iskut River area; *in* Geological Fieldwork 2003, *British Columbia Ministry of Energy and Mines*, Paper 2004-1, p 1-13.

This publication is also available for free, as colour, digital files in Adobe Acrobat PDF format from the BC Ministry of Energy and Mines internet website at:

<http://www.em.gov.bc.ca/Mining/Geolsurv/Publications/catalog/catfldwk.htm>

COVER PHOTO: *Eskay Creek - 21B Ore Zone* - Black mudstones, siltstones and sandstones of Contact Mudstone host rock (dark bands), interbedded with graded clastic sulphide and sulphosalt beds (light bands) exposed in the west wall of the 865 crosscut of the 21B ore zone, Eskay Creek gold-silver mine. Stratigraphic tops toward upper right; scale bar shows 1-inch intervals in inset photo. Driven in September, 1990, the 865 crosscut offered the first opportunity to view this blind orebody in place, and provided the original bulk sample for smelter and pilot mill tests. Despite dilution from the unmineralized mudstone intervals, the 21B Zone averaged 66 g/t gold and 2,930 g/t silver. The stratiform, tabular 21B Zone is 900 metres long, up to 200 metres wide and up to 20 metres thick. - *photo by Dani Alldrick*

British Columbia Cataloguing in Publication Data

Main entry under title:

Geological Fieldwork: - 1974 -

Annual.

Issuing body varies

Vols. For 1978-1996 issued in series: Paper / British Columbia. Ministry of Energy, Mines and Petroleum Resources; vols for 1997- 1998, Paper / British Columbia. Ministry of Employment and Investment; vols for 1999- , Paper / British Columbia Ministry of Energy and Mines.

Includes Bibliographical references.

ISSN 0381-243X=Geological Fieldwork

1. Geology - British Columbia - Periodicals. 2. Mines and mineral resources - British Columbia - Periodicals. 3. Geology - Fieldwork - Periodicals. 4. Geology, Economic - British Columbia - Periodicals. 5. British Columbia. Geological Survey Branch - Periodicals. I. British Columbia. Geological Division. II. British Columbia. Geological Survey Branch. III. British Columbia. Geological Survey Branch. IV. British Columbia. Dept. of Mines and Petroleum Resources. V. British Columbia. Ministry of Energy, Mines and Petroleum Resources. VI. British Columbia. Ministry of Employment and Investment. VII. British Columbia Ministry of Energy and Mines. VIII. Series: Paper (British Columbia. Ministry of Energy, Mines and Petroleum Resources). IX. Series: Paper (British Columbia. Ministry of Employment and Investment). X. Series: Paper (British Columbia Ministry of Energy and Mines).

QE187.46 622.1'09711 C76-083084-3 (Rev.)

VICTORIA
BRITISH COLUMBIA
CANADA

JANUARY 2004

FOREWORD

The British Columbia Ministry of Energy and Mines presents the results of provincial geoscience surveys in the twenty-ninth edition of *Geological Fieldwork: A Summary of Fieldwork and Current Research*. Most articles are contributions from staff of the Geological Survey Branch, now called the Geosciences, Research and Development Branch. As in previous years, the volume also publishes studies by university and industry authors.

This past year the Branch's field program was delivered largely through partnerships with government, industry and universities. Virtually all operating funds for field projects were provided by partners, due to government budget shortfalls; the number of projects also declined, which reflects the reduced staffing available to the Branch.

The Geological Survey of Canada was a strong partner in field surveys and collaborative geoscience studies, through their Targeted Geoscience Initiatives Program and involvement in the Atlin, Iskut and Toodoggone field projects. Articles in this volume include reports on regional mapping in the Joss'alun region south of Atlin and in the Iskut Rift north of the Eskay Creek gold mine. The discovery of a number of new mineral occurrences in both areas highlights the potential for success of prospecting and mineral exploration. A major, integrated geology and geophysics project in the Toodoggone mining camp was funded not only by the two government surveys, but also by five industry partners. The Toodoggone has proven to be one of the more active exploration regions in the province in 2003, and companies have already been staking additional claims in anticipation of the early release of new survey data.

Industry partnerships were also a significant component of the Atlin and Foremore field projects. In the latter case, interpretations of possible regional volcanic massive sulphide horizons for northwestern British Columbia are being advanced, based on work focused on the host stratigraphy of the new mineral occurrences on the property.

This volume also includes a collection of articles derived from projects funded, at least in part, by the British Columbia and Yukon Chamber of Mines through their *Rocks to Riches* program. Industry, university and BC Geological Survey staff have written these articles. Several projects have used the province's extensive regional geochemical survey database to identify anomalies warranting consideration and possible exploration follow-up. Three articles report on preliminary investigations into the province's emerald and diamond potential - topics of considerable interest as these gemstones have now been found in nearby Yukon and Alberta respectively. An investigation of platinum group element mineralization in the Afton copper-gold porphyry deposit provides quality analyses, which highlight a significant palladium component to this well-known BC deposit.

The Oil and Gas Division of the Ministry of Energy and Mines has had another very successful year with numerous initiatives to enhance the energy sector, including a number of geoscience-related projects. The results from these programs are being published by the Ministry in a volume entitled, *Summary of Activities* being published by the Energy-Resource Development and Geoscience Branch.

Over the past year the Branch published 9 Open Files, 3 Geoscience Maps, 24 GeoFiles, 1 Paper, 6 Information Circulares and Geological Fieldwork 2002, as well as improving web access to information. These, and all past publications, are posted to the Ministry of Energy and Mines website. MapPlace, one of the world's premier internet-map systems, continues to improve with the addition of new tools and data layers. The site is expected to exceed two million hits in 2003.

This volume reflects the hard work and expertise of numerous authors who have earned our thanks for their contributions. The articles have been improved by peer and supervisor review. Many of the manuscripts in the volume were formatted by George Owsiacki and Garry Payie, or individual authors. Again for yet another year, Brian Grant earns special commendation for coordinating the organization and publication of the volume.

D.V. Lefebure
Director – Chief Geologist
Geosciences, Research and Development Branch

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