

Samarco's return to operations incorporates new solutions for the treatment of tailings and seeks maximum safety

The return to production will be gradual with reduced capacity

Samarco's return proposal, presented in the Corrective Operational Licensing process (LOC), incorporates new solutions for the treatment of tailings, with increased security and water recirculation within the production process. The LOC aims to validate environmental licenses for the Germano Complex in Mariana and Ouro Preto (MG), as well as the Bombas Station in Matipo (MG), which were suspended in October 2016 by the State Secretariat for Environment and Sustainable Development of Minas Gerais (Semad). The process will also validate emergency structures created to contain tailings after the Fundão Dam break.

According to the LOC's Environment Impact Study (EIA), filed with Semad in September of this year, Samarco plans to filter sandy tailings, which comprise 80% of total tailings generated after iron ore beneficiation, and thicken slurry, which accounts for the other 20%.

Filtering will remove water from the sandy tailings, allowing stacking to occur. The thickening of the slurry will also remove water, reducing the volume of tailings destined for the Alegria Sul pit, which is the area in which Samarco plans on depositing the beneficiation tailings, instead of a dam.

By stacking sandy tailings and depositing the thickened slurry in a pit, Samarco has managed to come up with a solution that will increase the life of mine of the Alegria Sul from 20 months to five years, without altering the project proposal. The use of this structure for tailings disposal depends on another licensing process, which is in the final phase of analysis by the State Environmental Policy Council (Copam).

Once the Installation License for the Alegria Sul pit has been obtained, Samarco will need approximately 6 months to prepare the area. The pit is a structure resulting from an open-pit mining process. It allows the safe containment of deposited waste due to its rocky and stable formation.

"Studies have proven that Samarco's return to operations is viable and safe," affirms CEO, Roberto Carvalho. "We have learned a lot and have proposed new solutions for tailings treatment."

Operation

There is no set date for Samarco's return to operations. The company's proposal is to initiate operations at one-third capacity, with the use of only one of the three concentrators and gradual reactivation of the others.

Samarco's original plan was to resume production at 60% capacity by reactivating two concentrators. However, the Municipality of Santa Bárbara did not grant the letter of

compliance of the existing water collection station in the municipality, necessary for LOC protocol at this level of production.

This subject is being discussed in courts, due to the fact that the structure began operation in 2014 and has not been submitted to any alterations, and therefore, has been in compliance with all legal specifications. The return project considers the exclusive use of priorly granted internal water sources without access to Santa Bárbara's water.

Lessons

The solutions presented by Samarco at the Corrective Operational Licensing represent many of the lessons that the company has learned. Samarco has invested R\$ 602 million since November 2015, in reinforcing the remaining structures of the Germano Complex and constructing a tailings retention system formed by the Nova Santarém Dam and four dikes (S1, S2, S3 and S4), avoiding the transport of sediment into the Gualaxo River.

Samarco has also improved the Monitoring and Inspection Center (CMI) which runs 24 hours a day, seven days a week. The monitoring system has 480 pieces of state-of-the-art equipment including: robotic and weather stations, millimeter-wave radar, a laser scanner, cameras, drones, piezometers and accelerometers. Field inspections are also carried out periodically. The dams are stable and safe according to the monitoring of a specialized consulting firm contracted at the request of public agencies.

Municipal civil defense coordinators have carried out three emergency drills with the support of Samarco since March 2016, preparing residents of ten communities between Mariana and Barra Longa. 31 sirens were installed in the area, interconnected via wireless networks, in order to guarantee that residents are warned in the event of an emergency.

Reparation

Samarco remains committed to the 42 compensation and repair programs established by the Transaction and Conduct Adjustment Agreement (TTAC) signed in March 2016 by the company, its shareholders Vale and BHP and by the Minas Gerais, Espírito Santo and Federal governments. A sum of R\$ 2.8 billion was paid between November 2015 and October 2017 in compensations and reparations which were assumed by the Renova Foundation in August 2016.

Samarco

Samarco has participated in the Brazilian mining sector for 40 years. The company has two areas of operations: Germano, in Mariana and Ouro Preto (MG), where the extraction and beneficiation of iron takes place in three concentrators; and Uba, in Anchieta (ES), where there are four pelletizing plants. The units are interconnected by three pipelines that are 400 kilometers long, which cross 25 municipalities in two states.

In 2015, the year that Samarco paralyzed its operations, it produced 24.9 million tons, 97% of which were in pellets and the remaining 3% in iron ore fines. In that year the company was the 12th largest exporter in Brazil, it earned R\$ 6.5 billion and generated around 6 thousand direct and indirect jobs.

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