

## STATEMENT ON THE STABILITY OF OUR TAILINGS DAMS AND DEPOSITS

Chile's location means that it experiences a significant amount of seismic activity and as a consequence has very strict regulations governing construction in the country. These regulations apply to all mining construction, including the dams where tailings are deposited. Chilean standards prohibit the construction of tailings using the upstream method, which is commonly used in other countries but poses significant safety risks. [Current Chilean legislation](#) also requires stability analysis of the dam wall, a review of safety measures and the development of detailed emergency plans in the event of a major incident.

These factors ensure not only that the dam design is safe, but also that in the event of an emergency there are adequate warning systems.

Those mining operations in the Antofagasta Group, such as [Los Pelambres](#) and [Zaldívar](#), that operate tailings dams have monitoring systems in place that are fully compliant with the standards required by Chilean legislation.

At [Centinela](#) we operate a pioneering technology for the large-scale use of [thickened tailings](#) that are stored in tailings deposits. This innovation provides important advantages in terms of improved stability in the event of earthquakes or heavy rainfall. It also helps minimise the use of important water resources. In addition, as non-desalinated sea water is used at Centinela this means that a salt crust forms on the tailings deposit that stops the release of particulate material.

At the Mauro dam, operated by Los Pelambres particular care has been taken in the design and operation of the dam and a series of quality and safety controls have been put in place to avoid the possibility of a failure. In particular, the dam now has 76 instruments on the dam wall, that allow online real-time monitoring of its stability. The Mauro dam has 17 different operational control indicators, which are constantly being monitored to ensure the physical stability and integrity of the tailings dam and that operations remain within its design parameters.

In September 2015, there was an [earthquake of magnitude 8.3 on the Richter](#) scale with an epicentre approximately 100 kilometres from the Mauro dam. Immediately following the earthquake Los Pelambres commissioned a thorough independent review of the dam's integrity and, in line with its original design, the review confirmed that it did not suffer any impact as a result of the earthquake and could continue to operate normally. Additionally, there were separate inspections by

experts and community leaders from the surrounding area to verify that the Mauro dam remained structurally sound after the most severe earthquake in the region for more than 70 years.

Studies and modelling carried out by internationally respected consultants have shown that the Mauro tailings dam is capable of safely withstanding an earthquake of magnitude 9.0 at a distance of 90 kilometres. Since the Richter scale of magnitude is exponential, this means that the Mauro dam is designed to withstand an earthquake roughly 10 times as severe than the one in 2015. Scientific studies show that the characteristics and location of the Nazca Plate on which the Mauro dam is constructed mean that the chance of such an earthquake of this magnitude in the Coquimbo region are thought to be impossible.

After a process of [participatory dialogue](#) with the community of Caimanes, which is located near the Mauro dam, an agreement was reached to put in place additional safety measures to reduce any risk posed by the dam to the community. The engagement between Antofagasta and the Caimanes was monitored independently by [Chile Transparente](#), a branch of Transparency International.

In addition, Los Pelambres participates in the [Programa Tranque](#) promoted by the public-private alliance Alta Ley. As part of this initiative, a pilot project is being conducted at the Mauro dam to assess the online monitoring of the relevant variables for tailings deposits. Antofagasta participates in this programme, together with other independent mining and inspection bodies, such as the [DGA](#) (the Chilean Water Directorate) and [Sernageomin](#) (the Chilean National Geology and Mining Service).

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