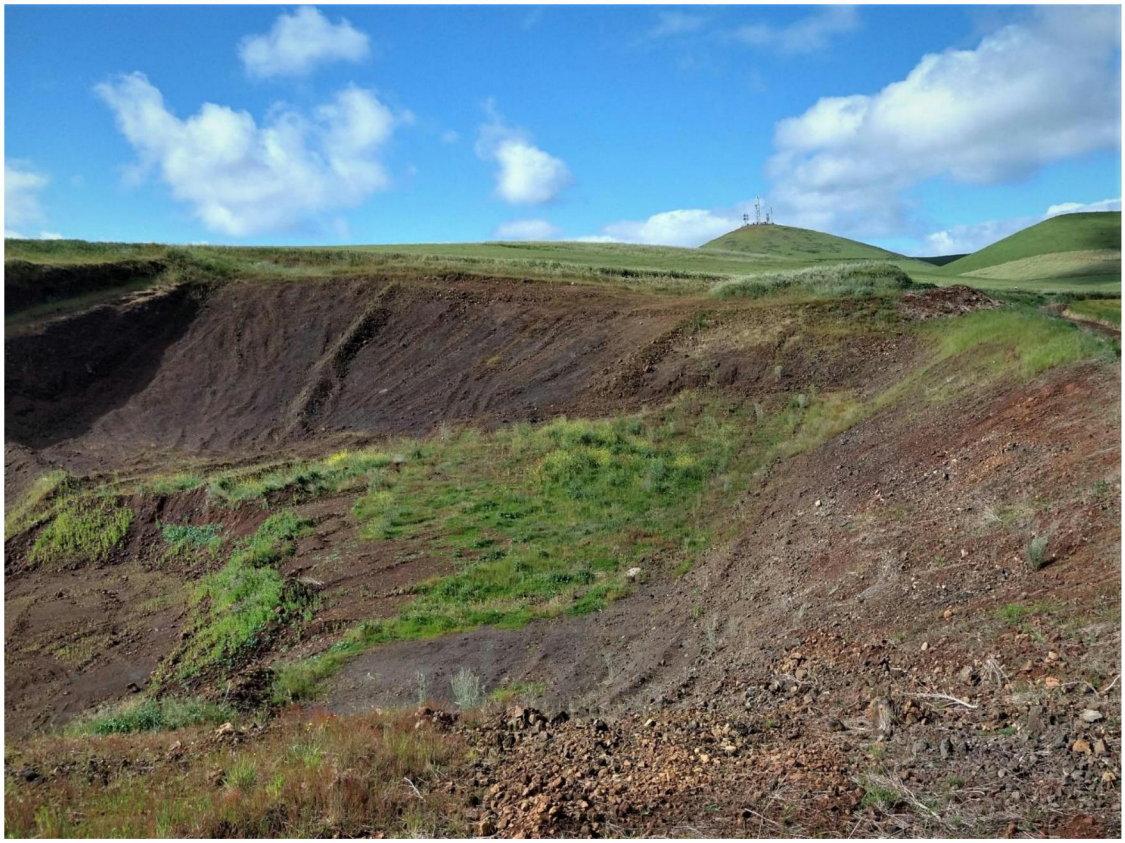
Mount Shadwell Scoria Quarry.
WA1478-PLN001732
Rehabilitation Plan



Old quarry Lot 1.

Owner Operator [redacted]
Business Name Mount Shadwell Scoria Quarry
Address 19 Steeles Lane Mortlake
Tel. [redacted]
Email [redacted]
Postal Address: 19 Steeles Lane Mortlake

Version 2 November 2023.

Site Information and Setting.

Project Summary.
Summary of operation.
This application is for the licensing of an existing scoria quarry on Lots 1 & 2, an area of approximately 7ha and an extension into an adjoining green field site, Lot 4, approximately 26ha. in area. Lot 4 is within the same property ownership. The quarry site is located on the lower northern slopes of Mt Shadwell, approximately 2.4kms north of Mortlake. (Please refer to Plate 3, Mount Shadwell Scoria Quarry Site Plan). The property is owned by the sponsor Mr Collin Goldsworthy. The material to be quarried is a fine red/ black scoria deposited across the area. The intended use of these materials is for general road and farm track base. The post extraction proposal is for the land to be returned to the existing high value agricultural productivity of crops and fat lambs. Extraction will be progressive in approximately 11 stages, starting in the old quarry and progressively moving west into Lot 4. Scoria will be bladed to the quarry floor by bulldozer and stockpiled for processing. A portable crushing and screening plant will be bought on site as needed to crush and screen the scoria into various sizes for sale. Customer trucks will be loaded by front end loader. Approximately 6-10 trucks per day will be loading, some days or weeks there may be no trucks on site. Operating hours are from 7am-6pm Monday to Friday, 7am-12 noon Saturday, no operation on Sundays or public holidays. As each stage is extracted terminal faces are battered to a 1V:3H-1V:6H depending on the pre-existing land form. Stockpiled overburden and topsoil is then respread over the surface that it was removed from and the area will then be sown to pasture or crop. Agricultural productivity will recommence on the rehabilitated stages as the quarry progresses into the next stage. Commuters travelling south on the Mortlake Ararat Road will have limited views of the extraction stages in Lot 4. An indigenous tree plantation to screen Lot 4 will be established on the northern boundary. The Haul road will be retained at the current location off the Mortlake Ararat road for farm use. The design and rehabilitation of the quarry will cause minimal disruption to farming operations. For details please see attached plans at end of document.

Current Quarry.
Lots 1 & 2.
The historically worked area of the old quarry on Lots 1 is approximately 2ha consisting of an exposed scoria floor and face heights to approximately 10m. The eastern and western sections are sown to crops. Topsoil ratios are fairly consistent, being on average 0-20 cm in depth. Overburden depth is variable 0-1m depending on the underlying scoria. Available topsoil is 14,443m3 and overburden is 72,214m3. Topsoil and overburden will be stockpiled separately for rehabilitation as required. 86,657m3 of rehabilitation materials are available on site. (Please refer to sheet 9 of the Work Plan drawings).
Lot 4.
Lot 4, of approximately 27ha adjoins the existing extraction on the western face. This site will have varying terminal faces from 1m on the lower northern eastern face increasing to 25m faces as extraction extends to the south on the rising slopes of Mt Shadwell. Lot 4 will be worked in parcels of approximately 2ha each and rehabilitated progressively. Available topsoil is 45,848m3 and overburden is 229,242m3. Topsoil and overburden will be stockpiled separately for rehabilitation as required. 275,090m3 of rehabilitation materials are available on site. {Please refer to sheet 25 of the Work Plan drawings).

Site description.

The site is located on the lower northern slopes of Mount Shadwell, a volcanic cone, there are two active quarries on the mount, the larger operated by Moyne Shire Council is located on adjoining land to the south east. Lots 1, 2 and 4 have been historically cleared of all native vegetation for agriculture. The area is rotated annually for cropping and grazing. There are no wetlands or waterways within 1.5km of the site. Blind Creek is approximately 1.5-2km west of the site. There are no Crown Land reserves within 2km of the site. The site will be accessed at the current entry point off the Mortlake Ararat Road. For details please see attached Work and Rehabilitation Plans at rear of this document.

Environmental and Social Setting.

The existing quarry has not operated for a number of years. The site is located approximately 3km north of Mortlake on the northern slopes of Mount Shadwell. Approximately 1.5ha of Lot 1 has been partially extracted. Lot 4, adjoins the existing quarry on the west side. The site is located on private farmland on the lower northern slopes of Mount Shadwell.

Plate 1. WA1478. Lot 4 extension area. Mount Shadwell in the background.

The area is sparsely populated grazing and cropping land with 18 residences within 2km of the work site, the closest being the land owners. The general area has been cleared of native vegetation and wetlands have been drained for agriculture. There are no wetlands, or public land within 2km of the site, a small section of Blind Creek is approximately 1.5-2km west of the site. This historic land clearing and drainage has greatly reduced the biodiversity of the area. The site is within an area of “Declared Aboriginal Sensitivity, (Volcanic Plains)” as

described by the Aboriginal Heritage Act 2006, and as such a Cultural Heritage Management Plan, (CHMP) is mandatory. The CHMP has been endorsed by Eastern Maar Aboriginal Corporation, (EMAC), the Registered Aboriginal Party, (RAP) for this area. The quarry will be accessed at the current location off the Mortlake Ararat Road. Moyne Shire council operates a scoria quarry immediately south east of this location.

Plate 2. Lot 4. Field survey for CHMP

Rehabilitation Obligations and Commitments.

The following agencies were notified of the application and invited to attend an onsite meeting to discuss the application or to provide written advice relating to their area of responsibility. The site meeting was held on 13/7/20.

Invitees and attendees were:

Earth Resources Regulation, (ERR). Attended.

Moyne Shire Council, (MSC). Attended.

Glenelg Hopkins Catchment Management Authority. (GHCMA) Did not attend, provided written advice.

First Peoples State Relations (FP SR) Did not attend, provided written advice.

Department of Environment Land Water and Planning, (DELWP). Attended

Heritage Victoria. (HV). Did not attend, provided written advice.

[redacted] Attended.

NAM P/L. Attended.

The following matters were raised and discussed.

Mr Goldsworthy, land owner.
Mr Goldsworthy provided knowledge of the existing quarry, agricultural management of the site, the proposed quarry purpose and the long term objectives for his land.

Obligations.

ERR.

- A geotechnical assessment of slope stability be undertaken.
- Guidelines for the Preparation of Work Plans, and Work Plan Variations be referenced for the application..
- Nearby landowners located within 2km of the site be visited by NAM P/L to notify them of the proposal and given the opportunity to discuss the proposal and provided with written details.

FP-SR.

- The site is located within an area of declared Aboriginal heritage sensitivity, (Volcanic Plains). A Cultural Heritage Management Plan, (CHMP) be undertaken.
- Eastern Maar Aboriginal Corporation,(EMAC) has heritage responsibility for this area and must be notified.

EMAC.

- Assisted with determining the requirements for the field work required for the CHMP.
- Meet with heritage advisors to discuss the CHMP field work detail and legislative requirements.
- Assist with the field survey for the CHMP.
- The CHMP be provided to EMAC for their assessment.

MSC.

- The quarry site is located on land that is zoned rural agricultural.
- Vic Roads be advised to determine the safety of the intersection with the Mortlake Ararat Road.
- The application will be assessed when received and will follow the normal planning permit application procedure.
- Suggested that a tree screen be established on the northern face of the extension to limit views to commuters on the Mortlake Ararat Road.

DELWP.

- Generally DELWP had no major concerns as the areas proposed for licensing have been cleared of native vegetation.
- The exposed quarry face may be a roosting/nesting site for raptors and that this should be assessed prior to any extraction of this face during the breeding season.
- The rocky outcrop on Mount Shadwell approximately 100m south of Lot 4 may provide suitable habitats for Southern Bent-wing Bats, (SBwB), an endangered species, and that a visual inspection of this area be undertaken to determine the likelihood of suitable habitats.
- The may also be suitable SBwB habitats within the extraction areas.

Heritage Victoria.

- Advised in writing that the area did not contain any known archaeological sites.

Commitments.

ERR.

- A geotechnical slope stability assessment has been completed. (Douglas Partners, Geotechnical Inspection. Quarry Extension Geotechnical Investigation Red Hill, 19 Steeles Ln, Mortlake. November 2021, reviewed to comply with the guidelines Oct.23.). No instability issues were identified.
- The Guidelines for the Preparation of Work Plans, and Work Plan Variations were implemented in the preparation of the Work and Rehabilitation Plans.
- Neighbours were advised by door knock and letter drop on the 3/2/22. No issues or objections were raised at this time or have been received since.

EMAC

- Assisted with determining the requirements for the field work required for the CHMP.
- Met with heritage advisors to discuss the CHMP field work detail and legislative requirements.
- Assisted with the field survey for the CHMP. The field survey and associated research has been completed.
- Endorsed the Mt Shadwell Quarry CHMP in December 2021.

MSC.

- A Planning Permit application be submitted following ERR endorsement of the Work Plan.
- Department of Transport guidelines for the quarry entry off the Mortlake Ararat road be implemented.
- A native tree plantation will be established on the northern side of the extension area.

DELWP

- The exposed quarry face will be assessed to determine the presence of breeding/roosting habitat for raptors. If raptors are breeding in the quarry face, then extraction of this area will be put on hold until the juveniles are fully fledged and have left the nest.
- The extraction areas and the rocky outcrop south of Lot 4 were inspected for SBWB habitats by DELWP, no suitable habitat was evident.

Local Community.

- A letter explaining the proposal has been prepared and delivered to neighbours within 2km. No concerns or objections were raised at the time of visit or since.
- To minimise visual impact to neighbouring residences and road users a tree plantation will be established on the northern face of Lot 4 using native trees.

Environmental and Social setting.

There are no bio-diversity impacts. The area is located within the confines of the cropping property that has been historically cleared of all native vegetation. There is no native vegetation within the site. The site, on the lower northern slopes of Mt Shadwell is located within an area of high intensity grazing and cropping properties. Apart from a small section of Blind Creek, approximately 1.5-7km west of the work site there are no waterways or wetlands within 2km. Sections Lot 4 are visible to commuters travelling south on the Mortlake Ararat Road. As the area is within an area of Aboriginal heritage sensitivity several discussions with EMAC regarding the proposal have taken place and relevant issues are included as conditions in the CHMP.

Sensitive Receptors.

- There is 1 residence within 500m, six within 1km and eleven within 2km. The eleven residences within 1-2km of the quarry site are located on the western and southern slopes of Mount Shadwell on the outskirts of Mortlake. The bulk of Mount Shadwell obscures views of the quarry site from these residences.
- There are no wetlands, public land or reserves within 2km.
- A small section of Blind Creek is approximately 1.5-2km west of Lot 4.
- Moyne Shire Council operates a scoria quarry approximately 500m southeast of the proposed quarry site.
- A declared Aboriginal Cultural Area, Mount Shadwell Stony Rises is located in the south east corner of Lot 4. This site is buffered out of the quarry.
- All of the proposed quarry area lies within an area of Declared Aboriginal Heritage Sensitivity. (Please refer to Aboriginal Heritage Sensitivity area plan, page 9).
- Mortlake Ararat Road is approximately 500m east of the quarry.

Plate 3. Site Plan. Mount Shadwell Scoria Quarry.

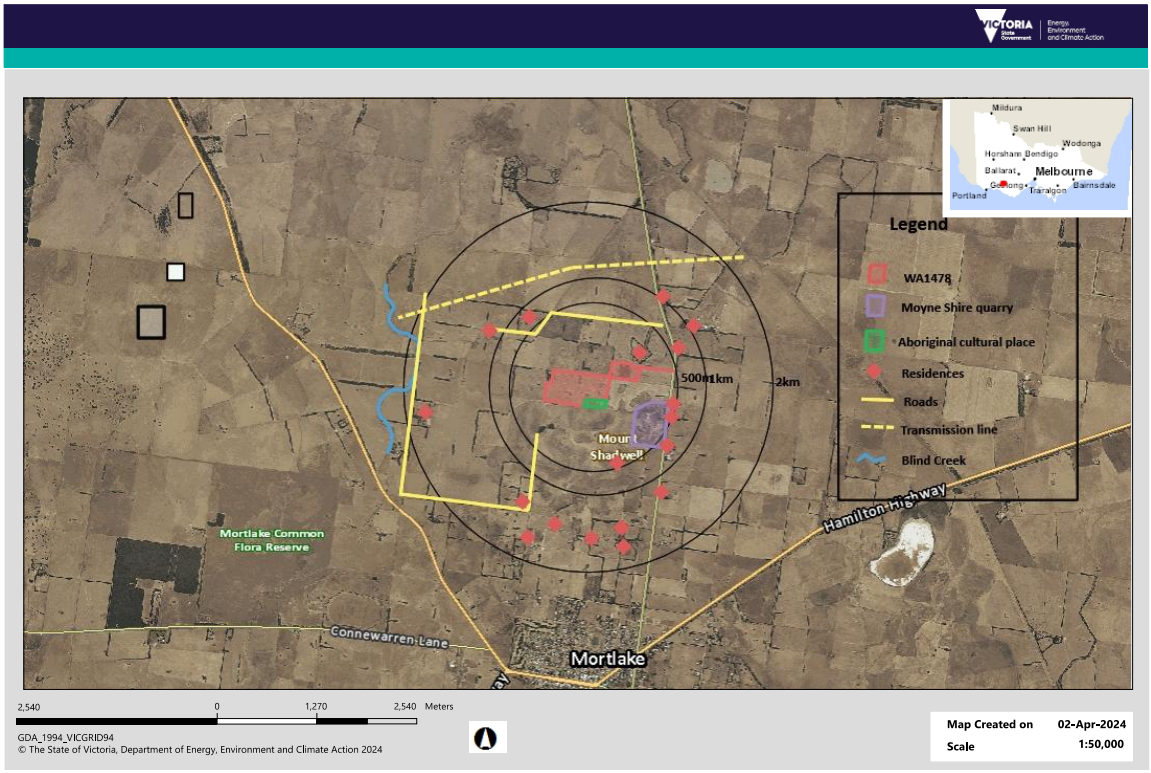


Plate 4. Mount Shadwell Scoria Quarry Receptor Plan

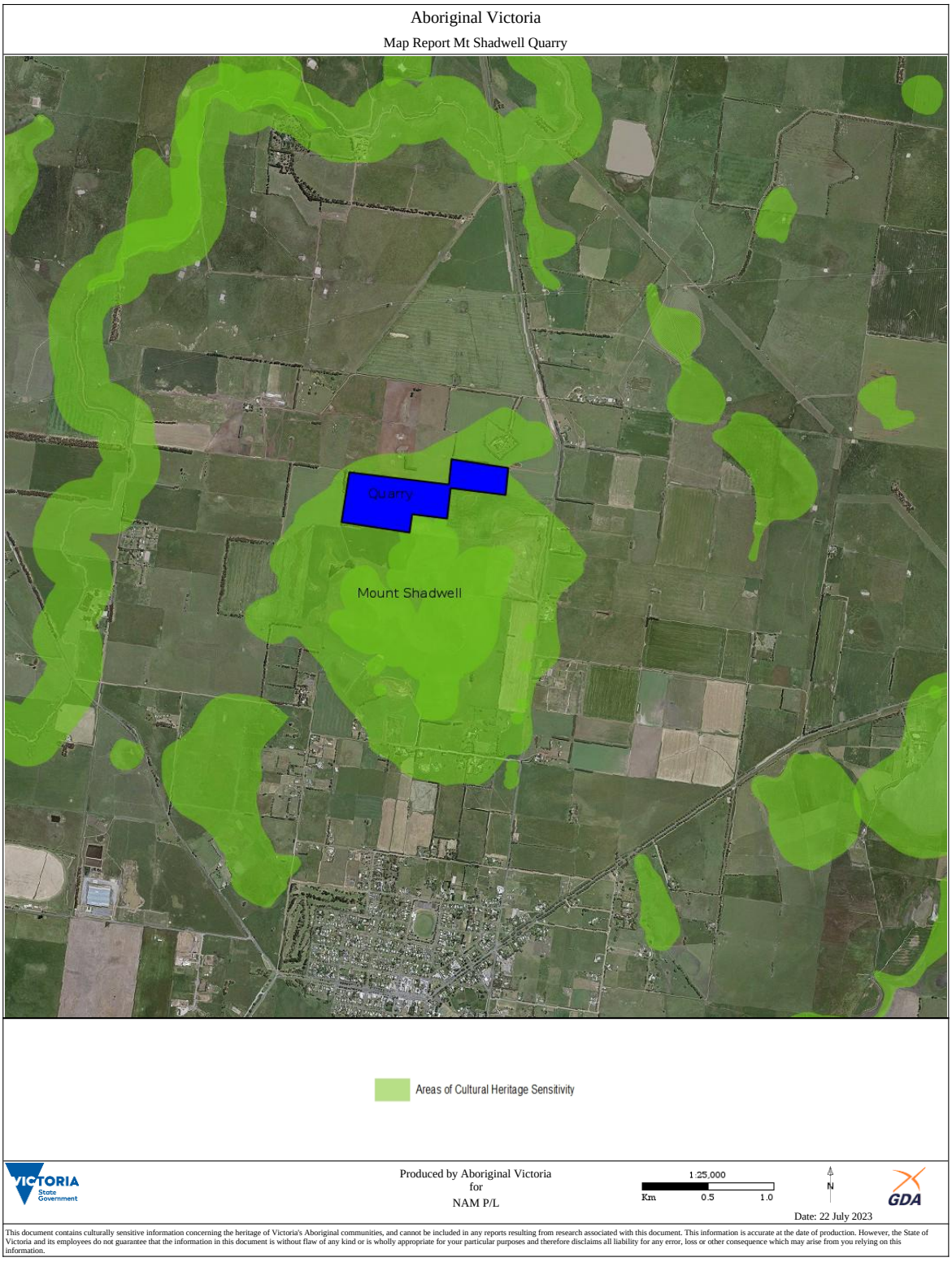


Plate 5. Mount Shadwell Scoria Quarry. Area of Aboriginal Cultural Sensitivity.

Community Engagement

Community member/group	Date / type of consultation	Summary of matters presented	Community views expressed	How community views were considered
18 residents extending to 2km from the quarry area.	February 2022 Door knock.	Provided a community notification letter. Discussed the staged rehabilitation proposal.	Generally accepted and supported. 2 neighbours unavailable. Community Notification Letter left at residence.	No objections or concerns raised during visit or follow up from absent neighbours.
EMAC	2020-2021 Several formal and informal discussions.	Potential impact to Aboriginal heritage by the proposed quarry extension on Mt Shadwell. Protection of the registered Aboriginal place and management of artefacts. Methodology of field assessment for CHMP.	General concern as to the impact on their heritage. Review and discuss the CHMP recommendations. Report prepared for EMAC detailing how the extension will be designed and managed to consider Aboriginal heritage values.	Following these meetings, the management conditions in the CHMP and the rehabilitation design of the extension have been modified to address these values. CHMP endorsed by EMAC in Dec. 2021.

Proposed post-quarrying land uses and land form.

Post quarrying land use.

The extension area will be progressively returned to high value agricultural production. This is consistent with the current use of surrounding agricultural land and is supported by the local farming community and MSC. The post quarrying land form will be rehabilitated to enable the continuation of the current cropping/grazing use of the land. That is, by re-spreading the overburden and topsoil over the area and establish batters of 1V:3H.–1V:6H: depending on the pre-existing land form. The extracted area will then be re-sown in preparation for grazing or cropping. Rehabilitation will be achieved using machinery and equipment owned by the quarry operator who is also the land owner and site manager. It is in the owners best interest to rehabilitate the extracted areas expediently so that normal farming activities can occur as soon as practical. Re-pasturing will be undertaken during optimal seasonal conditions. The Lot 4 tree corridor will be maintained as a farm windbreak and habitats for wildlife. The land form is subject to normal seasonal extremes including drought and potential wildfire. It is not subject to flooding due to the elevation of the area.

Rehabilitation domains

Rehabilitation domains, objectives, and criteria

Whole of site objective
• The rehabilitated land will be returned to agriculture. • Sediment ponds will be filled in • Topsoil respread over the extracted surfaces. • Haul road retained for farm access

Rehabilitation domain	**Objective**	**Criteria**	**Monitoring/ Standards**
Sediment ponds	Ponds filled	Ponds filled with overburden prior to spreading topsoil	Ponds filled to rehabilitated ground level and spread with topsoil
Haul road	Retained for farm use	Haul road retained	Haul road maintained
Overburden/Topsoil stockpiles	Retain overburden and topsoil for rehabilitation	Suitable quantities of overburden and topsoil for respreading over extracted surfaces	Rehabilitated surfaces monitored monthly for 3 monthsto ensure germination of pasture/crop

Rehabilitation milestones

Schedule of rehabilitation milestones	
Sediment sumps filled in. Land is returned to high intensity agricultural production.	
Milestone	**Timing/ Trigger**
Before quarrying commences	
Strip topsoil from site and stockpile Dig sediment pond	As soon as practicable following license issue.
During quarrying	
Stockpile stripped topsoil and overburden within extraction stage. Excavate sediment pond in stage.	As stage is prepared for extraction.
After quarrying	
Fill sediment pond. Spread overburden and topsoil to required batter angle. Re-establish pastures/crops. Retain haul road	As soon as stage has been exhausted. Following the filling of the sediment pond. Immediately following spread of topsoil and overburden if seasonal conditions are suitable, or when conditions become suitable. At end of quarrying

Rehabilitated land risk assessment & 25

Post-rehabilitation risks					
No.	**Risk**	**Likelihood**	**Consequence**	**Activities to manage risk**	**Projected costs to manage risk**
1	Sediment ponds	Unlikely	Moderate.	Suitable volumes of overburden available on site to fill sediment pond	Average volumes available per 2ha are topsoil 5,956m3, overburden 29728m3 = 35,674m3 available. D8 Dozer $320 per hour x 16hrs = $5120,00 + float, $300 from Mortlake. Total $5420.00 per 3ha. area.
2	Limited volumes of topsoil and overburden available for stage rehabilitation.	Unlikely	Low. Overburden and topsoil is generally mixed across the site due to extensive surface ploughing over many decades Low	Topsoil and overburden stockpiles kept within stage of extraction. Stockpiles respread over area of removal. Suitable volumes of topsoil/overburden available on site for rehabilitation in accord with design prescriptions. Total overburden volume of 301,456m3 provides a minimum 100mm coverage of the quarry area of 33ha. Topsoil stockpiles totalling 60,291m3 will be spread over the overburden. Please refer to sheets 9 & 25 of work plans for overburden and topsoil volumes available for rehabilitation	
3	Failure of pasture/crops to establish on rehabilitated stage if conditions are unsuitable	Unlikely	Moderate	Re-establish pasture/crops during optimum seasonal conditions	Site preparation $165.00 ha per 3ha stage $495.00 Pasture seed $15.00 per kg. Spread rate of 25kg per ha. 3ha. stage = $375.00 Re pasture cost per 3ha stage=$870.00
4	Haul road unusable	Unlikely	Moderate	Haul road maintained in a useable condition	

Rehabilitation table

	Objectives	Criteria	Milestone and timing of evidence gathering/reporting
The whole site will be safe, stable and sustainable			
a)	**is not likely to cause injury or illness** – by ensuring: • The site is safe, so that it cannot cause injury to humans or other animals, and • There are no contaminating or irritating sources left in an exposed or unstable state that could cause adverse human and other animal health impacts	• No dangerous features such as high precipices and steep slopes remain accessible as per agreed design • Site meets requirements of ongoing access and use compatible with land use.	**Pre quarry operation**: • Site geology is the same as existing quarry. • Quarrying methods will be consistent with Work Plan. • Extension area is designed as a continuation of the existing quarry. • Potential health risks identified using existing quarry history of operation. • Quarry and landform designs minimise safety risk. **During operations:** • Safety and health risks of quarried materials and landforms that will remain at the end of quarry life regularly updated by engaging appropriate expertise. • Evidence gathered to show that control measures are appropriate, implemented, and effective. • Progressively decommission and rehabilitate extracted stages. **In advance of closure** • Work authority signage will be removed. • Fencing and gate will remain. • The haul road is to be retained for farm use • Sediment ponds will be filled in and shaped to natural ground level. • Batter terminal faces to agreed slope angles • There is no waste to be capped or covered. • Overburden and topsoil spread over surface of quarry • re-establish pasture grasses/crops

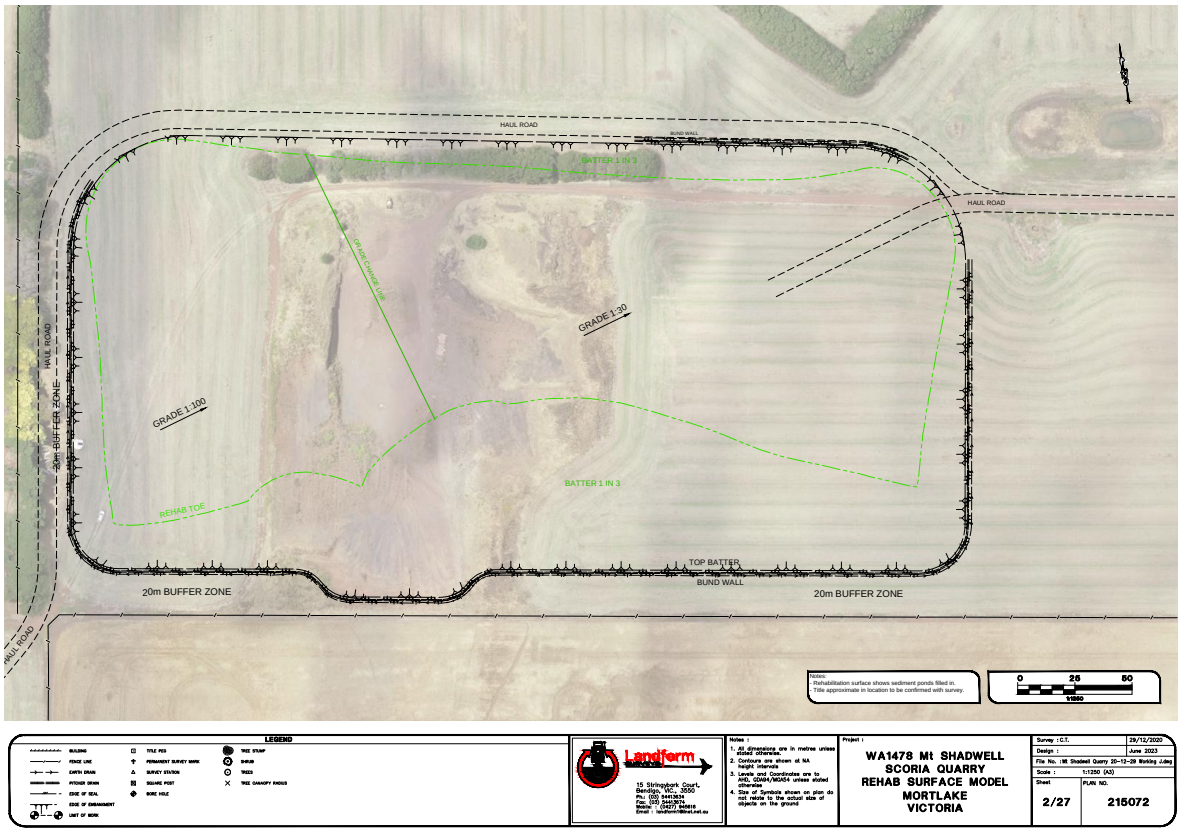
	Objectives	Criteria	Milestone and timing of evidence gathering/reporting
b)	**structurally, geotechnically and hydrogeologically sound -** by ensuring: • No unstable slopes, • Low susceptibility to erosion and predicted erosion factored into landform and drainage design.	• Methods of construction and reshaping as well as implementation of rehabilitation is verified by quarry manager to ensure construction and rehabilitation is aligned with approved design life and post-quarrying purpose/land use.	**Pre quarry operation** Landform features maintained by the design and location of the extension area. Rehabilitation and Closure (R&C) designed to address long term stability while integrating other objectives (a, c and d). Key elements and whole landform show how rehabilitation criteria will be met and are approved by regulator. **During operations** Geotechnical design of extension area is consistent with existing quarry to ensure, quality assurance are met. Progressive rehabilitation of completed areas are monitored and reported upon to quarry manager. **After decommissioning and rehabilitation** verify implementation and achievement of CC by evaluation of performance, monitoring until CC are achieved. Undertake maintenance during early stages to support stability.
c)	**non-polluting** – by ensuring: • No water or sediment pollution impacts the site or beyond • No airborne pollution is mobilised onsite or could leave the site	• Sediment pond located within each stage as extraction progresses. • Sediment pond infilled following extraction and prior to rehabilitation.	**During operations** • Rainwater only within quarry floor directed to sumps.
d)	**aligns with the principles of sustainable development** by ensuring: • The company understands and responds positively to stakeholder expectations, • Landforms blend with adjacent landscapes • Rehabilitation is self-sustaining	• Stakeholders are effectively engaged before quarrying commences and throughout the quarry's life to access R&C knowledge and share their local knowledge and concerns • Aesthetic impacts are addressed • Soil fertility and structure are comparable to local and pre-existing soil conditions	**Pre quarry operation** • Stakeholders visited and or advised of the proposal and views sought and discussed. • Regulator conditions met in consultation phases and design detail. • Pre located Aboriginal heritage salvaged prior to site preparation. • Quarry area and buffers established and clearly identified. • Plantation established on north face of Lot 4. **During operations** **In advance of closure**

	Objectives	Criteria	Milestone and timing of evidence gathering/reporting
		• Growth medium sustains land use for agriculture, that demonstrate sustainability and management inputs required. • Grazing lands support comparable stocking rates as adjacent areas	• Rehabilitate in accord with the directions of the Rehabilitation Plan. • Stockpiles are highly fertile with Olsen Phosphorus levels at 40ppm and Potassium levels of 300ppm • Grazing/cropping progressively introduced into rehabilitated stages. **After decommissioning and rehabilitation** • Rehabilitated area regularly monitored, (monthly) to ensure pasture/crop establishment and productivity. • Scoria does not need drainage for maximum performance of pasture and crops • Rehabilitated area supports comparable agricultural productivity as adjacent area. • Haul road remains useable
Domain 1 Quarried out quarry pit.			
a)	**is not likely to cause injury or illness** by ensuring: • Land surface profile is consistent with adjacent non extracted areas. Batters are reshaped to mimic surrounding landscape. 1V:3H-1V:6H • Redundant infrastructure removed • Extracted stages topography is compatible with proposed land use	• Terminal and rehabilitated walls are consistent with surrounding landscape • Topography is compatible with cropping/grazing farming.	**Pre quarry operation** • Work Plan shows how design criteria will be met for eventual rehabilitation and closure. (maximum height and slope, drainage and rehabilitation methods). • Rehabilitation will be progressive as each stage is exhausted. • Post closure use is cropping/grazing. **During operations** • Review stability data to ensure knowledge base for eventual rehabilitation of area. **In advance of closure** develop detailed design of slopes, drainage and rehabilitation plan for decommissioning, rehabilitation and long-term stability. **After decommissioning and rehabilitation**

	Objectives	Criteria	Milestone and timing of evidence gathering/reporting
			Rehabilitated stages monitored continuously as extractions move into the next stage.
b)	**structurally, geotechnically is sound** by ensuring: • Stage walls will not fail • Stage walls shaped and rehabilitated to design, and closed to design (related also a)	• Maximum terminal faces do not exceed 25m.	**Pre quarry operation** • Terminal and rehabilitated slopes are designed to be consistent with the existing quarry operations to ensure in perpetuity stability. The existing quarry has faces of 10m. There is no historic evidence of slumping or collapses at the quarry, or the adjoining Moyne Shire scoria quarry. Refer to Douglas and Partners Geotechnical Report 11/11/21. **During operations** • Stage walls constructed to work plan design. • Regular monitoring to ensure design is checked, verified or modified to address shortfalls for stability. **In advance of closure** • No deviations from design. **After decommissioning and rehabilitation.** • Extracted area is compatible with the approved land use.
c)	**non-polluting** by ensuring: • Final extracted areas do not impact ground or surface water quality • Surface water is not polluted by drainage	• Vegetation on extracted strips limits erosion and transport of sediments into water or air (as dust)	**Pre quarry operation** • Suitable soil materials are available for stripping during operations and stockpiled for use in rehabilitation. • Drainage and/or overflow water from quarried out stages meets water and sediment quality. **During operations** • Pollution risks, (spilt hydrocarbons) contained/managed in accord drainage design. • Spilt fuel kit available and accessible. • Sediment ponds will receive any contaminated surface water.

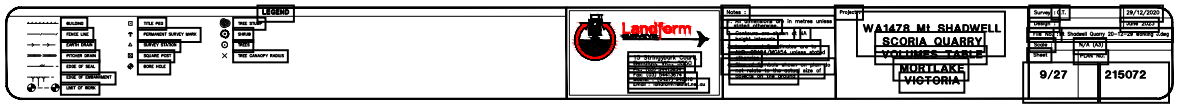
	Objectives	Criteria	Milestone and timing of evidence gathering/reporting
			After decommissioning and rehabilitation • R&C works meet design and construction requirements. Re-pasturing will be implemented.
d)	**aligns with the principles of sustainable development** by ensuring: • Rehabilitated and closed extraction area blends with adjacent landforms and is compatible with local land use.	• Terrestrial biodiversity is restored (Re-pasturing /cropping for agriculture). • Develop criteria to demonstrate success and sustainability – soil nutrients, biological, physico-chemical properties for use on the flatter pit slopes;	**Pre quarry operation** **During operations** • Stockpiles retained within stage of extraction and maintained to ensure soil viability. • Re-pasturing follows establishment of rehabilitation batters. **In advance of closure** • Quarry operator provide resources to manage the pit transition to post-closure to ensure objectives are met in the time frames agreed. **After decommissioning and rehabilitation** • Monitor for 3 months after sowing to ensure re- establishment of pasture.

Lots 1&2 Rehabilitation designs

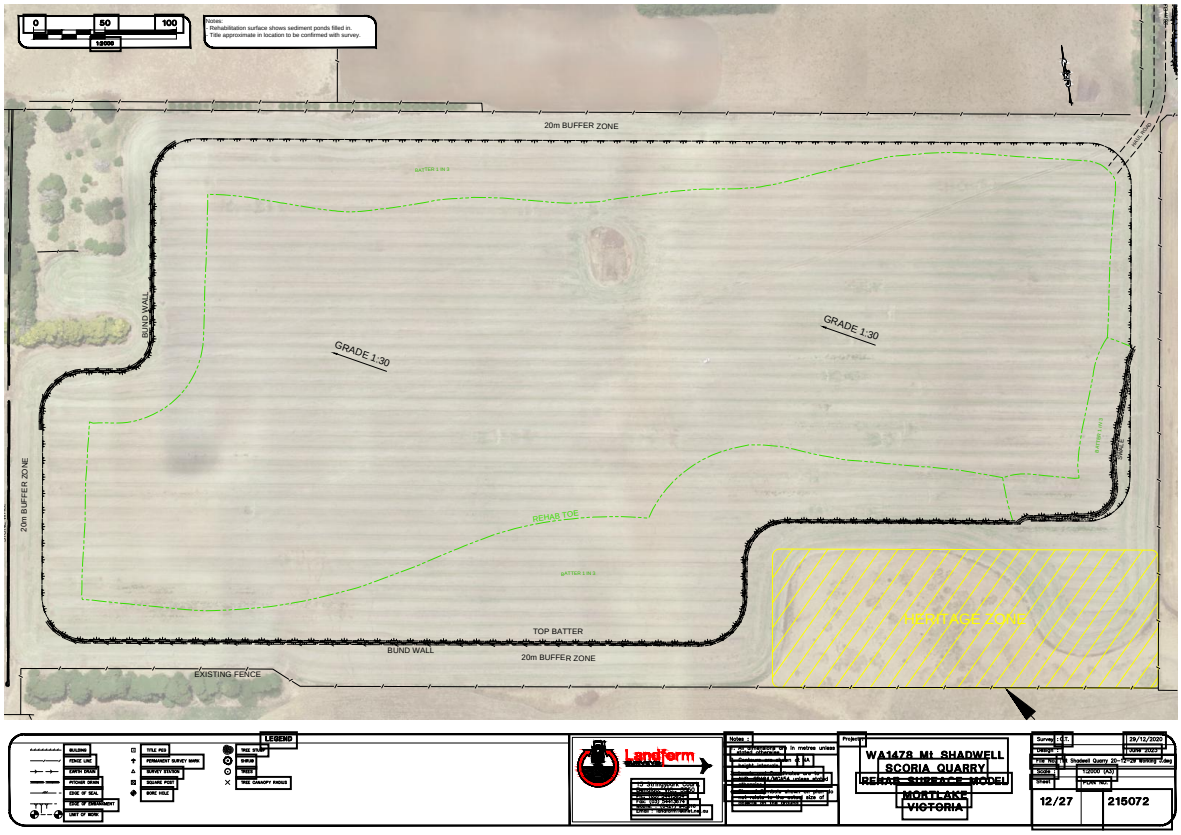


Lot 1&2 Rehabilitation Plan.

Name	2D Area (m2)	Cut (m3)	Fill (m3)	Net (m3)	Cut/Fill
Top Soil.1	15465	3093	0	3093	Cut
Top Soil.2	35832	7166	0	7166	Cut
Top Soil.3	20917	4183	0	4183	Cut
Overburden.1	15465	15465	0	15465	Cut
Overburden.2	20917	20917	0	20917	Cut
Overburden.3	35832	35832	0	35832	Cut
Scoria.1	15464	34901	11088	23813	Cut
Scoria.2	35832	225658	880	224779	Cut
Scoria.3	20917	63968	1884	62083	Cut
Total Top Soil	72214	14443	0	14443	n/a
Total Overburden	72214	72214	0	72214	n/a
Total Scoria	72213	324527	13852	310675	n/a

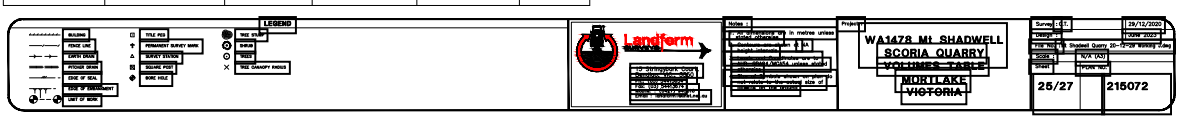


Lots 1&2 Volumes Table



Lot 4 Rehabilitation Plan.

Name	2D Area (m2)	Cut (m3)	Fill (m3)	Net (m3)	Cut/Fill
Top Soil.1	48553	9711	0	9711	Cut
Top Soil.2	22527	4505	0	4505	Cut
Top Soil.3	27635	5527	0	5527	Cut
Top Soil.4	29728	5946	0	5946	Cut
Top Soil.5	29825	5965	0	5965	Cut
Top Soil.6	27928	5586	0	5586	Cut
Top Soil.7	26909	5382	0	5382	Cut
Top Soil.8	16137	3227	0	3227	Cut
Overburden.1	48553	48553	0	48553	Cut
Overburden.2	22527	22527	0	22527	Cut
Overburden.3	27635	27635	0	27635	Cut
Overburden.4	29728	29728	0	29728	Cut
Overburden.5	29825	29825	0	29825	Cut
Overburden.6	27928	27928	0	27928	Cut
Overburden.7	26909	26909	0	26909	Cut
Overburden.8	16137	16137	0	16137	Cut
Scoria.1	48545	382032	639	381393	Cut
Scoria.2	22499	148239	1048	147190	Cut
Scoria.3	27635	410590	455	410135	Cut
Scoria.4	29727	441460	218	441242	Cut
Scoria.5	29823	368488	333	368155	Cut
Scoria.6	27928	405257	267	404990	Cut
Scoria.7	26909	229379	402	228977	Cut
Scoria.8	16114	151525	386	151139	Cut
Total Top Soil	229242	45848	0	45848	n/a
Total Overburden	229242	229242	0	229242	n/a
Total Scoria	229179	2536970	3749	2533221	n/a



Lot 4 Volumes Table.
For Rehabilitation profiles please refer to sheets 6-7 &14-23 of Work Plans