Molybdenum Polymetallic Metallogenic Regularity and Metallogenic Prediction of the Jinduicheng-Huang Longpu Mineral Field, Shanxi Province

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Jinduicheng - huanglongpu molybdenum field belongs to the southern margin of north China landmass metallogenic belt (small qinling), in which large deposits, three (county of jinduicheng, huanglongpu LuoNaXian stone house bay, LuoNaXian huanglong pave stone ditch), mines more than 70. Shaanxi province 99.9% of the proven reserves are for this field. Geographical coordinates: longitude 109 ° 20 ~ 110 ° 45', latitude 34 ° 00 ~ 34 ° 45', covers an area of about 1200 km2. Belongs to the typical porphyry molybdenum deposits of jinduicheng molybdenum mine, stone house bay molybdenum is a typical porphyry molybdenum and superposition of vein type molybdenum deposits, carbonate molybdenum Wen Gongling area for carbonate breccia type molybdenum and superposition of vein type molybdenum deposits.

Ore-controlling factors research says: no selective molybdenum mineralization of surrounding rock, mainly by all levels of structure, porphyry, dike, carbonate lithologic interface control: ShangDan fracture and fracture nearly east-west fracture sanbao and jinduicheng - rouge dam north east to fracture structure frame control of the north east to magmatic belt and field distribution; North east and north west to the structure, the unconformity interface, porphyry or carbonate vein joint control the deposit and orebody distribution.

Metallogenic regularity study suggests: the ore field has horizontal zoning, vertical zoning, spatial and temporal zoning three characteristics, ore fields metallogenic epoch is concentrated in two periods: (1) late Triassic early Jurassic (214-189.8 Ma); (2) the early cretaceous (144.8 ~ 132.4 Ma), and correspond with two phases within the rock mass, and reflect the two closely related to rock mass and the molybdenum

Ore tanaka mineralized alteration zoning regularity of main show is:

1, ore Tumble belt
(1) according to the degree of oxidation oxidation zone and primary zone, by the analysis of the statistics. The zoning for ore fields molybdenum oxide ore exploration is of great significance. Because of oxidation zone molybdenum catalyst components such as large, even in the aspect of hundreds of meters large molybdenum oxide body take tend to take less than a grade sample, often may leak. This needs to be combined ore-prospecting criteria and ore-prospecting model, a comprehensive analysis in the oxidation zone the following sample verification.

(2) the ore-forming elements zoning: centered on porphyry body or body of arteries and veins, ore-forming elements have given priority to with Mo, Mo (Re) W, Mo, Cu, Mo, Pb - zinc - Au - fluorite zoning. Characterize the downstream transition from high to the low temperatures. Due to the superposition mineralization space-time, more show zoning is not comple

(3) mineralization superposed zoning: there are three main kinds of circumstances, one is the same deposit by different mineralization period (phase) in a vertical or horizontal superimposed mineralization, presents the superposed zoning, such as stone house bay molybdenum deposits. 2 it is superposition of different mineralization stages in the same space (equivalent to a superposition of different metallogenic subsystems in the same space), which are in different periods, different pulse body (direction, occurrence) of different vein, orebody overlay, composed of one or more new ore bodies. Three is the ore body or body in vertical regularly repeated. After the two cases in stone ditch molybdenum, the elk bifurcation ridge rock mass Pan He molybdenum molybdenum, mang deep prospecting is common.

Mineralization superposed zoning reflect the characteristics of the ore-forming inheritance, additive, a new nature.

2, alteration zoning: it has two kinds of linear type
zoning and zoning, surface type alteration zoning is closely related to the ore into large, potassium outward development since the rock surface is changed (microcline) to beresitization, silicide - green rock lithification.

Pyrite, potassium, copper ore, galena, instructions for mineralization, copper mineralization is negatively related to the molybdenum mineralization, molybdenum grade copper mineralization area is low, but instructions near molybdenum mineralization; The rest of the elements and molybdenum mineralization is related to.

3, identify with: the residual deposit zoning, boulder zoning, heavy sand zoning and secondary halo anomaly zoning, the secondary halo anomaly zoning to the prospecting significance is the largest, the full combination of Mo, W, Sn, Bi, Cu, Pb, zinc - Hg, Sb, As, General exception element combination for the Mo (Pb), Cu and zinc, Ag, reflects mostly in deep erosion characteristics; Secondary halo anomalies in horizontal and vertical are from high temperature to low temperature elements in consequent zoning characteristics.

Establishing ore-prospecting criteria of the combination is: (1) tectonic, lithologic interface composite parts; Dike, rich high silicon high acid and alkali carbonate less than 1 km2 granite porphyry development area; (2) ring structure development zone; (3) iron cap, limonite development area; Lead-zinc mine, tungsten point distribution area; (4) W, Mo, Pb, zinc element combination of various geochemical exploration (primary halos, dispersed flow and sand) exception; (5) high polarizability IP anomaly; 6 k, beresitization, silicide, green plate lithification alteration.

Regional prospecting model is set up as follows: the sanbao fracture, iron stoves - the third fracture and jinduicheng - rouge dam north east to tectonic magmatic belt of tectonic frame; North east, north west, nearly east-west fracture composite or near where; Lithologic interface or near; Dike, rich high silicon high acid and alkali carbonate less than 1 km2 granite porphyry development zone, joint fissure development; Iron cap, limonite development area; Lead-zinc mine, tungsten point distribution; Inside, in the development of Mo, Pb, geochemical anomaly and element combination of W, Mo, Pb, zinc.

Keywords: Jinduicheng - Huanglongpu; Ore field; Molybdenum polymetallic deposits. Metallogenic regularity; Metallogenic mode; Prospecting model; Metallogenic prediction

References