Название публикации:

Priority hierarchy of measures towards appreciation of mineral deposits

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Аннотация:

The development of a mineral field requires significant capital investment and is characterized by long payback periods; therefore, one of the problems is the justification of the investment attractiveness of mining projects. Valuation of mineral deposits plays an important role in solving a variety of management tasks: holding a tender (auction) and issuing licenses; justification of investments for development of deposits; determining the order of their development; assessment of damage and loss of profits; resolution of property disputes, etc. The cost of a mineral deposit depends on the aggregate of geological, geological, and organizational and economic factors. The article considers the task of assessing the priority of incentive measures that ensure the change in organizational and economic factors aimed at increasing the value of a mineral deposit. The authors presented a formula for estimating the value of a field, including the change in individual components of the cash flow through the implementation of measures to stimulate its growth. The evaluation of the preference for incentive measures was proposed to be carried out simultaneously using two criteria: changes in the value of the field as a result of the implementation of incentive measures and an assessment of the success of each incentive measure under consideration. To assess the priority of measures to stimulate rise in the value of a field, an algorithm has been developed based on a fuzzy expert assessment of the probability of successful implementation of the incentive measures under consideration; calculating a fuzzy estimate of the growth in the value of a field based on discounted cash flows when implementing incentive measures. Such a multicriteria assessment allows a comprehensive assessment of the priority of measures to stimulate the growth of the value of a mineral deposit. The article presents a modification of the method of pairwise comparisons, which allows the use of the developed fuzzy criteria. As a result of the use of the proposed algorithm, an estimate of the priority of the incentive measures under consideration is found from 0 to 1. The proposed algorithm for evaluating measures to stimulate the growth of the value of deposits is tested on the example of a copper ore deposit. © 2018, "Ore and Metals" Publishing house. All rights reserved.

Ключевые слова:

Algorithm, Cash flow, Discounting, Economic factors, Expert evaluation, Field cost, Fuzzy estimation, Method of pair comparisons, Priority