



DIAVIK MECHANISED SAMPLE PREPARATION SYSTEM

The Diavik diamond mine in northern Canada is required to monitor its waste rock for the possibility that it will cause acid drainage problems in the future. There will be 100 to 150 samples to be processed in one shift, every day.

After drying, each sample is loaded into the System with the electro-hydraulic lift (on the left of the photograph)



Each sample is crushed finely with a Boyd Crusher and the crushed product is fed into a Rotating Sample Divider (RSD). The split from the RSD can be any proportion from 2-25%. The split % is set manually. The split portion falls into a two stage Continuous Flow Ring Mill (CRM) that pulverises the sample and delivers it into a disposable plastic cup. One sample is prepared every three minutes.

There is no automation. All machines operate all the time. The cabinet is sound proofed to 80-82 dBA. The waste material falls from the cabinet into a wheeled bin. It could be removed outside the building on a small belt conveyor. The cabinet is connected to the lab dust extraction system. This simple, Mechanised System could be used by many mines.