Ministry of Energy, Mines
and Petroleum Resources
Mining and Minerals Division

EXPLORATION AND MINING
in British Columbia 2008

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Front Cover:
A detailed in-fill drilling program was conducted in the Main zone of the Kutcho Creek deposit in 2008. Sherwood Copper Corporation completed its acquisition of Western Keltic Mines Inc in early 2008 and merged with Capstone Mining Corporation in September 2008. The two companies are now Capstone Mining Corporation. The Kutcho Creek Cu-Zn-Ag-Au Volcanic Massive Sulphide deposit is located approximately 100 km east of Dease Lake. Drilling amounted to 9900 m in 81 holes. Measured and indicated resources at Kutcho Creek total 17 690 706 tonnes, grading 1.17% Cu, 2.36% Zn, 27.5 g/t Ag and 0.34g/t Au. (Photo Credit: Jay Fredericks)

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FOREWORD

INTRODUCTION

Exploration and Mining in British Columbia 2008 represents the latest addition to continuing documentation of the activity of the province's exploration and mining industry that goes back to 1874 when the *Annual Report of the British Columbia Minister of Mines* first went to print. It supports one of the best geoscience databases in the world, featuring free and public Internet access through MapPlace and a comprehensive record of industry and government-generated geoscience information.

This publication is closely linked to its companion document *British Columbia Mines and Mineral Exploration Overview 2008,* by giving a more detailed description of key projects, documenting additional exploration efforts and providing a regional perspective on the exploration and mining industry.

BC's Regional Geologists and the Mineral Development Office

This document is primarily compiled and written by BC's Regional Geologists with the assistance of other individuals as acknowledged below. The Regional Geologists are located in Cranbrook (Dave Grieve), Kamloops (Bruce Madu), Prince George (John DeGrace), Smithers (Paul Wojdak) and Vancouver (Bruce Northcote). They support the Mineral Development Office in Vancouver (Jay Fredericks, Director) in providing front-line stimulation and promotion of mineral exploration and development in the province.

Key functions of all these individuals include:

- Fostering sustainable exploration, development and use of the Province's mineral and coal resources;
- Providing clients with technical information and professional advice about known and potential mineral and coal deposits, including the latest information available from key geoscience applied-research organizations such as the British Columbia Geological Survey and Geoscience BC;
- Facilitating future mineral development by providing geological and mineral resource information to project review or land use decision-making processes;
- Monitoring the status of the mining industry and the development of infrastructure required for mineral resource development;
- Working on field projects and surveys, compilations, promotional brochures and deposit models; and
- Contributing information to maintain and update geoscience databases such as MINFILE, commodity files and mineral resource inventories.

Methodologies

Compilation of this publication presents certain challenges, as deadlines demand manuscript submission before all information from summer and fall programs is available. Informal surveys are undertaken to gather much of the information, and in some instances the professional judgements of the authors are employed to provide estimates that are as accurate as possible. The cooperation of the industry in providing information and access to project sites is always welcomed and sincerely appreciated. A significant amount of information comes from corporate press releases and regulatory filings. Not all active 2008 programs are included in this document: the intent is to provide an overall summary of regional levels of activity. Often missing are the early stages of exploration where prospectors comb the land, or grass roots exploration programs that are carried out below *Mines Act* permit thresholds. The authors strive to capture these activities where possible, as they are fundamental to all discoveries.

Beginning this year, exploration expenditures are broken down by category: grassroots exploration, early-stage exploration, advanced exploration/deposit appraisal, mine evaluation, and mine property exploration; in most chapters the breakdown of expenditures is displayed graphically in a pie chart. Grassroots exploration commonly does not require permitting and the proportion assigned to this category is likely to be low. Early-stage exploration involves focused activities often based on a deposit model. It may include geophysics, geochemistry, trenching and drilling. Advanced-stage exploration is concerned with resource definition emphasizing drilling and bulk sampling, but included may be baseline environmental studies, economic pre-feasibility work, and exploration of secondary targets. Mine evaluation begins with the firm commitment to develop a resource, and usually coincides with a pending application to government to open a mine; it tends to concentrate on the environmental, social, engineering and financial assessments of a project. Mine property exploration represents work on a mining property other than that done within or immediately adjacent to the producing ore deposit; it may have characteristics of early-stage or advanced exploration.

Since the exploration expenditures are ultimately estimates, final figures are rounded to the nearest whole million dollar. In prior years this was not consistently done.

MINERAL EXPLORATION SUMMARY 2008

The British Columbia mining industry began 2008 with robust mine performance and surging exploration brought on by both high demand and prices for its products. However, tightening of financial markets throughout the year led to a slowdown and, late in the year, a 50-70 per cent reduction in most commodity prices caused a sharp retrenchment among producers and contraction of exploration. Mineral exploration expenditures were $367 million, the second highest figure ever recorded.

The most popular exploration target was copper-gold deposits; many are in Quesnel and Stikine terranes. Highlight projects include the Mitchell deposit at KSM, Ajax, Kwanika, Snowfield and Woodjam. Significant copper-molybdenum programs were also completed at the Berg, Catface, Hushamu, Red Chris and Schaft Creek prospects. The next most sought-after metal was molybdenum, with which British Columbia is richly endowed and is Canada's only producer. Exploration was activated at the past-producing Kitsault mine which came under new ownership, and exciting results were released on the Storie, Lone Pine, Haskins, Falcon, McFarlane, Chu and Nithi Mountain projects.

The search for gold includes a wide range of deposit types and spans nearly all tectonic terranes. Active districts in 2008 include the 'Golden Triangle' (Homestake Ridge, Dilworth and Silver Coin projects), Barkerville (Spanish Mountain and FraserGold projects) and Atlin (Yellow Jacket project).

Further emphasizing British Columbia's diverse geological potential is its rich heritage of volcanic and sediment-hosted massive sulphide mines. Highlights from 2008 include the Kutcho Creek, Akie, Ruddock Creek, Frank Creek, Bodine and the newly recognized Thor projects. Work continued on the Turnagain nickel project, Jersey-Emerald tungsten property and the Blue River niobium-tantalum property.

Coal exploration in northeast and southeast BC accounted for significant portions of the total activity in those regions. Notably, exploration expenditures in the northeast region were double 2007 levels. Major projects included Huguenot, Belcourt West and Goodrich in the northeast and Mt. Michael, Castle Mountain, Marten-Wheeler and Crowsnest in the southeast. In the case of the Crowsnest project in the Fernie area and the Goodrich Central South property in the northeast, the potential for underground mining is being considered.

The British Columbia Geological Survey, working in the central interior, Quesnel, 100 Mile House, Merritt, Princeton, Terrace and other strategic areas, made several exciting discoveries and produced new maps and reports. Geoscience BC's initiation of the QUEST WEST program of grassroots geophysical and geochemical surveys in the extensively drift-covered west-central portion of the province was essential to spurring exploration activities in this region of British Columbia.

MINING SUMMARY 2008

British Columbia is a significant producer of coal, copper, molybdenum, gold, silver, zinc, industrial minerals and construction aggregate, with a total forecast value of $5700 million for 2008. Expansion continued at Highland Valley Copper, one of the world's largest open pit copper-molybdenum mines. Expansion and modernization began at the Endako molybdenum mine, BC's oldest operating mine. The small, but high grade, MAX molybdenum mine completed its first full year of operation. Operations continued at the Kemess and Mount Polley copper-gold mines and at the Gibraltar and Huckleberry copper-molybdenum mines although some staff were laid off. Myra Falls, an important producer of zinc, copper, lead, silver and gold, faced challenges with staying profitable as zinc prices declined. Eskay Creek gold-silver mine closed in the first quarter of 2008 and most of the site has been reclaimed. The small QR gold mine experienced difficulties in its conversion to underground mining and came under new management. A successful underground bulk sample from the Lexington-Grenoble copper-gold project near Greenwood led to commercial operation as a small mine, BC's newest metal producer. Construction and underground development continued on the New Afton copper-gold mine but slowed late in the year. River and land-based access infrastructure for the new Tulsequah Chief polymetallic mine neared completion and underground development began. Construction of the new Ruby Creek molybdenum mine was put on hold. The large Galore Creek copper-gold project redesign continued; while at the same time significant progress was made on the mine access road. Owners of the Copper Mountain copper-gold mine, closed since 1996, announced they plan to re-develop it despite recent economic challenges.

Activity in the coal sector was particularly strong in 2008. Record prices for metallurgical and thermal coal supported an upward trend in coal exploration with several large new projects. Coal is produced from five mines in the Southeast (Fording, Greenhills, Line Creek, Elkview and Coal Mountain), three in the Northeast (Trend, Perry Creek and Brule) and one on Vancouver Island

(Quinsam). In the Northeast, Willow Creek suspended operation before returning to production. The Hermann project received an Environmental Assessment certificate. A sharp coal price decline late in the year led to a scaling back by producers although there still was a modest increase in overall coal production for 2008.

Among aggregate producers, a decrease in new building construction led to reduced demand, particularly on the west coast of the United States.

Two new projects entered the mine approval process in 2008: the Harper Creek copper and KSM gold-copper projects. The Mount Milligan and Prosperity copper-gold projects and Davidson molybdenum project are under review by the Environmental Assessment Office. Submissions are being prepared for several other metal and coal projects.

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