mining and processing a factory can do all obtained balance-industrial supplies that is got at correlation of losses of balance-industrial supplies and obstruction of content of quality indexes of minerals in the stream of iron-ore mass, corresponding normative value parameter for case acquisition contact longitudinal splits.

Calculations of normative values of parameter for the case of working off contacts longitudinal splits from simplify in comparing to the method of variants and continuous perfection of methodology of setting of norms of balance-industrial supplies of hard minerals.

Determine AV content of quality indexes of the iron related to magnetite, in balance-industrial supplies infinitely thin layer on the hay-crop of ledge at working off a contact longitudinal split with flat hay-crops.

Official and driven to technical literature methodologies of setting of norms of losses of balance-industrial supplies and obstruction of content of quality indexes of minerals do not take into account a loss, that inflicts to the national economy an enterprise from an exception from earth and use of breeds of opening and milltailingss of content of quality indexes of the iron related to magnetite, that it is taken into

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## ENHANCEMENT OF METHODS OF DETERMINING THE BOUNDARIES OF OPENCAST MINES

At present time, while developing steep iron ore deposits, the surface lineaments of most opencast mines reached their final grades. The development of mining occurs only after they get lower. In these conditions of deposits' development it is necessary to evaluate the resources of supply of raw materials for further development of mining plant.

Experience has proven that the depth and location of end boundaries of most of the major opencast mines are reevaluated and corrected multiple times during the development of mineral deposits. However, it is necessary to determine the end boundaries of opencast mines' development that ensure the effectiveness of opencast mining. This issue is particularly important while projecting new mining plant while the similar mining plants are already operating.

While determining the boundaries of opencast mines the economic stripping ratio is calculated based on the technical and economic indexes that were reached at the time of projecting and its value is constant. The analysis of mining and concentration complexes showed that their economic indexes and stripping ratios change through time.

That is why the purpose of this research is to prove that the economic stripping ratio is a variable value that changes through time and greatly influences the end depth of opencast mine development.

Based on the above statements, the condition for competitiveness of projected opencast mine can be phrased in the following way: the stripping ratio of the projected opencast mine cannot exceed the economic stripping ratio.

It is worth noting that in the regulatory documents that regulate the operation of mining plants with opencast mining method, the rated economic stripping ratio used to determine the end depth of opencast mine is assumed as a constant value.

However, this base rival plant carries on with its operation and, through time, its economic indexes will be changing, in our case – the final cost of ore. It is caused by the change of current stripping ratios upward and downward.

By the example of opencast mines, which reflect the unique features of developing steep deposits of Ukraine, the article demonstrates the influence of current stripping ratios of operating opencast mines on economic stripping ratio, which is the primary factor in determining the boundaries of opencast mining for the projected opencast mines.

The developed method of determining the boundaries of opencast mines specifies the application of economic stripping ratio as an

inconsistent value that changes through time and depends on the changes of current stripping ratios at the rival opencast mines.

Thus in order to determine the boundaries of projected opencast mine the economic stripping ratio should be determined with consideration of possible change of volumes of overburden extraction and ore extraction at base rival plants, i.e. with consideration of change of their current stripping ratios.

It was proved, that the deviation of end depth of development of conventionally projected opencast mine, determined based on the comparison of its current stripping ratios with current stripping ratios of conventional base rival opencast mines, from the end depth of development determined with economic stripping ratio may amount to 14 to 45%.

As a result, the theory in the area of determining end boundaries of opencast mines was enhanced.

The new method differs from the existing ones by the accounting of change of economic stripping ratio through time, as well as the determining of influence of technological factors of rival opencast mines on the end depth of the projected opencast mine.

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## METHOD OF FORMATION OF TECHNOGENIC DEPOSITS OF BULK TYPE USING OREPASSES

The growth of the volume of material production increases the need for mineral raw materials, so volumes of mining, which promotes the search for new sources of mineral raw materials.

Modern world trends in the implementation of resource-saving technologies encourage as a source to consider waste mining and concentrating production, which occupy large areas of fertile land and worsen the environmental state.