

# GRUYERE GOLD MINE WESTERN AUSTRALIA:

## PART 2 – RAMP UP TO OPERATIONS, A JOURNEY OF COMMINUTION, OPTIMISATION AND CHALLENGES

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### ABSTRACT

The Gruyere Gold Project was discovered by Gold Road Resources Limited in October 2013 on the Yamarna Belt, 200 kilometers east of Laverton in Western Australia. As a low-grade Mineral Resource the Feasibility Study for Gruyere, which was completed in October 2016, culminated in the selection of a primary crush SAG-ball circuit with recycle pebble crushing (SABC). An Engineering, Procurement and Construction (EPC) contract was executed in June 2017 with construction and commissioning of the SABC circuit commencing in early 2019.

Since 2019, the Gruyere Joint Venture (Gruyere JV), a collaboration between Gold Road Resources Ltd and Gold Fields Ltd, has been dedicated to the ramp up and operations phases of the project. Operational ergonomics, advanced process control, throughput optimisation, mechanical availability and metallurgical recovery consistency have all seen substantial improvements. Production outputs are now exceeding 9.5Mtpa and 340,000oz with an extended life of mine from the Gruyere Open Pit expansion.

This paper investigates the continuous test work, subsequent modeling, and improvement projects carried out during the ramp-up and early operational phases, including:

- Implementing mechanical enhancement projects and modifications to the original design to alleviate wear and availability concerns;
- Enhancing the pebble crushing circuit's capacity through a series of circuit and equipment upgrades;
- Conducting ongoing comminution studies and benchmarking surveys of the grinding circuit;
- Fine-tuning SAG and ball mill liner designs, optimising grinding media, and refining post-reline ramp-up strategies;
- Automating the Carbon-in-Leach (CIL) circuit using the Gekko Carbon Scout and Online Gold Analyser (OLGA) and
- Utilising gold deportment studies and metallurgical plant data to enhance gravity and leach circuit recovery.

**Keywords:** commissioning, ramp-up, SABC, pebble crusher, abrasion, comminution