QUEST-Northwest: Geoscience BC's New Minerals Project in Northwestern British Columbia (NTS 104G, J, Parts of NTS 104A, B, F, H, I, K, 103O, P)

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Introduction

Geoscience BC launched its latest regional project, QUEST-Northwest, in April 2011. The QUEST-Northwest area is host to a number of known mineral deposits and remains a highly prospective area for the discovery of new copper, gold, silver and molybdenum resources. The project aims to compile and update existing datasets as well as provide new geoscience data to help focus exploration. The QUEST-Northwest project coincides with the approval of the Northwest Transmission Line, which will provide critical infrastructure that will make exploration and development in this part of the province more viable and attractive.

The QUEST-Northwest project's main activities include bedrock geological mapping, a regional ground geochemical program and two airborne magnetic surveys flown at a line spacing of 250 m (Figure 1). The high-resolution airborne magnetic surveys in the north will be complemented by a compilation of existing high-quality industry airborne magnetic data in the Stewart area to the south (Figure 1). Additional projects in the QUEST-Northwest area will involve adding value to the airborne magnetic surveys and regional geochemical data as well as acquisition of new data.

Regional Bedrock Mapping

The QUEST-Northwest regional bedrock mapping program is a partnership between Geoscience BC and the British Columbia Geological Survey. Field mapping was led by the BC Geological Survey and was undertaken in July and August 2011. Mapping was undertaken at a 1:50 000 scale in the Dease Lake area (Figure 1). Additional follow-up analyses include geochronology, petrography, geochemistry and fossil identification. For more detailed information on the regional bedrock mapping program, see Logan et al. (2012). Release of the new mapping is planned for the Mineral Exploration Roundup 2012 in Vancouver, BC.

Keywords: *airborne magnetics, geochemistry, mapping, Quesnel terrane, Stikine terrane, QUEST-Northwest Project*

Geochemical Program

The QUEST-Northwest geochemical program involved the collection of new stream sediment and water samples as well as the reanalysis of archived samples from 1987. The new infill geochemical sampling was undertaken in August 2011 and a total of 441 stream sediment and water samples were collected. Details of the geochemical program are outlined in Jackaman (2012). Results of the new sampling will be released in late spring 2012. The results of the reanalysis (997 samples) will be released at Roundup 2012.

Geophysical Program

The QUEST-Northwest geophysical program includes two airborne magnetic surveys, in the Dease Lake and Telegraph Creek areas (Block 1 and Block 2; Figure 1). Both surveys were flown at a line spacing of 250 m, in an east-west orientation with 2500 m spaced tie lines. The flights were flown at a nominal height of 80 m above ground level. The terrain in both survey areas is rugged and varied, ranging from 400 m to more than 2000 m elevation (Figure 2). Block 1 was flown by Aeroquest Airborne (Mississauga, Ontario) using a HeliMAG stinger system. The survey covered approximately 5755 km^2 with a total of 25 357 line km flown. Block 2 was flown by Geo Data Solutions Inc. (Laval, Quebec), also using a HeliMAG stinger system (Figure 3). The survey covered approximately 2361 km^2 with a total of 11 337 line km flown. Release of the geophysical data from both surveys is planned for Roundup 2012.

In addition to the new data acquisition, a data compilation project is in development in the southern portion of the QUEST-Northwest area (Figure 1). High-quality industry airborne magnetic data exist in the Stewart area and Geoscience BC is currently investigating the possibility of compiling these datasets.

Summary

The QUEST-Northwest Project is a multidisciplinary, integrated project located in a region with a high potential for new discoveries. It currently includes the acquisition of new airborne magnetic surveys, stream sediment and water samples, and 1:50 000 mapping (and associated analytical analyses). In addition, it involves the compilation of exist-

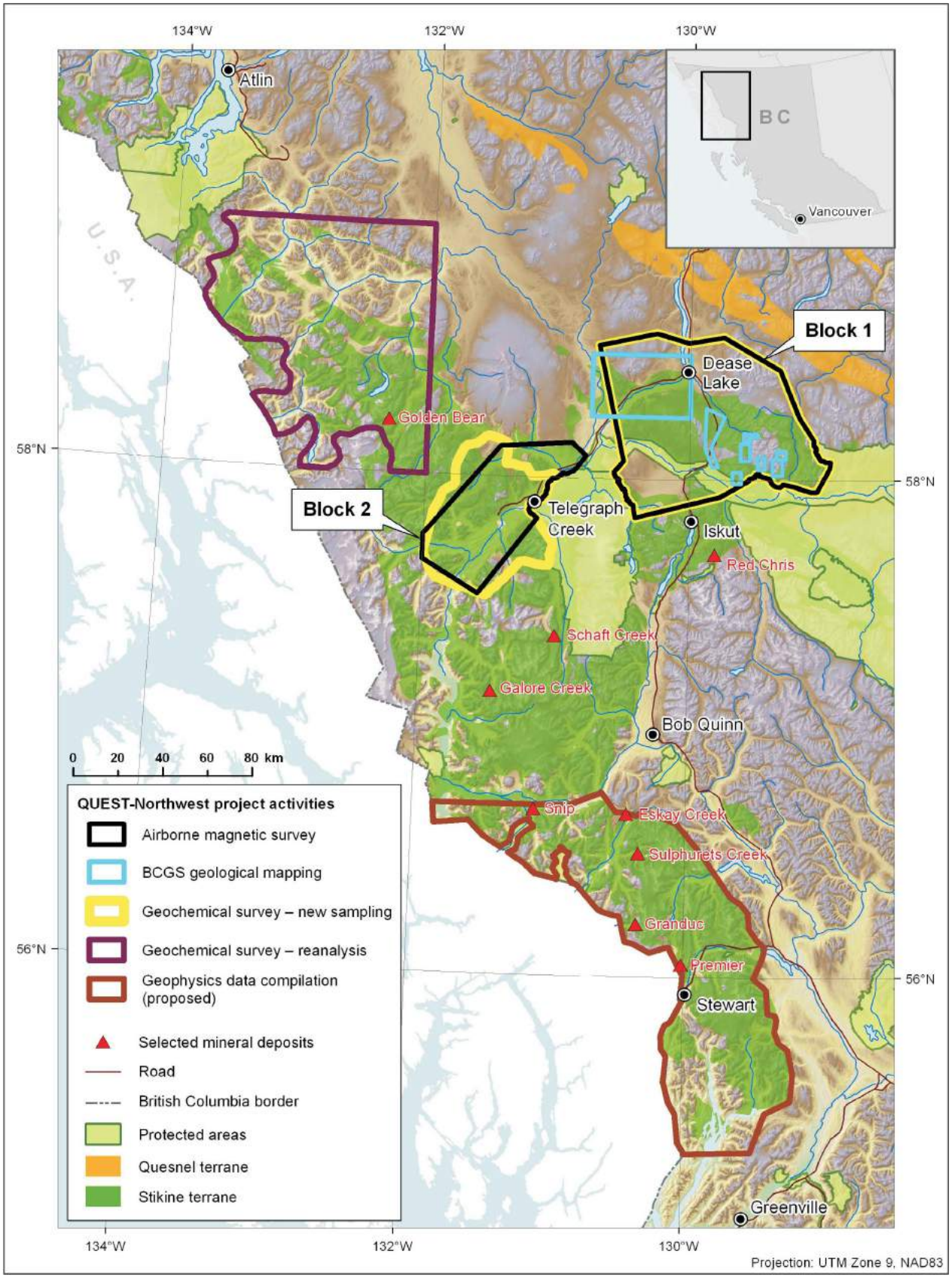

Figure 1. Geoscience BC's QUEST-Northwest Project area. The major project activities are outlined. Data from Canadian Council on Geomatics (2000), Massey et al. (2005), Natural Resources Canada (2007), Province of British Columbia (2008) and BC Geological Survey (2011).

Figure 2. Typical terrain within the Block 1 survey area, in the Dease Lake and Telegraph Creek areas. Photo courtesy of L. Luke, Aeroquest Ltd., Vancouver, British Columbia.

Figure 3. HeliMAG stinger system used by Geo Data Solutions Inc. to fly the Block 2 survey in the Dease Lake and Telegraph Creek areas. Photo courtesy of Geo Data Solutions Inc., Laval, Quebec.

ing geological and geophysical data and the reanalysis of archived geochemical samples. It is anticipated that additional studies will be undertaken to add value to, and build on, these new datasets. The results from the project will provide fundamental geoscience data to assist mineral exploration. QUEST-Northwest data will be made available on Geoscience BC's website (http://www.geosciencebc.com/s/DataReleases.asp) starting in early 2011.

Acknowledgments

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