Advanced argillic alteration in Tarom zone, Central Alborz, Iran

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Tarom area is a part of Central Alborz in north of Iran. Hydrothermal alteration processes are extensively took place on Eocene volcanic and pyroclstics rocks. Existence of deep fracturing and subvolcanic intrusions are enhanced extend hydrothermal alteration zones.

The following alteration zones are determined: proplitic, argillic, advanced argillic and sillicic. There are outcropped and widespread in different size and limit. Formation of siliceous sinter, silicified tuffs with preserved primary sedimentary layering including pure mineralized alunite patches are most outstanding. Quartz, sussoritic plagioclase, chlorite, sericite and alunite are main mineral constituents in the volcanics. On the basis of geochemical data volcanic rocks are rhyolite, dacite, andesite, andesitic-basalt and basalt in composition. Acid-sulfate zone is the most type of alteration in Tarom area and alunite is an index mineral of this zone.

In the past 40 years stable isotopes have been used extensively in the recognition and discrimination of various hydrothermal systems. As a result oxygen and sulfur isotope systematics from sulfur-bearing minerals in many ore deposits is well documented [1, 2]. In the present study the focus is on stable isotope geochemistry to determine various epithermal environments in Tarom area. Results of ^{18}O, D and ^{34}S stable isotope geochemistry on altered minerals (muscovite, kaolinite and alunite), revealed that advanced argillic alteration fluids are magmatic in origin.

[1] Rye, Bethke & Wasserman (1992) *Econ. Geol.* **87**, 225–262. [2] Stoffregen & Alpers (1987) *Canadian Mineralogist* **25**, 201–211.

Modeling of Index ratios and prioritization of the data mine

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Modeling of the index ratios prioritization of data mine

In order to discriminate the high prioritization data for follow up exploration program, the modelling of the index ratios might be used as a method [1, 2]. Different common and advance statistical methods are used to identify the best index ratios. The threshold values for the ratio that separates the high potential areas must be determine based on the data modelling.

In a gold mineralized area, shear zone type, two ratios of Au/W and Au/Bi was modelled by the prob-plot software for separation of the anomalous values of these ratios [1]. The comparison of each ratio with Au values was led to a better understanding from the high potential values. The modelling of the data was also separated the anomalous trend from the background trend. Based on the two threshold values for each ratio, the first (mineralized areas) and second (geochemical halos) prioritize data were discriminated from the background values (Fig. 1).

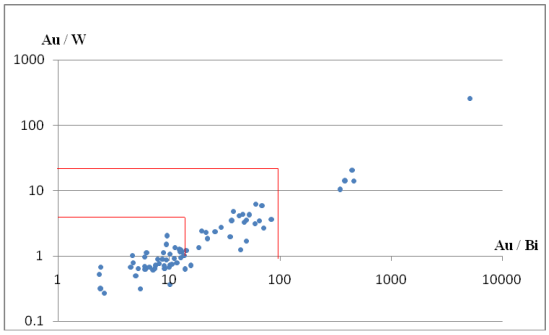

Figure 1: High prirotized data related to the Au mineralization

Conclusion

Modeling of the indexes ratios is more confidential for prioritization of the high potential area.

[1] Alizaddinabad (2010) MSc thesis, p.140. [2] Ghavami-Riabi (2007)PhD thesis, p.306.