

НАУЧНАЯ ЖИЗНЬ

PROPERTY CHARACTERISTICS OF THE MINERAL WATER «ARKHYZ»

УДК 614.4.

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ХАРАКТЕРИСТИКА СВОЙСТВ МИНЕРАЛЬНОЙ ВОДЫ «АРХЫЗ»

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The mineral water named «ARKHYZ» («The Legend of Arkhyz mountains») is extracted from well № 3 of the water intake located on the left-bank floodplain of the Bolshoy Zelenchuk River in 2.5 km south of the Nizhny Arkhyz village of the Karachay-Cherkess Republic. The subsoil site is localized within the Nizhnearkhizskoe mineral water field. The depth of the well is 25 m. In the sampling interval of 12.9–21.5 m, the well opens Quaternary (Upper Pleistocene-Holocene) sediments. Water-bearing rocks are represented by boulder-pebble sediments with sandy filler, resistant to leaching processes. The water intake was built on a section of the over-deep mountain river valley of the Bolshoi Zelenchuk river, characterized by the presence of unconfined reservoir-pore groundwater, high water abundance, the presence of a complicated boundary of the productive aquifer – a river (border with constant pressure). Infiltration water intake, with intensive water exchange, and with high lateral flow rates. The main source of nutrition is surface ultrafresh water (with mineralization not more than 200 mg/dm³).

These specified features of water intake form the special properties of mineral water from well № 3, the main of which is low, compared to other natural mineral drinking water, ultra-fresh mineralization.

The following indicators characterize mineral water produced from the well № 3, by its special properties:

by the level of total mineralization: M 0,1–0.25 g/dm³ belongs to the category of fresh mineral waters or ultrafresh according to the classification accepted in hydrogeology;

hydrochemical group: magnesium-calcium bicarbonate; mass concentration of basic ions (mg/dm³):

HCO ₃ ⁻	50–200	(Na ⁺ + K ⁺)	less than 40
SO ₄ ²⁻	less than 20	Ca ²⁺	less than 50
Cl ⁻	less than	Mg ²⁺	less than 20

pH value: slightly alkaline – pH 7.2–8.5;

organoleptic properties:

color – clear liquid, no color, no odor; taste – typical for the complex of substances contained in water;

by purposes refers to the mineral natural drinking table waters.

Mineral water «ARKHYZ» from well № 3 has a chemical composition characteristic of the waters of the Nizhnearkhizsky field, and has organoleptic, toxicological, radiochemical and microbiological indicators that meet the established requirements.

Mineral water «ARKHYZ» from the well № 3 is characterized by the stability of the composition and complies with safety for the «Public health standards» and the requirements of the Technical Regulations of the TR TS 021/2011 «For the safety of food products».

Mineral water «ARKHYZ» from well № 3 of the Nizhnearkhizsky deposit is physiologically complete and able to be used without limitation as a table drink, and also as a basis for creating soft drinks, beer, diluting juices, concentrates, cooking.

Thus, the substantiation materials confirm the information on the compliance of the special properties of the mineral water «ARKHYZ» from well № 3 of the Nizhnearkhizsky deposit with the natural conditions typical for the geographic object, the name of which is stated as the name of its place of origin. Possible variations in the basic ionic composition are associated with the natural variation of nature and do not have a significant impact on the special properties of water.

By this article we continue the series of publications [1–10].

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