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Mine call factor issues at Iduapriem mine: working towards a mineral and metal accounting protocol

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ABSTRACT

The theory of Mine Call Factor (MCF) compares the sum of metal produced in recovery plus residue to the metal called for by the mines evaluation method expressed as a percentage. This MCF concept is well known in underground scenarios and therefore this report highlights the MCF issues and the variable components affecting it from a surface mine perspective. The MCF investigation established the relationship between actual measurements and reporting against measurement protocols. Such measurements include "tonnage, volume, relative density, reconciliation strategy, and truck tonnage determination, sampling and assay standards. This study investigated how these measurements are conducted on Iduapriem Mine according to the mine's standard operating procedures (SOP). An improvement of documents towards a metal accounting protocol based on the AMIRA protocol is recommended. The mine's current quality control protocol was further expanded to reflect current practices. The mine to mill reconciliation compared production estimates from various sources (resource model, grade control model, pit design, plant and stockpile, truck tally, stockpile and plant feed, plant feed and plant received) in the period 2009 and 2010. Reconciliation factors expressed as a percentage were statistically analysed for discrepancies for tonnages and grades. It was realised that there is more confidence in mass (tonnage) measurement compared to grade. A generic mine to mill reconciliation path was suggested to be used by the mine.