High-resolution 2D seismic imaging in the Noranda camp and implications for exploration
G. Bellefluer1, E. de Kemp2, J. Goutier2 and M. Allard3

1. Geological Survey of Canada
2. Ministère des Ressources naturelles et de la Faune du Québec
3. Xtrata Copper Canada

Introduction

In the Noranda camp, a significant 3D geological model covering most of the central camp area has been successfully mapped from high-resolution 2D seismic profiles. These profiles were acquired using 3C (3-component) streamer systems to enhance the definition of sub-surface geological contacts. The model allows for a comprehensive interpretation of seismic data and for reliable predictions of geological contacts and ore bodies at depth. The model provides a more detailed understanding of the geological structure and the potential for ore deposits within the Noranda camp.

Physical Rock Properties in the Noranda Camp

Phenocryst proportions in the volcanic rocks of the Flavrian pluton are characterized by high proportions of plagioclase. The volcanic rocks near the Ribago seismic profile can be divided in two areas. To the west, the C-contact exhalite produces a prominent reflection that is difficult to associate with diffractions. This reflection could be a result of sub-horizontal diorite sills directly underneath the profile. Sub-horizontal diorite sills directly underneath the profile could also generate a similar reflectivity. However, results from 3D geological modeling indicate that many geological contacts are not at their exact locations where they intersect the seismic profiles.

Interpretation of the Amulet profile

Changes in reflectivity, such as the sub-horizontal reflections observed in Figure 4, can be attributed to the presence of sulphides. Figures 6 and 7 show the reconciliation of the detailed 3D geological model and seismic data. The sulphide mineralization is associated with the Eldrich diorite and the Méritens quartz-diorite. The sulphide mineralization is located near the intersection of the Eldrich diorite and the Méritens quartz-diorite. The sulphide mineralization is located near the intersection of the Eldrich diorite and the Méritens quartz-diorite.

Interpretation of the Ribago profile

The reconciliation of the detailed 3D geological model and seismic data is not necessarily a straightforward task. A significant amount of effort is required to achieve a more accurate understanding of the geological structure and the potential for ore deposits within the Noranda camp. The reconciliation of the detailed 3D geological model and seismic data is not necessarily a straightforward task. A significant amount of effort is required to achieve a more accurate understanding of the geological structure and the potential for ore deposits within the Noranda camp.

Summary

The Noranda camp is a significant geological structure that has the potential for hosting major ore deposits. The detailed 3D geological model and seismic data provide a comprehensive understanding of the geological structure and the potential for ore deposits. The reconciliation of the detailed 3D geological model and seismic data is not necessarily a straightforward task. A significant amount of effort is required to achieve a more accurate understanding of the geological structure and the potential for ore deposits within the Noranda camp.

References