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Projects
Collurabbie:
nickel, copper, PGM's
Fraser Range:
nickel, copper, PGM's
Polar Bear:
nickel, PGM's
Boundary Well:
nickel
Lawlers:
nickel
Youanmi:
nickel, copper, zinc, PGM's, gold

YOUANMI EXPLORATION UPDATE

- **Geological mapping identifies new PGM targets in Youanmi layered intrusion**

- **Soil sampling commenced over PGM targets and over copper-zinc prospective stratigraphy**

Sirius Resources (ASX:SIR) advises that soil geochemical sampling has commenced at its Youanmi project, following the identification of several new exploration targets.

Recent geological mapping has focused on defining the zonation within the Youanmi layered intrusion, identifying hydrothermal alteration zones in the surrounding felsic stratigraphy, and mapping through-going shear zones. These features are prospective for platinum group metals (PGM's), copper-zinc, and gold respectively.

Mapping has confirmed that the Youanmi layered intrusion contains layers of gabbro, gabbronorite, ferrogabbro and magnetite bearing gabbro. This is similar to the Skaergaard complex of Greenland, which hosts an Inferred Resource containing 10.3moz gold, 29.8moz palladium and 1.95moz platinum (source: Platina Annual Report 2009) in what is known as the Platinova Reef. This reef occurs in gabbros in the upper part of the Skaergaard intrusion, above the magnetite- and ilmenite-rich level. A similar magnetite-rich horizon has also been mapped in the Youanmi intrusion, allowing Sirius to undertake focussed exploration for similar PGM reef targets in a specific area of the Youanmi intrusion. Detailed geochemical sampling along several key traverses has commenced (Figure 1).

In addition to the PGM prospective upper layers, a potential feeder zone to the intrusion has also been identified in detailed aeromagnetic data. This has never been drilled and is concealed beneath an area of alluvium, which is not amenable to surface geochemical sampling (Figure 1). A detailed magnetic survey is planned for the March 2010 quarter, to be followed by drilling to confirm the geology and, if warranted, an electromagnetic (EM) survey to identify any sulphide accumulations associated with it.

The layered intrusion is surrounded by felsic volcanic rocks which contain known copper- and zinc-rich volcanogenic

massive sulphide (VMS) deposits. Examples of this include Empire Resources' Just Desserts resource (1.07mt @ 1.8% copper and 0.8g/t gold) and Metals Australia's Manindie zinc resource (1.05mt @ 7.6% zinc). The Manindie zinc deposit occurs at a specific stratigraphic horizon which can be identified in mapping and sampling. Sirius has commenced a soil geochemical sampling program to identify the potential strike extensions of this horizon as the first stage in defining VMS prospective areas suitable for EM geophysics (Figure 1).

The intrusion and the surrounding stratigraphy are cut by distinct shear zones which appear to be part of the same set of structures that host the gold mineralization at the nearby Youanmi gold mine. In most areas where these shear zones intersect suitable host rocks, the geology is concealed by surficial blankets of alluvium which is not amenable to soil geochemical sampling. This alluvium is likely to have concealed any mineralisation related geochemical signature from previous explorers (Figure 1). Rotary air blast (RAB) drilling is scheduled for the March 2010 quarter to test these targets.

Sirius has a 70% interest in the Youanmi Joint Venture, with Mark Creasy retaining a 30% free carried interest to the completion of a bankable feasibility study, and retaining full rights to vanadium, titanium and iron (V-Ti-Fe).

Mark Bennett
Managing Director and CEO
Sirius Resources NL

Important Notice

This press release is not an offer of securities for sale in the United States. No security of Sirius has been registered under the United States Securities Act of 1933, as amended (the "U.S. Securities Act"), and no such security may be offered or sold in the United States absent registration under the U.S. Securities Act and applicable state securities laws or an exemption from registration under the U.S. Securities Act and such laws.

Competent Persons statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. John Bartlett, Mr. Will Dix and Mr. Andy Thompson, who are seconded to the company via a services agreement with Apex Minerals. Mr. Bartlett, Mr. Dix and Mr. Thompson are Members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as Competent Persons as defined in the 2004 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Bartlett, Mr. Dix and Mr. Thompson consent to the inclusion in this report of the matters based on information in the form and context in which it appears.

Exploration results are based on standard industry practices, including sampling, assay methods, and appropriate quality assurance quality control (QAQC) measures. Reverse circulation (RC), aircore and rotary air blast (RAB) drilling samples are collected as 1 metre samples and composited where stated. Core samples are taken as half core sampled to geological boundaries where appropriate. All samples are prepared using four acid digest, lead collection or nickel sulphide collection fire assay, and assayed using inductively coupled plasma mass spectrometry (ICPMS), inductively coupled optical emission spectrometry (ICPOES) or atomic absorption spectrometry (AAS) at reputable laboratories in Perth, Western Australia. The accuracy and precision of analytical results is monitored by the use of internal laboratory procedures and certified standards and subsequent statistical analysis to ensure that results are representative.

Mineral Resources, where stated, have been estimated using standard accepted industry practices, as described in each instance. Top cuts have been applied to the composites based on statistical analysis and consideration of the nature and style of mineralization in all cases. Where quoted, Mineral Resource tonnes and grade, and contained metal, are rounded to appropriate

levels of precision, which may cause minor apparent computational errors. Mineral Resources are classified on the basis of drillhole spacing, geological continuity and predictability, geostatistical analysis of grade variability, sampling analytical spatial and density QAQC criteria, demonstrated amenability of mineralization style to proposed processing methods, and assessment of economic criteria.

Figure 1. Geological map of Youanmi layered intrusion, showing areas of soil geochemical sampling.