

South-Faizulinskoe manganese deposit (South Urals): geology and mineralogy

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The South-Faizulinskoe hydrothermal-sedimentary manganese deposit is located in 10km to east from Baymak town, at the site of West-Magnitogorsk island arc and Magnitogorsk inter-arc basin join. It is restricted to the South flank of Karamalytash volcanic edifice.

There are following Middle Devonian formations: irendyk – basalt–andesite-basaltic, karamalytash – rhyolite-basaltic, bugulygyr – jasper, ulutau – volcanogenic sedimentary.

On the deposit, bugulygyr jaspers are subdivided into 2 horizons, hosting various types of manganese mineralization. The lower consists of the body of hematite-quartz rocks (thickness 12–20m) with benthic fauna and red jaspers with braunite mineralization. The ore body (length 175m, thickness 2.5m) presents by thin ore braunite beds, separated by ore-free jaspers. The upper consists of grey banded silicites hosting silicate-carbonate manganese ores. Length of the ore body is 170m, thickness 2–5m.

Hydrothermal-sedimentary minerals are: rhodochrosite, quartz, clay components. In prehnite-pumpellyite metamorphic stage were formed some ore minerals: rhodonite, tephroite, caryopilite, spessartine, andradite, Mn-clinocllore, parsettensite, pyrophanite, calcite, hausmannite, barite, bementite, gersdorffite, molibdenite. Hypergene minerals are: psilomelane, pyrolusite, braunite.

In silicate-carbonate ores, manganese content reaches up to 30–45%, in oxidized – 50%. Reserves of manganese ores on the deposit is estimated as 200 000t.