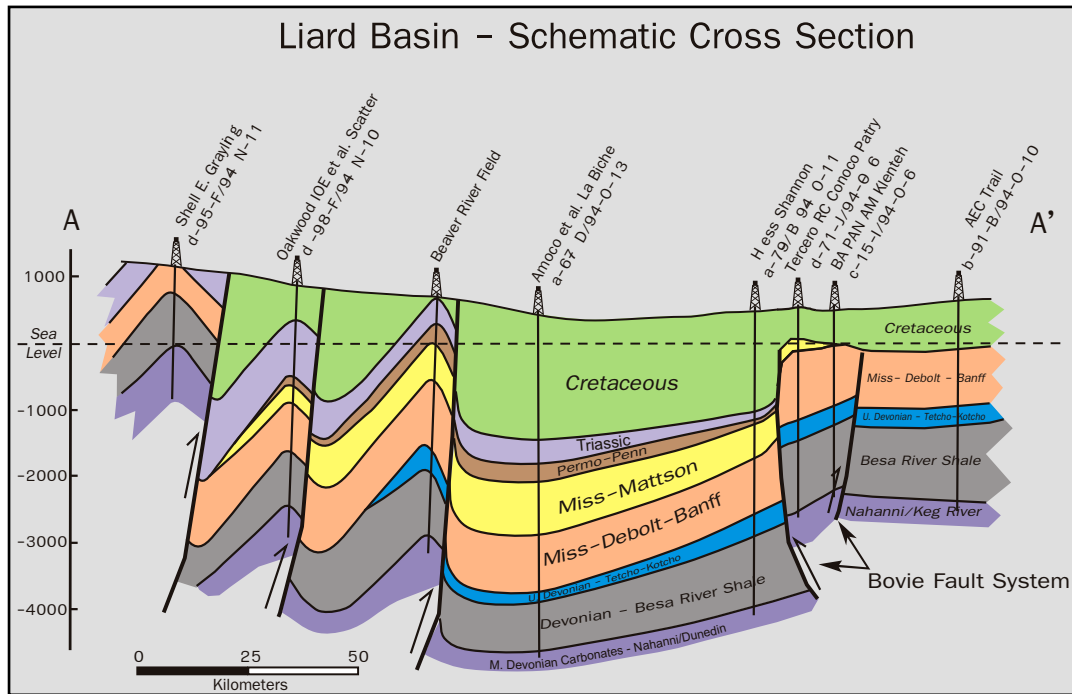


Ministry of Energy, Mines and Petroleum Resources
Oil and Gas Division
Resource Development and Geoscience Branch



Summary of Activities 2005



The Best Place on Earth

Library and Archives Canada Cataloguing in Publication Data

British Columbia. Resource Development and Geoscience Branch.

Summary of activities. -- 2005 -

Annual.

Issued also in CD ROM.

ISSN 1913-1275 = Summary of activities (British Columbia. Resource Development and Geoscience Branch. Print)

1. British Columbia. Resource Development and Geoscience Branch - Periodicals. 2. Geology, Economic - British Columbia - Periodicals. 3. Geology - British Columbia - Periodicals. I. Title. II. Title: Summary of activities ... Resource Development and Geoscience Branch.

TN177.B7B74

553. 09711'05

C2007-960048-4

Additional copies of this digital report can be obtained from:

Crown Publications

521 Fort Street, Victoria,

British Columbia,

Canada, V8W 1E7

<http://www.crownpub.bc.ca/> or individual articles can be acquired at: <http://www.em.gov.bc.ca/subwebs/oilandgas/pub/pub.htm>

Image on cover:

The Liard Basin, a sub-basin of the Western Canada Sedimentary Basin (WCSB), straddles the Northwest and Yukon Territories boundary with the Province of British Columbia. The basin contains over five kilometres of sedimentary strata of Cambrian through Upper Cretaceous age. The western side of the Liard Basin is referred to as the Liard Fold and Thrust Belt and the east boundary is defined by the Bovie Fault system. Exploration within the basin began in the 1950s with the first well drilled in the Liard Fold and Thrust Belt at the Toad River Anticline. For more information, see article by Walsh *et al.*, (this volume).

In referencing articles within this publication, please use the format in the following example:

Ferri, F. and Boddy, M. (2005): Geochemistry of Early to Middle Jurassic Organic-Rich Shales, Intermontane Basins, British Columbia; in Summary of Activities 2005, BC Ministry of Energy and Mines, pages 132-151.

FOREWORD

Increasing energy production from conventional and unconventional resources has positioned the province of British Columbia as one of Canada's energy leaders. The goals and strategies set out by the Ministry of Energy and Mines play a significant role as energy continues to generate wealth. The Ministry is the steward of energy and mineral resources and is mandated to protect the public interest in development of these resources and ensure that the benefits of these developments are maximized for all residents of the province.

One of the Ministry's key objectives is to provide a strong, competitive oil and gas sector while working with governments, First Nations and communities. Further implementation and refinement of the Ministry's Oil and Gas Development Strategy has been the main catalyst for increased capital investment in British Columbia's oil and gas sector. The annual dollar amount of oil and gas industry capital investment in British Columbia is expected to reach \$4 billion in 2005.

The Resource Development and Geoscience Branch within the Oil and Gas Division, serves as the lead unit within the Ministry in supplying petroleum geoscience information and knowledge to the province. It conducts ongoing energy-related projects that encompass a wide variety of studies, papers, and articles that summarize geoscience and resource development activity. This second volume of the "Summary of Activities" is the result of work completed by Branch staff; they have contributed the majority of the articles enclosed.

Geoscientists from the Geological Survey of Canada and the Alberta Geological Survey, have authored and co-authored articles on the Skeena and Bowser Lake Groups and highlighted results from surficial geology mapping. University research projects also play an important role in this volume. Contributions by the University of Alberta, University of Calgary, University of Regina, University of Victoria, and Simon Fraser University are presented here.

Some of the highlights in this volume include papers on the following:

- Exploration in the Middle Devonian Liard Basin
- Aggregate and surficial geology mapping in northeast British Columbia
- Bedrock topography mapping program and shallow gas in northeast British Columbia
- Implementation of geomatics technology for aggregate exploration in northeast British Columbia
- Bowser Lake Group stratigraphy and its relationship to the overlying Cretaceous Skeena Group
- Cumulative coal thickness and coalbed gas potential in the Comox Coal Basin on Vancouver Island

The Resource Development and Geoscience Branch continues to publish numerous open files, studies, special papers and other products, which recently included an analysis of shale gas potential in British Columbia. The Branch also continues to make improvements and add new information to its website at www.em.gov.bc.ca/oil&gas.

I thank all the authors for their contributions, dedication and perseverance; they have made this second volume another success. Lastly, these are exciting times for geoscience and its vital contributions to society. This volume contributes to our outreach efforts and documents important new findings.

Derek Brown
Executive Director,
Resource Development and Geoscience Branch
Ministry of Energy and Mines

TABLE OF CONTENTS

WESTERN CANADA SEDIMENTARY

BASIN PETROLEUM GEOLOGY

Ibrahimbas, A. and Walsh, W. STRATIGRAPHY AND RESERVOIR ASSESSMENT OF PRE-GIVETIAN STRATA IN NORTHEASTERN BRITISH COLUMBIA	1
Ryan, B., Karst, R., Owsiacski, G. and Payie, G. POTENTIAL COALBED GAS RESOURCE IN THE HUDSON'S HOPE AREA OF NORTHEAST BRITISH COLUMBIA	17
Walsh, W., Salad Hersi, O.V. and Hayes, M. LIARD BASIN - MIDDLE DEVONIAN EXPLORATION.....	41

AGGREGATE AND SURFICIAL GEOLOGY

Levson, V.M., Ferbey, T., Hickin, A.S., Bednarski, J., Smith, R., Demchuk, T.E., Trommelen, M.S., Kerr, B.J. and Church, A. SURFICIAL GEOLOGY AND AGGREGATE STUDIES IN THE BOREAL PLAINS OF NORTHEAST BRITISH COLUMBIA	45
Demchuk, T.E., Ferbey, T., Kerr, B.J. and Levson, V.M. SURFICIAL GEOLOGY AND AGGREGATE POTENTIAL MAPPING IN NORTHEAST BRITISH COLUMBIA USING LIDAR IMAGERY	55
Ferbey, T., Hickin, A.S., Demchuk, T.E. and Levson, V.M. NORTHEAST BRITISH COLUMBIA AGGREGATE MAPPING PROGRAM: A SUMMARY OF SELECTED AGGREGATE OCCURRENCES NORTHEAST OF FORT NELSON	65
Hickin, A.S. and Kerr, B.J. BEDROCK TOPOGRAPHY MAPPING AND SHALLOW GAS IN NORTHEAST BC	75
Kerr, B.J., Ferbey, T. and Levson, V.M. IMPLEMENTING GEOMATICS TECHNOLOGY FOR AGGREGATE EXPLORATION, NORTHEAST BRITISH COLUMBIA	83
Smith, R., Paulen, R., Plouffe, A., Kowalchuk, C. and Peterson, R. SURFICIAL MAPPING AND GRANULAR AGGREGATE RESOURCE ASSESSMENT IN NORTHWEST ALBERTA	87
Trommelen, M.S., Levson, V.M., Hickin, A.S. and Ferbey, T. QUATERNARY GEOLOGY OF FORT NELSON (NTS 094J/SE) AND FONTAS RIVER (NTS 094I/SW), NORTHEASTERN BRITISH COLUMBIA	105

INTERIOR BASINS

Ferri, F., Mustard, P.S., McMechan, M., Ritcey, D., Smith, G.T., Evenchick, C. and Boddy, M. SKEENA AND BOWSER LAKE GROUPS, WEST HALF HAZELTON MAP AREA (93M)	123
Ferri, F. and Boddy, M. GEOCHEMISTRY OF EARLY TO MIDDLE JURASSIC ORGANIC-RICH SHALES, INTERMONTANE BASINS, BRITISH COLUMBIA	143
Smith, G.T. and Mustard, P.S. THE SOUTHERN CONTACT OF THE BOWSER LAKE AND SKEENA GROUPS: UNCONFORMITY OR TRANSITION?	163

VANCOUVER ISLAND COALBED GAS

Ryan, B., Bickford, C.G.C. and Niemann, M. CUMULATIVE COAL THICKNESS AND COALBED GAS POTENTIAL IN THE COMOX COAL BASIN; VANCOUVER ISLAND	169
--	-----