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Vale completes emergency containment works in Brumadinho

Set of structures is designed to reduce the flow of sediments into the Paraopeba river. Tailings removal and handling activities and the environmental recovery of the affected areas continue

Vale completed the emergency containment works in Brumadinho (Minas Gerais) announced in June this year. The company has built a number of integrated structures designed to reduce the flow of sediments into the Paraopeba river, thus significantly reducing water turbidity. After the first rains that poured heavily in October, November and early December, the results achieved so far have been considered positive. The structures met the conceptual and fundamental goal of reducing the flow of sediments into the river in the beginning of the rainy season.

Emergency interventions also include removal and proper disposal of tailings upon approval of the Military Fire Brigade of Minas Gerais, and recovery of the affected stretch of the Paraopeba river.

Three large containment structures (two hydraulic filtration barriers and a dike) and 25 small stabilizing barriers have been installed between B1 at the Córrego do Feijão mine and the confluence of the Ferro-Carvão stream and the Paraopeba river in Brumadinho. This set of actions is part of the Tailings Containment Plan presented by the company to public authorities, shortly after the dam breach.

In addition to these structures, a metal pile barrier was installed near the confluence of the Ferro-Carvão stream and the Paraopeba river. This measure allowed cleaning of the river stretch concentrating most sediments. Also, since May 27, the solid flow into Paraopeba river was stopped.

It is important to clarify that all containment structures have been sized to dissipate the energy and speed of water, allowing it to flow through while retaining sediments. Thus, this is an integrated set of works that reduce the water ability to carry solid materials into the Paraopeba river. Water overflow in these structures is expected and monitored according to several parameters, including turbidity.

Vale also set up a River Water Treatment Plant (ETAF) near the confluence of the Ferro-Carvão stream and the Paraopeba river. From May 9 – when it began operating – until the beginning of December, ETAF Iracema returned to Paraopeba approximately three billion liters of clean water, with turbidity levels below 100 NTUs (therefore, within the legal standards established by the National Council for the Environment (Conama), with the removal of heavy metals, iron and manganese mainly.

In mid-May, Vale began preparatory activities to dredge the tailings of an affected stretch of the Paraopeba river, and started dredging in August, after the Firefighters ended the search for victims in this area. This action enables removal of the tailings accumulated in the silted region of the river, clearing its channel to accommodate a higher volume of water in the rainy season.

The material removed during dredging is stored and dehydrated in large geotextile bags. The water drained in these bags is pumped into a treatment plant and returns clean to the Paraopeba, within the standards set out by Conama. Dredging activities are planned to continue until 2020, beginning at the confluence of the Ferro-Carvão stream and the Paraopeba river, and extending almost 2km downstream. To date, about 38,000 cubic meters of material have been removed in this stretch alone.

This set of works mobilized 45 companies, 584 equipment and 2,800 workers, of which at least half are residents of Brumadinho and region. Investments this year alone amount from R\$ 400 million to R\$ 500 million and are expected to reach R\$ 1.8 billion by 2023.

More information



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