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METHODS OF MINERAL DEPOSITS ESTIMATION

Among the mining and surveying problems there is an issue concerning an estimation of mineral deposits, namely the choice of the most appropriate method of estimation. Deposit of mineral resources–is that particular amount of discovered minerals which is estimated in the place of occurrence according to geological exploration of deposits.

There are more than 20 different methods of deposits calculation. These methods are used in practice depending on the forms and the conditions of deposits occurrence, the nature of changes in the content of useful components, the system of prospecting and the density of prospecting points, as well as the goals and purposes for the estimation of mineral deposits. The most used methods are the following: arithmetic method, method of geological blocks, method of operational blocks, method of sectioning (vertical and horizontal), method of polygons.

The choice of optimal estimation method is shown on the example of Korosten' granite deposit. Analysis was carried out with three methods:

1. Arithmetic method. Prospecting holes are drilled on the area with a potential deposit; internal and external contours are built around prospecting holes. These contours divide the area into two parts: internal contour area S1 and cross - contour area S2. Estimation of deposits was conducted separately for each of these surfaces. According to arithmetic method, the volume of block was equal to 17372, 8 m^3.
2. Method of geological blocks. Average values of power and content which are calculated not for the entire deposit but for its individual parts are called - geological blocks. According to this method, the volume of block was equal to 17282, 5 m^3.
3. Method of vertical cuts. This method is based on the use of data of the ledge surveying conducted parallel to the core lines at *l* equal intervals. This method is used to determine the volume of excavated blocks with extended, almost parallel contours. Using the method of vertical cuts, the volume of blocks was equal to V=17409, 3 m^3.

The results of accomplished investigation has shown that the most accurate estimation among mentioned above estimation methods is the method of geological blocks. The advantage of this method is in its simplicity and fast performance, as well as in the possibility of making groups and categories of deposits according to certain criteria and conditions. The least accurate method of estimation at given mining enterprise is the method of vertical cuts.

REFERENCES

1. Антипенко Г. О. Гірнича геометрія: Підручник/– Дніпропетровськ. Національний гірничий університет, 2003. – 265 с.
2. План гірничих робіт ТОВ 'Техрозробка', 2015 рік.