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Optimised drill targeting using dynamic 3D modelling, Martabe Gold Mine, Indonesia

S.Konopa[1] FAusIMM, R.Ayres[2], A.NurKasnanto[3] MAusIMM, H. Indirawati[4]

1. Manager Mineral Resources, PT Agincourt Resources (Martabe Gold Mine), Jakarta 12310.

2. Consultant Geologist, PT Agincourt Resources (Martabe Gold Mine), Jakarta 12310.

3. Principal Geologist Mineral Resources, PT Agincourt Resources (Martabe Gold Mine), Jakarta 12310.

4. Senior Geologist Mineral Resources, PT Agincourt Resources (Martabe Gold Mine), Jakarta 12310.

ABSTRACT

As a project moves through the mine life cycle, the quantity of data available increases and the understanding of the orebody matures. Incorporating new information quickly and efficiently in current 3D models, is essential for adding value across the life-of-mine value chain.

At the Martabe Gold Mine, the resource development group manages 12 drill rigs on 6 resource projects, including 3 operating mines. The Martabe deposits are geologically complex and the volume of new information that becomes available each day is substantial. It is imperative that new geological and assay information is integrated into the 3D models as soon as possible, so that drill planning and targeting can be modified accordingly.

Martabe uses Leapfrog® 3D software to update and interrogate the 3D models on a dynamic basis as data becomes available. This results in faster and more effective changes to drill planning and schedules. The impact of this is better drill productivity and cost savings due to optimal drill targeting.

Optimal drill targeting has a positive impact on the Mineral Resource model as better information is available for interpretation and grade estimation. This in turn positively impacts the Ore Reserve model, mine planning and the overall project economics.

This paper describes the process used at Martabe for integrating new data into 3D models to enable optimised drill planning and targeting. The paper will present recent examples of the process and outcomes to demonstrate the benefits of this approach.