

The deposit is located in the South-Eastern part of Zakarpatska region 16 km from Rakhov city in a picturesque mountain valley of the Black Tisza river.

Geological section is represented by flysch sediments of **Cretaceous** age (from the bottom to top): highly crushed and fractured sandstone with thin argillite layers, thickness varies from 50 to 100 m in the river valley and from 200 to 300 m at the slopes; massive small - and average-grained highly ferrous sandstones with rare layers of argillites, thickness ranges from 300 to 500 m; argillite with sandstone layers 1-2 m thick, thickness vary from 200 to 500 m. The lowest part of this succession is occupied by effusive (diabase) **massif** up to 250 m thick.

Bed-rocks are covered with Quaternary sediments up to 50—70 m thick.

Rocks has been deformed into fold of North-Western trend and are cut with multiple faults and thrust faults that form thick tectonically weakened zone; to the last one the surface outflows of mineral water are confined.

There are ground and artesian mineral waters at the deposit.

Ground water of the springs with the discharge up to 1.5 l/s is confined to covering of the slopes, zone of weathered bedrock, alluvial pebbles and fissured effusive rocks; ground. water with 2.5 l/s specific discharge of the well are found in the alluvial fan.

Ground water mineralization ranges from 0.15 to 32 g/dm³.

Artesian mineral water is confined to:

— the tectonically weakened zone of argillites at the depth that varies from 4-10 to 40-50 m, up to 200 m at some places. Levels are set from 0.1 m above to 1.5 m lower the Earth's surface. Yield of wells fluctuates from 0.004 to 0.14 l/s when 13.3-20 m fall of water surface. Water is carbonated chloride-sodium with 33-39 g/dm³ mineralization; they contain (in g/dm³): free carbonic acid — 2.5 — 4.5; arsenic — 0.015 -0.061; boron — 0.2-0.9; bromine — 0.09; fluorine — 0.0001-0.0003;

— the core of anticline composed of sandstone. Thickness of aquifer varies from 60 to 100 m. Yield of wells fluctuates from 0.1 to 2.8 l/s (more often from 0.5 to 0.75 l/s) when 2—4,5 m fall of water surface. Levels are set from 0.5-4.5 to 20-59 m under the Earth's surface. Waters are carbonated arsenic hydrocarbonate-chloride sodium-calcium with the mineralization from 2 to 10 g/dm³, 8—10°C temperature and pH 6—6,9; they contain (in g/dm³): free carbonic acid — 1.5-28, arsenic — 0.002-0.006, boron — 0.01 — 0.05; iron — 0.007-0.01;

— the tectonic zone in the alternating sandstone and argillite. Yield of wells vary from 0.08 to 0.45 l/s when 0.16-3.1 m fall of water surface. Water is highly mineralized (16-40 g/dm³) chlo-

ride-hydrocarbonate sodium, carbonated, arsenic; filtration properties are weak. Water contains (in g/dm^3): free carbonic acid— 1.5 -3.0; arsenic — 0.0025-0.004; iron — 0.02-0.06; boron — 0.01-0.1; bromine — 0.003-0.045; iodine — 0.01-0.045. Its composition is close to the one of Sakhalin island mineral water; — the sandstone, forming the Southern limb of anticline. Yield of wells ranges from 0.02 to 0.26 l/s when 1.25 -10.5 m fall of water surface. Levels are set 0.5— 1.5 m lower the Earth's surface. Water is hydrocarbonate sodium-magnesium-calcium with the mineralization up to 10 g/l and 11.5°C temperature; it contains (in g/dm^3): free carbonic acid — up to 3; arsenic — 0.0002-0.001; iron — up to 0.04.

Confirmed mineral water reserves amount to 302 $\text{m}^3/24$ hours and inferred ones total 120 $\text{m}^3/24$ hours.

As to their curative properties they are recommended for cardiovascular, circulation of the blood, moving organ and peripheral nervous system diseases.

When constructing of the sanatoria and spa complex the energy and water supply, apartments for specialists and medical staff and reconstruction of purification plant should be foreseen.

Permission for plot allocation will be obtained in time,

Highway runs close to the deposit; distance to the railway station is 16 km.

Unique carbonated arsenical water, beauty of the Ukrainian Carpathians and their highest summit Goverla (2061 m over the sea level), terrific mountain air of -5°C in January and + 17°C in July guarantee success of sanatoria and spa complex which is offered for joint venture construction and exploitation.

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