

Maptek expertise meets the challenge in Mongolia

A global partnership to build and operate what is set to become Mongolia's largest copper-gold mine has acquired Maptek products and expertise to meet a tight schedule and overcome the challenge of distance.



Maptek and Oyu Tolgoi staff at Ikhbulag in Omnogov, Mongolia in March 2011

MAPTEK PROVIDED PRODUCT IMPLEMENTATION, SUPPORT AND TRAINING ACROSS TWO CONTINENTS. THIS HELPED OYU TOLGOI LLC OVERCOME THE MANY CHALLENGES OF SUCH A LARGE PROJECT.

Oyu Tolgoi is a copper-gold mine in the Gobi Desert of southern Mongolia with commercial production scheduled to begin in 2013. Oyu Tolgoi LLC, which will build and operate the project, is a strategic partnership between the Government of Mongolia (34%), Ivanhoe Mines (66%) and Rio Tinto.

With the mine located in Mongolia and mine study team located in Vancouver, Canada, Oyu Tolgoi LLC faced the challenge of implementing standard software across the operation. A tight schedule also meant that mining engineer support was required while mine staff underwent training. Maptek was able to address all of these needs through our global office network and in late 2010, 11 Vulcan licenses were purchased for the exploration, geological modelling and engineering design of the project.

Maptek Perth office undertook site implementation and support to take advantage of the same time zone as the Oyu Tolgoi mine. In addition to implementation and support, Maptek technical staff travelled to the mine site to provide specialist training in Vulcan geology, block

modelling, resource estimation, geotechnical, underground survey and mine design tools to 23 personnel.

Implementation and support for the Vancouver study team was handled by Maptek Denver office to ensure timely support and build a local partnership. Maptek Technical Services staff have also been providing fill-in mine engineering duties to the study team in Vancouver with monthly visits since May 2010.

Maptek Mine Engineer Mike Winfield and Geologist Julian Cosson visited the Oyu Tolgoi site in March 2011 and began geotechnical training with building and populating databases. Core is logged into spreadsheets, and stored in the acQuire master database, exported to csv format, and imported into Vulcan. The massive amount of data collected by site engineering contractors required transfer from CAD format into Vulcan.

Site staff learned how to structure the data into one comprehensive geotechnical database so it can be used effectively.



Geotechnical staff can load all their structural data such as joints and faults, and run Vulcan stereonet tools to view areas of strength/weakness in the mine. Downhole televiewer data can also be loaded into the Vulcan geotechnical database. Registering the 3D downhole images onto the holes adds a further element to the interrogation process.

'Rather than looking at each hole individually, you can load it all and do some analysis; for example to work out where failure planes are likely to intersect your mine', said Winfield.

Staff also learnt how to use the tools to generate data using the survey instrument to get data directly into Vulcan. This will lead to

more accurate survey volumes for design and geotechnical analysis.

Six geologists undertook introductory Vulcan training to become familiar with CAD, triangulation and block modelling tools. Drillhole database design, creation and validation and statistical methods for analysing drillholes were also covered.

The site resource geologists underwent training in Vulcan grade estimation tools, enabling them to handle drillhole databases, statistics, grade estimations, block modelling and scripting tasks. Workshops using Oyu Tolgoi site data helped the technical personnel to become confident in using the new tools.



Maptek and Oyu Tolgoi staff at Ihublag in Omnogov, Mongolia in March 2011