

# **Porgera Operational learning's from the post 2018 Earthquake**

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## **ABSTRACT**

The Porgera Gold Mine in Enga Province, Papua New Guinea, is owned by the Porgera Joint Venture (PJV). It is operated by Barrick (Niugini) Limited ("BNL") with 95% participating interest and 5% by Mineral Resources Enga (MRE) Limited. The Porgera operation comprises both Open Pit and Underground mining operations and since the first gold pour in 1990, more than 143 million tonnes of ore has been mined, producing over 20 million ounces of gold.

The open-pit and underground mines supply both course gold and refractory ore to a processing plant that includes crushing, grinding, gravity recovery, flotation, oxidation (autoclave) and Carbon In Pulp (CIP) circuits to produce a gold dore product and a high grade pyrite concentrate for shipment to offsite refineries and smelters for final processing.

In January 2016, the Porgera mine commenced exporting of pyrite concentrate after modifications to the flotation circuit had enabled the production of a gold rich sulfide concentrate to be shipped to an offsite smelter for further gold extraction.

Electricity to the mine is supplied by the PJV Hides power station located in the Hela Province to the south of the mine, providing 75MW of electricity across a 75km electrical transmission line. On 26th February 2018, a magnitude 7.5 earthquake struck the Hela province, disabling the Hides gas turbine power station.

In the 3 months post the earthquake, the processing plant was successfully operated with diesel generators on site providing only 10-15MW. A number of different grinding flowsheets were explored as well as utilising only the partial flowsheet.

This paper describes the operational ingenuity employed, the decision making processes, flexibility and learnings for the process operation whilst the Hides power station was restored to full operation.