



MINISTRY OF ENERGY AND MINES

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Regional Geologist Summaries

EXPLORATION AND MINING IN BRITISH COLUMBIA 2013



6 Year
Index Included



Ministry of
Energy and Mines

Regional Geologist Summaries
EXPLORATION AND MINING
in British Columbia 2013

Ministry of Energy and Mines
Mines and Mineral Resources Division

Front Cover:

Teck Resources Ltd. project geologist overlooking North Cirque project area. Kwadacha limestone and Gunsteel Formation shale outcrops are in the background, view is to the northeast.

Back Cover:

View of the Window pit area at the Sukunka coal project in the Peace River coalfield showing the Chamberlain Seam.

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FOREWORD

INTRODUCTION

Regional Geologist Summaries, Exploration and Mining in British Columbia 2013 represents the latest annual review of the activities of the province's exploration and mining industry. The record goes back to 1874 when the *Annual Report of the Minister of Mines* (Figure 1) first went to print and has evolved through various formats over the years. The volume provides a region-by-region perspective with an in-depth look at significant projects in British Columbia. An index of projects contained in the regional summary papers has been prepared. It looks back six years and it intended to add value to the documents by making property searches easier.

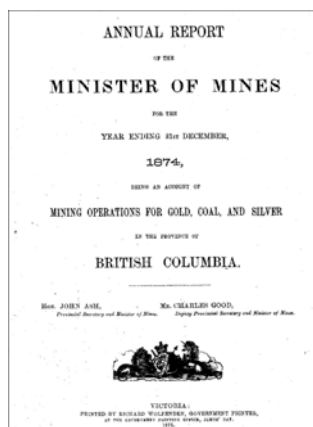


Figure 1. The duty of the collection of information on the province's mining industry goes back to 1874 when the *Annual Report of the Minister of Mines* first went to print.

Provincial Summary, *British Columbia Mines and Exploration Review 2013* is a companion volume to this publication and provides a more generalized overview of the province's mining and exploration industry (Figure 2). The province's exploration sector for coal, metals and industrial minerals is large and by necessity the reviews and summaries contained in this volume tend to be focused on the larger and/or more advanced projects.

Readers are also encouraged to use this publication in concert with the online geological databases accessible through the Ministry of Energy and Mines Internet site (<http://www.empr.gov.bc.ca/Mining/Pages/default.aspx>). The Ministry's well known MapPlace is a gateway to mineral and coal inventories (MINFILE; COALFILE); assessment reports; tenure; geology; geochemistry; and geophysics.

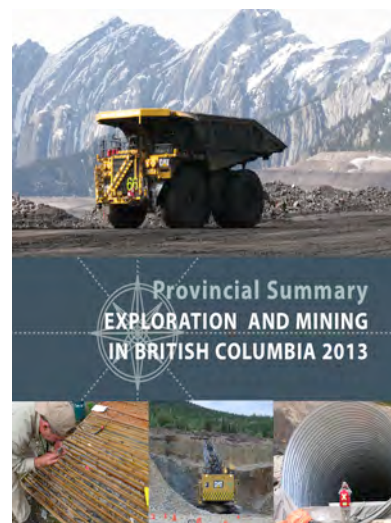


Figure 2. Provincial Summary, *British Columbia Mines & Mineral Exploration Review 2013* is a companion volume to this publication and provides a more generalized overview of the Province's Mining

BC's Regional Geologists and the Geological Survey

The Regional Geologists are located in Vancouver (Bruce Northcote), Smithers (Jeff Kyba), Kamloops (Jim Britton), Prince George (Paul Jago) and Cranbrook (Fiona Katay) (Figures 3, 4 and 5). We are very pleased to welcome Fiona Katay to our team this year. Among the experience she brings us is her knowledge of coal geology.

The Regional Geologists' role will continue to include providing geological and mineral industry expertise and promotion of mineral exploration and development in the province. As regional subject experts they also support various functions of the natural resource sector agencies in meeting the broader goals of government.

Their roles and responsibilities include:

- fostering sustainable exploration, development and use of the province's mineral and coal resources;
- providing clients with up-to-date technical information and professional advice about known and potential mineral and coal deposits;
- acting as regional contacts for the Geological Survey and pursuing joint project work;

- 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 geosciences databases (e.g. MINFILE).



Figure 3. The locations of the various regions referred to in this publication and the locations of many of the cities and towns in the province.



Figure 4. From left to right: Regional Geologists Bruce Northcote and Paul Jago, Co-op student Wes Harman, Regional Geologist Jeff Kyba, Director of the Mineral Development Office Bruce Madu, Regional Geologist Jim Britton.



Figure 5. Fiona Katay is the new Regional Geologist for the Kootenay/ Boundary regions.

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Methodology

Compilation of both *Exploration and Mining in British Columbia* documents presents certain challenges. Deadlines demand manuscript submission before all information from programs carried out later in the year is available, and before some programs are even complete. It is also difficult to garner information on all programs that have occurred. In particular, critical grassroots exploration that leads to many new discoveries may be difficult to track because it typically occurs below *Mines Act* permit thresholds.

Regional geologists maintain contact with their industry peers throughout the year, and ideally are able to visit them at project sites to view outcrops and drill core and to discuss results and progress. A significant amount of information is gleaned from corporate press releases, websites and reports. Late in the year informal surveys are conducted to gather as much of the statistical information as possible, but in some instances the authors use their professional judgement to provide reasonable estimates.

Exploration expenditures are broken down by category: grassroots exploration, early-stage exploration, advanced exploration, mine evaluation, and mine lease exploration. Grassroots exploration commonly does not require permitting and the activities and expenditures assigned to this category are less likely to be reported. 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 may include 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 lease exploration represents work on a mining property beyond known reserves; it may have characteristics of early-stage or advanced exploration.

Since the exploration expenditures include some estimates, final dollar figures for each region are rounded to the nearest whole million.

ACKNOWLEDGMENTS

The cooperation of the industry in providing information and access to project sites is always welcomed and sincerely appreciated. Gabriel Li and Anika Johal in Vancouver have provided valuable support in sections throughout the publication. The keen eyes of Lawrence Aspler have improved the document on many fronts. Compilation and layout of the volume was completed by George Owsiacki and Garry Payie of Total Earth Science Services.

TABLE OF CONTENTS

OMINECA REGION

Summary and Trends.....	1
Summary Figures and Tables.....	1
Mines and Quarries.....	3
Metal Mines.....	3
Endako Mine.....	3
Shasta Mine.....	7
Quarries.....	7
Placer Gold.....	7
Nephrite Jade.....	8
Sand and Gravel (Aggregate).....	9
Mine Development and Evaluation.....	9
Mine Development.....	9
Mt. Milligan Mine.....	9
Mine Evaluation.....	12
Kemess Underground (KUG).....	12
Blackwater.....	14
Exploration Highlights.....	16
Porphyry Copper Projects.....	16
Quesnel Terrane.....	17
Toodoggone District (Stikine Terrane).....	23
Epithermal Gold-Silver and Vein-type Projects.....	24
Nechako Plateau (Stikine Terrane).....	24
Toodoggone District (Stikine Terrane).....	29
Cache Creek Terrane.....	30
Quesnel Terrane.....	30
Cariboo/Cassiar and Slide Mountain.....	31
Sedimentary Exhalative (SEDEX) Projects.....	31
Ancestral North America.....	31
Ultramafic-hosted Projects.....	35
Cache Creek Terrane.....	35
Specialty Metal Projects.....	36
Cache Creek Terrane.....	36
Ancestral North America.....	37
Industrial Mineral Projects.....	37
Slide Mountain Terrane.....	37
Outlook for 2014.....	37
Acknowledgments.....	38
References.....	38

SKEENA REGION

Summary and Trends.....	39
2013 Significant Events.....	39
Mines and Quarries.....	42
Major Metal Mines.....	42
Huckleberry.....	42
Quarries.....	42
Fireside.....	42
Jade.....	43
Industrial Quarries.....	43
Mine Development and Evaluation Projects.....	43
Red Chris.....	43
Northwest Transmission Line and Hydro Projects.....	44

KSM (Kerr-Sulphurets-Mitchell-Iron Cap).....	44
Brucejack.....	47
Tulsequah Chief.....	48
Kitsault.....	49
Schaft Creek.....	49
Galore Creek.....	50
Morrison.....	50
Kutcho Creek.....	50
Granduc.....	51
Dome Mountain.....	51
Yellow Giant.....	51
Mineral Exploration.....	52
Porphyry Copper Projects.....	52
Porphyry Copper-Gold Projects in Stikine Terrane, Iskut District.....	52
Porphyry Copper-Molybdenum-Gold Projects in the Skeena Arch.....	55
Nickel in Ultramafic Rocks.....	57
Massive Sulphide Projects.....	57
Stewart District.....	57
Gold-Silver Projects.....	59
Epithermal and Orogenic Veins in the Atlin District.....	59
Epithermal and Orogenic Veins in the Stewart District.....	59
Intrusion related Gold-Silver in the Skeena Arch.....	60
Coal in the Bowser Basin.....	60
Acknowledgments.....	63

NORTHEAST REGION

Summary and Trends.....	69
Peace River Coalfield.....	70
Summary Figures and Tables.....	70
Mines and Quarries.....	70
Coal Mines.....	70
South of Tumbler Ridge.....	73
Wolverine Valley Area.....	74
Chetwynd-Pine River Area.....	74
Quarries.....	76
Sand and Gravel (Aggregate).....	76
Mine Development and Evaluation.....	76
Coal Projects.....	76
South of Tumbler Ridge.....	76
Wolverine Valley Area.....	81
Hudson's Hope Area.....	82
Exploration Highlights.....	84
Coal Projects.....	84
South of Tumbler Ridge.....	84
Wolverine Valley Area.....	86
Chetwynd-Pine River Area.....	86
Hudson's Hope Area.....	87
Industrial Mineral Projects.....	88
South of Tumbler Ridge.....	88
Liard Plateau.....	89

Outlook for 2014.....	90
Acknowledgments	90
References.....	90

THOMPSON-OKANAGAN-CARIBOO REGION

Summary.....	91
Mines	91
Coal	91
Industrial Minerals	91
Rock Quarries, Aggregate Pits and Placer Mines.....	93
Metal Mines (including near-mine exploration).....	94
Mine Development and Evaluation Projects	95
Mine Development.....	95
Mine Evaluation.....	97
Exploration Projects.....	100
Porphyry Projects.....	100
Thompson River-Shuswap Lake	100
Cariboo	101
Chilcotin	102
Similkameen River	102
Skarn Projects	103
Cariboo	103
Vein and Breccia Projects	103
Thompson River-Shuswap Lake	103
Cariboo	103
Chilcotin	104
Fraser River	104
Similkameen	104
Okanagan	104
Stratiform Sulphide Projects	105
Thompson River-Shuswap Lake	105
Cariboo	105
Magmatic Projects.....	105
Thompson River-Shuswap Lake	105
Similkameen River	105
Outlook for 2014.....	106

SOUTH AND WEST COAST REGIONS

Summary and Trends.....	107
Mines	107
Metals.....	107
Coal	110
Industrial Minerals	111
Mine Development	114
Mine Evaluation.....	114
Exploration Projects.....	115
Coal Projects	115
Precious Metals	115
Base Metals and Polymetallic	117
Other Industrial Metals	120
Industrial Minerals	120
Public Geoscience	120
Outlook	120
Acknowledgments	121

KOOTENAY-BOUNDARY REGION

Summary and Trends.....	123
Mines and Quarries.....	123
Coal	123
Industrial Minerals	127
Mine Development and Evaluation	129
Mine Development.....	129

Mine Evaluation	130
Exploration Highlights.....	130
East Kootenay Coalfields Projects	132
Elk Valley Coalfield	132
Crowsnest Coalfield.....	133
Gold Projects	134
Boundary District.....	134
West Kootenays	134
East Kootenays.....	135
Polymetallic Projects.....	137
West Kootenays	137
East Kootenays.....	139
Base Metals Projects.....	141
West Kootenays	141
East Kootenays.....	141
Industrial Minerals Projects.....	142
West Kootenays	142
Outlook for 2014.....	143
Acknowledgments.....	143

INDEX (2007-2013 Exploration and Mining in British Columbia)