FACTBOX - Brazil's Vale Faces Critical Test After Another Iron Ore Tailings Dam Accident -S&P Global Platts

LONDON, Jan. 28, 2019 /PRNewswire/ -- Brazil's Vale, the world's largest iron ore miner, on Friday afternoon reported the collapse of its iron ore tailings Dam 1 at its Feijao mining complex in Minas Gerais state, southeastern Brazil. For perspective, S&P Global Platts, the leading independent provider of information and benchmark prices for the commodities and energy markets, has released this FACTBOX "*Brazil's Vale facing critical test after another iron ore tailings dam accident*"

S&P Global
Platts

Platts.com
LinkedIn
Facebook
Twitter

The dam collapse came a little more than three years after a similar accident at Samarco, a mining and pelletizing joint venture owned by Vale and BHP, which caused one of Brazil's worst environmental disasters, with a mud slide claiming 19 lives and causing production disruptions that are still reverberating.

In terms of immediate iron ore production losses, the impact of the Feijao dam collapse may be smaller than the Samarco accident, but the human loss is far greater, with indications of a significant financial impact on Vale.

INFRASTRUCTURE

- Dam 1 of the Corrego do Feijao Mine in Brumadinho, Minas Gerais, breached on Friday afternoon and part of its contents hit two small buildings, B4 and B4A, which were downstream of the dam, Vale reported.
- The height of the dam was 86 meters and had a crest length of 720 meters. The waste disposal area was 249,500 m2 and the volume disposed was 11.7 million m3.
- These buildings were sediment containment basins, meaning -- according toVale -- they only contained water drainage from the rain and contents cannot be carried by the water to the outside environment.
- The dam was inactive -- no tailings were being added -- and the decommissioning of the dam was being planned. At the time of the breach, employees were working in the administrative area when it was hit. Rescue and care of those affected was being carried out on site by the local fire department and the civil defense agency, Vale said.
- Tailings are the byproducts of ore production and a tailings dam is usually an earth-filled embankment dam used to store these byproducts. Vale said there was no pond and no other type of operational activity taking place.
- Vale said the dam was built in 1976 by Ferteco Mineracao (acquired byVale on April 27, 2001), using the upstream

method.

- Vale reported that Dam 1 had "Stability Condition Statements" issued by TUV SUD do Brasil, an international company specializing in Geotechnics. "The dam had a Safety Factor in accordance with world best practices and was above the Brazilian Standard reference point," Vale said, maintaining that the stability declarations "attested to the physical and hydraulic safety of the dam."

- The dam went through biweekly field inspections, all of which were reported to national mining agency ANM through the SIGBM (Integrated System for Safety Management of Mining Dams). Vale said the last ANM inspection was on December 21, but the company had two other biweekly inspections in January, as required by law. "All these inspections did not detect any change in the state of the structure," Vale said.

- The dam had a PAEBM (Mining Dam Emergency Action Plan), in accordance with regulations, Vale said, in addition to a video monitoring system, siren alert system (all tested) and downstream population registration.

- Warning sirens, however, were triggered early Sunday at another dam -- Dam 6 -- at the same location. Locals were evacuated, but the civil defense agency later lowered the critical level of Dam 6 from 2 to 1, and those who had earlier left their homes were allowed to return and the civil defense agency has been able to resume the search for the missing in the region.

- As of 10:00 local time Monday, 60 fatalities had been confirmed from the Dam 1 accident, with up to 300 people listed as missing.

- Vale said its teams have been working with the fire and civil defense agencies in support of the rescue efforts. The company has provided 40 ambulances, 800 beds and a helicopter, in addition to drinking water for the community.

- At the time of the accident, there were about 300 workers (including contractors) in the area, Vale CEO Fabio Schvartsman said at a late-Friday press conference.

TRADE FLOWS

- The Corrego do Feijao Mine is part of Vale's Southern System, located in the "Iron Quadrangle" of Minas Gerais State. This region produced around 118 million mt of Vale's 366.5 million mt total output in 2017. The Corrego do Feijao mine itself has a capacity of 7.8 million mt/year of high grade ore and production was halted following the accident.

- On November 5, 2015, production of iron ore and pellets was halted at Samarco, a joint venture pelletizer owned by Vale and BHP, after its devastating dam burst.

- Samarco, with a pelletizing capacity of about 30 million mt/year, has yet to receive the final go-ahead to resume production.

- In July 2016, Vale, Samarco and BHP established the Fundacao Renova as part of a roughly $2 billion settlement with Brazil's government for remediation and compensation programs over many years.

- Schvartsman signaled that the environmental impact of this latest incident will be less than that of the Samarco accident, because the content of the tailings is only silica.

- Since the Samarco incident, silica content has risen in southern Brazil iron ore products, due to reduced wet processing, and the slowdown in licensing of new mining areas and processing pits. Miners have developed dry-tailings processing to be rolled out over the next few years, to reduce the impact and need for dams and pits filled with wet tailings.

- But the latest dam failure could lead to "increased government scrutiny/disfavor when it comes to issuing needed permits for Samarco to resume operations," Cowen Equity Research said in a note Friday.

- Citi Research said Monday it expects a "very significant" financial impact on Vale as a result of the latest accident.

- Vale said late Sunday that it may suspend dividend payments to shareholders and some variable payments to company executives following the dam collapse. It had originally expected to distribute at least $4 billion to shareholders in the 2019-21 period.

- The company reported that judges of courts in Belo Horizonte and Brumadinho in Minas Gerais state have decided to

freeze company assets worth Real 11 billion ($2.92 billion) as a result of the accident. This represents almost half of its available cash flow, put at around $6 billion.

- Vale said it has also been informed it will be fined Real 250 million by Brazil's federal environmental institute Ibama and around Real 99.14 million by Minas Gerais state.

- The company has set up independent committees to monitor rescue, assistance and recovery operations and to establish the causes of the accident and responsibility.

PRICES

- Iron ore futures at Dalian, China rose 6% Monday in response to Vale's decision to halt operations at Corrego do Feijao.

- S&P Global Platts assessed the 62% Fe Iron Ore Index at $78.70/dmt CFR North China Monday, up $3.30/dmt from last Friday. The front-month February TSI swap was up $4.05/dmt from last Friday at $78.60/dmt, with the price increases attributed to the market impact of the Feijao tailings dam collapse.

- Cowen analysts said Friday that, should there be a supply disruption for high-grade iron ore fines, associated pellet feed and/or a further delay in the restart of Samarco, "there could be upside bias to pellet premium pricing in the Atlantic Basin. With 2019 annual Atlantic Basin pellet premium negotiations complete or nearing completion and Samarco already out of the picture in 2019, we see more of a limited impact to realized 2019 pellet premiums."

- Cowen is currently projecting a $6/mt of upside in Atlantic Basin pellet premiums (on a like-for-like 62% basis) in 2019 and assume no further upside in 2020.

Media Contacts:

Global, Americas, Asia: Kathleen Tanzy, + 1 917 331 4607, kathleen.tanzy@spglobal.com

About S&P Global Platts
At S&P Global Platts, we provide the insights; you make better-informed trading and business decisions with confidence. We're the leading independent provider of information and benchmark prices for the commodities and energy markets. Customers in over 150 countries look to our expertise in news, pricing and analytics to deliver greater transparency and efficiency to markets. S&P Global Platts coverage includes oil and gas, power, petrochemicals, metals, agriculture and shipping.

SOURCE S&P Global Platts

For further information: EMEA: Arnaud Humblot +44 207 176 6685, arnaud.humblot@spglobal.com and Alex Brog +44 207 176 7645, alex.brog@spglobal.com

---

https://press.spglobal.com/2019-01-28-FACTBOX-Brazils-Vale-Faces-Critical-Test-After-Another-Iron-Ore-Tailings-Dam-Accident-S-P-Global-Platts