

Discovery of the Laogouxi gold deposit, Heilongjiang province, NE China

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The Laogouxi gold deposit lies within the southeastern edge of the Mongol-Okhotsk Orogenic Belt in the Jurassic Upper Heilongjiang Basin that was developed on the Proterozoic Ergun Block. There are numerous placer gold mining occurrences nearby, active since the Qing Dynasty, with Laogouxi being a newly discovered lode gold deposit within the basin. Initially a regional 1:50,000 scale stream sediment geochemical survey covering the project region was conducted by a government sponsored program and defined multiple gold anomalies that led to discovery of Laogouxi, as well as the Shabaosi (1M oz), Hulalin, and Sanshierzhanda deposits. A subsequent 1:20,000 scale soil geochemical survey at the Laogouxi project area defined multiple Au, Ag, As, and Sb anomalies and trenching of the best gold anomalies discovered a couple of altered zones and more than 20 gold mineralized bodies. A 1:10,000 scale soil geochemical sampling indicated significant gold and arsenic anomalies that trend NE, NW, NNW, and N-S in various trenches. Gold and arsenic anomalies coincide with each other, but arsenic anomalies are broader in area.

The Laogouxi property has Proterozoic foliated granite basement that is overlain by Jurassic sandstones. Both the granite and sandstone are fractured, faulted, and intruded by diorite or lamprophyre dikes and granite. Gold mineralization occurs within the fractured, faulted and altered (limonitized, silicified, and sericitized) sandstone and dikes as disseminated and fractured-controlled sulfide-bearing veinlets and pervasive silicified zones with sulfides. There are four to five prospects within the property with identified surface gold mineralization, with the major prospect of gold mineralization being about 300-m-long and 100-m-wide with gold grades at about 1-3 g/t. A very preliminary gold resource of 60,000 oz was estimated based on trenching.

A ground magnetic survey of the whole license indicates: (1) high magnetic signature corresponds to intrusive rock and a middle to low signature corresponds to sedimentary rocks; (2) there are possibly two NE-striking faults; (3) there is a ring structure in the property center, which is defined by a Jurassic intrusion; and (4) some low magnetic signatures may correspond to altered rocks. A Dipole/IP survey across the major NE trend (1) identified potential targets characterized by low resistivity and elevated chargeability; (2) provided insights on the sedimentary rocks that may be an upper 100 m of resistive rock, probably sandstone, and lower non-resistive rock that is probably siltstone or limestone; (3) indicated strongly resistive and highly conductive probable magmatic rocks; and (4) indicates steep and gently dipping potential targets of mineralized rock, as well as concealed zones under the upper sandstone unit. Exploration has delineated a number of potential drilling targets within NE, NW, and NNW trends, which may be controlled by faults that are steeply and gently dipping, by an unconformity, and (or) by facies boundaries. These targets will be tested in future drilling and a significant gold resource will be added to the inventory. There may be multiple million ounce gold resources in the area based on the geochemical survey.