

News and Highlights

Super-Large Manganese Deposits Have Been Discovered at Pujue and Taoziping, Songtao County in Guizhou Province

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In 2016, the Geological Brigade No. 103 of Guizhou Geology and Mineral Exploration and Development Bureau discovered two super-large manganese deposits at Pujue and Taoziping, in Songtao County, Guizhou Province (Fig. 1). The Pujue manganese deposit has 191.59 million tons of proven (332+333) class ore reserves, including 35.54 million tons of 332 class and 156.05 million tons of 333 class at an average Mn grade of

17.05%. This deposit ranks first in Asia and seventh in the world for its abundant manganese ore resources, with a potential economic value exceeding 100 billion yuan. The Taoziping manganese deposit has up to 106.39 million tons of proven (332+333) class ore reserves, including 33.48 million tons of 332 class and 72.91 million tons of 333 class at an average Mn grade of 15.98%. This deposit ranks fourth in Asia and twelfth in the world for its rich

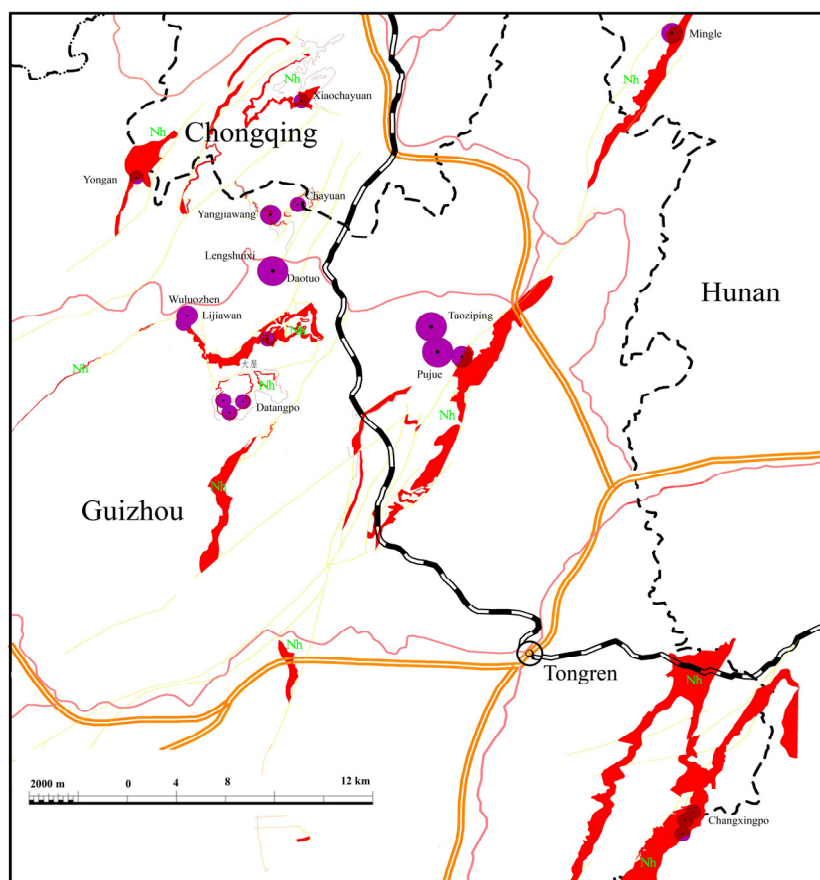


Fig. 1. Map showing newly discovered large-superlarge manganese deposits in Guizhou Province.

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Table 1 Comparison of the geological characteristics of manganese deposits in Guizhou and Xinjiang

No.	Deposit	Reserves	Discoverer	Submitted by	Features
57	Detailed (integrated) investigation of Pujue Mn deposit, Guizhou	Reserves: 191.59 million tons. Class: 192.59 million tons (332+333) class reserves: 35.55 M tons of 332 class at average Mn grade of 17.05%; 157.05 M tons of 333 class with Mn grade >15%. Scale: super-large. Accepted by Mineral Resource Reserve Evaluation Center of Guizhou Provincial Land Resources Planning and Research Institute (grant No. [2015]149). Accepted on 14th December 2015.	Geological Brigade No. 103, Guizhou Geology and Mineral Exploration and Development Bureau	Geological Society of Guizhou Province	Large deposit scale, but low grade
58	Detailed investigation of Taoziping Mn deposit, Songtao County, Guizhou	Reserves: 106.39 million tons. Class: 106.39 million tons (332+333) class reserves: 33.48 million tons of 332 class and 72.91 million tons of 333 class, at Mn grades of 15.02%–17.08%–20.13%. Scale: super-large. Accepted by Mineral Resource Reserve Evaluation Center of Guizhou Provincial Land Resources Department (grant No. [2016]135). Accepted on 2nd February 2016.	Geological Brigade No. 103, Guizhou Geology and Mineral Exploration and Development Bureau	Geological Society of Guizhou Province	Large deposit scale, but low grade
60	Reconnaissance of Aoertuokeneshen Mn deposit, Akto County, Xinjiang	Reserves: 8.69 million tons. Class: 0.834 million tons of 121b class reserves, 3.416 million tons of 122b class reserves, 23.35 tons of 332 class reserves and 232.85 tons of 333 class reserves, with an average Mn grade of 37.82%; 1.875 million tons of (332+333) class reserves, with unknown grade. Scale: middle-large size. Accepted by Mineral Resource Reserve Evaluation Center of Xinjiang (grant No. [2016]113). Accepted on 22nd November 2016.	Northwestern Geological Exploration Institute of China Metallurgical Geology Bureau	China Metallurgical Geology Bureau	Low deposit scale but high grade

Note: The Ten Largest Geological Prospecting Results in 2013 recorded the resource amounts of the Daotuo super-large manganese deposit, Lijiawan and Yangjiawan super-large manganese deposits and Xixibao manganese deposits in Songtao County, Guizhou Province, and did not include those of the super-large Taoziping manganese deposit documented here.

ore resources, with a potential economic value of up to 60 billion yuan.

The Pujue and Taoziping manganese deposits are located 224° southwest of Songtao County, which is about 20 km away. The ore district, seated in the piedmont area northeast of Fanjing Mountain, is located in the slope zone that is transitional from the Yunnan–Guizhou Plateau to the low hills in western Hunan Province. It is related to a tectonic denudation and karst erosion landform, with gullies and deeply cutting terrain.

These two manganese deposits are located in the same III-order faulted basin, and are controlled by the same syn-sedimentary fault. The orebodies are hosted in the bottom carbonaceous shale of the first member of the Datangpo Formation (Nh_1d_1 , 720–660 Ma) of the Lower Nanhuaian (725–635 Ma); they belong to a typical sedimentary manganese deposit type associated with an ancient gas leakage. They occur as gently dipping stratiform and stratoid orebodies on a large scale. The largest manganese orebodies in the Pujue deposit are >700 m long, 2000 m

wide, and 1.61–13.41 m thick, 5.21 m on average. Those in the Taoziping deposit are 7850 m long, 2500 m wide, and 1.07–14.58 m thick, 4.05 m on average. The ores are mainly massive and banded rhodochrosite, and display micritic, micro-scale and silty textures. The dominant ore minerals are rhodochrosite and manganocalcite.

The mining technical conditions of both deposits are generally simple. This type of manganese ore has been suggested to be high quality for hydrometallurgy based on industrial tests of mining technical performance and practices of deep processing enterprises. A number of electrolytic manganese plants have been built in the mine area, with mature production technology and good development and utilization conditions.

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