

Structural Systematics: Methods to Enhance Evaluation of Targets and Definition of Gold Concentrations.

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Structural Systematics, is the study of structural systems and how they interrelate, both in terms of the stresses and strain that lead to their development, and how their finite strain characteristics can be used to predict their geometries. The use of this series of non-conceptual structural methods is highly dependent on detailed field mapping, objective observations, and the presence of tectonic structures that are through going. The goal of the methods is to provide a foundation for prediction of the geometries and the volumetrics of structural systems. Gold mineralization is highly dependent on these volumetrics inasmuch as hydrothermal fluid flow requires conduits that maximize porosity and permeability for the deposition and concentrations of gold in these systems. Structural conduits and their geometries can be calculated and evaluated for the presence of gold concentrations in the system so long as their widths meet certain criteria and the presence of gold in these structural systems is known with certainty.

Epithermal as well as other types of gold systems can be rapidly evaluated by use of Structural Systematic methods.

Rapid evaluations of structural systems are necessary to more cost-effectively focus exploratory drilling. The exploration strategies that should be implemented must include the following.

- 1) Develop a geologic cadre that can use Structural Systematic methods to first delineate the structural systems that absolutely carry gold, do not conceptualize, use objectively obtained data.
- 2) Assemble a large group of properties, preferably in gold belts, which have been evaluated for their potential. Diversification is needed for both major and junior mining companies. Focus evaluation of the properties based on structural systematics for targeting.
- 3) For these properties, apply exploration techniques using Structural Systematics, The emphasis is on confidence and prediction of the geometries of the structural systems and focus on what potential gold concentrations are expected. Decide to what depths it is feasible to drill and use drilling to confirm the occurrence and concentrations of gold.
- 4) Drilling is almost exclusively diamond core because it provides the greatest amount of information for subsurface calculation and construction of structural systems. Angle drilling provides the greatest testing of real estate, and is thus almost always implemented . Other types of drill methods can be used, but they have limitations, especially early on in the exploration program.
- 5) Do not use drilling as your primary exploration tool. Your geologists are there to define targets, not the drill rig.
- 6) A geologist is hired for their brains and not just to fill a work slot. They must be trained in predictive and evaluation techniques.