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At LE BOURNEIX MINE, the Knelson Concentrator pays back by F. MEIA;
MINE MANAGER.

The BOURNEIX gold deposit is of the vein type with a consequent amount of free gold: from a minimum of 20% up to 80%.

After crushing and grinding, the run of mine ore which grade is around thirteen grams per metric tonne, if floated.

The 300 g/t flotation concentrate is then cyanided in a C.I.P. unit. Due to the high grade of the concentrate, it is possible to load the carbon up to 40/50 kg of gold per metric tonne. According to that and in order to use a more simple process and save some capital expenditure, the BOURNEIX management decided to recover the gold by roasting the carbon. So, LE BOURNEIX ships the loaded carbon to a refiner who roasts it, recovers and refines the gold. The yearly output is close to 70,000 oz.

The grade of the flotation tailings can vary from 0,3 g/t to more than 1 g/t according to:

- the characteristics of the ore treated.
- some malfunction of the flotation circuit.

A preliminary study conducted on a pilot level with a 7½" Knelson Concentrator has proved that 90% of the gold contained in the >140 mesh fraction can be recovered.

The reason is that the gold is mainly free gold which has not been caught in the flotation circuit.

It was then decided to acquire a 20" Knelson Concentrator in order to recover the free gold from the tailings. The tailings coming from the flotation are cycloned. The underflow, >140 mesh, is fed to the concentrator. The concentrate grades more than 60 O.P.T.

The amount of gold recovered is in line with the results of the pilot test i.e. 100 oz per month, increasing the total gold recovery by 1.5%.

The CAPEX payback is less than 4 months. This confirms the efficiency of the Knelson Concentrators to recover free gold and increase the profitability of the mine.