

Report on Geological Survey in 2018 of SEG student chapter at Chinese Academy of Geological Sciences

In March 26th -29th, 2018, Prof. Jingwen Mao, Academician of Chinese Academy of Engineering, coupled with Shandong Academy of Geological Sciences, Shandong Bureau of Geology and Mineral Resources, were invited by SEG student chapter at Chinese Academy of Geological Sciences (SEG-CAGS) to hold a geological survey in Shandong Province. The itinerary started from Jinan, passed through Zhouping and ended with Wulian. The SEG-CAGS team surveyed Wangjiazhuang Copper Deposit, Qibaoshan Copper-Gold Deposit and the surrounding mining area. During this period, they held several academic seminars, aiming to have a deep insight into Cretaceous porphyry copper deposit, cryptoexplosion breccia type Cu-Au deposit in Jiaodong Area and provide suggestion for mineral exploration. The details of this trip are as below.

In Wangjiazhuang Copper Deposit, Zhouping, the chief engineer of mine made a detailed introduction on geological characteristics of Wangjiazhuang deposit and regional geology of Zhouping volcanic rock basin to the SEG-CAGS team (Fig. 1). Then, they had an intensive survey on the ore-bearing country rocks, mineralization style, and alteration characteristics in the tunnel (Fig. 2). After that, the team investigated the Cretaceous igneous rocks surrounding area of Wangjiazhuang Copper Deposit (Fig. 3) and collected some typical samples for study. The Cretaceous igneous rocks consist of gabbro, diorite and late-stage vein rocks. Prof. Mao made a detailed introduction on these igneous rocks during the investigation, which benefited a lot for the team members.



Fig. 1. The chief engineer of mine made a detailed introduction on Wangjiazhuang Copper Deposit to the SEG-CAGS team



Fig. 2. Intensive survey in the tunnel.



Fig. 3. The SEG-CAGS team investigated the Cretaceous igneous rocks surrounding area of Wangjiazhuang Copper Deposit

Qibaoshan Copper-Gold Deposit is cryptoexplosion breccia type mineralization and the pit is drilled along breccia pipe. The team had a detailed investigation at the bottom of the pit (Fig. 4). The country rocks are composed of diorite, pyroxene diorite, quartz diorite porphyrite and amphibolite andesitic porphyrite. The wall rock alteration is severe in the deposit, consisting of beresitization, silicification, sericitization, chloritization, carbonatization, kaolinization and baratization. The main ore minerals are specularite, pyrite and copper, while the gangue mineral are quartz, siderite, barite and dolomite. Based on the investigation and guidance of the experts, the members had a deeper understanding on cryptoexplosion breccia type Cu-Au mineralization.

After the survey in Qibaoshan Deposit, the team visited the concentration plant in the ore district (Fig. 5), in order to understand the function and the serial operation process. Then, the team members and the workers in the mine held an academic seminar on the status of mine research, existing problems in the exploration, work proposal and the effective guidance on the exploration work.



Fig. 4. The SEG-CAGS team had a detailed investigation at the bottom of the pit.



Fig. 5. The team visited the concentration plant in the Qibaoshan ore district.

In the end, the SEG-CAGS team visited Shandong Key Laboratory of Metallogenic Geological Process and Resource Utilization (Fig. 6), and commended it for the preparations, work status and research condition. After the visitation, Prof. Jingwen Mao was invited by Shandong Academy of Geological Sciences to make an academic report on porphyry type deposit, skarn type deposit and VMS type deposit (Fig. 7, 8). The report was wonderful and acclaimed by the audiences because Prof. Mao analyzed several typical ore deposits based on his detailed investigations on the typical deposits in the world and combination with research focus and research frontiers.

This geological survey was strongly supported by SEG student chapter, Shandong Academy of Geological Sciences, Shandong Bureau of Geology and Mineral Resources, Geophysical Exploration Institute of Shandong Province and Eighth Geological Party of Shandong Bureau of Geology and Mineral Resources. It helped SEG student members enhance their geological skills, enrich their geological knowledge and broaden their study horizons. In addition, this geological survey is also a great opportunity for these students to communicate with each other and with experts.



Fig. 6. SEG-CAGS team visited Shandong Key Laboratory of Metallogenic Geological Process and Resource Utilization.



Fig. 7. Prof. Jingwen Mao was invited to make an academic report in Shandong Academy of Geological Sciences



Fig. 8. Prof. Jingwen Mao was making an academic report in Shandong Academy of Geological Sciences