

features for homogeneous growth conditions. They are probably adaptive in nature and are largely determined by the local growth conditions in which they develop.

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CHARACTERISTIC OF THE WATER DEIRONING STATION RUE VALOSIN HOUSING AND UTILITIES INFRASTRUCTURE

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This work describes a method for purification of groundwater with a high content of dissolved iron and manganese compounds RUE Valosin housing and utilities infrastructure.

Keywords: geochemical province, the deironing station, groundwater, water supply, purification system.

The use of fresh groundwater for drinking water supply is often complicated by a high content of dissolved iron and manganese compounds. As a result of natural geochemical processes changing the chemical composition of the groundwater over a long geological period on the territory of Belarus, Russia and other countries have formed a regional geochemical province with high content of iron, manganese and other elements. The use of such underground waters for household-drinking and industrial needs is possible only after cleaning. Concentrations of iron in groundwater range from 1–2 to 30 mg/l (MAC 0,3 mg/l) and manganese up to 1–4 mg/l (MAC 0,1 mg/l).

Excessive content of iron and manganese in water gives it a brownish color, an unpleasant metallic taste, causes clogging of water mains and hydrant valves due to the development of ferrous and manganese bacteria that cause defective products to enterprises.

The iron removal station applies the method of simplified aeration and filtration. When using this method of iron removal, water enriched with oxygen as a result of aeration, heads straight to the filter, and the oxidation reaction of bivalent iron takes place directly in the thickness of the filter material. The iron concentration in the water entering the station of deferrization reaches 1,4 mg/dm³.

In the process of aeration is achieved by the reaction processes of oxidation and hydrolysis. The oxidation of 1 mg of iron stands out 1.6 mg of free carbon dioxide and 0,043 mg-EQ reduces the overall alkalinity of the water.

The method of simplified aeration is based on the oxidation of ions of bivalent iron and the detention compounds formed in the thickness of the filter. In this case, the grains of the filtering layer take place simultaneously oxidation and hydrolysis.

Between the formed hydroxides and grains of the filtering layer there is a very strong and constant communication, which increases the stability of the filtration process and increases its independence from the hydrodynamic conditions. Filtering via download for a certain time leads to the formation on the surface of the grains download film iron compounds, playing the role of a catalyst. The formation of such a film occurs gradually, as her education as a filter is improved.

The deironing of water in the boot, covered with film, is a heterogeneous autocatalytic process, which provides continuous update of the film during operation of the filter. A necessary condition for the formation and action of the film is the presence of oxygen in the water.

The efficiency of the filters is mainly determined by the quality of the regeneration of filter loading.

In the iron removal system at the company comprises the following main blocks:

1. Water metering metering source water
2. Compressor station
3. The valve of flow of raw water
4. Bactericidal installation
5. Water metering metering water wash

Modular water treatment system is designed for drinking water purification from compounds of iron, manganese, removing color, turbidity, degassing gases CO₂, H₂S.

In the course of cleaning are achieved sanitary-hygienic requirements of water quality for consumers (iron concentration < 0,1 mg/dm³).