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Title: TECTONIC FRAMEWORK OF METALLOGENIC EVENTS IN THE JAPANESE ISLANDS

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Abstract: The new compilation of mineral resources maps of Japan at the scale of 1:500,000 was completed in 2005 by the Geological Survey of Japan. The regional mineral resources data and a geodynamic map of the Northeast Asia were compiled by the international project on the Mineral Resources, Metallogenes, and Tectonics of Northeast Asia. Using those databases, tectonic frameworks of metallogenic events in the Japanese Islands can be evaluated. Furthermore, the Japanese metallogenic events can be compared with those in the Asia continent to understand regional tectonic setting for the ore forming events.

As the Japanese islands were a part of the Asian continent before the opening of the Japan Sea back-arc basin, the early stage of the tectonic evolution and metallogenesis of the Japanese islands can be correlated to those of the eastern part of the present Asian continent. However, tectonics and metallogenesis of the Japanese islands after the opening of the Japan Sea show differences with those in the stable Asian continent. Those characteristics of the tectonic evolution and metallogenesis of the Japanese islands are summarized to define 13 metallogenic belts in Japan for the Northeast Asia metallogeny project.

The metallogenic belts are classified into two main units, (1) Pre-accretionary and (2) Post-accretionary metallogenic belts. The Post-accretionary metallogenic belts are further classified into two groups, (2-1) continental arc setting, (2-2) island arc setting. Southwest Japan is tectonically divided into two zones, inner zone and outer zone. Both of the zones in the Southwest Japan contain accretionary complexes, and a Pre-accretionary metallogenic belt was defined for each of the belts. The Pre-accretionary metallogenic belts mainly contain Besshi-type stratiform Cu deposits, stratiform Mn deposits, and podiform-type Cr deposits. Those ore deposits were formed in the oceanic

plate and accreted to the Asian continent. Northeast Japan contains four Pre-accretionary metallogenic belts. During the late Jurassic to early Paleogene, the Inner Zone of Southwest Japan hosted continental arc igneous activity that was resulted from subduction of Paleo-Pacific plate and Pacific plate. The Inner Zone Southwest Japan Metallogenic Belt was defined to area which hosts ore deposit formed with relation to the continental arc igneous activity. Ore deposits in the Miocene to Quaternary Post-accretionary metallogenic belts of Japan were formed with relation to the island arc volcanism resulted by subduction of the Pacific plate and Philippine Sea plate. The Kyusyu Metallogenic Belts which host major gold deposits of Japan, were formed by the subduction of the Philippine Sea plate. The timing and location of arc igneous activities control distribution of the Post-accretionary metallogenic belts.