

CASE STUDY: GRANDUC DEPOSIT

The Application of High Resolution Helicopter Borne Electromagnetics and Magnetics in VMS Exploration

Introduction

The Granduc deposit is a copper-rich massive sulphide deposit that historically produced 420 million pounds of copper and 4 million ounces of silver. The mineralization occurs within highly deformed volcanic and sedimentary rocks of the Upper Triassic and undeformed volcanics of the Lower-Mid Jurassic.

Mineralization was first identified in 1931 in the form of copper rich massive sulphide units within NNE striking, steeply westward dipping Upper Triassic rocks. Staking of the area started in 1951 and mining proceeded from the early 1960s until 1984 when low copper prices brought it to a close. At closure there remained over 5 million tonnes of unmined copper grading 1.84%.

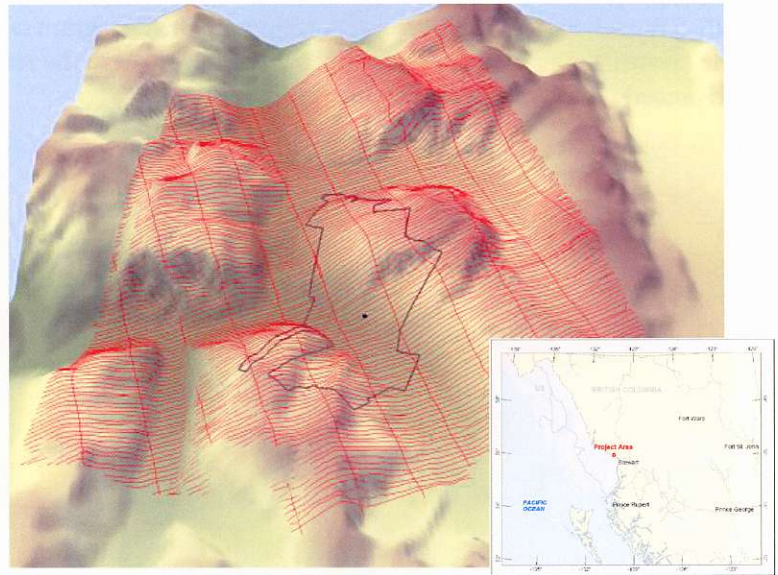


Figure 1. Granduc Deposit location overview with survey flight lines

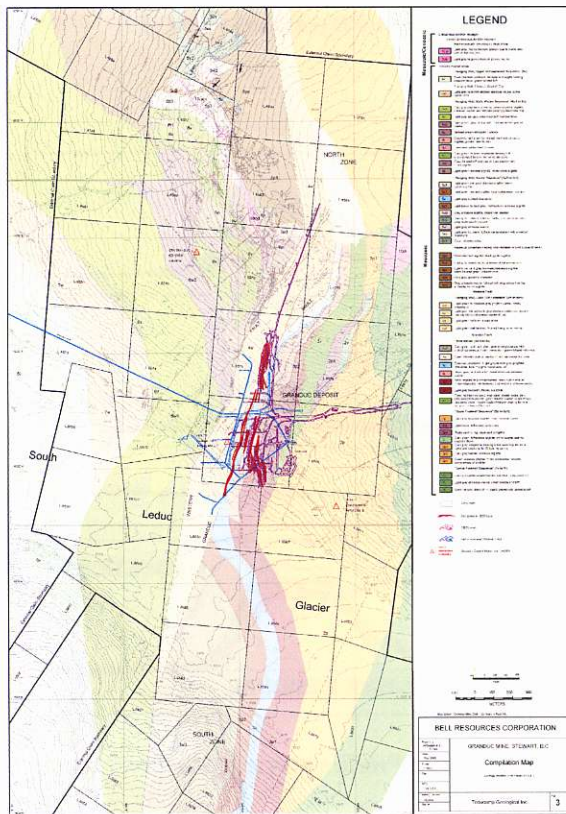


Figure 2. Geology of the Granduc Mine

The Granduc mineralized zones have been classified as 'Besshi-type' copper-silver volcanogenic massive sulphide (VMS). These deposits are stratiform and are the products of hydrothermal exhalation at vent sites (black smokers) or hydrothermal brine pools formed on the seafloor after exhalation. This deposit type has been known to extend along strike for many kilometers. 'Besshi-type' mineralization consists mainly of pyrite, pyrrhotite, chalcopyrite and occasionally sphalerite. Three major mineralized zones have been identified in the Granduc area – the North Zone, the Granduc Deposit and the South Zone.

The North Zone, located 1.5 km north of the Granduc Mine, has copper intersections ranging from 1.39% over 10.1 m to 3.29% over 8.28 m at depths ranging from 530 m to 570 m below surface.

The South Zone lies 1.5 km to the south of the Granduc Mine. Mineralization includes intercepts of greater than 3% over 5 m. The depth to mineralization varies between 150 m and 210 m.

The Granduc Deposit (part of the historic mine) consists of a number of south-plunging lenses. The grade of mineralization is known to be highest along the fold hinges. The Granduc Mine Series rocks are divided into 3 units separated by minor faults; the Lower-, Middle-, and Upper- Mine unit. These units consist of repeating layers of argillite, siltstone, mafic tuff, massive sulphide, tourmaline-bearing chert and magnetite iron formation.

Exploration

The recent upturn in base mineral prices has led to an aggressive exploration program in the area by Bell Resources. During April-May 2005 Aeroquest Limited conducted a 1,200 line-km AeroTEM survey along flight lines orientated NE-SW and spaced 100 m apart. A follow-up drill program confirmed the continuation of mineralization away from the known zones, and this new information may lead to the reopening of the Granduc Mine infrastructure for an advanced underground exploration program.

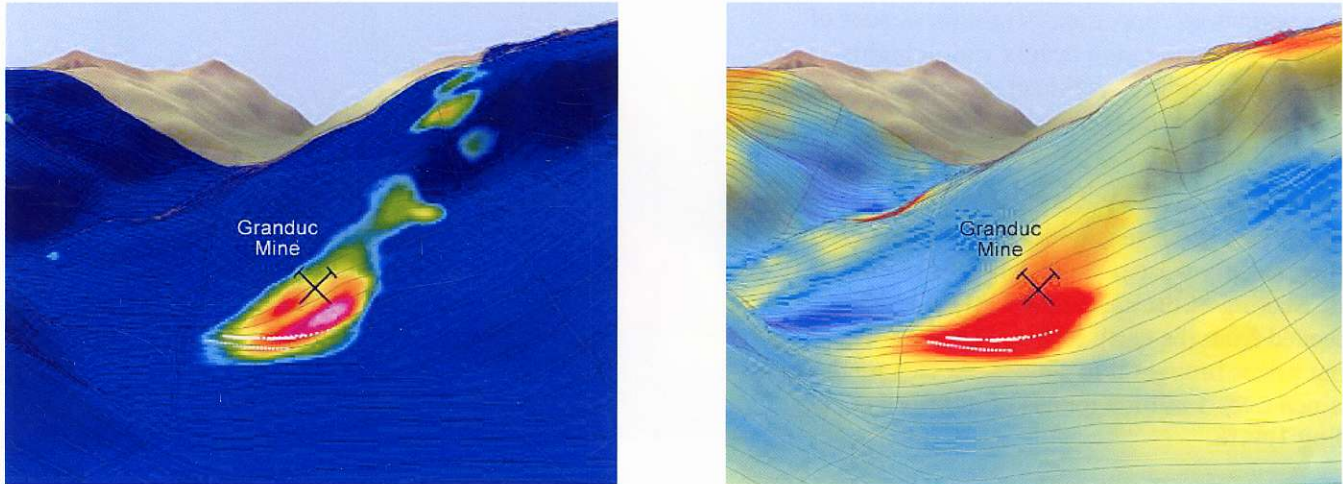


Figure 3 and 4. AeroTEM Z6 colour grid (left) and magnetic intensity colour grid (right) overlain on 3-D perspective view of topography. White dots represent recent drill collar locations.

AeroTEM Survey Results

The most notable AeroTEM response was identified under the South Leduc Glacier, located to the south of the Granduc mine. Bell Resources completed a drill program of 5 holes during the 2005 exploration program. The drill holes were positioned to intersect the interpreted conductors from the AeroTEM responses. Because of the rugged topography and logistical problems supporting a ground crew, a ground geophysical program was not conducted. All drill holes intersected mineralization that included copper grades of up to 3.92% at depths ranging from 300 ft to 1200 ft below surface. Drill holes were angled due east into the Granduc Mine Series rocks. Mineralization intercepts in core ranged from 7.5 m to 14.5 m with most of the drill holes intersecting multiple copper-rich zones. The drilling results suggest an increase both in the average thickness and grade of the mineralized zones to the south at depth.

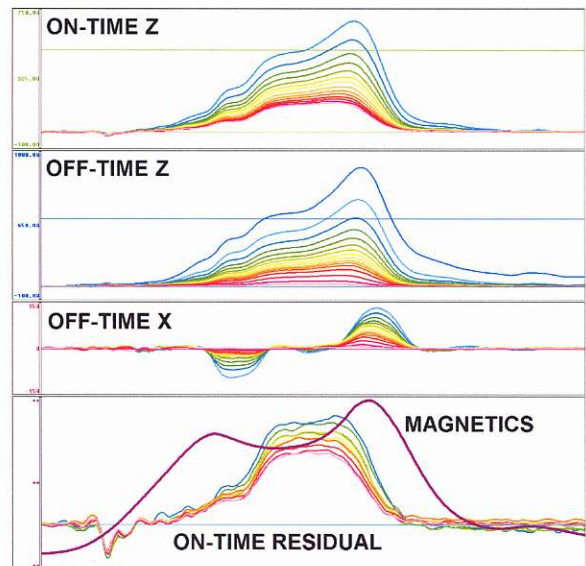


Figure 5. AeroTEM Profiles over new discovery zone at Granduc.

Aeroquest gratefully acknowledges Bell Resources Corporation for the geological information and for permission to publicize the data.