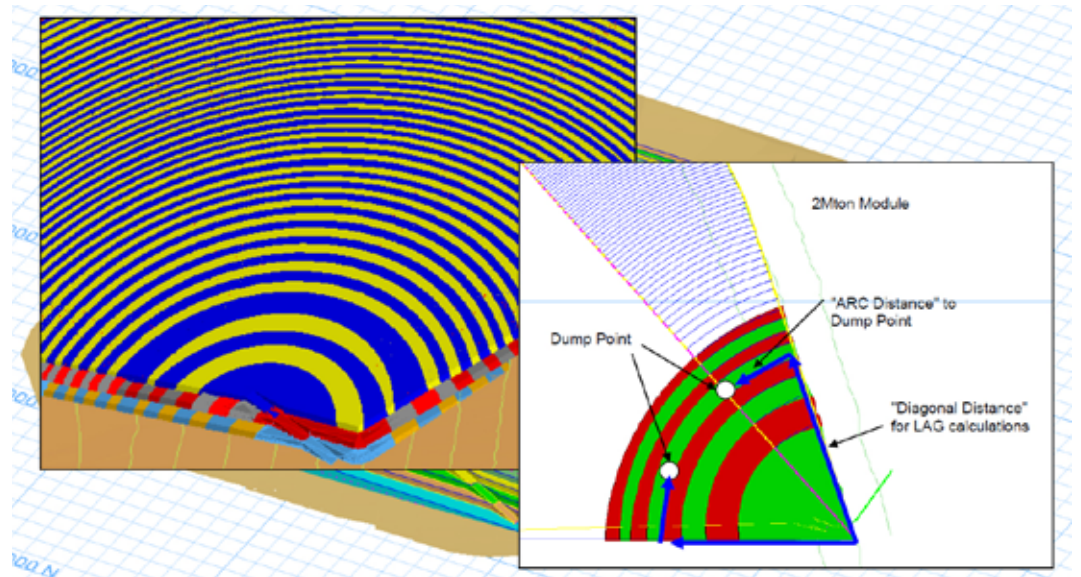


Optimising waste dump sequencing

The objective of long term planning is to maximise NPV through determination of the best sequence of extraction and supply to a processing plant.



Transportation profile and filling units

A TOOL WAS DEVELOPED FOR OPTIMISING DUMP FILLING USING VULCAN™ DESIGN OPTIONS AND THE HAULAGE PROFILE MODULE, COMPLEMENTED BY LINEAR PROGRAMMING IN MS EXCEL.

Planning engineers are also responsible for defining the shape and optimum physical location of waste dumps and other necessary works for the normal development of the mine.

Strategic planning establishes an extraction sequence which the operation aims to meet using the long term planning information. However, the sequence of filling the waste dumps is rarely set in these plans, or at least not done with enough detail. It is usually based on day-to-day decisions, in the hands of shift supervisors or short term planners. The sequence of dump filling must be defined based on criteria such as distance, time, cost, environment and availability of support equipment. Short term cycle times will inevitably affect long term plans.

A tool was developed for optimising dump filling using Vulcan™ design options and the

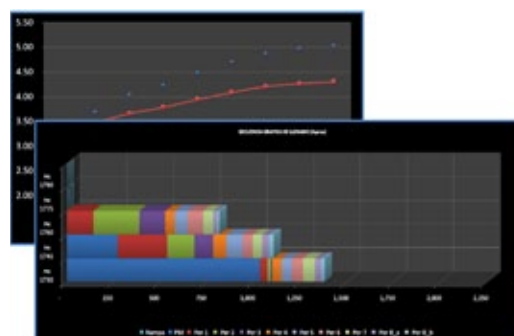
haulage profile module, complemented by linear programming in MS Excel.

The ultimate goal is to provide the mining operation with an ideal mathematical sequence for filling dumps, taking into account the particular variables that each user wants to define, such as cycle times and transportation costs. The filling plan needs to be managed easily in the short term, and aligned with the long term plan.

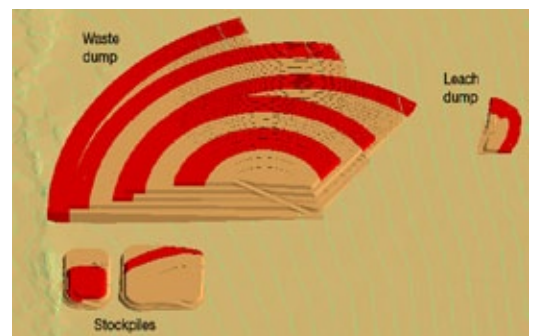
This method allows for the evaluation of multiple alternatives, and is applicable to stockpiles, ROM stockpiles and dumps for either short or long term planning.

Thanks to
Javier A. Córdova, Core Mining Studies

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Graphic results in Excel



Graphic results in Vulcan