

ANNEXURE P
GHD CALCULATIONS USING THE DEPARTMENT OF PRIMARY INDUSTRY'S
REHABILITATION LIABILITY CALCULATOR DATED 6 FEBRUARY 2008

Open Cut Coal Mine Operations:

Domain 3: Overburden & Waste Dumps

Detail of person filling out the Worksheet:

Name	Nicole Anderson
Position	GHD Environmental Scientist
Department	Civil and Environment
Date	31/08/09

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory
	Default Rate where an alternative is not provided

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Unshaped Waste Rock Dumps <i>(minor reshaping required)</i>	Minor pushing, final trim, rock rake & deep rip (minor shaping and landscaping)	Y	271	Ha	\$1,100.00	\$1,200.00	\$325,200.00		This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	50000	m ³	\$3.30		\$165,000.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$490,200.00		
Unshaped Waste Rock Dumps <i>(major reshaping required)</i>	Major bulk pushing to achieve grades nominated in the approval/permit (i.e. < 18o)	Y	740000	m2	\$0.75	\$1.00	\$740,000.00	< 50m push	This item includes the volume requiring major reshaping, rock raking and deep ripping (only as required) to enhance revegetation program. The rate increases the longer the push length due to losses in dozer productivity.
	Source local material, cart and spread suitable material to cap the waste rock dump (cap thickness determined by approval/licence)	Y	400000	m ³	\$3.30	\$3.00	\$1,200,000.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume material to cap the waste rock dump. The material must have appropriate chemical & physical properties.
Precinct Rehabilitation Liability							\$1,940,000.00		
Landscaping, minor earthworks and revegetation throughout domain area.	Shaping or leveling of minor excavations, batters and stockpiles, final trim, rock rake and deep rip	N		Ha	\$1,100.00			included in minor pushing, final trim, above	This item includes the area requiring minor reshaping, rock raking and deep ripping to enhance revegetation program. It will generally include doing minor reshaping works to tidy up the site.
	Structural water management works, banks, drains, rock lined waterways, sediment dams	Y	60	Ha	\$1,400.00		\$84,000.00		This item includes the catchment area requiring earthworks (banks, & drains, etc) to manage all surface water within the disturbance footprint. This rate is based on an average per hectare cost to install all required earthworks .
	Reshape, deep rip and ameliorate sealed/unsealed roads	N	12.66	Ha	\$2,500.00			Ob roads required for maintenance and access	Enter the total area of the road footprint requiring reshaping and deep ripping.
	Maintenance of the rehabilitated areas that are intended to be part of the ongoing closure of the site.	Y	10	Ha	\$650.00		\$6,500.00	Sowing and minor erosion repairs	This item includes the ongoing maintenance of the rehabilitation (ie. repairing banks/drains and application of fertiliser. It assumes application twice during the first five (5) years after establishment.
	Construct a standard stock fence around the site	N	0	m	\$8.50				This item include the construction of a standard stock fence around the site to prevent stock and unauthorized person entering the site while it is being rehabilitated.
	Source, cart, spread and rip topsoil	Y	120000	m ³	\$2.55	\$3.00	\$360,000.00	haul distance > 2km -5km	This includes sourcing, carting and spreading of a suitable volume of topsoil to cover the entire disturbance footprint.
	Soil amelioration (adding gypsum, lime, etc)	Y	456	Ha	\$500.00		\$228,000.00		This includes adding a soil ameliorant prior to preparation of seed bed for rehabilitation or assist stabilising dispersive soils (eg lime or gypsum).
	Direct seeding (native tree species OR using native grasses)	Y	100	Ha	\$2,000.00	\$300.00	\$30,000.00		This rate includes acquiring a diverse mix of native tree & shrub species appropriate for the area (including understory), mixing and treating the seed (ie smoke and heat) and applying the seed by hand at a rate between 4 - 10kg/ha (as applicable). This rate also includes undertaken soil sampling ahead of the rehabilitation program.
	Direct seeding (pasture grass species)	Y	350	Ha	\$800.00		\$280,000.00		This includes direct seeding of non native pasture grass species with the principal aim of return the land to a stable, sustainable grazing land use. It is different to using pasture grasses in for temporary erosion and sediment control. This rate also includes undertaking soil sampling ahead of the rehabilitation program.
	Single application of fertiliser (trees)	Y	5	Ha	\$140.00		\$700.00		This item includes a single application of fertiliser during the initial seeding program .
	Single application of fertiliser (pasture)	Y	350	Ha	\$300.00		\$105,000.00		This item includes a single application of fertiliser during the initial seeding program .
	Planting tubestock (< 15cm)	Y	2000	@	\$5.00		\$10,000.00		This includes the seeding, fertiliser tablet, weed mat and guard - small tubestock.
	Hydro-seeding with straw mulching and bitumen tack.	Y	200000	m ²	\$0.95	\$0.03	\$5,000.00	Direct seeding of mixed indigenous species	This item has been included to capture the cost of any hydro seeding that may be required on the site.
Precinct Rehabilitation Liability							\$1,109,200.00		
Water Dams	Clean water dams to be retained after mine closure - make safe and minor earthworks to stabilise the water management structure.	N		@	\$2,000.00				This item includes making the dam spillway, and walls stable to ensure the integrity of the dam walls so they can remain after the closure of the project.
	OR Backfill and reinstate dam to natural surface.	N		m ³	Select from List			Select Haul Distance	Dam to be backfilled (ie. reinstate the dam to be consistent with the natural surface). Some minor earthworks may be required.
Precinct Rehabilitation Liability							\$0.00		
Other	Plantation Establishment	Y	200	Ha		\$100.00	\$20,000.00		Preparation for plantation establishment
	Other 2 <insert>						\$0.00		This item includes <<to be added by the operator>>
	Other 3 <insert>						\$0.00		This item includes <<to be added by the operator>>
Precinct Rehabilitation Liability							\$20,000.00		

Total Rehabilitation Liability for the "Domain" \$3,559,400.00

Open Cut Coal Mine Operations:

Domain 5: Other Management Issues

Detail of person filling out the Worksheet:

Name	
Position	
Department	
Date	

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory
	Default Rate where an alternative is not provided

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Other Management Issues	The restoration, care and maintenance of items that have historical significance and that are to be retained after the cessation of mining or quarrying	Y		item	\$0.00		\$0.00		This item includes ensuring that sufficient resources are made available to restore items of heritage significance and also provide a budget to enable the ongoing care and maintenance of the structure (if not the responsibility of any another stakeholder i.e. council, historical society).
	Removal of powerlines (this includes disconnection, rolling up the wires and removing the poles). It does not include the removal of substations.	Y	45	km	\$12,000.00		\$540,000.00	Power lines servicing mine/offices and infrastructure	This rate includes the dismantling and removal of powerlines and poles from the site. It does not include the removal of substations.
	Fill and cap exploration bores	N		@	\$250.00				This rate includes grouting, capping and sealing all uncapped exploration holes around the site.
	Pest and Weed Management	Y		@	\$2,500.00		\$0.00		This item covers the costs associated with the management of pests and weeds on the site. It includes spraying in in autumn and spring.
							\$0.00	Bore Sealing (below RL+2)	Bore Sealing rates (2008)
	Traralgon Aquifer	Y	6	item		\$29,000.00	\$174,000.00		
	M2C Aquifer	Y	12	item		\$20,000.00	\$240,000.00		
	M2B Aquifer	Y	7	item		\$12,000.00	\$84,000.00		
	Traralgon Aquifer Standpipes	Y	3	item			\$0.00		
	Drainholes	Y	7	item			\$0.00		
Precinct Rehabilitation Liability							\$1,038,000.00		

Total Rehabilitation Liability for the "Domain" \$1,038,000.00

Open Cut Coal Mine Operations:

Third Party Project Management & Contingencies

Detail of person filling out the Worksheet:

Name	
Position	
Department	
Date	

Legend:

	Item fixed no entry required
	Input from site optional (if information available)
	Input mandatory
	Default Rate where an alternative is not provided

Sub Total of all Domain Areas \$27,958,924.00

Item	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Additional Info.	Description / Notes:
Sundry Items	Mobilisation & Demobilisation (third party contractor rates apply).	Y	1	%	Select from List			Select Distance	This is to cover the cost of the "third party" contractor bringing equipment to the site to undertake the rehabilitation works. It needs to reflect the true costs of getting the equipment to and from the site.
	Post closure environmental monitoring requirements	Y	5%	%	This has deliberately been left blank		\$1,397,946.20		This item is to cover any monitoring and measurement requirements that may be needed following the closure of the project.
	Project Management & Surveying (this includes preparing any documentation and well as engineering and design changes that may be needed during closure).	Y	10%	%			\$2,795,892.40		This is to cover any Project Management or Surveying costs that may be required during the closure of the mine. It also covers the preparation of tender documents and any cost for engineering and re-design that may be required during the closure of the mine.
	Contingency	Y	10%	%			\$2,795,892.40		
Precinct Rehabilitation Liability							\$6,989,731.00		

Total Rehabilitation Liability for "Management & Contingencies" \$6,989,731.00

Summary Report of Rehabilitation Liability Calculation

Site Name:	Loy Yang Power		
Tenement number(s):	MIN5189		
Site Owner:	Great Energy Alliance Corporation (GEAC)		
Site Operator:	Loy Yang Power		
Current Bond:	\$ 15,000,000.00	Date of Last Rehabilitation Bond Review:	35556
Site Contact:	Jack Wilson	Jon Missen	
Position:	General Manager Mine	Environment and Land Manager	
Address:	Loy Yang Power PO Box 1799 Traralgon VIC 3844		
Phone:		email:	

Domain	Rehabilitation Liability
Domain 1: Infrastructure Areas	\$18,140,124.00
Domain 2: Tailings & Coarse Rejects Storage Facilities (1)	\$0.00
Domain 2: Tailings & Coarse Rejects Storage Facilities (2)	\$0.00
Domain 2: Tailings & Coarse Rejects Storage Facilities (3)	\$0.00
Domain 3: Overburden & Waste Dumps	\$3,559,400.00
Domain 4: Pits (1)	\$5,221,400.00
Domain 4: Pits (2)	\$0.00
Domain 4: Pits (3)	\$0.00
Domain 5: Other Management Issues	\$1,038,000.00
Sub-Total	\$27,958,924.00
Third Party Project Management & Contingencies	\$6,989,731.00
Total Rehabilitation Liability for the Operation	\$34,948,655.00

This rehabilitation liability calculation has estimated using the best available information at the time it is a true and accurate reflection of the total rehabilitation bond required to be lodged by this mine

Site Manager

Date: