



## SUPERPIT, WA CHAFFERS DRAPE DESIGN BUILD

SUPERPIT, WESTERN AUSTRALIA





## COLLABORATIVE PARTNERING WITH KCGM ENSURED SAFE DELIVERY OF THE COMPLEX PROJECT

### PROJECT OVERVIEW

The Fimiston Mine operation, commonly referred to as the Super Pit, is the largest open cut gold mine in Australia and is expected to be over 1.35km long and to a depth of over 500m. After a rockfall event in the South East Corner of the Chaffers Cutback, mining operations ceased with immediate effect to allow for a thorough risk assessment to be completed and to discuss engineered solutions to allow mining to continue beneath the 240m high wall.

### SOLUTION

The remediation concept selected consisted of a high tensile drape system reinforced with vertical support cables, which would allow the rocks to fall, but in a controlled manner, guiding them to the toe of the slope to minimise bounce height and potential kinetic energy.

The design had to take into account potential loss of performance in the drape system due to the sheer height of the slope, over 270m in length, reducing the strength of the drape by pre-tensioning the system under its own weight. To mitigate this, vertical cables were designed to transfer the load back to anchorage at the crest. This allowed the design boulder to be controlled during a potential rockfall between the mesh drape and the rock face, without compromising the system with the loads transferred through the mesh and into the top anchors and cables.

### CONSTRUCTION

The drape was installed in a top down fashion with meticulous hand and mechanical scaling by Rope Access Tradesmen in combination with a 200t crane. Significant areas of instability within the upper

stopes were contained with a dimensioned TECCO® G65/4mm mesh system comprising rockbolting and isolated mesh, which sat underneath the drape.

Several critical factors had to be considered to undertake construction including the extreme Goldfields heat which reached temperatures over 55 degrees on the face of the pit wall as well as the length of the work area meaning a significant section was out of the crane's reach and required technical rigging systems for mesh application.

### Services related to this project

- Ground Support
- Rockfall Drape Mesh
- Scaling
- Active Slope Stabilisation
- Rock Bolting
- Design/Build

More information is available online at [www.geovert.com](http://www.geovert.com)