

WWW.SAXUM.US



A Lycopodium Business



LITHIUM QUALIFICATIONS

PROJECTS & EXPERIENCE

LOCATIONS

ENGINEERING AND EPCM CAPABILITIES ALL AROUND THE WORLD



ARGENTINA
TUCUMAN
BUENOS AIRES

BRAZIL
BELO HORIZONTE

UNITED STATES
DALLAS, TX

AUSTRALIA
PERTH

CERTIFIED

ISO 9001
ISO 14001
ISO 45001



SAXUM is committed to continuous improvement, aligning all its procedures with the highest international standards. We are proud to hold the ISO 9001:2015 quality certification.

SERVICES

We stand out through our deep expertise in EPCM services for the mineral processing, oil & gas, and infrastructure industries. Our high-level engineering and project management teams ensure reliable execution, delivering optimized technical solutions on time and within budget—whether for new developments or facility upgrades.

Engineering & Design	Project Development	Execution & Delivery	Procurement
Multidisciplinary Engineering	Feasibility Studies	EPCM Services	Procurement
Conceptual, Basic & Detailed Designs	CAPEX/OPEX Evaluations	Site Supervision	Logistic & Expediting
Trade-Off Studies	Consulting Services	Commissioning	Auditing
		Planning & Project Control	



ENGINEERING

PROCESS ENGINEERING & PLANT OPTIMIZATION



PROCESS AUDITING, CAPACITY UPGRADES

TROUBLESHOOTING

OPERATIONS ANALYSIS

MASS AND ENERGY BALANCES

PROCESS CALCULATIONS AND FLOW DIAGRAMS

ANALYSIS OF OPTIMUM MATERIAL STORAGE REQUIREMENTS

COMMISSIONING

METALLURGY

CHEMICAL

PROCESS DEVELOPMENT & MODELLING

PILOT PROGRAMMES

HAZID / HAZOP

DYNAMIC SIMULATION

ENGINEERING

MECHANICAL ENGINEERING & PLANT DESIGN



SYSTEMS INTEGRATION WITH MULTIPLE VENDORS

PLANT LAYOUTS

GENERAL ARRANGEMENTS

FULL 3D MODELLING

EQUIPMENT TECHNICAL EVALUATIONS

EQUIPMENT SIZING AND CAPACITY DETERMINATION

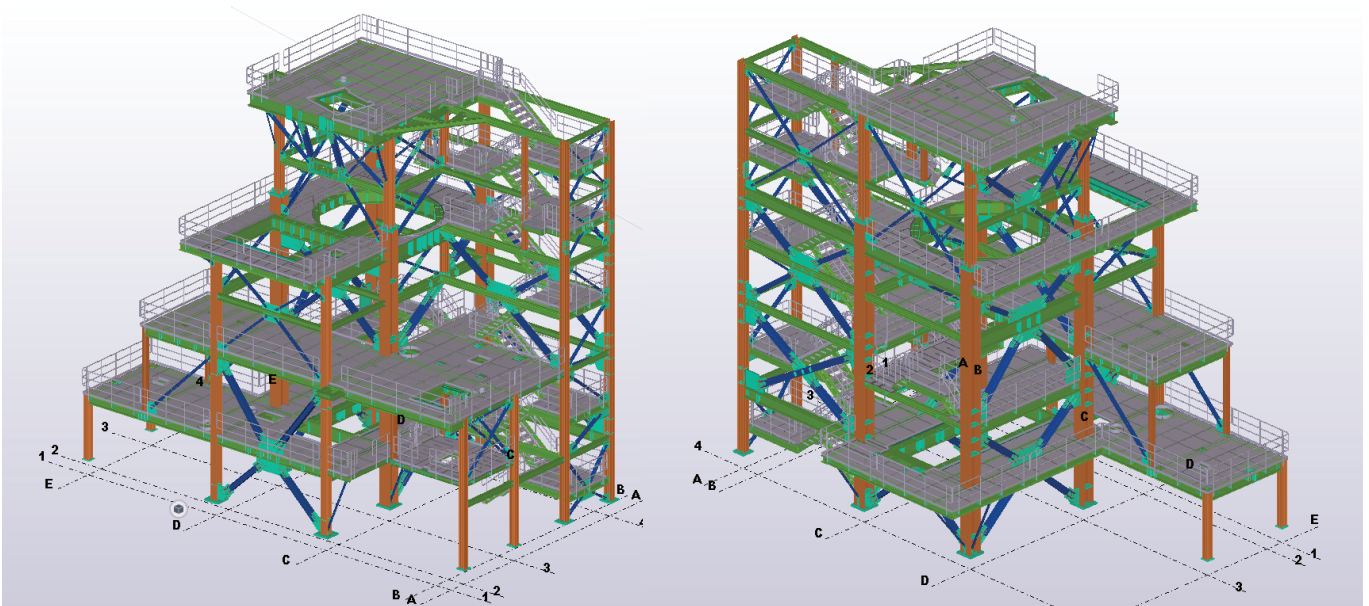
EQUIPMENT AND INSTALLATION SPECIFICATIONS

DUCTWORKS

ENGINEERING DESIGN: PIPING SYSTEMS - MATERIAL HANDLING SYSTEMS
PROCESS EQUIPMENT LAYOUTS

ENGINEERING

CIVIL & STRUCTURAL ENGINEERING



- STRUCTURAL ANALYSIS & DESIGNS (INCLUDING HIGH SEISMIC & HURRICANE ZONES) FOR INDUSTRIAL PLANTS
- EVALUATION AND IMPLEMENTATION OF GEOTECHNICAL REPORTS
- STRUCTURAL DESIGN BASED ON VIBRATION MITIGATION
- DYNAMIC FOUNDATION ANALYSIS
- DESIGN OF REINFORCED CONCRETE AND STEEL STRUCTURES
- CONCRETE SILOS AND BUNKERS
- STEEL BINS AND HOPPERS
- TUNNELS AND UNDERGROUND STRUCTURES
- DESIGN OF ROADS, EARTHWORKS, AND SLOPES.
- DESIGN OF PONDS AND TAILING DAMS.
- STABILITY ASSESSMENT OF SOIL/ROCK SLOPES.

ENGINEERING

ELECTRICAL ENGINEERING



POWER DISTRIBUTION SYSTEMS

INSTRUMENTATION AND CONTROLS

HMI INTERFACE COORDINATION

PLC PROGRAMMING

MOTORS (MEDIUM VOLTAGE AND LOW VOLTAGE)

MEDIUM VOLTAGE STARTERS AND BREAKERS

TRANSFORMERS

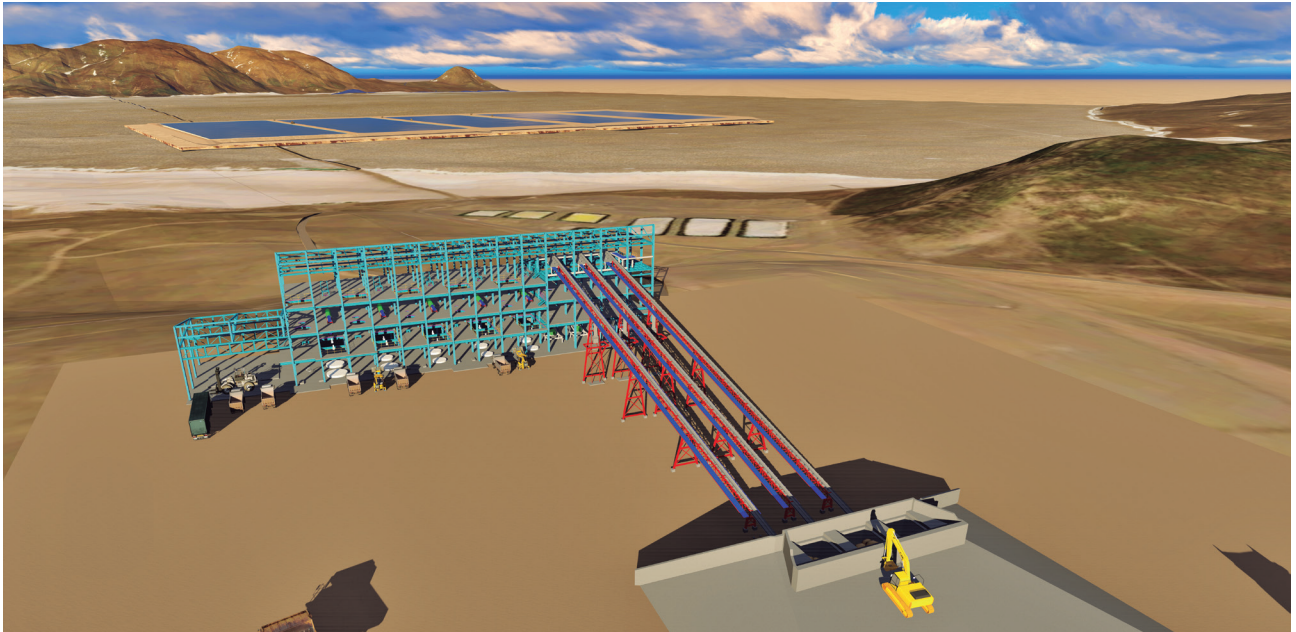
MOTOR CONTROL CENTERS

SHORT CIRCUIT ANALYSIS

POWER STUDIES

ENGINEERING

3D MODELLING FOR FULL PROJECT INTEGRATION



INTEGRATION OF EQUIPMENT ENGINEERING WITH THE CIVIL, MECHANICAL FABRICATION AND ELECTRICAL ENGINEERING

SHOP DRAWING REVIEWS

FABRICATION SHOP INSPECTIONS

COORDINATION OF MATERIALS FABRICATION FOR CONSTRUCTION AND DELIVERIES TO THE JOB SITES

WHY CLIENTS CHOOSE SAXUM

TOTAL RESOURCES IN HOUSE

KNOW-HOW AND EXPERIENCE IN LITHIUM SOLUTIONS

LEADERSHIP IN DETAILED ENGINEERING SOLUTIONS

DEEP KNOWLEDGE OF STANDARDS AND CONSTRUCTIVE PROCEDURES

ENGINEERING MANAGEMENT ORIENTED TO SATISFY CLIENT TECHNICAL NEEDS

PROVEN PROCEDURES FOR PROCUREMENT, CONSTRUCTION
MANAGEMENT & PROJECT CONTROL.



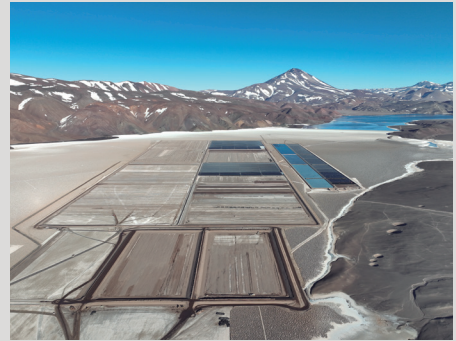
PROJECTS

Zijin Mining/LIEX - Tres Quebradas Project

Location: Catamarca, Argentina

Commodity: Lithium Carbonate

Multidisciplinary engineering was delivered across all key disciplines, including process alignment, vendor coordination, and preparation of IFC deliverables, along with support for early procurement and construction readiness. In 2023, SAXUM developed the Definitive Feasibility Study for Phase II to increase plant capacity to 50,000 t/a.

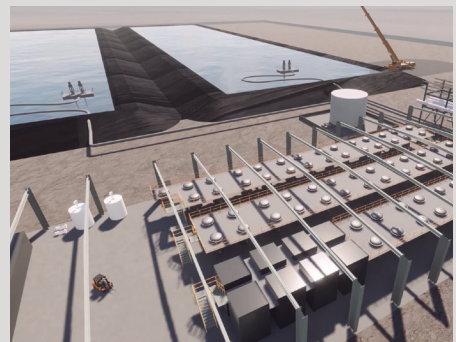


Lake Resources/MDV Minerals – Kachi Project

Location: Catamarca, Argentina

Commodity: Lithium Carbonate

SAXUM supported the owner's team in the DFS, reviewing the lithium carbonation process and FEED engineering, and delivering a full report on logistics, access, ports, customs, and schedules.



Argosy Minerals Ltd. - Rincon Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

SAXUM provided Early Contractor Involvement and Technical Services, reviewing the existing 2,000 tpa lithium facility and developing Stage 3 Basis of Design. Work leveraged operational data and design improvements to accelerate the DFS and support the Final Investment Decision.



Galan Lithium Ltd. - Salar del Hombre Muerto

Location: Catamarca, Argentina

Commodity: Lithium Carbonate

SAXUM managed the Technical Office for GALAN's project, overseeing engineering, design, and construction support. SAXUM's team handled coordination, resource and budget management, process optimization, and quality assurance.



PROJECTS

Minera EXAR S.A. - Salar de Cauchari Project

Location: Santa Cruz, Argentina

Commodity: Lithium Carbonate

Engineering support covered all major disciplines, with a focus on process integration, vendor reviews, field assistance during construction, and commissioning. In 2023, SAXUM's scope expanded to the Phase II Feasibility Study for an additional 40,000 t/a of lithium carbonate production.



GALAXY Resources Ltd. - Sal de Vida Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

SAXUM was responsible for the development of the P&IDs of the greenfield lithium project Galaxy in the province of Salta, Argentina. Also SAXUM made the cost estimate of the portion of that project related to the P&IDs.



Sales de Jujuy S.A. - Olaroz Project

Location: Santa Cruz, Argentina

Commodity: Lithium Carbonate

Conceptual and detailed engineering for CO₂ recovery and re-injection, including equipment sizing and gas consumption analysis. Thermal energy balance and evaluation of the optimal method to integrate a new steam generator into the existing system.



HANAQ - Doncella Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

SAXUM developed conceptual engineering designs of the plant's aqueducts, defining the most convenient alternative for each of them and obtaining the resulting CAPEX of the project.



PROJECTS

FMC (Arcadium Lithium) - Fénix Project

Location: Salta, Argentina

Commodity: Lithium Carbonate / Lithium Chloride

Basic and detailed engineering for the expansion of FMC's Fénix operation at the Salar del Hombre Muerto, covering the production of both lithium carbonate and lithium chloride. SAXUM's scope of work included all engineering disciplines, excluding process design.



ERAMET - Centenario-Ratones Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

Conceptual, basic and detailed engineering services for ERAMET's lithium evaporation pilot plant at the Ratones Project in Salta, Argentina. The final review was also developed by SAXUM.



Alpha Lithium (Tecpetrol) – Tolillar Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

The scope of work includes basic engineering for a 20,000 t/a lithium carbonate project based on solar evaporation pond technology, encompassing multidisciplinary design and the development of CapEx and OpEx estimates.

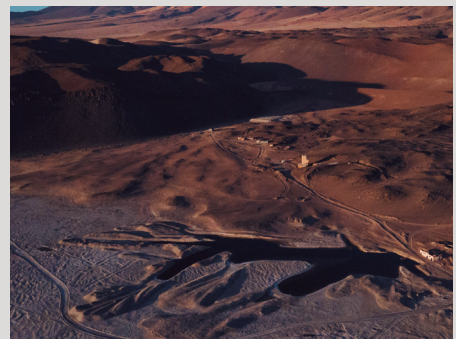


Litica (Pluspetrol) – Rio Grande Project

Location: Salta, Argentina

Commodity: Lithium Carbonate

SAXUM's scope includes reviewing the project schedule, coordinating stakeholders, and managing document control and project documentation.



KEY PRECIOUS METALS PROJECTS

PROJECT	CS / SS / ECS & Consulting	PFS	FS / DFS / BFS	PROJECT DELIVERY	CLIENT	LOCATION	PROCESSING	COMMODITY
Afema					Teranga Gold Corp	Côte d'Ivoire	1 Mtpa	Au
Agbaou					Endeavour Mining Corporation	Côte d'Ivoire	1.6 Mtpa	Au
Agbaou Secondary Crusher					Endeavour Mining Corporation	Côte d'Ivoire	1.6 Mtpa	Au
Agnew					Gold Fields Australasia Pty Ltd	Australia (WA)	1.35 Mtpa	Au
Ahafo					Newmont Ghana Gold Ltd	Ghana	7.5 Mtpa	Au
Ahafo Cyanide Recovery					Newmont Ghana Gold Ltd	Ghana		Au
Ahafo North					Newmont Ghana Gold Ltd	Ghana	3.4 Mtpa	Au
Ahafo South Water Treatment Plant Expansion					Newmont Ghana Gold Ltd	Ghana		Au
Akyem					Newmont Ghana Gold Ltd	Ghana	8.5 Mtpa	Au
Back Forty					Aquila Resources	USA		Au, Zn, Cu, Ag, Pb
Banfora					Teranga Gold Corp	Burkina Faso		Au (refract)
Baomahun					FG Gold Limited	Sierra Leone	2 Mtpa	Au
Batie West					Centamin Plc	Burkina Faso	3 Mtpa	Au
Bibiani					Ashanti Goldfields Ltd	Ghana	2.6 Mtpa	Au
Bissa					Nordgold	Burkina Faso	3 Mtpa	Au
Block 14					Orca Gold	Sudan	6 Mtpa	Au
Blue Bird					St Barbara Ltd	Australia (WA)		Au
Bomboré					Orezone	Burkina Faso	5.2 Mtpa	Au
Boto					IAMGOLD	Senegal	2.7 Mtpa	Au
Bouly Heap Leach					Nordgold	Burkina Faso	7.5 Mtpa	Au
Browns Creek					Hargraves Resources NL	Australia (NSW)	0.5 Mtpa	Au, Cu
Buzwagi					Barrick Gold Corporation	Tanzania	8.5 Mtpa	Au, Cu
Cadia Valley Cleaner Upgrade					Cadia Holdings Pty Ltd	Australia (NSW)	0.6 Mtpa	Au, Cu
Cadia Vertimill Project					Newcrest Mining Ltd	Australia (NSW)	4 Mtpa	Au, Cu
Chirano					Red Back Mining Limited	Ghana	2 Mtpa	Au
Chirano Upgrade					Red Back Mining Limited	Ghana	3.5 Mtpa	Au
Dandoko					Oklo Resources	Mali	1 Mtpa	Au
Edikan Upgrade					Perseus Mining Ghana Ltd	Ghana	2.6 Mtpa	Au
Elang					PT Amman Mineral Nusa Tenggara	Indonesia	60 Mtpa	Au, Cu
Essakane Debottlenecking					IAMGOLD	Burkina Faso		Au
Fekola					B2Gold Corporation	Mali	4 Mtpa	Au
Fekola Expansion					B2Gold Corporation	Mali	7.5 Mtpa	Au

KEY PRECIOUS METALS PROJECTS

PROJECT	CS / SS / ECS & Consulting	PFS	FS / DFS / BFS	PROJECT DELIVERY	CLIENT	LOCATION	PROCESSING	COMMODITY
Golden Pride / Golden Pride Upgrade					Resolute Tanzania Limited	Tanzania	3 Mtpa	Au
Granny Smith					Gold Fields Australasia Pty Ltd	Australia (WA)	2.9 Mtpa	Au
Gruyere JV					Gruyere JV	Australia (WA)	10 Mtpa	Au
Gruyere JV - Cone Crushers Upgrade					Gruyere JV	Australia (WA)	10 Mtpa	Au
Gruyere JV - Pebble Crusher Maintenance Platform					Gruyere JV	Australia (WA)	10 Mtpa	Au
Hidden Valley Operations					Hidden Valley Services Ltd	Papua New Guinea	5.5 Mtpa	Au
Hillgrove					Hillgrove Resources Ltd	Australia (NSW)	7,500 tpa	Au
Houndé					Endeavour Mining Corporation	Burkina Faso	3 Mtpa	Au
Ity					Endeavour Mining Corporation	Côte d'Ivoire	5 Mtpa	Au
Kalana					Endeavour Mining Corporation	Mali	3 Mtpa	Au
Karma					Endeavour Mining Corporation	Burkina Faso	4 Mtpa	Au
Kiaka					West African Resources	Burkina Faso	7 Mtpa	Au
Koné					Shark Mining	Côte d'Ivoire	11 Mtpa	Au
Kurmuk					Allied Gold Corp	Ethiopia	4 Mtpa	Au
Lafigué					Endeavour Mining Corporation	Côte d'Ivoire	4 Mtpa	Au
Lihir					Lihir Gold Ltd	Papua New Guinea	12 Mtpa	Au
Los Filos CIL Plant					Equinox Gold	Mexico		Au
Mako					Toro Gold Ltd	Senegal	1.8 Mtpa	Au
Mallina					De Grey Mining Ltd	Australia (WA)	10 Mtpa	Au
Masbate					B2Gold Corp, previously CGA Mining Ltd	Philippines	4 Mtpa	Au
Masbate Expansion 1 & 2					B2Gold Corp	Philippines	6.5 Mtpa	Au
Misima					Kingston Resources Ltd	Papua New Guinea	5.5 Mtpa	Au
Montagne d'Or					Nordgold	French Guiana		Au
Namdini					Cardinal Resources Ltd	Ghana	9.5 Mtpa	Au
Natougou					Semafo Boungou S.A	Burkina Faso	1.3 Mtpa	Au
Navachab					QKR Namibia Navachab Gold Mine Pty Ltd	Namibia	2.5 Mtpa	Au
Nyanzaga					OreCorp Tanzania Limited	Tanzania	4 Mtpa	Au
Nzema					Adamus Resources Limited	Ghana	2.1 Mtpa	Au
Obotan					Resolute Mining	Ghana	1.2 Mtpa	Au

CLIENTS



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