

**BRGM**  
Bureau de Recherches Géologiques et Minières  
Orléans, France



## ABOUT

The BRGM is the French geological survey and France's public reference institution in earth science applications for the management of surface and subsurface resources and risks. Its activities are geared to scientific research, support to public policy development, international cooperation and mine safety.

Its role:

- Understanding geological phenomena and associated risks
- Developing new methodologies and techniques
- Producing and distributing data to support the management of soils, subsoils and their resources
- Delivering the necessary tools to support the management of soils, subsoils and their resources, risk prevention and policy responses to climate changes

BRGM employs over 1050 people, including more than 700 researchers and engineers. Its total income from its activities was €144 M in 2014.

The Water, Environment and Ecotechnologies Division works towards better management of water, polluted sites and soils, waste and mineral resources. This division draws up methodological guides and technical standards, develops decision-aid tools, and develops «clean technologies» for treating water, wastes and raw material. The BRGM Waste and Raw Material Unit belongs to this Division and is involved in PROMETIA.

## EXPERTISE

The BRGM Waste and Raw Material Unit is an R&D team of 16 people (process and environmental engineers & researchers) that works on process development & environmental analysis (including LCA) in the field of mining waste management, recycling, water management and primary resources treatment (mineral processing & extractive metallurgy).

The BRGM team involved in PROMETIA has a strong experience in European projects (FP6: BIOMINE, Bioshale, FP7: PROMINE, H2020: Biomore, FAME, HISER). It is actively involved in research projects focusing on the development of innovative techniques for mineral processing in the mining industry (including a unique expertise in biohydrometallurgy). BRGM is also involved in projects dealing with the development and the demonstration of processes for the recycling of electronic waste (REWARD) and of mining and metallurgical wastes (ProMine, ENVIREE, EXTRAVAN).

The team works on the following targets :

- Primary resources: metal ores, unconventional resources (polymineral and polymetallic concentrates, tailings), industrial minerals  
Secondary resources: post-consumer waste (WEEE, ELV etc.), metallurgic waste (slag, fly ash etc., construction & demolition waste)
- Effluent, industrial sludge and sediment

Their expertise can be described as follows: Characterisation & sampling; Process development & optimisation (comminution, concentration, thermal treatment, hydrometallurgy, biological treatment); Management of process water; Technical & environmental assessment of processes and resources and waste management.

## FACILITIES & SERVICES

Laboratory and pilot scale facilities on mineral processing & biohydrometallurgy. Development and optimisation of processes through different approaches: experimental works, simulation and modelling.



- Access to multi-scale experimental and technical means from laboratory to pilot scale (2000 m<sup>2</sup>). From grams to several tons: Samplers; Crushers; Gravity separators Magnetic separators Eddy current separator; Flotation cells; (Bio)leaching reactors; Furnaces
- Process simulation and modelling tools: HSC, USIMPAC, COMSOL, LCA-SIMAPRO, Environmental evaluation
- Analytical facility for characterisation and analysis of solids and liquids: Significant volume DTA/GTA (up to 100 g); Portable IR, fluoX; Texture analysis, Chemical analysis, etc.



## MORE INFORMATION

Website: [www.brgm.fr](http://www.brgm.fr)

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