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THE ANALYSIS OF MODERN TECHNOLOGY AND TECHNIQUE APPLIED IN THE COMPLETION OF GEOTECHNOLOGICAL WELLS AND REMEDIAL WORKS IN THEM

Abstract. The issues related to the current state of conducting remedial works to recover geotechnological wells that are operated to mine uranium ores by the technique of underground borehole leaching are considered in the article. The essence of this method is that a chemical reagent that dissolves the ore into the liquid phase is pumped through one well (pumping/injection), and through other wells (production) the solution is lifted to the surface. The production wells tend to lose their initial productivity with the operation, and the injected ones - the injectivity due to colmatation of the working zone in well screen. The causes and types of colmatationare discussed and the analysis of existing equipment and technology for remedial works has been made. On the basis of this analysis, the promising areas for improving technology and techniques for remedial works in geotechnological wells have been identified.
Key words: well, flow rate, recovery, remedial works, well screen, colmatation, well injectivity.

Introduction. At present, the economy of the Republic of Kazakhstan mainly depends on the extraction and export of hydrocarbon raw materials, but according to many studies the world's reserves of this type of raw materials are limited and their quantity is sufficient only for the next 40-50 years.

But on the other hand, many countries, such as France, Japan, the United States, Canada and others have switched to an alternative source of energy –nuclear energy. For example, in France and Japan 80% of electricity is generated from nuclear power plants.

At the same time, Kazakhstan is very rich in ores for the nuclear industry, but today they are not consumed inside the country and the extraction of this raw material is carried out mainly for the purpose of its export. Consumption of raw materials in the nuclear industry in the future in the Republic of Kazakhstan as an alternative to hydrocarbon raw materials is beyond doubt.

25% of the world uranium reserves are concentrated in Kazakhstan, and about 70% of them are suitable for extraction by the method of underground in-situ leaching (ISL). The program for the development of the nuclear industry, approved by the Government of the Republic of Kazakhstan, envisages a sharp increase in uranium production in Kazakhstan. The solution to this task is achievable with the introduction of advanced technology and technique of exploration and production, with the replacement and improvement of the existing fleet of equipment, tools andtraining highly qualified specialists.

Currently, one of the most widely used methods for developing uranium deposits is geotechnological methods incorporating boreholes, the essence of which lies in underground in-situ leaching of uranium ores, i.e. the useful component (uranium ore) is transferred to the liquid phase by dissolving it with chemical reagents and then lifting the metal-saturated solution to the surface. For this purpose, a chemical reagent is injected through the wells drilled from the surface into the mineral deposit, capable of transferring minerals to the soluble phase and then lifting to the surface through other wells [10, 11].