

Mineralogical Patterns in Hydrothermal Systems Putting the **GEO** into **Geometallurgy**

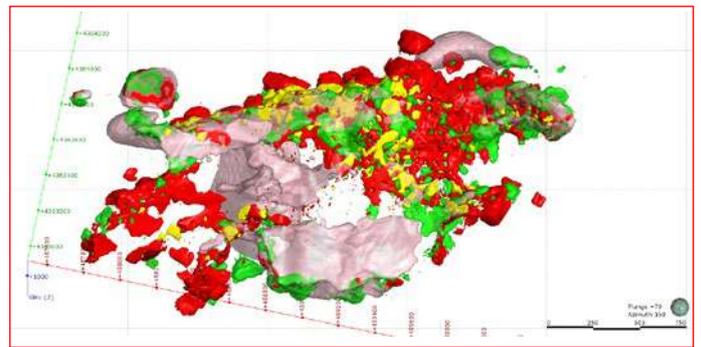
The seminar will feature a selection of expert speakers and presentations of real project data to demonstrate how to interpret mineralogy from multi-element geochemistry and to turn it into 3D domains for resource modelling.

This one-day, not-for-profit technical seminar will demonstrate how to use multi-element geochemistry to construct 3D mineralogical models of orebodies.

Logging drill core or drill chips is very subjective. Variation in skills and opinions from one geologist to the next makes it very difficult to create reliable 3D alteration models of orebodies based on visual logging. Routine 4-acid digest ICP analyses provide a quantitative and consistent data set through an entire orebody that can help take the guess work out of logging. This provides the basis for improved 3D resource domain models.

Such models can:

- Lead to vastly improved metallurgical test work sample selection.
- Use the assays as a proxy to populate an entire block model with predicted rock properties, where correlations are established between metallurgical test results and mineralogy estimated from the chemistry.
- Predict rock hardness domains (bond work index, power consumption, mill wear drilling production rates).
- Map clay mineralogy distribution – impacting flotation sliming, geotech/slope stability/UG stope over-break, dilution, etc.
- Quantitatively map sulphide type, percentages, ratios.
- Mineralisation-related alteration models (vectoring for resource extensions and near-mine exploration, predicting grade domaining and ore-body zonation).
- Map deleterious element distribution – As, Sb, Se, Mg etc, potentially affecting concentrate quality.
- Quantitatively map reactive mineral components and toxic metals that have an environmental impact.



Utilising Leapfrog facilitates rapid 3D interpretation and modelling of data, routinely updatable models and multiple hypotheses testing.

This seminar will discuss appropriate assay methods and demonstrate a workflow for estimating mineralogy from assay tables and constructing 3D mineralogy models of orebodies. The monetary value of an orebody is determined not only by the amount of contained metal but also by the cost of mining, milling and extracting the metal from the ore. If we can use mineralogical proxies for cost components, then we can then generate value-driven rather than grade-driven resource models and improve financial models and mine scheduling.

This not-for-profit event is generously sponsored by:



CSA Global
Mining Industry Consultants



Donations can be made at
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Who should attend?

This seminar is for exploration geologists with advanced projects, resource definition and development managers, metallurgists, mining engineers, process engineers, geotechnical engineers and technical services managers.

My motivation - for creating awareness and raising funds for prostate cancer

Every year in Australia, 22,000 cases of prostate cancer are diagnosed, over 3,000 men die from it. Four years ago I was diagnosed with prostate cancer. I had a blood test just in time. Without a PSA test, I wouldn't have made it to 60.

I am participating in a bike ride from Perth to Margaret River on 16th-17th September which is designed to increase public awareness about prostate cancer, but is also a fund raiser for the Prostate Cancer Foundation of Australia (PCFA). Last year PCFA provided \$11 million to fund medical researchers who are looking at better ways to diagnose and treat prostate cancer. They also funded 27 specialist prostate cancer nurses around Australia.

This seminar is my contribution to this fund raising event. Prostate cancer has a high survival rate, but the key is early detection. Without awareness of the risk, many men leave it too late to have a test. This year the funds raised will go directly towards employing a specialist prostate cancer nurse in Perth. The nurse will assist men diagnosed with prostate cancer to find the specialists they need and particularly help with post-treatment rehabilitation to restore quality-of-life issues. This WILL make a huge difference to the lives of hundreds of Perth men who are being treated for prostate cancer.

**The event is a not-for profit event
but we ask that you make a
generous donation to this worthy
cause as part of your registration.
If you cannot attend but would
like a copy of the presentations
please register your interest along
with your donation.**

Donations can be made at
**[www.prostateactive2016.
everydayhero.com/au/scott](http://www.prostateactive2016.everydayhero.com/au/scott)**

**Numbers are limited and
will be on a first-come, first
served basis, so please register
your interest by emailing the
organiser (Scott Halley) on:
minmap@westnet.com.au**

Morning Chairman, Cam McCuaig (CET)	
9:00-9:15	Jo Milios (Complete Physiotherapy & Men's Health) Proactive health management for men.
9:15-10:00	Scott Halley (Mineral Mapping Pty Ltd) Applied Lithogeochemistry.
10:00-10:30	Ben Cooke (ALS) The ICP analytical process from start to finish.
10:30-10:45	Morning Tea
10:45-11:00	Scott Halley Some simple QAQC tests you should do on your data.
11:00-11:20	John Beeson (Geoscience Now Pty Ltd) Geology of the Productora Cu-Mo deposit, Chile.
11:20-12:00	Scott Halley Estimating alteration mineralogy at Productora from 4 acid digest ICP analyses; A live demonstration in ioGAS.
12:00-12:45	Warren Potma (CSA Global) 3D model of the Productora alteration mineralogy; A live demonstration in Leapfrog.
12:45-1:30	Lunch
Afternoon Chairman, Jeff Elliott (CSA Global)	
1:30-2:00	Grant King (AMEC Foster Wheeler) The Business Case for Early-stage Implementation of Geometallurgy – an example from the Productora Cu-Mo-Au deposit, Chile.
2:00-2:20	Clemens Augenstein (Model Earth) Geology and structural controls on shoot geometries at the Sentinel Cu deposit, Zambia.
2:20-3:00	Scott Halley Estimating sulfide mineralogy at Sentinel; a live demonstration in ioGAS.
3:00-3:20	Afternoon Tea
3:20-4:00	Iain Levy (Leapfrog) Creating a domain model for sulfide mineralogy at Sentinel; a live demonstration in Leapfrog.
4:00-4:20	Mike Christie (First Quantum) Geochemical classification of ore types at Sentinel; implications for mining, processing and decision making.
4:20-6pm	Networking

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