



# **GEOLOGICAL FIELDWORK 2006**

*A Summary of Field Activities and Current Research*



**Report 2007-1**

**Ministry of Energy, Mines  
and Petroleum Resources**  
British Columbia Geological Survey

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# Ministry of Energy, Mines and Petroleum Resources Mining and Minerals Division British Columbia Geological Survey

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**COVER PHOTO:** *Photo of Chilcotin basalts with well-developed columnar jointing, near Quesnel, which are typical of the plateau basalts in central British Columbia. These basalts are the focus of much recent geoscience research as geoscientists attempt to better understand their character, distribution and thickness, particularly in the interior plateau region most affected by the Mountain Pine Beetle epidemic.*

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## FOREWORD

### **Geological Fieldwork 2006**

The **British Columbia Geological Survey** (BCGS) presents the results of 2006 geoscience surveys and studies in this thirty-second edition of *Geological Fieldwork*. Most of the articles within the first half of this volume are contributions from Survey staff who have worked extensively throughout the province on geology, geochemistry and mineral deposits. In previous years the results of similar field surveys and the provision of geoscience data has led to claim staking and increased mineral exploration expenditures. These are the first steps towards the development of new mines which benefit British Columbians, particularly those living in regional communities.

The second part of this volume consists of articles provided by **Geoscience BC**, an industry-focused, not-for-profit society that works with industry, academia, government, First Nations and communities to attract mineral and oil and gas investment to British Columbia. These articles span a wide spectrum from geochemical and geophysical surveys and mineral deposit studies to new exploration tools. For details of the Geoscience BC program, see their program review and project reports in this volume.

### **BC Geological Survey Successes**

- British Columbia Geological Survey geological database was ranked number one globally by the Fraser Institute Survey.
- Staff are key contributors to the volume titled “*Paleozoic Evolution and Metallogeny of Pericratonic Terranes at the Ancient Pacific Margin of North America*” published by the Geological Association of Canada, Special Paper 45.
- Over 95% of industry assessment reports have been published to the Survey website to improve access to this critical exploration database. This is part of an ongoing responsibility to act as the custodian for the province’s mineral and coal geoscience data.
- Rift model published pointing out key locations for exploration for Eskay Creek-type Au-Ag deposits.
- MapPlace continues to be used by the exploration community from around the world and to attract exploration investment to the province with more than 6 million visits during 2006.
- Systematic geology and geophysical surveys completed for the Toodoggone mining camp with new insights into the metallogeny of the porphyry and epithermal deposits.
- An evaluation of the Quaternary volcanic cover rocks in the Interior Plateau suggests that they are thinner and less extensive than previously thought, which opens up new exploration potential.
- Survey staff, including those based in Vancouver and Ministry regional offices, contributed their expertise to assist in government decisions, respond to client inquiries in confidence and report on industry activity in the province.
- Survey staff continue to train and mentor geology students as they prepare for their careers.

### **2006 Field Surveys and Publications**

Articles in this volume include reports on British Columbia Geological Survey programs in the Smithers-Hazelton, Canim Lake, Rock Creek, northeast coalfield, northern Vancouver Island and Terrace areas. The Survey has recognized the impact of the Mountain Pine Beetle infestation in the central interior of the province and initiated a new survey to complement existing projects in this area to attract mineral exploration. Despite excellent mineral potential, the central interior has been under-explored due to widespread glacial till and young, volcanic cover rocks. Geoscience could provide one option to help alleviate the economic downturn in forestry by attracting mineral exploration and possibly mine development. Studies continued at the provincial scale on industrial minerals and geochemistry. British Columbia’s largest metal deposits, porphyries, continued to be the focus of a joint partnership with several companies and university researchers.

Many BCGS programs involved cooperative partnerships with universities, other government agencies, First Nations and industry. The Survey continued its tradition of working with the Geological Survey of Canada on British Columbia projects providing technical and financial assistance to the Targeted Geoscience Initiative in southern British Columbia. The new agency, Geoscience BC, is another key partner.

Over the past year the Geological Survey Branch published *Geological Fieldwork 2005*, *Exploration and Mining in British Columbia 2005*, 14 Open File map and reports, 7 Geoscience Maps, 12 GeoFile maps, reports and data and 5 Information Circulars. All geoscience publications are routinely posted to the Ministry of Energy, Mines and Petroleum Resources website. MapPlace, one of the world’s premier geoscience internet-map systems, continues to improve with the additional data layers and improved tools. Clients can now access more than 95% of the company mineral assessment reports from the ARIS database over the internet. Survey staff played active roles as presenters and organizers at numerous conferences and events to market British Columbia’s mineral potential, including trade missions to Toronto and China, international conferences in Toronto and Vancouver, and numerous meetings and workshops around the province.

This Fieldwork volume is made possible by the hard work and expertise of numerous authors who have contributed their insight to improve our understanding of British Columbia’s geology and mineral deposits. The articles have been improved by peer and supervisor review. The quality services of RnD Technical are acknowledged for helping to put the volume together. However, it is Brian Grant, the editor, who deserves special commendation for being the key person in so many ways in producing *Geological Fieldwork*. This is his 19th year at the helm.

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British Columbia Geological Survey*

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