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22-9-20

Darryl Thiedeke
Hy-Tec Industries
4/63-79 Parramatta Rd
SILVERWATER NSW 2128

Dear Sir,

RE: BUDGET COST OF PLANT DEMOLITION AND REMEDIATION OF THE AUSTEN QUARRY

At your request we offer an opinion on the likely cost of the plant demolition and remediation of the Austen Quarry. We provided a similar opinion on 18-7-17.

By way of introduction we provide Consulting Structural Engineering and Costing and Tender advice to a number of demolition contractors. We have been in this industry some 35 years. Projects undertaken, similar to this, with which we have been involved include demolition and clean-up of the Holcim quarry at Penrith, Boral quarry buildings at Greystanes, and quarry buildings at Woods Reef asbestos mine, Port Augusta Power Station in South Australia and various major bin structures and Stacks in various mines and Quarries in NSW and ship loaders port facilities in WA..

Historically we have provided Hy-Tec with Structural Engineering audits of this quarry and have a fair amount of data and photography of the structures on site. We are also familiar with the general surroundings and earthworks. We attach a selection of structure photographs.

We have obtained current opinions from our contacts in the Demolition/Remediation Industry who provided same for the 17-7-17 report on the applicability of costings applied in the DRG Rehabilitation Cost Estimate Tool as they would be applied to the Austen Quarry.

As before we have reviewed the expected length of conveyors from available imagery on Google Earth to establish the work required for these elements. All other components were estimated from our knowledge and experience at Austen Quarry. It is expected that the majority of Quarry infrastructure would be pulled over, ripped apart and cut up with minimum 35t Excavators with grapples, hooks & shears. The job is simplified given the location and space around each of the infrastructure components. The demolition would include removal of all concrete slabs and footings.

As before we advise we have not checked area quantities to which rates have been applied and have enquired as to the applicability of the rates.

We have received advice to the effect the current economic conditions mean that if the job was being awarded today they would do it for the same price as 5 years ago. Some indicated a possible price reduction but it is our opinion this would be related to the individual contractors and perhaps not industry wide. Whilst general escalation would suggest an increase of 10% or thereabouts would be applicable it seems there is not much work around and they are all eating into margins and working at or below cost to keep open.

Therefore our opinion as to the cost of plant demolition and remediation is as follows.

1. As before the cost of Termination of Services and Demolition Works Subtotal of \$722,880.00 would appear to be an over estimate and the cost would be around \$350,000.00 with all equipment and scrap belonging to the Demolisher.
2. All other costings where reported to be in the upper end of expectations.

If a more accurate fully documented costing is required we would need to confirm quantities and obtain prices from the industry.

Please advise if you wish to go further with this matter.

Yours Sincerely,
TAIT CONDON PTY LTD



Jeff Condon. BE, MIEAust, CPEng, NPER, RPEQ, NTBP
Director

Attachments –

Site Plant photographs
Costing Spreadsheet.

Open Cut Operations

Domain 1a: Infrastructure

Total Cost for Infrastructure Domain

\$879,968

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

All stockpiles would be removed as sold product.

Key Rehabilitation Area Data for Domain

Enter data below manually

Total Landform Establishment: 7.4ha

Total Growth Media Development: 7.4ha

Total Ecosystem Establishment: 7.4ha

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)	No	0	allow	\$35,000			No connections to water, power or sewerage at site	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.)	No	0	allow	\$5,500			No connections to water, power or sewerage at site	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	No		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	No		km	\$100,000				Applies to power lines on steel tower and steel lattice structures assuming 3 towers / km.
	Remove significant 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	No		Item	\$350,000				Major structures 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	No		m2	\$600.00				Simple structure to demolish. Assumes single story building and segregation of contents for scrap as applicable.
	Demolish and remove switchyard. Dispose of waste material on-site/locally	No		m2	\$55.00				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	Y	515	m2	\$40.00		\$20,600		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	Y	70	m2	\$65.00		\$4,550		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	180	m2/floor	\$115.00		\$20,700		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 industrial buildings (workshops tyre change and servicing area etc not CHPP/process plant) and disposal on-site/locally	Y	490	m2/floor	\$180.00		\$88,200		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	750	m2/floor	\$265.00		\$198,750		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	No		m2/floor	\$265.00			Accounted for in process plant	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 reclaim (radial or luffing etc. with maneuverability for stockpile control) and disposal on-site/locally	No		allow	\$1,000,000				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	No		allow	\$2,500,000				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	No		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	No		allow	\$100,000				Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 3000 T coal silo and disposal on-site/locally	No		allow	\$85,000				Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove 1250 T coal silo and disposal on-site/locally	No		allow	\$65,000				Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Collapse, Cut and Remove rail loading bins and disposal on-site/locally	No		allow	\$65,000				Collapse structure and remove. Does not include transport to regional disposal facility or equivalent.
	Demolish and remove onground conveyors, transfer stations & gantries (scrap only if does not include dismantling for reuse at another site) and disposal on-site/locally	Y	630	m	\$210.00		\$132,300		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	No		m	\$370.00				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.	Y	125	m	\$1,200		\$150,000		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.
	This may include small scale fixed material stacking infrastructure								

Demolish reclaim tunnel, cut reo and expose reclaim conveyor, then collapse into the reclaim tunnel void (Does not include excavation to expose reclaim tunnel, removal of conveyor or backfilling void)	Y	255	m2	\$80.00		\$20,400	Does not include conveyor removal or backfill.
Remove and demolish conveyor from reclaim tunnel (Does not include excavation and demolition of reclaim tunnel roof)	Y	85	m	\$150.00		\$12,750	Due to no canopy or infrastructure attached.
Demolition of reclaim tunnel concrete (Assumes complete removal and dumping in mine pit void)	No		m	\$950.00			Assumes this area will be used for another land-use that requires the structure to be dug up and re-buried somewhere else.
Demolish and remove small tank clean (Thickener etc 3 - 9 m diameter) and disposal on-site/locally	No		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	No		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	No		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	No		allow	\$85,000			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	No		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	No		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	No		allow	\$30,000			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	No		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	No		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	No		m	\$165.00			For example: 1 m pipes - 2 m deep.
Remove above ground pipe (supported) and disposal on-site/locally	No		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	No		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.
Remove pump and pontoon from a lake or dam including pipes and electrical supply or diesel tanks and disposal on-site/locally	No		allow	\$150,000			Assumes infrastructure is moored and requires barge mobilisation to sever the mooring and / or is a significant fixed structure for controlled release of water. Does not include transport to regional disposal facility or equivalent.
Remove bitumen (car park and access roads) and dispose on-site/locally	No		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	No		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	Y	1490	m2	\$37.00		\$55,130	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	Y	260	m2	\$75.00		\$19,500	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	No		tonne	\$17.00			Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 50 mm	No		tonne	\$20.00			Does not include haulage of materials - assumes crushing plant is readily available.
Crush concrete to make road aggregate - 30 mm	No		tonne	\$22.00			Does not include haulage of materials - assumes crushing plant is readily available.
Remove fence (cyclone/wire fence) and disposal on-site/locally	No		m	\$20.00			Roll up fence and remove posts.
Termination of Services and Demolition Works Subtotal						\$722,880	
Rail Infrastructure							
Remove rail loop and spur, ballast etc. and disposal on-site/locally	No		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	No		m2	\$265.00			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	No		ha	\$2,500				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation).
					Rail Infrastructure Subtotal		\$0		
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.	Y	1	Cluster	\$15,000		\$15,000	Allowance for contamination assessment upon closure.	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 re-fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation. 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.	No		Cluster	\$100,000				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.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	No		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)	No		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 High Level contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill	No		m3	\$700.00				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	Y	5	m3	\$200.00		\$1,000	Allowance made in case contaminated material is found. None at present	Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	No		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	No		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	No		m3	\$165.00				Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	No		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)	No		m2	\$40				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Remove and dispose of asbestos	No		tonne	\$2,400				6 mm asbestos sheet approx. 15 kg / m2 = ~70 m2 per ton. Allowing \$20 / m2 for removal, 4 hours trucking @ \$125 and \$100 / t disposal plus 20% OHP = \$2,400 / t.
	Treatment of known Acid Sulfate Soils	No		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	No		m2	\$1.00				Provisional sum for cutting using ripping tyres and on-site disposal of the liner.
					Contaminated Materials Subtotal		\$16,000		
Pits, Shafts and Boreholes									
	Exploration boreholes & rehabilitate boreholes and drill pads as required	No		depth (m)	\$40.00				Where multiple boreholes exist, this is the rate for the total cumulative depth of all boreholes (e.g. two boreholes at 100m depth each = 200m). Assumes a per metre drilling rate of ~\$150 / m of which ~25 - 30% is for rehabilitation which may include a variety of works (i.e., cut casing and install cap, install poly pipe to facilitate back-filling, grout preparation, grouting and capping, reshaping / ripping the drill pad, amelioration / seeding etc.)
	Exploration boreholes & backfill open bore holes with cuttings	No		allow	\$300				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.
	Exploration boreholes & grout and cap open bore holes	No		allow	\$7,950				Includes grouting and capping 100 - 200 m exploration boreholes to meet the requirements of EDG01.
	Boreholes & cap and seal open bore holes with steel casing (i.e., goaf drainage etc.)	No		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	No		allow	\$15,000				Surface-to-in-seam gas drainage boreholes.

	Boreholes ñ cap and seal open bore holes - vertical gas drainage	No		allow	\$16,000			Vertical gas drainage boreholes.	
	Boreholes ñ grout (with concrete) cap and seal bore holes (i.e. where sealing aquifers)	No		allow	\$35,000			Includes multi skin sleeves to prevent aquifer mixing.	
	Boreholes ñ cap and seal service boreholes for UG operations	No		allow	\$45,000			Includes large diameter boreholes used for supplying electricity (66kV), compressed air, water, solsenic etc.	
Pits, Shafts and Boreholes Subtotal					\$0				
Roads and Tracks	Unsealed roads / vehicle park-up areas ñ minor works including deep rip and trim	No		ha	\$960.00			Assumes ~6 m road width - 16H Grader @ \$212 per hour.	
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds ñ minor earthworks and deep rip and trim	No		ha	\$1,500			Assumes ~20 m road width - D10 Dozer @ \$332 per hour.	
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip and seed (pasture grass)	No		ha	\$3,698			D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.	
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,485		All roads to be retained at land owner request	D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.	
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	No		ha	\$3,820			D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.	
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,595			D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.	
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	No		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.	
Roads and Tracks Subtotal					\$0				
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit ñ Select Push Length	No		m3	Select from List		Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit	
	Minor reshaping and pushing	Y	7.4	ha	\$3,900		\$28,860	D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation).	
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	No		ha	\$1,600			Combination of dozer and excavator work. Small dozer (D6 or similar) @ ~\$200 per hour plus grader @ \$212 per hour 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)	No		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	No		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)	Y	7.4	ha	\$960.00		\$7,104	16H Grader @ \$212 per hour - ripping in 1 direction only.	
	Deep rip hard stand / lay down areas	No		ha	\$960.00			D10 dozer @ \$332 per hour - deep rip in 2 directions @ 5 m spacing ~3 hr per hectare.	
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	No		m2	\$35.00			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).	
Earthworks / Structural Works (Landform Establishment) Subtotal					\$35,964				
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	22200	m3	\$3.26		\$72,288	Assume minimum 300mm growth medium over entire domain	610 m3/hr with 4 x 657 scrapers at \$430/hr, D10 trimming at \$270/hr 3ha/day at 150mm depth
	Planting mature trees (>15 cm)	No		allow	\$20.00				4 m centres.
	Planting tube stock (<15 cm)	Y	1700	allow	\$10.00		\$17,000	Approximately 2.7ha of this domain to be rehabilitated to woodland.	4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	7.4	ha	\$1,240		\$9,176		Rate can fluctuate however this is a suitable standard rate.
	Direct seeding / fertiliser (tree or native grass species)	No		ha	\$2,095				Rate can fluctuate however this is a suitable standard rate.
	Hydro-seeding with straw mulching and bitumen tack	No		m2	\$1.80				Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	No		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)	No		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.)	No		ha	\$860.00				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	No		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	No		m	\$9.50				Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	No		m	\$4.00			Existing fencing adequate	Standard rate for standard stock fencing.
Purchase and erect warning signs	No		allow	\$250.00				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.	No		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 filling voids and/or capping etc.	No		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.	
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal					\$98,464				
Water Management	Clean water dams to be retained after decommissioning ñ make safe and minor earthworks	Y	9	allow	\$2,500		\$22,500	Allowance for all water management dams across Site	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.

Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)		No		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		No		allow	\$25,000			Pipelines accounted for in infrastructure domain.	Provisional sum for removal of water management infrastructure.
Water Management Subtotal							\$22,500		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	7.4	ha	\$900		\$6,660		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	No		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	No		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	No		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	No		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Maintenance of Rehabilitated Areas Subtotal							\$6,660		
Additional Items	Other 1 <insert>	N			This is				This item includes ☐ To be added by the operator ☐
	Other 2 <insert>	N			deliberately				This item includes ☐ To be added by the operator ☐
	Other 3 <insert>	N			left blank				This item includes ☐ To be added by the operator ☐
Additional Items Subtotal							\$0		
T ☐ RESULT							Total Cost for Infrastructure Domain		\$879,968

Open Cut Operations

Domain 2a: Tailings & Rejects

Total Cost for Tailings & Rejects 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	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.	No		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 re-fuel, sewage treatment, secondary workshop, chemical storage etc.)
	Undertake an intrusive site investigation. 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	\$100,000		\$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.
	Removal and disposal of contaminated water from tanks, bunded areas and sumps	No		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)	No		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 High Level contaminated material off site to a licensed landfill. Assumes cartage to a licensed landfill	No		m3	\$700.00				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	No		m3	\$200.00				Includes load, haul and dump fees to a licensed facility.
	Onsite remediation of hydrocarbon contaminated soils manual land farming (Select Volume from List)	No		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	No		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	No		m3	\$165.00				Additional cost as the treatment process is fast tracked.
	Remove and dispose of asbestos (<750 m2)	No		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)	No		m2	\$40.00				Where an assessment/estimation has been made to confirm the volume of asbestos to be removed.
	Remove and dispose of asbestos	No		tonne	\$2,400				6 mm asbestos sheet approx. 15 kg / m2 = ~70 m2 per ton. Allowing \$20 / m2 for removal, 4 hours trucking @ \$125 and \$100 / t disposal plus 20% OHP = \$2,400 / t.
	Treatment of known Acid Sulfate Soils	No		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	No		m2	\$1.00				Provisional sum for cutting using ripping tyres and on-site disposal of the liner.
Contaminated Materials Subtotal							\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas ñ minor works including deep rip and trim	No		ha	\$960.00				Assumes ~6 m road width - 16H Grader @ \$212 per hour.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds ñ minor earthworks and deep rip and trim	No		ha	\$1,500				Assumes ~20 m road width - D10 Dozer @ \$332 per hour.
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip and seed (pasture grass)	No		ha	\$3,698				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,485				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.

	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	No		ha	\$3,820				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,595				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	No		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.
Earthworks / Structural Works (Landform Establishment) Subtotal						\$0			
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit ñ Select Push Length	No		m3	Select from List			Select Push Length ☐ Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	No		ha	\$3,900				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 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)	No		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)	No		ha	\$960.00				16H Grader @ \$212 per hour - ripping in 1 direction only.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	No		ha	\$1,600				Combination of dozer and excavator work. Small dozer (D6 or similar) @ ~\$200 per hour plus grader @ \$212 per hour for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	No		m2	\$35.00				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).
Earthworks / Structural Works (Landform Establishment) Subtotal						\$0			
Mine Waste	Reshaping, capping / sealing of a structure unlikely to present difficulties due to chemistry ñ reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and physical properties (i.e., shear strength, etc.) - where the mine waste stream is geochemically benign and / or the strength condition within the upper 4 - 6 m meets the target shear strength profile.	No		ha	\$81,000				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 1 m including growth media. Water quality from runoff, seepage etc. meets site-specific environment water quality values.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).
	Reshaping, capping / sealing of structure likely to present moderate difficulties due to chemistry ñ reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), or physical properties ñ shear strength, etc. limiting equipment choice.	No		ha	\$108,000				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 of approximately 2 m including growth media. This may require additional materials (such as 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.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).

	Reshaping, capping / sealing of structure likely to present considerable difficulties due to reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and / or physical properties (low shear strength greatly limiting equipment selection for material placement etc.)	No		ha	\$170,000				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 2.5 m including growth media. 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.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).
Mine Waste Subtotal						\$0			
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media (Select Haul Distance from List)	No						Select ☐ Haul Distance ☐ Here	If topsoil is not available on-site, then Virgin Excavated Natural Material (VENM) may need to be externally sourced.
		No		m3	Select from List				
	Direct seeding / fertiliser (pasture grass species)	No		ha	\$1,240				Rate can fluctuate however this is a suitable standard rate.
	Direct seeding / fertiliser (tree or native grass species)	No		ha	\$2,095				Rate can fluctuate however this is a suitable standard rate.
	Hydro-seeding with straw mulching and bitumen tack	No		m2	\$1.80				Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	No		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)	No		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.)	No		ha	\$860.00				Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	No		ha	\$1,015				Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	No		m	\$9.50				Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	No		m	\$4.00				Standard rate for standard stock fencing.
	Purchase and erect warning signs	No		allow	\$250.00				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.	No		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 filling voids and/or capping etc.	No		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.	
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal						\$0			
Water Management	Clean water dams to be retained after decommissioning & make safe and minor earthworks	No		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.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	No		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.
Water Management Subtotal						\$0			
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	No		ha	\$900				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	No		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	No		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	No		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	No		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>	N			This is				This item includes ☐ to be added by the operator ☐
	Other 2 <insert>	N			deliberately				This item includes ☐ to be added by the operator ☐
	Other 3 <insert>	N			left blank				This item includes ☐ to be added by the operator ☐
Additional Items Subtotal						\$0			
T ☐ RESULT Total Cost for Tailings ☐ Reflects Domain						\$0			

Open Cut Operations

Domain 3a: Overburden & Waste

Total Cost for Overburden & Waste Domain

\$303,548

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

This domain incorporates both the Overburden Emplacement Area (8.8ha) and the Yorkeys Stockpile Area (5.5ha).

Key Rehabilitation Area Data for Domain

Enter data below manually

Total Landform Establishment: 14.3ha

Total Growth Media Development: 14.3ha

Total Ecosystem Establishment: 14.3ha

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	No		ha	\$2,580				Assumes ASS is treatable via neutralisation and does not require capping and isolation.
	Removal and disposal of plastic liner (i.e. dam, leach pad, sump etc.)	No		m2	\$1.00				Provisional sum for cutting using ripping tyres and on-site disposal of the liner.
Contaminated Materials Subtotal							\$0		
Roads and Tracks	Unsealed roads / vehicle park-up areas ñ minor works including deep rip and trim	No		ha	\$960.00			All roads to be rehabilitated accounted for in infrastructure area.	Assumes ~6 m road width - 16H Grader @ \$212 per hour.
	Unsealed roads / access tracks / vehicle park-up areas with windrows and/or small earthen bunds ñ minor earthworks and deep rip and trim	No		ha	\$1,500				Assumes ~20 m road width - D10 Dozer @ \$332 per hour.
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip and seed (pasture grass)	No		ha	\$3,698				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.
	Unsealed roads / vehicle park-up areas ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,485				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (pasture grass)	No		ha	\$3,820				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - pasture grass seed.
	Unsealed roads / haul roads / vehicle park-up areas with windrows and/or small earthen bunds ñ Minor earthworks, final trim and deep rip, ameliorate and seed (native tree/shrub/grass)	No		ha	\$4,595				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour (50% utilisation) - tree/shrub seed.
	Remove stabilised material (blue metal, aggregate etc.) from roadways and disposal on-site/locally (Select Haul Distance from list)	No		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.
Roads and Tracks Subtotal							\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit ñ Select Push Length	No		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y	14.3	ha	\$3,900		\$55,770		D10 Dozer @ \$332 per hour and 16H Grader @ \$212 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)	No		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	No		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)	Y	14.3	ha	\$960.00		\$13,728		16H Grader @ \$212 per hour - ripping in 1 direction only.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	No		ha	\$1,600			Water management structures in place	Combination of dozer and excavator work. Small dozer (D6 or similar) @ ~\$200 per hour plus grader @ \$212 per hour for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	No	0	m2	\$35.00				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).
Earthworks / Structural Works (Landform Establishment) Subtotal							\$69,498		
Mine Waste	Reshaping, capping / sealing of a structure unlikely to present difficulties due to chemistry ñ reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and physical properties (i.e., shear strength, etc.) - where the mine waste stream is geochemically benign and / or the strength condition within the upper 4 - 6 m meets the target shear strength profile.	No		ha	\$81,000				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 1 m including growth media. Water quality from runoff, seepage etc. meets site-specific environment water quality values.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).

	Reshaping, capping / sealing of structure likely to present moderate difficulties due to chemistry of reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), or physical properties of shear strength, etc. limiting equipment choice.	No		ha	\$108,000			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 of approximately 2 m including growth media. This may require additional materials (such as 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.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).
	Reshaping, capping / sealing of structure likely to present considerable difficulties due to reactive materials (ARD / AMD / PAF / NMD / carbonaceous / saline), and / or physical properties (low shear strength greatly limiting equipment selection for material placement etc.)	No		ha	\$170,000			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 2.5 m including growth media. 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.
	Additional materials required for reshaping, capping / sealing of structure to facilitate water quality from runoff, seepage etc. meeting site-specific environment water quality values.	No		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.	No		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.).
Mine Waste Subtotal						\$0		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	42900	m3	\$3.26	\$139,692	0.01 km	610 m3/hr with 4 x 657 scrapers at \$430/hr, D10 trimming at \$270/hr 3ha/day at 150mm depth
	Planting mature trees (>15 cm)	No		allow	\$20.00		Assume 300mm growth medium over entire domain	4 m centres.
	Planting tube stock (<15 cm)	Y	5500	allow	\$10.00	\$55,000	Based on 4m centres for 8.8ha in Overburden Emplacement Area	4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	5.5	ha	\$1,240	\$6,820		Rate can fluctuate however this is a suitable standard rate.
	Direct seeding / fertiliser (tree or native grass species)	Y	8.8	ha	\$2,095	\$18,436		Rate can fluctuate however this is a suitable standard rate.
	Hydro-seeding with straw mulching and bitumen tack	No		m2	\$1.80			Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	No		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)	Y	8.8	ha	\$140.00	\$1,232		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.)	No		ha	\$860			Assumes 2.5 t / ha as an average application rate.
	growth media amelioration with biosolids	No		ha	\$1,015			Recent experience with agronomy projects.
	Construct no-climb stock fence around rehabilitated areas	No		m	\$9.50			Standard rate for no-climb stock fencing.
	Construct standard stock fence around rehabilitated areas	No		m	\$4.00		Existing fencing adequate	Standard rate for standard stock fencing.
	Purchase and erect warning signs	No		allow	\$250.00			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.	No		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.
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal						\$221,180		
Water Management	Clean water dams to be retained after decommissioning and make safe and minor earthworks	No		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.
	Remove sediments from the floor of the dam to						Select Haul Distance Here	This item includes the volume of

	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	No		m3	Select from List				contaminated sediment requiring removal using an excavator, truck and dozer to clean out the dam.
							\$0		
Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	14.3	ha	\$900		\$12,870		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	No		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	No		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	No		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	No		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Maintenance of Rehabilitated Areas Subtotal							\$12,870		
Additional Items	Other 1 <insert>	N			This is				This item includes ☐ to be added by the operator ☐
	Other 2 <insert>	N			deliberately				This item includes ☐ to be added by the operator ☐
	Other 3 <insert>	N			left blank				This item includes ☐ to be added by the operator ☐
	Additional Items Subtotal							\$0	
T ☐ RESULT Total Cost for ☐ verburden ☐ Waste Domain							\$303,548		

Open Cut Operations

Domain 4a: Active Mine & Voids

Total Cost for Active Mine & Voids Domain

\$159,830

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

Water in final landform would equilibrate with groundwater level at approximately 730m AHD, although this may be higher given the impervious nature of the underlying bedrock aquifer.

A conservative estimate of areas requiring growth medium development and ecosystem establishment has been applied. It is acknowledged that some surface of the final landform for the extraction area will contain faces that would not be revegetated.

Key Rehabilitation Area Data for Domain

Enter data below manually	
Total Landform Establishment:	16.4ha
Total Growth Media Development:	16.4ha
Total Ecosystem Establishment:	16.4ha

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	No		Lm	\$1.70				Blasting at 90c/m3, D11 push at \$350 and 375 bcm/hr (80c/m3).
	Drill & blast faces to make safe	No		m3	\$0.90				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 will allow drilling and blasting at \$0.90/bcm.
	High wall treatment & (trench and safety berm)	No		m	\$90.00				D10 Dozer @ \$332 per hour and 16H Grader @ \$212 per hour including revegetation with pasture grass.
Open Cut Subtotal							\$0		
Earthworks / Structural Works (Landform Establishment)	Major bulk pushing to achieve grades nominated in the approval/permit & Select Push Length	No		m3	Select from List			Select Push Length Here	Major bulk pushing to achieve grades nominated in the approval/permit
	Minor reshaping and pushing	Y	7.2	ha	\$3,900		\$28,080		D10 Dozer @ \$332 per hour and 16H Grader @ \$212 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)	No		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	No		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)	No		ha	\$960.00			Deep ripping not required in this domain	16H Grader @ \$212 per hour - ripping in 1 direction only.
	Structural works, banks, waterways - contour banks, drainage channels and other soil conservation measures	No		ha	\$1,600			Water management structures in place	Combination of dozer and excavator work. Small dozer (D6 or similar) @ ~\$200 per hour plus grader @ \$212 per hour for ~4 hours each per ha.
	Construction of spine drains / drop structures and/or stabilising water course entry points - required for large catchments	No		m2	\$35.00				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).
Earthworks / Structural Works (Landform Establishment) Subtotal							\$28,080		
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment)	Source, cart and spread growth media - haul distance <1 km	Y	21600	m3	\$3.26		\$70,334	Select 1km Assume 300mm growth medium over entire domain	610 m3/hr with 4 x 657 scrapers at \$430/hr, D10 trimming at \$270/hr 3ha/day at 150mm depth
	Planting mature trees (>15 cm)	No		allow	\$20.00				4 m centres.
	Planting tube stock (<15 cm)	Y	4500	allow	\$10.00		\$45,000	Based on 4m centres for 7.2ha	4 m centres.
	Direct seeding / fertiliser (pasture grass species)	Y	7.2	ha	\$1,240		\$8,928		Rate can fluctuate however this is a suitable standard rate.
	Direct seeding / fertiliser (tree or native grass species)	No		ha	\$2,095				Rate can fluctuate however this is a suitable standard rate.
	Hydro-seeding with straw mulching and bitumen tack	No		m2	\$1.80				Rate can fluctuate however this is a suitable standard rate.
	Single application of fertiliser (pasture)	No		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)	Y	7.2	ha	\$140.00		\$1,008		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.)	No		ha	\$860.00				Assumes 2.5 t / ha as an average application rate.
	Growth media amelioration with biosolids	No		ha	\$1,015				Recent experience with agronomy projects.
	Security fence around steep section of high wall	No		m	\$55.00			Safety bunding in place and property fencing for security reasons.	Class 1 cyclone wire (or similar) security fence @ 2.1 m with 3-4 m post spacing - complying with AS1725-2010 - Chain-link fabric security fences and gates.
	Purchase and erect warning signs	No		allow	\$250.00				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.	No		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 filling voids and/or capping etc.	No		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.
Land Preparation and Revegetation (Growth Media Development and Ecosystem Establishment) Subtotal							\$125,270		
Water Management	Clean water dams to be retained after decommissioning & make safe and minor earthworks	No		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.
	Remove sediments from the floor of the dam to enable it to be converted into clean water structure (Select Haul Distance from list)	No		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.
Water Management Subtotal							\$0		

Maintenance of Rehabilitated Areas	Maintenance of areas that have been shaped and seeded and revegetation has been 'successful'	Y	7.2	ha	\$900		\$6,480		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	No		ha	\$1,200				Areas requiring minor repair - rills, minor growth media replacement.
	Existing rehabilitation repair - moderate	No		ha	\$1,700				Areas requiring moderate repair - rills, significant growth media replacement.
	Existing rehabilitation repair - major	No		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	No		ha	\$40,000				Areas that require extensive rehabilitation repair - re-design and re-construction of landform.
Maintenance of Rehabilitated Areas Subtotal							\$6,480		
Additional Items	Other 1 <insert>	N			This is				This item includes ☐ to be added by the operator. ☐
	Other 2 <insert>	N			deliberately				This item includes ☐ to be added by the operator. ☐
	Other 3 <insert>	N			left blank				This item includes ☐ to be added by the operator. ☐
Additional Items Subtotal							\$0		
T ☐ RESULT		Total Cost for Active Mine ☐ ☐ oids Domain					\$159,830		

Domain 5a: Management Activities

Total Cost for Management Activities

\$115,120

		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:
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)	No			ML	\$3,600				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 (includes removal of metals etc, neutralisation treatments and cost of mobile water treatment unit	No			ML	\$1,500				Rate can fluctuate depending on treatment type however this is a suitable standard rate for current programs at mining operations.	
Water Management Subtotal								\$0			
Creek Diversions	Repairs and/or stabilisation of new or compromised water course diversion	No			m	\$2,500				Assumes material is suitable for revegetating and has a reasonable chance of stabilising.	
	Long term maintenance of water course diversion n Channel constructed through backfilled material	No			m	\$1,500				Assumes maintenance has been kept up and significant works are not required.	
	Long term maintenance of water course diversion n Channel constructed through competent material	No			m	\$750.00				Assumes maintenance has been kept up and significant works are not required.	
	Installation of rock armouring	No			m2	\$6.00				Assumes competent material is locally available - multiply costs by 2 for sourcing and transporting from offsite location.	
Creek Diversions Subtotal								\$0			
Maintenance of Rehabilitated Areas	Pest management on buffer lands, non-disturbed, and rehabilitated areas	No			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)	Y	37.8		ha	\$400.00		\$15,120	Land management only applicable to previously disturbed areas	Undisturbed areas within the lease boundary that require land management activities.	
Maintenance of Rehabilitated Areas Subtotal								\$15,120			
Heritage Items	The restoration and care and maintenance of items that have heritage significance	No			allow	Use alternate rate cell				Item for the redistribution of Aboriginal artefacts, preservation of European heritage items or a combination of activities.	
Heritage Items Subtotal								\$0			
Sundry Items	Development of an 'Unplanned' Project Closure Plan - State Significant Development	Y	1		allow	\$100,000		\$100,000	SSD	Provisional sum to be used to refine the conceptual closure plan into a detailed closure plan with execution strategies for rehabilitation activities.	
	DRG tender preparation and assessment, stakeholder consultation, risk assessment facilitation and management, statutory reporting and instruments, permitting and compliance requirements, document and data management	Y	1		allow	Use alternate rate cell		\$0		Provisional sum for the NSW Government to prepare tender documentation (i.e. demolition, waste disposal, earthworks, environmental management etc.) manage stakeholders and establish permitting and compliance requirements for closure.	
	Site security during closure	No			yr.	\$75,000			Given remoteness of site and security measures, site security not required.	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.	
	HAZMAT Clean-up - cleaning and decontaminating plant and equipment, chemical storage locations, oil and grease traps, tanks, vessels, and pipe work etc	No			allow	\$100,000				Provisional sum to perform the site clean up and ensuring the demolition program is not interrupted due to potential contamination of waste streams.	
	Removal and disposal of radiation devices	No			each	\$25,000				Provisional sum for removal and disposal of monitoring devices on conveyors using a radiation source (i.e., Americium n 241, Plutonium n 238, Caesium - 137 etc).	
	Additional fees for accessing State, Crown or other public lands for rehabilitation/remediation activities	No			allow	Use alternate rate cell				Provisional sum.	
Sundry Items Subtotal								\$100,000			
Mobilisation and Demobilisation	Mobilisation & Demobilisation for small mine or quarry	No			item	\$40,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.	
	Mobilisation & Demobilisation (Distance to site <150 km)	No			item	\$100,000				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)	No			item	\$150,000				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)	No			item	\$300,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.	
	Mobilisation & Demobilisation (Distance to site >1000 km)	No			item	\$500,000				May include specialist demolition equipment and/or suitable plant to execute bulk earthworks as required.	
Mobilisation and Demobilisation Subtotal								\$0			
Additional Items	Other 1 <insert>	N				This is deliberately left blank				This item includes ☐ To be added by the operator ☐	
	Other 2 <insert>	N					This item includes ☐ To be added by the operator ☐				
	Other 3 <insert>	N					This item includes ☐ To be added by the operator ☐				
Additional Items Subtotal								\$0			
Total Cost for Management Activities								\$115,120			





