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SUEK's Berezovsky open-pit mine in the Krasnoyarsk region is completing the construction of an autonomous, stable and closed system of water consumption and disposal for production processes. It comprises facilities for the treatment of quarry and process water generated during mining.

"90% of the works at the facility have been completed; the installation of equipment is nearing completion, including flotation, filtration and pumping units, a storage bin for sludge and a tank to meet our process needs. Commissioning is scheduled for this spring and summer, after which all treatment facilities will be put into operation," says Alexander Konstantinov, Chief Engineer of the Berezovsky open-pit mine.

On its part, the mine's laboratory of environmental protection and labour conditions is doing a large amount of research. "We are developing the practice of using flocculants and coagulants, i.e. chemical reagents that contribute to splitting and removing pollutants from water, and identifying their concentration and the way they work under different temperature conditions. In a word, we are trying to find the parameters to make treatment as efficient as possible, and to produce water of virtually potable quality," explains chemical engineer Stepan Krivosheev.

This treatment plant provides for multi-stage quarry water treatment: from settling ponds, water flows through pipelines, first to flotation units, where it is cleaned from metals with the use of reagents, then to filters that trap all suspensions and impurities; this is followed by ultraviolet disinfection, after which water can be partially used for technical needs.

The wastewater treatment plant at Berezovsky will be the first closed-circuit system built by SUEK in the Krasnoyarsk region using the best available techniques. In the future, similar facilities will be built at the Borodinsky and Nazarovsky open-pit mines.