

▶ CONTAINERISED/MODULAR GOLD DESORPTION & RECOVERY PLANT



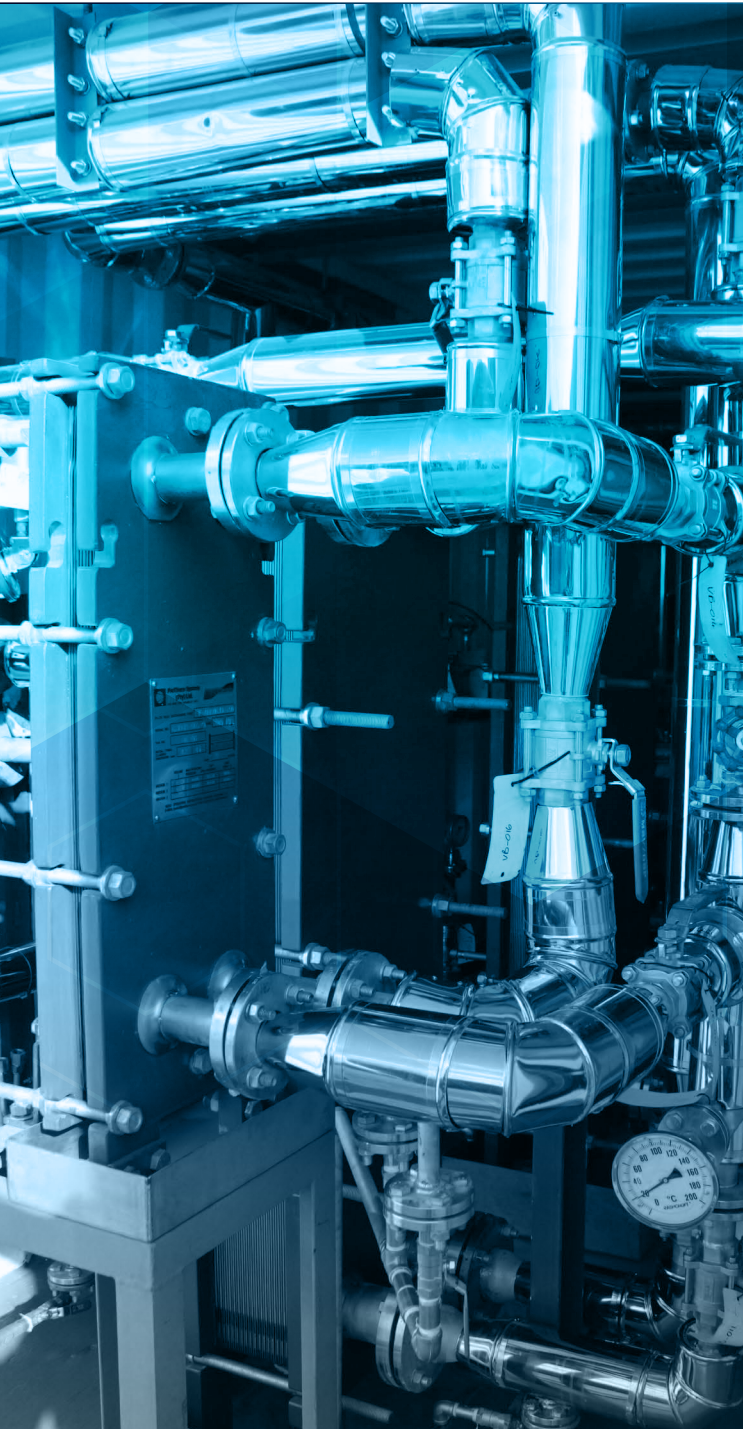
► INTRODUCTION

AZMET Technology & Projects is a world class multi-disciplined Engineering Design and Project Management Company. AZMET's Industry knowledge and experience, linked to sound fundamental understanding of numerous metallurgical processes, ensures feasible and economical viable solutions to our clients. Our capabilities range from PEA's through to Project Implementation and beyond.

AZMET has executed Turnkey and EPCM contracts to major global mineral producers.

AZMET offer the following services to the global metallurgical and mining sectors:

- » Project Management
- » Testwork Management and Reviews
- » Project Studies - from Scoping to Bankable Feasibility Studies
- » Detailed Engineering Designs for any project phase
- » Project Implementation
- » Process Plant Optimisations and Expansions
- » Project Evaluations
- » Operations
- » Innovative Products & Process Technologies
- » Project studies
- » Production optimisation
- » Process plant optimisation and expansions
- » Process plant audits



► BACKGROUND

AZMET Activated carbon has a strong affinity for the extraction of gold from cyanide solutions. Methods for chemically desorbing gold from loaded carbon has made it possible to apply these methods for gold recovery.

These procedures also allowed for the recycling of carbon for further gold recovery.

Today, many options are available to the plant designer and operator for desorption of gold from carbon. Each method has advantages and disadvantages, which AZMET will evaluate when deciding which process to utilise.

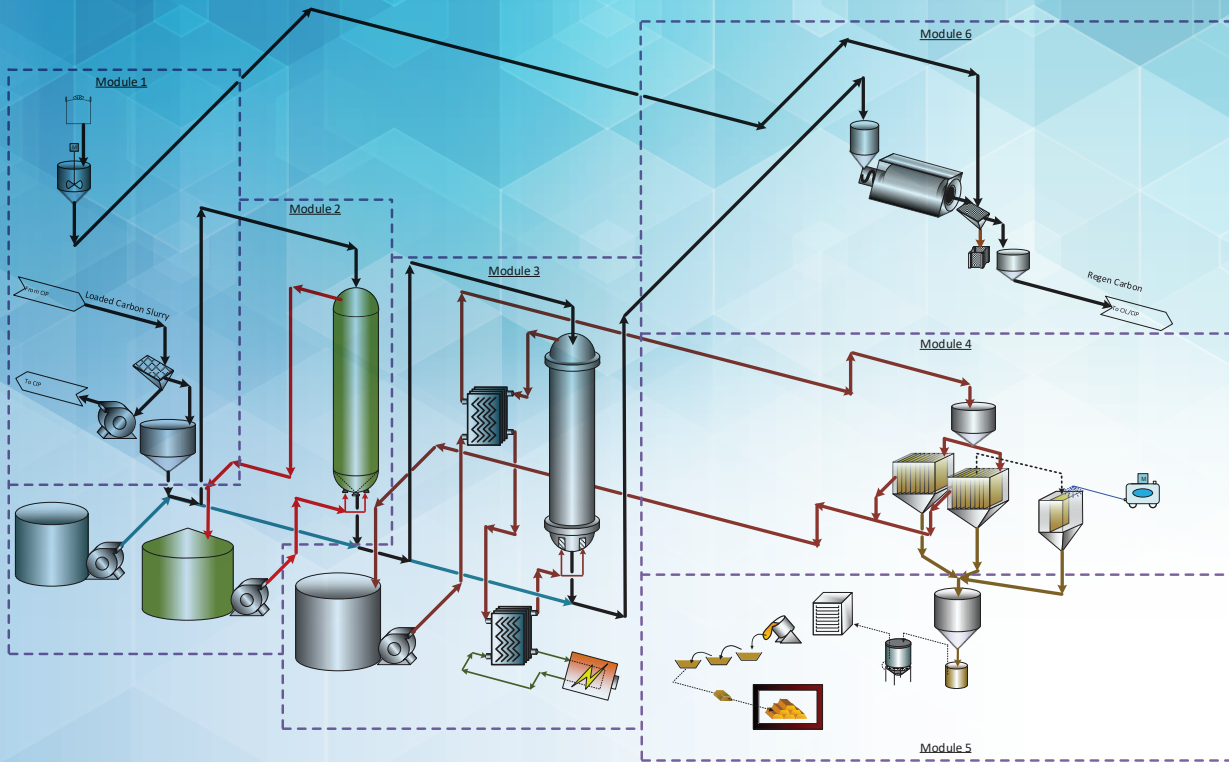
AZMET considers itself to be the global leader in the design and optimisation of Adsorption, Recovery and Regeneration Plants.

On exception of the power consumption of comminution, the highest consumers of power within a gold processing plant are elution, carbon regeneration and goldroom unit processes. AZMET has developed and designed a state of the art engineering model to optimize gold elution circuit and designed/modeled containerised unit processes.

Designing and erecting elution plants can be costly and time consuming. For this reason, AZMET has developed and designed containerised/modular gold elution plants in order to save on project schedule time execution, as well as capital and operating cost.

AZMET utilise the most reputable and experienced suppliers for all major mechanical process equipment (e.g. KEMIX), underpinned by back-up service, training and maintenance contracts.

AZMET will supply an elution plant of the highest quality that will provide full automation with optimum recovery and operating costs. Hence, the client will receive an end product that is affordable, durable, safe, easy to operate, maintenance friendly and environmentally sustainable.



► FEATURES

AZMET utilises the latest engineering technology and draughting packages to design the respective process modules. The different available process unit modules allow our clients to be selective in their needs to satisfy their expansion and/or project needs.

MAJOR MODULES

The following modules are available:

- » Carbon loading system
- » Acid wash and associated reagent system
- » Elution and associated reagent system
- » Electrowinning
- » Merrill Crowe Metal Precipitation
- » Gold Room
- » Carbon Regeneration

VALUE ADDED ADDITIONS

AZMET offers the following additions to the major modules specified:

- » Containerised MCC & PLC
- » Gold Room security
- » Carbon fines recovery system
- » Mercury retort and scrubber system
- » Gold Room ammonia and mercury scrubber

- » Containerised/Modular reagent packages
- » Civil Gold Room layout & design
- » Gold recovery from fine carbon & woodchips
- » Containerised sewage plants

AVAILABLE CIRCUIT DESIGNS

The following containerised elution circuits are available:

- » Pressure Zadra
- » Anglo American Research Laboratory (AARL)
- » Split AARL

All containerised/modular gold desorption and recovery plants are designed to allow minimum site installation time prior to hot commissioning.

ELUTION BATCH SIZE RANGES

AZMET can design any size desorption and recovery plant. Our current range of gold elution plants consist of carbon batch sizes ranging from 0.5-12 tonne. AZMET will however advise the client on the appropriate circuit selection, irrespective should the plant be containerised/ modular in design or a green or brown fields installation.

The respective circuit comparisons are modeled to obtain the following optimum:

- » Batch size
- » Cost/ton of carbon treated
- » Cost/ton of ROM ore treated
- » CAPEX comparisons
- » OPEX optimisations



► BENEFITS

AZMET constantly strive to provide our clients with process plants that utilises current engineering standards and the latest technologies with unparalleled safety and environmental consciousness. Our sound fundamental understanding, knowledge and experience in the recovery of gold processing will maximise the client's profits at the lowest possible operating cost. It is common knowledge that the Desorption, Recovery and Regeneration unit processes within the design of a gold processing plant is the most complicated and time consuming, but also the most critical to ensure that the optimum design has been allowed for to maximise recovery.

EPCM BENEFITS

AZMET's Desorption and Recovery plant will have the following value-added cost saving benefits to all EPCM Project Companies:

- » Lower overhead cost
- » Lower design cost
- » Minimal layout cost
- » Minimal procurement cost
- » Fast track project completion schedule
- » All designs will be accompanied with:
 - PFD's and P&ID's
 - Layout Drawings
 - Data Packs

DESIGN BENEFITS

The design allows for both containerised or loose standing modules. Containerised modules are designed to fit into standard shipping containers which has the following benefits:

- » Minimal capital cost
- » Ease of transportation
- » Ease of assembly
- » Reduction in site construction labour
- » Reduction in site establishment cost
- » Economical footprint
- » Optimum recovery and operating costs
- » Ease of expansion and/or relocation
- » OEM service agreements
- » Diesel or electrical powered designs
- » Equipment reliability and process sustainability

► WHY USE AZMET?

- » Cost effective designs
- » Compact and efficient layout
- » Flexible, fit for purpose designs
- » Turnkey solutions
- » Experience in international project executions
- » Unparalleled service excellence
- » Safety and environmental consciousness
- » Value-added approach



CONTACT DETAILS