

SAR CONSULT

Project Management & Support Services



www.sarconsult.com.au

Overview of Services



Business support, planning & formation

Mine Acquisition Due Diligence

Project 'Cost at Completion' Forecasts

Project Performance Review

Project Planning & Mobilisation

Commercial Risk Modelling

Contract Procurement

Contractual Claims

Tender assistance

S.Rodgers - Background



Overview of Services



SAR Consult is an Australian owned consultancy specialising in the provision of project management services and general business solutions. With over 25 years of Australasian experience across the civil, minerals, building construction industries and various service industries (telecom / asset management) the core services offered include:

Business	Business objectives, strategy and planning. Budget planning. Acquisition & merger review / due diligence.
Pre-Contracts	Development of Project Delivery Strategies. Tender management plans. Project Implementation plans. Scheduling. Technical writing. Tender support services. Implementation risk modelling. Proposal evaluations / Estimate reviews. Early phase engineering (minerals) studies.
Project Establishment	Mobilisation planning. Management services. Handover / induction training packages. Contract implementation, negotiation & award.
Project Delivery	Management services. Cost performance audits / reviews. Project delivery / compliance audits / reviews. Claim formation & management.
Training	Value Management. Operational / Commercial Risk Management. Project Financial Management.
General	Workshop facilitation. Training package development.

Services are:

Provided on a strictly confidential basis; and

Provided in a professional, analytical and unbiased manner thereby giving clarity for our client.

Skills Base

SAR Consult has established an association with select specialist consultants skilled in engineering, mine planning and project management support services.

Contact SAR Consult

Principal:	Mr Steve Rodgers
Email:	stevearodgers@gmail.com
Mobile:	0439 222 820 / International ++ 61 439 222 820
Telephone:	07 3350 5917 / International ++ 61 7 3350 5917
Address:	10 Sunfields Street, Geebung, Qld, Australia 4304

Business Formation Mine Prospect Due Diligence



Business Formation:

Thiess Communications / Silcar Comms
usWater.
Kazaxminerals Inc.
Stonehouse (EPC).
Pyramid Engineering.
China Tiachen Chemical Corp.
PE/STI JV.

Mine Acquisition DD:

Lomonosovskoye iron Ore (RoK).
Kula Gold (PNG).
Abzu Gold (Ghana).
Indico Copper (Peru).
Helio Gold (Botswana).
Paul Isnard (FG).
Salinas (Brazil).
Enchi (Ghana).
Asmara (Eriteria).
Crazy Horse (Philippines).
Shienni Hills (Ghana).

Mine Reviews & Engineering Studies:

VIM - Tungsten options.
Newcrest - Tungsten options.
Nui Phao - EPCM Review.
Tioman - EPCM Review.
Dyno - Cost Risk review.
VSPC - Business Model review.
Shienni Hill s- Ore Tpt Options.

Bankable Feasibility Studies:

ZeroGen.
Lomonosovskoye Iron Ore.
Gladstone Nickel.
Caldag Nickel.

SAR Consult has considerable experience in the formation of new businesses and in the assessment of Greenfield mining prospects.

Services include;

New Business

Development of business plans.

Mobilisation / establishment facilitation / management.

Development of core processes & procedures.

Review of target acquisitions (capability & financial).

Greenfield Mining Prospect Due Diligence. A robust due diligence assessment of greenfield mineral concessions based upon geological report (i.e. JORC or NI 43101) including comprehensive evaluation of the LoM economics based upon:

Conceptual mine plan options.

Minerals processing operations.

Infrastructure costs (nb power & water).

In-country regulatory / tax regime.

Off balance sheet funding options.

SAR Consult conducts this work in partnership with established independent process engineers and mine planners (or alternately with the Acquirer's / Owner's in-house technical team); with a primary focus on gold, copper and iron ore resources.

Early Phase Engineering Studies (in the minerals sector) to aide in technology selection and robust detailed planning of a project's execution.

Project 'Cost at Completion' Forecasting



A properly structured cost plan is essential to monitoring a project's health. Industry is littered with examples of 'surprise financial outcomes' where in-house reporting has not provided management with the early warning signs or indeed reporting at executive & board level is materially inaccurate.

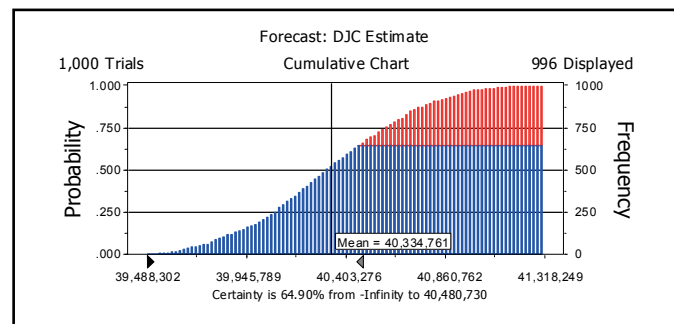
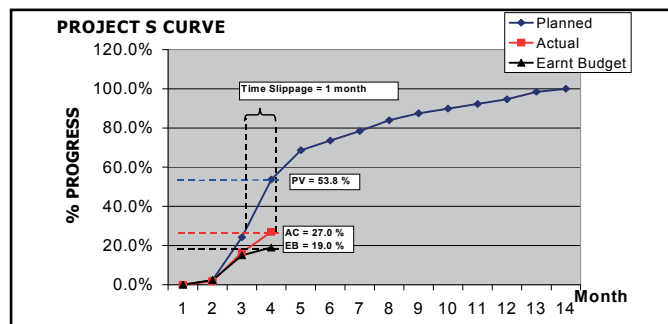
SAR Consult's cost performance review (CPR) provides an independent analysis on the financial health of the project based upon:

- True progress aligned with actual 'cost to date' (ledger) data;
- A practical productivity basis for the 'costs to go' forecast; and
- Earned value parameter analysis.

This analysis can be tailored to fit individual needs. It can range from a review of the Project's cost report through to the compilation of an independent analysis derived from the raw data and using proven 'earned value parameter analysis'. A concise interpretation and recommendations report is provided with every analysis and provides a clear measure of current cost performance against earned budget and a forecast of cost at completion.

Sensitivity modelling of the final cost outcome based on practical productivity limits for the work to go can also be provided. This is a useful management tool at both financial investment decision time (or tender) and during a project's implementation phases.

SAR Consult CPR is an invaluable independent management aid to the senior executive and Board.



Code	Description	Budget					
b	c	UoM	Qty	Start Budget	Current Budget	Approved Changes	Budget Rate
		d	e	f	g	h	i
						= g - f	= g / e
	PROJECT SUMMARY	Item	1	\$ 456,801,400	\$ 461,301,400	\$ 4,500,000	\$ 461,301,400
	OVERHEAD SUMMARY	Item	1	\$ 43,623,038	\$ 43,623,038	\$ -	\$ 43,623,038

Progress			Qty
% / Qty	Basis	EB\$	To Go
j	k	l	m
[measure]		= j x g // j x i	= 1 - j
12.29%	Consol	\$ 56,693,942	87.7%
26.16%		\$ 11,411,786	73.8%

Costs					BtG
Ledger Accrual	Manual Accrual	CtD (ledger total)	CtG	FCaC	[Recognised - CtD]
n	n1	o	p	q	r
[JDE]	[Manual]	[JDE]	[Forecast]	= o + p	= g - o
\$ -	\$ -	\$ 70,562,980	\$ 389,398,420	\$ 459,961,400	\$ 390,738,420
\$ -	\$ -	\$ 9,737,841	\$ 35,985,197	\$ 45,723,038	\$ 33,885,197

Rates		Variance	Gain / Loss	FCaC	CC
RtD	RtG	EB - CtD	on Budget	Last Month	Movement
s	t	u	v	w	x
= o / j	[Forecast]	= l - o	= g - q	[Ref previous Report]	= w - q
		\$ 13,869,038	\$ 1,340,000	\$ 458,776,002	\$ 1,185,398
		\$ 1,673,945	\$ 2,100,000	\$ 48,452,178	\$ 2,729,140

Project Performance Review



Project Review Experience:

Matahina Dam Reconstruction (NZ).

Tintaya Oxides (Peru).

Nui Phao - Minerals processing (Vietnam).

Rail Infrastructure Alliance (Vic).

Palau Compact Roads (Palau).

Intrepid Mine Operations (WA).

HVE Mine Operations (NSW).

Yallourn Valley River Diversion (Vic).

Sth Rail Project (WA).

Feature Tower (UAE).

Tioman Mineral Sands (Kenya).

Hunter Rv Remediation.

Wahana Coal Mine (Indonesia).
BHPB SIL (SA).

Kestrel Mine Expansion - KBR (Qld).

Mohali Hills (India).

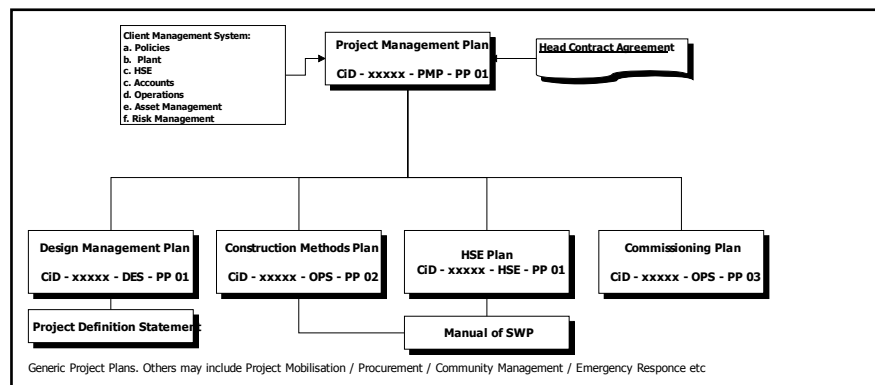
Business Bay (Dubai).

Telstra Mobiles.

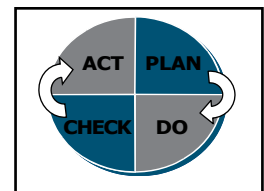
Landmark Towers

Project reviews are aimed at determining the operational, contractual and financial health of a project. The reviews are conducted by experienced project managers and scope encompasses the following key issues:

- **Adequacy of project management / implementation plans**
 - Focus on the specific project and contract requirements.
 - Roles and responsibilities.
 - Key management and control processes.
 - Adherence to management policy / system requirements (Quality, HSE and Risk).
 - Overall likely schedule and cost outcome.
 - Engineering adequacy / design integration.



- **Project controls systems ability to provide the right data**
 - Contractual notices and submissions.
 - Time management and progress control.
 - Sound construction / service implementation methodologies.
 - Cost Control and Cash Flow Management.
 - Quality management systems.
 - Design, change & procurement management.
 - Document control & communication regimes.
 - Management of sub-tier entities.



- **Risks to the successful project outcome**
 - Poor management of contractual risks (head contract, vendors and subcontractors).
 - Poor design, construction & operational productivity.
 - Inadequate process engineering and poor scoping.
 - Poor 3rd party performance and inappropriate assignment of risks.
 - Inadequate contingency (time, budget & resources) allowance reflecting project maturity and covering all budgets aspects (e.g. Owners + EPCM phases).

Project reviews provide an invaluable independent check for the Contractor's executive management team (& Boards) or for the Client.

Project Performance Review



Project Mobilisation Experience:

us Alliance (Victoria).

Mt Keith Mining Alliance (WA).

Silcar Telepower.

Thiess Communications –
CAN Projects.

Batu Hijau – SWIS (Indonesia).

Inner City Busways (Brisbane).

Project Magnet – EPC (Sth Australia).

Minsur Tailings Dam (Peru).

Mainline Sth Rail


Rehabilitation Project (Philippines).

Lomonosovskoye Iron ore (RoK).

Project Magnet (SA).

Aguai Sugar Mill (Bolivia).

Many years of experience have underpinned the belief that time spent mobilising a project is a wise investment. SAR Consult can assist in the development of project plans, management systems and the training of staff in their use at time of mobilisation.




Project Review
Nui Phao Mine - Vietnam

Engineering, Procurement and
Controls
March 2008

Rev	Date	Description
A0	25th March 08	Internal Review
A1	26th March 08	Initial Client Issue
A2	8th April 08	Final Issue

Prepared by
S.Rodgers, J.Jones, J.Hepbur



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Kwale Mineral Sands
Project

Draft Capital Cost Review
January 2007



25th January 2007



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Commercial Risk Modelling



SAR Consult Pty Ltd (SARC) has expertise and experience at assessing the cost (& time) risk associated with the various aspects of complex, multi-disciplined projects.

Various techniques are employed to identify the root causes of potential risks and then value risk events in terms of time and cost. Monte Carlo modelling techniques are used to determine the range and likelihood of contingency costs associated with these risks.

Risk Valuation Modelling Principles:

- Identify delivery risks associated with each project phase - design, procurement, construction, commissioning & start-up (operations & maintenance if applicable).
- Quantify risks in terms of time delay and / or cost.
- Determine cost rate ranges for labour, plant and subcontract works.
- Use the specific 'market place' data that relates to your project (e.g. supply quotations; escalation data etc).
- Establish correlations between major risk events.
- Value relevant contract (or late to market) penalty provisions relating to time of completion, escalation, forex etc and other performance penalties.
- Ensure extreme (and unlikely) events do not skew the analysis.
- Apply realistic sensitivity parameters.
- Establish realistic 'contingency' levels based on the level of project definition and technology / market risk environments.
- Analyze the model output and compare it against the project estimate (and emerging cost reports) to answer 'what if & why?'
- Align the financial model with the project's critical path.

Contingency Build Up Definition

Complex multi discipline projects should develop Capex budgets that incorporate the following levels of budget & contingency. Holding and allocation of this contingency between Owner and Prime Contractor(s) will depend on the contracting strategy.

a. Quantity Growth allowance - detailed with the 'Base Line Capex' estimate. Growth (& design) allowance covers the likely quantities of work that are poorly defined due to the lack of detailed engineering; and will

predominantly address bulk scope items such as concrete, steel & piping works.

b. Direct Contingency allowance - provides a contingency sum to address a range of known and probably risk and opportunity events. This would normally include:

- Scope, time and cost impacts associated with 'yet to be resolved' technical risks.
- The normal range of productivity and unit cost risks present in the supply, fabrication and construction markets.
- Escalation risk.
- Extra over time delay risk.

Other project specific risks as identified in the Project risk register (i.e. risks with a 'High' (or greater) ranking that have not been closed or have not had mitigation scope costed into the 'Baseline Capex' estimate). For example this category of risk event may include:

- Wet Weather delay
- Industrial disputation delays
- Etc ...

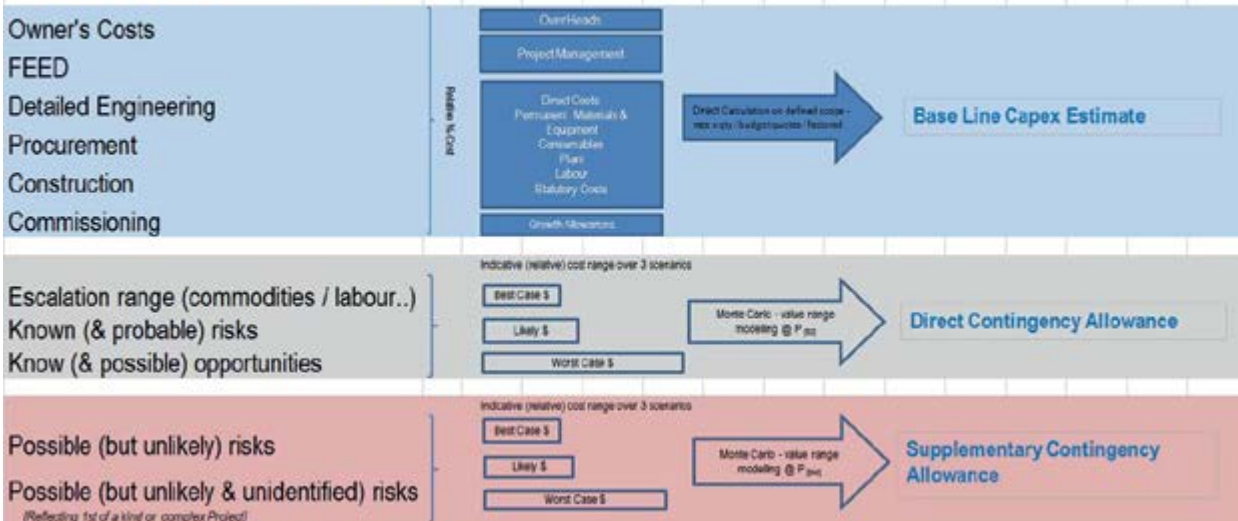
The Direct Contingency does not allow for force majeure or other major emergency type events.

c. Supplementary Contingency Allowance – provides a contingency sum for predominantly unknown events, particularly in context of a complex or first of a kind project. This amount will bring the total budget up to a predetermined cost probability outcome decided by the principal project funders.

Commercial Risk Modelling



Project Capex Estimate Structure



SAR Consult applies risk assessment techniques including qualitative and quantitative methods such as:

- Contract / Project Risk Classification
- Boston Square
- Monte Carlo (Software)
- Beta Distribution

Recent examples of commercial risk models developed by SAR Consult include:

- Project contingency model for Project Aurora – Thiess;
- Annual operating cost model for Hunter Integrated Services – Thiess Services;
- Project cost model for various telecommunication tenders – Silcar Communications;
- EPC cost and operating revenue model for BOO Project – Leighton Asia;
- Owner + EPCM capex and operating model for submission to government - ZeroGen; and
- Forecast completion cost risk model for D&C coal mine project – Thiess Sedgman.

Training workshops in commercial risk management are also available.

Contract and Tender Management



Recent Contracts / RFT / Tender Assessments:

EPCM Services - Iron Ore Mine (RoK).

EPC Acid Plant (US\$ 65M) – Fidic – China.

Bulk earthworks (US\$ 20M) – Fidic – Turkey.

Design services (A\$ 6M) –process & infrastructure design – special form – Australia.

Pipeline Construction (A\$25M) – special form – Australia.

Design services (up to A\$2M / yr) – telecom – minor services – Australia.

Recent Dispute Claims:

South Rail Project (WA).

HV Installation (Vic).

Yanacoocha Leach Pad (Sth America).

Tintaya Tailings (Sth America).

Recent Tender Support / Management:

DoD – CMS – Sth East Qld Region.

DoD – CMS – NE Victorian Region.

Provision of integrated engineering services for Lihir.

Hard Shelter Fabrication (DoD).

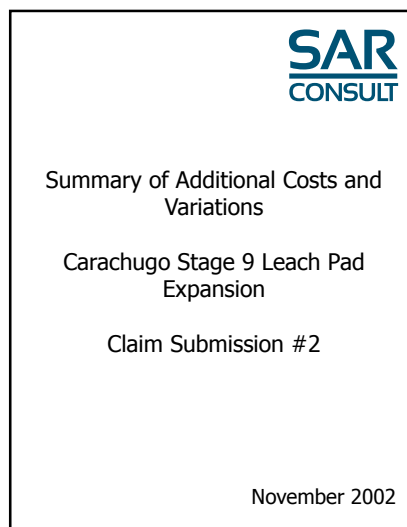
Water & Waste water - Collaborative D&C Initiative (SEQ).

NBN D&C - Silcar.

ZeroGen Clean Coal.

SAR Consult provides services to prepare and implement contract agreements through the Request for Tender (RFT) to Contract execution stage. Services include:

- Development of contracting strategy and plans; ensuring scope, contract structure, risk allocation and compensation structures support a positive outcome for all parties;
- Preparation of RFT documentation; including instructions for tender, draft contract documents, particular conditions etc;
- Tender evaluation, including technical and commercial assessments and analysis of the implementation risks;
- Contract document preparation and negotiations;
- Preparation of reporting and risk management processes to support contract management requirements;
- Assistance in mediation;
- Dispute claim preparation and analysis.



SAR CONSULT	
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Steve Rodgers - Background

Qualifications

BE (civil). Member Institute of Engineers.

Employment History

Thiess Pty Ltd.
John Holland Asia.
Chevron.
Aker Kvaerner.
Lucas Meinhardt & Toother.
Australian Army.
Stonehouse Pte Ltd.

Positions Held

Business Unit Operations Manager.
Project Manager / Engineer / Auditor / Mentor
Tender Manager.
Technical Services Manager.
Corporate Risk Manager.
Claims Manager.
Principle's Representative.
CEO.
General Manager.

Major Projects (Discipline Selection)

Project Magnet – EPC Iron Ore Processing and Materials Handling Facilities in South Australia.

Caldag Nickel Project – EPCM Greenfields Nickel Mine & Processing Facilities in Turkey.

Lomonosovskye Iron Ore - Bankable feasibility study for this Greenfield Iron Ore deposit in NW Kazakhstan.

Kutubu – Oil & Gas field development in PNG.

Telstra Telepower – Asset management project across 40,000 sites in Australia.

'us' Alliance – Operations and maintenance project for water and waste water infrastructure in South East Melbourne.

Ergon – Operations and maintenance project for power distribution infrastructure in central and northern Queensland.

Mt Keith - Mining Alliance in Western Australia.

Minsur - Tailings Dam construction in Peru.

Main Line South 2 – Rail Reconstruction in the Philippines.

Kwale - Greenfields mineral sands development in Kenya.

A summary of key SAR Consult clients is shown overleaf:

Project Management & Support Services

Steve Rodgers - Background

CLIENT	SECTOR					SERVICES BY SARC												
	Mineral Processing	Structural, Mechanical & Piping	Civil Infrastructure	Services - Telecommunications / Water / Electrical	Other (Bldg / Mining / Energy etc)	Tender Strategy & Technical Writing	Business Planning / Engineering Studies	Project Implementation Strategy & Planning	Tender & Estimate (review / management)	Contract Procurement Negotiation	Principal Representative	Contractual Claim (Strategy & Preparation)	Project Management Plans & Project Start Up	Training - Project Management	Commercial Risk Modeling	Operational Management & Support	Project / Construction Management Processes & Procedures	Project Review (Commercial & Contractual)
European Nickel Pte	✓																	
Gladstone Pacific Nickel Ltd	✓				✓			✓		✓					✓			
Leighton Asia Limited			✓		✓	✓			✓						✓		✓	
Silar Pty Ltd			✓			✓									✓		✓	
Thiess Pty Ltd																		
Thiess Services Pty Ltd				✓														
1st Call Pty Ltd		✓																
Tionin Pty Ltd	✓										✓							✓
Global Defence Solutions Pty Ltd					✓	✓	✓										✓	
Aker Kvaerner Australia						✓												
China Tiachen Chemical Corporation	✓	✓	✓		✓		✓						✓					
Process Essentials / LogiCamma	✓	✓			✓		✓	✓	✓				✓					
Thiess Sedgmen JV		✓													✓			
Leighton International Limited			✓		✓		✓						✓					✓
Transfield Services Pty Ltd				✓				✓					✓					
United Utilities Australia	✓						✓	✓					✓					
Vanguard International Minerals								✓										
GRDMinproc	✓	✓			✓			✓										
EngPac	✓							✓									✓	
KBR		✓			✓	✓												
ZenGen			✓			✓				✓			✓					