

O.O. VUSYK, graduate student,
A.M. PYZHYYK, PhD, Assoc. Prof.,
Kryvyi Rih National University, Ukraine

CONDUCTING OPEN DEVELOPMENT OF SURFACE MINING ROCKS USE OF MINING COMBINES

The practice of mining enterprises shows the tendency of widespread use of non-blasting development of rocks. In which the surface mining of the rock massif is performed by surface miners to soften the rocks without conducting a mass explosion.

In the works devoted to the study of this issue, the presented results testify to the relevance of using the technology of surface mining of the rock massif by surface miners, as one of the effective technologies for preparing rocks for excavation and demonstrates its prospects. Depending on the principle of operation of surface mining machines and the physic-mechanical properties of rocks, one can determine the efficiency of surface mining. Therefore, the priority direction of research on the non-blasting technology of the development of mineral deposits is the improvement and production of it in the working conditions of existing pits. As a result of analyzing the research of this issue, a new research direction for the transition of iron ore pits to a non-blasting developed rock massif, which is represented by rocks of considerable strength, is proposed.

The purpose of the work is to substantiate the effectiveness of the use of the non-blasting development of iron ore deposits in case of surface mining of the rock massif by surface miners and its parameters of the elements of the development system. Industrial tests and applications of surface mining by open-pit miners of the rock massif in domestic and foreign mines, suggests that in conditions of open-pit development of iron ore deposits, surface mining can be successfully and effectively used for the development of iron ore cages of interiors. Industrial tests and applications stratified mining of open pit surface miners in domestic and foreign pits ah mining enterprises, suggests the possibility that in the conditions of open-pit development of iron ore deposits it is possible

to apply surface mining quite successfully and effectively for the development of iron ore open-pit mines.

The implementation of the integration of surface mining technology into the existing technology of open mining of mineral deposits, as a whole, is possible when solving such important tasks as:

perform in-depth analysis of modern high-performance excavation-loading equipment, which does not require a complex of drilling and blasting operations;

to establish the most optimal technological parameters of the excavation-loading equipment and the parameters of the elements of the system for the development of mineral deposits, as well as the rationality of the field of application of open pit mines.

After completing the research on the above directions and obtaining results, a real operating without explosive technology of mining the rock massif in the conditions of developing iron ore open-pits will be created.

Using the technology of surface mining of the rock massif in iron ore pits for the preliminary softening of half-rocky rocks and rocky rocks requires the study of all aspects of the technology of open-pit mining that lacks brown-blasting.

Surface mining with mining combines with sufficient efficiency and economic feasibility can be used in the development of half-rocky rocks and rocky rocks with a strength factor of $f=12-14$ with the presence of various inclusions in them with a significant strength factor $f>20$ on the Prof. M.M. Protodyakonova.

Thus, the use of surface mining by mining miners makes the technology of open mining economic and environmental.

When drilling and blasting is intrinsically labor intensive and difficult to implement, if you replace them with surface mining with mining miners, then the technology of open-pit mining of mineral deposits is significantly simplified.