

# **EXPLOSIVE OPTIMIZATION THROUGH THE USE OF A CASCADE LOADING TECHNIQUE AT INCO LIMITED - MANITOBA DIVISION**

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## **ABSTRACT**

With a current trend toward Bulk Mining methods utilizing both large diameter uphole and downhole drilling, corresponding loading equipment and technology is required to safely and efficiently load these blastholes. Such is the case at Inco Limited Thompson Mine.

Since the early 1980s, INCO's Manitoba Division has been converting to bulk mining methods utilizing both 4.5 and 6.5-inch diameter blastholes. The introduction of large diameter upholes underground provided an interesting challenge to the operation and its operators. In order to optimize the technique, the use of an economical explosive product and system was explored. Various techniques were investigated until, the selected method, utilizing the Cascading of AN/FO, was adopted. Although the AN/FO Cascade loading method has existed for some time, various operational problems have been associated with the method, such as complex bleeder tube arrangements, as well as a method of securing the collar plugs.

The following paper will outline the development of the system and detail the loading procedures, as well as specific operational and engineering techniques developed through its successful application at the Thompson T-3 Mine.