



# **GEOSCIENCE BC SUMMARY OF ACTIVITIES 2017: ENERGY**

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**Cover photos and credits (clockwise from top left):** **1)** Peace project sonic drilling program, northeastern BC (A. Cahill, 2017); **2)** GHGmap project launch event, Vancouver, BC (Vision Photography, 2017); **3)** GHGmap small unmanned aerial vehicle (sUAV), Vancouver, BC (Vision Photography, 2017); **4)** Installing piezometers near Coles Lake, northeastern BC (S. Abadzadesahraei, 2016); **5)** Installed seismograph near Fort Nelson, BC (Nanometrics, 2013); **6)** Fugitive-gas field research site near Hudson’s Hope, BC (A. Cahill, 2017); **7)** Sample collection at Kiwigana River, BC (Kerr Wood Leidal, 2014); **8)** Peace airborne EM survey (SkyTEM Surveys ApS, 2015).

## Foreword

Geoscience BC is pleased to once again present results from our ongoing projects in our annual *Summary of Activities* publication. For the past 10 years, we have published the results from our energy and minerals projects in one volume. This year we have decided to publish the ‘Energy’ and ‘Minerals and Mining’ papers in two separate volumes. This volume, *Summary of Activities 2017: Energy*, contains 10 papers from Geoscience BC–funded projects and 2017 scholarship winners. A second volume, *Summary of Activities 2017: Minerals and Mining*, contains 11 papers on projects throughout British Columbia (BC). Both volumes are also available for download from our website.

### Summary of Activities 2017: Energy

Whiticar et al. present an exciting new project aimed at measuring and mapping real-time greenhouse gas emissions using an optical microsensor mounted on a small quadcopter drone. Initial project activities included flights over natural gas compression and distribution sites, as well as municipal landfill and sewage sites. Evans and Hayes present an update on the British Columbia Natural Gas Atlas project, which is focused on geochemically ‘fingerprinting’ natural gas in northeastern BC and compiling the results into a database.

Three projects examine seismicity induced by hydraulic fracturing in northeastern BC. Babaie Mahani and Kao provide an update on induced seismicity research funded through the BC Seismic Research Consortium (BC Oil and Gas Commission, Geoscience BC, BC Oil and Gas Research and Innovation Society, Canadian Association of Petroleum Producers and Yukon Geological Survey). Bustin and Longobardi focus on collecting ground-motion data for the mitigation and prevention of induced seismicity; and Monahan et al. look at mapping ground-motion amplification hazard in an area of induced seismicity in northeastern BC.

Two papers examine petroleum systems in northeastern BC. Silva and Bustin report on the preliminary liquid hydrocarbon potential assessment of the Doig Formation, and Wilson and Bustin focus on Devonian shales in the Horn River and Liard basins, and the Cordova Embayment.

Water continues to be a major focus of Geoscience BC projects. Cahill et al. introduce an exciting new multidisciplinary study on fugitive gas, which will help to inform surface gas flux and groundwater monitoring approaches. Quinton et al. highlight ongoing work on permafrost in northern BC and the Northwest Territories, which will be wrapping up in late 2018. Finally, Simons et al. present a numerical modelling study examining disposal of saline wastewater into the Paddy and Cadotte members.

### Geoscience BC Energy Publications 2017

In addition to the two *Summary of Activities* volumes, Geoscience BC releases interim and final products from our projects as Geoscience BC reports. All Geoscience BC data and reports can be accessed through our website. Geoscience BC released the following energy reports in 2017:

- 14 technical papers in the *Geoscience BC Summary of Activities 2016* volume (the volume also includes minerals papers)
- **Direct Use Geothermal Resources in British Columbia: Follow-Up Project**, by Tuya Terra Geo Corp. (Geoscience BC Report 2017-07)
- **North-East BC Sonic Drilling Project Physical Log Descriptions and Interpretations**, by V. Levson and M. Best (Geoscience BC Report 2017-16)
- **Summary Report on Proposed Water Well Locations for Halfway River First Nation Area**, by V. Levson and M. Best (Geoscience BC Report 2017-17)
- **Petrophysical Interpretation on Six Shallow Wells in the Peace Region of BC**, by Y. Mykula (Geoscience BC Report 2017-18)

All releases of Geoscience BC reports and data are announced through our website and e-mail list. If you are interested in receiving information regarding these reports and other Geoscience BC news, please contact [info@geosciencebc.com](mailto:info@geosciencebc.com). Most final reports and data can be viewed through our Earth Science Viewer at <http://www.geosciencebc.com/s/WebMaps.asp>.



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