

Report to:
Yallourn Energy

**COSTING OF THE YALLOURN MINE
REHABILITATION MASTER PLAN
UPDATE FOR JULY 2001**

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1. INTRODUCTION

A Cost Model for the Whole of Life Rehabilitation of the Yallourn Mine, which incorporates the Township, East Field and Maryvale coalfields, was previously developed in 1999. This model was based on meeting the rehabilitation proposal as outlined in the "Rehabilitation Master Plan" (RMP), 1998. The plan defined how and when areas were to be rehabilitated.

Since the report was produced, the proposed mine development has been modified, with major changes to the proposed treatment of the Morwell River Diversion and subsequent extension of the Eastfield activities. This report provides an update to the Whole of Life Rehabilitation Cost Model based on the concept planning which has been undertaken to date. Further detailed planning for the Whole of Life development is to be undertaken by Yallourn Energy later in the 2001 calendar year, with detailed rehabilitation planning to be carried out after this.

The current mine plan involves the completion of coal winning in 2032 (an extension of 5 years on the previous plan). The principals of the 1998 RMP have been maintained with changes made to the shape of rehabilitation areas and the timing of rehabilitation works to conform with the current mine development concept plans.

The long term proposal to flood the mine after completion of mining activities is maintained, with the final water level and range consistent with the previous report. (ie. Water level to range between RL 36.0 and 38.0.) Treatment of shoreline areas also remains consistent with the previous report.

Based on the current mine development and adjusted staged rehabilitation plans, the annual liability and annual costs of rehabilitation have been developed. Where possible, rates for works were based on actual experience in the Yallourn mine. At the closure of the mine, buildings, coal handling equipment, pipelines and dredgers will need to be dismantled, rehabilitation finished and the mine made safe for ultimate public access. Dewatering will be progressively slowed and channels, weirs and other work carried out to allow the mine to be flooded. These activities have been itemised, timed and costed.

This study has not included costs for any rehabilitation works associated with the proposed Morwell River diversion or for the Yallourn North ash dump and landfills. A quantity of topsoil has been identified in the topsoil stockpile calculations for use to rehabilitate the Yallourn North ash dump and landfills.

2. REHABILITATION AREAS

Rehabilitation areas have been defined for the purpose of this costing exercise. They have been based on the RMP and areas designated according to the timing of activities and the geographic zone. The areas allow separate costing of the rehabilitation works above and below the future water level as well as those activities required to ensure the final rehabilitation of the mine. The areas used in this report are similar to those used in the previous 1999 report, with some changes in area and treatment resulting from the development modifications. The areas are shown on Figure 1. Details of each area (name, area, current status, proposed mining activity, end use, rehabilitation requirements and timing,

and any differences from previous report) are included in Appendix 1. A summary table of the information is also included at the back of Appendix 1.

3. DEFINITION OF COMMITMENT

The commitment to rehabilitation and the costs implied, occurs when mining first disturbs an area. In some cases the commitment already exists (eg. the worked out batters in Township Field) whilst in other areas the commitment will not occur for many years. With each year of development, further mined areas become committed to rehabilitation.

The current commitment is the gap between completed rehabilitation and the committed work. Included in the current commitment is the shut down costs for the mine. This current commitment will exist until the mine is closed down and finally rehabilitated. With progressive rehabilitation the current commitment to rehabilitation can increase or decrease in any single year.

Rehabilitation of the overburden removal face is a current commitment. A working face will continue to progress and change as the mine develops. For the purpose of this report it is assumed that the commitment for the working face is reasonably constant and will continue through to the end of the overburden operations. Other overburden batters will be committed as the overburden face is completed and the face moves on.

4. COSTING OF REHABILITATION WORK

The cost of rehabilitation work is based on the estimated rehabilitation areas, the treatment of each rehabilitation area, the quantities estimated from detailed cross sections and, the rate for the rehabilitation work. The timing of the rehabilitation works is planned to follow the timing shown in the mine development plans and as outlined in the RMP. A cash flow has been developed for the rehabilitation works. The rehabilitation areas used in the estimation are outlined in Figure 2 and described in Appendix 1; the treatment for the rehabilitation work is taken from the RMP and the rates used for rehabilitation works are detailed in Appendix 2. These rates were developed based on experience within Yallourn mine.

A spreadsheet has been developed for each area showing the committed costs and the timing of rehabilitation works (Appendix 3).

5. REHABILITATION ASSUMPTIONS

The following assumptions have been made:

- The current Rehabilitation Master Plan (RMP) is the basis for rehabilitation treatment and timing.
- Areas associated with the Morwell River Diversion and the Yallourn North mine and landfill have not been considered in this analysis.

- Mine development has been taken from the Yallourn Mine current Eastfield development and Maryvale development plans, June 2001. This has defined when rehabilitation works are committed and when areas can be effectively rehabilitated with both interim and/or final treatment. This report will be updated when detailed long term development plans are prepared later in the calendar year. Where the development plans differ from the RMP, the shape and timing of the rehabilitation works has been made to conform to the mine development plans. However the intent of the RMP is maintained.
- The commitment to rehabilitation is created when an area is mined. The actual rehabilitation work is carried out to conform to the RMP. This defines the cash flow of the rehabilitation work. The rates for rehabilitation works have generally been based on experience at the Yallourn mine, although rates for woodland and wetland development have yet to be established at Yallourn.
- The Yallourn Mine will be inundated after mining has ceased. Coal production is currently planned for completion in 2032. Inundation will be assumed to commence in 2035 and take approximately 10 years to complete.
- The top water level in the flooded mine has been set at AHD 38 (dictated by the Morwell River level at the south end of the mine) and the lower water level has been set at AHD 36.0.
- The water level may vary between the above limits. Inlet and outlet structures will be required to accommodate the change in level. Indicative costs for these structures have been included.
- Topsoil will be removed in advance of overburden and overheight mining operations and stockpiled if not used immediately. There is excess topsoil in the East Field area which will be removed prior to 2005 with the majority placed in stockpile. Topsoil in stockpile will be treated as an asset with an assigned capital value of \$3.98/m³. This assigned value will be recouped when the topsoil is taken from stockpile for use in the proposed rehabilitation areas. In Maryvale it has been assumed that approximately 100 mm of the topsoil resource is recoverable. Most of this resource will be used directly in the rehabilitation works with any excess placed in stockpile.
- Areas above the water line will be topsoiled to a depth of 125 mm.
- Areas to be ultimately inundated will be topsoiled to a depth of 65 mm to enhance the establishment of the interim vegetation.
- Surfaces of the internal overburden dump, that will be left for more than 5 years before the next overburden level or before they are inundated, will be progressively rehabilitated by interim planting treatment to stabilise the surface.
- Generally all surfaces above the future water level will be topsoiled. It has been assumed that 125 mm thick topsoil will be used. The topsoil will be directly trucked from ahead of the working face or require carting from the stockpiles.
- The finished batter slopes for areas above the future water line will be 3H to 1V.
- Within the shoreline zone a batter slope of 6H to 1V is assumed. To limit the effect of wave erosion, planting of wetland vegetation will be required when the final water level is attained. In some areas likely to be used for swimming a "beach" may be developed with a minimum slope of 8H to 1V.

- Coal batters and some areas on the base of the mine which will be below the water line will not be clay covered. Coal benches below the water line, apart from the final operating bench positions, will be clay covered during mining operations to minimise the risk of fire. This is not a rehabilitation cost.
- Sowing to pasture is the initial stabilising and fire safe treatment for areas above water level. Subsequent planting of some areas to woodlands and wetlands is as shown in the RMP. Woodlands will generally not be planted until mining activities are well clear of the area.
- At the closure of mining the equipment and buildings are to be dismantled. The Raw Coal Bunker dismantling is considered to be part of the Yallourn W Power Station.
- To flood the mine it has been assumed that connection will be made to the Morwell River into South Field, and that water will discharge into the Morwell River at the confluence with the Latrobe River. Provision has been made for channels and weirs to be constructed.

6. ESTIMATION

6.1 DEFINITIONS

The costs for rehabilitation at the Yallourn Mine have been estimated against 'Committed' costs and 'Actual Expenditure' costs. These have been defined in sections 2 and 3. The spreadsheets estimate the current liability and the cash flows of planned works as they occur.

6.2 COST RATES

Cost rates have mainly been established based on experience in the Yallourn mine. Where experience is limited (eg woodland and wetland development) estimates have been made based on estimates made for the Morwell river diversion. The rehabilitation rates are detailed in Appendix 2.

6.3 SPREADSHEET EXPLANATION

A Microsoft Excel spreadsheet has been used to develop a rehabilitation costing model (supplied electronically). The summary of this spreadsheet is shown in Appendix 3. This model can be used to readily investigate the effect of changed rates and rehabilitation standards on the cost commitment to rehabilitation. The spreadsheet consists of three levels which are tied together to produce the Rehabilitation Costing Summary Sheet and graphs. These levels are :-

- A Rates table that contains the unit rates for various earthwork types and rehabilitation levels.
- A Series of worksheets for the various rehabilitation areas and major additional rehabilitation items. There is a separate worksheet for each of the 28 rehabilitation areas identified on the Rehabilitation Area plan (Figure 1) and for topsoil stripping and stockpiling operations. Separate sheets are provided for closure activities – final rehabilitation of the shoreline, river diversion facilities, removal of buildings and plant and public facilities. These worksheets identify the types of rehabilitation activities

involved for each area, the quantities involved, when the commitment to carry out rehabilitation work is made (ie. when the natural ground is disturbed by mining activity) and when the rehabilitation works will be carried out. The Commitment and Cashflow cost estimations are linked to the Rates table. Each worksheet also shows a total annual commitment & cashflow and a cumulative commitment & cashflow.

- A “Summary” sheet shows the Total and Cumulative Commitment and Cashflow costs from each of the rehabilitation areas and items. These individual area and item costs are then totalled to give overall mine rehabilitation costs. Totals are also given for rehabilitation works involved in areas below the final waterline (ie. Areas 1 to 11) and for the areas above the waterline.
- A “Graphs” worksheet contains separate graphs of the cumulative commitment and cashflow for the areas below the final waterline, the areas above the waterline and a total of both. The difference between the cumulative committed cost and the cashflow is the “Current Liability” for the particular period. A graph of the current liability for the areas below the final waterline, the areas above the waterline and the total of both are also included. The “Graphs” worksheet also contains graphs of the annual cashflow requirements.

APPENDIX 1 REHABILITATION AREAS

AREAS 1 TO 11 – INUNDATED AREAS

AREA 1 - Southern Overburden Dump

Area:	191 Ha
Current Status:	Site is currently available to rehabilitate.
Proposed Mining Activity	None
Commitment to Rehabilitate	Current
End Use:	Inundation
Rehabilitation:	Part interim stabilisation between 2002 & 2007 (Approx. 40 Ha each year)
Change from previous report	No change

AREA 2 - Fire Service Ponds

Area:	133 Ha
Current Status:	Site includes Fire Service and Flocculation Ponds (80 Ha).
Proposed Mining Activity	These will remain until end of mine
Commitment to Rehabilitate	Land between ponds is available to be rehabilitated.
End Use:	Inundation
Rehabilitation:	Master plan does not show any rehabilitation of the pond areas. Part interim stabilisation (50 Ha) could be undertaken when other Areas of the internal dumps are treated. (say 2016 to 2018)
Change from previous report	Timing only

AREA 3 - Western overburden dump

Area has been combined with Area 4 which covers the current Township Field Overburden Dump.

AREA 4 - Overburden Dump Township Field

Area:	366 Ha
Current Status:	Overburden dump and Coal floor
Proposed Mining Activity	Overburden dumping – 2001 to 2010. A small lake is developed on the dump adjacent to the coal dyke for preliminary treatment of runoff prior to discharge via the Fire Service Pond.
Commitment to Rehabilitate	Following placement of backside pass.
End Use:	Inundation
Rehabilitation:	Rehabilitation after dumping completed. Interim stabilisation in 2007 – 2015, Approx. 40 Hapa.
Change from previous report	Area increased with addition of Area 3

AREA 5 - Old Midfield Dump

Area:	81 Ha
Current Status:	Shaped and stabilised now. Vegetation contains many weeds.
Proposed Mining Activity	Morwell River Diversion embankment works.

Commitment to Rehabilitate As part of Morwell River Diversion Project
 End Use: Morwell River Diversion embankment remains
 Rehabilitation: Around 2005 as part of Morwell River Diversion Project works.
 Change from previous report Changed area and activity.

AREA 6 - Old Midfield Dump

Area: 169 Ha
 Current Status: Old worked out mine that has significant vegetation cover and is substantially rehabilitated to pasture already.
 Proposed Mining Activity None
 Commitment to Rehabilitate Minor interim stabilisation of O/B dump, conveyor formations and dredger transfer routes.
 End Use: Inundation
 Rehabilitation: Minor rehabilitation – Interim stabilisation (8 Ha) around 2010 after O/B conveyors relocated.
 Change from previous report Area increased as it is combined with previous area 5.

AREA 7 – Northern parts of original Yallourn Mine

Area: 51 Ha
 Current Status: Rehabilitated substantially completed
 Proposed Mining Activity None
 Commitment to Rehabilitate Minor rehabilitation in short term.
 End Use: Inundation apart from batter areas.
 Rehabilitation: Modify batters to 6 to 1 in shoreline zone with some small steeper batters on the west side near rising conveyors. Carry out around 2012 using waste fill from Maryvale operations.
 Change from previous report Rehabilitation completed apart from batter flattening.

AREA 8 - Conveyor formations etc.

Area: 81 Ha
 Current Status: Conveyor formations
 Proposed Mining Activity Conveyor formations required till end of mine
 Commitment to Rehabilitate Current
 End Use: Will be substantially inundated at end of mine.
 Rehabilitation: May need to remove slabs and formation over 5Ha section, which will be above water line, and sew to pasture.
 Change from previous report The area has been modified and split with the embankment earthworks for the Morwell River Diversion, and the conveyor tunnel under the embankment

AREA 9 – East Field – Floor

Area: 392 Ha
 Current Status: Mine floor partially exposed.
 Proposed Mining Activity East Field mining development includes excavating the coal, dumping of BWE removed overburden and truck dumping of overheight O/B from Maryvale. Drainage retention ponds to be developed
 Commitment to Rehabilitate Area created as bottom system completes excavation, ie. Current (160 Ha) – to 2012 (392 Ha)
 End Use: Inundation

Rehabilitation: Progressively interim rehabilitate as dump areas are completed. (ie 2016 to 2030 – Approx. 25 Ha/year).
 Change from previous report Bottom coal system has progressed through area. Area increased with Eastfield extension.

AREA 10 - Maryvale Northern Floor – Including drainage pond
 Area: 195 Ha (Including 65 Ha of pond)
 Current Status: Not mined
 Proposed Mining Activity Maryvale field excavation. Overburden dumping.
 Commitment to Rehabilitate Area created as bottom system completes excavation, ie. 2012 to 2019. Overburden dumping will continue in this area towards end of overburden excavation in Maryvale.
 End Use: Inundation
 Rehabilitation: Progressive interim rehabilitation after internal overburden placed. Interim treatment in 2019 to 2024.
 Change from previous report Stacker dumping of overburden proposed for long period.

AREA 11 - Maryvale – Southern Section Floor
 Area: 136 Ha.
 Current Status: Not yet mined.
 Proposed Mining Activity Maryvale field coal winning followed by O/B dumping partially covering the coal floor. Substantial area of coal floor will remain.
 Commitment to Rehabilitate Area progressively created as bottom system completes coal excavation and O/B dump is developed, ie. 2020 to 2031
 End Use: Inundation
 Rehabilitation: Rehabilitate northernmost overburden dump area only (80Ha) with interim stabilisation in 2029/32. Southern dump areas do not justify rehabilitation effort, as inundation would occur shortly after completion.
 Change from previous report Timing of work. Extent of dumping.

AREAS 12 TO 28 – ABOVE WATER LINE

AREA 12 - Southern Overburden Dump

Area:	104 Ha
Current Status:	Site is currently available for rehabilitation.
Proposed Mining Activity	None
Commitment to Rehabilitate	Current commitment for final rehabilitation.
End Use:	Open woodland with some closed woodland and wetlands.
Rehabilitation:	Plant pasture cover – Say 2015 to 2025. Open woodland created around 2022 to 2028. Old topside dump requires dozing to shape as part of wetland formation. Closed woodland and wetland created around 2032. 80 % open woodland, 15 % closed woodland and 5 % wetland.
Change from previous report	Area includes part of previous Area 13 which will remain above water level.

AREA 13 – WESTERN OVERBURDEN DUMP

Previous Area 13 reduced in size, due to overburden dumping changes, and combined with area 12.

AREA 14 – MIDFIELD DUMP

Area:	57 Ha
Current Status:	Shaped & stabilised now, vegetation predominantly weeds. 9.5 Ha of area stripped for conveyor works.
Proposed Mining Activity	None
Commitment to Rehabilitate	Commitment now to final rehabilitation.
End Use:	Open woodland with some closed woodland and wetlands.
Rehabilitation:	Open and closed woodland and wetlands created after 2024. Upgrade existing pasture in 2028/9 planting of trees. 80 % open woodland, 15 % closed woodland & 5 % wetland.
Change from previous report	Area reduced due to Morwell River diversion embankment.

AREA 15 – EASTERN BATTERS OLD YALLOURN MINE

Area:	31 Ha
Current Status:	Worked out batters.
Proposed Mining Activity	None in current plan.
Commitment to Rehabilitate	Commitment now for final rehabilitation.
End Use:	Open woodland with some closed woodland.
Rehabilitation:	Rehabilitation should be undertaken with river diversion works around 2005 to 2007. Batter flattening above water level by cut and fill with dozers, where necessary cover coal, topsoil and then plant to pasture. Woodland planting in 2032.
Change from previous report	Earlier date of treatment.

AREA 16 – SOUTHERN BATTERS OLD YALLOURN MINE

Area: 81 Ha
 Current Status: Worked out batters with low grade pasture to edge of mine.
 Proposed Mining Activity: None
 Commitment to Rehabilitate: Commitment now for final rehabilitation.
 End Use: Open woodland with some closed woodland.
 Rehabilitation: Carry out progressively after Area 15 completed – Say 2009 to 2012. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (31 Ha). Woodland planting (25 Ha - open, 6 Ha – closed) and upgrade existing pasture (42 Ha) in 2028.

Change from previous report: Brought batter treatment and planting to pasture forward.

AREA 17 – SOUTH WEST BATTERS OLD YALLOURN MINE

Area: 86 Ha
 Current Status: Worked out.
 Proposed Mining Activity: None
 Commitment to Rehabilitate: Commitment now for final rehabilitation.
 End Use: Pasture areas with open and some closed woodland on batters.
 Rehabilitation: Batter flattening in 2012 to 2016 by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture 44 Ha. Woodland planting (15 Ha open, 4 Ha closed) and upgrade pasture (35 Ha) in 2032.

Change from previous report: Brought batter treatment and planting to pasture forward.

AREA 18 – WESTERN BATTER OLD YALLOURN MINE – SURCHARGE DUMP

Area: 30 Ha
 Current Status: Worked out batter
 Proposed Mining Activity: None
 Commitment to Rehabilitate: Commitment now for final rehabilitation.
 End Use: Pasture areas with open woodland and some closed woodland on batter slopes.
 Rehabilitation: Carry out between 2020 to 2025. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (25 Ha). Woodland planting (12 Ha open, 5 Ha closed) in 2027.

Change from previous report: No change

AREA 19 – WESTERN AREA ABOVE BATTERS

Area: 126 Ha
 Current Status: Already rehabilitated to pasture and woodlands
 Proposed Mining Activity: None
 Commitment to Rehabilitate: Commitment now for final rehabilitation.
 End Use: Pasture areas with open woodland and some closed woodland.
 Rehabilitation: Carry out around 2025/26 Upgrade existing pasture (61 Ha). Woodland planting (10 Ha open, 50 Ha closed).

Change from previous report: No change

AREA 20 – TOWNSHIP FIELD NORTHERN BATTERS

Area:	22 Ha
Current Status:	Worked out batters
Proposed Mining Activity	None
Commitment to Rehabilitate	Commitment now for final rehabilitation.
End Use:	Pasture with open woodland.
Rehabilitation:	Carry out commencing 2004 to 2008. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (22 Ha). Woodland planting (10 Ha open woodland) in 2009.
Change from previous report	No change

AREA 21 – POWER STATION AND PRODUCTION AREA

Area:	113 Ha. (25 Ha to be rehabilitated by mine)
Current Status:	Mine support buildings, workshops, etc.
Proposed Mining Activity	Current status. These facilities required until end of mine life.
Commitment to Rehabilitate	Commitment now for final rehabilitation. Demolition of buildings included under Area 30.
End Use:	Woodlands (open with some closed).
Rehabilitation:	Carry out after 2032 – Say 2034/35. Topsoil and sew to pasture. Woodland (open (23 Ha), closed (2 Ha).
Change from previous report	Timing only

AREA 22 – OLD EXTERNAL OVERBURDEN DUMP & FUTURE SURCHARGE DUMP

Area:	128 Ha
Current Status:	Currently approx. 70 % rehabilitated to final requirement.
Proposed Mining Activity	Construction of surcharge dump. Morwell River Diversion through area.
Commitment to Rehabilitate	Commitment now for final rehabilitation.
End Use:	Pasture areas with open and some closed woodland.
Rehabilitation:	Earthworks could be carried out along with river diversion works - around 2005/6. Woodlands planted (open (30 Ha), closed (6 Ha) around 2017 to 2019
Change from previous report	Area reduced due to Morwell River Diversion works.

AREA 23 – EAST FIELD NORTHERN BATTERS

Area:	31 Ha
Current Status:	Current mine operation area. Batters partly developed and some interim stabilisation.
Proposed Mining Activity	East Field mining operations.
Commitment to Rehabilitate	Area currently committed to final rehabilitation is 25 Ha. Remaining area will be progressively created by 2006.
End Use:	Shoreline of open woodland with some closed woodland.
Rehabilitation:	Batter earthworks carried out progressively from 2012 to 2018 when coal conveyors transfer to Maryvale. Fill used from Maryvale over height operation (substantially an operations cost). Progressively planted to pasture (total 16 Ha) when sections of earthworks completed, with open woodland (13 Ha) and closed woodland (3 Ha) planted in

2020.
Change from previous report Timing change

AREA 24 – EAST FIELD NORTH EAST BATTERS

Area: 65 Ha
Current Status: Not mined.
Proposed Mining Activity Eastfield mining operations.
Commitment to Rehabilitate Commitment of area created in 2012 when coal conveyors removed from these batters.
End Use: Shoreline area of open woodland with some closed woodland.
Rehabilitation: Batter earthworks cannot be carried out until trunk conveyors have been shifted to the Maryvale Field. Earthworks in 2016 to 2020 using fill from Maryvale over height operation (substantially an operations cost). Planted to pasture (total 21 Ha) when sections of earthworks completed, with open woodland (15 Ha) and closed woodland (3 Ha) planted in 2024 to 2026.

Change from previous report Area increased due to Eastfield extension

AREA 25 – EAST FIELD SOUTH EASTERN BATTERS

Area: 48 Ha
Current Status: Not mined.
Proposed Mining Activity East Field Extension mining operations.
Commitment to Rehabilitate Commitment of area created in 2010 when overburden operations finish East Field Extension.
End Use: Shoreline area of pasture with open woodland and some closed woodland.
Rehabilitation: Batter earthworks carried out in 2021 to 2025, using fill from Maryvale over height operation (substantially an operations cost). Planted to pasture (total 38 Ha) when sections of earthworks completed, with open woodland (25 Ha) and closed woodland (3 Ha) planted in 2027 following closure of the overburden operations into Eastfield.

Change from previous report Area extended with Eastfield extension and timings changed.

AREA 26 – MARYVALE EASTERN BATTERS

Area: 61 Ha
Current Status: Not Mined
Proposed Mining Activity Maryvale operations.
Commitment to Rehabilitate Commitment of area created between 2012 and 2028 as overburden operations move through Maryvale.
End Use: Shoreline area of pasture with open woodland and some closed woodland.
Rehabilitation: Batter earthworks carried out after 2030 when overburden operations are completed and the overburden trunk conveyor removed. Batter flattening by cut and fill with dozers, 2030 to 2032. Planted to pasture (total 40 Ha) when sections of earthworks completed, with open woodland (32 Ha and closed woodland (3 Ha) in 2033.

Change from previous report Area and timing changed.

AREA 27 – MARYVALE SOUTHERN BATTERS

Area: 33 Ha
 Current Status: Not mined.
 Proposed Mining Activity Maryvale operations.
 Commitment to Rehabilitate Commitment of area created between 2029 and 2030 when overburden operations undertake the final pivot of Maryvale.
 End Use: Shoreline area of pasture with open woodland.
 Rehabilitation: Batter earthworks to be dozed down from 1 to 1 final batters following completion of overburden operations in 2030. Planted to pasture (total 18 Ha) when earthworks completed, with open woodland (12 Ha) planted in 2032.

Change from previous report Changed area and timing.

AREA 28 – MARYVALE WESTERN BATTERS

Area: 75 Ha
 Current Status: Not mined
 Proposed Mining Activity Maryvale operations.
 Commitment to Rehabilitate Commitment of area created between 2012 and 2029 when overburden operations move through Maryvale.
 End Use: Shoreline area of pasture with open and some closed woodland.
 Rehabilitation: Overburden batter could be progressively rehabilitated after the overburden face moves past, however best done after coal conveyors remain on benches below. Batter flattening by cut and fill with dozers, then plant sections to pasture (40 Ha) when dozing is completed. Open woodland (32 Ha) and closed woodland planting (3 Ha) in 2032.

Change from previous report Progressive rehabilitation cannot be carried out as coal trunk conveyors are on batters below.

ITEM 29 – STRIP TOPSOIL AND STOCKPILE

Each year, topsoil is stripped in advance of the overburden removal activities. Some of this topsoil will be used directly on various rehabilitation projects and the remainder will be stockpiled for later use.

In the early years where stripping is from the East Field, much of the topsoil stripped will be stockpiled and used for later rehabilitation works. The depth of topsoil removed from East Field ranges from 100 to 600 mm due to variation across the flood plain. The quantities of topsoil removed from East Field have been taken from estimates supplied by Yallourn Energy.

Topsoil from the Maryvale field has an average thickness of 136 mm (“Yallourn Mine Topsoil Resource” February 1997 report by M Ireland). It is assumed that approx. 80% of this topsoil will be recoverable. Most of the topsoil removed from Maryvale will be used directly in “current” rehabilitation works with any remainder placed in stockpile.

Topsoil in stockpile is regarded as a capital item and has been assigned a value based on the cost to cart to the stockpile (\$3.98/m³). This cost will be recouped when the topsoil is taken from stockpile and used for the rehabilitation works. Topsoil in stockpile will therefore be assigned as a committed cost against rehabilitation works. (For the purpose of estimating rehabilitation costs for calculating NRE rehabilitation bond requirements, the cost of topsoil in stockpile should not be considered.) At this stage, the topsoil stockpile will increase until around 2010, after which it will be drawn down to meet the proposed rehabilitation works. As the stockpile is drawn down, the capital cost of the topsoil used will be recouped as a committed cost against the rehabilitation works.

The total quantity of topsoil available from stripping operations is in excess of the requirements for rehabilitation of all areas above the water line. Excess topsoil will therefore also be used on the interim rehabilitation areas below the waterline to enhance the establishment of the interim vegetation. A nominal thickness of 65 mm of topsoil over the interim rehabilitation areas enables the total topsoil resource to be utilised.

CLOSURE ACTIVITIES

ITEM 30 – WATER DIVERSION FACILITIES

This item is for works associated with filling the mine with water after the completion of mining activity. It includes:

- An inlet channel is to be excavated from the Morwell River to the Yallourn Mine near the Flocculation Pond. A channel width of 50 metres has been assumed to enable a flood flow to be substantially redirected from the Morwell River Channel to the Mine. The channel could be approx. 400 m long and generally directed through the low lying river flood plain. The main excavation will be required through the current levee bank. (Allowance \$1,000,000)
- A diversion structure within the Morwell River Channel to ensure that a flood flow is substantially redirected to the Mine. (Allowance \$100,000)
- An inlet drop structure within the mine to enable water to drop from the upper level of RL 38.0 to the lower level of 36.0. (Allowance \$300,000)
- A temporary channel and drop structure within the mine to minimise erosion when the mine is filling. (Allowance \$180,000)
- An outlet channel from the eastern Eastfield batter of the mine back to the Morwell River Diversion. A channel width of 15 metres has been assumed. (Allowance \$100,000)
- An outlet structure to control the lake level and/or outlet flow. (Allowance \$200,000)
- Planting of the shoreline when the mine has been flooded to final level. There will be approx. 27 km of shoreline. (Allowance \$540,000 at \$20,000/km)
- Beaching of the shore line along the Morwell River Diversion embankment. Embankment batter works will be placed at say 3 to 1 and will not be flattened to 6 to 1 for the ultimate shoreline. Beaching will therefore be required before inundation, say 2035. Approx. 2000 m of beaching will be required. (Allowance \$250/m)

ITEM 31 – REMOVE BUILDINGS/PLANT

This item is for works associated with the removal of mine buildings and mine plant following completion of mining activities. It includes:

- Clearing asbestos from the various buildings and plant prior to final demolition/removal. Yallourn Energy has determined that \$1,170,000 will be required to remove the asbestos remaining at the end of the mine life. Asbestos, which will be required to be removed prior to the end of mining activities, has been budgeted elsewhere by the mine.
- Demolition of buildings. Yallourn Energy advise that \$1,600,000 will be required for the removal of mine buildings and associated infrastructure. Mine offices and currently used workshops are assumed to be made available for use by others at the end of mining operations.

- Demolish and remove Bucket Wheel Excavators (BWE) and the Stacker. While it may be possible that the salvage value of demolition/removal of these machines will be greater than the cost, a nominal allowance of \$100,000 has been made for each machine.
- Removal of conveyors and conveyor structures. Similarly to machines, a nominal cost of \$10/m has been allowed for the removal of conveyors.
- Removal of fire service and dewatering pipelines. Similarly to machines, a nominal cost of \$5/m has been allowed for the removal of pipes.
- Sealing of bores. At the end of mine life there will be a number of groundwater pumping and monitoring bores and relief wells which will need to be decommissioned and sealed to prevent movement of water to and from the aquifers. 8 relief wells, 2 pumping bores and 80 monitoring bores have been allowed for sealing at an estimated total cost of \$360,000. This amount will be relatively constant between now and the end of the mine. As new bores are added to the network, old bores will be decommissioned.

ITEM 32 – PUBLIC FACILITIES

These are the provision of facilities to enable the mine site to be used by the public after the completion of mining activities. The facilities to be provided are those shown on the RMP “Finalised Project” drawing. MV15-5/6. It is assumed that the facilities within the Morwell River Diversion for the Maryvale Project will be included under the Maryvale Project works. The facilities included in this rehabilitation costing report are:

- Access roads. Allowance has been made for 1.2 km of vehicle access roads to the north west shoreline of the lake. New road construction is assumed, however it may be possible to use some of the current access roads from within the power station and production centre areas.
- Car parks. Car parking for approx. 100 to 150 vehicles has been allowed in connection with the north west access roads. The north west area is likely to be a point from which boat launching facilities could be readily provided, (The old rising conveyor slabs could be used as boat ramps).
- Beaches. Allowance has been made for 3 constructed beach areas around the mine. This would involve flattening the shoreline zone to 8H to 1V and back dumping with sandy/gravel material from the over burden operations. (\$100,000)
- Footways. Allowance has been made for 23 km of gravel footways, mostly around the lake perimeter.
- Major facilities. Allowance has been made for two major recreation nodes, one near the north west access area and one in the south. Facilities would include toilet blocks, information sites, picnic and play facilities, and additional landscaping associated with the recreation nodes.
- Minor Facilities. Allowance has also been made for minor recreational facilities at other locations.

With these facilities, the commitment is considered to arise at the end of the mining in 2032. The construction of the facilities being carried out by 2035.

YALLOURN MINE – REHABILITATION COSTING – SUMMARY TABLE

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
Below Water Line					
1. Southern Overburden Dump	191	Available to rehabilitate.	Inundation	Part interim stabilisation between 2002 & 2007 (Approx. 40 Ha each year)	No change
2. Fire Service Ponds	133	Site includes Fire Service and Flocculation Ponds (80 Ha).	Inundation	Part interim stabilisation (50 Ha excluding pond area) could be undertaken when other areas of the internal dumps are treated. (say 2016 to 2018)	
3. Western Overburden Dump	0				Area has been combined with Area 4 which covers the current Township Field Overburden Dump.
4. Overburden Dump Township Field	366	Overburden dump and coal floor	Inundation	Rehabilitation after dumping completed. Interim stabilisation in 2007 – 2015, Approx. 40 Hapa.	Area increased with addition of Area 3.
5. Old Midfield Dump	81	Shaped and stabilised now. Vegetation contains many weeds	Morwell River Diversion embankment works	Around 2005 as part of Morwell River Diversion Project works.	Changed area and activity
6. Old Midfield Dump	169	Old worked out mine that has significant vegetation cover and is substantially rehabilitated to pasture	Inundation	Minor rehabilitation – Interim stabilisation (8 Ha) around 2010 after O/B conveyors relocated.	Area increased as it is combined with previous area 5
7. Northern parts of original Yallourn Mine	51	Rehabilitated substantially completed	Inundation apart from batter areas	Modify batters to 6 to 1 in shoreline zone with some small steeper batters on the west side near rising conveyors. Carry out around 2012 using waste fill from Maryvale operations	Rehabilitation completed apart from batter flattening

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
8. Conveyor formations etc	81	Conveyor formations	Will be substantially inundated at end of mine	May need to remove slabs and formation over 5Ha section, which will be above water line, and sew to pasture.	The area has been modified and split with the embankment earthworks for the Morwell River Diversion, and the conveyor tunnel under the embankment
9. East Field – Floor	392	Mine floor partially exposed	Inundation	Progressively interim rehabilitate as dump areas are completed. (ie 2016 to 2030 – Approx. 25 Ha/year).	Bottom coal system has progressed through area. Area increased with Eastfield extension.
10. Maryvale Northern Floor – Including drainage pond	195	Not mined	Inundation	Progressive interim rehabilitation after internal overburden placed. Interim treatment in 2019 to 2024.	Stacker dumping of overburden proposed for long period.
11. Maryvale – Southern Section Floor	136	Not yet mined.	Inundation	Rehabilitate northernmost overburden dump area only (80Ha) with interim stabilisation in 2029/32. Southern dump areas do not justify rehabilitation effort, as inundation would occur shortly after completion.	Timing of work. Extent of dumping
Above Water Line					
12. Southern Overburden Dump	104	Available for rehabilitation	Open woodland with some closed woodland and wetlands	Plant pasture cover – Say 2015 to 2025. Open woodland created around 2022 to 2028. Old topside dump requires dozing to shape as part of wetland formation. Closed woodland and wetland created around 2032. 80 % open woodland, 15 % closed woodland and 5 % wetland.	Area includes part of previous Area 13 which will remain above waterlevel
13. Western Overburden Dump	0			Previous Area 13 reduced in size, due to overburden dump changes, and combined with area 12.	

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
14. Midfield Dump	57	Shaped & stabilised now, vegetation predominantly weeds	Open woodland with some closed woodland and wetlands	Open and closed woodland and wetlands created after 2024. Upgrade existing pasture in 2028/9 planting of trees. 80 % open woodland, 15 % closed woodland & 5 % wetland.	Area reduced due to Morwell River diversion embankment
15. Eastern Batters Old Yallourn Mine	31	Worked out batters	Open woodland with some closed woodland	Rehabilitation should be undertaken with river diversion works around 2005 to 2007. Batter flattening above water level by cut and fill with dozers, where necessary cover coal, topsoil and then plant to pasture. Woodland planting 2032.	Earlier date of treatment.
16. Southern Batters Old Yallourn Mine	81	Worked out batters with low grade pasture to edge of mine	Open woodland with some closed woodland	Carry out progressively after Area 15 completed – Say 2009 to 2012. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (31 Ha). Woodland planting (25 Ha - open, 6 Ha – closed) and upgrade existing pasture (42 Ha) in 2028.	Brought batter treatment and planting to pasture forward
17. South West Batters Old Yallourn Mine	86	None	Pasture areas with open and some closed woodland on batters	Batter flattening in 2012 to 2016 by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture 44 Ha. Woodland planting (15 Ha open, 4 Ha closed) and upgrade pasture (35 Ha) in 2032.	Brought batter treatment and planting to pasture forward
18. Western Batters Old Yallourn Mine	30	None	Pasture areas with open woodland and some closed woodland on batter slopes.	Carry out between 2020 to 2025. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (25 Ha). Woodland planting (12 Ha open, 5 Ha closed) in 2027.	No change

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
19. Western Area Above Batters	126	Already rehabilitated to pasture and woodlands	Pasture areas with open woodland and some closed woodland	Carry out around 2025/26 Upgrade existing pasture (61 Ha). Woodland planting (10 Ha open, 50 Ha closed).	No change
20. Township Field Northern Batters	22	Worked out batters	Pasture with open woodland	Carry out commencing 2004 to 2008. Batter flattening by cut and fill with dozers, provide coal cover, topsoil and then plant to pasture (22 Ha). Woodland planting (10 Ha open woodland) in 2009.	No change
21. Power Station and Production Area	113 Ha. (25 Ha to be rehabilitated by mine)	Mine support buildings, workshops, etc	Woodlands (open with some closed).	Carry out after 2032 – Say 2034/35. Topsoil and sew to pasture. Woodland (open (23 Ha), closed (2 Ha).	Timing only
22. Old External Overburden Dump and Future Surcharge Dump	128	Currently approx. 70 % rehabilitated to final requirement	Pasture areas with open and some closed woodland	Earthworks could be carried out along with river diversion works - around 2005/6. Woodlands planted (open (30 Ha), closed (6 Ha) around 2017 to 2019	Area reduced due to Morwell River Diversion works.
23. East Field Northern Batters	31	Current mine operation area. Batters partly developed and some interim stabilisation.	Shoreline of open woodland with some closed woodland	Batter earthworks carried out progressively from 2012 to 2018 when coal conveyors transfer to Maryvale. Fill used from Maryvale over height operation (substantially an operations cost). Progressively planted to pasture (total 16 Ha) when sections of earthworks completed, with open woodland (13 Ha) and closed woodland (3 Ha) planted in 2020.	Timing change

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
24. East Field North East Batters	65	Eastfield mining operations	Shoreline area of open woodland with some closed woodland	Batter earthworks cannot be carried out until trunk conveyors have been shifted to the Maryvale Field. Earthworks in 2016 to 2020 using fill from Maryvale over height operation (substantially an operations cost). Planted to pasture (total 21 Ha) when sections of earthworks completed, with open woodland (15 Ha) and closed woodland (3 Ha) planted in 2024 to 2026.	Area increased due to Eastfield extension
25. East Field South Eastern Batters	48	East Field Extension mining operations.	Shoreline area of pasture with open woodland and some closed woodland.	Batter earthworks carried out in 2021 to 2025, using fill from Maryvale over height operation (substantially an operations cost). Planted to pasture (total 38 Ha) when sections of earthworks completed, with open woodland (25 Ha) and closed woodland (3 Ha) planted in 2027 following closure of the overburden operations into Eastfield.	Area extended with Eastfield extension and timings changed.
26. Maryvale Eastern Batters	61	Maryvale operations.	Shoreline area of pasture with open woodland and some closed woodland.	Batter earthworks carried out after 2030 when overburden operations are completed and the overburden trunk conveyor removed. Batter flattening by cut and fill with dozers, 2030 to 2032. Planted to pasture (total 40 Ha) when sections of earthworks completed, with open woodland (32 Ha and closed woodland (3 Ha) in 2033.	Area and timing changed.

AREA - Description	Area (Ha)	Current status	End use	Rehabilitation Works	Change from Previous Cost Model (1999)
27. Maryvale Southern Batters	33	Maryvale operations.	Shoreline area of pasture with open woodland.	Batter earthworks to be dozed down from 1 to 1 final batters following completion of overburden operations in 2030. Planted to pasture (total 18 Ha) when earthworks completed, with open woodland (12 Ha) planted in 2032.	Changed area and timing.
28. Maryvale Western Batters	75	Maryvale operations.	Shoreline area of pasture with open and some closed woodland.	Overburden batter could be progressively rehabilitated after the overburden face moves past, however best done after coal conveyors remain on benches below. Batter flattening by cut and fill with dozers, then plant sections to pasture (40 Ha) when dozing is completed. Open woodland (32 Ha) and closed woodland planting (3 Ha) in 2032.	Progressive rehabilitation cannot be carried out as coal trunk conveyors are on batters below.
29. Strip Top soil and Stockpile	-	-	-	Most of the topsoil stripped from East Field will be stockpiled and used for later rehabilitation works.	
30. Water Diversion Facilities	-	-	-	Inlet and outlet channels and associated structures. Constructed when mining activities are completed.	
31. Remove Buildings/Plant	-	Mine production centre buildings		Remove asbestos, clear buildings, demolish BWE's and conveyors, remove fire service and other pipelines, seal bores, etc.	
32. Public Facilities	-	-	-	Access roads and car parks, footways, beach areas, facilities at recreational nodes.	

APPENDIX 2 COSTING RATE DETAILS

YALLOURN ENERGY
COSTING OF MINE REHABILITATION MASTER PLAN
COSTING RATE DETAILS

ITEM	UNIT	COST	Estimated Input/Output for Approx Scenario 2040/01
Excavation			
Topsoil strip and stockpile (60x4x2-4x3)	m³	3.88	These calculations focused on the EF period in terms of haul distance only, but in the context of a WOL plan it is appropriate to adopt a single rate calculated for CP9 only as there are a great many stockpile variables in any given year throughout the WOL period
Topsoil strip and stockpile (60x4x2-4x3)	m³	482	
Topsoil strip and stockpile (60x4x2-4x3)	m³	466	
Topsoil strip and stockpile (60x4x2-4x3)	m³	466	
Topsoil strip and stockpile (60x4x2-4x3)	m³	466	
Topsoil strip and stockpile (60x4x2-4x3)	m³	5-16	
Dozer from cut to fill batter	m³	1.08	
Cart and place using truck & shovel - Short haul	m³	3.24	
Cart and place using truck & shovel - Long haul	m³	5.40	
Excavate coal and cart to BWIE	m³	3.24	
Additional to cart and place for clay capping material	m³	0.54	
Place & compact material from overhead operation	m³	0.54	
Finish stripping with dozers - Old OVB dump stockpiles	Ha	3240.00	
Finish stripping with dozer - regular surface	Ha	1080.00	
Disturb Treatment			
Rip and/or harrow surface	Ha	1026.00	
Topsoil placement (65 mm depth)	Ha	2880.00	
Sow seed and fertilise	Ha	1026.00	
Total	Ha	4350.00	
Additional to extract topsoil from stockpile	Ha	2880.00	
Row to Establish			
Rip and/or harrow clay surface	Ha	288.00	
Fencing , drainage, etc	Ha	1313.00	
Topsoil placement (125 mm depth)	Ha	6381.00	
Sow grass, fertilise and lime as required -	Ha	615.00	
Total	Ha	7572.00	
Additional to place topsoil for Township & SE Fields	Ha	2060.00	
Additional to extract topsoil from stockpile	Ha	4975.00	
Open Woodland			
Preparation of planting areas	Ha	626.00	
Upgrade pasture grasses (10% native grasses)	Ha	1946.00	
Planting of Taser/Sinuba - 20% cover	Ha	1230.00	
Total	Ha	3802.00	
Closed Woodland			
Preparation of planting areas	Ha	626.00	
Planting of trees	Ha	4100.00	
Upgrade pasture grasses (6% native grasses)	Ha	923.00	
Total	Ha	6549.00	
Wetland Development			
Preparation of wetland surface/drainage	Ha	2101.00	
Preparation of planting areas	Ha	1313.00	
Planting of wetland species	Ha	5981.00	
Total	Ha	8795.00	
Stockpiles Development			
Rock Leaching	m	250.00	
Public Facilities			
Access roads	km	159760.00	
Parking areas	Ha	128126.00	
Pathways	km	25626.00	
Recreational nodes - Major	No.	105083.00	
Recreational nodes - Minor	No.	31519.00	

Assume 50% of area fenced only
= \$4.40/m² Plus 25%

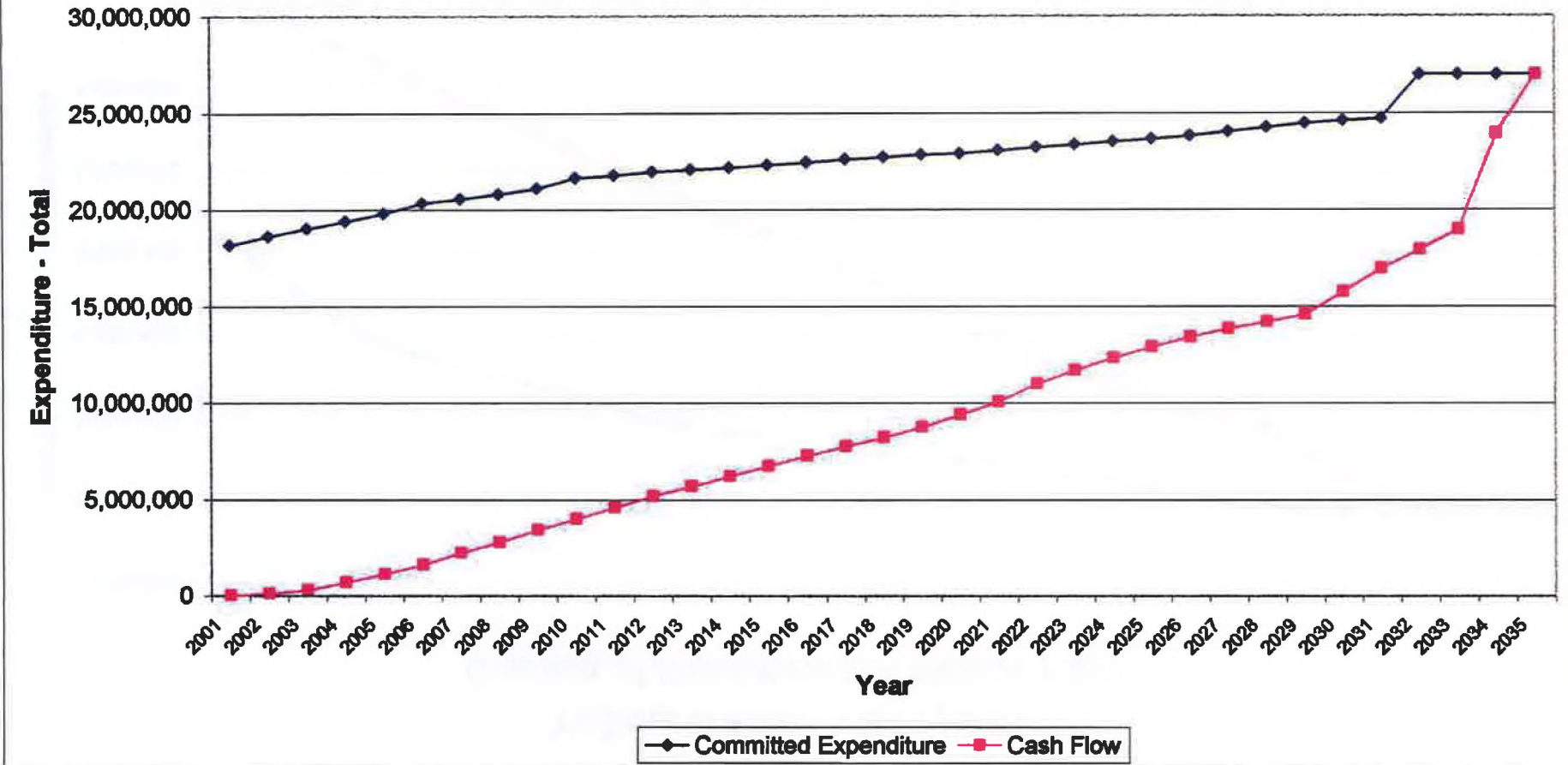
APPENDIX 3 COSTING SUMMARY SPREADSHEET

**YALLOURN ENERGY
COSTING OF MINE REHABILITATION MASTER PLAN
SUMMARY SHEET**

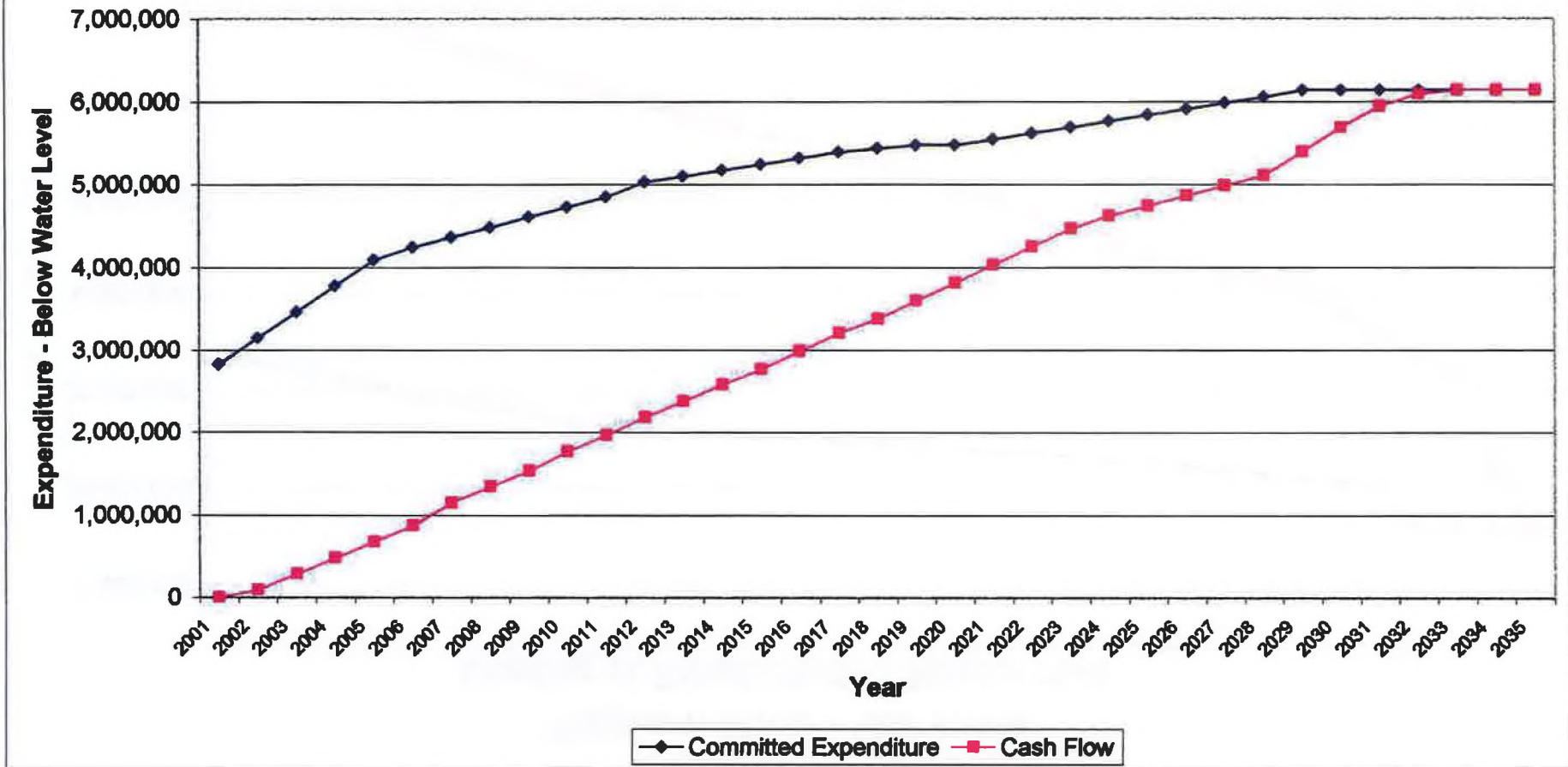
Area No.	Area Description	Area Ha.	End Use	Cost	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
1	South west overburden dump	191	Inundation	926350	Commitment Cash Flow	926350	0	0	0	0	0	0	0	0	0	0	0	
2	Service ponds and surrounds	133	Inundation	242500	Commitment Cash Flow	242500	0	0	0	0	0	0	0	0	0	0	0	
3	Western overburden dump	0	Inundation	0	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
4	Overburden dump - Township	366	Inundation	1775100	Commitment Cash Flow	970000	194000	194000	194000	194000	201000	223100	194000	194000	194000	194000	194000	
5	Central dump - southern	81	Monwell river diversion (Project work)	0	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
6	Central dump - North	169	Inundate	38800	Commitment Cash Flow	38800	0	0	0	0	0	0	0	38800	0	0	0	
7	Northem	51	Inundation - Mostly pasture	29904	Commitment Cash Flow	29904	0	0	0	0	0	0	0	0	0	22704	0	
8	Conveyor Formations	99	Substantially Inundation	43280	Commitment Cash Flow	43280	0	0	0	0	0	0	0	0	0	0	0	
9	Eastfield bottom of mine	392	Inundation	1001200	Commitment Cash Flow	592000	121250	121250	121250	121250	121250	121250	121250	121250	121250	121250	106700	
10	Maryvale - North floor (F/S pond)	195	Inundation	518950	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	72760	
11	Maryvale - Southern section	136	Inundation	659600	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
12	South west overburden dump	104	Open woodland, some forest	1516183	Commitment Cash Flow	1516183	0	0	0	0	0	0	0	0	0	0	0	
13	Western Overburden dump	0	Mixed woodland	0	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
14	Midfield Dump	57	Mixed woodland	352261	Commitment Cash Flow	352261	0	0	0	0	0	0	0	0	0	0	73446	
15	Eastern Batter - Current Mine	31	Wooded shoreline, some forest	418340	Commitment Cash Flow	418340	0	0	0	0	47580	95180	95180	55162	0	0	0	
16	Southern Batters	81	Wooded shoreline, some forest	1060830	Commitment Cash Flow	1060830	0	0	0	0	0	0	309157	309157	174128	145104	0	
17	South West Batters	86	Wooded shoreline, some forest	814650	Commitment Cash Flow	814650	0	0	0	0	0	0	0	0	0	0	0	
18	Western Batter - Surcharge	30	Wooded shoreline, some forest	701370	Commitment Cash Flow	701370	0	0	0	0	0	0	0	0	0	0	100699	
19	Western Area Above Batters	126	Pasture, woodland and forest	425945	Commitment Cash Flow	425945	0	0	0	0	0	0	0	0	0	0	0	
20	Northern Batter - Township	22	Wooded shoreline	1198084	Commitment Cash Flow	1198084	0	216948	231190	236190	238190	238568	36000	0	0	0	0	
21	Power Str/Production Centre	113	Wooded area with some forest	283196	Commitment Cash Flow	283196	0	0	0	0	0	0	0	0	0	0	0	
22	Old External Dump	128	Woodland and Forest	270996	Commitment Cash Flow	270996	0	0	0	0	0	0	43248	54060	0	0	0	
23	Eastfield - Northern Batters	31	Wooded shoreline with some forest	349500	Commitment Cash Flow	162102	34741	34741	40281	3741	42987	0	0	0	0	0	0	
24	Eastfield NE Batters	65	Wooded shoreline with some forest	418650	Commitment Cash Flow	0	0	0	0	0	342104	0	0	7652	0	0	0	
25	Eastfield - Southern Batters	48	Wooded shoreline with some forest	545580	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
26	Maryvale - Eastern Batters	61	Wooded shoreline with some forest	660724	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
27	Maryvale - South East Batters	33	Wooded shoreline	352296	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
28	Maryvale - Western Batters	75	Wooded shoreline	561364	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	28234	
29	Strip Topsoil and Stockpile	0	Topsoil for rehabilitation	2425996	Commitment Cash Flow	1658812	107866	56146	41221	31271	6364	27757	56811	41888	75918	0	0	
30	Water Diversion Facilities	0	Regulate water in mine	3147351	Commitment Cash Flow	2080000	0	0	0	0	0	0	0	0	0	0	0	
31	Remove Buildings/Plant	0		4180000	Commitment Cash Flow	4180000	0	0	0	0	0	0	0	0	0	0	0	
32	Public Facilities	0		1178583	Commitment Cash Flow	0	0	0	0	0	0	0	0	0	0	0	0	
	2904 Ha Total Cost		Commitment Cash Flow	26978599	18155588	457877	406137	396780	381282	541731	213861	242921	304548	548168	121250	204874	101574	
			Account	18156832	18614481	1920288	19417387	20360386	20854823	20971183	21101681	21848868	21771188	21975778	22077383	22077383	22077383	22077383
			Current Liability	18156832	18517481	18722586	18713411	18662483	18724452	18328517	18010481	17608840	17872848	17197769	16800027	16390480		
1813 Ha	Total Cost for Inundated Areas		Commitment Cash Flow	2832814	315250	315250	315250	315250	150380	121250	121250	121250	121250	121250	179450	72760		
			Account	2832814	315250	315250	315250	315250	150380	121250	121250	121250	121250	121250	179450	72760		
			Current Liability	2832814	315250	315250	315250	315250	150380	121250	121250	121250	121250	121250	179450	72760		
1091 Ha	Total Cost for Areas Above Waterline		Commitment Cash Flow	15323771	142827	90887	81510	67012	991367	92817	121671	182998	426915	0	25224	28824		
			Account	15323771	142827	90887	81510	67012	991367	92817	121671	182998	426915	0	25224	28824		
			Current Liability	15323771	142827	90887	81510	67012	991367	92817	121671	182998	426915	0	25224	28824		
2904 Ha	Total Cost (loss topsoil stockpiling)		Commitment Cash Flow	16297773	349991	349991	335336	319991	535341	186110	326262	472250	204874	101574	101574	101574		
			Account	16297773	349991	349991	335336	319991	535341	186110	326262	472250	204874	101574	101574	101574		
			Current Liability	16297773	349991	349991	335336	319991	535341	186110	326262	472250	204874	101574	101574	101574		

APPENDIX 4 GRAPHS

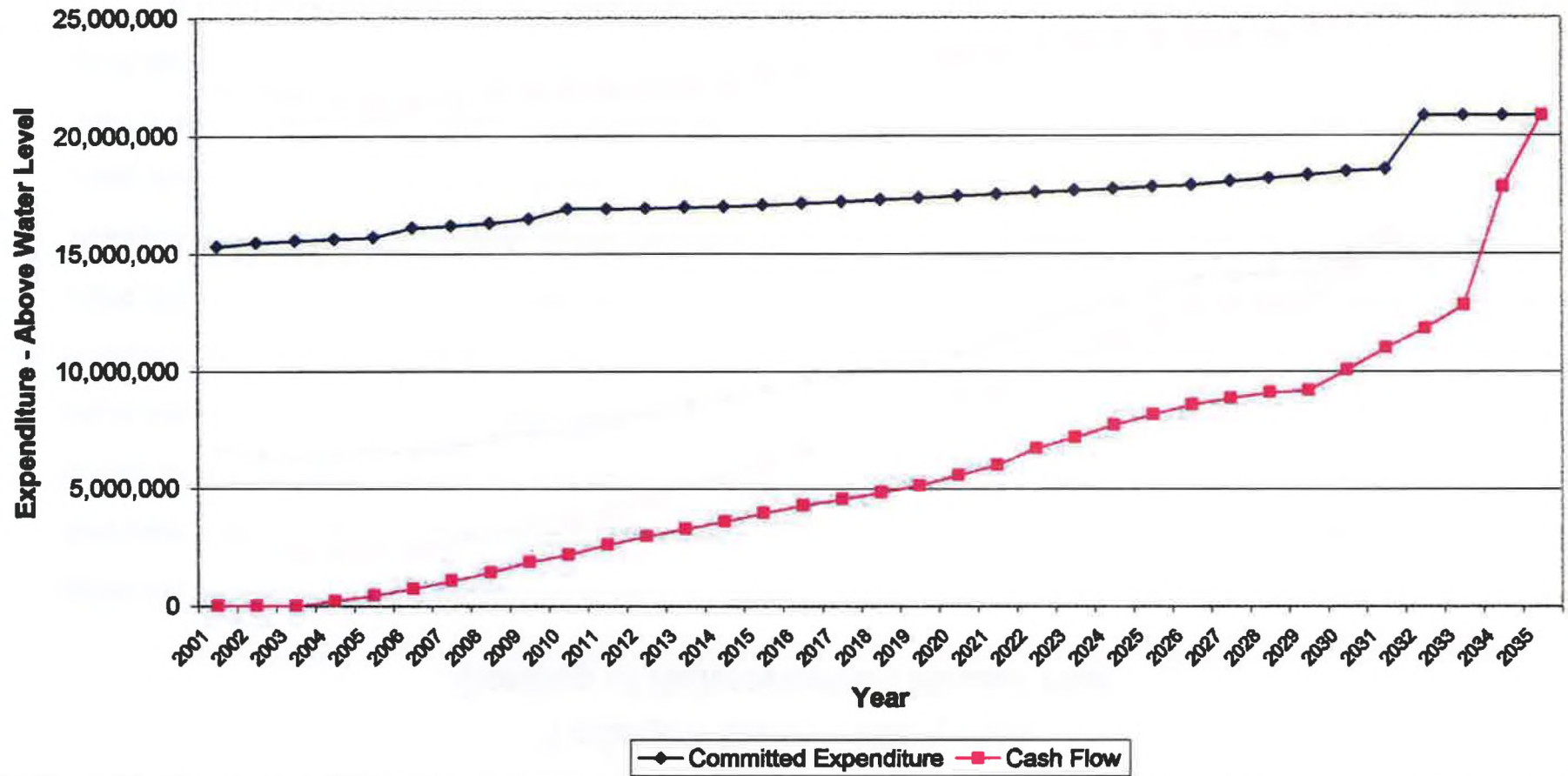
Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan



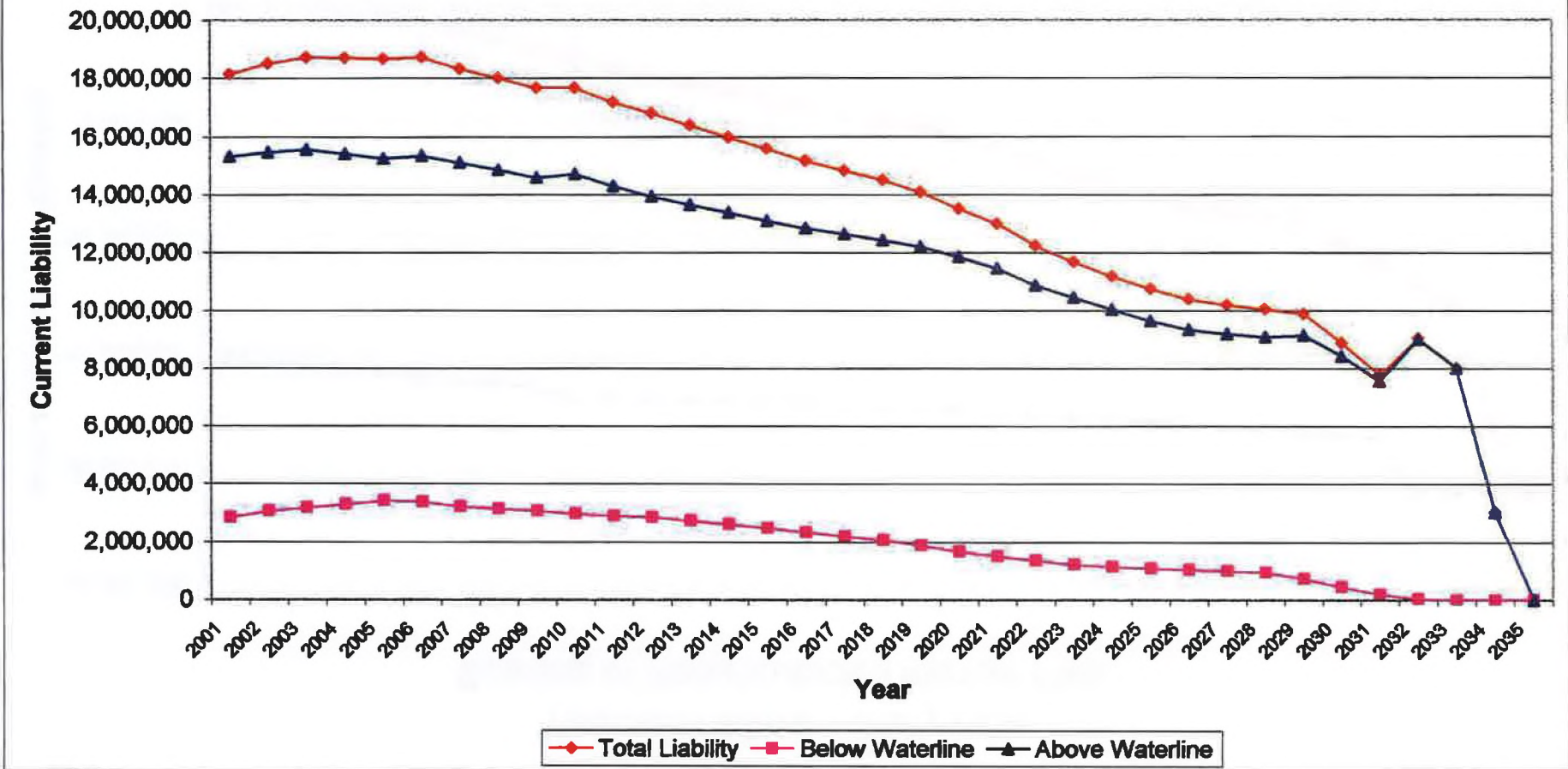
Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan



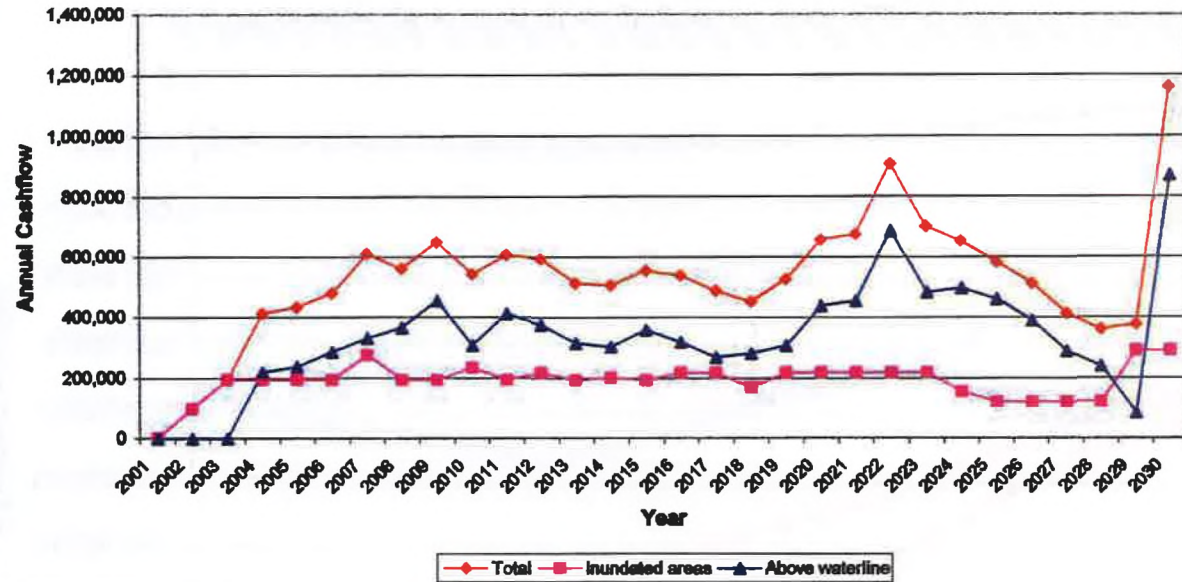
Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan



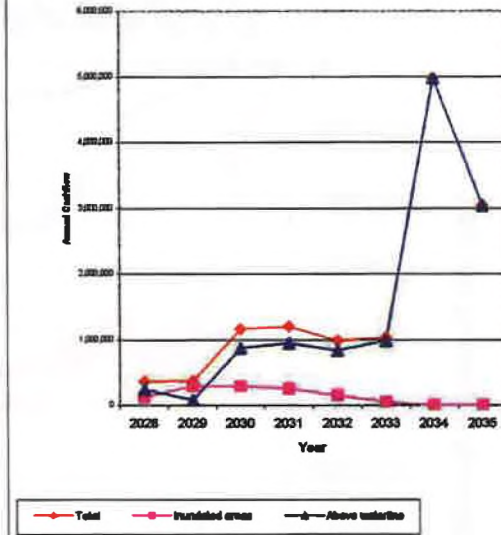
Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan



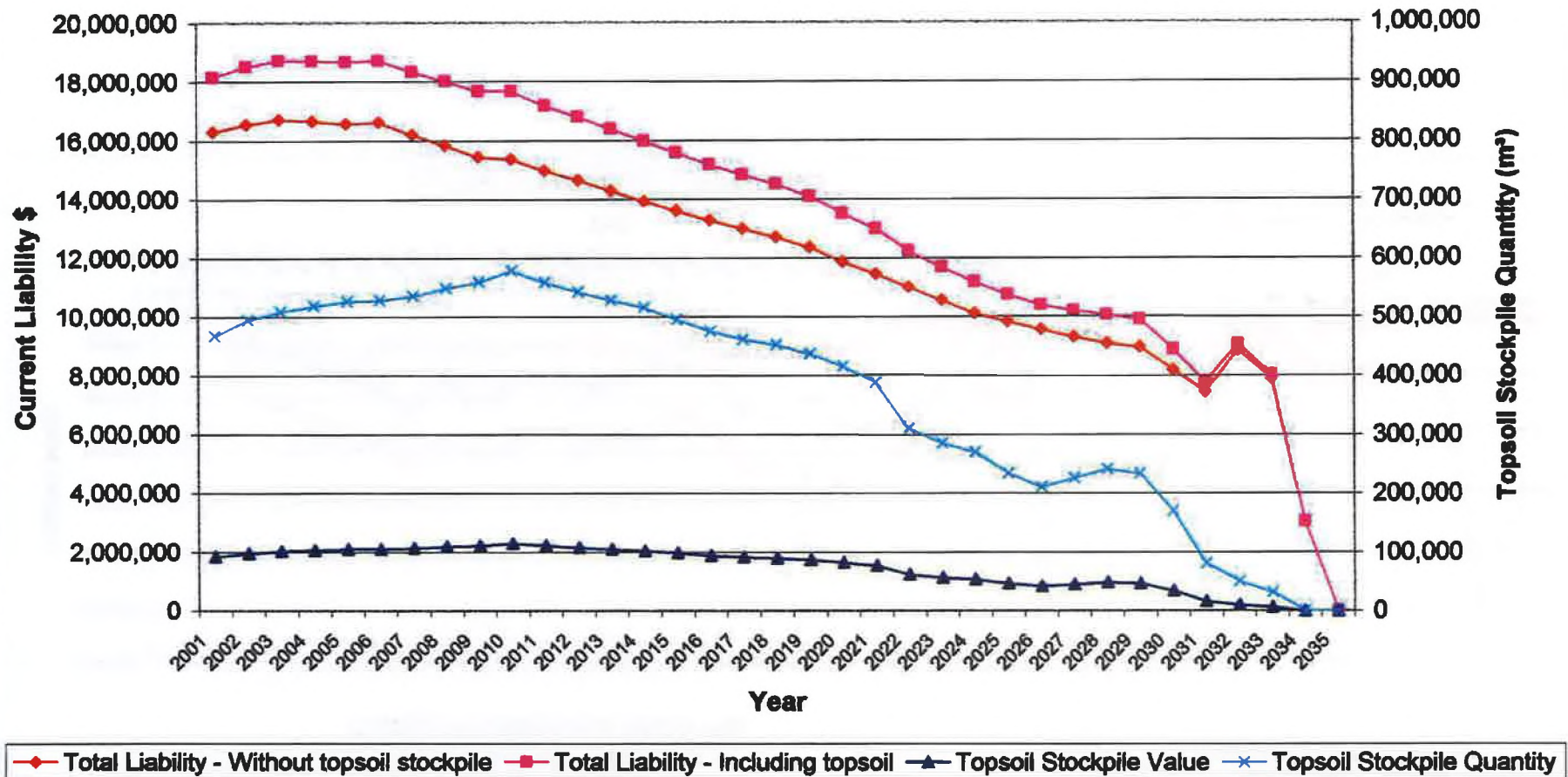
Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan

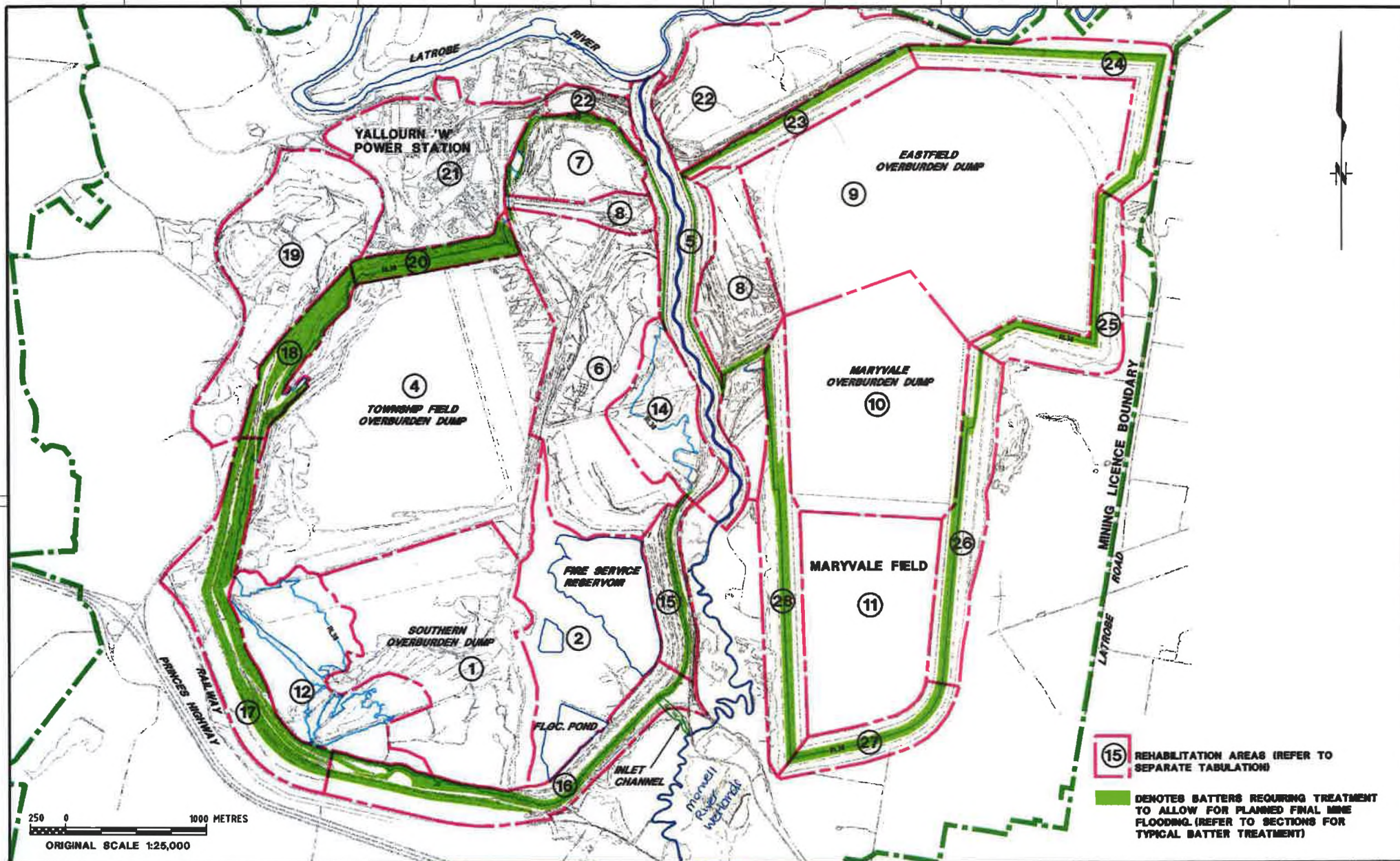


Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan



Yallourn Mine - Maryvale Costing of Rehabilitation Master Plan





15 REHABILITATION AREAS (REFER TO SEPARATE TABULATION)
 DENOTES BATTERS REQUIRING TREATMENT TO ALLOW FOR PLANNED FINAL MINE FLOODING. (REFER TO SECTIONS FOR TYPICAL BATTER TREATMENT)

REV	REMARKS	CHECKED	APPROVED

GEO.ENG

Melbourne Office:
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Australia
Ph: 61-3-9558 8333
Fax: 61-3-9558 8444

Other Offices:
Brisbane - Head Office
Perth
Brisbane
Sydney

Beijing
Wuhan
Manila
Jakarta

The Right Decision

YALOURN

Yalourn Energy Pty Ltd

CONTRACTOR DRAWING REFERENCE: 7-197-16 CLIENT / JOB No. 1150/6019

SCALE: 1:25,000	CONTRACT NUMBER	YALOURN ENERGY DRAWING NUMBER:	REVISION
DRAWN: S Verhellen	CHECKED: <input checked="" type="checkbox"/>	DRAWING TITLE:	
DATE: JUNE 2001	DESIGNED: <i>[Signature]</i>	<h3 style="margin: 0;">YALOURN MINE REHABILITATION MASTER PLAN COSTING REHABILITATION AREAS</h3>	
DESIGN APPROVAL: <i>[Signature]</i>	CAT: <i>[Signature]</i>		
Y.E. REVIEWED:	Y.E. MANAGER:	JOB REGISTRATION NUMBER:	

PLOTTING SHEET SCALE -

