

## Felsic Extrusive VAMS Cu-Pb-Zn-Ag-Au

**Province:**

**Potential:**

**Certainty:**

**Index (out of 10):**

Critical Elements (Assessment Criteria)	Identified	Not Identified, but likely	Unlikely	Weighting
Setting <ul style="list-style-type: none"> <li>• Back-arc extensional basins, ensialic extensional volcanic basins (Archaean and Proterozoic)</li> <li>• Calc-alkaline submarine volcanics (bimodal or polymodal) dominated by rhyolite and sediments.</li> <li>• Archaean greenstone belts</li> </ul>				
Source (fluid, metal, energy) <ul style="list-style-type: none"> <li>• Fluid: seawater; subvolcanic intrusives.</li> <li>• Metal: seawater; footwall volcanics (mafic for copper); subvolcanic intrusives</li> <li>• Energy: subvolcanic intrusives; deep and/or shallow ultramafic sills, rhyolite domes or plugs</li> </ul>				
Fluid pathway <ul style="list-style-type: none"> <li>• Syn-volcanic faults</li> <li>• Relatively more permeable epiclastic or autoclastic breccia</li> </ul>				
Trap (any of the following) (predominantly structural) <ul style="list-style-type: none"> <li>• Structural: resurgent and collapse calderas</li> <li>• Chemical: interaction with seawater</li> </ul>				
Signs of mineralising process (any of the following, but if occurrences have been identified the level of certainty increases)				

<ul style="list-style-type: none"> <li>• Wall rock alteration (any of the following): <ul style="list-style-type: none"> <li>• Regional chloritic±sericitic alteration (Phanerozoic deposits)</li> <li>• In Precambrian deposits metamorphism transforms alteration zones: chloritic into an assemblage of hornblende, biotite, cordierite and anthophyllite and if carbonate was present, into tremolite-actinolite, garnet, epidote and Ca-pyroxene; sericitic into sillimanite-quartz-feldspar assemblage</li> <li>• Semiconformable zones (few hundreds of metres thick and several kilometres long) of alkali depletion and variably carbonatized rocks could indicate 'reservoir zones'.</li> </ul> </li> <li>• Geochemical <ul style="list-style-type: none"> <li>• Na depletion and Mg enrichment halos</li> </ul> </li> <li>• Geophysical (not quite important)</li> <li>• Known occurrences</li> </ul>				
<p>Preservation</p> <ul style="list-style-type: none"> <li>• Age: Not important but younger systems have higher chances of being preserved</li> <li>• Cover of epiclastic units, basalts soon after the formation could be important for preservation</li> </ul>				