

formations of the Ukrainian Shield these methods give positive results in stratification the metamorphic complex and reconstruction of historical and tectonic events.

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USEFUL MINERALS OF YUGOK HANNIVSKE DEPOSIT

The Hannivske Deposit of ferruginous quartzites is situated within the boundaries of the Northern field of the Kryvyi Rih ore area of poor magnetite ores (magnetite quartzites) located in the southern part of the East Hannivska strip. As constituents of the Saksaganska suite of this region, there are six ferruginous (the first, the second, the fifth, the sixth, the seventh, the eighth, the ninth) and seven schistose (the first, the third, the fifth, the sixth, the seventh, the eighth, the ninth, the tenth) horizons. The fifth and sixth ferruginous horizons make up the productive strata of the deposit. The thickness of the productive strata varies from 300-350 to 30-50m from the south to the north of the region. The deposit is developed by YuGOK Hannivsky Open Pit.

The major raw material of the deposit under study is iron ore. The

deposit industrial and productive layers are ferruginous quartzites of the first horizon. Currently 18 deposits are developed by open pit and underground mining methods.

The deposit quartzites as for their iron content, material composition, and textural and structural features are divided into the rich lying sequence (brown iron stones, magnetite and hematite quartzites), where the average content of total iron is 36 %, and poor hanging sequence (magnetite and hematite quartzites) with the total iron content of 27.4-27.8 percent. According to the geological, exploitation and research data, the ratio of the varieties is the following: magnetite quartzites occupy up to 46% of the sequence, hematite-magnetite quartzites – 42%, silicate-magnetite quartzites – 9%, magnetite-silicate quartzites – 3%.

Productive ferruginous horizons form steep seams and seam-like bodies, complicated by faults. The length of the horizons along strike reaches more than 15 km, the thickness varies from the first tens of meters up to 500 meters.

According to the accepted for the deposits, petro geochemical criteria within the lying sequence there are four mineral types of ores: magnetite, hematite-magnetite, silicate-magnetite and magnetite-silicate quartzites. Magnetite quartzites have medium- and thin-layered texture, due to the alternation of ore, mixed and quartz layers in different proportions. Ore layers from 0.1 to 5 mm thick, in some cases up to 10 mm, occupy about 50% of the volume. Hematite-magnetite quartzites have a medium texture, due to the alternation of ore, mixed and quartz layers. The proportion of layers vary within wide limits, making ore layers – 50% mixed layers – 15% and quartz layers – 35%. Silicate-magnetite quartzites have a stratified structure, due to the alternation of ore (47%), mixed (10%), quartz (32%) and silicate (11%) layers in different proportions. Magnetite-silicate quartzites are characterized by rude texture due to the alternation of ore (10%), mixed (30%), quartz (45%) and silica (15%) layers.

Each variety is characterized by its own technological properties, which substantially affect the performance of ore beneficiation.