

#### Rehabilitation Cost Estimation Tool

The *Mining Act 1992* and the *Petroleum (Onshore) Act 1991* allow the Minister (or delegate) to impose and vary a security deposit condition on authorisations or titles granted under these Acts. The **security deposit** is required for the fulfilment of obligations under the authorisation or title (hereon in referred to as an authority), including those related to rehabilitation, and obligations that may arise in the future. Authority holders are required to submit a Rehabilitation Cost Estimate (RCE) whenever a potential change in rehabilitation liability occurs and at other key points throughout the tenure of an authority. The RCE is used by the Department to assist in determining the amount of the security deposit required for an authority.

The objective of the Rehabilitation Cost Estimation Tool (the RCE Tool) is to provide exploration, mining and petroleum operators with guidance on calculating an appropriate RCE for their operations by assisting in the assessment and quantification of rehabilitation risks and liabilities pursuant to the *Mining Act 1992 and Petroleum (Onshore) Act 1991*.

Please Note: The RCE Tool does not apply to the sealing of petroleum wells associated with exploration and production activities under the Petroleum (Onshore) Act 1991. Petroleum title holders can use the RCE Tool for guidance on calculating an appropriate RCE for disturbance associated with their activities. However, it is the expectation that a separate estimate is submitted for the sealing of petroleum wells, with the RCE prepared by a suitably qualified expert in consideration of the scale, nature, risks and age associated with petroleum wells specific to the petroleum title. For petroleum production use the Open Cut Button. For petroleum exploration use the Exploration Button.

Prior to calculating a RCE, authority holders using the RCE Tool should refer to *Guideline: Rehabilitation Cost Estimate* and the *Rehabilitation Cost Estimate Tool Handbook* which provide guidance information about, and step by step instructions on how to use, the RCE Tool. The guideline and handbook are available on the Department's website www.resourcesregulator.nsw.gov.au

#### **Calculating a RCE**

The framework of the RCE Tool has been developed in accordance with a tiered risk-based approach to calculating rehabilitation costs whereby the outcome of the estimation will be based on the nature, size, scale and complexity of the operation. While the authority holder has the opportunity to nominate unit rates\* which are not the same as those in the RCE Tool, any other unit rate proposed by the authority holder must be based on a <a href="mailto:third-party">third party</a> cost as it is assumed that if the authority holder defaults on their responsibility to rehabilitate the mine or exploration operation(s), a contractor will be engaged by the Government to carry out the required rehabilitation works.

#### Select Type of Mining/Exploration Operations from Buttons Below

By selecting the relevant type of mining/petroleum/exploration operation (below), followed by the **ENTER** button, the worksheet relevant to the operation type will be activated. Each worksheet shows the domains likely to be present for the operation type. A worksheet must be completed, with **ALL** relevant domains, in order to estimate the total rehabilitation costs for the exploration, petroleum operations and/or mining operation.

\*Note: The Department may regularly make changes and updates to the spreadsheet as necessary. All authorisation holders are encouraged to use the most recent version of the spreadsheet, available on the Department's website.

Complete the following field	lds prior to calculating the Security Deposit.
Mine Name:	Bowral Waste Centre Pty Ltd Quarry Extension
Lease(s):	M(MO)L11 1992
Title Holder:	Bowral Waste Centre Pty Ltd
Term of RCE:	
Current Security:	\$204,000 Date of last Security Deposit review 23/01/20
Mine Contact:	Brett Jarvis
	No change to landform, No extraction, No rehabilitation



# **Open Cut Summary Rehabilitation Cost Estimation**

Note: Sections of this page	are automatically filled in from the registration page			
Mine Name:	Bowral Waste Centre Pty Ltd Quarry Extension			
Lease(s):	M(MO)L11 1992			
Authorisation Owner:	Bowral Waste Centre Pty Ltd			
Term of RCE:				
Current Security:	\$204,000 Date of Last Se	ecurity Depo	osit Review:	23/01/2024
Mine Contact:	Brett Jarvis			
	Domain		Security I	Deposit
Domain 1: Infrastructure			•	\$720
Domain 2: Tailings & Re				Ţ· - v
Domain 3: Overburden 8	-			
Domain 4: Active Mine &	k Voids			\$100,939
Domain 5: Management	Activities			\$55,264
Subtotal (Domains and	Sundry Items)			\$156,923
Contingency		10%		\$15,692
Post Closure Environme		10%		\$15,692
Project Management and	d Surveying	10%		\$15,692
Total Security Dep	osit for the Mining Project (excl. of GST	Γ)		\$204,000
	in the above calculation or as part of rehabilitation se			
_	made to unit prices within this spreadsheet. (Attach a sep			es).
The proposed rehabil	itation design is generally consistent with the development	consent for th	ne project.	
This mine security calculation	on has been estimated using the best available information	at the time		
	ection of the total rehabilitation liability held by this mine.	aoo.		
Brett Jarvis			04/02/20	124
Company Resprese	ntative's Name		04/02/20 <b>Date</b>	JZ4
Tampany Nooprodu			2410	
Group Operations Ma	nager		Brett Jai	rvis
	tative's Role / Responsibility		Signatu	
, , ,	• •		J	

# Domain 1a: Infrastructure

# Total Cost for Infrastructure Domain

\$720

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	N		allow	\$35,000				For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	N		allow	\$5,850				Used for infrastructure remote from primary connection.  Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	N		km	\$15,000				Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	N		km	\$100,000				Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	N		Item	\$350,000				Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	N		Item	\$500,000				Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	N		Item	\$1,300,000				Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	N		m2	\$100.00				Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	N		m2	\$75.00				Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	N		m2	\$40.00				Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	N		m2	\$61.00				Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	N		m2/floor	\$90.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	N		m2/floor	\$130.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	N		m2/floor	\$225.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	N		m2/floor	\$225.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	N		allow	\$750,000				Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	N		allow	\$2,000,000				Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	N		m	\$75.00				Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	N		allow	\$92,500		-		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.

Collapse, Cut and Remove 3000 T coal silo and			-11	677 500		Collapse structure and remove. Does not include transport to regional
disposal on-site/locally  Collapse, Cut and Remove 1250 T coal silo and	N		allow	\$77,500		disposal facility or equivalent.  Collapse structure and remove. Does
disposal on-site/locally	N		allow	\$62,500		not include transport to regional disposal facility or equivalent. Collapse structure and remove. Does
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	N		allow	\$65,000		not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	N		allow	\$460,000		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	N		m	\$185.00		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	N		m	\$295.00		Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally.  This may include small scale fixed material stacking	N		m	\$850		Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
infrastructure Remove and demolish conveyor from reclaim tunnel				6450.00		Due to no canopy or infrastructure
(Does not include excavation and demolition of reclaim tunnel roof)	N		m	\$150.00		attached.  Assumes this area will be used for
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	N		m	\$950.00		another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	N		allow	\$25,000		Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	N		allow	\$10,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	N		allow	\$30,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	N		allow	\$45,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	N		allow	\$100,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	N		allow	\$100,000		Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent.
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	N		allow	\$21,000		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	N		allow	\$30,000.00		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	N		m	\$25.00		For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Υ	12	m	\$60.00	\$720	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	N		m	\$165.00		For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	N		m	\$12.00		~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
Remove surface pipelines (unsupported) and disposal on-site/locally	N		m	\$15		-300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	N		allow	\$20,000.00		Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	N		m2	\$10.00		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on- site/locally	N		m2	\$20.00		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.

Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	N		m2	\$36.00				Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	N		m2	\$75.00				Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Crush concrete to make road aggregate - 75 mm	N		tonne	\$10.00				Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	N		tonne	\$13.00				Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 30 mm	N		tonne	\$15.00				Does not include haulage of materials - assumes crushing plant is readily
Remove fence (cyclone/wire fence) and disposal on-	N		m	\$20.00				available.  Roll up fence and remove posts.
· ·			each					Remove small poly tanks used for water
Demolish and remove galvanised/corrugated light weight tanks	N		each	\$500.00				storage, etc.  Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
Demolish and remove communication towers	N		each	\$5,000.00				Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
Removal of UG services (power within main gate areas, etc.)	N		allow	\$50,000.00				Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	N		tonne	\$7.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	N		tonne	\$9.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	N		tonne	\$12.50				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	N		tonne	\$32.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	N		tonne	\$36.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	N		allow	Use alternate rate cell				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general waste)	N		tonne	\$193.00				Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	N		tonne	\$174.00				Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
T	Tern	nination of Se	rvices and D	emolition Wo	rks Subtotal	\$720		Remove all materials to allow area to be
Remove rail loop and spur, ballast etc. and disposal on-site/locally	N		m	\$60.00				reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
Remove train loading facilities and disposal on- site/locally	N		m2	\$185.00				Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
Reshape rail spur and load out areas. Does not include growth media and revegetation	N		ha	\$2,860				D10 Dozer and 16 H Grader (50% utilisation).
		I	R	ail Infrastruct	ure Subtotal	\$0		, , , , , , , , , , , , , , , , , , ,
Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  Crush concrete to make road aggregate - 30 mm  Remove fence (cyclone/wire fence) and disposal on-site/locally  Removal of small plastic tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove communication towers  Removal of UG services (power within main gate areas, etc.)  Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km  Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km  Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill - fees (general waste)  Waste disposal to Council landfill - fees (general waste)  Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)  Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  N  Crush concrete to make road aggregate - 50 mm  N  Crush concrete to make road aggregate - 50 mm  N  Crush concrete to make road aggregate - 30 mm  Remove fence (cyclone/wire fence) and disposal on-site/locally  Removal of small plastic tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove communication towers  N  Removal of UG services (power within main gate areas, etc.)  Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km  Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <56 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <56 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <56 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <56 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  N  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  N  Waste disposal to Council landfill - fees (general waste)  N  Remove train loading facilities and disposal on-site/locally  Reshape rail spur and load out areas. Does not include growth media and revegetation  N  Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  N  Crush concrete to make road aggregate - 50 mm  N  Crush concrete to make road aggregate - 50 mm  N  Remove fence (cyclonel-wire fence) and disposal on-site/locally  N  Removel of small plastic tanks  N  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove galvanised/corrugated waste) - N  Removal of UG services (power within main gate areas, etc.)  Waste disposal to Council landfill (general waste) - N  Maste disposal to Council landfill (general waste) - N  Maste disposal to Council landfill (general waste) - N  Maste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <26 km  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Remover all loop and spur, ballast etc. and disposal on-site/locally and the disposal on-site/local power and local out areas. Does not include growth media and revegetation - N  N  Waste disposal to Council landfill - fees (general waste) - N  N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill -	Remove concrete pads & footings (-300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm	Remove concrete pads & foolings (>300 mm thickness) and disposal on-alterlocatily  Crush concrete to make road aggregate - 75 mm  N	Remove concrete pade & foodings (>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Remove concrete and a florings in John members of the control of t	Remove concurs pack & bodings of Normal Remove Control appeals to a Month American Control appeals to a Month Remove Control appeals and American Control appeals (appeal appeals and American Control appeals (appeal appeals appeals appeals appeals and American Control appeals (appeals appeals appeals appeals appeals appeals and American Control appeals (appeals appeals

							- -
Undertake an intrusive site investigation on sites with small footprints to investigate e.g. \$15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$44,000			The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g. –10-15 fa requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$106,000			The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earther bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	\$35,000			Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell			Assumes complex site; detailed design drawings required for cover.
Removal and disposal of contaminated water from tanks, bunded areas and sumps	N		L	\$0.35			Cost for recent sump clean-up from resource activity - requires specialists to treat
Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	N		m3	Select from List		Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill.  Assumes cartage to a licensed landfill.	N		m3	\$800.00			Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N		m4	\$660.00			Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N		m3	\$220.00			Includes load, haul and dump fees to a licensed facility.
Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	N		m3	Select from List		Select Volume Here	opreauing or contaminates sons or a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months
Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	N		Item	\$150,000			Required if treatment of hydrocarbon contamination is required to be fast tracked.
On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	N		m3	\$165.00			Additional cost as the treatment process is fast tracked.
Remove and dispose of asbestos (<750 m2)	N		m2	\$50.00			Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Remove and dispose of asbestos (>750 m2)	N		m2	\$40			Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Waste disposal to Council landfill - fees (asbestos)	N		tonne	\$290			Landfill fees to regional landfill.
Treatment of known Acid Sulfate Soils	N		ha	\$2,580			Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	N		m2	\$1		Select Haul Distance Here	Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
I		ı İ	ļ		Ī	Select naul Distance Here	ı l

ĺ	Long haulage brine/salt for disposal (Select Haul	N	1	tonn-	Select from				Costs for haulage to location for
	Distance from list)	N		tonne	List				authorised disposal.
	Brine disposal to landfill - fees only	N		tonne	\$288				Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to
	Simo disposal to idilaliii loce only			101110	<b>4200</b>			Select Haul Distance Here	landfill.
	Long haulage water (clean or contaminated) (Select	N		tonne	Select from			Select Hauf Distance Here	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items
	Haul Distance from list)				List				where warranted.
				Contam	inated Mater	ials Subtotal	\$0		
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	N		depth (m)	\$44.55				Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	N		allow	\$43				May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	N		allow	\$5,700				Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	N		allow	\$6,960				Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
	Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage	N		allow	\$17,890				Surface-to-in-seam gas drainage boreholes.
	Boreholes – cap and seal open bore holes - vertical gas drainage	N		allow	\$16,000				Vertical gas drainage boreholes.
	Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	N		allow	\$35,000				Includes multi skin sleaves to prevent aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	N		allow	\$45,000				Includes large diameter boreholes used for supplying electricity (66kV),
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$2,070				compressed air, water, solsenic etc.  Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$1,340				Sealing required, but not complete filling with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	N		each	\$415				Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor		ı		s and Boreho	oles Subtotal	\$0		Assumes ~6 m road width - 16H
Rodus and Tracks	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up	N		ha	\$1,040.00				Grader. D10 Dozer @ \$400 per hour and 16 H
	areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	N		ha	\$1,500				grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	N		ha	\$3,700				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or othe surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
Earthworks / Structural Works		l e	1	R	oads and Tra	cks Subtotal	\$0	> 50m - 100m < push	
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – 50 m-75 m push length	N		m3	\$1.19				Assumes D11 dozer push @ 375 bcm/hr.
	Minor reshaping and pushing	N		ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	N		m2	\$185.00				This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Deep rip hard stand / lay down areas	N		ha	\$960.00				D10 deep ripping.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (rip- ap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of guily head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E	arthworks / S	tructural Wor	ks (Landforn	n Establishme	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media	Source, cart and spread growth media - haul	M		m2	¢2.20			<=1km	Undertaken with 623 scraper and 14 M
Development and Ecosystem	distance <1 km	N	I	m3	\$3.26		1		grader.

Ī	Planting mature trees (>15 cm)	N		allow	\$15.00				4 m centres.
	Planting tube stock (<15 cm)	N		allow	\$6.60				4 m centres.
	Direct seeding / fertiliser (pasture grass species)	N	1.76	ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	,,				. , ,				helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	N	1.76	ha	\$4,135				Includes treating, weighing, mixing with fertiliser + spreading by tractor or
									helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen								Process to be used on flat well prepared surfaces under irrigation e.g. sewage
	tack with native seed	N		m2	\$1.90				treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and
									input variables. Native seed +\$1.00
									Process to be used on flat well prepared
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from
	tack with pasture seed								\$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
									,
									Assumes use on flat areas with a gradient of less than 4:1, and where
	Hydromulch - base grade or standard for flat areas								irrigation from water cart may be possible. Industry standard application
	that can be irrigated by water cart	N		m2	\$0.80				rate of 2500kg/ha. Product will last short term (less than 3 months) and
									vegetation is required to grow ASAP for stability. This cost includes cover crop
									only, additional seeding required.
									Assumes use on steep areas where
	Hydromulch - bonded fibre matrix grade for steep	N		m2	\$1.80				stabilisation is required for up to 12 months. Application rate of ~3500kg/ha.
	areas to stabilise up to 12 months								This cost includes cover crop only, additional seeding required.
									<u> </u>
	Lhidramulah high performance flevible grouth								Assumes use on extreme slopes where stabilisation is required for up to 18
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				months. Application rate of ~4,000kg/ha minimum. This cost includes cover
									crop only, additional seeding required.
									Assumes 250 kg / ha. These rates have
	Single application of fertiliser (pasture)	N		ha	\$420.00				fluctuated over the last few years however in light of current conditions
	, ,								(lower fuel prices, reduced demand etc) this is a suitable standard rate.
									These rates have fluctuated over the
	Cingle application of fastilizer (trace)	N		ho	\$140.00				last few years however in light of current
	Single application of fertiliser (trees)	N		ha	\$140.00				conditions (lower fuel prices, reduced demand etc) this is a suitable standard
									rate. Assumes 2.5 t / ha as an average
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				application rate.
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	N		m	\$22.00				Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	N		m	\$13.00				Standard rate for standard stock fencing.
	Durahasa and areat warning signs	N		allow	\$250.00				Compliance with AS 1319-1994 - Safety signs for the occupational environment -
	Purchase and erect warning signs	N		allow	\$250.00				installed every 25 m.
	Supply from external sources virgin excavated								D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks
	natural material (VENM) for growth media.	N		m3	\$80.80				(90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill
									material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil								D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks
	from large excavation for filing voids and/or capping etc.	N		m3	\$72.50				(90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill
									material.  Clearing and grubbing of light
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				vegetation growth e.g. regrowth
									Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and
	Topsoil stripping	N		m3	\$4.86				haul to final rehabilitation location required or respreading where
									necessary.  Addition of manure to improve soil
	Growth media supplementation with manure	N		ha	\$747.50				quality.
	Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				Material that can be applied as an alternative to spreading topsoil prior to
	Land Preparation and Revegetation (Grov	wth Media De	velopment ar	nd Ecosysten	n Establishme	ent) Subtotal	\$0		hydromulching.
Water Management				,					Provisional sum for earthworks and
	Clean water dams to be retained after decommissioning – make safe and minor	N		allow	\$2,500				revegetation required to rehabilitate dam batters etc suitable for re-use by
	earthworks			3	,2,000				an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture
									grass.  Provisional sum for earthworks and
	Large clean water dams (i.e. ≥ 2 ha) to be retained	N.		- برمالم	\$10,500				revegetation required to rehabilitate
	after mine closure – make safe and minor earthworks	N		allow	\$10,500				dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or
	Demons and monte from the flore							Select Haul Distance Here	similar) + pasture grass.  This item includes the volume of
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure	N		m3	Select from List				contaminated sediment requiring removal using an excavator, truck and
	(Select Haul Distance from list)				List				dozer to clean out the dam.
	Removal of evaporation fans and/or other water transfer and management infrastructure	N		allow	\$25,000				Provisional sum for removal of water management infrastructure.
Maintanage of Bot 1997	T			Wa	ter Managem	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been should and								Rehabilitation maintenance might include re-seeding, watering, fertilising,
	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				minor re-shaping, erosion control, inspections/audits - does not include
									major repair works.
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills,
	<u> </u>			-					significant growth media replacement.
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement,
	J			l	,				some level of additional surface water
									management.

		Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
Π			eas Subtotal	\$0						
Ī	Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
		Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
		Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
			ms Subtotal	\$0						
	Total Cost for Infrastructure Domain								\$720	

#### Domain 2a: Tailings & Rejects

#### **Total Cost for Tailings & Rejects Domain**

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (vi)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <pre>s15</pre> ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$44,000				The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$106,000				The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	\$35,000				Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell				Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	N		L	\$0.35			Outrast Hard File	Cost for recent sump clean-up from resource activity - requires specialists to treat.
	Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	N		m3	\$800.00				Includes load, haul and dump fees to a licensed facility.

	Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N		m4	\$660.00				Includes load, haul and dump fees to a licensed facility.
	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N		m3	\$220.00				Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	N		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	N		Item	\$150,000				Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	N		m3	\$165.00				Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	N		m2	\$50.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.  Where an assessment/estimation has
	Remove and dispose of asbestos (>750 m2)	N		m2	\$40.00				been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	N		tonne	\$290	-1-0-1	\$0		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor	N		ha	\$1,040.00	iais Subtotai	\$0		Assumes ~6 m road width - 16H
	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	N		ha	\$1,500				Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed	N		ha	\$3,700				utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	(pasture grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Seed (native tree/sintuorgrass) Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds — Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
Fasthwarks / Structural Warks	E	arthworks / S	tructural Wor	ks (Landforn	n Establishme	ent) Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	N		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	N		ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Mine Waste	E	artnworks / S	tructural Woi	ks (Landforn	n Establishme	ent) Subtotal	\$0		
	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	N		ha	\$82,000				This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N		allow	Use alternate rate cell				materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

					Include additional cost to import
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, Shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$146,500		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$313,000		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tallings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tallings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).

	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	N		ha	\$843,000				This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N		allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N		allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
					Mine Wa	ste Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	N		ha	\$4,135				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 * \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	N		m	\$22.00				Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated	N		m	\$13.00				Standard rate for standard stock fencing.
	areas		1	1					Compliance with AS 1319-1994 - Safety signs for the occupational environment -
	areas  Purchase and erect warning signs	N		allow	\$250.00				installed every 25 m.
		N N		allow m3	\$250.00 \$80.80				D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Purchase and erect warning signs  Supply from external sources virgin excavated								D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill

Т	Topsoil stripping								Stripping or topsoil at an approximate
	rupaun ampping	N		m3	\$4.86				depth of 0.2 m into stockpiles; load and haul to final rehabilitation location
									required or respreading where necessary.
-	Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil
	310with media supplementation with manufe	N		IId	\$147.50				quality.  Material that can be applied as an
Į.	Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				alternative to spreading topsoil prior to hydromulching.
	Land Preparation and Revegetation (Grow	vth Media De	velopment an	d Ecosysten	n Establishme	ent) Subtotal	\$0		
d	Clean water dams to be retained after decommissioning – make safe and minor aarthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
a	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
e	Remove sediments from the floor of the dam to enable it to be converted into clean water structure Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ter Managem	ent Subtotal	\$0		
	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
E	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
E	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
Ε	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of andform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
			Mainte	nance of Rel	nabilitated Ar	eas Subtotal	\$0		
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
c	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
c	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
					Additional Ite	ems Subtotal	\$0		
	Total Cost for T	ailings	& Reje	cts Dor	nain			\$0	

#### Domain 3a: Overburden & Waste

#### Total Cost for Overburden & Waste Domain

**\$**0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	N		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	N		m2	\$1				Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	N		tonne	\$288				Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items where warranted.
				Contan	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	N		ha	\$1,040.00				Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	N		ha	\$1,500				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	N		ha	\$3,700				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or othe surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
Earthworks / Structural Works				R	oads and Tra	cks Subtotal	\$0		In the second se
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	N		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	N		ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	N		m2	\$185.00				This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N	-	ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (fip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.

Mine Waste

Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	N	ha	\$82,000		This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$146,500		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from > 1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid cutrillarising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (IMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$313,000		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap? Cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping materials are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	N	ha	\$843,000				This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	N	m3	Select from List		60	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and	1			Mine Wa	ste Subtotal	\$0	Select Haul Distance Here	If toppoil is not evallable 'tth-
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N	m3	Select from List			Select radii Distance nere	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	N	allow	\$15.00				4 m centres.
	Planting tube stock (<15 cm)	N	allow	\$6.60				4 m centres.
	Direct seeding / fertiliser (pasture grass species)	N	ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	N	ha	\$4,135				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N	m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N						Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from
	tack with pasture seed		m2	\$0.43				\$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N	m2 m2	\$0.43				
	Hydromulch - base grade or standard for flat areas	N N						input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep		m2	\$0.80				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only,
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth	N	m2	\$0.80				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade	N N	m2 m2	\$0.80 \$1.80 \$2.50				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of -4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however fullight of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)	N N	m2 m2	\$0.80 \$1.80 \$2.50				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)	N N N	m2 m2 ha	\$0.80 \$1.80 \$2.50 \$420.00				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average application rate.  Recent experience with agronomy
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with biosolids Construct no-climb stock fence around rehabilitated	N N N N N N N	m2 m2 ha ha ha	\$0.80 \$1.80 \$2.50 \$420.00 \$1,000 \$1,005				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however fullight of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average application rate.  Recent experience with agronomy projects.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with biosolids	N N N	m2 m2 ha ha	\$0.80 \$1.80 \$2.50 \$420.00 \$1,000				input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 25 t / ha as an average application rate.  Recent experience with agronomy projects.

									D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks
	Supply from external sources virgin excavated natural material (VENM) for growth media.	N		m3	\$80.80				(90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	N		m3	\$72.50				D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	N		m3	\$4.86				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosysten	n Establishme	ent) Subtotal	\$0		
water management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ter Managem	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
		N	Mainte		\$40,000	eas Subtotal	\$0		rehabilitation repair - re-design and re- construction of landform.
Additional Items		N N	Mainte		,	eas Subtotal	\$0		rehabilitation repair - re-design and re- construction of landform.  This item includes < <to added="" be="" by<br="">the operator&gt;&gt;</to>
Additional Items	landform		Mainte		nabilitated Are	eas Subtotal	\$0		rehabilitation repair - re-design and re- construction of landform.  This item includes < <to added="" be="" by<br="">the operator&gt;&gt; This ptem includes &lt;<to added="" be="" by<br="">the operator&gt;&gt;</to></to>
Additional Items	Other 1 <insert></insert>	N	Mainte	enance of Rel	nabilitated Ard This is deliberately				rehabilitation repair - re-design and re- construction of landform.  This item includes < <to added="" be="" by<br="">the operator&gt;&gt;  This item includes &lt;<to added="" be="" by<="" td=""></to></to>
Additional Items	Other 1 <insert> Other 2 <insert></insert></insert>	N N		enance of Rel	nabilitated Ard This is deliberately left blank Additional Ite		\$0 \$0	\$0	rehabilitation repair - re-design and re- construction of landform.  This item includes < <to added="" be="" by<br="">the operator&gt;&gt; This item includes &lt;<to added="" be="" by<br="">the operator&gt;&gt; This item includes &lt;<to added="" be="" by<br="">This item includes &lt;<to added="" be="" by<="" td=""></to></to></to></to>

#### Domain 4a: Active Mine & Voids

# **Total Cost for Active Mine & Voids Domain**

\$100,939

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	N		Lm	\$1.93				Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	N		m3	\$0.95				Bulk Drilling say 8°9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	N		m	\$90.00				D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Structural Works		T T		Ī	Open	Cut Subtotal	\$0	< 50m push	
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – 50 m push length	Y	29487	m3	\$0.80		\$23,534	C John push	Assumes D11 dozer push @ 400 bcm/hr.
	Minor reshaping and pushing			ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List		FALSE	Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	N		m2	\$185.00				This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	Ea	arthworks / S	tructural Wor	ks (Landforn	n Establishme	ent) Subtotal	\$23,534		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	21000	m3	\$3.26		\$68,381	< =1km	Undertaken with 623 scraper and 14 M grader.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	N N		allow allow	\$15.00 \$6.60				4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y	1.76	ha	\$4,135		\$7,278		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.

	Other 3 <insert></insert>	N			left blank				
	Other 2 <insert></insert>	N			deliberately				the operator>> This item includes < <to added="" be="" by<="" th=""></to>
Additional Rems	Other 1 <insert></insert>	N			This is				the operator>> This item includes < <to added="" be="" by<="" th=""></to>
Additional Items			Mainte	enance of Re	habilitated Ar	eas Subtotal	\$0		This item includes < <to added="" be="" by<="" th=""></to>
	Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills significant growth media replacement
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				Rehabilitation maintenance might include re-seeding, watering, fertilisin minor re-shaping, erosion control, inspections/audits - does not include major repair works.
				W	ater Managem	ent Subtotal	\$0		dozo, to dean out the dam.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck ar dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastugrass.
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosyster	n Establishme	ent) Subtotal	\$77,405		hydromulching.
	Growth media supplementation with manure  Utilise biotic soil media - organic topsoil alternative	N N		ha m2	\$747.50 \$2.50				quality.  Material that can be applied as an alternative to spreading topsoil prior t
	Topsoil stripping	N		m3	\$4.86				depth of 0.2 m into stockpiles; load a haul to final rehabilitation location required or respreading where necessary. Addition of manure to improve soil
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approximat
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	N		m3	\$72.50				D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - al nominal rate of \$60/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	N		m3	\$80.80				D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - al nominal rate of \$70/m3 for imported to material.
	Purchase and erect warning signs	Υ	6	allow	\$250.00		\$1,500		Compliance with AS 1319-1994 - Sa signs for the occupational environme installed every 25 m.
	Security fence around steep section of high wall	N		m	\$64.00				1800mm x 3 barb chain-link mesh security fence and gate standard 2.5 mesh & 32 mm post not concreted
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y	1.76	ha	\$140.00		\$246		These rates have fluctuated over the last few years however in light of curr conditions (lower fuel prices, reduced demand etc) this is a suitable standa rate.

# Domain 5a: Management Activities

# **Total Cost for Management Activities**

\$55,000

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	1.76 HA
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N		ML	\$3,600			Information	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	\$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions	Repairs and/or stabilisation of new or compromised			W:	ater Managem	ent Subtotal	\$0		Assumes material is suitable for
	water course diversion	N		m	\$2,500				revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	\$1,500				Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	N		m	\$750.00				Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	N		m2	\$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	N		ha	\$150.00				Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	N		ha	\$400.00				Undisturbed areas within the lease boundary that require land managemen activities.
	control works)		Mainte	enance of Re	habilitated Ar	eas Subtotal	\$0		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of
					Heritage Ite	ems Subtotal	\$0		activities.
Sundry Items									Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	N		allow	\$100,000				Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain an finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, finiand use requirements and knowledge base investigations can range from ~575k to >51 M.  Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least 22 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N		allow	\$90,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	N		allow	\$15,000				Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Include risk assessment, sampling and analyses on e.f. samples, one study and Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	\$300,000				Includes costs for key investigations and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisions sum to be used to refine the conceptua closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >\$3 M. Sites with more than 1 pit to add \$50,000 to rate.

	km but <500 km)	IN	item	\$150,000				execute bulk earthworks as required.
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	N	item	\$150,000				May include specialist demolition equipment and/or suitable plant to
	Mobilisation & Demobilisation (Distance to site <150 km)	N	item	\$100,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	N	Item	\$35,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry - small fleet	N	Item	\$12,000	enis Subtotal	ψŪ		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	public lands for rehabilitation/remediation activities	.,		rate cell	ems Subtotal	\$0		
	Additional fees for accessing State, Crown or other	N	allow	Use alternate				Provisional sum.
	Removal and disposal of radiation devices	N	each	\$31,630				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source lostope type, quantity, strength, weight, source holder weight, pick-up location (among others) will directly affect pricing.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	N	allow	\$0			Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Site security during closure	N	yr.	\$75,000				Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N	allow	\$27,950				Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Development of an 'Unplanned' Project Closure Plan  Non State Significant Development with at least ≥2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N	allow	\$125,000				Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisions sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.

# Domain 1b: Infrastructure

# Total Cost for Infrastructure Domain

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	Y		allow	\$35,000		\$0		For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	Υ		allow	\$5,850		\$0		Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	Y		km	\$15,000		\$0		Applies to power lines on stobie, concrete or similar poles.
	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	Y		km	\$100,000		\$0		Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		Item	\$350,000		\$0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Y		Item	\$500,000		\$0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	Y		Item	\$1,300,000		\$0		Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	Y		m2	\$100.00		\$0		Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	Y		m2	\$75.00		\$0		Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	Υ		m2	\$40.00		\$0		Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	Υ		m2	\$61.00		\$0		Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	Y		m2/floor	\$90.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y		m2/floor	\$130.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	Y		m2/floor	\$225.00		\$0		Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	Y		allow	\$750,000		\$0		Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	Y		allow	\$2,000,000		\$0		Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	Υ		m	\$75.00		\$0		Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	Υ		allow	\$92,500		\$0		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.

Collapse, Cut and Remove 3000 T coal silo and		1			Collapse structure and remove. Does
disposal on-site/locally	Y	allow	\$77,500	\$0	not include transport to regional disposal facility or equivalent.
Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	Υ	allow	\$62,500	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent. Collapse structure and remove. Does
Collapse, Cut and Remove rail loading bins and disposal on-site/locally	Y	allow	\$65,000	\$0	not include transport to regional disposal facility or equivalent.
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	Y	allow	\$460,000	\$0	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	Y	m	\$185.00	\$0	Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	Υ	m	\$295.00	\$0	Estimate for elevated conveyor up to -10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally.  This may include small scale fixed material stacking	Y	m	\$850	\$0	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
infrastructure  Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of	Y	m	\$150.00	\$0	Due to no canopy or infrastructure
reclaim tunnel roof)	,		\$130.00		Assumes this area will be used for
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	Y	m	\$950.00	\$0	another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	Y	allow	\$25,000	\$0	Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	Υ	allow	\$10,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	Y	allow	\$30,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	Y	allow	\$45,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	Υ	allow	\$100,000	\$0	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	Y	allow	\$100,000	\$0	Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent.
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	Υ	allow	\$21,000	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	Y	allow	\$30,000.00	\$0	Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	Y	m	\$25.00	\$0	For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	Y	m	\$60.00	\$0	For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	Υ	m	\$165.00	\$0	 For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	Y	m	\$12.00	\$0	~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
Remove surface pipelines (unsupported) and disposal on-site/locally	Y	m	\$15	\$0	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	Y	allow	\$20,000.00	\$0	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	Y	m2	\$10.00	\$0	Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on- site/locally	Y	m2	\$20.00	\$0	Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.

	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	Y		m2	\$36.00		\$0	Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	Υ		m2	\$75.00		\$0	Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
	Crush concrete to make road aggregate - 75 mm	Υ		tonne	\$10.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 50 mm	Υ		tonne	\$13.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Crush concrete to make road aggregate - 30 mm	Υ		tonne	\$15.00		\$0	Does not include haulage of materials - assumes crushing plant is readily available.
	Remove fence (cyclone/wire fence) and disposal on-	Y		m	\$20.00		\$0	Roll up fence and remove posts.
	site/locally							Remove small poly tanks used for water
	Removal of small plastic tanks	Y		each	\$1,000.00		\$0	storage, etc.
	Demolish and remove galvanised/corrugated light weight tanks	Υ		each	\$500.00		\$0	Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
	Demolish and remove communication towers	Y		each	\$5,000.00		\$0	Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
	Removal of UG services (power within main gate areas, etc.)	Y		allow	\$50,000.00		\$0	Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	Y		tonne	\$7.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	Y		tonne	\$9.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	Y		tonne	\$12.50		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	Υ		tonne	\$32.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	Y		tonne	\$36.00		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	Y		allow	Use alternate rate cell		\$0	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
	Waste disposal to Council landfill - fees (general waste)	Y		tonne	\$193.00		\$0	Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Y		tonne	\$174.00		\$0 <b>\$0</b>	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Rail Infrastructure		I erm	nination of Se	rvices and D	emolition wo	rks Subtotal	φ0	Remove all materials to allow area to be
	Remove rail loop and spur, ballast etc. and disposal on-site/locally	Y		m	\$60.00		\$0	reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
	Remove train loading facilities and disposal on- site/locally	Y		m2	\$185.00		\$0	Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
	Reshape rail spur and load out areas. Does not include growth media and revegetation	Υ		ha	\$2,860		\$0	D10 Dozer and 16 H Grader (50% utilisation).
Contaminated Materials				R	ail Infrastruct	ure Subtotal	\$0	
	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Υ		Cluster	\$15,000		\$0	The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised classessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.) - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.) - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary workshop, chemical storage etc.)

Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$44,000	\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the reducible for a single program, site history, location, etc.  A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation.  Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Qualty Plan. Includes SAQP, fieldwork, sampling and analysis.
Undertake an intrusive site investigation on sites with large footprints to investigate e,g, >15 ha. This accounts for current and historical floations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$106,000	so		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y	allow	\$35,000	\$0		Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	Y	allow	Use alternate rate cell	\$0		Assumes complex site; detailed design drawings required for cover.
Removal and disposal of contaminated water from tanks, bunded areas and sumps	Y	L	\$0.35	\$0		Cost for recent sump clean-up from resource activity - requires specialists to treat.
Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	Υ	m3	Select from List		Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	Υ	m3	\$800.00	\$0		Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	Y	m4	\$660.00	\$0		Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	Y	m3	\$220.00	\$0		Includes load, haul and dump fees to a licensed facility.
Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	Y	m3	Select from List		Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Y	 Item	\$150,000	\$0		Required if treatment of hydrocarbon contamination is required to be fast tracked.
On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	Y	m3	\$165.00	\$0		Additional cost as the treatment process is fast tracked.
Remove and dispose of asbestos (<750 m2)	Y	m2	\$50.00	\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Remove and dispose of asbestos (>750 m2)	Υ	m2	\$40	\$0		Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Waste disposal to Council landfill - fees (asbestos)	Y	tonne	\$290	\$0		Landfill fees to regional landfill.  Assumes ASS is treatable via
Treatment of known Acid Sulfate Soils	Υ	ha	\$2,580	\$0		neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.

	Removal and disposal of plastic liner (i.e. dam,	Y	m2	\$1		\$0		Provisional sum for cutting using ripp
	leach pad, sump etc.)	'	1112	Ψ,		ψυ	Select Haul Distance Here	tynes and on-site disposal of the liner
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y	tonne	Select from List			Select Hauf Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Y	tonne	\$288		\$0		Rate for trackable liquid levy of \$78.2 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y	tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tank Add disposal costs to additional item where warranted.
			Contan	ninated Mater	ials Subtotal	\$0		
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	Υ	depth (m)	\$44.55		\$0		Cost to grout and cap an open exploration borehole. Assume a 20 r 20 m drill pad requires rehabilitation push cover of nearby growth media, and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	Y	allow	\$43		\$0		May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with dricuttings. Does not include reshaping ripping the drill pad, amelioration / seeding etc.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	Y	allow	\$5,700		\$0		Includes grouting and capping 100 - m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	Y	allow	\$6,960		\$0		Holes deeper than 100 m - includes cutting steel collar 6 m below surface grouting and capping.
	Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage	Y	allow	\$17,890		\$0		Surface-to-in-seam gas drainage boreholes.
	Boreholes – cap and seal open bore holes - vertical gas drainage	Y	allow	\$16,000		\$0		Vertical gas drainage boreholes.
	Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	Y	allow	\$35,000		\$0		Includes multi skin sleaves to prever aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	Y	allow	\$45,000		\$0		Includes large diameter boreholes us for supplying electricity (66kV), compressed air, water, solsenic etc.
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Y	Item	\$2,070		\$0		Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locall on site
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	Y	Item	\$1,340		\$0		Sealing required, but not complete fi with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	Υ	each	\$415		\$0		Cut collar, remove, cap, backfill cap collar and cover with nearby organic growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor	Y	ha	s and Boreho \$1,040.00	les Subtotal	\$0 \$0		Assumes ~6 m road width - 16H
	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y	ha	\$1,500		\$0		Grader. D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y	ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ	ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Y	ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Υ	ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
							Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y	m3	Select from List				material from the road, laydown or of surface using an excavator, dozer an grader to enable the establishment of rehabilitation.
Earthworks / Structural Works	etc.) from roadways and disposal on-site/locally	Y			cks Subtotal	\$0	Select Push Length Here	material from the road, laydown or o surface using an excavator, dozer ar grader to enable the establishment o
Earthworks / Structural Works (Landform Establishment)	etc.) from roadways and disposal on-site/locally	Y		List	cks Subtotal	\$0	Select Push Length Here	material from the road, laydown or o surface using an excavator, dozer ar grader to enable the establishment of rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit
	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing		R	List  oads and Tra  Select from	cks Subtotal	<b>\$0</b>	Select Push Length Here	material from the road, laydown or c surface using an excavator, dozer as grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).
	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y	R m3	oads and Tra Select from List	cks Subtotal			material from the road, laydown or or surface using an excavator, dozer as grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each ha.
	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y	m3	Coads and Tra  Select from List  \$3,900	cks Subtotal	\$0	Select Push Length Here Select Haul Distance Here	material from the road, laydown or c surface using an excavator, dozer as grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$290 per hour f50% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each jha.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes	Y	m3 ha	Select from List \$3,900 \$1,600 Select from	cks Subtotal	\$0		material from the road, laydown or c surface using an excavator, dozer as grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each jha.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilises.
	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y Y Y	m3 ha ha m3	List  Select from List  \$3,900  \$1,600  Select from List	cks Subtotal	\$0 \$0		material from the road, laydown or a surface using an excavator, dozer as grader to enable the establishment or rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each ha.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the voic and enable the establishment of rehabilitation.  This rate is used to rehabilitate stee slopes of weathered rock, roadway cuttings, et cut had cannot be cut back
Earthworks / Structural Works (Landform Establishment)	etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling /	Y Y Y Y	m3 ha ha m3	List  oads and Tra  Select from List  \$3,900  \$1,600  Select from List	cks Subtotal	\$0 \$0		material from the road, laydown or a surface using an excavator, dozer a grader to enable the establishment rehabilitation.  Major bulk pushing to achieve grade nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavato work plus grader for ~4 hours each ha.  This item includes the volume of material requiring backfill using an excavator and scraper to fill the voic and enable the establishment of rehabilitate stee slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.  Undertaken using D10 dozer and 16

Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y		m3	Select from List				Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y		allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)  Direct seeding / fertiliser (pasture grass species)	Y		allow	\$6.60 \$1,875		\$0 \$0		4 m centres.  Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Υ		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Υ		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover croponly, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Υ		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Y		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	Y		m	\$22.00		\$0		Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	Y		m	\$13.00		\$0		Standard rate for standard stock fencing.
	Purchase and erect warning signs	Υ		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Υ		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar		n Establishme	ent) Subtotal	\$0		hydromulching.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or situal) @ ~\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Υ		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
	Removal of evaporation fans and/or other water transfer and management infrastructure	Y		allow	\$25,000		\$0		Provisional sum for removal of water management infrastructure.
Maintenance of Rehabilitated				Wa	iter Managem	ent Subtotal	\$0		Rehabilitation maintenance might
Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Υ		ha	\$925		\$0		include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Υ		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
I									одынали угожи пеша теріасеттеті.

	Total Cost fo	·		\$0				
					Additional Ite	ms Subtotal	\$0	
	Other 3 <insert></insert>	N			left blank			This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 2 <insert></insert>	N			deliberately			This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
Additional Items	Other 1 <insert></insert>	N			This is			This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	•		Mainte	enance of Rel	nabilitated Are	eas Subtotal	\$0	
	Existing rehabilitation repair - total failure of landform	Y		ha	\$40,000		\$0	Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0	Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.

#### Domain 2b: Tailings & Rejects

#### **Total Cost for Tailings & Rejects Domain**

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. £15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$44,000				The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y		Cluster	\$106,000		\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Cuality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	\$35,000				Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell				Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps Remove material (carbonaceous / metalinerous	N		L	\$0.35			Calcas Herri Dies	Cost for recent sump clean-up from resource activity - requires specialists to treat.
	spillage or otherwise) from footprint of the process facility (leach pads) / stocknile area (ROM product) / Load, cart and dispose of Hazardous classified	N		m3	Select from List			Select Haul Distance Here	removal of the volume of carbonaceous material using dozer, grader etc. to Includes load, haul and dump fees to a
	contaminated material off site to a licensed landfill.  Assumes cartage to a licensed landfill.  Load, cart and disposal of Restricted classified	N		m3	\$800.00				licensed facility.  Includes load, haul and dump fees to a
	contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N		m4	\$660.00				lincludes load, haul and dump fees to a licensed facility.

	Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N		m3	\$220.00				Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	N		m3	Select from List			Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition innerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	N		Item	\$150,000				Required if treatment of hydrocarbon contamination is required to be fast tracked.
	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	N		m3	\$165.00				Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	N		m2	\$50.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Remove and dispose of asbestos (>750 m2)	N		m2	\$40.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Waste disposal to Council landfill - fees (asbestos)	N		tonne	\$290		1		Landfill fees to regional landfill.
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor				ninated Mater	ials Subtotal	\$0		Assumes ~6 m road width - 16H
	works including deep rip and trim  Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	N N		ha ha	\$1,040.00 \$1,500				Grader.  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim  Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed	N		ha	\$3,700				utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	(pasture grass) Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and	N		ha	\$4,485				utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	seed (native tree/shrub/grass) Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				utilisation) - native tree/shrub seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds — Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-siteflocally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
	E	arthworks / S	Structural Wor	ks (Landforn	n Establishme	ent) Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	N		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	N		ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or								
	stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Mine Waste	stabilising water course entry points - required for large catchments		Structural Wor			ent) Subtotal	\$0		rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an
Mine Waste	stabilising water course entry points - required for large catchments	arthworks / S	itructural Wor			ent) Subtotal	\$0		rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.  This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km runoth padd the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make under the more size of the works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Mine Waste	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no	arthworks / S	itructural Wor	rks (Landforn	n Establishme	ent) Subtotal	\$0		rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.  This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and and physical properties. This rate assumes suitable capping material is available on site within 10 km, and saverage cap thickness of approximately 0.5 m to 1 mand 0.15 m · 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material reducing haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in diditional to and long long spreading in diditional to and long long spreading in additional to any long

					-
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, Shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$146,500		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from 1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) - Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$313,000		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rater from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	N	ha	\$843,000		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

									_
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N		allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N		allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	Capping/cover material available withi 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
					Mine Wa	ste Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing wit fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	N		ha	\$4,135				Includes treating, weighing, mixing wi fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges frc \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepar surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fro \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard applicationate of 2500kg/ha. Product will last whort term (less than 3 months) and vegetation is required to grow ASAP I stability. This cost includes over cronly, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/l This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes whe stabilisation is required for up to 18 months. Application rate of ~4,000kg minimum. This cost includes cover crop only, additional seeding required
	Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates ha fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand et this is a suitable standard rate.
	Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of curr conditions (lower fuel prices, reduced demand etc) this is a suitable standarate.
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated	N N		m m	\$22.00 \$13.00				Standard rate for no-climb stock fencing. Standard rate for standard stock
	areas  Purchase and erect warning signs	N		allow	\$250.00				fencing.  Compliance with AS 1319-1994 - Sa signs for the occupational environme installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	N		m3	\$80.80				D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - al nominal rate of \$70/m3 for imported to material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	N		m3	\$72.50				D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - all nominal rate of \$60/m3 for imported f material.
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	N		m3	\$4.86				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load a haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil quality.  Material that can be applied as an
	Utilise biotic soil media - organic topsoil alternative	N	<u></u>	m2	\$2.50				alternative to spreading topsoil prior t hydromulching.
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosysten	n Establishme	ent) Subtotal	\$0		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastugrass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by

	enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List				contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ter Managem	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				Rehabilitation maintenance might include re-seeding, watering, fertilising minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re construction of landform.
			Mainten	nance of Rel	habilitated Are	eas Subtotal	\$0		
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
					Additional Ite	ms Subtotal	\$0		
	Total Cost for 1	<b>Failings</b>	& Rejec	cts Dor	nain			\$0	

#### Domain 3b: Overburden & Waste

#### Total Cost for Overburden & Waste Domain

\$0

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	Υ		ha	\$2,580		\$0		Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	Y		m2	\$1		\$0		Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	Υ		tonne	\$288		\$0		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	Y		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tanker Add disposal costs to additional items where warranted.
				Contan	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	Y		ha	\$1,040.00		\$0		Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	Y		ha	\$1,500		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	Y		ha	\$3,700		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$4,485		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	Υ		ha	\$4,870		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	Y		ha	\$7,025		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or othe surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
- I I I I I I I I I I I I I I I I I I I			1	R	oads and Tra	cks Subtotal	\$0		
Earthworks / Structural Works (Landform Establishment)		1						Select Push Length Here	Major bulk pushing to achieve grades
	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Υ		m3	Select from List				nominated in the approval/permit
		Y		m3 ha			\$0		nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	the approval/permit – Select Push Length				List		\$0	Select Haul Distance Here	nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H
	the approval/permit – Select Push Length  Minor reshaping and pushing  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul	Y		ha	\$3,900 Select from		\$0	Select Haul Distance Here	nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of
	the approval/permit – Select Push Length  Minor reshaping and pushing  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha m3	\$3,900  Select from List			Select Haul Distance Here	nominated in the approval/permit  D10 Dozer ® \$400 per hour and 16 H grader ® \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the vol and enable the establishment of rehabilitation.  This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, et chat cannot be cut back and stabilised.  Undertaken using D10 dozer and 16M grader.
	the approval/permit – Select Push Length  Minor reshaping and pushing  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling /	Y		ha m3 m2	\$3,900 Select from List		\$0	Select Haul Distance Here	nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.  Undertaken using D10 dozer and 16M
	the approval/permit – Select Push Length  Minor reshaping and pushing  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	Y		ha m3 m2	\$3,900  Select from List  \$185.00		\$0	Select Haul Distance Here	nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.  Undertaken using D10 dozer and 16M grader.  Combination of dozer and excavator work plus grader for ~4 hours each per

Division of Resources and Geoscience Rehabilitation Cost Estimation Tool - Open\_Cut (2)

Page 37 of 77

Mine Waste

						_
Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	Υ	ha	\$	\$82,000	\$0	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	allov		e alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allov		e alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NNID) salion foline Drainage (NNID) and/or low to moderate propensity for spontaneous combustion and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	Y	ha	\$1	\$146,500	\$0	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from > 1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap material included in rate). If additional material to any long haulage volume in 8.05.
Additional materials required for reshaping, capping sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allov		e alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allov		e alternate rate cell	\$0	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	*	ha	\$:	\$313,000	\$0	This item includes sourcing, carting, spreading, misiture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g., acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	Υ	ha	\$843,000		\$0		This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform profile in addition to this cap. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Y	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	Υ	m3	Select from List	ota Subtatal	<b>\$</b> 0	Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
Land Preparation and				wine wa	ste Subtotal	ΨU	Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Y	m3	Select from List			Select Hauf Distance Here	Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm)	Y	allow	\$15.00		\$0		4 m centres.
	Planting tube stock (<15 cm)		allow	\$6.60		\$0		4 m centres.  Includes treating, weighing, mixing with
	Direct seeding / fertiliser (pasture grass species)	Υ	ha	\$1,875		\$0		fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y	m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
								input variables. Native edea 141.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y	m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
		Y	m2 m2	\$0.43		\$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and
	tack with pasture seed  Hydromulch - base grade or standard for flat areas							Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep	Υ	m2	\$0.80		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10 Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only,
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth	Y	m2	\$0.80		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade	Y	m2 m2	\$0.80 \$1.80 \$2.50		\$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)	Y	m2 m2	\$0.80 \$1.80 \$2.50		\$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of -4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)	Y Y Y	m2 m2 ha	\$0.80 \$1.80 \$2.50 \$420.00		\$0 \$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 250kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 2.5 t / ha as an average application rate.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with biosolids  Construct no-climb stock fence around rehabilitated	Y Y Y Y	m2 m2 ha ha ha	\$0.80 \$1.80 \$2.50 \$420.00 \$1,000		\$0 \$0 \$0 \$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Recent experience with agronomy projects.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.)  growth media amelioration with biosolids	Y Y Y Y Y Y Y Y Y	m2 m2 ha ha ha ha	\$0.80 \$1.80 \$2.50 \$420.00 \$1,000 \$1,015 \$22.00		\$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of -3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of -4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Assumes 251 / ha as an average application rate.  Recent experience with agronomy projects.
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with biosolids  Construct no-climb stock fence around rehabilitated areas	Y Y Y Y Y Y Y	m2 m2 ha ha ha	\$0.80 \$1.80 \$2.50 \$420.00 \$1,000 \$1,000		\$0 \$0 \$0 \$0 \$0 \$0 \$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10  Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.  Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.  Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.  Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.  Recent experience with agronomy projects.  Standard rate for no-climb stock fencing.

	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosysten	n Establishme	ent) Subtotal	\$0		
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Y		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
				Wa	ter Managem	ent Subtotal	\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - moderate  Existing rehabilitation repair - major	Y		ha ha	\$1,700 \$2,500		\$0		significant growth media replacement.  Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
				ha ha	\$2,500 \$40,000		\$0 \$0		significant growth media replacement.  Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water
4486	Existing rehabilitation repair - major  Existing rehabilitation repair - total failure of	Y	Mainte	ha ha	\$2,500	eas Subtotal	\$0		significant growth media replacement. Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management. Areas that require extensive rehabilitation repair - re-design and re- construction of landform.
Additional Items	Existing rehabilitation repair - major  Existing rehabilitation repair - total failure of	Y	Mainte	ha ha	\$2,500 \$40,000	eas Subtotal	\$0 \$0		significant growth media replacement.  Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management.  Areas that require extensive rehabilitation repair - re-design and re-construction of landform.  This item includes < <to added="" be="" by="" operator="" the=""></to>
Additional Items	Existing rehabilitation repair - major  Existing rehabilitation repair - total failure of landform	Y	Mainte	ha ha	\$2,500 \$40,000 nabilitated Ar	eas Subtotal	\$0 \$0		significant growth media replacement.  Areas requiring major repair rilikguilles, growth media replacement, some level of additional surface water management.  Areas that require extensive rehabilitation repair - re-design and re- construction of landform.  This item includes < <to added="" be="" by="" operator="" the="">&gt; This item includes &lt;<to added="" be="" by="" operator="" the="">&gt;</to></to>
Additional Items	Existing rehabilitation repair - major  Existing rehabilitation repair - total failure of landform  Other 1 <insert></insert>	Y	Mainte	ha ha enance of Rel	\$2,500 \$40,000 nabilitated Ar		\$0 \$0		significant growth media replacement.  Areas requiring major repair - rills, guilles, growth media replacement, some level of additional surface water management.  Areas that require extensive rehabilitation repair - re-design and re-construction of landform.  This item includes < <to added="" be="" by="" operator="" the="">&gt; This item includes &lt;<to added="" be="" by<="" td=""></to></to>

#### Domain 4b: Active Mine & Voids

## **Total Cost for Active Mine & Voids Domain**

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	•

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Y		Lm	\$1.93		\$0		Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	Υ		m3	\$0.95		\$0		Bulk Drilling say 8°9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	Y		m	\$90.00		\$0		D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Structural Works	1		ı	ı	Open	Cut Subtotal	\$0	Select Push Length Here	
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Υ		m3	Select from List			Ociect i dan Lengar nore	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Υ		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	Y		m2	\$185.00		\$0		This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	Y		ha	\$1,130.00		\$0		Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	Υ		ha	\$1,600		\$0		Combination of dozer and excavator work plus grader for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	Y		m2	\$27.00		\$0		Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
	E:	arthworks / S	tructural Wo	rks (Landforn	n Establishme	ent) Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	Υ		m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y		allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y		ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Direct seeding / fertiliser (tree or native grass species)	Y		ha	\$4,135		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	Y		m2	\$1.90		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	Y		m2	\$0.43		\$0		Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	Y		m2	\$0.80		\$0		Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	Υ		m2	\$1.80		\$0		Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	Υ		m2	\$2.50		\$0		Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	Y		ha	\$420.00		\$0		Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.

	Other 3 <insert></insert>	N			left blank	ems Subtotal	\$0		the operator>>
		N			deliberately				the operator>> This item includes < <to added="" be="" by<="" th=""></to>
	Other 1 <insert></insert>								the operator>> This item includes < <to added="" be="" by<="" th=""></to>
Additional Items	Other 1 <insert></insert>	N	ivialnte	mance of Re	This is	eas Subiotal	Ψυ		This item includes < <to added="" be="" by<="" th=""></to>
	Existing rehabilitation repair - total failure of landform	Y	Mainte	ha	\$40,000 habilitated Ar	rase Subtotal	\$0 <b>\$0</b>		rehabilitation repair - re-design and re construction of landform.
	Existing rehabilitation repair - major	Y		ha	\$2,500		\$0		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface wate management. Areas that require extensive
	Existing rehabilitation repair - moderate	Y		ha	\$1,700		\$0		Areas requiring moderate repair - rills significant growth media replacemen
	Existing rehabilitation repair - minor	Y		ha	\$1,200		\$0		Areas requiring minor repair - rills, minor growth media replacement.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y		ha	\$925		\$0		Rehabilitation maintenance might include re-seeding, watering, fertilisi minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Malatana at Bahah ""			ı	W	ater Managem	nent Subtotal	\$0		I
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck ar dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	Y		allow	\$10,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	Υ		allow	\$2,500		\$0		Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use b an alternate land-user - D6 Dozer (oi similar) @ -\$200 per hour and pastu grass.
	Land Preparation and Revegetation (Grov	wth Media De	velopment ar	nd Ecosyster	n Establishme	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	Y		m2	\$2.50		\$0		Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	Y		ha	\$747.50		\$0		necessary.  Addition of manure to improve soil quality.
	Topsoil stripping	Y		m3	\$4.86		\$0		Stripping or topsoil at an approximat depth of 0.2 m into stockpiles; load a haul to final rehabilitation location required or respreading where
	Clearing and grubbing of trees and vegetation	Y		ha	\$4,730.00		\$0		Clearing and grubbing of light vegetation growth e.g. regrowth
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Y		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - al nominal rate of \$60/m3 for imported in material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Sa signs for the occupational environme installed every 25 m.
	Security fence around steep section of high wall	Y		m	\$64.00		\$0		1800mm x 3 barb chain-link mesh security fence and gate standard 2.5 mesh & 32 mm post not concreted
	growth media amelioration with biosolids	Y		ha	\$1,015		\$0		Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	Y		ha	\$1,000.00		\$0		rate.  Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	Y		ha	\$140.00		\$0		last few years however in light of cur conditions (lower fuel prices, reduced demand etc) this is a suitable standar

## Domain 5b: Management Activities

## **Total Cost for Management Activities**

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	•

Management Precinct	Activity / Description	Applicable	Quantity	Unit	Default Unit		Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal	(Y or N)		ML	Rate \$3,600	Unit Rate	\$0	Information	Rate can fluctuate depending on treatment type however this is a suitable
	and cost of mobile water treatment unit)  On-site treatment of contaminated water due to low	'		IVIL	\$3,000				standard rate for current programs at mining operations.  Rate can fluctuate depending on
	pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	Y		ML	\$1,500		\$0		treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions	Repairs and/or stabilisation of new or compromised	Y			ater Managem \$2,500	ent Subtotal	\$0 \$0		Assumes material is suitable for revegetating and has a reasonable
	water course diversion  Long term maintenance of water course diversion –			m					chance of stabilising.  Assumes maintenance has been kept
	Channel constructed through backfilled material	Y		m	\$1,500		\$0		up and significant works are not required.  Assumes maintenance has been kept
	Long term maintenance of water course diversion – Channel constructed through competent material	Y		m	\$750.00		\$0		up and significant works are not required.
	Installation of rock armouring	Y		m2	\$6.00		\$0		Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.
Malatanana at Dahahilitata d					Creek Diversi	ons Subtotal	\$0		
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Y		ha	\$150.00		\$0		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Y		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land managemer activities.
	,		Mainte	enance of Re	habilitated Ar	eas Subtotal	\$0		
Heritage Items	The restoration and care and maintenance of items that have heritage significance	Υ		allow	Use alternate rate cell		\$0		Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
Sundry Items				l	Heritage Ite	ems Subtotal	\$0		Provisional sum to be used to refine the
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	Y		allow	\$100,000		\$0		conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, finic land use requirements and knowledge base investigations can range from ~\$75k to ~\$1 M. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher previous subsidence, and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	Y		allow	\$90,000		\$0		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan. Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPJ and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	Υ		allow	\$15,000		\$0		Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Include risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	Y		allow	\$300,000		\$0		Includes costs for key investigations and studies including designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisions sum to be used to refine the conceptua closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, fine land use requirements and knowledge base investigations can range to >33 M Sites with more than 1 pit to add \$50,000 to rate.

	Onio 3 Aliberty	IN IN	<u> </u>		Additional Ite	ems Subtotal	\$0		the operator>>
	Other 3 <insert></insert>	N			left blank				the operator>> This item includes < <to added="" be="" by<="" th=""></to>
	Other 2 <insert></insert>	N N			deliberately				the operator>> This item includes < <to added="" be="" by<="" th=""></to>
Additional Items	Other 1 <insert></insert>	N	IVIO	bilisation an	d Demobilisat	don Subtotal	Ψ		This item includes < <to added="" be="" by<="" td=""></to>
	Mobilisation & Demobilisation (Distance to site >1000 km)	Y		item	\$500,000		\$0 \$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	Y		item	\$300,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
	Mobilisation & Demobilisation (Distance to site >150 km but <500 km)	Y		item	\$150,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
	Mobilisation & Demobilisation (Distance to site <150 km)	Y		item	\$100,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Υ		Item	\$35,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required
bilisation and Demobilisatio	Mobilisation & Demobilisation for small mine or quarry - small fleet	Y		Item	\$12,000		\$0		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as require
	, and the state of					ems Subtotal	\$0		
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	Y		allow	Use alternate rate cell		\$0		Provisional sum.
	Removal and disposal of radiation devices	Y		each	\$31,630		\$0		Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source Americium – 241, Plutonium – 238, Caesium – 137 etc). Source Isotope type, quantity, strenweight, source holder type, source holder weight, pick-up location (ame others) will directly affect pricing.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	Y		allow	\$0		\$0	Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required cleaning and decontaminating plant equipment, chemical storage locatio oil and grease traps, tanks, vessels pipe work etc
	Site security during closure	Y		yr.	\$75,000		\$0		Provisional sum for site security measures required during closure. includes nightly patrols and first response in the event of an out of h incident.
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	Y		allow	\$27,950		\$0		Based on experience for a REF afte completion of a detailed closure stu (e.g. contamination investigation) of could range from \$10,000 to \$100,( ex GST. Note this does not apply to Statement of Environmental Effects Environmental Impact Statement.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least \$2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final vold	Y		allow	\$125,000		\$0		and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsider risk, cover/capping and final landfc site wide surface water, etc. Provis sum to be used to refine the conce closure plan into a detailed closure with execution strategies for rehabilitation activities.

## Domain 1c: Infrastructure

## Total Cost for Infrastructure Domain

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable	Quantity	Unit	Default Unit	Alternative	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Termination of Services and Demolition Works	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	(Y or N)		allow	Rate \$35,000	Unit Rate		Information	For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp
	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage	N		allow	\$5,850				and workshops are in separate places), consider multiple disconnection fees.  Used for infrastructure remote from primary connection. Can also be used for small mines / quarries that do not have dedicated
	treatment plant etc.)  Removal of low/medium voltage powerlines including disconnection, rolling up the wires and	N		km	\$15,000				supplies from supply authorities such as steel lattice power lines.  Applies to power lines on stobie,
	removing the poles - does not include the removal of substations  Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not	N		km	\$100,000				concrete or similar poles.  Applies to power lines on steel tower and steel lattice structures assuming 3
	include the removal of substations  Remove small rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	N		Item	\$350,000				towers / km.  Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove medium rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	N		Item	\$500,000				Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Remove large / significant rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material onsite/locally	N		Item	\$1,300,000				Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
	Demolish and/or remove substations (assumes they are in a closed building). Dispose of waste material on-site/locally	N		m2	\$100.00				Simple structure to demolish mechanically (no labour required), assumes single story building with no asbestos and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	N		m2	\$75.00				Includes demolition and removal of all switchgear and transformers etc. and segregation of contents for scrap as applicable.
	Demolish and remove demountable structures on concrete stumps. Assumes not being re-used	N		m2	\$40.00				Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove small buildings/tanks (admin buildings, single story accommodation etc) and disposal on-site/locally	N		m2	\$61.00				Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove light industrial buildings and disposal on-site/locally	N		m2/floor	\$90.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	N		m2/floor	\$130.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Demolish and remove CHPP/process plant (include the area of each floor of the structure) and disposal on-site/locally	N		m2/floor	\$225.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces, agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	N		m2/floor	\$225.00				Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	N		allow	\$750,000				Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Collapse, demolish and remove bucket wheel stacker/reclaimer and disposal on-site/locally	N		allow	\$2,000,000				Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	N		m	\$75.00				Includes both rails, does not include the conveyor system. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	N		allow	\$92,500				Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.

Collapse, Cut and Remove 3000 T coal silo and	N	allow	\$77,500		Collapse structure and remove. Does not include transport to regional
disposal on-site/locally  Collapse, Cut and Remove 1250 T coal silo and					disposal facility or equivalent.  Collapse structure and remove. Does
disposal on-site/locally  Collapse, Cut and Remove rail loading bins and	N	allow	\$62,500		not include transport to regional disposal facility or equivalent. Collapse structure and remove. Does
disposal on-site/locally	N	allow	\$65,000		not include transport to regional disposal facility or equivalent. Collapse structure and remove. Does
Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	N	allow	\$460,000		not include transport to regional disposal facility or equivalent.
Demolish and remove onground conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	N	m	\$185.00		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove elevated conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	N	m	\$295.00		Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
Demolish and remove overhead conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally.  This may include small scale fixed material stacking	N	m	\$850		Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
infrastructure Remove and demolish conveyor from reclaim tunnel			4450.00		Due to no canopy or infrastructure
(Does not include excavation and demolition of reclaim tunnel roof)	N	m	\$150.00		attached.  Assumes this area will be used for
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	N	m	\$950.00		another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolition and removal of vent raise fans, electrical substation and winch and disposal on-site/locally	N	allow	\$25,000		Does not include filling and capping the shaft. Does not include transport to regional disposal facility or equivalent.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	N	allow	\$10,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove medium tank clean (Thickener etc 10 - 15 m diameter) and disposal on- site/locally	N	allow	\$30,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove large tank clean (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	N	allow	\$45,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove extra large tank clean (Thickener etc >30 m diameter) and disposal on- site/locally	N	allow	\$100,000		Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
Demolish and remove tank clean (Thickener etc) >50 m diameter and disposal on-site/locally	N	allow	\$100,000		Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or equivalent.
Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	N	allow	\$21,000		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-site/locally	N	allow	\$30,000.00		Assume tank is clean (contents removed), does not include transport to regional disposal facility or equivalent.
Remove small underground pipe and disposal on- site/locally	N	m	\$25.00		For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or equivalent.
Remove medium underground pipe and disposal on- site/locally	N	m	\$60.00		For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or equivalent.
Remove large underground pipe and disposal on- site/locally	N	m	\$165.00		For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	N	m	\$12.00		~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
Remove surface pipelines (unsupported) and disposal on-site/locally	N	m	\$15		-300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	N	allow	\$20,000.00		Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	N	m2	\$10.00		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove bitumen (airstrip) and dispose on- site/locally	N	m2	\$20.00		Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.

Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	N		m2	\$36.00				Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally	N		m2	\$75.00				Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60 - \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.
Crush concrete to make road aggregate - 75 mm	N		tonne	\$10.00				Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	N		tonne	\$13.00				Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 30 mm	N		tonne	\$15.00				Does not include haulage of materials - assumes crushing plant is readily available.
Remove fence (cyclone/wire fence) and disposal on-	N		m	\$20.00				Roll up fence and remove posts.
Removal of small plastic tanks	N		each	\$1,000.00				Remove small poly tanks used for water storage, etc.
Demolish and remove galvanised/corrugated light weight tanks	N		each	\$500.00				Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
Demolish and remove communication towers	N		each	\$5,000.00				Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
Removal of UG services (power within main gate areas, etc.)	N		allow	\$50,000.00				Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges
Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	N		tonne	\$7.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	N		tonne	\$9.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km	N		tonne	\$12.50				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >10 km but <15 km	N		tonne	\$32.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km	N		tonne	\$36.00				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	N		allow	Use alternate rate cell				Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.
Waste disposal to Council landfill - fees (general waste)	N		tonne	\$193.00				Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	N		tonne	\$174.00				Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
	Term	nination of Se	rvices and D	emolition Wo	rks Subtotal	\$0		
Remove rail loop and spur, ballast etc. and disposal on-site/locally	N		m	\$60.00				Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to regional disposal facility or equivalent.
Remove train loading facilities and disposal on- site/locally	N		m2	\$185.00				Remove rail load point infrastructure including gantries and control structures. Does not include transport to regional disposal facility or equivalent.
Reshape rail spur and load out areas. Does not include growth media and revegetation	N		ha	\$2,860				D10 Dozer and 16 H Grader (50% utilisation).
			R	ail Infrastruct	ure Subtotal	\$0		
Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pit-top facilities (i.e., vehicle refluel, sewage treatment).
	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  Crush concrete to make road aggregate - 50 mm  Crush concrete to make road aggregate - 30 mm  Remove fence (cyclone/wire fence) and disposal on-site/locally  Removal of small plastic tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove communication towers  Removal of UG services (power within main gate areas, etc.)  Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km  Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km  Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill - fees (general waste)  Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  N  Crush concrete to make road aggregate - 50 mm  N  Remove fence (cyclone/wire fence) and disposal on-site/locally  Removal of small plastic tanks  N  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove communication towers  N  Removal of UG services (power within main gate areas, etc.)  Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km  Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  N  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km  N  Waste disposal to Council landfill - fees (general waste)  N  Remove train loading facilities and disposal on-site/locally  Reshape rail spur and load out areas. Does not include growth media and revegetation  N  Undertake a preliminary site investigation (Phase 1), This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies	Remove concrete pads. & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm  N  Crush concrete to make road aggregate - 50 mm  N  Crush concrete to make road aggregate - 30 mm  Remove fence (cyclone/wire fence) and disposal on-site/locally  Removal of small plastic tanks  N  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove galvanised/corrugated light weight tanks  Demolish and remove communication towers  N  Removal of UG services (power within main gate areas, 10 km but <15 km  Waste disposal to Council landfill (general waste) - haulage >10 km but <25 km  Waste disposal to Council landfill (general waste) - haulage >15 km but <26 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <15 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >15 km but <50 km  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Waste disposal to Council landfill - fees (general waste) - N  Remove train loop and spur, ballast etc. and disposal on-site/locally  N  Remove train loop and spur, ballast etc. and disposal on-site/locally  N  Remove train loop and spur, ballast etc. and disposal on-site/locally  N  Remove train loop and spur, ballast etc. and disposal on-site/locally  N  Undertake a preliminary site investigation (Phase 1), This accounts for current and revegetation  N  Undertake a preliminary site investigation (Phase 1), This accounts for current and revegetation  N  N	Remove concrete pads & footings (-300 mm teickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm	### Branches   Proceedings   Process   Process	Parabove concrete pada & footings (>300 mm the forms) and disposal on-eliofically (seement waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (general waster) - forms and disposal to Council landfill (findustrial demolation / concrete / scap metal) - haudage > 10 mm to < 25 mm	Remove concrete case & foreigne (-)000 mm hordered and disposal on-stellecically and an increase of the steller	Removed concerts pack a 1storage Local minimum of the concentration of the concentration of the disposal or shallowing the concentration of the concentra

						_
Undertake an intrusive site investigation on sites with small footprints to investigate e.g. ≤15 ha. This accounts for current and historical locations where areas of disturbance are dustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Y	Cluster	\$44,000	\$0		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	NN	Cluster	\$106,000			The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N	allow	\$35,000			Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N	allow	Use alternate rate cell			Assumes complex site; detailed design drawings required for cover.
Removal and disposal of contaminated water from tanks, bunded areas and sumps	N	L	\$0.35			Cost for recent sump clean-up from resource activity - requires specialists to treat
Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	N	m3	Select from List		Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	N	m3	\$800.00			Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N	m4	\$660.00			Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N	m3	\$220.00			Includes load, haul and dump fees to a licensed facility.
Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	N	m3	Select from List		Select Volume Here	Spreading of contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 24 months.
Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	N	Item	\$150,000			Required if treatment of hydrocarbon contamination is required to be fast tracked.
On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	N	m3	\$165.00			Additional cost as the treatment process is fast tracked.
Remove and dispose of asbestos (<750 m2)	N	m2	\$50.00			Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Remove and dispose of asbestos (>750 m2)	N	m2	\$40			Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Waste disposal to Council landfill - fees (asbestos)	N	tonne	\$290			Landfill fees to regional landfill.
Treatment of known Acid Sulfate Soils	N	ha	\$2,580			Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	N	m2	\$1			Provisional sum for cutting using ripping tynes and on-site disposal of the liner.

	r e e e e e e e e e e e e e e e e e e e								
	Long haulage brine/salt for disposal (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	N		tonne	\$288				Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to
	,				• •				landfill.
	Long haulage water (clean or contaminated) (Select	N		tonne	Select from			Select Haul Distance Here	Assumes transport in a 20,000 L tanke Add disposal costs to additional items
	Haul Distance from list)				List				where warranted.
Vente Obette and Deschales		I	ı	Contan	ninated Mater	ials Subtotal	\$0		<u> </u>
Vents, Shafts and Boreholes	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	N		depth (m)	\$44.55				Cost to grout and cap an open exploration borehole. Assume a 20 m 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
	Option 3 - Mineral RAB and aircore drill holes Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	N		allow	\$43				May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	N		allow	\$5,700				Includes grouting and capping 100 - 20 m exploration boreholes to meet the requirements of Departmental Guidelines.
	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	N		allow	\$6,960				Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
	Boreholes – cap and seal open bore holes - surface- to-in-seam gas drainage	N		allow	\$17,890				Surface-to-in-seam gas drainage boreholes.
	Boreholes – cap and seal open bore holes - vertical gas drainage	N		allow	\$16,000				Vertical gas drainage boreholes.
	Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	N		allow	\$35,000				Includes multi skin sleaves to prevent aquifer mixing.
	Boreholes – cap and seal service boreholes for UG coal operations	N		allow	\$45,000				Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$2,070				Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site
	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	N		Item	\$1,340				Sealing required, but not complete fillir with concrete/grout
	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	N		each	\$415				Cut collar, remove, cap, backfill cappe collar and cover with nearby organic or growth material
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor	l	I		s and Boreho	oles Subtotal	\$0		Assumes ~6 m road width - 16H
	works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	N N		ha ha	\$1,040.00 \$1,500				Grader.  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
	minor earthworks and deep rip and trim Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	N		ha	\$3,700				utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and	N N		ha m3	\$7,025  Select from List			Select Haul Distance Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed  This item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth
Farthworks / Structural Works	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) seed (native tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally			m3	Select from	cks Subtotal	\$0		grader @ \$230 per hour (50% utilisation) - native tree/shrub seed  This Item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth surface using an excavator, dozer and
Earthworks / Structural Works (Landform Establishment)	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass) seed (native tree/shrub/grass) Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally			m3	Select from List	cks Subtotal	\$0	Select Haul Distance Here  Select Push Length Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed  This Item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth surface using an excavator, dozer and
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing	N		m3	Select from List	cks Subtotal	\$0		grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of Major bulk pushing to achieve grades nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
Earthworks / Structural Works (Landform Establishment)	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	N N		m3	Select from List oads and Tra Select from List	cks Subtotal	\$0		grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or obsurface using an excavator, dozer and grader to enable the establishment of Major bulk pushing to achieve grades nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks,	N N		m3 R m3	Select from List oads and Tra Select from List \$3,900	cks Subtotal	\$0		utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth surface using an excavator, dozer and qrader to enable the establishment of  Major bulk pushing to achieve grades nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for -4 hours each per
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness	N N N N		m3  m3  ha	Select from List  oads and Tra  Select from List  \$3,900  \$1,600  Select from	cks Subtotal	\$0	Select Push Length Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or oth surface using an excavator, dozer and grader to enable the establishment of Major bulk pushing to achieve grades nominated in the approval/permit  D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for -4 hours each peha. This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be out back
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling /	N N N N N		m3 m3 ha ha	Select from List oads and Tra Select from List \$3,900 \$1,600 Select from List	cks Subtotal	\$0	Select Push Length Here	grader @ \$230 per hour (\$0% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or obsurface using an excavator, dozer and grader to enable the establishment of a comminated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (\$0% utilisation). Combination of dozer and excavator work plus grader for -4 hours each per ha. This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. This rate is used to rehabilitate steep slopes of weathered rock, roadway outlings, etc that cannot be cut back and stabilised. Undertaken using D10 dozer and 16 M
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes	N N N N N N N		m3 m3 ha ha m3	Select from List Select from List Select from List \$3,900 \$1,600 Select from List	cks Subtotal	\$0	Select Push Length Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of Major bulk pushing to achieve grades nominated in the approval/permit D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation). Combination of dozer and excavator work plus grader for -4 hours each pe ha. This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation. This rate is used to rehabilitate steep slopes of weathered rock, roadway outlings, etc that cannot be out back and stabilises.
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N N N N N N N N N N N N N N N N N N N		m3 m3 ha ha m3 m4	Select from List Select from List Select from List \$3,900 \$1,600 Select from List \$185.00	cks Subtotal		Select Push Length Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or obsurface using an excavator, dozer and grader to enable the establishment of the volume of stabilised material from the road, laydown or obsurface using an excavator, dozer and grader to enable the establishment of the properties of t
(Landform Establishment)	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Deep rip hard stand / lay down areas  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N N N N N N N N N N N N N N N N N N N	tructural Wo	m3  m3  ha  ha  m3  m4  m3  m2  ha  ha  m2	Select from List  Select from List  Select from List  \$3,900  \$1,600  Select from List  \$185.00  \$1,130.00  \$960.00			Select Push Length Here  Select Haul Distance Here	grader @ \$230 per hour (\$0% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or obsurface using an excavator, dozer and grader to enable the establishment of a continuous or the stabilishment of the stabilishme
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)  Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length  Minor reshaping and pushing  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Shotcrete application on cuttings and steep slopes  Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Deep rip hard stand / lay down areas  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N N N N N N N N N N N N N N N N N N N	tructural Woo	m3  m3  ha  ha  m3  m4  m3  m2  ha  ha  m2	Select from List  Select from List  Select from List  \$3,900  \$1,600  Select from List  \$185.00  \$1,130.00  \$960.00			Select Push Length Here	grader @ \$230 per hour (50% utilisation) - native tree/shrub seed This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of the volume of stabilised material from the road, laydown or other of the properties of the properti

Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or
Direct and the 14 and the action and the								helicopter (aerial seeding). Includes treating, weighing, mixing with
Direct seeding / fertiliser (tree or native grass species)	N		ha	\$4,135				fertiliser + spreading by tractor or helicopter (aerial seeding).
Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
areas	N		m	\$22.00				Standard rate for no-climb stock fencing.
Construct standard stock fence around rehabilitated areas	N		m	\$13.00				Standard rate for standard stock fencing.
Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		Installed every 25 m.  D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth
Topsoil stripping	N		m3	\$4.86				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil quality.
Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				Material that can be applied as an alternative to spreading topsoil prior to
Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosysten	m Establishme	ent) Subtotal	\$0		hydromulching.
Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)  Removal of evaporation fans and/or other water	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.  Provisional sum for removal of water
	N		allow	\$25,000 ater Managem	ent Subtotal	\$0		management infrastructure.
transfer and management infrastructure			vva	ист манадет	CIT SUDIOIAL	ΨŪ		Rehabilitation maintenance might
transfer and management infrastructure								
transfer and management infrastructure  Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
Maintenance of areas that have been shaped and	N N			\$925 \$1,200				include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include
Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'			ha					include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.  Areas requiring minor repair - rills,
	Hydro-seeding with straw mulching and bitumen tack with native seed  Hydro-seeding with straw mulching and bitumen tack with pasture seed  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  Hydromulch - high performance flexible growth medium grade  Single application of fertiliser (pasture)  Single application of fertiliser (trees)  Spoil amelioration (adding lime / gypsum etc.) growth media amelioration with biosolids  Construct no-climb stock fence around rehabilitated areas  Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc.  Clearing and grubbing of trees and vegetation  Topsoil stripping  Growth media supplementation with manure  Utilise biotic soil media - organic topsoil alternative  Land Preparation and Revegetation (Growthworks)  Large clean water dams (i.e. ≥ 2 ha) to be retained after thworks  Remove sediments from the floor of the dam to enable it to be converted into clean water structure	Direct seeding / fertiliser (tree or native grass species)  N  Hydro-seeding with straw mulching and bitumen tack with native seed  N  Hydro-seeding with straw mulching and bitumen tack with pasture seed  N  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  N  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  N  Hydromulch - high performance flexible growth medium grade  N  Single application of fertiliser (pasture)  N  Single application of fertiliser (trees)  N  Spoil amelioration (adding lime / gypsum etc.)  growth media amelioration with biosolids  N  Construct no-climb stock fence around rehabilitated areas  Construct standard stock fence around rehabilitated areas  Purchase and erect warning signs  Y  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil roll of the dam to a supplementation and Revegetation in the control of the dam to be retained after decommissioning — make safe and minor earthworks  Large clean water dams to be retained after decommissioning — make safe and minor earthworks  Large clean water dams to be retained after decommissioning — make safe and minor earthworks  N  Remove sediments from the floor of the dam to enable it to be converted into clean water structure  N  N  N  N  N  N  N  N  N  N  N  N  N	Direct seeding / fertiliser (tree or native grass species)  N  Hydro-seeding with straw mulching and bitumen tack with native seed  N  Hydros-seeding with straw mulching and bitumen tack with native seed  N  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  N  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  N  Single application of fertiliser (pasture)  N  Single application of fertiliser (pasture)  N  Single application of fertiliser (trees)  N  Single application of fertiliser (frees)  N  Spoil amelioration (adding lime / gypsum etc.)  Growth media amelioration with biosolids  N  Construct no-climb stock fence around rehabilitated anses  Onstruct standard stock fence around rehabilitated anses  Purchase and erect warning signs  Y  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filling voids and/or capping etc.  Clearing and grubbing of trees and vegetation  N  Topsoil stripping  N  Clearing and grubbing of trees and vegetation (Growth Media Development at all can water dams (i.e. 2.2 ha) to be retained after mine closure — make safe and minor earthworks  Large clean water dams (i.e. 2.2 ha) to be retained after mine closure — make safe and minor earthworks  enable it to be converted into clean water structure  N  enable it to be converted into clean water structure  N  enable it to be converted into clean water structure  N	Direct seeding / fertiliser (tree or native grass species)  N ha  Hydro-seeding with straw mulching and bitumen tack with native seed  Hydro-seeding with straw mulching and bitumen tack with pasture seed  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - base grade or standard for flat areas that can be irrigated by water cart  Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months  M m2  Hydromulch - high performance flexible growth mediaum grade  Single application of fertiliser (pasture)  N m2  Single application of fertiliser (pasture)  N ha  Single application of fertiliser (trees)  N ha  Single application of fertiliser (trees)  N ha  Single application of fertiliser (trees)  N ha  Supoil amelioration (adding lime / gypsum etc.)  N ha  Construct on-climb stock fence around rehabilitated nor areas  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources virgin excavated natural material (VENM) for growth media.  Supply from external sources a combination of virgin excavated natural material (VENM) for growth media.  Supply from external sources and vegetation  N ha  Topsoil stripping  N ha  Clearing and grubbing of trees and vegetation  N ha  Topsoil stripping  N ha  Land Preparation and Revegetation (Growth Media Development and Ecosyster Clean water dams to be retained after decommissioning – make safe and minor earthworks  Romove sediments from the floor of the dam to earthworks  Romove sediments from the floor of the dam to earthworks  Romove sediments from the floor of the dam to earthworks  Romove sediments from the floor of the dam to earthworks  Romove sediments from the floor of the dam to earthworks	Direct seeding / fertiliser (tree or native grass spocies)  N  N  N  N  S4,135  Hydron-seeding with straw mulching and bitumen tack with native seed  N  N  N  N  N  N  S1,20  S4,33  Hydron-seeding with straw mulching and bitumen tack with pasture seed  N  N  N  N  N  N  S1,20  S4,33  Hydron-seeding with straw mulching and bitumen tack with pasture seed  N  N  N  N  N  N  N  S1,20  S1,80  Hydron-seeding with straw mulching and bitumen tack with pasture seed  N  N  N  N  N  N  N  S1,80  S1,80  Hydron-seeding with straw mulching and bitumen tack with pasture seed  N  N  N  N  N  N  S1,80  S1,80  Hydron-seeding with straw mulching and bitumen tack with pasture seed  N  N  N  N  N  N  S1,80  S1,80  S1,80  S1,80  Single application of liter matrix grade for steep areas to stabilise up to 12 months  N  N  N  N  N  S1,80  Single application of fertiliser (pasture)  N  N  N  N  S1,80  S1,80  Single application of fertiliser (pasture)  N  N  N  N  S1,80  S1,80  Single application of fertiliser (pasture)  N  N  N  N  S1,80  S1	Disect seeding / fertiliser (tree or native grass species)  N	Decide accessing / fertilisers (tree or native grass species)  N	December searching of werliner (there or native grants executed by the place analysing and bitumen as with value) was with relative based or producting and bitumen as with product seed or producting and bitumen as with producting and bitumen as with product seed or producting and bitumen as with product seed or producting and bitumen as with producting and bitumen and producting and bitumen as with producting and bitumen as with producting and bitumen as with producting and bitumen and producting and bitumen as with producting and bitumen and bitumen and bitumen and bitumen and bitumen and

	Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re- construction of landform.	
Maintenance of Rehabilitated Areas Subtotal \$0										
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>	
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>	
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>	
					Additional Ite	ms Subtotal	\$0			
Total Cost for Infrastructure Domain \$0										

#### Domain 2c: Tailings & Rejects

#### **Total Cost for Tailings & Rejects Domain**

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	N		Cluster	\$15,000				The preliminary investigation would include at minimum a desktop assessment of the area and site history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pit-top facilities (i.e., vehicle refuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. <15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$44,000				The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (ivi)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assumes site is easily accessible and a small area e.g. ~10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	N		Cluster	\$106,000				The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 380 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	\$35,000				Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
	Develop a Remediation Action Plan on sites with large footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	N		allow	Use alternate rate cell				Assumes complex site; detailed design drawings required for cover.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	N		L	\$0.35				Cost for recent sump clean-up from resource activity - requires specialists to treat.
	Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockplie area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
	Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	N		m3	\$800.00				Includes load, haul and dump fees to a licensed facility.

Load, cart and disposal of Restricted classified contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas	N		m4	\$660.00				Includes load, haul and dump fees to a licensed facility.
Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill	N		m3	\$220.00				Includes load, haul and dump fees to a licensed facility.
	N		m3	Select from List			Select Volume Here	spreading or contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of
	N		Item	\$150,000				oroanic chemicals - time frame of up to Required if treatment of hydrocarbon contamination is required to be fast tracked.
	N		m3	\$165.00				Additional cost as the treatment process is fast tracked.
Remove and dispose of asbestos (<750 m2)	N		m2	\$50.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Remove and dispose of asbestos (>750 m2)	N		m2	\$40.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
Waste disposal to Council landfill - fees (asbestos)	N		tonne	\$290	iala Cubtatal	\$0		Landfill fees to regional landfill.
Unsealed roads / vehicle park-up areas – minor					iais Subtotai	<b>\$</b> 0		Assumes ~6 m road width - 16H
works including deep rip and trim Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds –	N N		ha ha	\$1,040.00				Grader. D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed	N		ha	\$3,700				utilisation) - no seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50%
Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and	N		ha	\$4,485				utilisation) - pasture grass seed D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This term includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation
E	arthworks / S	Structural Wor	ks (Landforn	n Establishme	ent) Subtotal	\$0		
	N		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
Minor reshaping and pushing	N		ha	\$3,900				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N N		ha m3	\$3,900 Select from List			Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Trim, rock rake & deep rip (includes levelling /				Select from			Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  Undertaken using D10 dozer and 16M
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	N		m3	Select from List			Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Tirm, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N N N		m3 ha ha m2	\$1,130.00 \$1,600	mi) Substated	50	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  Undertaken using D10 dozer and 16M grader.  Combination of dozer and excavator work plus grader for ~4 hours each per
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Tirm, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N N N	structural Wo	m3 ha ha m2	\$1,130.00 \$1,600	ent) Subtotal	\$0	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  Undertaken using D10 dozer and 16M grader.  Combination of dozer and excavator work plus grader for ~4 hours each per ha.  Installation of on-site rock material (riprap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an
Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)  Tirm, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)  Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N N N	structural Wo	m3 ha ha m2	\$1,130.00 \$1,600	ent) Subtotal	\$0	Select Haul Distance Here	grader @ \$230 per hour (50% utilisation).  This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.  Undertaken using D10 dozer and 16M grader.  Combination of dozer and excavator work plus grader for ~4 hours each per ha.  Installation of on-site rock material (riprap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an
CALIFF CS F CS F C F C F C F C F C F C F C F	contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill.  Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)  Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment.  On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit  Remove and dispose of asbestos (<750 m2)  Remove and dispose of asbestos (<750 m2)  Waste disposal to Council landfill - fees (asbestos)  Unsealed roads / vehicle park-up areas – minor works including deep rip and trim  Unsealed roads / cocess tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks, final trim and deep rip and trim  Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	contaminated material off site to a licensed landfill.  Add \$50/m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional alandfill. Add \$50/m3 for cartage to regional alandfill. Add \$50/m3 for cartage to regional landfill.  Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)  Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment  On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit  N  Remove and dispose of asbestos (<750 m2)  N  Remove and dispose of asbestos (<750 m2)  N  Waste disposal to Council landfill - fees (asbestos)  N  Unsealed roads / vehicle park-up areas - minor works including deep rip and trim  Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds - minor earthworks, final trim and deep rip and seed (pasture grass)  Unsealed roads / vehicle park-up areas - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds - Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)  N  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	contaminated material off site to a licensed landfill.  Add \$50/m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill.  Add \$50/m3 for cartage to regional landfill.  Consite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)  Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment  On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit  N  Remove and dispose of asbestos (<750 m2)  N  Remove and dispose of asbestos (<750 m2)  N  Waste disposal to Council landfill - fees (asbestos)  N  Unsealed roads / vehicle park-up areas – minor works including deep rip and trim lonseated roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim lonseated roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native grass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)  Remove stabilised material (blue metal, aggregate etc.) from roadways and disposa	contaminated material off site to a licensed landfill.  Add \$50/m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional anaffill.  On-site remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)  Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment  On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit  N m3   contaminated material off site to a licensed landfill. Add \$50/m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50/m3 for cartage to regional landfill. Add \$50/m3 for cartage from List  Note that the regional landfill and \$150,000 for cartage to regional landfill. Add \$50/m3 for cartage for material landfill. Add \$50/m3 for material landfill. Add \$50/	contaminated material off site to a licensed landfill. Add \$50m3 for cartage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50m3 for cartage to regional landfill.  Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)  N m3 Select from List  Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soils remediation of hydrocarbon contaminated soils - using a mobile treatment on the process of asbestos (-750 m2)  N m3 \$165.00  Remove and dispose of asbestos (-750 m2)  N m2 \$40.00  Remove and dispose of asbestos (-750 m2)  N m2 \$40.00  Waste disposal to Council landfill - fees (asbestos)  N baseled roads / vehicle park-up areas – minor works including deep rip and trim Unsealed roads / scress tracks / vehicle park-up areas + Minor earthworks and deep rip and trim  Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed minor earthworks, final trim and deep park and trim.  N ha \$1,500  Insealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree'struburgass)  Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, and trim  N ha \$3,700  Linealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree'struburgass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small aerthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree'struburgass)  Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small aerthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree'struburgass)  N ha \$4,485  Select from List  Earthworks / Structural Works (Landform Establishment) Subtotal	contaminated material off site to a licensed landfill. Add \$50m for catage from regional areas  Load, cart and disposal of Low Level contaminated material off site to a licensed landfill. Add \$50m for cartage from regional and fill for cartage from regional landfill for cartage for regional landfill for soils soils manual land farming (Select Volume from List)  Mobilisation of cement stabilisation plant and equipment for hydrocarbon contaminated soils for the cartage for regional landfill for the particular for hydrocarbon contaminated for the cartage for regional	contaminated material of site to a licensed landfill.  N  M  M  M  M  M  M  M  M  M  M  M  M	

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$146,500				This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from > 1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.) -, and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from taillings cap, use rate from 9.02 for relevant haulage and spreading in additional material to make up haulage volume in 8.05.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / dlay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$313,000				This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. and till construction that the construction method is the construction of the co
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	Υ	allow	Use alternate rate cell		\$0		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / dlay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / dlay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	N	 m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
				Mine Wa	ste Subtotal	\$0		
Land Preparation and Revegetation (Growth Media	0			Outro			Select Haul Distance Here	If topsoil is not available on-site, then
Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N	m3	Select from List				Virgin Excavated Natural Material (VENM) may need to be externally sourced.

	Direct seeding / fertiliser (pasture grass species)	N		ha	\$1,875				Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass species)	N		ha	\$4,135				helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of –4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	N		m	\$22.00				Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated	N		m	\$13.00				Standard rate for standard stock
	areas  Purchase and erect warning signs	N		allow	\$250.00				fencing.  Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	N		m3	\$80.80				D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	N		m3	\$72.50				D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth
	Topsoil stripping	N		m3	\$4.86				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final rehabilitation location required or respreading where necessary.
	Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil quality.
	Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				Material that can be applied as an alternative to spreading topsoil prior to
	Land Preparation and Revegetation (Grov		velonment a			ent) Subtotal	\$0		hydromulching.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N	velopinent al	allow	\$2,500	Sity Gustotal			Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List	nont Subtotal	\$0	Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925	Sin Subtoidi			Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion control, inspections/audits - does not include major repair works.
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	N		ha et Bo	\$40,000	6-1	¢0		Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
			Mainte	enance of Rel	habilitated Ar	eas Subtotal	\$0		

	Total Cost for 1	<b>Tailings</b>	& Reje	cts Dor	nain			\$0	
					Additional Ite	ms Subtotal	\$0		
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>

#### Domain 3c: Overburden & Waste

#### Total Cost for Overburden & Waste Domain

\$0

Additional Assumptions: Record any relevant assumptions to this domain below:

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Contaminated Materials	Treatment of known Acid Sulfate Soils	N		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes 1% by weight lime addition and treatment to 100 mm depth only.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	N		m2	\$1				Provisional sum for cutting using rippir tynes and on-site disposal of the liner.
	Long haulage brine/salt for disposal (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Costs for haulage to location for authorised disposal.
	Brine disposal to landfill - fees only	N		tonne	\$288				Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
	Long haulage water (clean or contaminated) (Select Haul Distance from list)	N		tonne	Select from List			Select Haul Distance Here	Assumes transport in a 20,000 L tank Add disposal costs to additional item where warranted.
				Contar	ninated Mater	ials Subtotal	\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	N		ha	\$1,040.00				Assumes ~6 m road width - 16H Grader.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	N		ha	\$1,500				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	N		ha	\$3,700				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$4,485				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	N		ha	\$4,870				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	N		ha	\$7,025				D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or ot surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
				R	oads and Tra	cks Subtotal	\$0		T
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	N		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Y		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	N		m2	\$185.00				This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each pe ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N		m2	\$27.00				Installation of on-site rock material (rif rap) where managing water run-off fre disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If require to be sourced off site, assume an additional \$20\mu.

Division of Resources and Geoscience Rehabilitation Cost Estimation Tool - Open\_Cut (3)

Page 57 of 77

Mine Waste

					1 .
Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (NMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	N	ha	\$82,000		This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$146,500		This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from > 1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth. This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / hauf / place / crush / screen / borrow etc.). Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell		Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	N	ha	\$313,000		This item includes sourcing, carting, spreading, misture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth. This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.). Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.). This option is typically driven by time
	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	N	ha	\$843,000				Inis option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desicaction, resulting in a tailings shea strength that is very weak excluding access by conventional small plant. Small equipment used for rehabilitation. This excludes any additional material required to form the final landform
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				excelle in addition to this con Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	N	allow	Use alternate rate cell				Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	N	m3	Select from List			Select Haul Distance Here	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
	•			Mine Wa	ste Subtotal	\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N	m3	Select from List			Select Haul Distance Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y	allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	ha	\$1,875		\$0		Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Direct seeding / fertiliser (tree or native grass species)	Y	ha	\$4,135		\$0		helicopter (aerial seeding). Includes treating, weighing, mixing with fertiliser + spreading by tractor or
	Hydro-seeding with straw mulching and bitumen tack with native seed	N	m2	\$1.90				helicopter (aerial seeding).  Process to be used on flat well prepare surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fror \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N	m2	\$0.43				Process to be used on flat well prepare surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges fror \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N	m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP to stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N	m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N	m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/h minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	N	ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Single application of fertiliser (trees)	N	ha	\$140.00				These rates have fluctuated over the last few years however in light of currer conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
	Spoil amelioration (adding lime / gypsum etc.)	N	ha	\$1,000				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	N	ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated	N	m	\$22.00				Standard rate for no-climb stock
	areas Construct standard stock fence around rehabilitated	N	m	\$13.00				fencing. Standard rate for standard stock
	areas		allow	\$250.00		\$0		fencing.  Compliance with AS 1319-1994 - Safe signs for the occupational environment
	Purchase and erect warning signs	Y						installed every 25 m.
	Purchase and erect warning signs  Supply from external sources virgin excavated natural material (VENM) for growth media.	Y	m3	\$80.80		\$0		
	Supply from external sources virgin excavated		m3 m3	\$80.80 \$72.50		\$0 \$0		Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allon nominal rate of \$70/m3 for imported fill

	Total Cost for O	/erburd	len & W					\$0	
					Additional Ite	ems Subtotal	\$0		une operators
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	lanuomi		Mainte	enance of Rel	nabilitated Ar	eas Subtotal	\$0		construction of landform.
	Existing rehabilitation repair - total failure of landform	N		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re
	Existing rehabilitation repair - major	N		ha	\$2,500				Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - moderate	N		ha	\$1,700				Areas requiring moderate repair - rills significant growth media replacemen
	Existing rehabilitation repair - minor	N		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
laintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	N		ha	\$925				Rehabilitation maintenance might include re-seeding, watering, fertilisin minor re-shaping, erosion control, inspections/audits - does not include major repair works.
				Wa	ter Managem	ent Subtotal	\$0		
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	Select from List			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring removal using an excavator, truck an dozer to clean out the dam.
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pastugrass.
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosysten	n Establishme	ent) Subtotal	\$0		
	Utilise biotic soil media - organic topsoil alternative	N		m2	\$2.50				Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Growth media supplementation with manure	N		ha	\$747.50				Addition of manure to improve soil quality.
	Topsoil stripping	N		m3	\$4.86				Stripping or topsoil at an approximal depth of 0.2 m into stockpiles; load a haul to final rehabilitation location required or respreading where necessary.

## **Total Cost for Active Mine & Voids Domain**

\$0

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant Information	Description / Notes:
Open Cut	Active pit area – benches blasted and doze to acceptable grade	Y		Lm	\$1.93		\$0		Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
	Drill & blast faces to make safe	N		m3	\$0.95				Bulk Drilling say 8'9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive density of 0.9, diameter of 229 mm, explosives at 665.3 kg/hole with a powder factor of 0.37 with an approximate bench height of 25 m.
	High wall treatment – (trench and safety berm)	N		m	\$90.00				D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Structural Works		l	l	ı	Open	Cut Subtotal	\$0	Select Push Length Here	
(Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push Length	Y		m3	Select from List			Golder and Longar Hote	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y		ha	\$3,900		\$0		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).
	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	Υ		m3	Select from List			Select Haul Distance Here	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
	Shotcrete application on cuttings and steep slopes	N		m2	\$185.00				This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	N		ha	\$1,130.00				Undertaken using D10 dozer and 16M grader.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation	N		ha	\$1,600				Combination of dozer and excavator work plus grader for ~4 hours each per
	measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	N	tructural Wa	m2	\$27.00	anti Subtetal	\$0		ha.  Installation of on-site rock material (rip- rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is locally available). If required to be sourced off site, assume an additional \$20/m2.
Land Preparation and	E	artnworks / 5	tructurai vvoi	rks (Landforn	n Establishme	ent) Subtotal	<b>\$</b> 0	Select Haul Distance Here	If topsoil is not available on-site, then
Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	N		m3	Select from List			Ociect Hauf Distance Here	Virgin Excavated Natural Material (VENM) may need to be externally sourced.
	Planting mature trees (>15 cm) Planting tube stock (<15 cm)	Y Y		allow allow	\$15.00 \$6.60		\$0 \$0		4 m centres. 4 m centres.
				anow					Includes treating, weighing, mixing with
	Direct seeding / fertiliser (pasture grass species)  Direct seeding / fertiliser (tree or native grass	Y		ha	\$1,875		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding). Includes treating, weighing, mixing with
	species)	Y		ha	\$4,135		\$0		fertiliser + spreading by tractor or helicopter (aerial seeding).
	Hydro-seeding with straw mulching and bitumen tack with native seed	N		m2	\$1.90				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
	Hydro-seeding with straw mulching and bitumen tack with pasture seed	N		m2	\$0.43				Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	N		m2	\$0.80				Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	N		m2	\$1.80				Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
	Hydromulch - high performance flexible growth medium grade	N		m2	\$2.50				Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
	Single application of fertiliser (pasture)	N		ha	\$420.00				Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions

		**			Additional Ite	ms Subtotal	\$0		the operator>>
	Other 3 <insert></insert>	N			left blank				This item includes < <to added="" be="" by<="" th=""></to>
	Other 2 <insert></insert>	N			deliberately				This item includes < <to added="" be="" by<="" th=""></to>
Additional Items	Other 1 <insert></insert>	N			This is				This item includes < <to added="" be="" by="" operator="" the="">&gt;</to>
	an arotti		Mainte	enance of Re	habilitated Ar	eas Subtotal	\$0		construction of landform.
	Existing rehabilitation repair - total failure of landform	N N		ha	\$40,000				some level of additional surface water management.  Areas that require extensive rehabilitation repair - re-design and re-
	Existing rehabilitation repair - major	N		ha	\$2,500				significant growth media replacement Areas requiring major repair - rills, gullies, growth media replacement,
	Existing rehabilitation repair - minor  Existing rehabilitation repair - moderate	N N		ha ha	\$1,200 \$1,700				minor growth media replacement.  Areas requiring moderate repair - ril
	seeded and revegetation has been 'successful'	N N		ha	\$925				minor re-shaping, erosion control, inspections/audits - does not include major repair works. Areas requiring minor repair - rills,
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and					ent Subtotal	Ψ0		Rehabilitation maintenance might include re-seeding, watering, fertilisi
	enable it to be converted into clean water structure (Select Haul Distance from list)	N		m3	List	ant Cultinatal	<b>\$0</b>		removal using an excavator, truck as dozer to clean out the dam.
	Remove sediments from the floor of the dam to	.,			Select from			Select Haul Distance Here	This item includes the volume of contaminated sediment requiring
	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	N		allow	\$10,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use ban alternate land-user - D6 Dozer (o similar) + pasture grass.
Water Management	Clean water dams to be retained after decommissioning – make safe and minor earthworks	N		allow	\$2,500				Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use ban alternate land-user - D6 Dozer (o similar) @ ~\$200 per hour and pastigrass.
	Land Preparation and Revegetation (Grov	vth Media De	velopment ar	nd Ecosyster	n Establishme	ent) Subtotal	\$0		
	Growth media supplementation with manure  Utilise biotic soil media - organic topsoil alternative	N N		ha m2	\$747.50 \$2.50				quality.  Material that can be applied as an alternative to spreading topsoil prior hydromulching.
	Topsoil stripping	N		m3	\$4.86				depth of 0.2 m into stockpiles; load a haul to final rehabilitation location required or respreading where necessary.  Addition of manure to improve soil
	Clearing and grubbing of trees and vegetation	N		ha	\$4,730.00				Clearing and grubbing of light vegetation growth e.g. regrowth Stripping or topsoil at an approximal
	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	Υ		m3	\$72.50		\$0		D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$60/m3 for imported material.
	Supply from external sources virgin excavated natural material (VENM) for growth media.	Y		m3	\$80.80		\$0		D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Truck (90c/km) from imported stockpile - a nominal rate of \$70/m3 for imported material.
	Purchase and erect warning signs	Y		allow	\$250.00		\$0		Compliance with AS 1319-1994 - Sa signs for the occupational environme installed every 25 m.
	Security fence around steep section of high wall	N		m	\$64.00				1800mm x 3 barb chain-link mesh security fence and gate standard 2.5 mesh & 32 mm post not concreted
	growth media amelioration with biosolids	N		ha	\$1,015				Recent experience with agronomy projects.
	Spoil amelioration (adding lime / gypsum etc.)	N		ha	\$1,000.00				Assumes 2.5 t / ha as an average application rate.
	Single application of fertiliser (trees)	N		ha	\$140.00				These rates have fluctuated over the last few years however in light of cur conditions (lower fuel prices, reduce demand etc) this is a suitable standa rate.

## Domain 5c: Management Activities

## **Total Cost for Management Activities**

\$264

Key Rehabilitation Area Data for Domain	Enter data below manually
Total Landform Establishment:	
Total Growth Media Development:	
Total Ecosystem Establishment:	

Management Precinct	Activity / Description	Applicable (Y or N)	Quantity	Unit	Default Unit Rate	Alternative Unit Rate	Total Cost	Basis for Costs Estimation and Additional Relevant	Description / Notes:
Water Management	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	N N		ML	\$3,600	om nato		Information	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	N		ML	\$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
Creek Diversions				W	ater Managem	ent Subtotal	\$0		Assumes material is suitable for
	Repairs and/or stabilisation of new or compromised water course diversion	N		m	\$2,500				revegetating and has a reasonable chance of stabilising.
	Long term maintenance of water course diversion – Channel constructed through backfilled material	N		m	\$1,500				Assumes maintenance has been kept up and significant works are not required.
	Long term maintenance of water course diversion – Channel constructed through competent material	N		m	\$750.00				Assumes maintenance has been kept up and significant works are not required.
	Installation of rock armouring	N		m2	\$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite
					Creek Diversi	ons Subtotal	\$0		location.
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	Υ	1.76	ha	\$150.00		\$264		Feral animal baiting programs if required and waste materials required to be removed.
	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	Υ		ha	\$400.00		\$0		Undisturbed areas within the lease boundary that require land managemen activities.
	CORROL WORKS)		Mainte	enance of Re	habilitated Ar	eas Subtotal	\$264		activities.
Heritage Items	The restoration and care and maintenance of items that have heritage significance	N		allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of
					Horitago Ita	ems Subtotal	\$0		activities.
Sundry Items	T				пентадент	ilis Sublotai	φυ		
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater //subsidence / pli takes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	×		allow	\$100,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan into a detailed closure plan with execution strategies for rehabilitation activities.  Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction.  Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc.  Depending on site size, complexity, fine land use requirements and knowledge base investigations can range from ~575k to >51 M.  Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final vold	N		allow	\$90,000				Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan.  Sites with more than 1 pit to add \$50,000 to rate.
	Development of an 'Unplanned' Project Closure Plan Non State Significant Development with no EPJ and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	N		allow	\$15,000				Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Include risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.
	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	N		allow	\$300,000				Includes costs for key investigations and studies including designs e.g. geochemistry. Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisions sum to be used to refline the conceptua closure plan into a detailed closure plan with execution strategies for rehabilitation activities. Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc. Depending on site size, complexity, fine land use requirements and knowledge base investigations can range to > \$3 M Sites with more than 1 pit to add \$50,000 to rate.

	Mobilisation & Demobilisation (Distance to site <150 km)	N	Item	\$35,000 \$100,000				equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
	Mobilisation & Demobilisation for small mine or quarry - small fleet  Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	N N	Item	\$12,000				equipment and/or suitable plant to execute bulk earthworks as required.  May include specialist demolition
Mobilisation and Demobilisation	public lands for rehabilitation/remediation activities	N	allow	rate cell	ems Subtotal	\$0		Provisional sum.  May include specialist demolition
	Removal and disposal of radiation devices  Additional fees for accessing State, Crown or other	N	each	\$31,630 Use alternate				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc). Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up location (among others) will directly affect pricing.
	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	N	allow	\$0			Select type of HAZMAT Clean-up Required	Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
	Site security during closure	N	yr.	\$75,000				Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours
	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	N	allow	\$27,950				Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects resulting in significant issues requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	N	allow	\$125,000				Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover(capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.

Assumptions and rehabilitation requirements
List or record any assumptions made when completing this tool:



Domain

Activity

# Justification for Change of Rates in the Rehabilitation Cost Estimation Tool

DRG unit/rate

	1					
In completing the Rehabilitation Cost Estimation, we are seeking an adjustment to the rates currently utilised in the Rehabilitation Co Tool. A justification for the rate change by a third party has been included and I confirm that only the rates identified in the above ta altered in the Rehabilitation Cost Estimation Tool.						
	Authrorisation Representatives	Name		Date		
	Authorisation Representatives F		Signature			

**Adopted Rates** 

Justification



## Definitions for the Rehabilitation Cost Estimation Tool

Term	Meaning
adit	Entrance to an underground mine which is horizontal or nearly horizontal, by which
adit	the mine can be entered, drained of water and ventilated
amelioration	Addition of materials to change physical or chemical properties or soil, tailings, or
	other materials.
aquifer	Has the same meaning as it has in the Water Management Act 2000.
armouring	Application of a self-sustaining mechanism for erosion control typically utilising rock.
authority	Means an exploration licence, an assessment lease or a mining lease granted under the <i>Mining Act 1992</i> .
authorisation	Means an authority, a small-scale title or an environmental assessment permit granted under section 252 in force under the <i>Mining Act 1992</i> .
backfill	The act of placing material to refill an excavation or void (such as an open cut or dam).
ballast (rail)	A free draining coarse aggregate or metallurgical slag used to support railway tracks and allow for drainage.
batters	Slopes manufactured during mining and/or excavation activities.
borehole	A hole made by drilling or boring, but excludes sampling and coring using hand held equipment; and petroleum wells.
capillary break	A layer of coarse material placed between finer-textured materials to prevent the vertical movement of water (and associated salts) by surface tension from the lower, finer-textured material into the upper finer-textured material (such as topsoil or growth media). It can also function to limit root penetration into the underlying seal and more than one capillary break can be present within a cover design.
capping / sealing	The act of applying material (such as clay) in a usually engineered design to seal off underlying material (such as waste, contaminated soil or spoil) in order to prevent exposure of this material to the environment and outside conditions.
СНРР	Coal Handling and Processing Plant - A plant used to upgrade the quality of coal including crushing, sizing washing and drying.
Clearing of vegetation	Any one or more of the following: <ul><li>cutting down, felling, thinning, lopping, logging or removing vegetation</li><li>killing, destroying, poisoning, ringbarking, uprooting or burning vegetation.</li></ul>
contaminated	Condition or state where there is/are potentially hazardous substance(s) at concentrations above background or recommended land use levels and where assessment shows it poses, or is likely to pose, an immediate or long-term hazard to human health or the environment.
contour banks	Earthen structures constructed across cultivated slopes.
crusher/crushing plant	Equipment that crushes ore or rock - also referred to as a mill
demountable	A transportable prefabricated structure/building produced off site and transported to site, designed to be movable rather than permanently located.
Department	Department of Regional NSW
desiccation	Process of removing moisture or extreme drying.
de-water	Removal or draining groundwater or surface water from a structure by pumping or evaporation.
diversion	A drain or channel that diverts stormwater runoff around a site or landform.
earthworks	Equipment activity involving the placement and working of large amounts of earth to engineering or other design specification (such as cut and fill operations for roads, dams, landforms, etc.).
evaporation fans	Fans used to evaporate water as an alternative to discharging water off-site.
excavation	The removal of the surface layer of land to a depth greater than 500 mm from the natural surface level of that land.

exploration	Has the same meaning as it has in the State Environmental Planning Policy							
7 7 7 7 7 7	(Mining, Petroleum Production and Extractive Industries) 2007.							
gas drainage	A method of reducing the in-situ gas content of the seam to within acceptable limits							
-	by drilling holes into the seam or surrounding strata ahead of mining.							
goaf	The space remaining following extraction of the mineral.							
groundwater	Water that occurs beneath the ground surface in the saturated zone.							
hardstand	A hard-surfaced area on which heavy vehicles can be parked and equipment can be stored.							
haul road Roads used to transport mine materials (product and waste).								
HAZMAT	Anything that, when produced, stored, moved, used or otherwise dealt with without adequate safeguards to prevent it from escaping, may cause injury or death or damage to life, property or the environment.							
Item of heritage significance	Means:  • any heritage items listed in one or more of the following:  — the Commonwealth Heritage List  — the World Heritage List  — the National Heritage List  — the State Heritage Register  — an Environmental Planning Instrument  • any relic (being any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is 50 or more years old)  • within State Conservation Areas:  — items that are listed on the DECC Historic Heritage Information Management System  — in all other circumstances, any deposit, object or material evidence relating to the settlement or occupation of New South Wales or a part of New South Wales (not being Aboriginal settlement or occupation) if the deposit, object or material evidence							
	is more than 25 years old at the date of the interference or removal.							
leach	Dissolution and removal of a soluble substance from a substrate.							
mine subsidence	Movement of strata resulting from the extraction of coal, metals or minerals and incorporates vertical ground movement (strain) and differential vertical movement (tilt).							
open cut	Open-cut mining occurs where mineral deposits are close to the surface and typically involves blasting and removing surface layers of soil and rock to reach the mineral deposit. Also referred to as open-pit, or open-cast mining.							
overburden	Top soil/strata overlying a coal seam.							
petroleum title	means an exploration licence, assessment lease, production lease or special prospecting authority in force under the <i>Petroleum (Onshore) Act 1991</i> .							
	Means a hole made by drilling or boring in connection with prospecting for petroleum or operations for the recovery of petroleum, but excludes:  • sampling and coring using hand held equipment							
petroleum well	<ul> <li>a hole constructed and operated for the following purposes where the operation of that hole does not involve fracture stimulation or the recovery of petroleum:</li> </ul>							
	— stratigraphic definition — seismic (for example shot holes, geophone, tilt meters bores)							



Item	Activity Description	Unit	Unit Pric	ces	Justification and Assumptions for Proposed Rates
Termination of Serv	vices and Demolition Works				
1.01	Disconnect and terminate all services (Water, electricity, gas etc at point of attachment to site)	allow	\$ 35,0	000	For disconnection of all services, at building boundaries, physical cut at the point of attachment or distribution location. If infrastructure is not consolidated (i.e., administration, camp and workshops are in separate places), consider multiple disconnection fees.  Used for infrastructure remote from primary connection.
1.02	Disconnect and terminate services at remote areas (i.e. pump stations, remote workshops, sewage treatment plant etc.)	allow	\$ 5,8	850	Can also be used for small mines / quarries that do not have dedicated supplies from supply authorities such as steel lattice power lines.
1.03	Removal of low/medium voltage powerlines including disconnection, rolling up the wires and removing the poles - does not include the removal of substations	km	\$ 15,0	000	Applies to power lines on stobie, concrete or similar poles.
1.04	Removal of power lines on tower or lattice structures (this includes disconnection, rolling up the wires and removing the structures) - does not include the removal of substations	km	\$ 100,0	000	Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
1.05a	Remove <u>small</u> rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Item	\$ 350,0		Smaller structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
1.05b	Remove <u>medium</u> rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Item	\$ 500,0		Medium structures - minimal civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
1.05c	Remove <u>large / significant</u> rail, road, water course overpass - manage potential interruptions and demolish and remove bridge supports/pylons/bridge structure etc. and dispose of waste material on-site/locally	Item	\$ 1,300,0	000	Large structures - includes significant water management e.g. watercourse diversion and civil works to demolish (constructed for the purposes of mining related works - does not include transport to regional disposal facility or equivalent).
1.06	Demolish and/or remove substations (assumes they are in a closed building). Dispose	m <sup>2</sup>	\$ 100	00	Simple structure to demolish mechanically (no labour required), assumes single story building with
1.07	of waste material on-site/locally  Demolish and remove switchyard. Dispose of waste material on-site/locally	m <sup>2</sup>	\$ 75	5.00	no asbestos and segregation of contents for scrap as applicable.  Includes demolition and removal of all switchgear and transformers etc. and segregation of contents
1.08	Demolish and remove demountable structures on concrete stumps. Assumes not being	m <sup>2</sup>	\$ 40	00	for scrap as applicable.  Crib huts, temporary offices and other 'non permanent' structures. Does not include transport to
1.09	re-used  Demolish and remove small buildings/tanks (admin buildings, single story	m <sup>2</sup>			regional disposal facility or equivalent.  Simple structure to demolish, assumes no greater than 2 stories high. Does not include transport to
	accommodation etc) and disposal on-site/locally		,		regional disposal facility or equivalent.  Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m) - does not include transport to
1.10	Demolish and remove light industrial buildings and disposal on-site/locally	m²/floor	\$ 90		regional disposal facility or equivalent. Assumes asbestos free and mechanically demolished.
1.11	Demolish and remove industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally  Demolish and remove CHPP/process plant (include the area of each floor of the	m²/floor	\$ 130	).00	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.  Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to
1.12	structure) and disposal on-site/locally  Collapse, demolish and remove washery, crushers, hoppers, mills, furnaces,	m²/floor	\$ 225		regional disposal facility or equivalent.
1.13	agglomeration, electrowinning, floatation, sizing stations, rotary breakers, etc (include the area of each floor of the structure) and disposal on-site/locally	m²/floor	\$ 225	5.00	Needs to be calculated per floor/level (Assume 1 floor/level = 3-4 m). Does not include transport to regional disposal facility or equivalent.
1.14	Collapse, demolish and remove stacker OR reclaimer (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	allow	\$ 750,0		Cost for removal of stacker or reclaim unit only. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
1.15	Collapse, demolish and remove <b>bucket wheel stacker/reclaimer</b> and disposal on- site/locally	allow	\$ 2,000,0		Cost for just removal of the bucket wheel stacker/reclaim units. Does not include terminate services, remove rails and ballast etc. Does not include transport to regional disposal facility or equivalent.
1.16	Remove stacker/reclaimer rails and ballast and demolish and remove concrete footings etc and disposal on-site/locally	m	\$ 75		Includes both rails, does <b>not</b> include the conveyor system. Does not include transport to regional disposal facility or equivalent.
1.17	Collapse, Cut and Remove 5000T coal silo and disposal on-site/locally	allow	\$ 92,5		Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.18	Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	allow	\$ 77,5	500	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.19	Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	allow	\$ 62,5	500	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.20	Collapse, Cut and Remove rail loading bins and disposal on-site/locally	allow	\$ 65,0	000	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.20a	Demolish and Remove large concrete rail loading bin - and disposal on-site/locally	allow	\$ 460,0	000	Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
1.21	Demolish and remove <b>onground</b> conveyors, transfer stations & gantries (scrap only – does not include dismantling for reuse at another site) and disposal on-site/locally	m	\$ 185		Estimate for on-ground conveyor including anything up to 10 m off the ground. Does not include transport to regional disposal facility or equivalent.
1.22	Demolish and remove <b>elevated</b> conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally	m	\$ 295		Estimate for elevated conveyor up to ~10 m off the ground. Does not include transport to regional disposal facility or equivalent.
1.23	Demolish and remove <b>overhead</b> conveyors, transfer stations & gantries (scrap only, does not include dismantling for reuse at another site) and disposal on-site/locally.  This may include small scale fixed material stacking infrastructure	m	\$ 8	850	Estimate for overhead conveyor including conveyors that are >10 m off the ground that require a crane to remove. Does not include transport to regional disposal facility or equivalent.
1.24	Remove and demolish conveyor from reclaim tunnel (Does <b>not</b> include excavation and	m	\$ 150	00	Due to no canopy or infrastructure attached.
	demolition of reclaim tunnel roof)  Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in		•		Assumes this area will be used for another land-use that requires the structure to be dug up and re-
1.25	mine pit void)  Demolition and removal of vent raise fans, electrical substation and winch and disposal	mallow	\$ 950 \$ 25,0		buried somewhere else.  Does <b>not</b> include filling and capping the shaft. Does not include transport to regional disposal facility
1.27	on-site/locally  Demolish and remove small tank <b>clean</b> (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	allow	\$ 10,0	000	or equivalent.  Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
1.28	Demolish and remove medium tank <b>clean</b> (Thickener etc 10 - 15 m diameter) and disposal on-site/locally	allow	\$ 30,0	000	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
1.29	Demolish and remove large tank <b>clean</b> (Thickener etc 15 - 30 m diameter) and disposal on-site/locally	allow	\$ 45,0	000	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
1.30	Demolish and remove extra large tank <b>clean</b> (Thickener etc >30 m diameter) and disposal on-site/locally	allow	\$ 100,0	000	Assume tank is clean - contents removed. If tank is full allow extra 30% for excavator and 2 men to dig out and dispose. Does not include transport to regional disposal facility or equivalent.
1.31	Demolish and remove tank <b>clean</b> (Thickener etc) >50 m diameter and disposal on- site/locally	allow	\$ 100,0	000	Estimate only - may require a detailed assessment from demolition expert due to specialised equipment required for removal. Does not include transport to regional disposal facility or
1.32	Removal of UG tank <5000 L - including pipes, bunds etc. and disposal on-site/locally	allow	\$ 21,0	000	equivalent. Assume tank is clean (contents removed), does not include transport to regional disposal facility or
1.33	Removal of UG tank 5000 L - 15000 L - including pipes, bunds etc. and disposal on-	allow	\$ 30,0	000	equivalent. Assume tank is clean (contents removed), does not include transport to regional disposal facility or
1.34	site/locally  Remove small underground pipe and disposal on-site/locally	m			equivalent.  For example: 300 mm pipes - 0.5 m deep, does not include transport to regional disposal facility or
1.35	Remove medium underground pipe and disposal on-site/locally	<u> </u>	•	5.00	equivalent. For example: 500 mm pipes - 1 m deep, does not include transport to regional disposal facility or
		m		).00	equivalent.
1.36	Remove large underground pipe and disposal on-site/locally	m	\$ 165	5.00	For example: 1 m pipes - 2 m deep.

ltem	Activity Description	Unit	Unit	t Prices	Justification and Assumptions for Proposed Rates
1.37	Remove above ground pipe (supported) and disposal on-site/locally	m	\$	12.00	~300 mm pipes and assumes pipes are in close proximity to infrastructure areas. Does not include transport to regional disposal facility or equivalent.
1.38	Remove surface pipelines (unsupported) and disposal on-site/locally	m	\$	15.00	~300 mm pipes and assumes pipes are used for water transfer between pits (or similar) and remotely located. Does not include transport to regional disposal facility or equivalent.
1.39	Remove pump and pontoon from small lake or dam including pipes and electrical supply or diesel tank/s	allow	\$	20,000	Includes equipment for retrieval - boats, etc. and labour. Does not include transport to regional disposal facility or equivalent.  Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km,
1.40	Remove bitumen (car park and access roads) and dispose on-site/locally	m <sup>2</sup>	\$		depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.  Scalp bitumen and stabilised material. Generally haulage rates will be \$0.60 - \$1.20 / km,
1.41	Remove bitumen (airstrip) and dispose on-site/locally	m <sup>2</sup>	\$		depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.  Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60
1.42	Remove concrete pads & footings (<300 mm thickness) and disposal on-site/locally	m <sup>2</sup>	\$	36.00	- \$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.  Breaking up slab and disposal or for conversion to aggregate. Generally haulage rates will be \$0.60
1.43 1.44	Remove concrete pads & footings (>300 mm thickness) and disposal on-site/locally  Crush concrete to make road aggregate - 75 mm	m <sup>2</sup>	\$	75.00	-\$1.20 / km, depending on truck fleet, loaders etc. For off-site disposal use alternate rate option and add \$0.90 / km for transport.  Does not include haulage of materials - assumes crushing plant is readily available.
1.45	Crush concrete to make road aggregate - 70 mm  Crush concrete to make road aggregate - 30 mm	tonne	\$	13.00	Does not include haulage of materials - assumes crushing plant is readily available.  Does not include haulage of materials - assumes crushing plant is readily available.  Does not include haulage of materials - assumes crushing plant is readily available.
1.47	Remove fence (cyclone/wire fence) and disposal on-site/locally Removal of small plastic tanks	m each	\$ 1	20.00	Roll up fence and remove posts. Remove small poly tanks used for water storage, etc.
1.49	Demolish and remove galvanised/corrugated light weight tanks	each	\$	,	Demolish and remove small lightweight metal tanks. No costs included for managing liquids, etc.
1.50	Demolish and remove communication towers	each	\$ 5	5,000.00	Cost includes demolition and removal of tower only; separate costs required for disconnection of services, demolition of footings, etc.
1.51	Removal of UG services (power within main gate areas, etc.)	allow	\$ 50	3,000.00	Assume service disconnection at the mine boundary is at surface level. This cost covers all fees and charges  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity
1.52	Waste disposal to Council landfill (general waste) - haulage >10 km but <15 km	tonne	\$	7.00	against Waste disposal to Council landfill - fees for relevant waste type.
1.53	Waste disposal to Council landfill (general waste) - haulage >15 km but <25 km	tonne	\$	9.00	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity
1.54	Waste disposal to Council landfill (general waste) - haulage >25 km but <50 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) -	tonne	\$	12.50	Rate accounts for round trip haulage to Council landfill - fees for relevant waste type.  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity
1.55	haulage >10 km but <15 km  Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) -	tonne	\$	32.00	against Waste disposal to Council landfill - fees for relevant waste type.  Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity
1.56	haulage >15 km but <25 km	tonne	\$ Use	36.00	against Waste disposal to Council landfill - fees for relevant waste type.
1.57	Waste disposal to Council landfill (industrial demolition / concrete / scrap metal) - haulage >25 km but <50 km	allow	altern cell	nate rate	Rate accounts for round trip haulage to Council landfill but excludes landfill fees. Input quantity against Waste disposal to Council landfill - fees for relevant waste type.  Fee for waste disposal of general waste to local Council landfill; transport rates separate. Please
1.58	Waste disposal to Council landfill - fees (general waste)	tonne	\$		note that this is not applicable to operations with approval for building and demolition waste disposal on site.
1.59	Waste disposal to Council landfill - fees (industrial demolition / concrete / scrap metal)	tonne	\$	174.00	Fee for waste disposal of industrial demolition / concrete / scrap metal waste to local Council landfill; transport rates separate. Rate does not assume material is recyclable. Please note that this is not applicable to operations with approval for building and demolition waste disposal on site.
Rail Infrastructure 2.01	Permove reil loop and appr. hallast etc. and disposal on aits/locally.		\$	60.00	Remove all materials to allow area to be reshaped and rehabilitated - does not include transport to
2.02	Remove rail loop and spur, ballast etc. and disposal on-site/locally  Remove train loading facilities and disposal on-site/locally	m m <sup>2</sup>	\$		regional disposal facility or equivalent. Remove rail load point infrastructure including gantries and control structures. Does not include
2.03	Reshape rail spur and load out areas. Does not include growth media and revegetation	ha	\$		transport to regional disposal facility or equivalent.  D10 Dozer and 16 H Grader (50% utilisation).
Contaminated Mate		TIE .	ΙΨ	2,000	DTO DOZEL AND TO THOUSAND, UNINSANDI).
3.01a	Undertake a preliminary site investigation (Phase 1). This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple studies may be required.	Cluster	\$		history, incidents, etc. as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 1 assessment (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method.  A cluster may include:  - Mine infrastructure (i.e., fuel / chemical store, workshop, vehicle wash-down, sewage treatment etc.)  - Processing plants (i.e., ore and product storage, mine waste storage and disposal, rail load-out etc.)  - Remote pit-top facilities (i.e., vehicle re-fuel, sewage treatment, secondary workshop, chemical storage etc.)
3.01b	Undertake an intrusive site investigation on sites with small footprints to investigate e.g. ≤15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Cluster	\$		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc.  A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation.  Assumes site is easily accessible and a small area e.g. ~10-15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
3.01c	Undertake an intrusive site investigation on sites with large footprints to investigate e.g. >15 ha. This accounts for current and historical locations where areas of disturbance are clustered. If there are multiple cluster areas on site, multiple intrusive investigations should be included.	Cluster	\$		The intrusive investigation would include at minimum a site walkover and field sampling as per the National Environmental Protection (Site Contamination) Measure (NEPM) Phase 2 intrusive investigation (EP Act Section 389 (2) (iv)) or similar approved and recognised assessment method. Note: An intrusive investigation is not required for all contaminated areas and should be applied considering the rehabilitation program, site history, location, etc. A cluster area where it is highly anticipated that contamination has occurred (i.e., underground tanks / pipes that are known to have leaked, chemical stores with earthen bunds, around ineffective oil/water separators etc.) and further field work is required involving intrusive investigation. Assume site has a history of contamination and/or a large area >15 ha requires investigation and testing (test pits, boreholes, etc.) based on Sampling and Analysis Quality Plan. Includes SAQP, fieldwork, sampling and analysis.
3.01d	Develop a Remediation Action Plan on sites with small footprints based on outcomes of intrusive investigation including strategies to address contamination exceedances	allow	\$	35,000	Develop remediation plan for approval including designs and detailed costs. Costs may increase if detailed designs required for construction.
3.01e	Develop a Remediation Action Plan on sites with large footprints based on outcomes of	1	Use		
	intrusive investigation including strategies to address contamination exceedances	allow	cell		Assumes complex site; detailed design drawings required for cover.
3.02	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of	L	cell \$	0.35	Assumes complex site; detailed design drawings required for cover.  Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer,
3.02	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of	L m <sup>3</sup>	s Selection	ect from	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.
3.02 3.03- 3.03a	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of	L m <sup>3</sup>	selectist	3.90	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of	L m³ m³	sele- List \$	3.90 5.63	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup>	selectist \$ \$ \$ \$ \$ \$	3.90 5.63 7.81	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 7 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >5 km)	L m³ m³	sele- List \$	3.90 5.63 7.81	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b	intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >5 km)  Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup>	selectist \$ \$ \$ \$ \$ \$	3.90 5.63 7.81	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 7 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b 3.03c	Intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >5 km)  Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill.	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup>	selectist  Selectist  \$ \$ \$	3.90 5.63 7.81 9.26	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 7 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 9 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer
3.02 3.03- 3.03a 3.03b 3.03c 3.03d 3.04a	Intrusive investigation including strategies to address contamination exceedances  Removal and disposal of contaminated water from tanks, bunded areas and sumps  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (Select Haul Distance from list)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance < 1km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >1 km but <2 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >2 km but <5 km)  Remove material (carbonaceous / metalliferous spillage or otherwise) from footprint of the process facility (leach pads) / stockpile area (ROM product) / roads and dump in a void on-site (haul distance >5 km)  Load, cart and dispose of Hazardous classified contaminated material off site to a licensed landfill.  Load, cart and disposal of Restricted classified contaminated material off site to a	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup>	selectist  Selectist  \$ \$ \$ \$ \$	3.90 5.63 7.81 9.26 800.00 660.00	Cost for recent sump clean-up from resource activity - requires specialists to treat.  This item includes scraping and removal of the volume of carbonaceous material using dozer, grader etc. to make safe an area and enable the establishment of rehabilitation.  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 3 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 7 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Assumes 1 Excavator, 9 Trucks 16 M Grader (50% utilisation) and 1 D10 Dozer  Includes load, haul and dump fees to a licensed facility.

ltem	Activity Description	Unit	Un	it Prices	Justification and Assumptions for Proposed Rates
3.06a	Onsite remediation of hydrocarbon contaminated soils (<50 m <sup>3</sup> ) - manual land farming	m³	\$	100.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.06b	Onsite remediation of hydrocarbon contaminated soils (>50 m³ but <100 m³) - manual land farming	m³	\$	89.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.06c	Onsite remediation of hydrocarbon contaminated soils (>100 m³ but <500 m³) - manual land farming	m <sup>3</sup>	\$	78.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3.  Includes constructing base and bunds.
3.06d	Onsite remediation of hydrocarbon contaminated soils (>500 m³) - manual land farming	m³	\$	75.00	Overall rate for bio-remediation in the order of \$75 - \$120 /m3 depending on volume, additives, treatment durations and contamination levels. \$45 /m3 for spreading contaminated soils on a prepared surface and stimulation of aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture to promote the aerobic degradation of organic chemicals - time frame of up to 12 months. Assumes additive of bio-remediation enhancers of approx. \$25 /m3. Includes constructing base and bunds.
3.07	Mobilisation of cement stabilisation plant and equipment for hydrocarbon (i.e., PAH, long chain hydrocarbons, etc.) contaminated soil treatment	Item	\$	150,000	Required if treatment of hydrocarbon contamination is required to be fast tracked.
3.08	On-site remediation of hydrocarbon contaminated soils - using a mobile treatment unit	$m^3$	\$	165.00	Additional cost as the treatment process is fast tracked.
3.09	Remove and dispose of asbestos (<750 m²)	$m^2$	\$	50.00	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
3.10	Remove and dispose of asbestos (>750 m²)	$m^2$	\$	40.00	Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
3.11	Waste disposal to Council landfill - fees (asbestos)	tonne	\$	290	Landfill fees to regional landfill.
3.12	Treatment of known Acid Sulfate Soils	ha	\$	2,580	Assumes ASS is treatable via neutralisation and does not require capping and isolation. Assumes
3.13	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	m <sup>2</sup>	\$	1.00	1% by weight lime addition and treatment to 100 mm depth only.  Provisional sum for cutting using ripping tynes and on-site disposal of the liner.
3.14-	Long haulage brine/salt for disposal (Select Haul Distance from list)	tonne		ect from	Costs for haulage to location for authorised disposal.
3.14a	Long haulage brine/salt for disposal >10 km but <15 km	tonne	\$	10.25	Costs for haulage to location for authorised disposal.
3.14b	Long haulage brine/salt for disposal >15 km but <25 km	tonne	\$		Costs for haulage to location for authorised disposal.
3.14c	Long haulage brine/salt for disposal >25 km but <50 km	tonne	\$		Costs for haulage to location for authorised disposal.
3.14d	Brine disposal to landfill - fees only	tonne	\$		Rate for trackable liquid levy of \$78.20 per tonne and authorised disposal to landfill.
3.15-	Long haulage water (clean or contaminated) (Select Haul Distance from list)	tonne	Sel List	ect from	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15a	Long haulage water (clean or contaminated) >10 km but <15 km	tonne	\$	9.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15b	Long haulage water (clean or contaminated) >15 km but <25 km	tonne	\$	12.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.
3.15c	Long haulage water (clean or contaminated) >25 km but <50 km	tonne	\$	15.00	Assumes transport in a 20,000 L tanker. Add disposal costs to additional items where warranted.

Item	Activity Description	Unit	Uı	nit Prices	Justification and Assumptions for Proposed Rates
Vents, Shafts and	Boreholes				
4.01a	Seal portals / drifts (width >3 m) – only entry seal / plug required with in front of access backfill with engineered fill for 5 m	allow	\$	126,000	This cost is not applicable to coal operations which require backfilling to MDG6001 or similar due to gases. Costs include engineering and QA/QC. Costs assume engineered fill backfilled between 2 x 1 m plugs for sealing, + haul material to backfill per >5 km distance + concrete pump and secondary support.
4.01b	Seal portals / drifts (width >3 m) accessible to men and machinery requiring a bulkhead – grout backfill against a concrete bulkhead to be constructed	allow	\$	250,000	Cost includes engineering the bulkhead and underground construction (access available) followed by grout backfill via workings and rehabilitation (reshape, bulk push and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$7,250 for grouting. If no bulkhead required, deduct \$60,000.
4.01c	Seal portals / drifts (width >3 m) not accessible by men or machinery – grout backfill against a concrete bulkhead existing or to be constructed	allow	\$	250,000	Cost includes engineering the bulkhead if required and construction via access directly above heading followed by grout backfill via boreholes every 10 m to fill voids and rehabilitation (bulk push final trim, seeding and full rehabilitation). Assume tunnel length of 20 m. For every additional m add \$8,700 for grouting.  If no bulkhead required, deduct \$60,000.  Assumes any existing bulkhead is observable by camera and satisfies regulations and engineer (location, etc.).
4.01d	Seal small adits (width ≤3 m) accessible by men and/or machinery or neither requiring a bulkhead –backfill with appropriate material against a concrete bulkhead existing or to be constructed. The rate includes reshaping and rehabilitation of the batter around the entrance of the adit	allow	\$	25,000	Costs estimated from executed works program in NSW from multiple sites. Rate assumes standard works program with suitable access, and additional roof and rib stabilisation works etc. is not required.
4.02a	Costs to grout fill tunnel via mine workings to seal and eliminate voids and/or likelihood of failures of ground	m	\$	7,250	Workings are accessible to run grout lines via machine or seam dip is favourable i.e. dips inbye
4.02b	Costs to grout fill tunnel by drilling directly above to seal and eliminate voids and/or likelihood of failures of ground	m	\$	8,700	Area directly above heading is accessible by drill rig with depth of cover <30 m and access outbye. One borehole required every 10m to fill void.
4.03a	Demolish ventilation fans	Item	\$	30,000	Costs for demolition of ventilation fan prior to sealing shaft.  Rate accounts for a range of factors including variations in depth and size, accessibility limitations,
4.03b	Seal and rehabilitate ventilation shafts on hard rock operations (no to low gas risk) or coal operations - allows for works in a remote location	allow	\$	150,000	equipment transport to the shaft etc. Assumes engineered fill is available within 10 km round trip and no bulkhead required. Excludes demolition of ventilation fans.  Assume 1 x day visual inspection (10hrs inc' travel) for suitably qualified / competent person +
4.04	Maintenance and monitoring of sealed adits/portals and shafts (for a total of 5 years)	allow	\$	25,000	reporting, for an annual inspection @ \$5,000 per year. Exclusions are intrusive investigation and testing (e.g. concrete strength etc).
4.05	Install gate or grill over the adit (Where site might be used by bats)	Item	\$	200,000	Rate accounts for a range of factors including establishing clear access, and/or working in remote locations without services, and/or stabilisation works to prevent the entry collapsing and compromising the gate etc.
4.06a	Option 1 - Coal bore hole Exploration boreholes – rehabilitate coal boreholes and drill pads as required	depth (m)	\$	44.55	Cost to grout and cap an open exploration borehole. Assume a 20 m x 20 m drill pad requires rehabilitation - push cover of nearby growth media, rip and seed.
4.06b	Option 3 - Mineral RAB and aircore drill holes  Exploration boreholes – backfill open Rotary Airblast (RAB) or aircore drill holes with cuttings	allow	\$	42.50	May include cutting of casing, installation of a casing cap, and/or manually backfilling the hole with drill cuttings. Does not include reshaping / ripping the drill pad, amelioration / seeding etc.
4.07	Option 2 - Mineral drill hole requiring grouting Exploration boreholes – grout and cap open bore holes	allow	\$	5,700	Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of Departmental Guidelines.
4.08	Boreholes – cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	allow	\$	6,960	Holes deeper than 100 m - includes cutting steel collar 6 m below surface, grouting and capping.
4.09 4.10	Boreholes – cap and seal open bore holes - surface-to-in-seam gas drainage Boreholes – cap and seal open bore holes - vertical gas drainage	allow allow	\$	17,890 16,000	Surface-to-in-seam gas drainage boreholes.  Vertical gas drainage boreholes.
4.11	Boreholes – grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	allow	\$		Includes multi skin sleaves to prevent aquifer mixing.
4.12	Boreholes – cap and seal service boreholes for UG coal operations	allow	\$	45,000	Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.
4.13	Option 4 - Mineral diamond drill hole Rehabilitation of diamond drill holes and pad including sealing drill holes for mineral exploration	Item	\$	2,070	Bog out cuttings, remove fencing, remove rubbish, push sumps in, rehabilitate pads and tracks, cut and plug collars. Includes labour and equipment, disposal of rubbish locally on site
4.14	Option 5 - Mineral reverse circulation drill holes Rehabilitation of reverse circulation drill holes and pad including sealing drill holes for mineral exploration	Item	\$	1,340	Sealing required, but not complete filling with concrete/grout
4.15	Option 6 - Rehabilitation of drill hole collars Rehabilitation of drill hole collars (mineral exploration)	each	\$	415	Cut collar, remove, cap, backfill capped collar and cover with nearby organic or growth material
Roads and Tracks 5.01	Unsealed roads / vehicle park-up areas – minor works including deep rip and trim	ha	\$	1 040	Assumes ~6 m road width - 16H Grader.
5.02	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds – minor earthworks and deep rip and trim	ha	\$		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - no seed
5.03	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip and seed (pasture grass)	ha	\$	3,700	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
5.04	Unsealed roads / vehicle park-up areas – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	ha	\$	4,485	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
5.05	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	ha	\$	4,870	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - pasture grass seed
5.06	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds – Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	ha	\$	7,025	D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation) - native tree/shrub seed
5.07-	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on- site/locally (Select Haul Distance from list)	m <sup>3</sup>	Se List	elect from t	This item includes the scraping and removal of the volume of stabilised material from the road, laydown or other surface using an excavator, dozer and grader to enable the establishment of rehabilitation.
5.07a	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on- site/locally (haul distance < 1km)	m <sup>3</sup>	\$	4.45	Assumes 1 excavator, 3 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07b	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on- site/locally (haul distance >1 km but <2 km)	m <sup>3</sup>	\$	5.64	Assumes 1 excavator, 4 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07c	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on- site/locally (haul distance >2 km but <5 km)	m <sup>3</sup>	\$	7.20	Assumes 1 excavator, 6 trucks, 2 x 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
5.07d	Remove stabilised material (blue metal, aggregate etc.) from roadways and dump in a void on-site (haul distance >5 km)	m <sup>3</sup>	\$	9.45	Assumes 1 scrapers 623, 9 trucks 16 M grader (50% utilisation) and 1 D10 Dozer @ \$400
Open Cut 6.01	Active pit area – benches blasted and doze to acceptable grade	l 1-m	l \$	1.02	Blasting in a 8x9 pattern of bench height 25 m with D11 push of 50-75 m.
6.02	Drill & blast faces to make safe	Lm m <sup>3</sup>	\$		Bulk Drilling say 8*9 pattern, assuming a stem height of 6 m, charge length of 19 m, explosive
6.03	High wall treatment – (trench and safety berm)	m	\$	90.00	D10 dozer, 16H Grader and revegetation with pasture grass.
Earthworks / Struc 7.01-	Major bulk pushing to achieve grades nominated in the approval/permit – Select Push	m3		lect from	Major bulk pushing to achieve grades nominated in the approval/permit
7.01a	Length  Major bulk pushing to achieve grades nominated in the approval/permit – 50 m push	m3	List		Assumes D11 dozer push @ 400 bcm/hr.
	length  Major bulk pushing to achieve grades nominated in the approval/permit – 50 m-75 m		Ė		·
7.01b	push length  Major bulk pushing to achieve grades nominated in the approval/permit – 75 m-100 m	m3	\$	1.19	Assumes D11 dozer push @ 375 bcm/hr.
7.01c	push length)	m3	\$	1.42	Assumes D11 dozer push @ 250 bcm/hr.
7.01d	Major bulk pushing to achieve grades nominated in the approval/permit – 150 m push length)	m3	\$		Assumes D11 dozer push @ 175 bcm/hr.
7.02 7.03	Minor reshaping and pushing Structural works, banks, waterways - contour banks, drainage channels and other soil	ha ha	\$		D10 Dozer @ \$400 per hour and 16 H grader @ \$230 per hour (50% utilisation).  Combination of dozer and excavator work plus grader for ~4 hours each per ha.
7.04	conservation measures  Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	m <sup>2</sup>	\$		Installation of on-site rock material (rip-rap) where managing water run-off from disturbed land and/or upon entry to water courses - prevents erosion of gully head (assumes competent material is
Mine Waste	points - required for large catchments				locally available). If required to be sourced off site, assume an additional \$20/m2.
8.01	Ideal Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with little chemical reactivity (no to low risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and good physical properties (not significantly hydrophilic, shear strength does not limit equipment choice, no artificial strengthening required)	ha	\$	82,000	This includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume material with the appropriate chemical and physical properties. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness of approximately 0.5 m to 1 mand 0.15 m - 0.2 m growth media (assume at least 1 m thick cover required for carbonaceous material covers). Water quality from runoff, seepage etc. meets site-specific environment water quality values.  If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.

ltem	Activity Description	Unit	Unit Prices	Justification and Assumptions for Proposed Rates
8.01a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.01b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.02	Efficient Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (low to medium risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or low to moderate propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	ha	\$ 146,500	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities where the tailings or rejects base is at a strength that enables economically efficient construction methods with small plant. This rate assumes suitable capping material is available on site within 10 km, and an average cap thickness ranging from >1 m to 2 m thickness constructed in 1 m layers + growth media up to 0.2 m depth.  This may require additional materials (such as capillary breaks, geofabric, etc.) - use alternate rate cells below, specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.).  Costs for haulage of specialised/additional materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
8.02a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.02b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.03	Adverse Tailings Capping - reshaping, capping / sealing of trafficable tailings facility with moderate chemical reactivity (medium to high risk Potential Acid Forming (PAF) / Neutral Mine Drainage (NMD) / Saline Mine Drainage (SMD) and/or moderate to high propensity for spontaneous combustion) and moderate physical properties (not significantly hydrophilic, shear strength limits equipment choice somewhat, no artificial strengthening required)	ha	\$ 313,000	This item includes sourcing, carting, spreading, moisture conditioning and compaction of a suitable volume of material to cap / cover facilities of high geochemical risk, and / or low shear strength that prohibits economically efficient construction methods. This rate assumes suitable capping material/s are available on site within 10 km, and an average cap thickness of approximately >2 m + growth media up to 0.2 m depth.  This may require additional materials (i.e., capillary breaks, geofabric, etc.), specific material types (e.g. acid neutralising / consuming materials, competent rock etc.), and associated activities (i.e., load / haul / place / crush / screen / borrow etc.).  Costs for haulage of specialised materials must be added separately if required. If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
8.03a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.03b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.04	Difficult Tailings Capping- reshaping, capping / sealing of weak or soft surfaced tailings facility with poor physical properties (significantly hydrophilic, low shear strength limits equipment choice greatly, artificial strengthening required) OR visible adverse impacts on legacy sites from chemical reactivity over lengthy exposure prior to rehabilitation	ha	\$ 843,000	This option is typically driven by time constraints and/or when tailings properties significantly restrict adequate desiccation, resulting in a tailings shear strength that is very weak excluding access by conventional small plant.  Small equipment used for rehabilitation.  This excludes any additional material required to form the final landform profile in addition to this cap.  If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance in 8.05 (spreading costs for tailings cap material included in rate). If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading in additional to any long haulage volume in 8.05.
8.04a	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.04b	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	allow	Use alternate rate cell	Include additional cost to import materials (i.e., shale / clay, competent drainage materials etc.) and / or additional requirements (i.e., geofabric / composite lining etc.).
8.05-	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. (Select Haul Distance from List)	m3	Select from List	Capping/cover material available within 50 km round trip e.g. waste / overburden dumps, borrow areas, etc.
8.05a	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >10 km but <15 km	m3	\$5.50	Assume haulage required from location to site stockpile or site to off-site disposal area - round trip haulage distance. Excludes costs for spreading.  If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04).  If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading.
8.05b	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >15 km but <25 km	m3	\$6.00	Assume haulage required from location to site stockpile or site to off-site disposal area - round trip haulage distance. Excludes costs for spreading.  If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04).  If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading.
8.05c	Long haulage soil / weathered rock / sediment e.g. capping/covers, removal of contamination, etc. >25 km but <50 km	m3	\$8.00	Assume haulage required from location to site stockpile or site to off-site disposal area - round trip haulage distance. Excludes costs for spreading.  If site haulage longer than 10 km round trip add the volume of the relevant material requiring haulage for this distance here (spreading costs included in tailings rates 8.01 to 8.04).  If additional material to make up landform, provide buttress or other works aside from tailings cap, use rate from 9.02 for relevant haulage and spreading.

Item	Activity Description	Unit	Unit Prices	Justification and Assumptions for Proposed Rates
Rehabilitation				
9.01-	Source, cart and spread growth media (Select Haul Distance from List)	m <sup>3</sup>	Select from List	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
9.01a	Source, cart and spread growth media - haul distance <1 km	m <sup>3</sup>	\$ 3.26	Undertaken with 623 scraper and 14 M grader.
9.01b	Source, cart and spread growth media - haul distance >1 km but <2 km	m <sup>3</sup>	\$ 4.32	Undertaken with scraper and D10 dozer.
9.01c	Source, cart and spread growth media - haul distance >2 km but <5 km	$m^3$	\$ 6.00	Undertaken with D10 dozer, excavator and trucks.
9.01d	Source, cart and spread growth media - haul distance >5 km	$m^3$	\$ 7.91	Undertaken with D10 dozer, excavator and trucks.
9.02-	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (Select Haul Distance from List)	$m^3$	Select from List	This item includes the volume of material requiring backfill using an excavator and scraper to fill the void and enable the establishment of rehabilitation.
9.02a	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit (haul distance <1 km)	$m^3$	\$ 3.90	Undertaken using a 623 scraper and D10 Dozer.
9.02b	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit ( haul distance >1 km but <2 km)	m <sup>3</sup>	\$ 5.22	Undertaken using 623 scraper and D10 Dozer.
9.02c	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit ( haul distance >2 km but <5 km)	m <sup>3</sup>	\$ 6.88	Undertaken using a 45T excavator, truck, grader and D10 Dozer.
9.02d	Fill dams, voids etc Source local material, cart and spread to cap or backfill, cap thickness determined by approval / permit ( haul distance >5 km)	m <sup>3</sup>	\$ 9.13	Undertaken using a 45T excavator, truck, grader and D10 Dozer.
9.03	Shotcrete application on cuttings and steep slopes	$m^2$	\$ 185.00	This rate is used to rehabilitate steep slopes of weathered rock, roadway cuttings, etc that cannot be cut back and stabilised.
9.04	Trim, rock rake & deep rip (includes levelling / landscaping and rip in 1 direction)	ha	\$ 1,130.00	Undertaken using D10 dozer and 16M grader.
9.05	Deep rip hard stand / lay down areas	ha	\$ 960.00	D10 deep ripping.
9.06	Planting mature trees (>15 cm)	allow	\$ 15.00	
9.07	Planting tube stock (<15 cm)	allow	\$ 6.60	
9.08	Direct seeding / fertiliser (pasture grass species)	ha	\$ 1,875	Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
9.09	Direct seeding / fertiliser (tree or native grass species)	ha	\$ 4,135	Includes treating, weighing, mixing with fertiliser + spreading by tractor or helicopter (aerial seeding).
9.10a	Hydro-seeding with straw mulching and bitumen tack with native seed	m²	\$ 1.90	Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Native seed +\$1.00
9.10b	Hydro-seeding with straw mulching and bitumen tack with pasture seed	m2	\$ 0.43	Process to be used on flat well prepared surfaces under irrigation e.g. sewage treatment irrigation areas. Ranges from \$0.15 - \$0.50 depending on size and input variables. Pasture seed +\$0.10
9.10c	Hydromulch - base grade or standard for flat areas that can be irrigated by water cart	m2	\$ 0.80	Assumes use on flat areas with a gradient of less than 4:1, and where irrigation from water cart may be possible. Industry standard application rate of 2500kg/ha. Product will last short term (less than 3 months) and vegetation is required to grow ASAP for stability. This cost includes cover crop only, additional seeding required.
9.10d	Hydromulch - bonded fibre matrix grade for steep areas to stabilise up to 12 months	m2	\$ 1.80	Assumes use on steep areas where stabilisation is required for up to 12 months. Application rate of ~3500kg/ha. This cost includes cover crop only, additional seeding required.
9.10e	Hydromulch - high performance flexible growth medium grade	m2	\$ 2.50	Assumes use on extreme slopes where stabilisation is required for up to 18 months. Application rate of ~4,000kg/ha minimum. This cost includes cover crop only, additional seeding required.
9.11	Single application of fertiliser (pasture)	ha	\$ 420.00	Assumes 250 kg / ha. These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
9.12	Single application of fertiliser (trees)	ha	\$ 140.00	These rates have fluctuated over the last few years however in light of current conditions (lower fuel prices, reduced demand etc) this is a suitable standard rate.
9.13	Spoil amelioration (adding lime / gypsum etc.)	ha	\$ 1,000.00	Assumes 2.5 t / ha as an average application rate.
9.14	growth media amelioration with biosolids	ha	\$ 1,015	Recent experience with agronomy projects.
9.15	Security fence around steep section of high wall	m	\$ 64.00	1800mm x 3 barb chain-link mesh security fence and gate standard 2.5mm mesh & 32 mm post not concreted
9.16	Construct <b>no-climb</b> stock fence around rehabilitated areas	m	\$ 22.00	
9.17	Construct <b>standard</b> stock fence around rehabilitated areas	m	\$ 13.00	
9.18	Purchase and erect warning signs	allow	\$ 250.00	Compliance with AS 1319-1994 - Safety signs for the occupational environment - installed every 25 m.
9.19	Supply from external sources virgin excavated natural material (VENM) for growth media.	m <sup>3</sup>	\$ 80.80	D7 to spread material at \$205/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$70/m3 for imported fill material.
9.20	Supply from external sources a combination of virgin excavated natural material (VENM) and spoil from large excavation for filing voids and/or capping etc.	m <sup>3</sup>	\$ 72.50	D10 push into void at \$270/hr, Excavator (\$220/hr) load Artic Trucks (90c/km) from imported stockpile - allow nominal rate of \$60/m3 for imported fill material.
9.21	Clearing and grubbing of trees and vegetation	ha	\$ 4,730.00	Clearing and grubbing of light vegetation growth e.g. regrowth
				Stripping or topsoil at an approximate depth of 0.2 m into stockpiles; load and haul to final
9.22	Topsoil stripping	m3	\$ 4.86	rehabilitation location required or respreading where necessary.
9.23	Growth media supplementation with manure	ha	\$ 747.50	
9.24a	Utilise biotic soil media - organic topsoil alternative	m2	\$ 2.50	Material that can be applied as an alternative to spreading topsoil prior to hydromulching.
Water Management				
10.01	On-site treatment of contaminated water due to high salt (includes removal of metals etc, brine disposal and cost of mobile water treatment unit)	ML	\$ 3,600	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
10.02	On-site treatment of contaminated water due to low pH (incudes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	ML	\$ 1,500	Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.
10.03a	Clean water dams to be retained after decommissioning – make safe and minor earthworks	allow	\$ 2,500	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) @ ~\$200 per hour and pasture grass.
10.03b	Large clean water dams (i.e. ≥ 2 ha) to be retained after mine closure – make safe and minor earthworks	allow	\$ 10,500	Provisional sum for earthworks and revegetation required to rehabilitate dam batters etc suitable for re-use by an alternate land-user - D6 Dozer (or similar) + pasture grass.
10.04-	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	m <sup>3</sup>	Select from List	This item includes the volume of contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
10.04a	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance <1km)	m <sup>3</sup>	\$ 3.55	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04b	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >1km but <2km)	m <sup>3</sup>	\$ 4.45	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04c	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >2km but <5km)	m <sup>3</sup>	\$ 7.25	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.04d	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (haul distance >5km)	m <sup>3</sup>	\$ 9.50	Undertaken with excavator, trucks, 16 M grader and D10 Dozer
10.05	Removal of evaporation fans and/or other water transfer and management infrastructure	allow	\$ 25,000	
10.06	Exploration sump decommissioning	$m^3$	\$ 57.00	Use of a tractor or bob cat with labour. This could be completed in a few hours. Assumes 3 m x 3 m x 1 m sump. Assumes backfill material available within 2 km round trip.
10.07	Water / mud disposal from sump	L	\$ 0.30	Disposal of non-contaminated sediments removed from sump.

Item	Activity Description	Unit	Un	nit Prices	Justification and Assumptions for Proposed Rates
Creek Diversions					
11.01 11.02	Repairs and/or stabilisation of new or compromised water course diversion  Long term maintenance of water course diversion – Channel constructed through	m	\$		Assumes material is suitable for revegetating and has a reasonable chance of stabilising.  Assumes maintenance has been kept up and significant works are not required.
	backfilled material Long term maintenance of water course diversion – Channel constructed through	m	+	,	
11.03	competent material	m	\$		Assumes maintenance has been kept up and significant works are not required.  Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting
11.04	Installation of rock armouring	m <sup>2</sup>	\$		from offsite location.
Maintenance of Rel	Maintenance of areas that have been shaped and seeded and revegetation has been	ha	\$	925	Rehabilitation maintenance might include re-seeding, watering, fertilising, minor re-shaping, erosion
12.02	'successful' Pest management on buffer lands, non-disturbed, and rehabilitated areas	ha	\$		control, inspections/audits - does not include major repair works.  Feral animal baiting programs if required and waste materials required to be removed.
12.03	Land management of undisturbed areas (rehabilitation, weeds, ferals, erosion and sediment control works)	ha	\$		Undisturbed areas within the lease boundary that require land management activities.
12.04a	Minor stabilisation works and maintenance of mine subsidence areas - ripping etc.	ha	\$		Undertaken using Dozer. Costs subject to the extent of subsidence impacts
12.04b	Crack filling to repair subsidence impacts	m	\$	1,450	Undertake more substantial works to backfill cracks and/or sink holes (e.g., filling with mulch prior to grouting, grouting, etc.) Costs subject to the extent of subsidence impacts.  Include >5 km haul of fill.
12.05a	Water course restoration to repair subsidence impacts	allow	Use alte	rnate rate	Undertake more substantial works to remediate water courses (e.g., channel bed repairs, rock bar repairs, swamp stabilisation etc.)
12.05b	Create cut-through to re-establish natural water courses/drainage channels following subsidence	allow	\$	3,000	Includes all earthworks and revegetation required to re-establish the natural drainage profile of the subsided area.
12.06 12.07	Existing rehabilitation repair - minor  Existing rehabilitation repair - moderate	ha ha	\$	1,200 1,700	Areas requiring minor repair - rills, minor growth media replacement.  Areas requiring moderate repair - rills, significant growth media replacement.
12.08	Existing rehabilitation repair - major	ha	\$		Areas requiring major repair - rills, gullies, growth media replacement, some level of additional surface water management.
	Existing rehabilitation repair - total failure of landform	ha	\$	40,000	Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Heritage Items			Use	e	there for the andictribution of Aboriginal artefacts, proper ation of Fundament business items or a
13.01 Sundry Items	The restoration and care and maintenance of items that have heritage significance	allow	alte cell	rnate rate	Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.
14.01-	Development of an 'Unplanned' Project Closure Plan - for either State Significant or Non	allow			Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with
	State Significant Developments		List		execution strategies for rehabilitation activities.  Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with
14.01a	Development of an 'Unplanned' Project Closure Plan - State Significant Development with closure planning well progressed i.e. preferred cover design, closure environment modelled e.g. groundwater /subsidence / pit lakes, preliminary seal designs, etc. and only finalisation of detailed engineering deigns required	allow	\$	100,000	execution strategies for rehabilitation activities.  Assumes outcomes of studies readily available including modelling, landform design, geochemistry, demolition, etc. Costs to finalise options by domain and finalise designs for construction.  Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc.  Depending on site size, complexity, final land use requirements and knowledge base investigations can range from ~\$75k to >\$1 M.  Sites with more than 1 pit to add \$50,000 to rate.
14.01b	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects requiring closure planning, but no significant issues realised at this time: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	allow	\$		Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.  Estimated cost for developing closure plan including studies - basic to satisfy risks and decisions - includes risk assessment, options analysis, Closure Plan.  Sites with more than 1 pit to add \$50,000 to rate.
14.01c	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with no EPL and/or only one of the following relevant aspects: previous subsidence, low to medium geochemistry risk and/or spontaneous combustion propensity, known limited contamination, small approved final void	allow	\$	15,000	Assumes sediment control is the key concern for rehabilitation e.g. small mines, exploration operations. Includes risk assessment, sampling and analyses on <5 samples, one study and Closure Plan.
14.01d	Development of an 'Unplanned' Project Closure Plan - State Significant Development with only preliminary to conceptual closure planning in place	allow	\$	300,000	Includes costs for key investigations and studies including designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.  Assume at least 15 types of studies required ranging from geotechnical to ecology and social, development of a closure plan including address of obligations. Assume a simple site e.g. single open cut, no legacy operations historic in the area, little social dependence, etc.  Depending on site size, complexity, final land use requirements and knowledge base investigations can range to >\$3 M.  Sites with more than 1 pit to add \$50,000 to rate.
14.01e	Development of an 'Unplanned' Project Closure Plan - Non State Significant Development with at least ≥2 of the following aspects resulting in <u>significant issues</u> requiring remediation: previous subsidence, medium or higher geochemistry risk and/or spontaneous combustion propensity, known/ likely contamination, tailings / rejects, final void	allow	\$	125,000	Includes costs for key investigations and studies including economic treatments and designs e.g. geochemistry, Contamination Remediation Action Plan, subsidence risk, cover/capping and final landform, site wide surface water, etc. Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.
14.01f	Develop a Review of Environmental Factors (REF) to facilitate rehabilitation including contamination works.	allow	\$		Based on experience for a REF after completion of a detailed closure study (e.g. contamination investigation) costs could range from \$10,000 to \$100,000 ex GST. Note this does not apply to a Statement of Environmental Effects or Environmental Impact Statement.
14.02	Site security during closure	yr.	\$	75,000	Provisional sum for site security measures required during closure. This includes nightly patrols and first response in the event of an out of hours incident.
14.03-	Choose type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow			Type of HAZMAT Clean-up required - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc
14.03a	Small HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow	\$	100,000	Provisional sum to perform the site clean-up on a small site (e.g. one mine infrastructure area and ≤2 pit top or laydown/storage areas) ensuring the demolition program is not interrupted due to potential contamination of waste streams.
14.03b	Medium HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	allow	\$	350,000	Very labour intensive and previous experience in similar mine sites suggest this is a better more realistic rate to use for medium size contam clean-ups (e.g. two mine infrastructure areas and >2
14.025	Large HAZMAT Clean-up - cleaning and decontaminating plant and equipment,	olla	\$		but ≤5 pit top or laydown/storage and plant areas).  Very labour intensive and previous experience in similar mine sites suggest this is a better more
14.03c	chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc  Removal and disposal of radiation devices	allow	\$	31.630	realistic rate to use for larger size contam clean-ups.  Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium – 241, Plutonium – 238, Caesium - 137 etc).  Source Isotope type, quantity, strength, weight, source holder type, source holder weight, pick-up
14.05	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	allow		rnate rate	location (among others) will directly affect pricing.  Provisional sum.
Third Party Project	Management and Contingencies		cell		
15.00	Mobilisation & Demobilisation for exploration programs	Item	\$		Assumes an exploration program of 10 or fewer holes and local contractors within 250 km are available to undertake rehabilitation of disturbance generated by dedicated exploration companies. Apply once per exploration pad.
15.00a	Mobilisation & Demobilisation for small mine or quarry - small fleet	Item	\$	12.000	May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.
15.00b	Mobilisation & Demobilisation for small mine or quarry - medium to large fleet	Item	\$		May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.01	Mobilisation & Demobilisation (Distance to site <150 km)	item	\$	100,000	required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.02	Mobilisation & Demobilisation (Distance to site >150 km)			150,000	required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
		item	+		required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.03	Mobilisation & Demobilisation (Distance to site >500 km but <1000 km)	item	\$	300,000	required.  May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as
15.04	Mobilisation & Demobilisation (Distance to site >1000 km)	item	\$	500,000	required.  A contingent amount to account for "unkown unknowns" and areas were data / details of
15.05	Contingency	Total		10%	rehabilitation methods are uncertain.
15.06	Post Closure Environmental Monitoring	Total		10%	Includes all monitoring post closure execution works and compilation of all monitoring and maintenance data into a final rehabilitation report and submission for regalatory sign-off.
15.07	Project Management and Surveying	Total		10%	Includes all costs for project management of the closure execution works and post closure management requirements until land and/or tenure relinquishment.
	· · · · · · · · · · · · · · · · · · ·	<u>I</u>	1		Imanagement requirements until land and/or tenure relinquishment.

Date	<b>Revision Number</b>
2/05/2022	2022-1
5/05/2023	2023-1

11/06/2024 2024-1

#### **Revision description**

- 1. Underground report summary tab, resolved issue of addition of values from multiple domains (tabs) for Domain 4: Subsidence and Management
- 2. Underground, Site Security Closure Row 434 resolved issue of value not recording as total cost for this line
- 1. Resolved issue of "Description/Notes" field for "Exploration" referring to superseded text rather than looking up updated text in cost schedule. Issue was restricted to "Roads and Tracks" and "Earthworks/ Structural Works (Landform Establishment)" management precincts.
- 1. Removed superfluous fields from the "Site Registration" in the Registration tab worksheet.
- 2. Removed the "Site Description" page and all associated fields from the Registration tab worksheet
- 3. Removed superfluous fields related to those removed from the "Site Registration" in the Summary tab worksheet.
- 4. Removed text related to printing and attached RCE worksheets to AEMR and MOPs in the Summary tab