MAPTEK
Forge
Newsletter
June 2011

FASTER 3D MODELLING

Marcelo Arancibia, Senior Vice President Maptek™ South America, describes a technique to increase productivity in generating 3D geological models for large complex metalliferous orebodies.

The Geology Adjusted Modelling method was presented at the Australian Users Conference in April. It uses existing Vulcan™ tools, and has been tested with the help of customers in Chile.

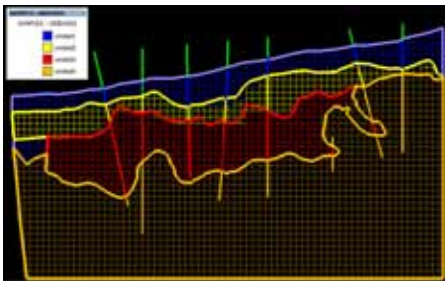
A test case considered a deposit with four different geological units. There were 50 geological sections at 25m intervals, with half perpendicular to the others.

The case study compared the different traditional techniques and evaluated the results against the Geology Adjusted Modelling method.

Various traditional techniques are used for generating solid models, including: 2D solid extrusion models; manual 2.5D solid models connecting sections; inclusive manual 3D solid models observing the drilling intercepts; exclusive manual 3D solid models for totally shared walls between adjacent solids; and implicit mathematical 3D solid models. The mathematical models are supposed to be automatic, however geological polygon lines and points must be used to control the geology!

Using traditional techniques, building the 3D solids for the test case took one month. The same 3D models were built in only 20 minutes using the new technique.

Modelling is based on observed data from mapping or geological logs. The interpretation of sections and/or plans always reflects the geological knowledge of the deposit.



The geologist always has a three dimensional picture in mind - even without computers.

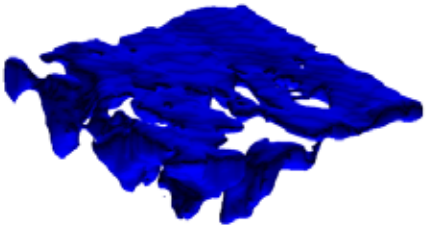
Geologists transform the drilling data into 'hard' intercept data to produce sections or lines - polygons of geological control. Such sections become the base data used by the Geology Adjusted Modelling technique. There is no need to create solids as the starting point.

Block model tools developed for resource estimation and subsequent reserve assessment are used to generate the solid and/or surface models representing the deposit, directly from the geological data.

Techniques for the estimation of block model domains include: continuous and/or categorical Indicator estimation; continuous or categorical Indicator simulation; pluri-Gaussian simulation; and truncated Gaussian simulation.

Block model population for the test case was through estimation by the nearest neighbour method, but any other geostatistical estimation method could have been used.

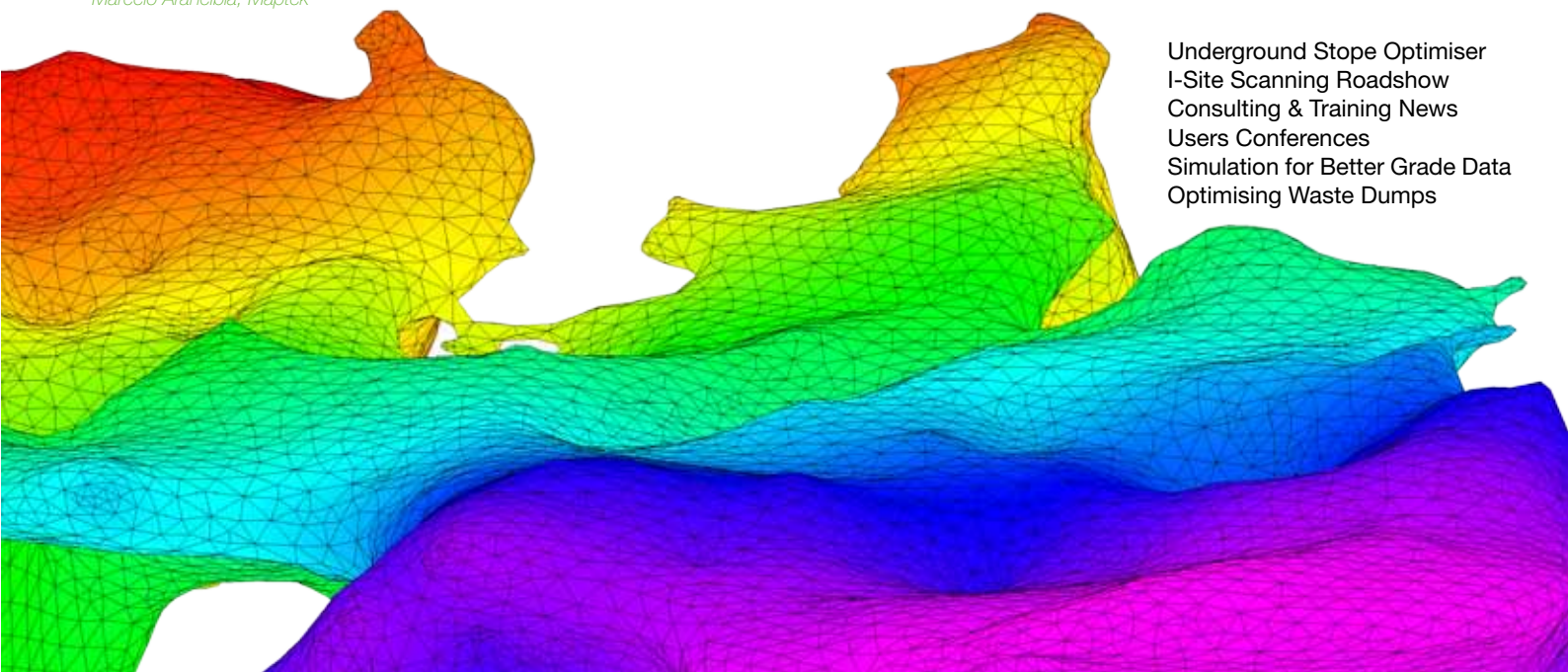
The output showed that the resultant Geology Adjusted Model was identical to the block model developed by traditional methods from 3D solids. The 20 minute execution time proves the new technique to be a winner!



'THIS METHOD IS MORE DIRECT - THE INNATE GEOLOGICAL KNOWLEDGE GOES STRAIGHT INTO THE BLOCK MODEL.'

Marcelo Arancibia, Maptek

> In this issue



VULCAN HELPS SHAPE TANAMI

Newmont Asia Pacific recently tested the new Vulcan™ Stope Optimiser on scenarios for the Tanami Operations in the Northern Territory of Australia.

Mining for gold began in the early 1900s and most recently from the late 1980s. Current production comes from the Callie underground orebody. Exploration and feasibility investigations continue as Newmont looks for opportunities to extend the life of the mine.

In early 2011 Newmont's mine planning team used the Vulcan Stope Optimiser, available in Vulcan 8.1, to assess how cut-off grade variations may affect the orebody expansion plans.

Newmont is looking to set up a haulage shaft at the Tanami which would allow the operation to reduce the cut-off grade at which stopes are mined. Improving economies of scale, and overcoming haulage and trucking constraints would mean they could extract more material from the mine.

Establishing a hoisting shaft for the main Callie orebody is expected to reduce the cut-off grade by around 0.5 g/t.

The Stope Optimiser was part of the process to assess the new haul shaft in terms of cut-off grades and volume of ore recovered. A dramatic time improvement was seen in getting results, over a manual design method.

The Stope Optimiser was run for a range of cut-off grades and several shape configurations. The results were tabulated in a spreadsheet to obtain expansion factors for tonnes and ounces. These factors were used in the mine schedule to prepare quick estimates for shaft scenarios.

'The results were enough to enable us to move on without having to re-design stopes manually', said Nadine Wetzel, Senior Mine Planning Engineer for Newmont.

'This is a long project, and we're still working on it. Getting the information quickly has meant the project has not been delayed. Information from the Vulcan reports can be fed into the mine plans, and used by the geologists as well.'

The Stope Optimiser was also run for the Villa orebody, which is a narrow vein type deposit close to the surface. A range of cut-off grades and minimum stoping widths were evaluated. Comparing the results in a spreadsheet helped the mine planning team to get a feel for the continuity of the orebody under a range of assumptions.

'The benefits of the Stope Optimiser are that it is very quick, its design parameters can be changed very easily and it gives a repeatable result every time with the same parameters. In comparison, if 2 or 3 engineers did this manually, different designs would eventuate from the same parameters. And you know that the Stope Optimiser generates the optimum design', added Wetzel.

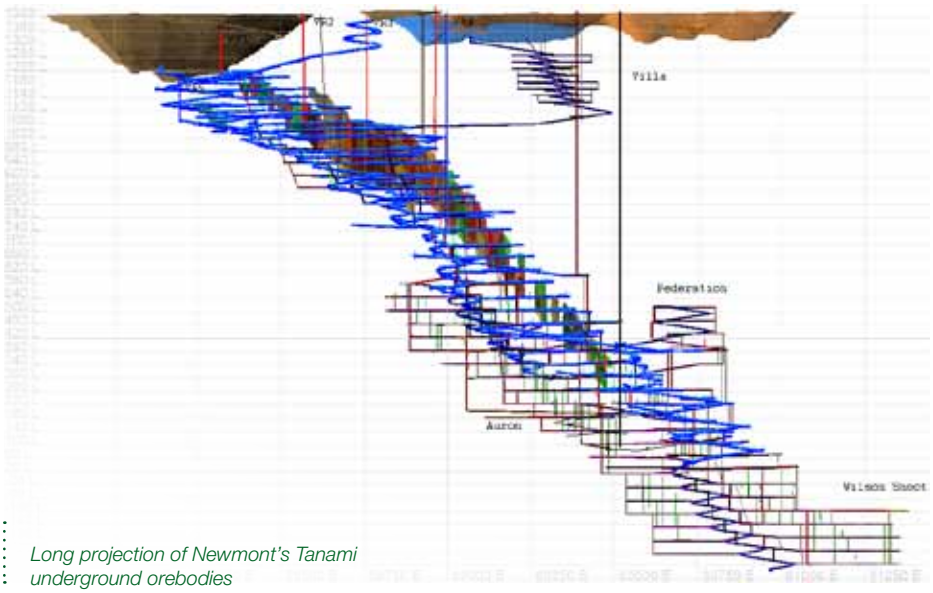
Stope Optimiser shapes (grey) vs manually designed stopes

The current version of the Stope Optimiser is an output of AMIRA's PRIMO research project (see *Forge* September 2010).

Newmont was involved in sponsoring this project and is now sponsoring AMIRA's P1037 project which aims to continue development of the Stope Optimiser tool. Newmont is contributing experience and suggestions to the research project team, and looks forward to the results of the next stage.

Thanks to
Nadine Wetzel
Senior Mine Planning Engineer
Newmont Asia Pacific

Presented at Australian Users Conference, April 2011



Long projection of Newmont's Tanami underground orebodies

VULCAN™ STOPE OPTIMISER reads a Vulcan block model with either grade or economic information, applies stope framework and geometric constraints, and creates a set of mineable stope shapes. These are summarised in an optimisation log and reserve report.

Vulcan Stope Optimiser delivers full 3D capabilities on stope shape generation and block model analysis without manual digitising. Because reserving is incorporated, no iteration is required to produce the optimum 3D stope shape. Stope design time is reduced by 98% compared with manual design. Productivity is increased substantially.

Vulcan's 3D integration removes 2D cross-section constraints and enables multiple runs for analysing 'what-if' scenarios. Hanging wall and footwall visualisation allows the planner to have influence over the final stope design.

Further information about the Vulcan Stope Optimiser can be found at www.maptek.com/vulcan8.1/

MAPTEK DRIVES MINE SURVEY SOLUTION

Maptek's customised vehicle has been used to demonstrate I-Site™ scanning capabilities around North America.

In November 2010, I-Site Services Manager Scott Schiele began planning the acquisition of a truck to showcase the I-Site laser scanning system. His goal was to enable clients and prospects to see I-Site in action at their sites and show how it could work for them.

Maptek unveiled the I-Site truck at the February 2011 SME tradeshow in Denver, Colorado, generating a tremendous amount of interest. This prompted Maptek to launch an I-Site roadshow.

Schiele, along with I-Site team members John Dolan and Mike Foster, embarked on a five state tour of Western US mines in late March. The team demonstrated how an I-Site equipped vehicle obtains near-instantaneous data using 3D laser scanning technology.

Schiele explains, 'With the I-Site 8800™ laser scanner on a vehicle mount and high precision GPS system, we have a fully integrated mobile scanning vehicle. It's like a survey office on wheels.'

The I-Site 8800 is the first survey instrument to combine long range laser scanning and panoramic digital colour photography at a super high resolution of 70 megapixels.

'We customised the truck to include a 17" flatscreen and laptop running the Maptek I-Site data acquisition software, I-Site Studio™ and GPS software, allowing us to process the results while mapping in the field.'

Traditional workflow requires surveyors to collect data in the field and take it back to the office for processing and analysis. Often it is not until the processing stage that lack of coverage or 'shadows' in the data become evident.

This requires a trip back out to the site to fill the gaps. Scanning with the I-Site system eliminates that second trip; viewing the data in the field shows whether the area has been adequately covered before leaving.

Jon Larson, General Manager of Maptek in North America, notes that the integration of equipment is key.

'Because we've combined the I-Site 8800 with I-Site Studio and GPS on a vehicle, we're now able to show people how they can acquire and process their data in just a few minutes', Larson says.

'The truck fully equips us to meet a client's on-site survey needs. Our consulting offering includes end-of-month reconciliations, stockpile measurements and highwall mapping.'

Site personnel appreciated seeing their data processed immediately on the flatscreen in the truck. The team also demonstrated video fly-throughs of portions of each site, showing scanned results in real time.

For details email info@maptek.com or visit www.maptek.com/roadshow


01


02


03

01 Scott Schiele demonstrates I-Site Studio software in the mobile mapping vehicle
02 I-Site truck at Red Rocks Amphitheatre near Denver, prior to field trials
03 Scott Schiele demonstrates the I-Site 8800 to Ben Beard of Resolution Copper
04 The I-Site team: Scott Schiele, James Kenney, Mike Foster and John Dolan

04

'IT'S A SURVEY OFFICE ON WHEELS...'

Scott Schiele, Maptek

MAPTEK INDIA

Maptek™ has established an office in New Delhi to service the Indian mining market.

India has a wealth of natural resources for internal consumption and export, with significant areas yet to be fully explored. The current challenge for the mining industry is to assess the potential to keep pace with commitments for growth.

'Maptek products can help meet the demand by miners for better technical capability. Considering the industrial growth and urbanisation of India, we know this is a favourable time to offer our solutions. We can do that better with a local presence', said Maptek General Manager, Peter Johnson.

New staff have undertaken training in Australia to become familiar with Maptek products and service delivery standards.

Praveen Mishra, Regional Manager, India Operations and Mark Scholes, Mine Planning Solutions Manager for Australia, showcased the latest Maptek products and services at the Geominetech Symposium in Bhubaneswar, India in May.

'MAPTEK STANDS FOR INNOVATIVE TECHNOLOGY AND CUSTOMER SATISFACTION. WE OFFER THE PERFECT MINING APPLICATIONS FOR YOUR SITE AND GUARANTEE GLOBAL AND LOCAL SUPPORT.' *Praveen Mishra*

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Mr B.D. Mishra (former Head of IIT Kharagpur) presents an award for excellence to Mark Scholes

LKAB, SWEDEN GOES MAPTEK

Maptek's global prowess in established mining markets cut no ice when convincing the Scandinavian market that we could deliver the best solutions in Scandinavia to Scandinavian companies.

Elkem of Norway became our first customer in Scandinavia in 2002, after conducting a careful analysis of Maptek products and services.

In December 2010 Maptek was given another opportunity to prove our worth. Swedish company, LKAB (Luossavaara-Kiirunavaara AB) is one of the world's leading producers of upgraded iron ore products for the steel industry and a growing supplier of industrial minerals products. The company's chief assets are the magnetite ore deposits at Kiruna and Malmberget in northern Sweden.

LKAB planners were struggling to deliver enough fast, accurate information to satisfy the demands of a rapidly growing production schedule. Their mine planning engineer Matti Sormunen contacted Maptek in Edinburgh, UK, to evaluate our capabilities. A thorough analysis of the Vulcan™ software convinced LKAB that it was the solution they needed.

LKAB has now implemented Vulcan for geological modelling and mine planning, with training underway to bring the geologists and mine engineers up to speed with Vulcan functionality.

Maptek's Graeme Cowie (right) demonstrating the I-Site 8800 laser scanner on site with LKAB personnel in northern Sweden in February 2011

CHRONOS FOR CANNINGTON

Mining engineers from BHP Billiton's Cannington site were recently trained in the newly acquired Vulcan Chronos scheduling module.

Maptek staff flew to Townsville to train Douglas Suk and Karthikeyan Nadarajan. Vulcan Product Manager, Eric Gonzalez, who was visiting Australia from Denver at the time, took the opportunity to share his Chronos expertise.

BHP Billiton is in the final pre-feasibility stage to move operations towards a combined underground and open pit at Cannington, with excavation due to start in mid 2012. The mine planning engineers will use Chronos to set up a long-term schedule, programming the first two years on a monthly basis, followed by quarterly periods, to create a 5-10 year plan.

Eric Gonzalez claims that 'enhancements to Chronos in Vulcan 8.1, involving multi-threading and tuning parameters, reduce the time required to run mine schedule optimisations by up to 99%'.

Alison Farrah (Maptek), Douglas Suk (BHP Billiton), Mike Winfield and Eric Gonzalez (Maptek), and Karthikeyan Nadarajan (BHP Billiton)

GEOSTATISTICS

Maptek will host the Citation in Applied Geostatistics in Viña del Mar, Chile and Perth, Western Australia during 2012. Courses will be run by Dr Clayton Deutsch.

To find out more, email cursos@maptek.cl or info@maptek.com.au

TRAINING IN MONGOLIA

Technical services staff from Australia have been training geologists and mining engineers at Oyu Tolgoi in Mongolia.

Last year, Vulcan™ was acquired for exploration, geological modelling and engineering design of the Oyu Tolgoi copper-gold mine in the Gobi Desert of southern Mongolia.

Oyu Tolgoi LLC, which will build and operate the project, is a partnership between the Government of Mongolia, Ivanhoe Mines and Rio Tinto. Commercial production is scheduled to begin in 2013.

Maptek™ mining engineer Mike Winfield and geologist Julian Cosson visited the Oyu Tolgoi site in March 2011. A total of 23 personnel received specialist training in Vulcan geology, block modelling, resource estimation, geotechnical, underground survey and engineering tools.

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

Geotechnical training started with building and populating databases. Core is logged into spreadsheets and stored in the acQuire master database, then 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

Oyu Tolgoi technical staff

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's stereonet tool 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 the specialised tools for drillhole database, statistics, grade estimation, block modelling and scripting tasks. Workshops using Oyu Tolgoi site data helped the technical personnel to become confident in using the new tools.

CONSULTING IN SENEGAL

Technical staff in all Maptek regional offices relish the opportunity to work in a variety of specialist tasks. One of these is to help operations when short staffed.

Neto Kapalata, Technical Services Mine Planner/Surveyor from Maptek's Johannesburg office is supporting the mine engineering department of Sabodala Gold Operations in Senegal, close to the border with Mali.

The property, owned and operated by Teranga Gold Corporation, was experiencing staff turnover issues, and required a relieving senior mining engineer for three months. Kapalata's role is to restructure and re-form a functioning mine engineering department.

His site routine involves inspecting load and haul, dewatering, dispatch engineering and drill & blast, and advising on aspects of the operation.

L-R: Michel Sauvenier, new Chief Mining Engineer, Sabodala Gold Operations, Neto Kapalata, Technical Services Maptek, and Yani Roditis, Vice President of Operations, Teranga Gold Corporation

USERS CONFERENCES 2011

AUSTRALIA

Customers and staff gathered at the Vines Resort north of Perth, during the heat of early April, to share experiences of the application of Maptek products.

More than 100 registrants from 6 countries made the trip to Western Australia, with industry networking cited as one of the greatest benefits of attending. Maptek themes included new techniques in modelling, survey, optimisation and data integration. Interesting customer case studies covered all resource types - iron ore, coal, potash, diamonds and gold.

New developments in Vulcan, including the underground stope optimiser and rapid pit phase design, drew strong interest from the audience. Workshops included hands-on demonstrations of the I-Site 8800 and the Z&F scanners. Eureka and BlastLogic were showcased as products to watch.

Social networking at welcome drinks and poolside gourmet barbecue continued at the dinner which featured a quiz around Maptek, mining and golfing themes.

The final session promised exciting developments in technology, software architecture and product integration. Maptek staff and customers made the most of the opportunity to discuss needs and solutions in an open forum.

'I highly recommend people to come to conferences. Even if some presentations are not oriented towards your specific field, there are still a lot of things to learn. I specialise in coal but in the metals talks I learnt techniques and shortcuts. Talking to a lot of people and exchanging ideas is a very worthwhile experience. The workshops are a great way to learn new techniques.'
Mike Kuligowski, Peabody Energy, St Louis

'The best thing about the conference was the interaction and social contact with other Maptek users. It really opened my mind to the way that Vulcan is used in other companies and for other commodities. It was good to see new products which can improve the quality of our work. And all in a friendly and relaxed atmosphere.'
Anne-Audrey Latscha, Rio Tinto

'Previewing the Vulcan 8.1 features before they were rolled out, and seeing how Vulcan is used in other companies was very valuable. It was great to meet Maptek staff, especially those with whom you've only spoken on the phone.'
Hamish Pescini, Solid Energy New Zealand

'The best thing about the conference was meeting face to face, and having dinner and drinks with Maptek people. It was valuable to talk about issues and future enhancements, and keep up with technology developments.'
David Hurley, Perilya Limited

EUROPE-AFRICA

4-7 September, Scotland

The 2nd Africa and Europe Users Conference is being held in picturesque Pitlochry, Scotland. The presentation schedule is full to overflowing with speakers from around the world.

Keynote talks from Maptek founder Bob Johnson, and prominent Scottish geologist and science communicator Professor Stuart Monro, have been lined up, as well as Europe's first taste of the inside story to the dramatic Chile mine rescue in 2010.

A comprehensive list of technical talks will be offered across the mining spectrum. Come and hear from Maptek resident experts and an outstanding selection of customer speakers.

EARLY REGISTRATION DISCOUNT RATE EXTENDED TO 17 JUNE

Visit www.maptek.com/europe_2011

SOUTH AMERICA

5-7 October, Chile

Maptek will hold the XIV Annual Users Conference in Viña del Mar in October. The technical program will feature presentations by users and Maptek experts on a range of topics relevant to the South American mining industry.

Case studies including open cut and underground mine planning, optimisation and scheduling, geostatistics and survey will be complemented by interactive workshops and forums.

This conference will build on the excellent service and 24/7 technical support offered to customers in South America.

www.maptek.com/cl/sudamerica_2011/

STATISTICAL FRAMEWORK FOR POTASH GRADE

Potasio Rio Colorado explores for potash in the southwest of Argentina. The potassium salts are extracted by the well-investigated methodology of solution mining.

There is only limited data for the deposit, firstly because its geometric characteristics restrict access to the potassium source, and secondly because the extraction methodology doesn't require much drilling.

Therefore, as much grade information as possible must be provided by whatever data is available, either directly or by inference. Just as with the direct data, statistical inference from limited information involves errors, which must be quantified for better management of the potash production plan.

A statistical simulation process was developed in Vulcan™ software for two of the relevant geological variables, to define a test statistical framework in which to quantify the uncertainty.

The project had five stages:

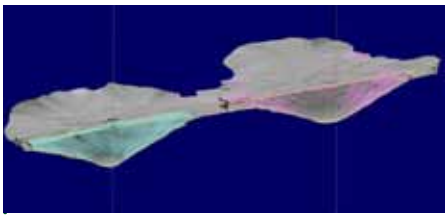
- Intensive review of the process and definition of the relevant variables to be modelled
- Analysis of available information and setting of work environments
- Modelling the variability of uncertain variables and validation against existing geological knowledge
- Simulation of geological contacts and potassium grades
- Review, validation and analysis of the information created, and generation of calculation procedures.

This modelled information is compared with the final results for each processing plant. Deviation parameters are analysed to identify opportunities for improvement in the different operational processes.

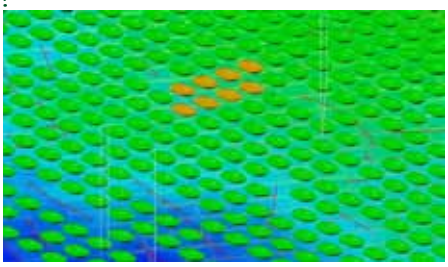
Thanks to
Claudia Monreal, Core Mining Studies
Christian Monardez & Jaime Colomé,
Vale PRC Argentina

Presented at Australian Users Conference, April 2011

The drill core shows clearly distinguishable strata, KCl salt crystals, areas of impurity and indicator clay horizons



Pilot caves (above)
3D cave layout model (below)



OPTIMISING WASTE DUMP SEQUENCING

The objective of long term planning is to maximise NPV through determination of the best sequence of extraction and supply to a processing plant.

Planning engineers are also responsible for defining the shape and optimum physical location of waste dumps and other necessary works for the normal development of the mine.

Strategic planning establishes an extraction sequence which the operation aims to meet using the long term planning information. However, the sequence of filling the waste dumps is rarely set in these plans, or at least not done with enough detail. It is usually based on day-to-day decisions, in the hands of shift supervisors or short term planners. The sequence of dump filling must be defined based on criteria such as distance, time, cost, environment and availability of support equipment. Short term cycle times will inevitably affect long term plans.

A tool was developed for optimising dump filling using Vulcan™ design options and the haulage profile module, complemented by linear programming in MS Excel.

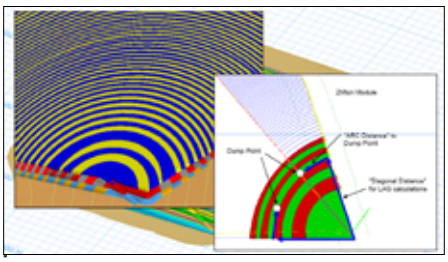
The ultimate goal is to provide the mining operation with an ideal mathematical sequence for filling dumps, taking into account the particular variables that each user wants to define, such as cycle times and transportation costs. The filling plan needs to be managed easily in the short term, and aligned with the long term plan.

This method allows for the evaluation of multiple alternatives, and is applicable to stockpiles, ROM stockpiles and dumps for either short or long term planning.

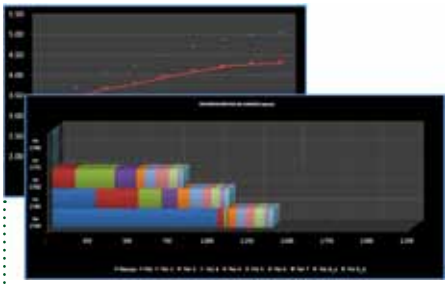
Thanks to
Javier A. Córdova, Core Mining Studies

Presented at Australian Users Conference, April 2011

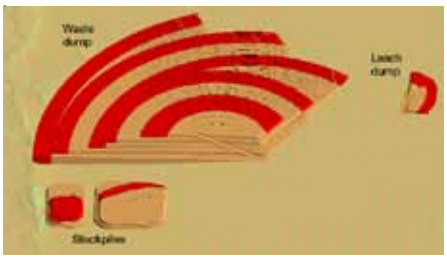
www.core-miningstudies.com



Transportation profile and filling units



Graphic results in Excel (above) and Vulcan (below)



VULCAN

ALEXIS MINERALS is planning to reopen a gold mine in Snow Lake, Manitoba, Canada. Historic data will be used in Vulcan for open pit/underground modelling with emphasis on underground applications.

ARUP GEOTECHNICS, based in New South Wales, is using Vulcan to model complex 3D geological ground conditions for major infrastructure projects including design for tunnels, bridges and offshore jetties.

CRESCENT GOLD LIMITED is a mining, development and exploration company based in Perth, Western Australia, focused on gold development and mining. Vulcan will be used for modelling the open cut Laverton Gold Project, 250 km northeast of Kalgoorlie.

ENAMI, Ecuador's national mining company, has acquired Vulcan for geological modelling and mine planning applications.

GEOTECH MINING SPECIALISTS, based in Perth, Western Australia, will use Vulcan for geotechnical consulting work.

HATCH, supplier of engineering, project, process and business consulting, and operational services for mining, energy and infrastructure, has acquired a Vulcan MineModeller for underground projects coordinated from its office in Santiago, Chile.

KALGOORLIE MINING COMPANY has purchased Vulcan for geological modelling at the former Bullant Mine, 520 km northeast of Perth, WA. Production at the gold-lithium operation is expected to restart in May 2011.

LKAB has purchased Vulcan for geological modelling and mine planning at its iron ore deposits in northern Sweden. LKAB produces upgraded iron ore pellets for steel making, and industrial minerals products.

MARTLET CONSULTANTS, based in Brisbane, Queensland, will use Vulcan for geological modelling and resource estimation.

MINERA ANDES IRON LTDA has acquired Vulcan for geological modelling and grade estimation at sites in Chile.

OZ MINERALS has acquired Vulcan GeoStatModeller for evaluation of the Carrapateena copper-gold exploration project in central South Australia.

SCM TRINIDAD, located in Diego de Almagro near Copiapó in northern Chile, has purchased Vulcan for geological modelling and grade estimation.

TWP AUSTRALIA, based in Perth, Western Australia, provides multi-disciplinary project design and management services in mining, process, energy and infrastructure. TWP will use Vulcan for mine design and modelling.

I-SITE

AGRIUM DRY VALLEY phosphate mine in southeast Idaho, USA, has invested in an I-Site 8800 laser scanning system for end-of-month surveys, and for obtaining better as-built data for existing and new pits.

ANGLO PLATINUM has acquired an I-Site 8800 laser scanner and four I-Site Studio licences. The scanner will be used mainly to track production, and also by the geology team at the Mogalakwena mine in Limpopo Province, South Africa.

BHP BILLITON ESCONDIDA mine is the world's largest copper producer, located in Chile's Atacama Desert, 170 km southeast of Antofagasta. An I-Site 8800 laser scanning system and three I-Site Studio licences have been acquired for geological and geotechnical applications, taking advantage of the automatic 3D high resolution imagery.

BHP BILLITON IRON ORE has purchased an I-Site 8800 laser scanning system, vehicle mount and four I-Site Studio licences for the Mt Whaleback iron ore mine in the Pilbara region of Western Australia.

BMA PEAK DOWNS has purchased three I-Site 8800 laser scanning systems for the large open cut coal mine in Queensland's Bowen Basin.

BMA SARAJI has acquired an I-Site 8800 laser scanner for site survey applications.

KUMTOR OPERATING COMPANY, CENTERRA GOLD INC. has purchased an I-Site 8800 laser scanning system for monitoring face stability and movement, as well as routine survey of inaccessible and dangerous areas at the open pit gold mine in the Kyrgyz Republic.

LEIGHTON HOLDINGS has purchased an I-Site 8800 laser scanning system and vehicle mount for end-of-month survey at the Sonoma open pit coal mine in Queensland's Bowen Basin.

MACARTHUR COAL LIMITED has purchased an I-Site 8800 system for end-of-month survey at the Moorvale open pit coal mine near Nebo in Queensland.

INSTITUTO MEXICANO DEL PETRÓLEO, a research centre dedicated to the petroleum industry, has acquired the I-Site 8800 laser scanning system for establishing cutting-edge methodologies for studying analogs in oilfield outcrops.

MOROBE MINING, a JV between Harmony Gold and Newcrest Mining to develop the Hidden Valley mine in the Morobe Province of Papua New Guinea, has purchased an I-Site 8800 laser scanning system for survey tasks at the open pit gold-silver mine.

TECK CARMEN DE ANDACOLLO MINE in central Chile near the southern limit of the Atacama Desert, will use the I-Site 8800 laser scanner for survey at their open pit copper mine.

THOMPSON CREEK MINING in Challis, Idaho, USA, has purchased an I-Site 8800 system. The long range laser scanner will be ideal to monitor the large mining operation and conduct end-of-month surveys.

VEDANTA RESOURCES PLC HINDUSTAN ZINC, owner of the world's largest zinc mine in Rajasthan, northwest India, will use the I-Site 8800 laser scanning system for survey.

VEDANTA RESOURCES PLC SESA GOA has purchased two I-Site 8800 laser scanning systems for their open pit iron ore operations in India's Goa province.

VISIT MAPTEK AT THESE TRADESHOWS IN 2011

June 13-17
Exponor
Antofagasta, Chile

August 17-19
Australian Institute of Mine Surveyors
Melbourne, Victoria

August 22-24
VIII International Mining Geology Conference
Queenstown, New Zealand

September 12-16
Extemin
Arequipa, Perú - Booth 446

September 26-30
APCOM 2011
Wollongong, New South Wales - Booth 8

October 26-29
Expomin Mexico
Acapulco, Mexico - Booth 1024

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