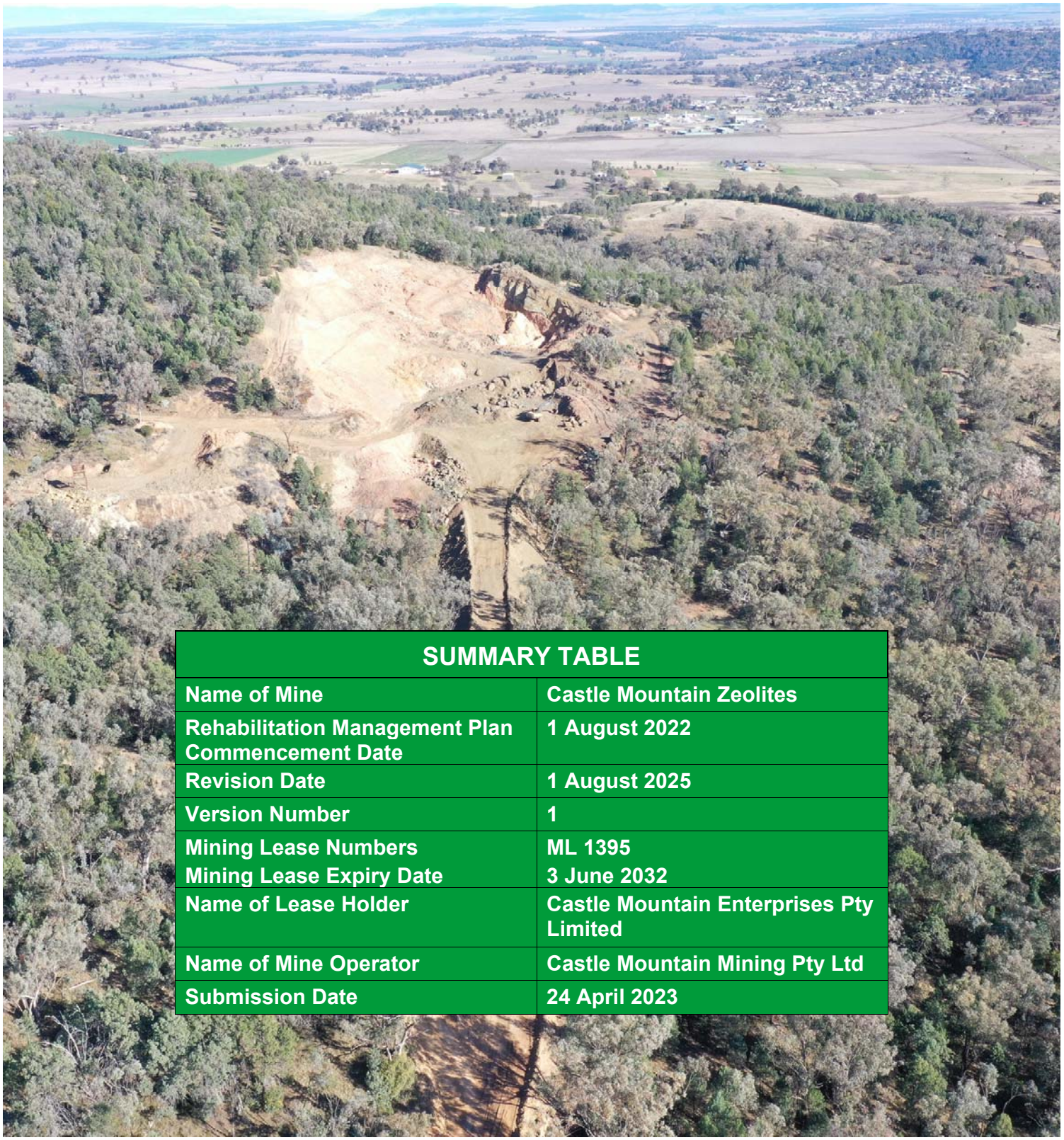
CASTLE MOUNTAIN ZEOLITES

the finest zeolites

REHABILITATION MANAGEMENT PLAN

Prepared for Castle Mountain Enterprises Pty Limited | 24 April 2023



SUMMARY TABLE	
Name of Mine	Castle Mountain Zeolites
Rehabilitation Management Plan Commencement Date	1 August 2022
Revision Date	1 August 2025
Version Number	1
Mining Lease Numbers Mining Lease Expiry Date	ML 1395 3 June 2032
Name of Lease Holder	Castle Mountain Enterprises Pty Limited
Name of Mine Operator	Castle Mountain Mining Pty Ltd
Submission Date	24 April 2023

Castle Mountain Zeolites

DA 59/95 | REHABILITATION MANAGEMENT PLAN

Prepared for Castle Mountain Enterprises Pty Limited
24 April 2023

	Prepared by	Reviewed by
Name	Gordon Atkinson	
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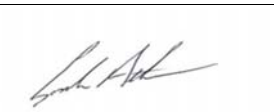
Position	Consultant Mining Engineer	
Signature		
Date	24 April 2023	

DOCUMENT CONTROL

Revision	Date	Description	Prepared by	Reviewed by
0	16 March 2023	For Castle Mountain Enterprises Pty Limited review	Gordon Atkinson & Associates Pty Ltd	Castle Mountain Enterprises Pty Limited
1	24 April 2023	Revised for submission	Gordon Atkinson & Associates Pty Ltd	Castle Mountain Enterprises Pty Limited

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1 PART 1 – INTRODUCTION TO MINING PROJECT

1.1 History of operations

Exploration activities for zeolite were initially conducted during 1992 by Castle Mountain Enterprises Pty Limited (CMZ) under Exploration Licence EL 3786.

A series of 10 “reverse circulation” exploration drill holes were completed for a total of 265 metres drilled. In addition a bulk sample of zeolite was obtained to assist in assessing the quantity and quality of zeolite mineral available for mining.

A development approval was obtained from the then Quirindi Shire Council for a small treatment plant to be built to process the bulk sample. Successful processing led to preparation during 1995 of an Environmental Impact Statement (EIS) supporting a Development Application (DA) for a zeolite mine and processing plant.

DA 59/95 was approved 23 October 1995, in perpetuity by Quirindi Shire Council.

A mining lease application was also lodged at that time with the then Department of Mineral Resources and Mining Lease, ML 1395 was granted on 4 June 1996 for a term of 15 years until 3 June 2011.

The original Mining Operations Plan (MOP) prepared by CMZ was dated November 1999 and essentially covered the first 10 years of operation within Mining Lease, ML 1395 for the period 3 November 1999 to 3 November 2009.

During this period mining and processing commenced in accordance with DA 59/95 and comprised mining, initially within a small, approximately 3.5 ha area of the zeolite deposit together with further establishment and operation of crushing and fine grinding facilities within an enclosed site processing building.

As markets for zeolite products expanded the requirement for additional processing plant and associated facilities became necessary. In addition, options for the use, handling and emplacement of waste rock were developed. In November 2004 the original MOP was amended to include a new area for waste emplacement. In July 2007 notification was provided to the then Department of Primary Industries regarding the establishment of a secondary crushing and screening plant.

A second MOP for the seven-year period 3 November 2008 to 3 November 2015 was prepared describing these recent site developments and to provide detail on the mining and rehabilitation activities within ML 1395. An application to renew ML 1395 was approved 18 October 2013 for a further term of 21 years until 3 June 2032. The rehabilitation security deposit assessed at this time was $137,700.

A third MOP document for the 7-year period, 3 November 2015 to 3 November 2022 was prepared in accordance with ESG3: Mining Operations Plan (MOP) September 2013 Guidelines and was approved 29 October 2015 by the then Department of Industry – Resources & Energy (DRE)’s Environmental Sustainability Unit for a 1-year period until 3 November 2016. (Refer DRE Reference: INW15/51975). A notice under s.240(1)(d) of the Mining Act 1992 was issued to address deficiencies in this MOP document including detail covering rehabilitation objectives and completion criteria.

This detail was addressed in the current 3 November 2015 to 3 November 2022 MOP (Amendment 1) dated 26 September 2016 that was subsequently approved 1 November 2016. The rehabilitation security deposit was re-assessed at this time and was determined to be $174,550 based on total mine related surface disturbance of approximately 7.5ha.

1.1.1 Mining activities

Since commencement of small scale, open cut mining operations by CMZ in early 2000, typical mine production of zeolite mineral has slowly increased from about 2,000tpa to over 5,000tpa.

This level of mine production is considerably below the maximum of 50,000tpa estimated in the 1995 EIS/DA documentation and is largely contributed to the difficulties associated in economically developing zeolite products in new and emerging markets.

Non the less mining and processing of zeolite mineral and associated zeolite rock/overburden has slowly but progressively increased with future annual tonnage targets of 10,000 to 15,000tpa. Once again, these tonnages are subject to future fluctuations in economic and market conditions.

Conventional open cut mining methods will continue to be employed at the CMZ mine together with processing of both zeolite rock and overburden to produce a range of sized zeolite and crushed rock products.

According to Smith, (1992) zeolite reserves at an overall 1.54:1 stripping ratio were calculated to be 827,000 tonnes at an average of 111 Meq NH^{4+} /100g and comprised;

- Zeolite Zt1 Band (lower) - 587,000 tonnes @ 121.4 Meq NH^{4+}/100g
- Zeolite Zt2 Band (upper) - 240,000 tonnes @ 87.5 Meq NH^{4+}/100g

The large zeolite resource previously identified within ML 1395 is expected to support a mine life well beyond the current ML 1395 expiry date of 3 June 2032. Further exploration drilling within ML1395 when required will continue to better define the extended surface outcrop and depth of both the currently mined lower, zeolite band (Zeolite Zt1) and the adjacent lower quality upper, zeolite band (Zeolite Zt2).

During the first “3-year forward program” from 4 June 2022 to 3 June 2025 an estimated 20,000 tonnes of zeolite is likely to be mined requiring a similar quantity of zeolite rock/overburden to be removed. This material, where practical and economical will be further processed into alternate crushed rock products.

Improved resource utilisation including the crushing and screening of former overburden materials (conglomerate and sandstones) together with the processing of lower grade zeolite rock has not only increased the use and efficiency of resources but is also likely to reduce the requirement for overburden emplacement within a previously planned 1.9ha disturbance area. The existing small, approximately 0.8 ha overburden emplacement is currently active and has to-date not been subject to rehabilitation.

Initial attempts for landform rehabilitation in a small 0.3ha “mined out” area of upper slope within the mine have to-date not been successful due to slope instability. Recent geotechnical and rehabilitation investigations together with a revised mine plan are presented in this first Rehabilitation Management Plan (RMP) that aims to address these issues and improve mine rehabilitation outcomes.

1.2 Current development consents, leases and licences

The current development consent, DA 59/95 granted under the Environmental Planning and Assessment Act 1979, (including subsequent amendments) together with authorisations and licences approved for the CMZ mine are listed in **Table 2**.

The list details the Issuing / Responsible Authority, type of approval, dates of issue, duration (where limited) and relevant comments.

DA 59/95 provides consent to CMZ subject to 10 conditions to extract zeolite rock and to process it by crushing and transporting it off site in respect to Part Lot 5 and Portion 314, Parish of Quirindi. The extent of zeolite extraction is defined by the map attached to DA 59/95 and referred to in Condition (1).

According to the Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 the CMZ mine is considered a "large mine" being the subject of one or more mining leases, the carrying out of activities under at least one of which requires an environment protection licence under the Protection of the Environment Operations Act 1997.

Table 1 Current development consents, leases and licences

Issuing / Responsible Authority	Type of Approval	Date of Issue	Expiry	Comments
Liverpool Plains Shire Council (formerly Quirindi Shire Council)	Development Application (DA 59/95) (**Attachment 1**)	23/10/1995	NA	Application to confirm hours of operation for processing plant approved 15/10/2003 as per LPSC letter dated 24/02/2004. Addition of crushing and screening plant subject to conditions as per LPSC letter dated 13 July 2007. Confirmation that property improvements ancillary to agricultural use may remain following cessation of mining as per LPSC letter dated 27 March 2009
Department of Regional NSW – Mining, Exploration and Geoscience	Mining Lease No 1395 (Act 1992) **(Attachment 2)**	04/06/1996	03/06/2032	Mining Lease Conditions 2013 Renewal took effect 18/10/2013
NSW Environment Protection Authority (EPA)	Environment Protection Licence No. 7511 Version 18-Jun-2013 (**Attachment 3**)	29/01/1999	NA Anniversary date: 29th January Next review: 25 April 2026	Crushing, Grinding or Separating (0-30,000 tonnes processed) and Mining for minerals (0-30,000 tonnes produced) annually

1.3 Land ownership and land use

Mining Lease ML 1395 is located along the Wallabadah Road approximately 5 km south east from the northern NSW town of Quirindi in the Liverpool Plains Shire Council as indicated on Figure 1.

Mining Lease ML 1395 occupies an area of 152.8 ha as indicated in Figure 1, partly within former freehold, Part Lot 5 now described as Lot 5 in DP253788 and partly within former Crown Land Portion 314 now titled Lot 3142 in DP1134392.

Immediately north and adjoining ML 1395 is “low-impact”” Exploration Licence EL9044 (expiry date 11/02/2027) held by Newmont Exploration Pty Ltd. The area of ML1395 is excluded from EL9044.

Further to the west and no longer overlapping ML 1395 is a large, 54 block Petroleum Exploration Licence PEL1 (1991) held by Australian Coalbed Methane Pty Limited and Santos QNT Pty Ltd, current until 12/04/2028.

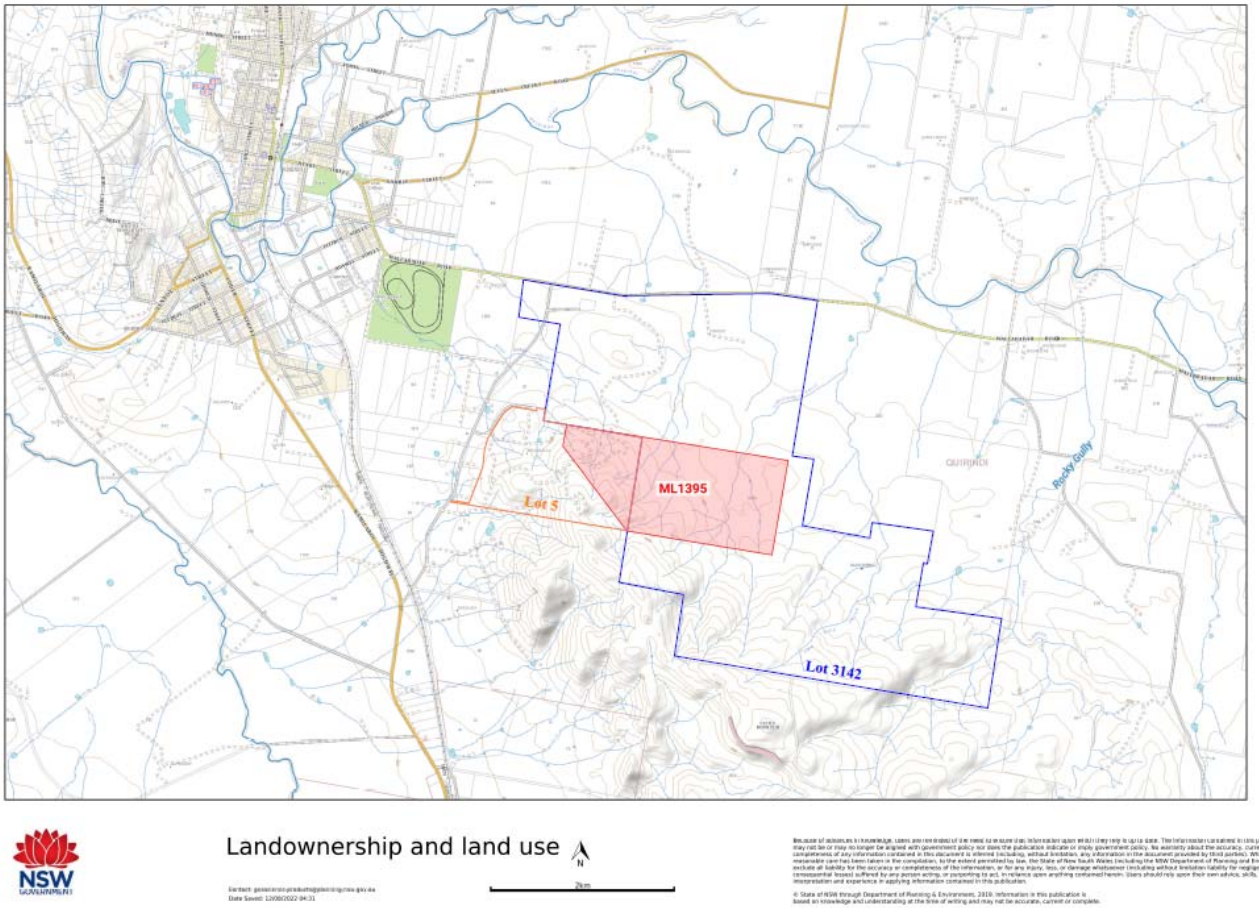
Lot 5 in DP253788 is owned by GJ and FM Heath and Lot 3142 in DP1134392 is owned by Castle Mountain Properties Pty Ltd. Both freehold Lots are located within the Parish of Quirindi, County of Buckland. Lot 5 in particular has been owned long term by the current owners who are long term residents within the Liverpool Plains Shire Council, local government area.

1.3.1 Land ownership and land use figure

The land is currently zoned RU1 Primary Production in accordance with the provisions of the Liverpool Plains Local Environmental Plan (LEP) 2011. “Extractive industries” and “open cut mining” are both identified as permissible land uses with consent.

Land use capability within ML 1395 has been assessed as Class 4 on lower slopes and predominately Class 7 covering the rough grazing land over rocky, outcrop with steep slopes.

Figure 1 Location Plan showing surrounding Land Ownership and Use



2 PART 2 – FINAL LND USE

2.1 Regulatory requirements for rehabilitation

No specific requirements for rehabilitation are included in the 10 conditions of development consent attached to DA 59/95 as presented in **Table 2**.

In regard retained infrastructure post mining, clarification was obtained from Liverpool Plains Shire Council as detailed in correspondence dated 27 March 2009 included in **Attachment 1**. Assets or property improvements including for example power, water storage, fencing, roadworks, erosion control works etc. are considered ancillary to agricultural use that is both a co-existing land use and post mining land use consistent with development consent and land zoning.

These assets are planned to be retained post mining.

Table 2 Conditions of development consent – DA 59/95

Condition Number	Details	Comments Re- Compliance
(1)	The mining and processing of zeolite rock be contained within Part Lot 5 D.P.253788 and Part Portion 314, Parish of Quirindi, as shown on the map attached to this consent (the delineation of which is to be carried out by survey at the applicant's full cost), such containment being designed to:	**Completed** Refer to "Map attached" **Attachment 1**
(a)	provide a buffer zone between the extraction and processing areas and existing residences; and	The original mining lease application area was reduced in size on the western side to address buffer and visual impacts.
(b)	to protect the scenic values of the Castle Mountain escarpment, including the skyline when viewed from Who'd-A-Thought-It Lookout	
(2) (a)	The provision of vehicular access from the site being provided through Portion 314, directly to M.R. 126 at a location and to a standard (including that section of the access within M.R. 126 road reserve) acceptable to the Council and the R.T.A., such access to be approved, constructed and used within 180 days of the date of this consent.	**Completed**
(2) (b)	The applicant entering into a road usage agreement designed to preclude the use of Callaghan's Lane, such agreement to be completed within 180 days of the date of this consent	

(3) (a) (b) (c)	Evidence being submitted to Council prior to production commencing that:- the necessary approvals from the Environmental Protection Authority of NSW have been received; an adequate rehabilitation erosion and sediment control plan has been submitted to and approved by the Department of Land & Water Conservation; the Department of Mineral Resources has approved of the whole of the proposal	**EPL No 7511 issued 29/01/1999** **Completed** **ML 1395 granted** 04/06/1996
(4)	The submission to Council, within 180 days of this consent, a noise audit conducted by an independent consultant with recognised expertise in noise measurement, such audit to relate to:- (i) operations at crushing plant; (ii) operations at excavation site And to clearly indicate the comparison between planning levels as specified by the EPA and actual levels resulting from the audit.	**Completed**
(5)	The access road within Portion 314 and all internal roads be covered for their full length with dust suppressing materials and be maintained in that condition and when necessary, a water cart be used to provide additional dust control	**Ongoing**
(6)	The applicant engage a structural engineer practising in the area of building design or an architect to inspect and record the structural integrity and state of repair of the 3 nearest residential dwellings (including that of H & E Golland and excluding that of K &M Heath), prior to mining commencing and that an annual inspection of H & E Golland's dwelling be made and the resulting report be submitted to H & E Golland.	**Completed**
(7)	All staff operating at the extraction sites be required to observe and advise company Principals of the existence of any sites of aboriginal significance that may be found and that the National Parks & Wildlife Service be notified immediately.	**Ongoing**
(8)	Compliance with bush fire management provisions of Council's District Fire Plan.	**Ongoing**

(9)	Should the daily throughput of the crushing plant need to be increased over and above the level of throughput resulting from the capacity of the plant located on site as at the date of this approval, a further assessment be carried out to ensure compliance with EPA standards.	**Actioned on** **24 February 2004, 13 July 2002**
(10)	The fuel storage area at the crushing plant be provided with a bunded enclosure and overflow storage system to eliminate accession to groundwater	**Completed**

The 1995 EIS submitted in support of DA 59/95 stated that;

"Rehabilitation will occur progressively as the mine progresses and will ensure land capability is maintained. An option exists regarding leaving a small void for future farm water storage. Due to the nature and location of the proposed development, sedimentation and erosion control structures will be minimal and have been designed to maintain water quality and restrict sediment movement"

Prior to Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 the regulatory requirements specific to land use and rehabilitation within ML 1395 were previously prescribed under Mining Lease Conditions 2013, **Condition 2 – Rehabilitation** as

"Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister".

2.2 Final land use options assessment

Post mining land use previously developed and presented in the 3 November 2015 to 3 November 2022 MOP (Amendment 1) document is still considered relevant and consistent with the regulatory requirements described above in Section 2.1.

2.3 Final land use statement

Post mining, land use will continue as rough grazing over the rehabilitated landform that will comprise safe, stable slopes with minimal erosion.

Property improvements considered ancillary to agricultural use (e.g. power, water storage, fencing, roadworks erosion control works etc.) and consistent with development consent and land zoning will remain with landholder agreement. The landholder and the mine operator have joint ownership. At lease relinquishment all surplus mining and processing plant and equipment not retained or required by the landholder will be stored on site until sold and subsequently removed.

2.4 Final land use and mining domains

Final landform and rehabilitation plans for the CMZ mine are presented in Section 5 and include the conceptual final land use domains as shown in **Figure 2**.

As noted in Section 1.1.1 the large zeolite resource previously identified within ML 1395 is expected to support a mine life well beyond the current ML 1395 expiry date of 3 June 2032.

2.4.1 Final land use domains

The final land use domains shown in **Figure 2** are coded against mine disturbance as summarised by the mining domains listed in **Table 3**.

Table 3 Coding for Final Land Use and Mining Domains

Code	Final Land Use Domain	Code	Mining Domain
I **A**	Infrastructure Area processing plant buildings, sheds and ancillary infrastructure including power retained as infrastructure for agricultural use. Haul roads and access roads retained for property access. Areas not required for agricultural use returned to rough grazing and/or native ecosystem.	**1**	Infrastructure Area processing plant & stockpile areas, haul-road and site access roads
G	Water storage area	**3**	Water management area
A	Native ecosystem	**4**	Overburden Emplacement
J **A**	Final void (refer to Note J) with stabilised landform including option for small future farm water storage to support rough grazing and re-establishment in part of native ecosystem.	**5**	Active Mining Area Mine and mine exploration area

The final land use domains as summarised in **Table 3** are further described as follows.

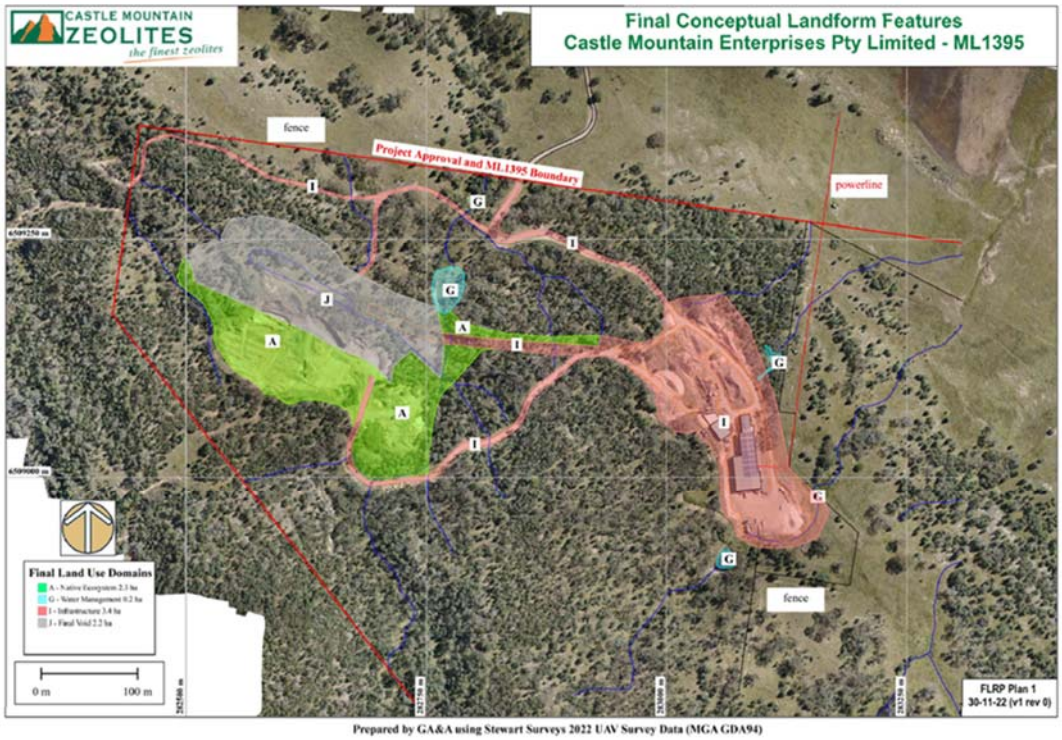
I - Infrastructure - the slightly sloping disturbed areas in and around retained processing plant buildings, sheds and ancillary infrastructure to be landscaped / revegetated to meet landholder's final agricultural land use being rough grazing requirements. The main site access together with the majority of haul roads to be retained for property access.

G - Water management areas – existing sediment dams as shown in Figure 2 to be retained for agricultural use.

A - Native ecosystem – north facing slopes of overburden emplacement to be battered to approximately 1 in 3. Slopes and upper surface to be revegetated with recommended native species.

J - Final Mine Void – Upper (approximate) 20 degree slope of the mine void's southern "foot-wall" to be stabilised with small retaining benches or berms cut at intervals into the slope to retain surface run-off, capture any loose material and promote native vegetation planting along these levels. Northern benched faces to be retained and treed. An option is available, subject to final extent/completion of mining, in regard to leaving a small void for future farm water storage as indicated in the 1995 EIS.

Figure 2 Final landuse Domains



2.4.2 Mining domains

The four mining domains for the CMZ mine upon which the final landform features – Plan 1 are based, are summarized below in **Table 4**.

Table 4 Mining Domains

Mining Domain	Description	Size (ha)	Major Assets	Retained
1	**Infrastructure**	**3.2**		
	processing plant & stockpiles	2.7	3 Ezy frame – colour bond sheds, concrete pads, associated sheds, water tanks, drainage, power supply	Yes
	roads	0.5	Main access and minor roads	Yes
3	**Water Management**	**0.2**	4 existing/modified farm dams plus 2 additional for sediment control	Yes
4	**Overburden Emplacement** (incl. main mine haul-road)	**1.3**	To be rehabilitated.	
6	**Active Mining Area**	**3.4**	To be rehabilitated.	
	mine current disturbance	1.2	As at 08/08/2022	
	area undergoing rehab.	0.7	Area of approx. 20 degree S slope	
	mine expansion area	1.5	To the 535m contour N and NW	
	Total Area	**8.1**		

3 PART 3 – REHABILITATION RISK ASSESSMENT

CMZ have successfully owned and operated the Castle Mountain Zeolite mine, with no external environmental incidents or complaints recorded during the mine's operations to date. The original mine area together with the initial processing plant building (that enclosed all crushing, screening and grinding equipment) and immediate surroundings currently disturb about 4 ha within the 152.8 ha mining lease area.

The conceptual final landform and rehabilitation plan is based on future development of the open cut zeolite mine, overburden emplacement and processing plant that is estimated to disturb areas of approximately 3.4ha, 1.3ha and 2.7ha respectively. These operational domains are connected by the 0.75km haul road access (now a light vehicle access) occupying approximately 0.5ha as shown on **Figure 2**. In addition, existing water management structures occupying approximately 0.2 ha are included.

Total disturbance within ML 1395 for future operation is anticipated to be approximately 8.1ha.

3.1 Environmental Risk Assessment

The Environmental Impact Statement prepared in June 1995 by HLA-Envirosciences Pty Limited assessed the existing environment in conjunction with likely impacts resulting from the mining and processing of zeolite within ML 1395.

Potential environmental issues as detailed in the 1995 EIS and their associated risk are summarised in the following Table 5. These environmental issues previously identified have been reviewed and re-assessed in association with recent site issues involving the stability of the upper slopes of the mine that in particular present a risk to successful rehabilitation.

Table 5 Environmental Risks

ISSUE	Existing Controls	Level of Impact	Likelihood
Visual	Low visibility. Use of green colour bond for site buildings. Revegetation of upper mine slopes.	Low	Possible
Land Capability	No change to rough grazing use.	Low	Unlikely
Landform Stability	Re-designed mine plan and revised landform rehabilitation repair strategy.	High	Possible
Surface Erosion	Sediment dams and structures in place	Low	Possible
Flora and Fauna	No rare or endangered species	Low	Unlikely
Groundwater	Above groundwater table. Containment of all hydrocarbons.	Low	Unlikely
Air Quality	Fine grinding/screening plant enclosed in building with dust extraction. Campaign mining allows flexible work arrangement during favourable weather conditions. Speed restriction to 40 kph.	Low	Unlikely
Noise	Concealed location. Campaign mining allows flexible work arrangement during favourable weather conditions Monitoring conducted as required. All blasts (1 - 2 annually) are monitored.	Low	Possible
Traffic	Truck access via Wallabadah Road only Maintained access road	Low	Unlikely
Heritage	No sites. Notification in the event of a discovery.	Low	Unlikely

CMZ have in place a Pollution Incident Response Management Plan (PIRMP) prepared November 2014 in accordance with EPL 7511 that assists in the identification of environmental hazards, the methods employed in minimising potential pollution risks and a plan of action in the unlikely occurrence of such an event.

3.2 Rehabilitation Risk Management

Section 6.2.1 of this RMP provides information on how potential environmental risks relating specifically to rehabilitation are managed during the active mining phase.

With the exception of landform stability and surface erosion issues that are now being managed in accordance with a revised mining plan and revegetation strategy the remaining potential risks, with controls are considered low impact and unlikely to occur.

Critical risks to rehabilitation identified from **Table 5** are currently considered to be landform stability and surface erosion of, in particular the upper slopes of the southern mine area. This in turn potentially impacts visual and final land capability.

4 PART 4 – REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA

The three general rehabilitation objectives for the CMZ mine that were previously adopted and presented in the 3 November 2015 to 3 November 2022 MOP (Amendment 1) and based on a Rehabilitation Strategy, dated July 2016, prepared by Global Soil Systems are listed below.

These objectives are;

- **Landform and Erosion** - Generally stable landforms that are appropriately drained with minimum erosion and soil movement in most areas.
- **Vegetation** - Adequate stands of native vegetation, relevant to their age which is resilient to reasonable extremes of climate.
- **Weeds** - Minimum weed presence of key weed species.

As stated in Section 2.1 no specific requirements for rehabilitation are included in CMZ's development consent DA 59/95. The original mining lease application boundary to the west was amended at the time of application to provide a buffer between mine and rural properties and to minimize visual impact from the "Who'd-A-Thought-It-Lookout".

CMZ have therefore developed the rehabilitation objectives and completion criteria presented in the following Section 4.1 based on the three general rehabilitation objectives above, in consideration of DA 59/95 and the supporting 1995 EIS together with knowledge from recent site geotechnical and revegetation investigations as detailed in **Attachment 4** and **Attachment 5** respectively.

4.1 Rehabilitation objectives and rehabilitation completion criteria

Rehabilitation objectives for the CMZ mine comprise the following;

- Land capability to be maintained as rough grazing,
- Landform to be stable and appropriately drained to minimise erosion and soil movement and will not present a greater safety hazard than surrounding land to post-mining land-users,
- Water management structures assessed for agricultural use functional, safe and stable,
- Revegetation mix of native species planted to support rough grazing land use, to minimise visual impact and to assist stable, minimal erodible final landforms,
- Weed presence to be minimised, and
- Mine infrastructure and property improvements ancillary to agricultural use to remain post mining with development consent approval.

Rehabilitation completion criteria are presented in **Table 6** for each rehabilitation objective across the final land use domains as determined for each active mining phase.

The coding used is the same as that detailed in **Table 3.**

Table 6 Rehabilitation Completion Criteria

Rehabilitation Objection	Mining Domains	Final Land Use Domains	Rehabilitation Completion Criteria
Land capability	1,3,4 & 5	A, G, I, J	Maintained as rough grazing in and around mine void and farm infrastructure
Landform	1	I	Areas not required for agricultural use e.g. stockpile areas ripped and revegetated with recommended native species as detailed under revegetation.
	4	A	North facing slopes of overburden emplacement to be battered to approximately 1 in 3 and prepared for revegetation. Upper surface to be ripped and revegetated with recommended native species as detailed under revegetation.
	5	J	Upper or foot-wall slope of mine void with clay layer removed battered to approximately 20 degrees and benched in preparation for revegetation to approximately 535m AHD. Remaining mine void, a safe and stable benched landform with safe access to any future farm water storage.
Water management	3	G	Functional, safe and stable for agricultural use.
Revegetation	1,3,4 & 5	A, G, I, J	The proposed performance indicators and completion/relinquishment criteria to be initially adopted for revegetated sites over a 10-year period include the following: **Species Diversity** - The presence of at least 2 over storey and 2 understorey species in any 10m x 10m plot at all ages. **Stem Densities** - Minimum total tree/shrub densities at: Year 1 - 600 stems/ha, Year 5 - 500 stems/ha and Year 10 - 400 stems/ha. **Natural Regeneration** - Evidence of natural regeneration at Year 10 for at least two species. Refer to suitable rehabilitation target species – **Attachment 5**.
Weeds	1,3,4 & 5	A, G, I, J	Minimum weed presence of key weed species e.g. Saffron Thistle, St Johns' Wort, Paspalum, Wild Oats and Hemlock
Infrastructure	1	I	Processing plant buildings, sheds and ancillary infrastructure including power retained as infrastructure for agricultural use fit for purpose. Haul roads and access roads in good condition retained for property access. Retained infrastructure has development consent approval. At lease relinquishment all surplus mining and processing plant and equipment not retained or required by the landholder will be stored on site until sold and subsequently removed.
	1	A	Areas not required for agricultural use returned to rough grazing and/or native ecosystem. Refer to revegetation.

4.2 Rehabilitation objectives and rehabilitation completion criteria – stakeholder consultation

CMZ after gaining developmental approval and commissioning has owned and operated the Castle Mountain Zeolite mine for over 25 years. The management of both CMZ and the mine operator Castle Mountain Mining Pty Ltd is held within the Heath family with Managing Director Gordon Heath a resident on-site landholder and also a long term resident within the local Quirindi community.

The Mine Manager, Kurt Heath (0418 482 916) is responsible for all site activities and environmental performance at the mine that is located some 5km south-east of Quirindi. In addition, CMZ maintain an office at 122 Station Street in Quirindi (02 6746 3555) and a website www.cmzeolites.com.au.

The office telephone (together with the website) serves as a complaints line and is available during operating hours in accordance with Environment Protection Licence No. 7511 - Condition M3 both for registering complaints and for receiving community feedback.

CMZ have an assigned Deed of Grant of Licence covering access and land use within Lot 3142 in DP1134392 with adjoining landowner, Castle Mountain Properties Pty Ltd.

No specific rehabilitation objectives and completion criteria are specified in the Deed of Grant of Licence that includes licence to use a small area adjacent to CMZ's mining (processing) plant and CMZ's existing road access as shown in **Figure 1.** The licence period is for the duration of ML 1395 and such additional period as will in all the circumstances be reasonable to allow CMZ to dismantle and carry away from ML 1395 any ancillary structures plant or equipment used in connection with the ML1395 or CMZ's mining operations.

Power supplied to part Lot 5 in DP 253788 covered by ML 1395 is via overhead powerline within a registered 20m wide easement in favour of the local energy supplier in accordance with Section 88A of the Conveyancing Act 1919.

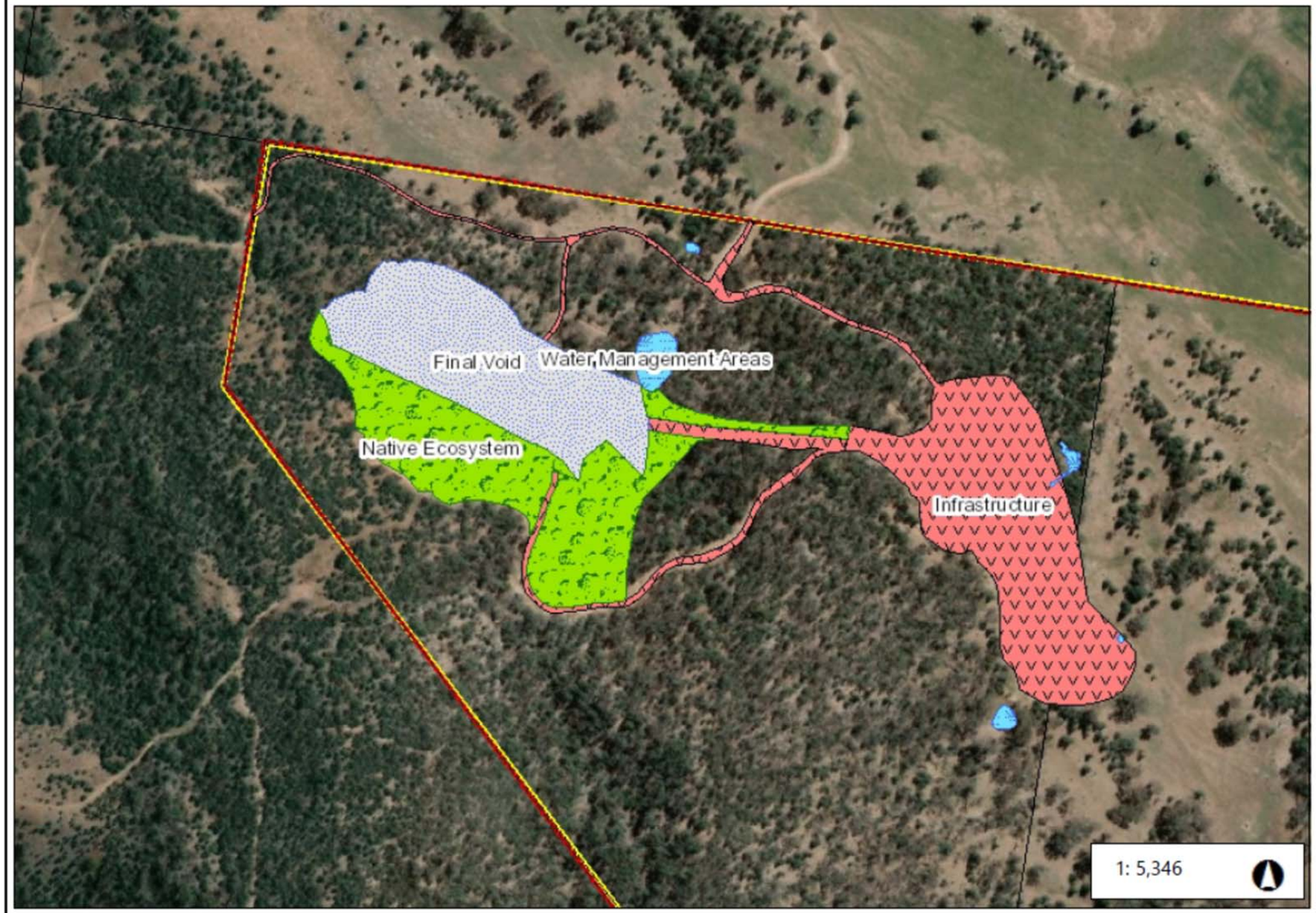
In addition CMZ is required to comply with the requirements of all relevant authorities in relation to the use and occupation of the licenced area.

In this regard and consistent with both conditions of DA 59/95 and ML 1395, post mining, land use will continue as rough grazing over the rehabilitated landform that will comprise safe, stable slopes with minimal erosion. Property improvements considered ancillary to agricultural use (e.g. power, water storage, fencing, roadworks erosion control works etc.) and consistent with development consent and land zoning will remain after mining ceases.

5 PART 5 – FINAL LANDFORM AND REHABILITATION PLAN

Final landform and rehabilitation plans, Plan 1 and Plan 2 showing final landform features and final landform contours as downloaded from the Mine Rehabilitation Portal are included on the following two pages.

FLRP Plan 1: Final Landform Features



Legend

- Final Landform Features
- Final Landuse
  - Agricultural – Cropping
  - Agricultural – Grazing
  - Rehabilitation Biodiversity Offset Ar
  - Final Void
  - Heritage Area
  - Industrial
  - Infrastructure
  - Native Ecosystem
  - Water Management Areas
  - Water Storage (Excluding Final Voi
  - Other
- Project Approval Boundary
- Mine Operations Area
- Boundary
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

271.6 0 135.79 271.6 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

FLRP Plan 2: Final Landform Contours

Legend

- Final Landform Features
- Final Landform Contours
- Project Approval Boundary
- Mine Operations Area
- MINERALS - CURRENT TITLE
- COAL - CURRENT TITLES
- PETROLEUM-CSG - CURREN
- Boundary
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
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6 PART 6 – REHABILITATION IMPLEMENTATION

6.1 Life of mine rehabilitation schedule

As indicated in Section 1.1.1 the large zeolite resource previously identified within ML 1395 is expected to support a mine life well beyond the current ML 1395 expiry date of 3 June 2032.

The final landform and rehabilitation plan presented in Section 5 is considered a conceptual plan based on a likely life of mine in excess of 20 years but subject to economic and market conditions and well beyond the current expiry date of ML 1395.

An estimated disturbance footprint for this conceptual final landform plan of 8.1ha is developed in the early stages of the mine life following mine development to the 535m contour as indicated in the Final Landform and Rehabilitation Plan – Plan 2. Within this footprint the approximate, 20 degree dipping zeolite seams are mined to about 520m elevation.

A small water storage is likely to be formed at the bottom of the mine void.

The majority of infrastructure to remain as farm assets or property improvements approved in accordance with DA59/95 as described in Section 2.1.

Mine rehabilitation is concentrated on the southern “upper” slopes with the main objective being creation of a stable landform with suitable native vegetation cover. Final land use to be consistent with existing rough grazing land.

6.2 Phases of rehabilitation and general methodologies

6.2.1 Active mining phase

Risks and opportunities for rehabilitation associated with the active mining phase are described under the following categories.

a. Soils and materials

The soils in the area, as described in 1993 by the former Department of Land and Water Conservation (DLWC), are of the red brown earth association. These moderately fertile soils have formed on predominantly fine grained sedimentary rocks, and consist of an association of lithosols on the higher slopes, non-calcic brown earths and red brown earths on the lower slopes and brown clays on the flood plains.

Physical limitations such as slope, soil type and soil fertility restrict the land capability of the subject lands to Classes IV and VII according to the NSW Soil Conservation Service land capability system.

Soil sampling from site and analysis conducted in DLWC’s Soil Services laboratories confirmed that both “topsoil and subsoil materials” available within the mining lease area were suitable for revegetation purposes. However, it was noted that the topsoil on site was very thin and contained much loose rock within a depth of 100 to 150 mm.

To date, less than 1,000 tonnes of “topsoil materials” (defined as a very thin, inconsistent layer containing much loose rock within a depth of 100 to 150 mm) have been stripped with difficulty from initial areas cleared of vegetation.

This material is currently stockpiled on a section of the overburden emplacement. A minor quantity forms a small clean water diversion bund at the “southern” top of the mine. Further recovery of “topsoil material” is considered to be limited.

Recent soil laboratory testing of “in-situ” soil and clay seams below the lower zeolite seam suggest suitability as a growth medium better suited to revegetation as detailed in the August 2022, CMZ Rehabilitation Repair Strategy prepared by MINESOILS. Refer to **Attachment 5**.

b. Flora

Flora and fauna investigations undertaken by Envirosciences Pty Limited in January 1994 described the existing vegetation as low woodland interspersed with grassy patches with the forest areas regenerating from previous clearing and grazing activities. As a consequence, existing vegetation was not considered critical habitat.

Mixed aged stands of White box (Eucalyptus albens), Tumbledown Red Gum (E. Delbata) and Cypress Pine (Callitris endlicheri) predominate. A low understorey comprising mostly grasses (Kangaroo Grass, Haresfoot Clover and Spear Grass) and herbs with occasional shrubs were identified.

No rare or endangered flora species were recorded during the investigations undertaken or were reported to occur in the area.

Rehabilitation target species for trial revegetation by direct seed application is included in Attachment B of the CMZ Rehabilitation Repair Strategy prepared by MINESOILS. Refer to **Attachment 5**.

Weed species identified include Saffron Thistle, patches of St Johns’ Wort together with Paspalum, Wild Oats and Hemlock. Cattle grazing and contract spraying will continue to be undertaken for weed control in accordance with rural land and farm management practices.

c. Fauna

The dominant fauna of the mining lease area was found by Envirosciences Pty Limited, 1994 to be birds with a total of 34 species recorded. Eastern Grey Kangaroos were common over and around the site, and there were signs that Wombats and Echidnas were moderately common.

No rare or endangered fauna species were recorded during the investigations undertaken or were reported to occur in the area.

Baiting for pests including rats and mice particularly at the processing plant will continue.

d. Rock/overburden emplacement

The existing 0.8ha overburden emplacement will be merged with the mine open pit void and new haul road access as indicated in Final Landform and Rehabilitation Plans – Plan 1 and Plan 2.

Final faces to be battered to approximately 1 and 3 slope and covered with existing stockpiled, “topsoil materials”.

e. Waste management

In accordance with Condition No 10, Conditions of Consent, DA No. 59/95, the fuel, oil and consumables storage area at the crushing plant as indicated in Table 2 has been provided with a bunded enclosure and overflow storage system to eliminate accession of potential hydrocarbon contamination to groundwater.

f. Geology and Geochemistry

Within Mining lease ML 1395 two bands of red, ash fall tuff or zeolite that dip northward at approximately 20 degrees have been identified and are contained within massive conglomerates and sandstones. The lower band (Zeolite Zt1) currently being mined is approximately 6 to 8 meters thick. Mining of the upper band (Zeolite Zt2) is now underway with 535m bench development.

Minerals of the zeolite group are hydrated alumino-silicates. The major type of zeolite identified in the lease area is clinoptilolite which has the chemical composition

$$(Ca, Mg, Na, K) . (Al_6Si_{30}O_{72})_{20}H_2O$$

The zeolite mined is a reddish pink, homogeneous rock that is hard and brittle, has no toxic problems and when shattered during mining produces almost no dust.

Geology and geochemistry of the zeolite mineral and overburden/interburden materials are considered to have no geochemical risks or impediments to rehabilitation. Zeolite has many environmental features and benefits as detailed on CMZ's website www.cmzeolites.com.au.

g. Material prone to Spontaneous Combustion

Not applicable

h. Material prone to generating Acid Mine Drainage

Not applicable

i. Ore beneficiation waste management (reject and tailings disposal)

As described in Section 1.1.1 improved resource utilisation including the crushing and screening of former overburden materials (conglomerate and sandstones) together with the processing of lower grade zeolite rock has not only increased the use and efficiency of resources but is also likely to reduce the requirement for overburden emplacement.

j. Erosion and Sediment Control

Existing ephemeral creeks within the mining lease area continue to drain north ward toward Quirindi Creek. The two main creek lines contain existing farm dams. Four of these dams continue to function effectively as sediment control structures for surface water run-off. Two small dams (one in place) are currently being constructed for control of any sediment laden run-off along the eastern perimeter of the processing plant area.

Annual inspection of these dams or inspection after heavy rainfall will continue. Any material build up will be removed as required to maintain effective sediment control.

Run-off from undisturbed areas is diverted away from mine disturbed areas by the use of diversion drains. These drains have been constructed as per former Soil Conservation Services specifications that includes a 3 metre channel base width, a grade of 1 in 200, 1 (vert) in 3 (horiz) batters and a bank height of 0.7 metres.

The run-off from disturbed areas including the open cut mine area and access roads is directed to both existing and new sediment dams that have been sized and constructed by the former Soil Conservation Services.

The environmental impact assessment conducted in 1995 by HLA – Envirosciences Pty Ltd considered that development of the zeolite mine and processing plant would not affect groundwater quality or aquifer levels.

In accordance with current Final Landform and Rehabilitation Plans the proposed depth of the zeolite mine is approximately 518m and is substantially above estimated ground water levels of between 410 and 440m. Previous exploration drilling on former Assessment Lease AL15 to an elevation of 450m did not intersect groundwater.

k. Ongoing management of biological resources for use in rehabilitation

Refer to **Attachment 5** detailing the proposed use of "in-situ" soil and clay seams below the lower zeolite seam as presented in the August 2022, CMZ Rehabilitation Repair Strategy prepared by MINESOILS.

l. Mine Subsidence

Not applicable in regard to underground mining that is not conducted within ML 1395.

For mine stability including recent slippage issues refer to the Geotechnical and mining inspection relating to the November 2021 slope instability prepared by Boden Resource Management Pty Ltd and included as **Attachment 4**.

m. Management of potential cultural and heritage issues

In March 1994, Envirosciences Pty Limited in association with the Nungaroo Local Aboriginal Land Council conducted an archaeological survey over an area of approximately 150 ha covering the proposed zeolite open cut mine, plant and surrounding areas.

No areas or structures of aboriginal heritage significance were discovered during investigations.

An Aboriginal Heritage Information Management System (AHIMS) search was conducted on 28 May 2014 as part of due diligence for exploration drilling within ML1395. This search has further shown that no Aboriginal sites are recorded in or near this location and that no Aboriginal Places have been declared in or near this location.

However, in the event of any such sites being discovered during operations, work in the immediate vicinity of the site will immediately cease and the NSW National Parks and Wildlife Service and Nungaroo Local Aboriginal Land Council notified.

Refer to Condition 7, Conditions of Consent, DA No. 59/95.

n. Exploration activities

No outstanding rehabilitation requirements for exploration within ML1395 at present.

Any future exploration activities will be conducted in accordance with conditions of ML 1395.

6.2.2 Decommissioning

Decommissioning requirements for mine infrastructure are considered to be minimal and will be some time in to the future.

The use of existing infrastructure for example power, water storage, fencing, roadworks, erosion control works etc. are considered ancillary to agricultural use that is both a co-existing land use and post mining land use consistent with development consent and land zoning. Such infrastructure will remain.

At lease relinquishment all surplus mining and processing plant and equipment not retained or required by the landholder will be stored on site until sold and subsequently removed.

6.2.3 Landform establishment

A final conceptual landform and rehabilitation plan is presented in Plans 1 and 2 in **Section 5**.

a. Water management infrastructure

As stated in **Section 6.1** a small water storage is likely to be formed at the bottom of the mine void at approximately the 520m elevation as shown on the final landform and rehabilitation contours plan - Plan 2. Existing drainage lines can drain into the mine void with overflows reporting into current sediment dams immediately to the north.

These water management structures plus the existing/modified farm dams in and around the processing plant area as shown on the final landform rehabilitation features plan – Plan 1 are to be retained for agricultural use.

b. Final landform construction; general requirements

Final landform construction in particular the existing southern “upper slopes” have been subject to a geotechnical assessment following previous slope stability issues.

Included in **Attachment 4** is the Memo Report regarding the Geotechnical and mining inspection relating to the November 2021 slope instability prepared by Boden Resource Management Pty Ltd. In addition, included in **Attachment 5** is CMZ’s Rehabilitation Repair Strategy prepared by Land & Rehabilitation Specialists MINESOILS.

Information provided in these studies guide final landform construction and growth medium development in creating a stable landform with native vegetation cover consistent with maintaining the existing rough grazing land use.

b. Final landform construction; reject emplacement areas and tailings dams

The overburden emplacement area of approximately 1.3ha is immediately adjacent to and forms part of the eastern mining area and new haul road access.

North facing slopes of both the final overburden emplacement and mine haul road to be battered to approximately 1 in 3 in preparation for revegetation.

c. Final landform construction; final voids, highwalls and low walls

This phase of rehabilitation has recommenced in the “low wall” or existing southern “upper slopes” following the implementation of a revised mining and rehabilitation plan. The revised plan incorporates design and methodology for future zeolite mining to approximately 520m elevation and for landform stability and rehabilitation of existing southern “upper slopes” above 535m.

The approximate, 1.6ha area of “low wall” available for re-profiling and progressive rehabilitation is shown in Error! Not a valid bookmark self-reference..

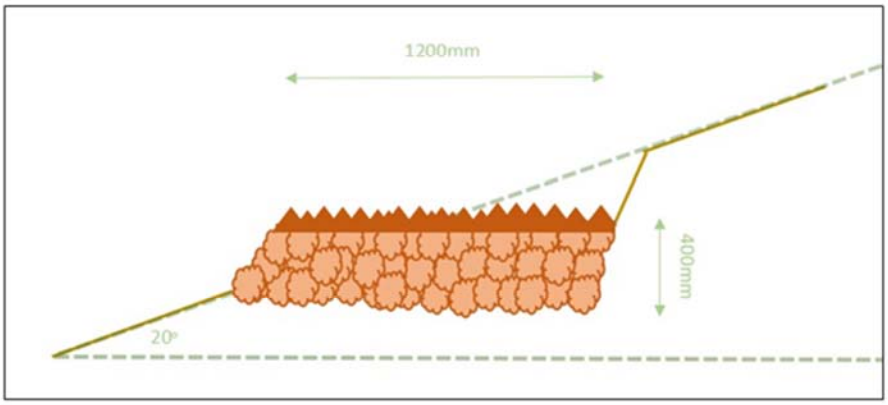
Following initial clean up of the “upper slopes” landform rehabilitation proposed by MINESOILS comprises the removal of a problematic clay layer and the development of benches into the parent material using a standard cut and fill technique. The benches will be created as per the schematic diagram included in **Plate 2**. Cutting benches directly into unweathered rock is anticipated to result in a more stable landform.

Remaining mine void, a safe and stable benched landform with safe access to any future farm water storage.

Plate 1 View of southern “upper slopes” from 535m bench, lower zeolite seam in foreground.

Plate 2 Landform rehabilitation bench design – MINESOILS August 2022

MINESOILS
LAND & REHABILITATION SPECIALISTS



6.2.4 Growth medium development

Subject to successful and stable landform rehabilitation further preparation according to MINESOILS of the benched “upper slopes” as growth zones for vegetation involves using ripped parent material and clay layer, and potentially soil ameliorants as required to minimise erosion and promote establishment of vegetation.

Laboratory analytical results of soil resources collected by MINESOILS and included in **Attachment 5** indicates that the soil resources available in immediate proximity to the proposed rehabilitation works are generally physically and chemically stable. Nutrient and pH levels indicate suitability for growth. The exchangeable sodium percentage of 4.9 % indicates a mild sodicity risk, however this can be reduced further with the application of gypsum or organic matter if required.

The surface of the benches should be ripped and left in as coarsely structured a condition as possible in order to promote infiltration and minimise erosion until vegetation is established, and to prevent anaerobic zones forming.

6.2.5 Ecosystem and land use establishment

Following appropriate preparation of the “upper slopes” as detailed in **Section 6.2.4** the benches formed will be sewn with seed and fertilizer. For native revegetation activities in rehabilitation areas MINESOILS recommend use of local provenance seed for direct seeding , although the use of tube stocking can be applied where considered necessary.

A mixture of native grasses and trees will be selected based on the species currently established in the area. Target species will include Callitris endlicheri (Black Cypress Pine), which grows prolifically in adjacent uncleared areas.

Other species endemic to the area that are suitable for revegetation are listed in Attachment B included in MINESOILS Rehabilitation Repair Strategy, refer to **Attachment 5**.

These species have been recommended by Tamworth Regional Landcare Nursery, who provide revegetation support as part of rehabilitation works for a number of mines and quarries in the region.

6.2.6 Ecosystem and land use development

In conjunction with landform rehabilitation and native ecosystem development the following additional management measures are recommended by MINESOILS for consideration during the ecosystem and land use development phase noting that the landholder is the mine owner for the majority of the 8.1ha of mine disturbance.

- Preferentially schedule and undertake revegetation activities in or just before suitable seasonal conditions.
- Spread seed as soon as possible following ripping/scarifying. If seeding is delayed following ripping/scarifying, undertake an assessment to determine whether further re-ripping/tilling is required before applying seed to ensure sufficient surface roughness (e.g. to break up any crusting that may have resulted from rainfall events).
- Monitor and control weed growth on revegetated areas.
- Implement suitable erosion control measures (e.g. catch drains, sediments dams, silt fences, mulches, cover crops) to minimise soil loss from areas undergoing rehabilitation. Implement erosion and sediment controls in accordance with Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries (DECC 2008b).

- Conduct regular site inspections to assess soil conditions and erosion, drainage and sediment control structures, runoff water quality, revegetation germination rates, plant health and weed infestation, until vegetation has become well established and the site can be considered stable.
- Record outcomes of inspections and implement any required intervention/adaptive management actions as soon as practicable after a monitoring program indicates that rehabilitation performance is unsatisfactory as part of the rehabilitation management and maintenance program.

6.3 Rehabilitation of areas affected by subsidence

No impacts from underground mining.

7 PART 7 – REHABILITATION QUALITY ASSURANCE PROCESS

Assistance to be sought from Land and Rehabilitation Specialists in implementing a simple quality assurance process as part of the rehabilitation monitoring program.

8 PART 8 – REHABILITATION MONITORING PROGRAM

8.1 Analogue baseline monitoring

Assistance to be sought from Land and Rehabilitation Specialists in selection of suitable analogue baseline monitoring sites.

8.2 Rehabilitation establishment monitoring

Assistance to be sought from Land and Rehabilitation Specialists in the development of a simple inspection and reporting regime once revegetation commenced.

8.3 Measuring performance against rehabilitation objectives and rehabilitation completion criteria

Further assistance from Land and Rehabilitation Specialists to be sought firstly to review the proposed rehabilitation completion criteria as presented in **Table 6** and their suitably for measuring the performance of the proposed revegetation currently planned.

9 PART 9 – REHABILITATION RESEARCH, MODELLING AND TRIALS

9.1 Current rehabilitation research, modelling and trials

Current rehabilitation research, modelling and trials at the CMZ mine is based upon advice and recommendations contained in the CMZ Rehabilitation Repair Strategy developed by Land and Rehabilitation Specialists MINESOILS.

9.2 Future rehabilitation research, modelling and trials

No future rehabilitation research, modelling and trials considered until outcome of current rehabilitation practices assessed.

10 PART 10 – INTERVENTION AND ADAPTIVE MANAGEMENT

To be developed as required in association with rehabilitation monitoring program.

11 PART 11 – REVIEW, REVISION AND IMPLEMENTATION

This is the first rehabilitation management plan for CMZ in accordance with new operational rehabilitation reform documentation. In addition, the first 3 Year forward program has been prepared covering a revised mine and rehabilitation plan commencing 4 June 2022.

A review of this rehabilitation management plan is to be considered no later than 1 August 2025.

Attachment 1

Development Consent DA59/95

Quirindi Shire Council

RECIPIENT OF THE A.R. BLUETT MEMORIAL AWARD - 1991

Telephone (067) 46 1755
Facsimile (067) 66 3038

All communications to be address to the:
General Manager
P.O. Box 152,
Quirindi. 2343.

Reference: D.A. 59/95 PFS:KT

Your Reference:

Contact: Mr. Sheridan

23rd October, 1995.

Mr. K.J. Heath,
Managing Director,
Castle Mountain Enterprises Pty. Ltd.,
P.O. Box 54,
QUIRINDI. 2343

Dear Sir,

Development Application 59/95

Zeolite Mine and Processing Plant

Castle Mountain Enterprises Pty. Ltd.

Please find enclosed Council's Instrument of Consent for the zeolite mine and processing plant for Castle Mountain Enterprises Pty. Ltd.,

Should further information be required relative to the conditions of consent, please contact Council's Director of Environmental Services, Mr. Ron Short.

Yours faithfully,

P.F. Sheridan,
GENERAL MANAGER.

Encl.

QUIRINDI SHIRE COUNCIL

Telephone: (067) 461755
Fax: (067) 663038

ALL COMMUNICATIONS TO BE ADDRESSED TO
THE GENERAL MANAGER,
STATION STREET,
QUIRINDI. 2343

Council Chambers,
Station Street,
QUIRINDI. 2343

In your reply
please quote **D.A. 59/95**

FORM 7

Environmental Planning and Assessment Act, 1979

NOTICE TO APPLICANT OF DETERMINATION OF A DEVELOPMENT APPLICATION

CASTLE MOUNTAIN ENTERPRISES PTY. LTD.
P.O. BOX 54,
QUIRINDI. 2343

being the applicant in respect of Development Application **59/95.**

Pursuant to Section 92 of the Act notice is hereby given of the determination by the consent authority of the development application abovementioned relating to the land described as follows:-

Consent to extract zeolite rock and to process it by crushing and transporting it off site is issued to Castle Mountain Enterprises Pty. Ltd. in respect to Part Lot 5 and Portion 314, Parish of Quirindi.

The development application has been determined by -

* ~~(a) granting of consent unconditionally;~~
* (b) granting of consent subject to the conditions specified in the notice;
* ~~(c) refusing the consent.~~

Endorsement of date of consent: 23rd October, 1995.

NOTES:

(1) To ascertain the date upon which the consent becomes effective refer to Section 93 of the Act.
(2) To ascertain the extent to which the consent is liable to lapse refer to Section 99 of the Act.
(3) Section 97 of the Act confers on an applicant who is dissatisfied with the determination of a consent authority has a right of appeal to the Land and Environment Court exercisable within 12 months after receipt of this notice.

DETERMINATION OF DEVELOPMENT APPLICATION NO. **59/95**

The conditions of the consent are set out as follows:-

(1) The mining and processing of zeolite rock be contained within Part Lot 5 D.P. 253788 and Part Portion 314, Parish of Quirindi, as shown on the map attached to this consent (the delineation of which is to be carried out by survey at the applicant's full cost), such containment being designed to:

(a) provide a buffer zone between the extraction and processing areas and existing residences; and

(b) to protect the scenic values of the Castle Mountain escarpment, including the skyline when viewed from Who'd-A-Thought-It Lookout.

(2) (a) The provision of vehicular access from the site being provided through Portion 314, directly to M.R. 126 at a location and to a standard (including that section of the access within the M.R. 126 road reserve) acceptable to the Council and the R.T.A., such access to be approved, constructed and used within 180 days of the date of this consent.

(b) The applicant entering into a road usage agreement designed to preclude the use of Callaghan's Lane, such agreement to be completed within 180 days of the date of this consent.

(3) Evidence being submitted to Council prior to production commencing that:-

(a) the necessary approvals from the Environment Protection Authority of N.S.W. have been received;

(b) an adequate rehabilitation erosion and sediment control plan has been submitted to and approved by the Department of Land & Water Conservation;

(c) the Department of Mineral Resources has approved of the whole of the proposal.

(4) The submission to Council, within 180 days of the date of this consent, a noise audit conducted by an independent consultant with recognised expertise in noise measurement, such audit to relate to:-

(i) operations at crushing plant;
(ii) operations at excavation site

and to clearly indicate the comparison between planning levels as specified by the Environment Protection Authority and actual levels resulting from the audit.

(5) The access road within Portion 314 and all internal roads be covered for their full length with dust suppressing materials and be maintained in that condition and when necessary, a water cart be used to provide additional dust control.

(6) The applicant engage a structural engineer practising in the area of building design or an architect to inspect and record the structural integrity and state of repair of the 3 nearest residential dwellings (including that of H. & E. Golland and excluding that of K. & M. Heath), prior to mining commencing and that an annual inspection of H. & E. Golland's dwelling be made and the resulting report be submitted to H. & E. Golland.

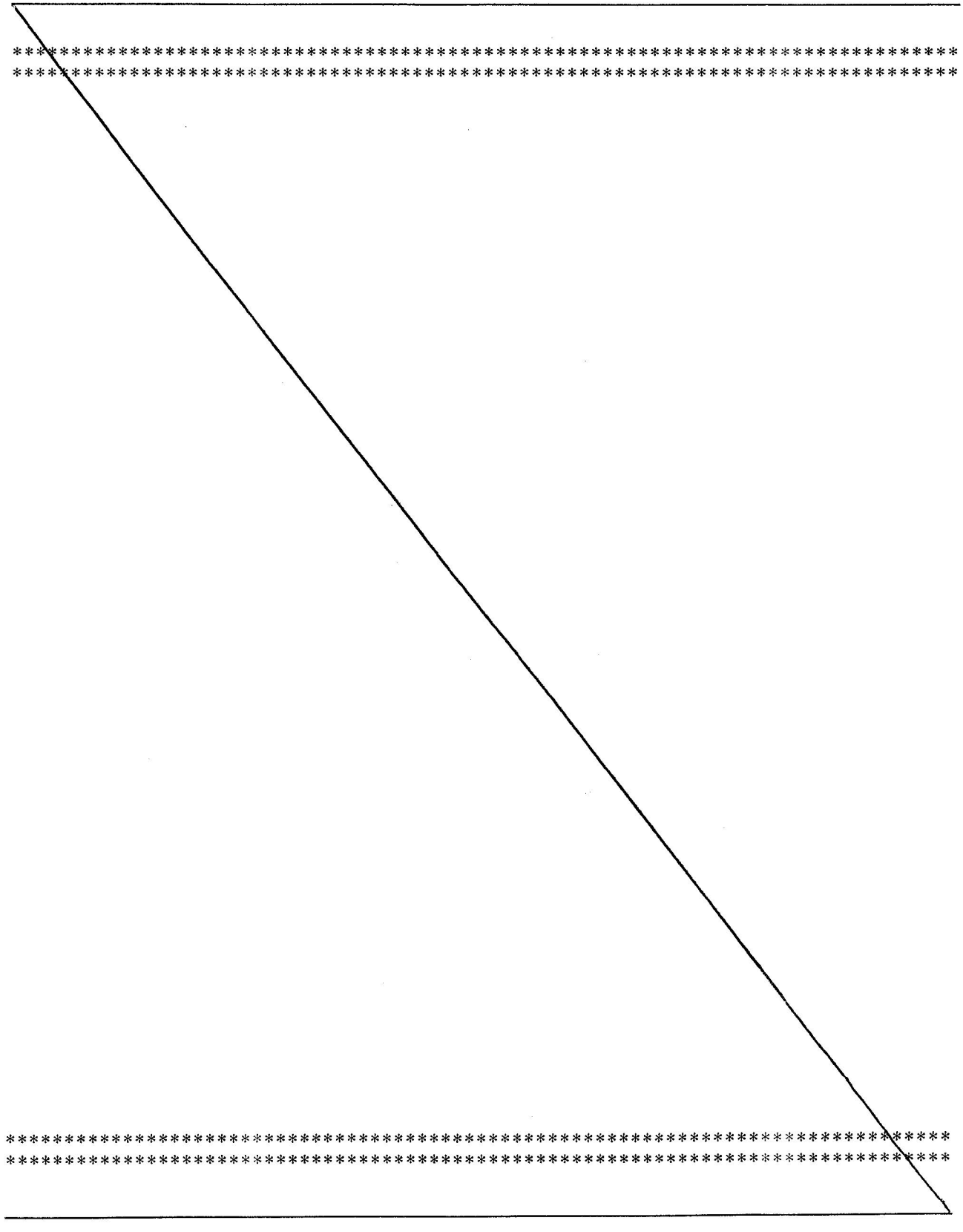
(7) All staff operating at the extraction sites be required to observe and advise Company Principals of the existence of any sites of aboriginal significance that may be found and that the National Parks & Wildlife Service be notified immediately.

(8) Compliance with bush fire management provisions of Council's District Fire Plan.

(9) Should the daily throughput of the crushing plant need to be increased over and above that level of throughput resulting from the capacity of the plant located on the site as at the date of this approval, a further assessment be carried out to ensure compliance with Environment Protection Authority standards.

DETERMINATION OF DEVELOPMENT APPLICATION NO. **59/95**

(10) The fuel storage area at the crushing plant be provided with a bunded enclosure and overflow storage system to eliminate accession to groundwater.



DETERMINATION OF DEVELOPMENT APPLICATION NO. **59/95**

The reasons for consent are as follows:-

(1) Condition to provide buffer zone between development and existing and future infill development and further to protect existing landscape.

(2) (a) Condition designed to preclude heavy traffic from Callaghan's Lane to eliminate dust, noise and general impact on existing residential development and future infill residential development.

(b) Designed to ensure that both loaded and empty trucks hauling to and from the site do not use Callaghan's Lane so as to eliminate dust, noise and general impact on existing residential and future infill residential development along Callaghan's Lane.

(3) To ensure that all approvals from Government Agencies are received before the commencement of development.

(4) To ensure that the development can substantiate its ability to meet the noise levels required so as to minimise the impact on nearby residential development.

(5) To protect residential interests from the effect of dust from the operations of the development.

(6) To provide evidence of the structural status of the specified buildings before any significant mining commences so that the interests of all parties is protected from claims of damage from mining operations.

(7) While the Environmental Impact Statement did not reveal any significant sites, it is considered that briefing of operational staff and the placement of an advisory protocol should such a site be discovered as outlined in this condition would provide reasonable safeguards against destruction of a significant site.

(8) To protect the interests of all parties concerned.

(9) Allows for ongoing impact assessment to take place as capacity of the mining process is increased.

(1) A protection measure to control the escape of fuel to ground water supplies or to other areas likely to result in combustion.

For and on behalf of
QUIRINDI SHIRE COUNCIL

P.F. SHERIDAN,
GENERAL MANAGER.

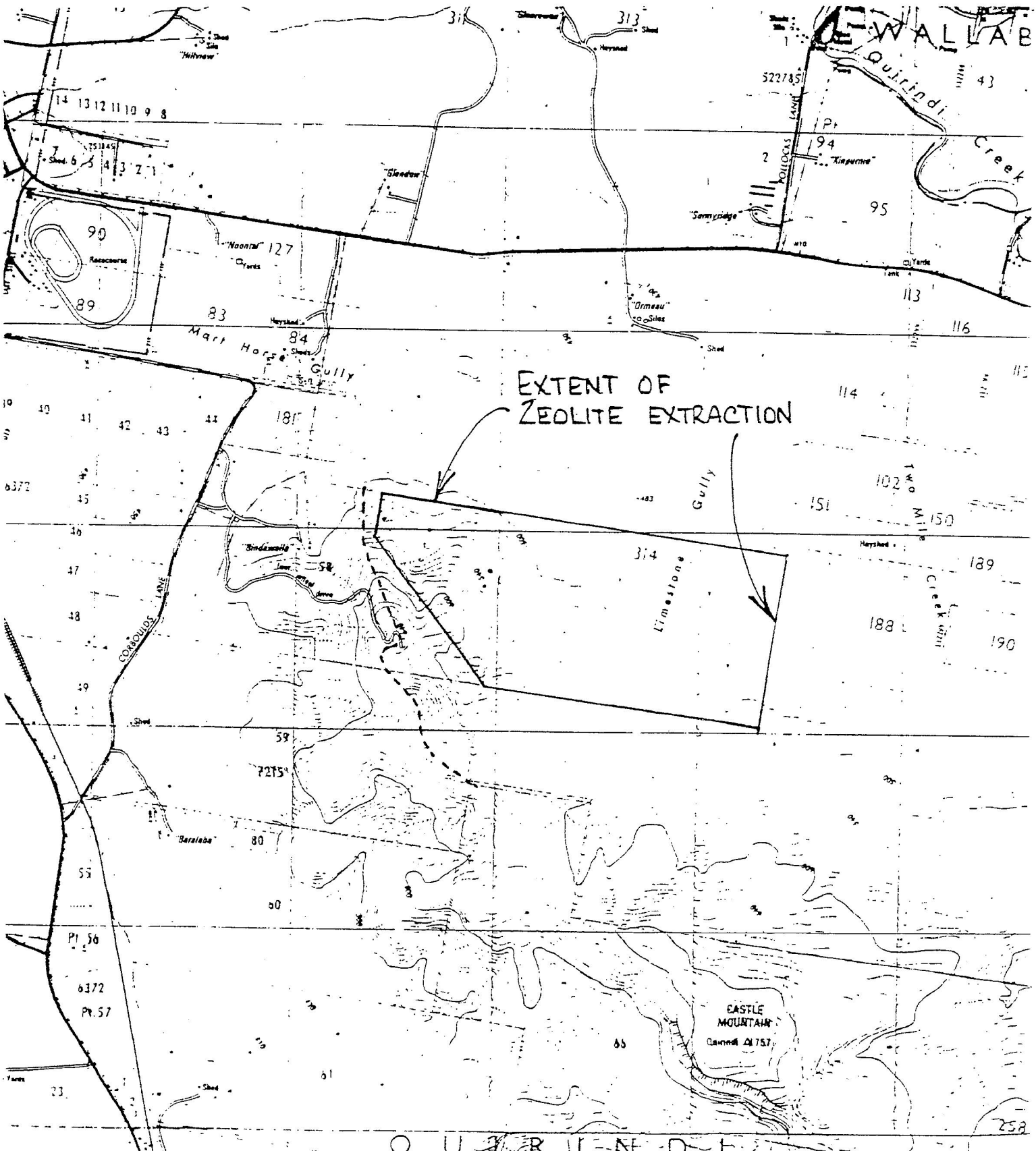
23rd October, 1995.

DEVELOPMENT APPLICATION 59/95

CONSENT:	**Zeolite Mining & Processing Plant**
APPLICANT:	**Castle Mountain Enterprises Pty. Ltd.**

Condition 1 of Approval - "Map attached".

Containment of activity as described in Condition No. 1 "The delineation of which is to be carried out by survey at the applicant's full cost."



Reference: RKS:jlt04/0051 DA59/95

Contact: Bob Stewart

Your Ref.:

24 February 2004

Mr Gordon Heath
Castlemountain Zeolites
PO Box 34
QUIRINDI NSW 2343

Dear Sir

Development Consent 59/95
Castlemountain Zeolites

I refer to your letter dated 26 August 2003 and confirm that Council considered the issue at its meeting on 15 October 2003. Council resolved that:

1. Council offer no objections to your proposed hours of operation for the processing plant provided that at all times that all the environmental performance standards as set by the conditions of development consent are met, including noise emissions;

2. All other operations on the site are restricted to those as set out in the development approval 59/95 and submitted documentation;

3. Council will conduct ongoing monitoring of the operations of the processing plant including an audit of noise during night time operations.

If Council receives complaints of exceedance of environmental standards it will act to enforce compliance through the *Protection of the Environment Operations Act 1997* which may include the company meeting any monitoring costs by Council or its consultants.

If you have any questions please do not hesitate to contact me.

Yours faithfully

R K Stewart
Director – Environmental & Community Services

LIVERPOOL PLAINS SHIRE COUNCIL

Reference: RKS:DCK 0409/07
DA 59/95 7.2.4

Contact: **Bob Stewart**

13 July 2007

Castle Mountain Zeolites
PO Box 54
QUIRINDI NSW 2343

Attn: Gordon Heath

Dear Sir

RE: DA 59/95 - Proposed Secondary Screening & Crushing Plant

I refer to your letter dated 09 July 2007 regarding the proposed introduction of a second crushing and screening plant in association with current extractive industry approved under DA 59/95 on 23 October 1995.

Due to the nature of the development and that it is not proposed to alter the original approval in relation to the area of the operations or the quantity of extraction Council provides the following comments:

- Council offers no objection to the proposal as stated in your letter and would not require the lodgment of a s96 Modification of Consent under the *Environmental Planning & Assessment Act 1979* provided that the applicant can provided written documentation confirming that the proposed equipment does comply with the current acceptable limits for noise and dust emissions as required by the Environmental Protection Authority (EPA).
- Written confirmation from the EPA is also required.

No equipment relating to this issue is to be commissioned until such time as Council has received the requested confirmations and approves the operation of that equipment in writing.

If you have any questions please contact me on 67 461 755.

Yours faithfully,

R. K. Stewart,
DIRECTOR ENVIRONMENTAL & COMMUNITY SERVICES.

LIVERPOOL PLAINS SHIRE COUNCIL
60 Station Street PO Box 152 Quirindi NSW 2343 TEL 02 6746 1755 FAX 02 6746 3255
EMAIL lpsc@lpsc.nsw.gov.au WEBSITE www.lpsc.nsw.gov.au ABN 97 810 717 370

NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Now incorporating Department of Mineral Resources
ABN 51 73 412 4190-003

25 July 2007

Gordon Heath
Castle Mountain Zeolites
PO Box 54
QUIRINDI NSW 2343

Dear Gordon,

RE: SECONDARY CRUSHING AND SCREENING PLANT

The Department of Primary Industry - Mineral Resources (DPI) acknowledges receipt of the letter (Ref: 11/07/2007) requesting approval to install a secondary crushing and screening process in the existing Castle Mountain Zeolite operation.

The secondary crushing and screening process activities are acknowledged and may commence once your company obtains all consent, licence or approval which may be necessary from the relevant Shire Council or any other Government Department or Instrumentality. You are reminded that all practical measures must be implemented to avoid environmental impact from the proposed activities.

DPI will review the requirement to submit a Mining Operation Plan with a full rehabilitation liability calculation and will contact you in the near future.

If you have any questions, please contact me on 0429168008.

Yours faithfully,

25/7/07

MONIQUE MEYER
A/Senior Environmental Officer

Mineral Resources - Environmental Sustainability Branch
PO Box 51
SINGLETON, NSW 2330 Australia

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CASTLE MOUNTAIN ZEOLITES
the finest zeolites

Station Street, Post Office Box 54 Quirindi NSW 2343 Australia
Tel 02 6746 3555 Fax 02 6746 2488
Email soles@cmzeolites.com.au Website www.cmzeolites.com.au
Division of Castle Mountain Enterprises Pty Ltd ABN 79 003 274 539

11 July 2007

Mr Mark Nolan
NSW Department of Primary Industry
P.O. Box 344
Hunter Region Mail Centre
Maitland NSW 2310

Dear Mark

I would like to inform your Department that we would like to proceed to establish a secondary crushing and screening plant on our existing production plant site, that would use existing overburden from the quarry to make road base and aggregates. Zeolite ore would also be processed to produce an additional range of larger size materials that cannot currently be produced in our existing plant.

Establishment of a secondary crushing and screening plant would involve:
A. Leveling of an area around the processing plant to allow room for the additional equipment, stockpiles of road base and other products.

B. The installation of a belt feeder, scalping screen, secondary crushers, sizing screens, reticulating conveyors and gen set.

There would be no major changes to the operations at the quarry as we are already drilling , blasting, excavating and carting the overburden by dump trucks to be dumped as per the attached documents prepared by Gordon Atkinson and Associates Pty Ltd. The only difference is that we would continue the dump trucks to the existing plant to convert the overburden into road base and other products.

We would envisage only having either the existing crusher or the new proposed crushing and screening plant working at any one time. The Gen Set would be replaced by connecting to the mains power supply as soon as practically possible. (We currently have mains power available at the plant)

Could you please advise if there is any further information you require or applications that should be sought.

Yours faithfully

Gordon Heath
General Manager

LIVERPOOL PLAINS SHIRE COUNCIL

Reference: DA 59/95 RVK 35806.53 136/09

Contact: Ron Van Katwyk

27 March 2009

The Managing Director
Castle Mountain Zeolites
PO Box 54
QUIRINDI NSW 2343

Dear Mr Heath

Development Application 59/1995 –
Property Improvements Ancillary to Agricultural Use

I refer to your letter dated 9 March 2009 in relation to the zeolite mine approved under Development Application 59/1995 and in particular what mining related improvements are common to general agricultural use.

Council's records indicate that Lot 5 DP 253788 has an area of 121.30 ha in which Council is of the understanding that a small portion of this land area is being utilised for mining operations while the residual is being used for agricultural purposes.

The allotment is zoned 1(a) Rural "A" Zone under the Quirindi Local Environmental Plan 1991 in which agricultural (other than intensive animal husbandry establishments and animal boarding , breeding and training establishments) is classified as being a use that does not require development consent.

Therefore your interpretation is correct in that the land being used for agriculture and the improvements to the property generally which are common to both agriculture and the small scale mining activity are permitted to remain, following cessation of mining activity and would not require the consent of Council.

Council's interpretation of property improvements related to agriculture include such ancillary infrastructure as power, water storage (surface and/or roof catchment), fencing, roadworks, erosion control works and like improvements commonly utilised with a general farming operation. Council's interpretation of those modifications to the property and its use for mining purposes include such land disturbance and specialised equipment necessary and resulting from the extraction of the sought after mineral.

I trust this is sufficient for your purposes and should you have any further enquiries please contact Council's Director Environmental and Community Services, Mr Ron Van Katwyk on 6746 1755.

Yours faithfully

R S (Ron) Van Katwyk
DIRECTOR ENVIRONMENTAL & COMMUNITY SERVICES

Attachment 2

Mining Lease ML No.1395

Draft Instrument of Variation

Mining Lease 1395 (1992)

I, **JAMIE TRIPODI, Executive Director Assessments & Systems**, Mining Exploration and Geoscience in the Department of Regional NSW, with the delegated authority of the Minister under section 261B and clause 12 of Schedule 1B of the *Mining Act 1992* (the Act), **vary** the conditions of mining lease **ML 1395 (1992)** as described in Schedule A.

The conditions of **ML 1395 (1992)**, as varied, are set out in Schedule B.

The variation takes effect on DD Month 2022.

JAMIE TRIPODI
Executive Director Assessments & Systems
As delegate for the Minister administering the *Mining Act 1992*
Delegation date: 14 May 2018

Dated: [date of instrument]

Schedule A

Condition		Variation	New Condition
	Definitions	Definitions of 'Department', 'Environment' 'Environmental incident notifications and reports' and 'Harm to the environment' omitted as no longer used.	N/A
1	Notice to Landholders	Wording amended to modernise the condition	1. Notice to Landholders – see Schedule B
2	Rehabilitation	Condition omitted	N/A
3	Mining Operations Plan and Annual Rehabilitation Report	Condition omitted	N/A
4	Compliance Reporting	Condition omitted	N/A
5	Environmental Incident Report	Condition omitted	N/A
6	Resource Recovery	Condition omitted	N/A
7	Security	Condition amended to modernise the wording. Condition has been re-numbered due to omission of other conditions.	2. Security– see Schedule B
8	Cooperation Agreement	Condition amended to modernise the wording. Condition has been re-numbered due to omission of other conditions.	3. Cooperation Agreement – see Schedule B
N/A		New condition attached	4. Assessable Prospecting Operations– see Schedule B
SPECIAL CONDITIONS			
Nil			

Schedule B

Mining Lease Conditions

(Version as at February 2022)

Definitions

Words used in this mining lease have the same meaning as defined in the *Mining Act 1992* except where otherwise defined below:

Term	Definition
Act	means the *Mining Act 1992.*
Landholder	for the purposes of these conditions: • does not include a secondary landholder • includes, in the case of exempted areas, the controlling body for the exempted area.
Minister	means the Minister administering the Act.

Note:

1. The rights and duties of the Lease Holder(s) are those prescribed by the *Mining Act 1992* and the Mining Regulation 2016, subject to the terms and conditions of this mining lease.
2. This mining lease does not override any obligation on the lease holder(s) to comply with the requirements of other legislation and regulatory instruments which may apply (including all relevant development approvals) unless specifically provided under the *Mining Act 1992* or other legislation or regulatory instruments.

MINING LEASE CONDITIONS

Standard conditions

See Mining Regulation 2016, Schedule 8A, Part 2.

NOTE TO HOLDERS: The prescribed standard conditions in the Mining Regulation 2016, Schedule 8A, Part 2 apply in addition to the conditions in this Schedule 2 (but have not been replicated in this mining lease). The conditions imposed by the Mining Regulation 2016 prevail to the extent of any inconsistency with the conditions in this Schedule 2.

General conditions

1. Notice to Landholders

(a) Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:

(i) that this mining lease has been granted or renewed; and

(ii) whether the lease includes the surface.

The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.

(b) If there are ten or more landholders to which notice must be given, the lease holder will be taken to have complied with condition 1(a) if a notice complying with condition 1(a) is published in a newspaper circulating in the region where the lease area is situated.

2. Security

The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations under the mining lease, including obligations under the mining lease that may arise in the future.

The amount of the security deposit to be provided has been assessed by the Secretary at **$174,550**.

3. Cooperation Agreement

The lease holder must make every reasonable attempt, and be able to demonstrate its attempts to the satisfaction of the Secretary, to enter into a cooperation agreement with the holder(s) of any overlapping authorisations issued under the *Mining Act 1992* and petroleum titles issued under the *Petroleum (Onshore) Act 1991*. The cooperation agreement should address but not be limited to:

- access arrangements
- operational interaction procedures
- dispute resolution
- information exchange
- well location
- timing of drilling

- potential resource extraction conflicts; and
- rehabilitation issues.

4. Assessable Prospecting Operations

(a) The lease holder must not carry out any assessable prospecting operation on land over which this lease has been granted unless:

(i) it is carried out in accordance with any necessary development consent; or

(ii) if development consent is not required, the prior written approval of the Minister has been obtained.

(b) The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval.

(c) An approval granted by the Minister under this condition may be granted subject to terms.

(d) The lease holder must comply with the approval granted to the holder under this condition.

Special conditions

Nil

Exploration Reporting

Note: *Exploration Reports (Geological and Geophysical)*

The lease holder must lodge reports in accordance with the requirements in section 163C of the Mining Act 1992 and clauses 59, 60 and 61 of the Mining Regulation 2016 as well as any further requirements issued by the Secretary under clause 62 of the Mining Regulation.

Guidelines for the structure, content and data format requirements for reports are set out in the Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales.

Attachment 3

EPL No.7511

Environment Protection Licence

Licence - 7511

Licence Details	
Number:	7511
Anniversary Date:	29-January

Licensee
CASTLE MOUNTAIN ENTERPRISES PTY. LIMITED
PO BOX 54
QUIRINDI NSW 2343

Premises
"BINDAWALLA"
CALLAGHAN'S LANE
QUIRINDI NSW 2343

Scheduled Activity
Crushing, Grinding or Separating
Mining for Minerals

Fee Based Activity	Scale
Crushing, grinding or separating	0-30000 T processed
Mining for minerals	0-30000 T produced

Region
North - Armidale
Ground Floor, NSW Govt Offices, 85 Faulkner Street ARMIDALE NSW 2350
Phone: (02) 6773 7000
Fax: (02) 6772 2336
PO Box 494 ARMIDALE
NSW 2350

Environment Protection Licence

Licence - 7511

Environment Protection Licence

Licence - 7511

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

CASTLE MOUNTAIN ENTERPRISES PTY. LIMITED
PO BOX 54
QUIRINDI NSW 2343

subject to the conditions which follow.

Environment Protection Licence

Licence - 7511

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, Grinding or Separating	Crushing, grinding or separating	0 - 30000 T processed
Mining for Minerals	Mining for minerals	0 - 30000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
"BINDAWALLA"
CALLAGHAN'S LANE
QUIRINDI
NSW 2343
LOT 5 DP 253788, LOT 3142 DP 1134392

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
MILLING OF ZEOLITE ORE

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and

b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Noise limits

L2.1 Noise from the premises must not exceed an LA10 (15 minute) noise emission criterion of 5 dB(A) above the background noise level LA(90,T), except as expressly provided by this licence.

L2.2 Noise from the premises is to be measured within six metres of the facade of any noise sensitive location (eg residential, schools, hospitals etc) to determine compliance with this condition.

5 dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character.

3 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

Environment Protection Licence

4 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after:
a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

5 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

Environment Protection Licence

6 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 7511

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 7511

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 05-May-2000

End Notes

1 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>

2 Licence varied by notice 1514236 issued on 18-Jun-2013

Attachment 4

Geotechnical and mining inspection relating to the November 2021 slope instability, Boden Resource Management Pty Ltd (2021)

Boden Resource Management Pty. Ltd.

Mr Gordon Heath and Mr Kurt Heath
Castle Mountain Zeolites
122 Station St,
Quirindi NSW 2343

Thursday, 10th February 2022

Memo Report : Geotechnical and mining inspection relating to the November 2021 slope instability

This memo report provides a response to the prohibition notice given to Castle Mountain Enterprises Pty Ltd by the NSW Resources Regulator on 15 November 2021. A highwall (or technically the low wall as the highwall is the near vertical northern and western walls) slip was observed that filled the eastern end of the open cut and caused one of the open cut access roads to collapse.

In response, mining at depth was reported to have ceased and a site inspection was conducted on the 19 November 2021. This memo report is as an outcome of this inspection and has been compiled in consultation with Mr Kurt Heath and Mr Gordon Heath.

The contributing factors of rainfall and presence of the underlying clay seam identified in the notice seem to be the likely main factors for this slope failure. Other possible contributing factors could also be attributable include the;

- dip and dip direction of the clay seam with respect to the low wall slope angle
- nature of the unconsolidated dump material present above the open cut access road
- possible concentration of rainfall runoff in the pre-slip area from the above contour drains into the unconsolidated clay, fill material and
- presence of a weathered igneous intrusion (dyke) on the eastern slip limb

Figure 1 Low wall slip – Eastern end, access road in background and access road deformation

Mode of Failure

The type of failure was circular in shape (Figure 2) and these are known to typically occur in unconsolidated dumps, weak rock or soil slopes which are especially triggered during or post rainfall events.

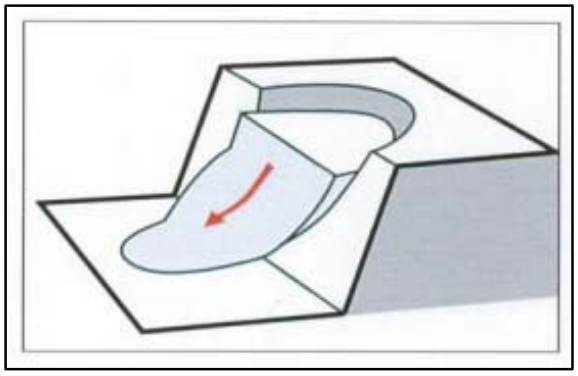

Figure 2 Circular Failure

Similar circular failure types on the low wall where overburden or waste rock has been emplaced has been reported in previous Castle Mountain Annual Environmental Management Report's (2017 and 2019) and can be observed in Figure 3.

Figure 3 Low wall slips

Remedial Actions
There are several methods in which to remediate the slip and decrease the likelihood of these types of slips from reoccurring.

- removal of the unconsolidated material from the low wall slope
- buttress the low wall dump toe with conglomerate boulders below clay layer (previously used in technique-Figure 4) or other dumped material
- disturb the basal clay seam (drill and blast) and form a shear barrier to stop low wall material encroaching the extraction area
- reduce the batter angle of the slope
- reduce dump heights, widen roadways, drainage
-

Figure 4 Previously used Boulder Buttress remediation technique

November 2021 Low wall Slip Remedial Plan
Due to recent change in market there is potential to remove the unconsolidated material previously shaped and contoured for rehabilitation and for it to be removed

to the clay layer, stockpiled and reprocessed and sold as a product material Given the history of other similar low wall slips and the steep low wall batter angle of 20° to 23° removal would be a preferred remediation option. This would be the safest outcome from the risk of slope instability as it eliminates the unconsolidated material hazard.

In terms of preferred mine rehabilitation slope angles, the 20° overall batter angle is at the upper limit for typically, successfully rehabilitated slopes. The overall slope angle doesn't take into account the steeper localised batter angles for the contour drain construction which also exacerbates the difficulty in successful revegetation outcomes.

Further work on alternate rehabilitation strategies for the low wall slope (e.g. hydroseeding or mulching) is planned to be undertaken for the final landform prior to closure as part of the Rehabilitation Management Plan.

Mine Recovery Sequence

1. Unconsolidated material to be excavated and removed to in situ rock (orange) which removes unconsolidated slip hazard in this area
2. Proposed road to be reinstated at lower level (including ½ wheel height safety berms)
3. Alternate sequencing of mining at depth virgin ore and southern low wall area to be excavated to remove potential slip material to MOP boundaries

Figure 5

Mine Design parameters review

The existing and currently approved Mining Operations Plan (MOP) has the following design and plan parameters contained within it.

Uppermost working bench level (AHD)	555 m
Lowermost working bench level (AHD) this MOP	540/535 m
Working Bench Height	5 m
Total number of Working Benches this MOP	4 to 5
Safety Berm Width (rehabilitation); (operational)	2 m; 5m
Open Cut Wall Slope (approx.)	20 °
Waste to Zeolite Ratio this MOP	3.6 : 1
Haul Road Width	6 m
Haul Road Gradient (max)	10%
Material Characteristics - In-situ Bulk Density	2.1

Figure 5 MOP Open cut design criteria

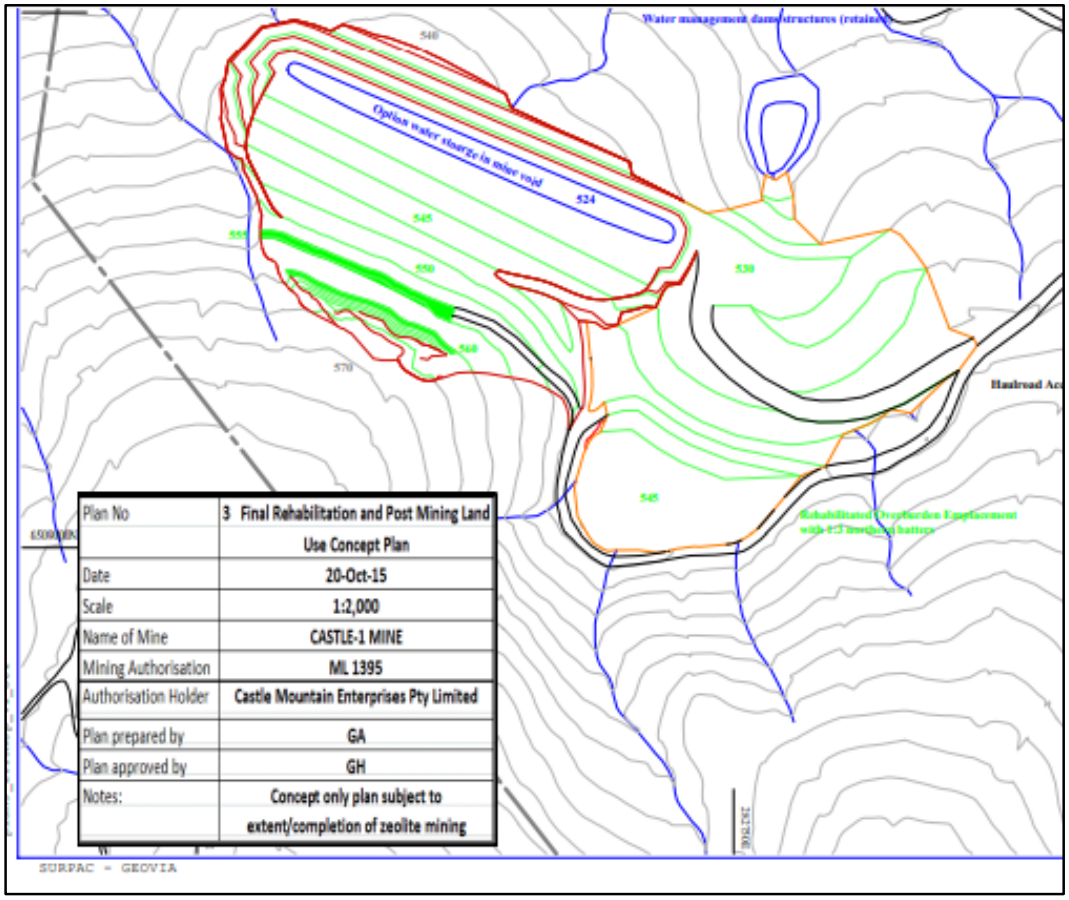

Figure 6 MOP Final Landform plan contingent on zeolite recovery

These mine design and final landform parameters generally still applicable for the operation.

Mine Sequencing, Lode removal and mining practice

Given the zeolite deposit is a moderately dipping, strata bound style lode extraction is conducive to a pseudo strip style of mining. The other main consideration of mining sequencing other than main geotechnical implications is the requirement to have a variety of ore types available. Given the southern low wall dump will be re-mined access for both ore types is desirable so a flexible mining system is required to allow access to both sources of material.

Continued good mining practices including accurate set out of the blasting patterns, sequential scaling of the excavation to reduce rock fall hazards, maintenance of vehicle and personnel berms, contractor management, adherence to mine design criteria, original equipment manufacturer machine slope tolerances and adaptive management of the mining sequence assists in the geotechnical management on a mine. These good practices and others are included in the NSW Resource Regulator – Health and Safety at Quarries (2018) guide.

Chris Armit

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Attachment 5

Castle Mountain Zeolites Rehabilitation Repair Strategy, Minesoils (2022)

MINESOILS
LAND & REHABILITATION SPECIALISTS

12th August 2022

Castle Mountain Zeolites
122 Station St,
Quirindi NSW 2343

Attention: Gordon Heath

Dear Gordan,

Re: Castle Mountain Zeolites Rehabilitation Repair Strategy

Background

Previous rehabilitation efforts at the CMZ mine site targeted an excavated north-east facing section of the landform covering an area of approximately 6,000m^2 on a slope of approximately 20^o. A significant portion of this area was underlain with a seam of approximately 300mm – 500mm of clay material, which resulted in the mass movement of a portion of the benched landform due to sub-surface slippage and subsequent erosion. Entire sections of established bench structure were compromised, and colluvium, soil and debris have accumulated towards the base of the slope.

Due to the potential for further slippage, this area has been identified as a site safety risk and an exclusion zone has been established at the base of the slope. A further strategic rehabilitation approach is therefore required to mitigate the site safety hazard and increase the long-term geotechnical stability and structural integrity of the landform.

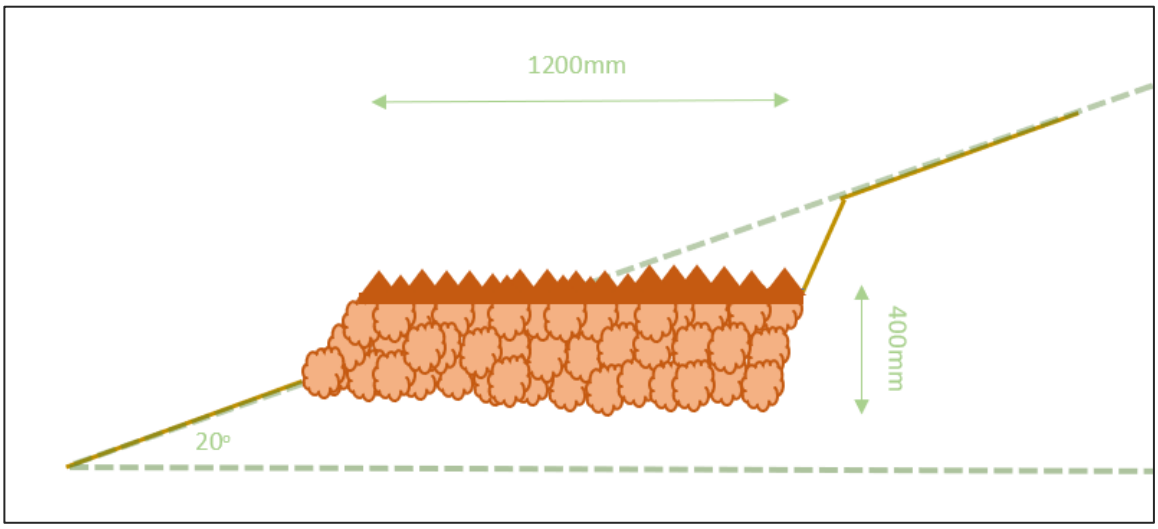
Rehabilitation Strategy

Rehabilitation is proposed to consist of the removal of the clay layer and the development of benches into the parent material using a standard cut and fill technique. The benches will be created as per the schematic diagram in Figure A. Cutting benches directly into unweathered rock is anticipated to result in a more stable landform.

Benches will be established in 10 m intervals down slope, with a bench width of approximately 1.2 to 2.0m. Given the exposed landform is partially visible to the Quirindi township and other receptors, tree's will be established on each bench to reduce visual amenity impacts.

Benching will be created down to the 535m AHD level, whereby a level, free draining landform will be established. This will ensure landform stability while allowing for potential downslope excavation activities in the future.

Figure A: Bench design



Management

Benches will be prepared as growth zones for vegetation by using ripped parent material and clay layer, and potentially soil ameliorants as required to minimise erosion and establish vegetation. This will provide a suitable growth medium with root zone material for developing and facilitate a water holding capacity to promote growth. Laboratory analytical results of the soil seam (refer **Attachment A**) indicates the soil resources available in immediate proximity to the proposed rehabilitation works are generally physically and chemically stable. Nutrient and pH levels indicate suitability for growth. The exchangeable sodium percentage of 4.9 % indicates a mild sodicity risk, however this can be reduced further with the application of gypsum or organic matter if required.

The surface of the benches should be ripped and left in as coarsely structured a condition as possible in order to promote infiltration and minimise erosion until vegetation is established, and to prevent anaerobic zones forming. Following appropriate preparation, these benches will be sewn with seed and fertiliser. Native revegetation activities in rehabilitation areas should use local provenance seed for direct seeding, although the use of tube stocking can be applied where considered necessary. A mixture of native grasses and trees will be selected based on the species currently established in the area. Target species will include *Callitris endlicheri* (Black Cypress Pine), which grows prolifically in adjacent uncleared areas. Other species endemic to the area that are suitable for revegetation are listed in **Attachment B**. These species have been recommended by Tamworth Regional Landcare Nursery, who provide revegetation support as part of rehabilitation works for a number of mines and quarries in the region.

The following addition management measures are recommended as per *Guideline: Rehabilitations Controls* (NSW Resource Regulator 2021):

- Preferentially schedule and undertake revegetation activities in or just before suitable seasonal conditions.
- Spread seed as soon as possible following ripping/scarifying. If seeding is delayed following ripping/scarifying, undertake an assessment to determine whether further re-ripping/tilling is required before applying seed to ensure sufficient surface roughness (e.g. to break up any crusting that may have resulted from rainfall events).
- Monitor and control weed growth on revegetated areas.
- Implement suitable erosion control measures (e.g. catch drains, sediments dams, silt fences, mulches, cover crops) to minimise soil loss from areas undergoing rehabilitation. Implement

erosion and sediment controls in accordance with *Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries* (DECC 2008b).

- Conduct regular site inspections to assess soil conditions and erosion, drainage and sediment control structures, runoff water quality, revegetation germination rates, plant health and weed infestation, until vegetation has become well established and the site can be considered stable.
- Record outcomes of inspections and implement any required intervention/adaptive management actions as soon as practicable after a monitoring program indicates that rehabilitation performance is unsatisfactory as part of the rehabilitation management and maintenance program.

To further discuss rehabilitation options and strategy for CMZ, please feel free to contact me on the details provided below.

Yours sincerely,

Matt Hemingway
Senior Environmental Consultant
Minesoils Pty Ltd

Mobile: 0459 950 335
E-mail: matt@minesoils.com.au

Attachment A

Laboratory Analytical Results of the Soil Seam

Analysis Report Soil

PLEASE NOTE: This excel spreadsheet does not constitute an official laboratory analysis report - please refer to the authorised PDF

Project No:	EW220958	**Date of Issue:**	31/05/2022
Customer:	CASTLE MOUNTAIN ZEOLITES	**Report No:**	2
Address:	PO BOX 54 QUIRINDI NSW 2343	**Date Received:**	6/05/2022
Phone:	0428 767 007	**Matrix:**	Soil
Fax:	6746 2488	**Location:**	
Email:	Gordon@cmzeolites.com.au	**Sampler ID:**	Client
		Date of Sampling:	
		Sample Condition:	Acceptable

				Client Sample ID:	**Clay**	**1**	**2**	**3**
				Source/Depth:				
Test Parameter	**Method Description**	**Method Reference**	**Units**	**LOR**	**220958-1**	**220958-2**	**220958-3**	**220958-4**
pH (1:5 in CaCl2)	Electrode	R&L4B2	pH units		8.06			
Chloride Soluble	DA	DAP-06	mg/kg	2	30.6			
Electrical Conductivity	Electrode	R&L 3A1	dS/m	0.01	0.14			
Extractable Nitrate-N	DA	DAP-03	mg/kg	0.5	<0.50			
Ammonium - N (Ex)	ExKCl/UV-Vis	PMS-22	mg/kg	2	<2.00	<2.00	<2.00	<2.00
Phosphorus Buffer Index	UV-Vis	PMS-12	mg/kg	10	57.6			
Phosphorus (Colwell)	Bicarb/UV-Vis	R&L 9B1	mg/kg	1	9.62			
Extractable Copper	DTPA/ICP	R&L 12A1	mg/kg	0.2	1.04			
Extractable Zinc	DTPA/ICP	R&L 12A1	mg/kg	0.2	0.38			
Extractable Manganese	DTPA/ICP	R&L 12A1	mg/kg	0.5	2.28			
Extractable Iron	DTPA/ICP	R&L 12A1	mg/kg	0.5	4.00			
Exchangeable Potassium	NH4Cl/ICP	R&L 15A1	mg/kg	10	161	83.0	59.0	98.7
Exchangeable Calcium	NH4Cl/ICP	R&L 15A1	mg/kg	20	8909	9196	4492	6748
Exchangeable Magnesium	NH4Cl/ICP	R&L 15A1	mg/kg	10	1035	969	358	269
Exchangeable Sodium	NH4Cl/ICP	R&L 15A1	mg/kg	10	633	288	178	749
Exchangeable Potassium	R&L 15A1	R&L 15A1	cmol/kg		0.41	0.21	0.15	0.25
Exchangeable Calcium	R&L 15A1	R&L 15A1	cmol/kg		44.5	46.0	22.5	33.7
Exchangeable Magnesium	R&L 15A1	R&L 15A1	cmol/kg		8.63	8.08	2.98	2.24
Exchangeable Sodium	R&L 15A1	R&L 15A1	cmol/kg		2.75	1.25	0.77	3.26

ECEC	Calculation	PMS-15A1	cmol/kg	56.3	55.5	26.4	39.5
Ca/Mg Ratio	Calculation	PMS-15A1	cmol/kg	5.16	5.69	7.53	15.1
K/Mg Ratio	Calculation	PMS-15A1	cmol/kg	0.05	0.03	0.05	0.11
Exchangeable Potassium %	Calculation	PMS-15A1	%	0.73	0.38	0.57	0.64
Exchangeable Calcium %	Calculation	PMS-15A1	%	79.1	82.8	85.2	85.4
Exchangeable Magnesium %	Calculation	PMS-15A1	%	15.3	14.5	11.3	5.68
Exchangeable Sodium %	Calculation	PMS-15A1	%	4.89	2.26	2.93	8.25
Gravel >2.0mm	Sieve	ASTMD422-63	%	0.5			
Coarse Sand 0.2-2.0mm	Sieve	ASTMD422-63	%	18.4			
Fine Sand 0.02-0.2mm	Sieve	ASTMD422-63	%	21.2			
Silt 0.002-0.02mm	Hydrometer	ASTMD422-63	%	17.1			
Clay <0.002mm	Hydrometer	ASTMD422-63	%	42.8			

Attachment B

Suitable Rehabilitation Target Species

Scientific Name	Common name
Large Trees	
Acacia salicina	Cooba
Alphitonia execelsa	Soap Bush or Red Ash
Angophora floribunda	Rough Barked Apple
Brachychiton populneus	Kurrajong
Eucalyptus albens	White Box
Eucalyptus blakelyi	Blakely's Red Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus dealbata	Tumbledown Gum
Eucalyptus melanophloia	Silver-leaved Ironbark
Eucalyptus moluccana	Grey Box
Eucalyptus populnea	Bimble Box or Poplar Box
Eucalyptus sideroxylon	Mugga Ironbark
Ficus coronata	Sandpaper Fig
Ficus rubiginosa	Rusty Fig
Acacia salicina	Cooba
Alphitonia execelsa	Soap Bush or Red Ash
Small Trees/ Large Shrubs	
Acacia deanii	Dean's Wattle
Acacia pendula	Weeping Myall
Alectryon oleifolius	Western Rosewood
Melaleuca bracteata	Black Tea Tree
Notolaea microcarpa	Native Olive
Pittosporum angustifolium	Berrigan
Shrubs	
Acacia decora	Western Silver Wattle
Acacia montana	Mountain Wattle
Senna artemesiodes	Silver Senna
Senna barcleyana	Pepper-leaved Senna
Swainsona galegifolia	Smooth Darling Pea

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