Short course SC7
Geology, Genesis and Exploration of Epithermal Deposits

Presenter
Stuart Simmons, email: stuart@hotsolutions.co.nz

Date: Saturday 6 April – one-day; 8:00 am - 5 pm

Short course description

Epithermal deposits are diverse and attractive exploration targets for precious metals because they can contain high metal grades and large resources, and they can overlie deep porphyry mineralisation. This course focuses on the geological characteristics of epithermal deposits, their hydrothermal alteration patterns, and the processes that produce them. The topics include: geological settings and controls on mineralisation, hydrothermal minerals and their zonation, precious-metal transport and deposition, spatial-temporal scales of mineralising processes, exploration strategies, and case studies. Emphasis is placed on understanding the exploration potential of a project and the depth level of erosion.

Schedule

<p>| 8:00-10:00 AM | Characteristics of epithermal deposits |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>10:30-12:00 PM</td>
<td>Active geothermal systems: chemical &amp; thermal structure</td>
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<td>12:00-1:00 PM</td>
<td>Lunch</td>
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<tr>
<td>1:00-2:00 PM</td>
<td>Gold (silver) transport &amp; deposition</td>
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<td>2:15-4:15 PM</td>
<td>Hydrothermal alteration &amp; mineral zonation patterns</td>
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<td>4:30-5:00 PM</td>
<td>Exploration considerations</td>
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Stuart Simmons

Stuart is a Research Professor (EGI, University of Utah) and a consulting geoscientist, with >30 years of research/teaching experience on hydrothermal processes, epithermal mineralisation, and geothermal resources. He has a PhD in Economic Geology (University of Minnesota), and much of his professional career was spent in New Zealand at the Geothermal Institute, University of Auckland. As a consultant, he serves clients around the Pacific rim in the exploration of gold-silver and geothermal resources.

**Included:**
- Lunch, Morning and afternoon teas
- Hard-copy print outs of presentations.

**Minimum number of participants:** 15

**Cost:** To be notified.

**Further information:** Email Stuart Simmons at stuart@hotsolutions.co.nz

**Gallery:**

![Diagram of Depth level zonation-epithermal deposits](image)
Banded quartz & electrum, Karangahake, Hauraki goldfield, NZ

Native gold, Emperor, Fiji

Golden Cross, Hauraki Goldfield, NZ
Quartz-Calcite-Adularia-Illite
Low to intermediate sulfidation

Ore textures-minerals

crustiform-colloform quartz
lattice quartz
adularia
Quartz-Alunite±Pyrophyllite±Dickite ± Kaolinite
High to intermediate sulfidation

Ore textures-minerals