

KLEINFELDER

Rehabilitation Cost Estimate

Cabbage Tree Road Sand Quarry

(SSD 13-6125)

398 Cabbage Tree Road,

Williamtown NSW

10135-BOE-001

20 January 2020

Goeldner Consulting Pty Ltd

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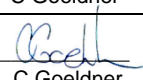
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PREAMBLE

This document has been prepared to support the development of the Rehabilitation Bond Estimate for the Cabbage Tree Road Sand Quarry as required by Schedule 3, Condition 38 of the Development Consent

This report has been prepared on behalf of and for the exclusive use of Kleinfelder for the purpose of determining the Rehabilitation Bond, and is subject to and issued in accordance with the agreement between Kleinfelder and Goeldner Consulting Pty Ltd. Goeldner Consulting Pty Ltd accepts no liability or responsibility whatsoever for it in respect of any use of or reliance upon this report for any other purpose. Copying this report without the permission of Kleinfelder and Goeldner Consulting Pty Ltd is not permitted.

REV	DESCRIPTION	ORIG	REVIEWER	APPROVER	DATE
0	Internal Review	C Goeldner	C Jackson	C Goeldner	18-01-20
1	Issued for use	C Goeldner	C Jackson	 C Goeldner	20-01-20

1 ESTIMATE SUMMARY

The total Rehabilitation Bond Estimate (RBE) for this Development Consent SSD-6125 as detailed in this document is \$259,279.00.

2 BASIS OF ESTIMATE

2.1 Purpose and Objective

The Cost Estimate was prepared by Goeldner Consulting to determine the expected cost to rehabilitate the subject site to the condition required for final land use after 3 years of operation.

2.2 Scope of Work

The Cabbage Tree Road Sand Quarry involves the extraction of up to 530,000 tpa of sand to a total of 3.25 Mt over a period of 8-15 years. The sand will be extracted by front end loader and be transferred via electric conveyors to a semi-mobile processing plant and stockpiled. Trucks transport the sand from the site via a weighbridge to the consumer.

Rehabilitation involves the combination of natural regeneration, brush matting, direct seeding and propagated tube stock methods. The following items will be retained on site for future land use consistent with the land zoning.

- Intersection and access road through to the office and workshop area
- Workshop, office, amenities and weighbridge
- Associated water and electrical services
- Security fencing

2.3 Assumptions

The following qualifications and assumptions were noted when preparing the Capital Cost Estimate:

- Estimate base date is January 2020. No allowance for escalation is included beyond this date.
- The works will be executed on a fixed price lump sum basis with the local contractor being selected through a competitive tender process.
- The scope of work is based in the *"Biodiversity and Rehabilitation Management Plan"* Version 3 prepared by Kleinfelder Australia and dated 1 April 2019 (BRMP).
- The estimate is based on the likely rehabilitation works required after 3 years of operation. No allowance for the rehabilitation of any areas outside of the 3 year operations area.
- The estimate is based on the assumption that progressive rehabilitation is not undertaken during the 3 years of operation.
- All rehabilitation works will be performed by contractor based on single mobilisation to site. No allowance for staging of works.

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- The estimate excludes GST.

2.4 Experience and Qualifications

The RBE was prepared by Craig Goeldner, Managing Director of Goeldner Consulting. Craig has over 25 years of experience in construction activities within various sectors including the mining, oil and gas, civil and infrastructure, ports and marine, commercial and residential sectors. Previous roles include Project Management and Estimating for contractors and subcontractors where he was responsible for tendering, cost management and overall delivery of construction projects. As a Registered Quantity Surveyor, Craig provided construction cost consultancy to numerous clients including private developers, public companies, Government authorities, building contractors and financiers.

A copy of Craig's CV is included in Appendix 2.

Appendix 1 Estimate Details

Goeldner Consulting	Cabbage Tree Road Sand Quarry	10257-EST-001-C
Rehabilitation Bond Estimate		

Item	Description	Remarks	Unit	Quantity	Rate	Total
REHABILITATION						
<i>PRELIMINARIES</i>						
1	Allowance for rehabilitation contractor preliminaries including supervision, mobilisation/ demobilisation, surveys, barricades, signage etc.	Based on 10% of rehabilitation costs. Contractor personnel only. Owner's Representative/Project Manager allowed in Item 17.	item	1	15,764.40	15,764
<i>PROCESSING PLANT</i>						
<i>All processing plant is either mobile or transportable and will likely be removed from site by the operator. Any remaining equipment will have resale value which will offset any associated removal costs.</i>						
<i>INFRASTRUCTURE</i>						
<i>Workshop, demountable office, weighbridge, amenities and security fencing to be retained for future land use</i>						
<i>UTILITIES</i>						
<i>Water and electricity services to be retained for future use</i>						
<i>FENCING</i>						
2	Remove frog exclusion fence	Goeldner Consulting database	m	730	3.65	2,665
3	Remove internal Koala exclusion fence	Excluded. Advised by Kleinfelder that the koala exclusion is to be removed in the revised BRMP.	m	0	20.00	Nil
<i>ROADS AND HARDSTAND</i>						
<i>Selaed roads in Southern resource area to be retained for future land use</i>						
4	Remove 50% of existing gravel roads and place as long term fire trails	Goeldner Consulting database	m3	713	14.50	10,339
<i>REVEGETATION OF BATTERS</i>						
5	Place and spread topsoil from stockpile, 200mm thick	Based on DRG Rehabilitation Cost Estimation Tool	m3	4,795.96	3.26	15,635
6	Spread native seed mix	Based on DRG Rehabilitation Cost Estimation Tool	m2	23,979.80	0.21	5,036
<i>REVEGETATION OF EXTRACTION AREA FLOORS</i>						
7	Place and spread topsoil from stockpile, 200mm thick	Based on DRG Rehabilitation Cost Estimation Tool	m3	19,008.80	3.26	61,969
<i>PLACEMENT OF VEGETATION, TIMBER AND BRUSH MATTING</i>						
8	Distribute stockpiled vegetation following respreading of topsoil	Estimate based on 40hrs for 6 man team including 2 excavators and truck	item	1	32,400.00	32,400
<i>PROPAGATION AND REPLANTING</i>						
9	Planting of tubestock including 'Watering in' where targeted species do not generate through top soil	Assume 10% of 12 hectare. 1 tubestock plant per 10m2	no.	1,200	10.00	12,000
<i>MAINTENANCE OF REHABILITATED AREAS</i>						
10	Rehabilitation maintenance including re-seeding, watering, fertilising, erosion control, monthly inspections and audits	Based on DRG Rehabilitation Cost Estimation Tool	ha	12	900.00	10,800

Item	Description	Remarks	Unit	Quantity	Rate	Total
	<i>PEST CONTROL</i>					
11	Pest management of rehabilitated areas	Based on DRG Rehabilitation Cost Estimation Tool	ha	12	150.00	1,800
	<i>CONTAMINATION</i>					
12	Provisional allowance for treatment/disposal contaminated material	Allow for minor contamination from trucks, loaders and other mobile equipment	t	20	250.00	5,000
	MONITORING AND COMPLIANCE					
13	Undertake monthly environmental inspections	Included in rehabilitation maintenance allowance	item	1		included
14	Undertake bi-annual monitoring of rehabilitation	12 hectares, 1 hectare per day (10hrs @ \$110/hr x 12ha) x two events 1 x letter report	item	1	33,900.00	33,900
	GENERAL COSTS					
15	Development of Project Closure Plan	To be completed by Kleinfelder prior to commencement of operations	item	0	6,000.00	Nil
16	Tender preparation and assessment	Allow 40hrs x \$130/hr for consultant	item	1	5,200.00	5,200
17	Rehabilitation project manager	Allow 6 weeks x 20hrs/week x \$150/hr	item	1	18,000.00	18,000
18	Close out report	Allow 40hrs x \$130/hr for consultant	item	1	5,200.00	5,200
	CONTINGENCY					
19	Allowance for contingency based on 10% of total cost		item	1	23,570.80	23,571
						259,279
	TOTAL					259,279

Appendix 2 CV

Craig Goeldner

Principal Estimator

Craig has over 25 years experience in construction activities within various sectors including mining, chemical, oil and gas, civil and infrastructure, ports and marine, commercial and residential. His broad range of experience includes hands-on site work, estimating and project management with subcontractors and head contractors, independent quantity surveying, client-side project management, lead estimating and cost engineering roles on minor and major engineering projects.

Craig established Goeldner Consulting in 2016, a construction consultancy firm providing estimating, cost engineering and quantity surveying services to engineering and commercial construction projects. Craig's technical skills and experience ensures that project teams get the benefit of the best industry practices and resources.

Expertise and Technical Skills

- Capital Cost Estimates
- Contingency Risk Assessment (including Monte Carlo Simulations)
- Expert witness
- Estimate Reviews
- Preparations of Bills of Quantities
- Tender reviews and progress claim assessment

Qualifications / Affiliations

- Bachelor of Construction Management (Building) Honours, University of Newcastle, 2006
- AssocDip. Civ Eng, Hunter Institute of Technology, 1995
- AAIQS (Associate - Australian Institute of Quantity Surveyors)
- AACE (Association for the Advancement of Cost Engineering)

Relevant Projects

Quantity Surveyor | Goeldner Consulting | NCIG | 2019

NCIG Coal Export Terminal – Rehabilitation Cost Report. Craig prepared the Rehabilitation Cost Report for the NCIG Coal Export Terminal located at Kooragang Island near Newcastle, NSW. The project involved demolition of all existing equipment/infrastructure and revegetation of the site.

Quantity Surveyor | Goeldner Consulting | Whitehaven Coal | 2019

Vickery Expansion Project, Gunnedah, NSW. Craig prepared the detailed cost estimate for the construction of the mine expansion project. The project involved the construction of a new mine infrastructure area, dams and drainage, haul/access roads and new rail loop.

Quantity Surveyor | Goeldner Consulting | AGL | 2018

Bayswater Turbine Upgrade Project, Bayswater Powerstation, Muswellbrook, NSW. Craig prepared the independent estimate of Capital Investment Value for the Bayswater Turbine Upgrade Project. The

project involved the upgrade of the existing 4 turbine generators to improve long term power supply until 2035.

Lead Estimator | WorleyParsons | Exxonmobil Environmental Services | 2015

Adelaide Refinery Wharf Demolition Project, Port Stanvac, SA. Exxon Mobil Environmental Services (EMES) initiated a study into the cost of removing the Wharf and associated infrastructure as the next phase of the Port Stanvac Refinery demolition project. Craig prepared detailed estimates for multiple demolition methods to assist in determination in the most viable method in consideration of safety, environmental and economic factors. The project involved the demolition, processing and disposal of the concrete/steel wharf, dolphin and caisson materials and any remediation activities required for the completion of the project.

Experience

WorleyParsons | Lead Estimator | 2011-2016

- Leading estimating teams to deliver quality cost estimates throughout Australia and New Zealand from \$100k to multi-billion
- Contingency assessment including Monte Carlo simulation
- Quest Tool Champion – Provide training and support to Quest estimating software users globally within WorleyParsons
- Management of the estimate development and compliance with the certified Quality Management System
- Review of estimates and proposals
- Review subcontractor quotations/tenders

Thomas and Coffey | Senior Estimator | 2010-2011

Hard dollar competitive tender pricing and document preparation for various commercial and mining infrastructure projects in Sydney, Newcastle and the Hunter Valley

- Supervision, training and management of estimating team
- Bid management and compliance with the certified Quality Management System
- Preparation and review of estimates and tender submissions
- Review and negotiation of subcontractor quotations/tenders
- Preparation and review of variations

Madden and Associates | Associates Director/Quantity Surveyor | 2007-2010

- Management, supervision and training of quantity surveying/project management team
- Preparation of Bills of Quantities
- Preparation of estimates including feasibility, elemental and detailed pre-tender estimates
- Preparation of cost reports for financial institutions
- Progress claim preparation and assessment
- Preparation of expert witness reports
- Preparation of tender documents, tender review and negotiation