

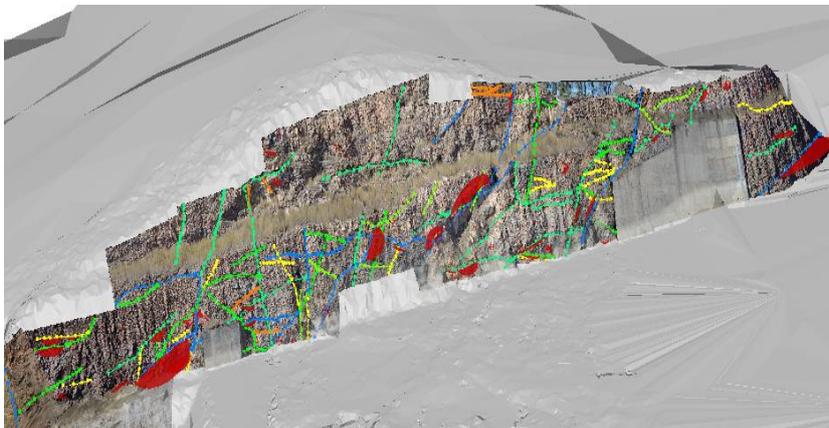
## Application of Sirovision in capturing structural information



SunWater engaged a CAE Mining consultant to undertake both geological and structural mapping and analysis of a spillway wall using Sirovision technology. The mapping was required for a stability analysis of the natural outcrop at the dam site. Sirovision technology provided a fast, safe and remote mapping capability for mapping the structure.

The Sirovision work involved the consultant capturing 3D images and creating a mosaic of georeferenced 3D images. The mosaics were then used to map structures including faults and joints as well as the geological contacts. This information was then used to create a structural model and the joint sets used for structural analysis by SunWater.

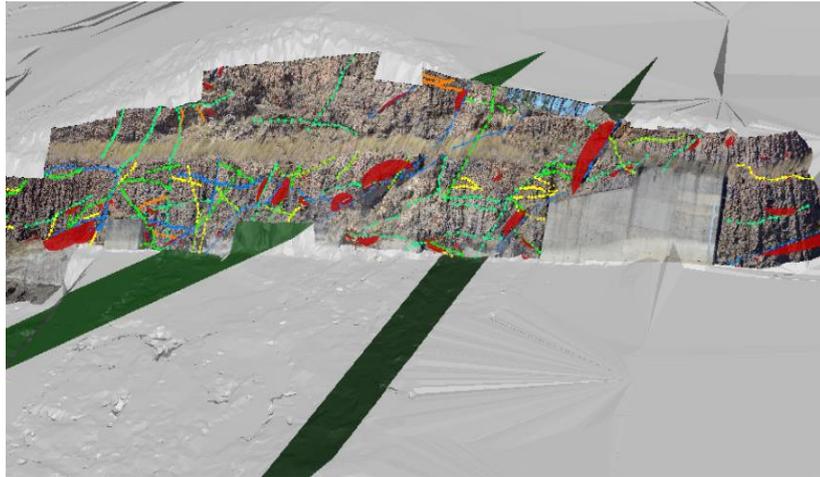
The CAE Mining consultant completed this work in 8 days and provided SunWater with a solution to safely map outcrop areas for analysis. All field data acquisition (stereo photographs) was conducted at a safe distance from the high walls.



All structural data was captured and used for geotechnical purposes to help with design and slope stability analysis. A structural model was also created in CAE Mining, Studio 3 software to help identify fault structures that had potential to cause problems with slope stability.

*Above: Sirovision Mosaic showing joints and mapped structures.*

*Right: Faulted surfaces interpreted from mapping within Studio 3*



### **About Sirovision**

The system utilizes off-the-shelf digital SLR cameras to capture stereo photographs of the rock face and uses the latest image processing technology to generate accurate 3D image models. These 3D models are digitally analysed using computational geometry to extract accurate geological and geotechnical data.

- Hardware costs: approximately \$2000 to \$5000 depending on which off the shelf digital SLR cameras and lenses are purchased;
- Up to 500% reduction in time spent performing field work and mapping;
- Flexible field methods with a minimum 3 control points to geo reference the entire rock wall;
- Easy deployment using lightweight equipment;
- Different levels of detailed mapping possible by quickly changing lenses;
- Outcrops can be photographed and mapped from up to 1500 metres away;
- Requires a very basic knowledge of how to use a digital camera;
- CAE Mining Consultants are available to undertake Sirovision project work;
- Stereonet analysis and wedge detection for stability analysis can be conducted within Sirovision software;
- Easy exporting functions to other software packages e.g.; Studio 3, CAD software;
- Results obtained in a safe manner without having to risk personal safety;

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