

Rio Algom's Spence deposit

1998 Prospector of the Year awarded to Rio Algom's exploration team in recognition of the Spence discovery.

The Spence deposit is a copper porphyry (100% owned by Rio Algom) located at an elevation of 1,700 metres between the Chilean cities of Antofagasta and on the coast Calama. The deposit was discovered in 1996 through an aggressive and persistent exploration drill program. To date drilling has indicated 305 million tonnes at 1.1% copper. The potential is to produce 300 million pounds of copper in concentrate as early as 2002.

Gravel and leached rock ranging in thickness from 50 to 154 meters cover the deposit. Typical of many Chilean copper deposits, there is an oxide cap amounting to approximately 12% of the resource, underlain by an enriched sulphide zone, grading into primary sulphides at depth. The discovery is comprised of two principal zones centred on granitic porphyries, intruding sediments and volcanics.

Geophysical surveys were commissioned to obtain the signature of the deposit as a case study. Several contractors were requested to bid and according to Rio Algom one of the contractors claimed that the environment was too arid and effective surveys could not be carried out.

During the period from August 15 to November 19, 1996 Quantec Geophysica Limitada conducted a suite of surveys at the then Nora Project in an effort to map the mineralised limits of the large copper porphyry prospect. The objective was to evaluate the applicability of three geophysical techniques – induced polarization (IP)/resistivity ground Magnetics and center loop transient electromagnetic soundings.

“ The Ip data have clearly outlined a large oblong polarizable zone measuring approximately 4 km by 1km”

– From the *Quantec Report, Fall 1996.*

The results indicate clearly that the IP was the method of choice in outlining the Spence deposit. Quantec was also able to demonstrate that:

- IP data could be acquired in this extremely difficult environment despite the beliefs of other contractors
- EM coupling effects that were encountered in the acquisition stage of the IP data could be effectively removed through the acquisition of multi-frequency data and the use of Quantec's proprietary decoupling software.

This demonstration of resourcefulness is why **Quantec** remains the service provider of choice. Our exposure to different problems in different environments, climates, and terrain all over the world has contributed to our unmatched depth of understanding. This experience and our unique perspective of exploration and mining problems is why our clients have a distinct advantage in their pursuit of **success**.

Congratulations to Rio Algom for the Discovery of the Spence deposit and thanks are also extended to Rio Algom for allowing us to showcase our abilities.
