

The use of a continuous mini pilot plant (MPP) has become increasingly popular as an effective alternative to conventional piloting. The MPP has the following advantages over the conventional pilot plant:

1. Drill core sampled from across the resource is used instead of a pilot shaft being sunk to extract a bulk specimen
2. The MPP requires much less ore sample material than the conventional pilot plant, and operates at a feed rate of 10-12 kg/hr
3. The MPP approaches steady state more quickly
4. Together with the operating procedures, the MPP uses appropriate quality controls to assure the reliability of the test data
5. The results scale up to operations level accurately
6. The MPP campaign is cheaper than a conventional pilot plant campaign.

The MPP equipment list includes grinding, conditioning, conventional rougher and cleaner flotation cells, columns, and continuous pin regrind mills. It is served by a sophisticated reagent dosage plant and is controlled by online PLC instrumentation. Due to the wide range of equipment, most flowsheets can easily be configured.

Whether the project is for a new ore resource so as to demonstrate a developed flowsheet, or for an existing operation that wants to demonstrate improved metallurgy for existing orebodies, the MPP campaign will deliver design information, together with grades and recoveries at the saleable concentrate level.

Key Capabilities

Our MPP offers the following key capabilities and results:

- Continuous operation
- Sample mass requirements are significantly less than conventional pilot plant
- Sophisticated process control and data logging
- Bruker XRF assays every 3 hours
- Bulk product samples for characterisation, e.g. tailings for backfill studies
- Closed mass and value balance for design

Fragomeni, D., Hoffman, M., Kelly, A., Yu, S., and Lotter, N.O., 2004.

Flotation Mini Pilot Plant Experience at Falconbridge Limited, Proc. Mineral Process Modelling, Simulation and Control, Laurentian University, Sudbury, Canada, June 6-7, 2006, pp. 329-355.

