

Ukwazi Projects

2005 – 2009

2009 Projects

Client Name	Project Name	Commodity, Mining Method	Description	Country
Anglo Base Metals in collaboration with Golder (Africa)	Black Mountain Mine	Base Metals, Massive	Reserve audit.	South Africa
Anglo Platinum	Der Brochen Platinum Mine Project	PGM, Narrow Tabular	Der Brochen strategic long term planning resource exploitation strategy and life of mine plan.	South Africa
BCL Limited	Selebi Central	Base Metals, Tabular	Scoping study.	Botswana
BCL Limited	Phikwe No. 3 Shaft South Ext.	Base Metals, Massive Tabular	Scoping study.	Botswana
BCL Limited	Phikwe South East Ext.	Base Metals, Tabular	Scoping study.	Botswana
BCL Limited	Phikwe No. 1 Shaft Ext.	Base Metals, Massive Tabular	Scoping study.	Botswana
BCL Limited	BCL Operations Reserve and Reserve Audit	Base Metals, Massive Tabular	Resource and reserve audit.	Botswana
BHP Billiton (Samancor Manganese)	Central Block Expansion	Manganese, Massive Tabular	Mining and engineering sections of the feasibility study.	South Africa
Exxaro in collaboration with Golder (Africa)	Rosh Pinah	Base Metals, Massive	Reserve audit.	Namibia
Impala Platinum	Impala No.12 Shaft UG2 Decline Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Impala Platinum	Impala No.17 Shaft Project	PGM, Narrow Tabular	Project expansion optimisation and maintenance.	South Africa
Impala Platinum	Impala No.14 Shaft UG2 Upper Project	PGM, Narrow Tabular	Design of ore body access, mining method and scheduling.	South Africa
Impala Platinum	Impala No.18 Shaft Project	PGM, Narrow Tabular	Prefeasibility study.	South Africa
Kameni Limited	Bougai Project	PGM, Narrow Tabular	Scoping study.	South Africa
Kameni Limited	Kalkfontein Project	PGM, Narrow Tabular	Feasibility study.	South Africa
Mbuyelo Investment Holdings	Xivono Evaluation project	Coal, Massive	Prioritising and recommendation on resource prospecting rights.	South Africa
RSV	Lonmin K4 Shaft	PGM, Narrow Tabular	Design and scheduling.	South Africa
Kumba Resources	Sishen South Implementation	Iron Ore, Open Pit	18 Month Schedule	South Africa
South Deep Gold Mine	South Deep Gold Mine Project	Gold, Massive and Tabular	Life of mine plan.	South Africa
Taung Gold	Evander 6 Shaft Project	Gold, Narrow Tabular (Steep and flat dipping)	Scoping verification study.	South Africa
University of Pretoria	Final Year Mine Design Lecturing	All Commodities	Lecturing to mining engineering undergraduates.	South Africa
Witwatersrand Consolidated Resources	Bloemhoek Project	Gold, Narrow Tabular	Life of mine design and scheduling.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Xstrata (Elands Platinum)	Elands Platinum Underground Project	PGM, Narrow Tabular	Life of mine design and scheduling.	South Africa
Xstrata Alloys	Generic mining and cost model	PGM, Narrow Tabular	Generic mining and cost model.	South Africa

2008 Projects

Client Name	Project Name	Commodity, Mining Method	Description	Country
African Copper in collaboration with RSV	Mowana Mine	Base Metals, Massive Mining	Mine design and scheduling for the prefeasibility study.	Botswana
Afrisam / Holcim	Afrisam Quarry Mining Engineering Maintenance	Aggregate, Quarry	Mining engineering and mine planning maintenance of all South African operations.	South Africa
Anglo Platinum	Richmond Early Mine Platinum Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Anglo Platinum	Der Brochen Long Term Plan Project	PGM, Narrow Tabular	Resource exploitation strategy.	South Africa
Anglo Platinum	Union Mine - 5 South Underground Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Decline Section	PGM, Narrow Tabular	Mine design and scheduling.	South Africa
Barrick Platinum	Sedibelo Open Pit Project	PGM, Open Pit	Mining section of the feasibility study including pit design with open pit / underground optimisation.	South Africa
BCL Limited	Selebi Mining Method Trade Off Study	Base Metals, Massive Mining	Mining method of the trade off study.	Botswana
BHP Billiton (Corridor Sands Limitada)	Corridor Sands Mineral Sands Project	Heavy Minerals, Open Pit	Re-evaluation of the resource exploitation strategy as part of the prefeasibility study.	Mozambique

Client Name	Project Name	Commodity, Mining Method	Description	Country
BHP Billiton (Samancor Manganese)	Gabon Manganese Open Pit Project	Manganese, Open Pit	Mining section of the scoping study.	Gabon
BHP Billiton (Samancor Manganese)	Central Block Expansion	Manganese, Massive Tabular	Mining and engineering sections of the feasibility study.	South Africa
Central African Gold	Bibiani Gold Mine	Gold, Massive Mining	Design and scheduling.	Ghana
Impala Platinum	Afplats (Leeuwkop) Project	PGM, Narrow Tabular	Mining section of the bankable feasibility study.	South Africa
Impala Platinum	Impala No.14 Shaft UG2 Upper Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Impala Platinum	Impala No.12 Shaft UG2 Decline Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Impala Platinum	Impala No.17 Shaft Project	PGM, Narrow Tabular	Project expansion optimisation and maintenance.	South Africa
Keaton Energy	Sterkfontein Coal Project	Coal, Underground	Mine works programme.	South Africa
Kumba Iron Ore	Sishen Iron Ore Mine	Iron Ore, Open Pit	Resource exploitation strategy and life of mine plan.	South Africa
Kumba Iron Ore in collaboration with Golder (Africa)	Thabazimbi Iron Ore Mine	Iron Ore, Open Pit	Reserve estimation.	South Africa
Lanxess	Bayer Rustenburg Chrome Mine Underground & Open Pit Project	Chrome, Narrow Tabular and Open Pit	MG4 mine works programme.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Lonmin in collaboration with RSV	Limpopo Operations	PGM, Steep Dipping Narrow Tabular	Mine design and scheduling.	South Africa
Lundin Mining Corporation in collaboration with Golder (Africa)	Tenke Fungurume Borrow Pit	Aggregate, Quarry	Mine design (schedule) and equipment selection.	DRC
Marubeni Corporation	Mbila and Msebe Coal Project	Coal, Underground and Open Cast	Reasonability audit of social, environmental, mining engineering and infrastructure aspects.	South Africa
Marubeni Corporation	Kangwane Coal Project	Coal, Underground and Open Cast	Reasonability audit of social, environmental, mining engineering and infrastructure aspects.	South Africa
Mmakau Mining	Eureka Gold Mine Underground Project	Gold, Massive Mining	Scoping study including geology, mining, geotechnical and financial evaluation.	Zimbabwe
Norilsk ARM JV	Nkomati Nickel Open Pit Mine	Base Metals, Open Pit	Mining engineering maintenance contract during the implementation phase.	South Africa
Northam Platinum	Booyendal Platinum Project	PGM, Narrow Tabular	Mining section of the conceptual study.	South Africa
Petra Diamonds	Koffiefontein Mine JV	Diamonds (Kimberlite), Massive Mining	Resource exploitation strategy for the lower pipe footprint.	South Africa
Petra Diamonds	Kimberley Mine JV (Dutoitspan)	Diamonds (Kimberlite), Massive Mining	Resource exploitation strategy for the core footprint of Dutoitspan.	South Africa
Reclamation Group	Hwange Colliery Mine Status Report	Coal, Open Cast	Technical review.	Zimbabwe
Ridge Mining	Shebas Ridge Open Pit Project	Base Metals, Open Pit	Mining section of the feasibility study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Tharisa Minerals	Tharisa Open Pit Project	Chrome & PGM, Open Pit	Mining section of the feasibility study.	South Africa
Trans Hex	Baken and Bloedrif Open Pit Project	Diamonds (Alluvial), Open Pit	Life of mine plan.	South Africa
University of Pretoria	Surface Mining Lecturing	All Commodities	Lecturing to mining engineering undergraduates.	South Africa
University of Pretoria	Final Year Mine Design Lecturing	All Commodities	Lecturing to mining engineering undergraduates.	South Africa
Wits University	Project Management Lecturing	All Commodities	Lecturing to mining engineering postgraduates.	South Africa
Xstrata (Elands Platinum)	Elands Platinum Underground Project	PGM, Narrow Tabular	Life of mine design and scheduling.	South Africa

2007 Projects

Client Name	Project Name	Commodity, Mining Method	Description	Country
Afrisam / Holcim	Afrisam Quarry Mining Engineering Maintenance	Aggregate, Quarry	Mining engineering and mine planning maintenance of all South African operations.	South Africa
Anglo Platinum	Union Mine - 5 South Underground Project	PGM, Narrow Tabular	Mining section of the scoping study.	South Africa
Anglo Platinum	Booyendal Platinum Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Anglo Platinum	Der Brochen Platinum Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Decline Section	PGM, Narrow Tabular	Mine design and scheduling.	South Africa
Barrick Platinum	Sedibelo Open Pit Project	PGM, Open Pit	Mining section of the feasibility study including pit design with open pit / underground optimisation.	South Africa
BHP Billiton (Corridor Sands Limitada)	Corridor Sands Mineral Sands Project	Heavy Minerals, Open Pit	Re-evaluation of the resource exploitation strategy as part of the prefeasibility study.	Mozambique
BHP Billiton (Samancor Manganese)	Central Block Expansion	Manganese, Massive Tabular	Mining and engineering sections of the prefeasibility study.	South Africa
BHP Billiton (Samancor Manganese)	Graben Block Replacement Project	Manganese, Massive Tabular	Mining section of the prefeasibility study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
BHP Billiton (Samancor Manganese)	Wessels Underground Mine	Manganese, Massive Tabular	Life of mine plan.	South Africa
BHP Billiton (Samancor Manganese)	Mamatwan Open Pit Mine	Manganese, Massive Tabular	Mining section of the conceptual study.	South Africa
Central African Gold	Bibiani Gold Mine	Gold, Massive Mining	Design and scheduling.	Ghana
EastPlats (BarPlats)	Spitskop and Crocette Platinum Project	PGM, Narrow Tabular	Design and scheduling of the conceptual study.	South Africa
Elands Platinum	Elands Platinum Underground Project	PGM, Narrow Tabular	Life of mine design and scheduling.	South Africa
Golden Star Resources in collaboration with Surpac	St. Jude Gold Mine	Gold, Open Pit	Pit optimisation.	South Africa
Hatch (Africa)	Richardsbay Minerals	Heavy Minerals, Dredging	Mine design.	South Africa
Impala Platinum	Impala No.17 Shaft Project	PGM, Narrow Tabular	Mining section of the bankable feasibility study.	South Africa
Impala Platinum	Impala No.14 Shaft UG2 Upper Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
International Ferro Metals	Lesedi Chrome Mine	Chrome, Narrow Tabular	Mining section of the conceptual study.	South Africa
International Ferro Metals	Sky Chrome Project	Chrome, Narrow Tabular	Mining section of the conceptual study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Katanga Mining	Kamoto Underground Base Metal Project	Base Metals, Massive Mining	Mine design, schedule and reserve estimation for feasibility study.	DRC
Katanga Mining	Katanga Mine T17 Open Pit Project	Base Metals, Open Pit	Pit optimisation, design and schedule for the feasibility study.	DRC
Kumba Iron Ore	Phoenix Iron Ore Open Pit Project	Iron Ore, Open Pit	Mining section of the prefeasibility study.	South Africa
Kumba Iron Ore	Sishen Iron Ore Mine	Iron Ore, Open Pit	Resource exploitation strategy and life of mine plan.	South Africa
Kumba Iron Ore in collaboration with SRK	Sishen South Iron Ore Project	Iron Ore, Open Pit	Mining model.	South Africa
Northam Platinum	Booyendal Platinum Project	PGM, Narrow Tabular	Mining design and scheduling of the conceptual study.	South Africa
Pamodzi Gold	Middelvlei Open Pit Gold Mine	Gold, Open Pit	Strategic and short term mine design and scheduling.	South Africa
Petra Diamonds	Koffiefontein Mine JV	Diamonds (Kimberlite), Massive Mining	Resource exploitation strategy for the lower pipe footprint.	South Africa
Ridge Mining	Shebas Ridge Open Pit Project	Base Metals, Open Pit	Mining section of the feasibility study.	South Africa
RSV	Flying Fox	Base Metals, Massive Mining	Mine design.	Australia
SRK	United Manganese Open Pit Project	Manganese, Open Pit	Equipment optimisation.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Stuart Coal	Stuart Cole Coal Mine	Coal, Open Pit	Compilation of Code of Practise to combat rock fall accidents.	South Africa
Teal Exploration and Mining	Mwambashi Open Pit Project	Base Metals, Open Pit	Resource exploitation strategy.	Zambia
Teal Exploration and Mining	Kalumines Open Pit Project	Base Metals, Open Pit	Mining section of the feasibility study.	DRC
Teal Exploration and Mining	Otjikoto Gold Project	Gold, Open Pit	Mining section of the conceptual study.	Namibia
Vametco Mining Corporation	Vametco Open Pit Mine	Vanadium, Open Pit	Geological block modelling and pit optimisation.	South Africa

2006 Projects

Client Name	Project Name	Commodity, Mining Method	Description	Country
Anglo Platinum in collaboration with Hatch (Africa)	Der Brochen Platinum Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Anglo Platinum in collaboration with Hatch (Africa)	Booyse dal Platinum Project	PGM, Narrow Tabular	Mining section of the prefeasibility study.	South Africa
Anglo Platinum in collaboration with Hatch (Africa)	Mototolo Platinum Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Megaslump	PGM, Narrow Tabular	Mining section of the conceptual study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Decline Section	PGM, Narrow Tabular	Mine design and scheduling for the feasibility study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Spud Shaft	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
BHP Billiton (Samancor Manganese)	Wessels Underground Mine	Manganese, Massive Tabular	Ore handling arena simulation and equipment selection.	South Africa
BHP Billiton (Samancor Manganese)	Wessels Underground Mine	Manganese, Massive Tabular	Life of mine planning.	South Africa
BHP Billiton (Samancor Manganese)	Wessels Underground Mine	Manganese, Massive Tabular	Manganese product optimisation study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
BHP Billiton (Samancor Manganese)	Mamatwan Open Pit Mine	Manganese, Open Pit	Mining section of the conceptual study.	South Africa
EastPlats (BarPlats)	Spitskop and Crocette Platinum Project	PGM, Narrow Tabular	Design and scheduling of the conceptual study.	South Africa
Elands Platinum	Elands Platinum Underground Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Golder (Africa)	Skorpion Zinc Open Pit Project	Base Metals, Open Pit	Reserve audit.	Namibia
Hatch (Africa)	Richardsbay Minerals	Heavy Minerals, Open Pit	Ore handling arena simulation and equipment selection.	South Africa
Impala Platinum	Impala No.17 Shaft Project	PGM, Narrow Tabular	Mining section of the bankable feasibility study.	South Africa
International Ferro Metals	Lesedi Chrome Mine	Chrome, Narrow Tabular	Mining section of the conceptual study.	South Africa
Katanga Mining	Kamoto Underground Base Metal Project	Base Metals, Massive Mining	Mine design, schedule and reserve estimation for feasibility study.	DRC
Katanga Mining	Katanga Mine T17 Open Pit Project	Base Metals, Open Pit	Pit optimisation, design and schedule for the feasibility study.	DRC
Kumba Iron Ore	Phoenix Iron Ore Open Pit Project	Iron Ore, Open Pit	Mining section of the prefeasibility study.	South Africa
Kumba Iron Ore	Sishen Iron Ore Mine	Iron Ore, Open Pit	Life of mine plan.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Kumba Iron Ore in collaboration with SRK	Sishen South Iron Ore Project	Iron Ore, Open Pit	Mining and dilution models.	South Africa
Lonmin Platinum	Lonmin Marikana Breakthrough Project	PGM, Narrow Tabular	Resource exploitation strategy.	South Africa
Lonmin Platinum	Lonmin Marikana Base Case Definition	PGM, Narrow Tabular	Life of mine plan for budget purposes.	South Africa
Lonmin Platinum	Open Pit Operations	PGM, Narrow Tabular	Pit optimisation.	South Africa
Pamodzi Gold	Middelvlei Open Pit Gold Mine	Gold, Open Pit	Strategic and short term mine design and scheduling.	South Africa
Teal Exploration and Mining	Mwambashi Open Pit Project	Base Metals, Open Pit	Equipment selection and optimisation.	Zambia
Teal Exploration and Mining	Mwambashi Open Pit Project	Base Metals, Open Pit	Mining section of the feasibility study.	Zambia
Teal Exploration and Mining	Kalumines Open Pit Project	Base Metals, Open Pit	Mining section of the conceptual study.	DRC
Teal Exploration and Mining	Otjikoto Gold Project	Gold, Open Pit	Mining section of the conceptual study.	Namibia
Vametco Mining Corporation	Vametco Open Pit Mine	Vanadium, Open Pit	Resource estimation.	South Africa
Vametco Mining Corporation	Vametco Open Pit Mine	Vanadium, Open Pit	Pit optimisation.	South Africa

2005 Projects

Client Name	Project Name	Commodity, Mining Method	Description	Country
Amzim	Unki Platinum Project	PGM, Narrow Tabular	Mining section of the prefeasibility and feasibility studies.	Zimbabwe
Anglo Platinum in collaboration with Hatch (Africa)	Der Brochen Platinum Project	PGM, Narrow Tabular	Strategic exploitation strategy and mining section of the conceptual study.	South Africa
Anglo Platinum in collaboration with Hatch (Africa)	Booyesdal Platinum Project	PGM, Narrow Tabular	Mining section of the conceptual study.	South Africa
Anglo Platinum in collaboration with Hatch (Africa)	Mototolo Platinum Project	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Section	PGM, Narrow Tabular	Mine design and scheduling for the feasibility studies.	South Africa
Anglo Platinum in collaboration with SSP & Associates	Union Mine Spud Shaft	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
De Beers (CDM)	Cullinan Diamond Mine BA West Block	Diamonds, Massive Mining	Bankable Feasibility study.	South Africa
EastPlats (BarPlats)	Crocodile River Mine	PGM, Narrow Tabular	Mine design, scheduling, cost modelling and labour estimation.	South Africa
Hunter Dickinson	Ga-Paschas Platinum Project	PGM, Narrow Tabular	Mine designs for the conceptual study.	South Africa

Client Name	Project Name	Commodity, Mining Method	Description	Country
Kumba Iron Ore	Phoenix Iron Ore Open Pit Project	Iron Ore, Open Pit	Mining section of the prefeasibility study.	South Africa
Kumba Iron Ore	Sishen South Iron Ore Project	Iron Ore, Open Pit	Diluted models.	South Africa
Lion Ore ARM JV	Nkomati Nickel Mine	Base Metals, Open Pit	Pit design.	South Africa
Lonmin Platinum	Voorspoed Platinum Mine	PGM, Steep dipping Narrow Tabular	Mine design and scheduling.	South Africa
Ridge Mining	Blue Ridge Platinum Mine	PGM, Narrow Tabular	Mining section of the feasibility study.	South Africa
Shaft Sinkers	Everest South Underground Mine	PGM, Narrow Tabular	Plan for mining contractors mining method statement.	South Africa