

"PRODUCTION BLASTING AT THE EMPIRE MINE"

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ABSTRACT

The Empire Mine initiated production in 1963. Since then the unit operations of drilling and blasting have evolved continually in order to meet the increased mining requirements demanded by plant expansions in 1968, 1973 and 1980. Additionally, advance mine planning has become an integral part of proper pit development and is necessary to insure uniform blending of the distinct ore horizons contained within the mine area. Blasting practices have been modified to facilitate the autogenous grinding system utilized at Empire and pioneered in the Iron Ore Industry. Technical innovations in the explosives industry, as well as, progress regarding on site blast engineering methods have substantially increased the use of ammonium nitrate explosives and helped to establish efficient charging procedures. In addition, the recent introduction and use of ammonium nitrate fueled with nitropropane and methanol indicates that it is a viable substitute for aluminized ANFO.