



INTELLIGENT MINERAL PROCESSING



CONSULTANCY & LABORATORY TESTING SERVICES

At Grinding Solutions, we provide innovative and pragmatic recommendations that result in real improvements to our clients with a fast turnaround.

MAXIMISE YOUR RESOURCES

- Grinding & energy efficiency
- Recovery & grade
- Production & profitability
- Environmental sustainability

ADDING VALUE THROUGH INNOVATION

- Exploring novel approaches for mineral liberation, comminution & separation
- A unique integrated analytical approach
- Flexible & responsive to client requirements
- World leaders in fine & ultrafine grinding

Our team have expert knowledge and are passionate about working with global clients to solve challenges and maximise opportunities.

GOLD PROCESSING

Our staff have a wealth of experience in gold processing working on projects based in North America, Europe, Africa and the Middle East. Integrating our world leading fine grinding expertise and gold processing knowledge, we offer an extensive range of test-work.

GOLD PROCESSING SERVICES

- Mineralogical gold deportment studies
- Diagnostic leaching
- Gravity pre-concentration using spiral / tables
- Andre Laplante GRG testing and concentrate handling
- Flotation recovery of gold
- Ultra fine grinding of concentrates
- Laboratory cyanide leach tests (bottle roll / agitated tank)
- Heap leach amenability testing (agglomeration testing to column leach testing)
- Carbon loading kinetics and equilibrium loading tests for use in circuit simulation packages
- Merrill Crowe testing
- Pre and post leach thickener requirements
- Cyanide detoxification testing (INCO SO₂ air, H₂O₂ etc.)
- Cyanide recovery (SART, AVR)

We also offer additional hydrometallurgical capabilities including bioleaching and biooxidation.



LABORATORY TESTING & PILOT PLANT CAPABILITIES



PROCESS MINERALOGY

Liberation analysis
Grind size determination
Process response modelling
Geometallurgy
Gold deportment study
Mineral/sample imaging & image analysis



GRINDING

Bulk milling, sample preparation & direct power measurement
SAG mill characterisation
Bond work index tests
Crushability & abrasiveness
Online grind chemistry monitoring & modification
(Magotteaux™ mill)
Fine & ultrafine signature plot (IsaMill™, Metso Vertimill®, Metso SMD)
Grinding media characterisation (steel & ceramic)
Pilot scale fine grinding



CLASSIFICATION

Particle size analysis
Bulk separation (wet & dry) from 1 µm upwards



FLOTATION

Batch flotation & bulk separations
Rate kinetic testing (rougher & cleaner)
Locked cycle testing
Froth monitoring



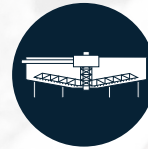
GRAVITY SEPARATION

Scoping gravity separation
Spiral separator testing
Shaking table testing
Enhanced gravity separation
Bulk gravity separation
Gravity-recoverable gold testing
Jig testing



OTHER MINERAL SEPARATIONS

Heavy liquid separation
Magnetic & electrostatic response profiles
Bulk magnetic separation



SOLID-LIQUID SEPARATION

Flocculant screening & settling curves
Filtration testing
Rheology testing



HYDROMETALLURGY

Acid & alkali leaching
Bioleaching
Biooxidation
Batch bulk leaching
Batch precipitation testing
Cyanide leaching (CIP, CIL, heap)
Diagnostic leaching
Carbon adsorption isotherms & kinetics
Oxygen consumption



INDUSTRIAL MINERALS

Calcining
Low contamination milling
Bleaching
Brightness testing
Attrition scrubbing/blunging
Product-specific testing



CONSULTANCY

Investment & Marketing
Pre-Feasibility & Feasibility Studies
Process innovation
Plant optimisation

SMART & INNOVATIVE MINERAL PROCESSING SOLUTIONS

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