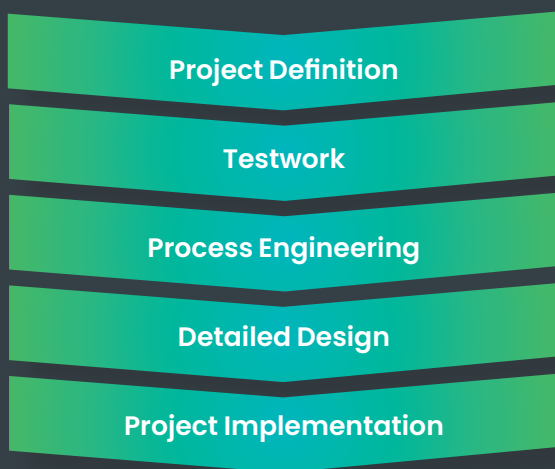


Core develops innovative and sustainable solutions to complex metallurgical problems allowing our partners to realise the value of their projects. With a strong focus on finding solutions that work, Core provides expertise across the entire Gold Project Cycle:



Cyanide Leaching

Cyanide leaching is a key process in gold extraction, and Core provides a wide range of testwork services. These include bench and pilot-scale leach testing, bottle-roll leach tests, diagnostic leach tests, and amalgamation of gravity concentrates. Core also offers full cyanide detox, preg-robbing, carbon-in-pulp, carbon-in-leach, oxygen demand, carbon loading, and carbon kinetics tests, along with oxygen uptake rate and Gravity Recoverable Gold (GRG).

Column/Heap Leaching

Core has extensive experience in heap leach amenability testwork for ore characterisation, reagent consumption, agglomeration screening, intermittent agitation bottle roll leach tests and column leach tests. For heap leaching Core can process the emerging PLS via SX to generate raffinate solution and then leach the ore in a closed-circuit configuration.

PROJECT DEFINITION

Core has wide experience in the review of gold project geology and mine planning and their influence on the metallurgy of the ore. Understanding this ore geometallurgy is critical for the design of testwork and the circuit flowsheet. Core can provide expertise for the selection of composite samples for testwork and the mineralogical analysis of the ore.

TESTWORK

Beneficiation

Core can carry out a range of testwork for the beneficiation of gold ores including crushing, gravity concentration, cycloning, primary grinding, ultrafine grinding, flotation, thickening and filtration.

For comminution, this includes Geopyöra rock breakage testing and IsaMill signature plot determination. For flotation this includes conventional lab and pilot scale tests, Jameson cell pilot tests and NovaCell™ coarse particle flotation.

Albion Process™

The Albion Process™ is a simple and cost-effective process for treating refractory gold concentrates. It uses a combination of ultrafine grinding and oxidative leaching at atmospheric pressure. The sulphides in the feed are oxidised and liberated, allowing the target metals to be recovered by conventional hydrometallurgical processes.



Pressure Leaching

Core has extensive expertise in testwork relating to pressure oxidation and pressure leaching processes. Test programmes carried out to date have included use of pressure autoclaves for pressure oxidation of gold/arsenic leachates and pressure oxidation of copper/gold bearing flotation concentrates. For pressure oxidation in particular, Core offers unrivalled expertise in the area of chemical analyses for sulphur species (elemental sulphur, sulphide and sulphate).

Gold Extraction

Core can provide testing of various processes to extract gold from cyanide solutions, including Merrill Crowe and Electrowinning. Core is one of the few laboratories that can undertake pilot-scale electrolytic processes.

Gold Analytical Analysis

Core's dedicated analytical laboratory can provide all analyses for gold projects including gold by fire assay/digest/DIBK/AAS, sequential gold diagnostic test, gold analysis of carbon, carbon speciation and LeachWELL diagnostic cyanide leach.

PROCESS ENGINEERING AND DESIGN

Core's team of Metallurgists and Process Engineers are experts in gold flowsheet development and capabilities include:

- Process modelling using METSIM, HSC and Excel based models
- Techno-economic evaluations
- Process options analyses
- Design, commissioning and execution of pilot and demonstration plants
- Conceptual or desktop studies, Scoping Studies, PFS to DFS
- Owners representative for Feasibility Studies
- Project Due Diligence

PROJECT IMPLEMENTATION

Core can offer the full range of Project Implementation services including:

- Process commissioning
- Process optimisation and plant surveys
- Plant availability analysis and optimisation
- Process debottlenecking
- Supply of Site operating staff from Process Manager to Operator
- Metallurgical accounting, gold balances and metal settlement audits



GOLD PROJECT EXPERIENCE

Project Location	Core Scope
Australia	<ul style="list-style-type: none">• Process engineering and testwork for gold heap leaching project
Australia	<ul style="list-style-type: none">• Process engineering and testwork for gold flotation project
Asia	<ul style="list-style-type: none">• Flowsheet development for serpentine rejection for a copper-gold operation
USA	<ul style="list-style-type: none">• Development of pre-aeration process options for an operating gold mine
Europe	<ul style="list-style-type: none">• Delivery of full DFS for a refractory gold project, now in operation
South Africa	<ul style="list-style-type: none">• Full management of recommissioning of the Cons Murch gold operation
South East Asia	<ul style="list-style-type: none">• Commissioning of a gold float-leach operation
Philippines, USA, New Zealand	<ul style="list-style-type: none">• Plant audits and optimisation studies for multiple gold operations
South East Asia	<ul style="list-style-type: none">• Long term management of a site metallurgical laboratory for a major gold operation
Australia	<ul style="list-style-type: none">• Copper recovery from cyanide waste using a low-cost SART process

Interested to find out more?

Contact: info@coreresources.com.au

About Core Resources: Core Resources is an award-winning process engineering and metallurgical testing business based in Brisbane, Australia. Core Resources services a global customer base, enabling the world's mining projects with innovative metallurgical flowsheet solutions.



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