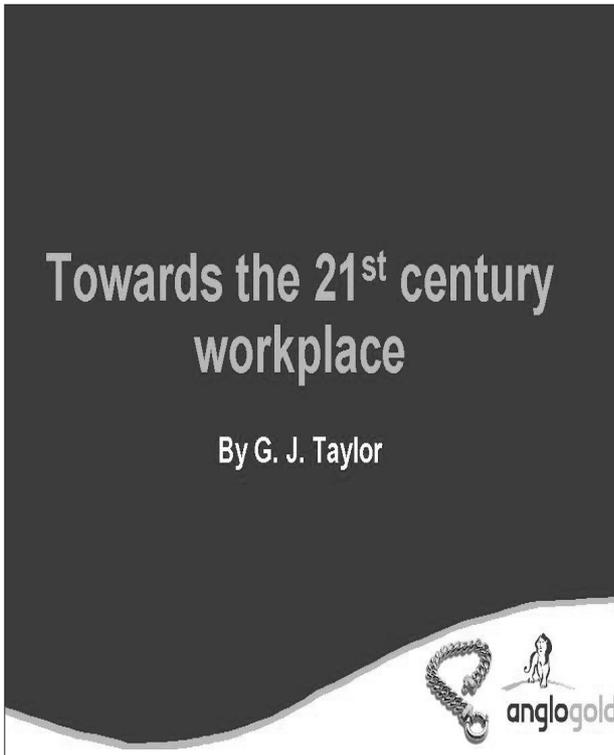


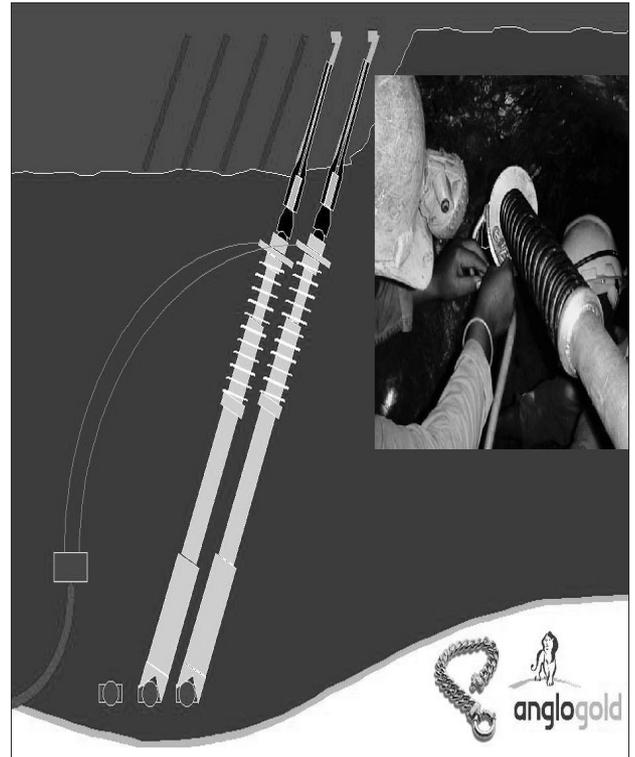


# Towards the 21st century workplace

by G. Taylor\*



A 21st Century worker is one who works less with his physical power and more with mental ability. Such a worker is more skilled than a labourer and is consequently rewarded accordingly. A 21st Century supervisor is one who ensures that workers are constantly supported so that they can maximize safety and productivity. A 21st Century manager is one who constantly searches for ways to maximize returns for the various stakeholders. Given the well-known constraints in narrow reef mining, all of the above is meaningless unless a mining method is found which provides conditions which support the 21st Century initiatives.

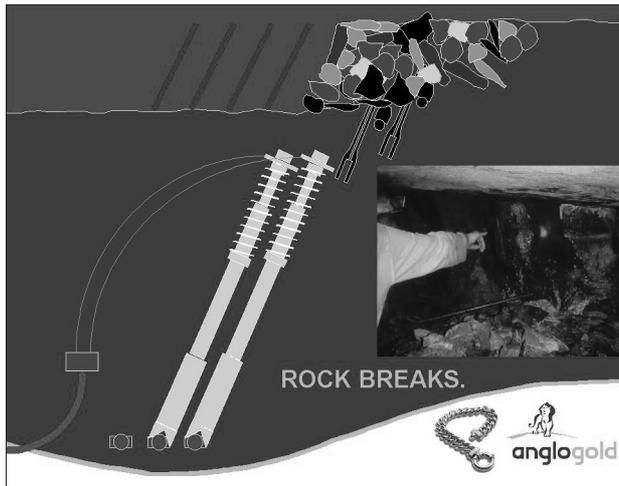


The identified mining method is a continuous non-explosive stope breaking system using rock splitter technology. Rocksplitting is defined as: The fragmentation of rock through high energy pulse wave transmission in a fluid-filled hole or hydrofracturing. Shotholes are effectively filled with a water-based gel and 30 grams of explosive after which the hole is closed off with a 'rocksplitting gun'.

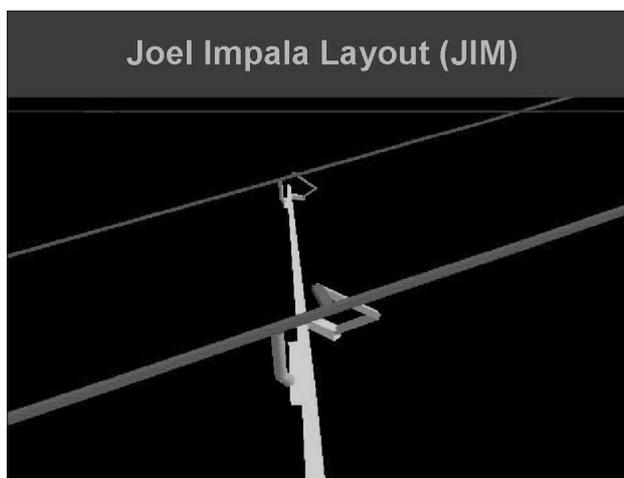
\* Joel Gold Mine, P.O. Box 128, Virginia, 9430.

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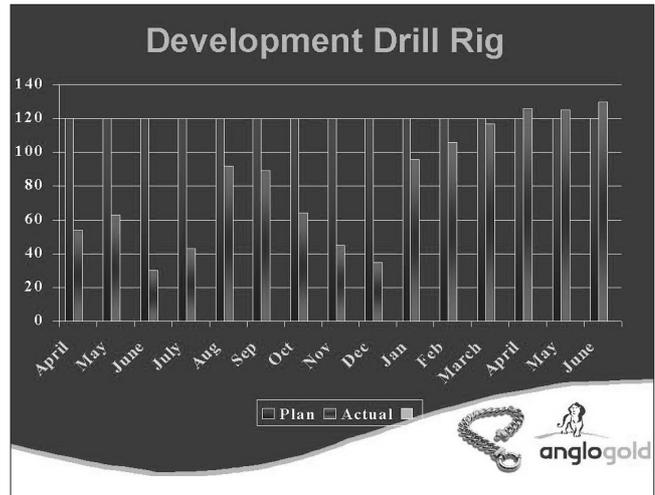
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The explosive charge is initiated remotely via the 'rocksplitting gun' and the required ore is broken. Re-entry is immediate and the crew is withdrawn to a safe place, usually five metres updip from the breaking point behind a lightweight screen. It is possible to have immediate re-entry because with normal stope ventilation conditions any harmful gas and dust resulting from the blast is immediately diluted and removed.



Development layouts based on the well known platinum mine layouts but modified to control water flow into the main haulages have been implemented at Joel. The effect of these layout changes has been to reduce the total life of mine development meterage by 46 kilometres.



Drill rigs are seen as being essential to the creation of a 21st Century workplace as well as enabling the 21st Century worker. Stope drill rigs are in the process of being implemented through a well-controlled 'Technology transfer' system in which workers are educated in the benefits of drill rigs and then are equipped with rigs after they have requested the rig and committed themselves to the rigs. Development rigs are already part of the production process and are showing very good results now that the technology transfer process has been completed.