



ABN: 52 000 005 550

2022 Annual Review

for the

New Berrima Clay/Shale Quarry

**Project Approval PA08_0212
Mining (Mineral Owner) Lease 6**



Prepared in Conjunction with:

RWCorkery&co

February 2023



RWCcorkery&co



ABN: 52 000 005 550

2022 Annual Review

for the

New Berrima Clay/Shale Quarry

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February 2023

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Title Block

Name of Operation	New Berrima Clay/Shale Quarry
Name of Operator	The Austral Brick Company Pty Limited
Project Approval #	08_0212
Name of holder of Project Approval	The Austral Brick Company Pty Limited
Mining Lease #	M(MO)L6
Name of holder of mining lease	The Austral Brick Company Pty Limited
Water licence #	Not Required
Name of holder of water licence	Not Required
Annual Review start date	1 January 2022
Annual Review end date	31 December 2022
<p>I, Peter Young-Whitford, certify that to the best of my knowledge this audit report is a true and accurate record of the compliance status of The Austral Brick Company Pty Limited for the period 1 January 2022 to 31 December 2022 and that I am authorised to make this statement of behalf of The Austral Brick Company Pty Limited.</p> <p><i>Note.</i></p> <p>a) <i>The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</i></p> <p>b) <i>The Crimes Act 1900 contains other offences relating to false and misleading information: Section 192G (Intention to defraud by false or misleading statement – maximum penalty 5 years imprisonment); Section 307A, 307B and 307C (false or misleading application/information/documents – maximum penalty 2 years imprisonment or \$22,000, or both).</i></p>	
Name of authorised reporting officer	Peter Young-Whitford
Title of authorised reporting officer	Raw Materials and Mining Manager
Signature of authorised reporting officer	
Date	27 February 2023

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1 STATEMENT OF COMPLIANCE

The compliance status of relevant approvals was reviewed for the reporting period and is summarised in **Table 1**. It was determined that there were two non-compliances during the reporting period. These are further discussed in **Table 2**.

**Table 1
Statement of Compliance**

Were all conditions of the relevant approval(s) complied with?	Yes / No
Project Approval 08_0212	No
Mining (Mineral Owners) Lease 6	Yes

**Table 2
Non-compliances**

Relevant Approval	Cond #	Condition Description (summary)	Compliance Status	Comment	Where Addressed
PA 08_0212	2/2A	The Proponent must carry out the project in accordance with ... the conditions of this consent.	Non-compliant	Whilst the Water Management Plan was appropriately implemented, the required additional analytes on the four opportunistic surveillance monitoring events were not analysed during the reporting period.	7.2, 11
PA 08_0212	3/18	Water management Plan - The Proponent must implement the approved management plan.	Non-compliant		7.2, 11

Compliance Status Key

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur.
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur.
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).

2 INTRODUCTION

2.1 OVERVIEW OF OPERATIONS

The New Berrima Clay/Shale Quarry (the “Quarry”) is located approximately 1.5km east of New Berrima in the Southern Highlands region of New South Wales (see **Figure 1**). Project Approval 08_0212 (PA 08_0212) was granted on 6 July 2012 and last modified on 6 July 2017. The approved layout is shown in **Figure 2** with surrounding land ownership and residences shown in **Figure 3**.

Project Approval 08_0212 was physically commenced in 2016. On-site establishment activities commenced November 2020 and were completed during the reporting period. Site establishment activities have included site access intersection upgrade works, construction of the water management system, establishment of site access roads, construction of the visibility barriers, planting of the northern vegetation screen, progressive stabilisation / rehabilitation of completed works, sealing the western access road, relocation of powerlines and planting of trees on the visibility barriers and southern vegetation screen. The remaining off-site establishment activities, namely the upgrade to the intersection of Taylor Avenue and New Berrima Road, is expected to be completed during 2023.

2.2 SCOPE AND FORMAT

This Annual Review for the Quarry has been compiled by The Austral Brick Company Pty Limited (“Austral”) in conjunction with R.W. Corkery & Co. Pty Limited.

This is the seventh Annual Review submitted for the Quarry and is applicable for the period 1 January 2022 to 31 December 2022 (“the reporting period”). The information presented within this Annual Review has been prepared by R.W. Corkery & Co. Pty Limited through compilation of information provided by Austral.

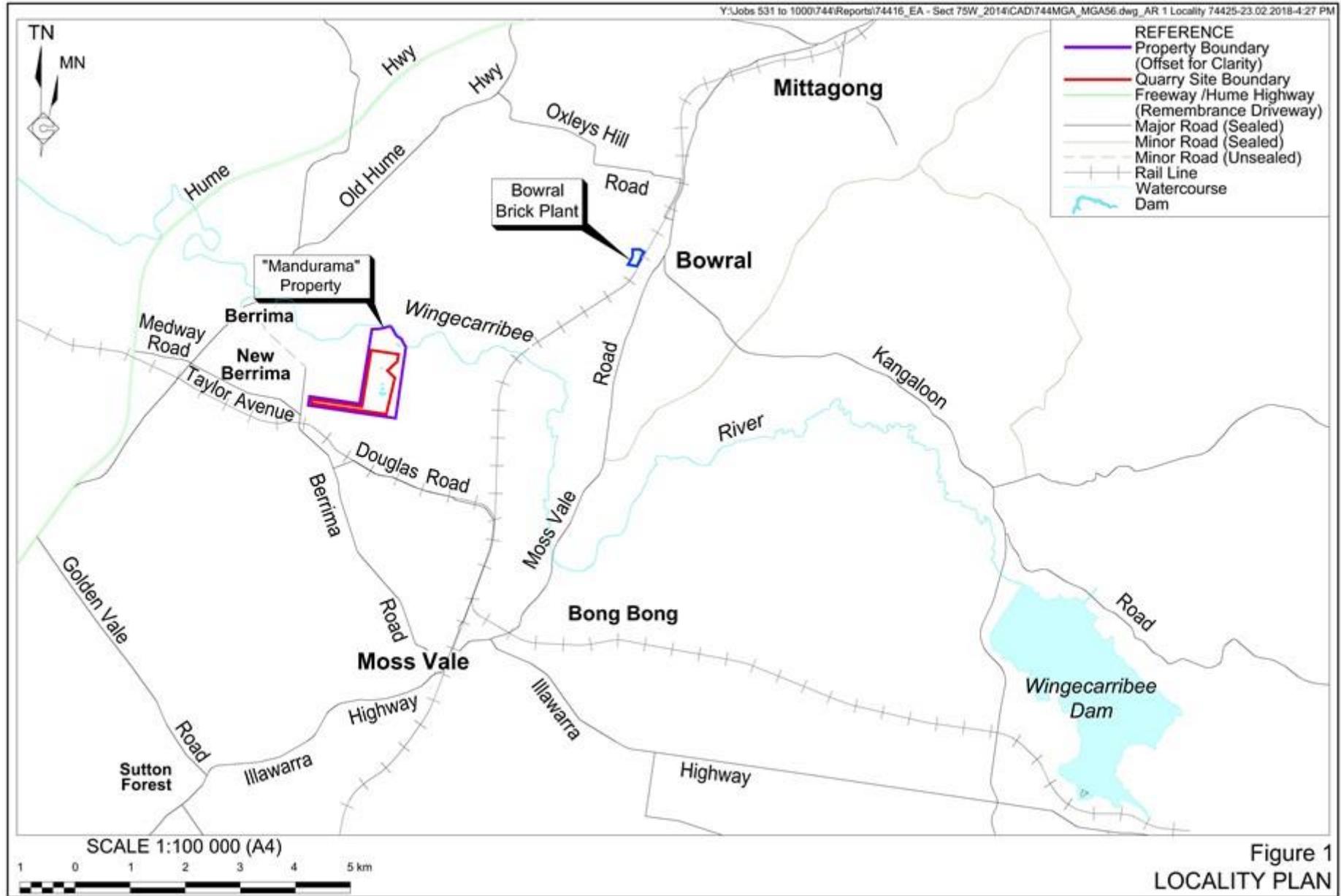
This Annual Review has been compiled in accordance with *Schedule 5 Condition 4* of PA 08_0212, generally follows the format and content requirements identified in the NSW Government *Annual Review Guideline* dated October 2015 and includes relevant information as required by the following conditions of PA 08_0212.

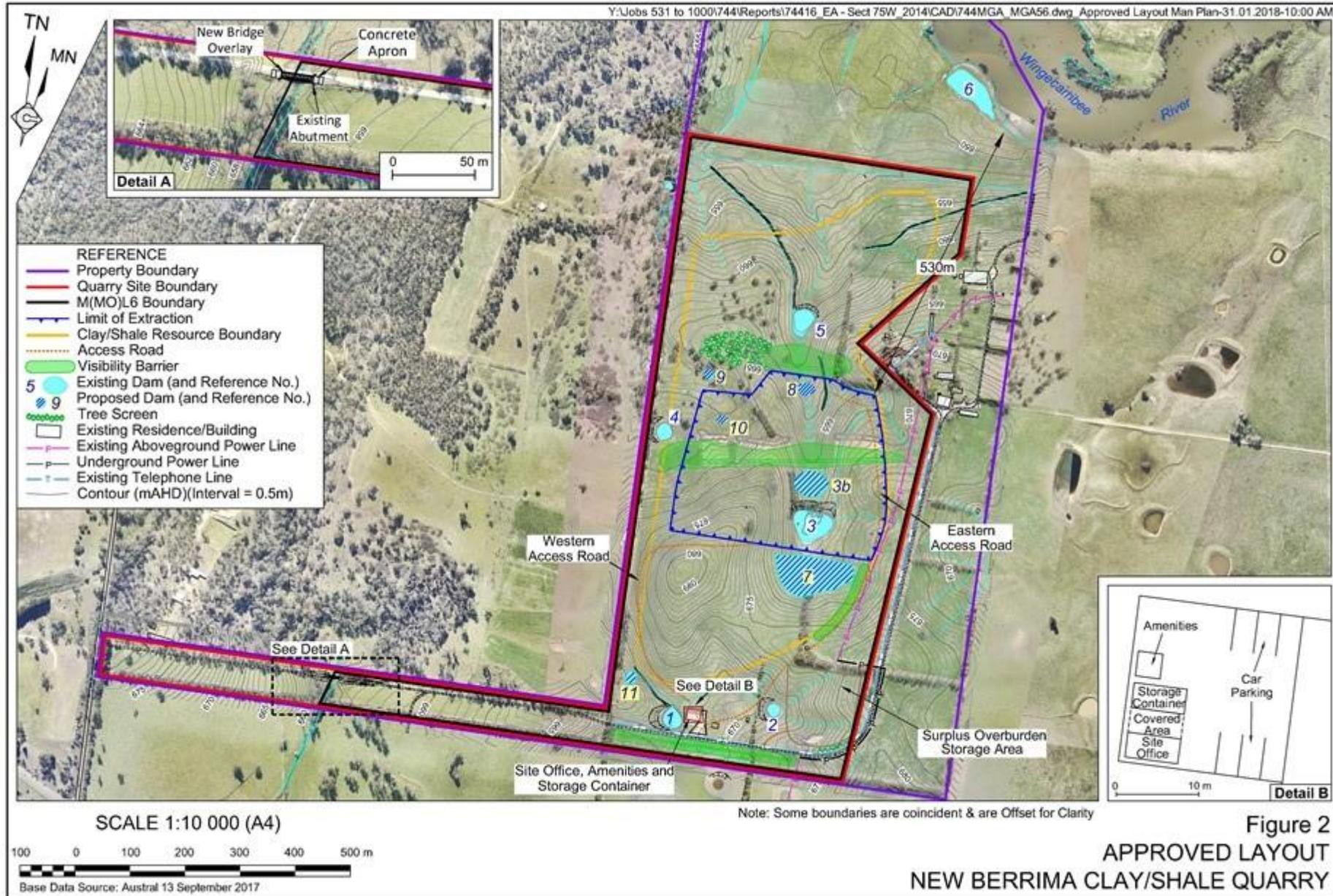
- *Schedule 2 Condition 15b*: Production Data.
- *Schedule 3 Condition 31*: Waste Management.
- *Schedule 5 Condition 11a*: Public Display.

2.3 KEY PERSONNEL CONTACT DETAILS

The key personnel contact names, position and phone numbers are as follows.

Name	Position	24 Hour Contact
Peter Young-Whitford	Raw Materials and Mining Manager	0412 611 714
Cassandra Steppacher	Environment Manager	0425 341 106





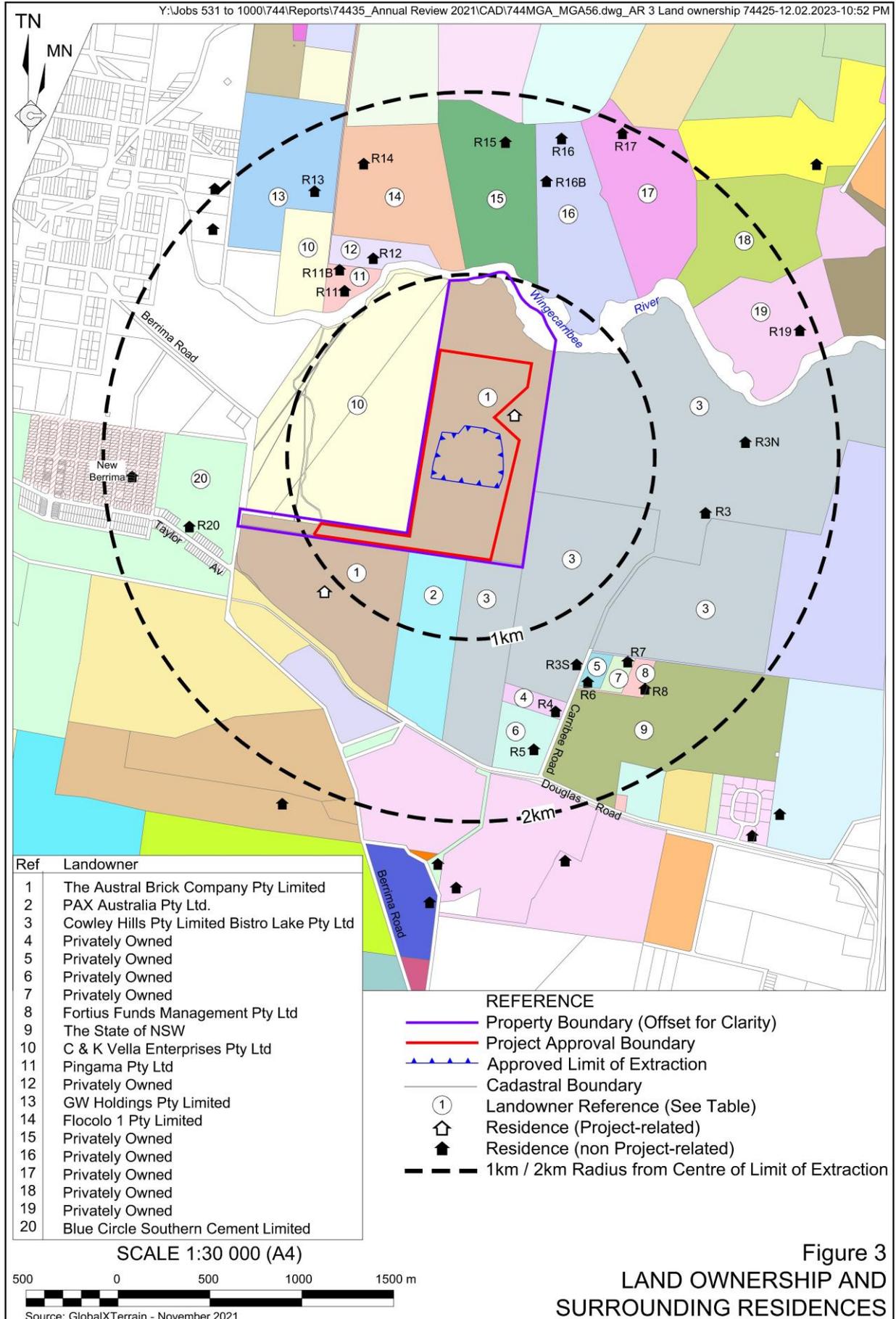


Figure 3
LAND OWNERSHIP AND
SURROUNDING RESIDENCES

3 APPROVALS

The Quarry is required to operate in accordance with the approvals and licences listed in **Table 3**.

Table 3
New Berrima Clay/Shale Quarry – Approvals and Licences

Consent/Lease/Licence	Issue Date	Expiry Date	Details / Comments
PA 08_0212	6/07/2012	31/12/2045	Issued by the (then) Minister for Planning and Infrastructure and last modified 6 July 2017.
Mining (Mineral Owners) Lease 6 (M(MO)L6)	27/06/17	27/06/2038	Granted by the Secretary of the (then) Department of Planning and Environment.
Environment Protection Licence 20377 (EPL 20377)	1/08/2016	Renewed annually	Issued by NSW Environment Protection Authority (EPA). Current version dated 29 January 2021.

During the reporting period the conditions of M(MO)L6 were updated by the Department of Regional NSW in accordance with the amendments to the *Mining Regulation 2016* and the Operational Rehabilitation Reform. There were no other modifications or variations to the other approvals or licences listed in **Table 3** during the reporting period.

The compliance reviews for PA 08_0212 and M(MO)L6 included in **Appendices 1** and **2** reflect the conditions relevant as at the end of this reporting period. A separate Annual Return also continued to be submitted to the NSW EPA in accordance with the requirements of EPL 20377 and is not further reported in this document.

A Section 138 Road permit, DA 17/1477, was previously issued by Council 30 August 2018 for an upgrade to the intersection of the Quarry access road and Berrima Road to accommodate B-Double vehicles. The works and requirements of this permit have been managed with and reported directly to Council with no conditions relevant to the ongoing operation of the Quarry.

4 OPERATIONS SUMMARY

4.1 CONSTRUCTION ACTIVITIES

On-site establishment operations were completed during this reporting period. Principal site establishment activities that were carried out during the reporting period included the following (see **Figure 4** and **Plates 1 to 4**).

- Completion of the site access intersection upgrades (sealing and line marking).
- Completion of bitumen sealing on the western access road.
- Planting of trees on the visibility barriers and the southern tree screen (completed May 2022).
- Re-routing of the powerlines around the Surplus Overburden Storage Area.
- Complete stabilisation of all water management infrastructure to ‘clean water’ standard.

4.2 EXTRACTION OPERATIONS

No extraction operations were undertaken during the reporting period. **Table 4** provides the production summary.

Table 4
Production Summary

Material	Units	Approved Limit (Specify Source)	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
Waste Rock / Overburden	bcm	Not Specified	0	0	0
ROM ¹	-	NA	-	-	-
Coarse Reject ¹	-	NA	-	-	-
Fine Reject ¹	-	NA	-	-	-
Saleable Product (Extractive Material)	t	150 000t [PA 08_0212 Condition 2(7)]	0	0	0
Transported Product	t	150 000t [PA 08_0212 Condition 2(8)]	0	0	0
Notes: 1. The Quarry does not generate ‘Run of Mine’ material, coarse or fine rejects.					

4.3 OTHER OPERATIONS

During the reporting period, Austral undertook a range of non-extractive activities. A summary of these activities is provided as follows.

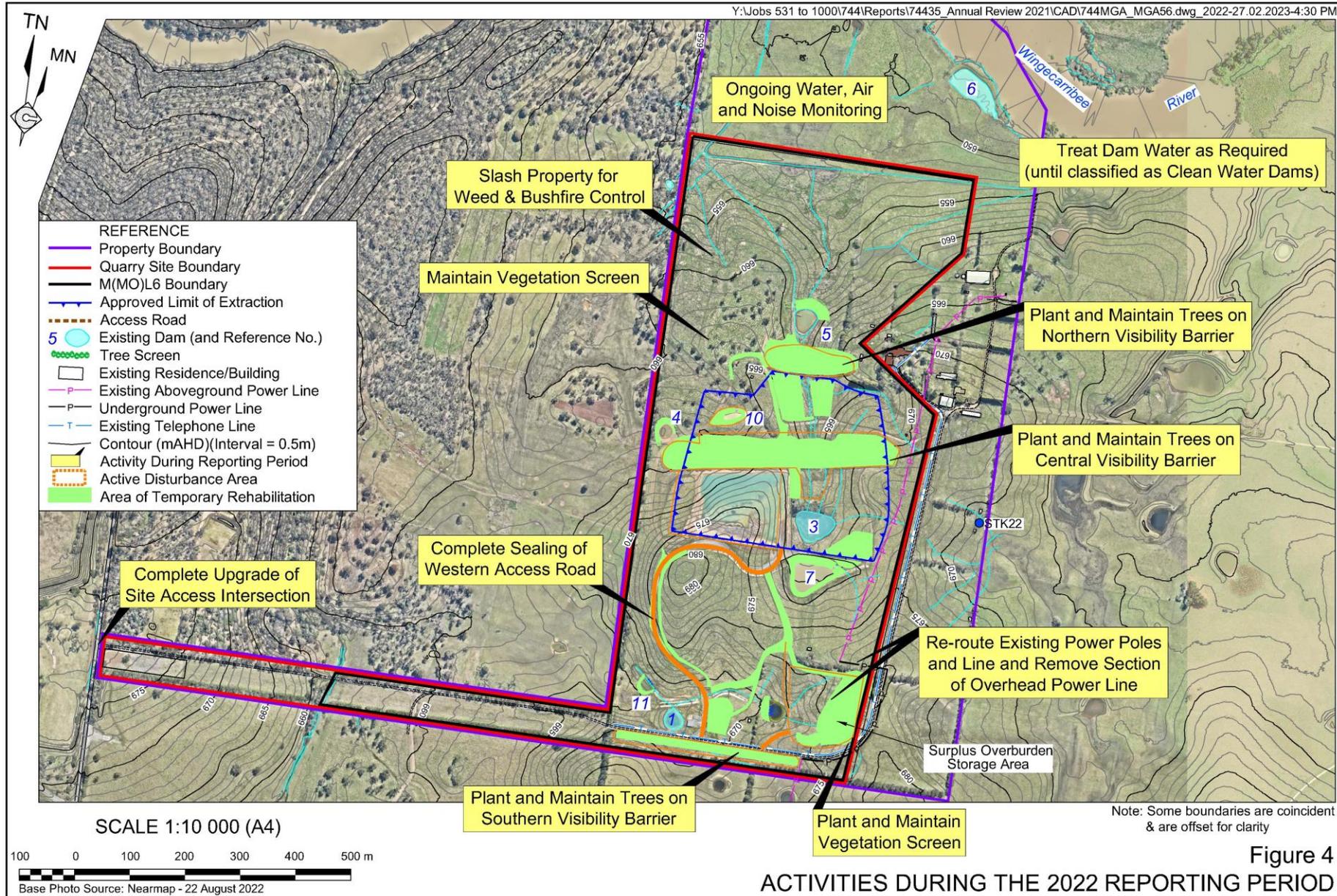


Figure 4
 ACTIVITIES DURING THE 2022 REPORTING PERIOD



Plate 1 **Completed Site Entrance
– Line Marking**
*Source: Austral Bricks
Date: February 2022*



Plate 2 **Completed Site Entrance –
Line Marking**
*Source: Austral Bricks
Date: February 2022*



Plate 3 **Completed Bitumen Seal
on Western Access Road**
*Source: Austral Bricks
Date: February 2022*



Plate 4 **Re-Routed Powerlines**
*Source: Austral Bricks
Date: May 2022*



Completion of Upgrades to Site Access Intersection

During the reporting period the upgrade works required for the site access intersection were completed as per the approved Section 138 Road permit plans. Upgrade works during the reporting period included sealing and line marking.

Preparatory Works for Upgrade of Taylor Avenue / Berrima Road Intersection

During the reporting period Austral continued to consult with Wingecarribee Shire Council and Jemena in relation to the upgrade works for the Taylor Avenue / Berrima Road intersection, including the approach to realigning services.

Environmental Management, Monitoring, and Community Liaison

Environmental monitoring continued throughout the reporting period including meteorological, deposited dust, surface water and groundwater quality monitoring. Results of this monitoring are summarised in Sections 6 and 7 together with the water management works completed during the reporting period. Maintenance and calibration of the meteorological station was also completed during the reporting period.

Rehabilitation through planting of the Southern Highlands Shale Woodland tree screening adjacent the northern visibility barrier and native trees in the southern tree screen was undertaken during the reporting period and is discussed in Section 8. A formal review of the catchments for relevant on-site dams to confirm change in status from ‘dirty water’ to ‘clean water’ dams was also conducted during the reporting period and is further discussed in Sections 7 and 8.

The community consultative committee continued to meet during the reporting period. Details of these meetings and other community liaison activities are summarised in Section 9.

Management Plans

During the reporting period the Rehabilitation Management Plan (RMP) and associated Forward Program were completed and the relevant components were submitted to the Resources Regulator. The RMP and Forward Program replace the previous Mining Operations Plan.

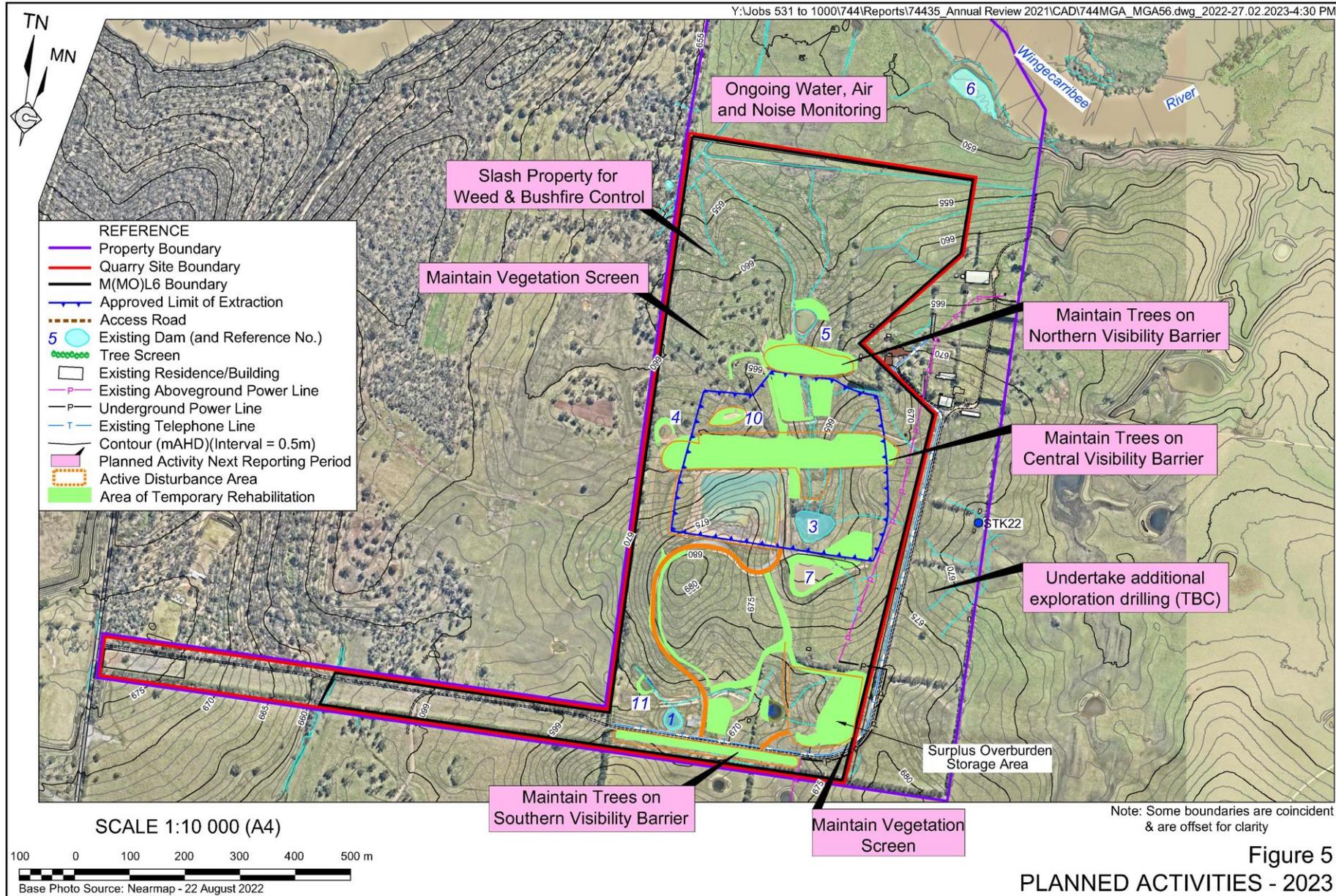
The Water Management Plan was also finalised after addressing DPE comments during the reporting period and was submitted to DPE in September 2022 for approval. At the time of this report approval had not yet been received.

4.4 NEXT REPORTING PERIOD

Activities planned to be undertaken during the next reporting period are summarised as follows and displayed on **Figure 5**.

Intersection Upgrade Works

Austral will continue to consult with Wingecarribee Shire Council in relation to the upgrade works for the Taylor Avenue / Berrima Road intersection. It is anticipated that the intersection upgrade works will either be completed during the reporting period or, subject to Council agreement, appropriate measures implemented for the utilisation of the intersection whilst matters relating to the required works are resolved by Council.



Site Establishment and Construction

All on-site site establishment activities are considered to have previously been completed.

Extraction

Clay/shale extraction operations are not expected to commence during the next reporting period. However, following resolution of the Taylor Avenue / New Berrima Road intersection upgrade an approximately 200t bulk sample is planned to be obtained from the existing exposed shale. The bulk sample will be transported to the Bowral Brick Plant to undertake a full scale test of shrinkage and colour. This testing will assist in planning for the raw material mix and potential effects on product consistency when transitioning from the existing material sourced from the Bowral Quarry Extension [M(MO)L11] to material sourced from the New Berrima Clay/Shale Quarry.

Rehabilitation

No areas will become available for final rehabilitation during the next reporting period. However, ongoing maintenance of the temporary rehabilitation area and tree screens will be undertaken. General property maintenance, including weed control and slashing, will also be undertaken as required.

Further discussion on planned rehabilitation is provided in Section 8.2.

Environmental Monitoring and Community Liaison

The following monitoring will be conducted during the next reporting period.

- Meteorological conditions.
- Dust deposition.
- Noise levels (if extraction activities are undertaken).
- Surface water quality.
- Groundwater levels and quality.
- General inspections for water management and maintenance.

The community consultative committee will also continue to meet during the next reporting period at intervals determined by the committee.

Management Plans

Given the completion of on-site site establishment and construction, in addition to the recently updated Water Management Plan, a review of the remaining management plans will be undertaken with any aspects not relevant to ongoing operations to be removed. Any learnings from the site establishment and construction phase will also be reflected in the management plans.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The 2021 Annual Review was submitted to the DPE and Resources Regulator on 2 March 2022 in accordance with the requirements of PA 08_0212 and M(MO)L6. Copies were also provided to Wingecarribee Shire Council, Water NSW and NRAR.

DPE confirmed satisfaction of the 2021 Annual Review by letter dated 10 March 2022. DPE did request that Section 5 be updated to state the 2021 reporting period, however, it is noted that Section 5 relates to the previous Annual Review and correctly refers to the 2020 Annual Review.

No formal response or actions were raised by the Resources Regulator. Correspondence from Water NSW on 24 March 2022 noted the activities undertaken during the reporting period and confirmed no they had no comments.

6 ENVIRONMENTAL PERFORMANCE

6.1 INTRODUCTION

A summary of environmental performance for the principal environmental aspects is provided in **Table 5**. Further detail regarding specific environmental aspects is also provided in the following subsections. Environmental performance relating to water is discussed in Section 7.

Table 5
Relevant Environmental Performance Aspects

Aspect	Approval criteria/ (EIS prediction)	Performance during the reporting period	Trend/key management implications	Implemented/proposed management actions
Noise (Barrier construction)	43dB(A) during the day at receiver R2. 38dB(A) at all other receivers.	Noise barrier construction was previously completed.	No longer applicable.	No longer applicable.
Noise (operations)	38dB(A) at all receivers.	No complaints and no issues raised through the CCC.	No trends identifiable. Currently no management implications.	No specific management measures implemented or currently proposed. Operational noise monitoring planned following commencement of extraction activities.
Blasting	Blasting is not an approved activity.	No blasting undertaken.	Nil.	Nil.
Air Quality	PM ₁₀ 24hr = 50µg/m ³ PM ₁₀ Annual = 30µg/m ³ TSP Annual = 90µg/m ³ Dep Dust Annual = 4g/m ² /month	No exceedances of annual average deposited dust and no complaints or issues raised through the CCC.	No trends identifiable. Currently no management implications.	Management measures implemented and monthly deposited dust monitoring undertaken and will continue in accordance with the Air Quality Management Plan. Currently no proposed changes.
Biodiversity	No significant impacts predicted.	No native vegetation disturbed within the Quarry Site. Planting of native species for southern visual screening. Permit for reduction in kangaroo numbers was previously sought from NPWS.	Control of kangaroo grazing pressure may be required pending future weather and stage of rehabilitation growth.	Completed planting of native tree species on visibility barriers and southern visibility screen. If required, continue to seek permit for control of kangaroos to reduce grazing pressure.
Landscape and Visual	Implement Landscape Management Plan.	During the reporting period trees were planted on the visibility barriers and the southern visibility screen was planted.	Currently no management implications.	Ongoing maintenance, including slashing and weed control, to be undertaken.
Heritage	Implement Aboriginal Cultural Heritage Management Plan.	Aboriginal heritage content delivered by trained personnel during inductions. No Aboriginal heritage items were located during the reporting period.	Currently no management implications.	Continued induction of all employees by Austral personnel trained in accordance with the Aboriginal Heritage Management Plan. Due diligence fencing of area of high archaeological constraint previously installed to ensure no inadvertent access.

6.2 METEOROLOGICAL MONITORING

Austral installed a meteorological station (see **Figure 6**) in September 2016. The meteorological station complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

A summary of the temperature and rainfall data for the reporting period is provided in **Table 6** whilst **Figure 7** presents the monthly wind roses. Daily rainfall records for the reporting period are presented in **Appendix 3**.

Table 6
Summary of 2022 Temperature and Rainfall Records (On-site Station)

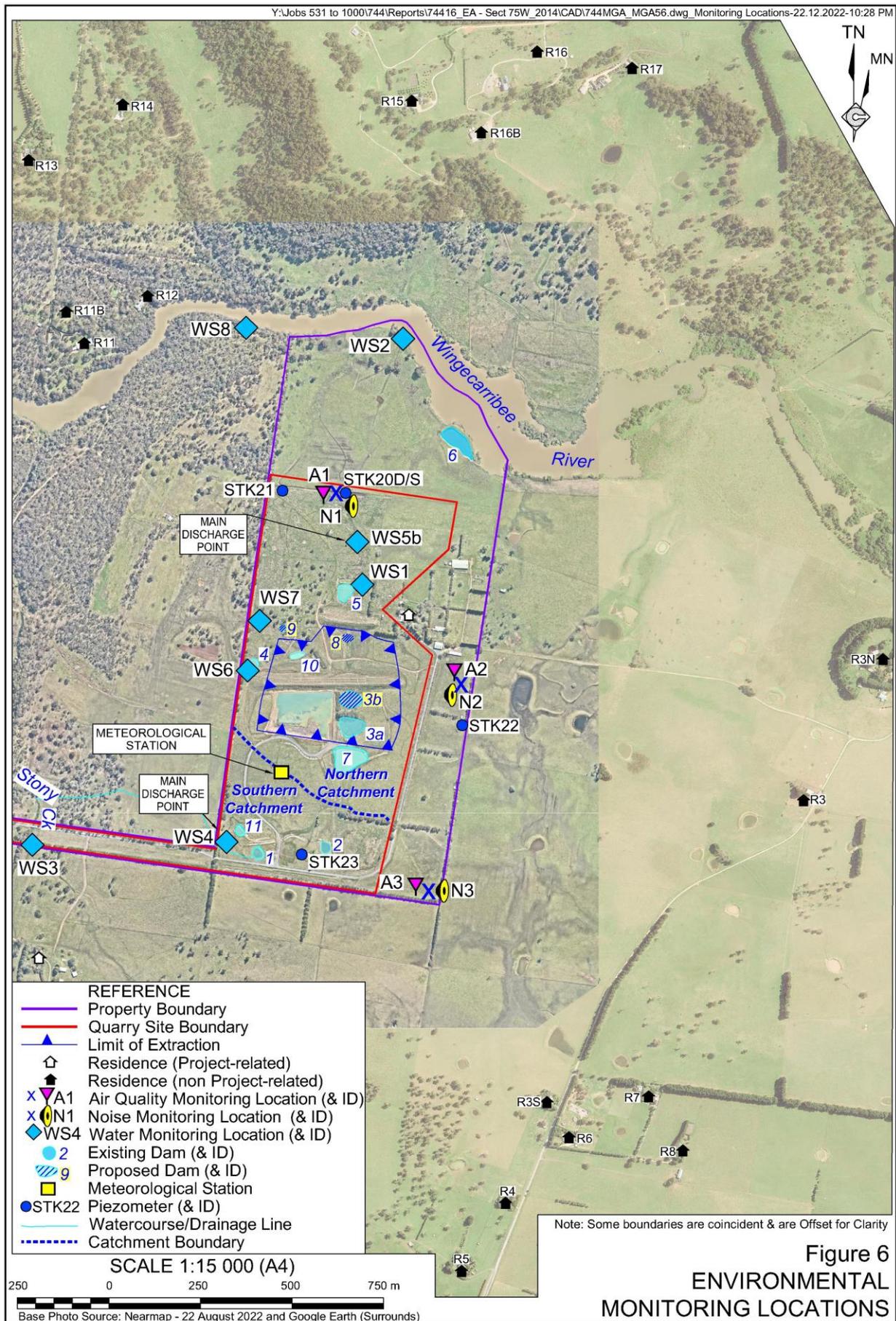
Month	Temperature (°C)			Rainfall (mm)
	Average	Minimum	Maximum	
January	18.4	13.9	21.9	157.6
February	17.0	12.9	22.4	88.0
March	15.7	12.1	19.1	377.6
April	13.3	10.2	15.9	160.8
May	10.2	5.5	16.4	73.8
June	6.6	4.2	9.5	6.8
July	6.7	3.8	10.9	317.6
August	8.5	5.0	13.5	40.6
September	9.5	5.9	12.4	130.8
October	12.5	7.7	16.7	150.2
November	13.0	7.2	17.0	93.4
December	15.0	10.7	22.6	67.8
Total	-	-	-	1665.0

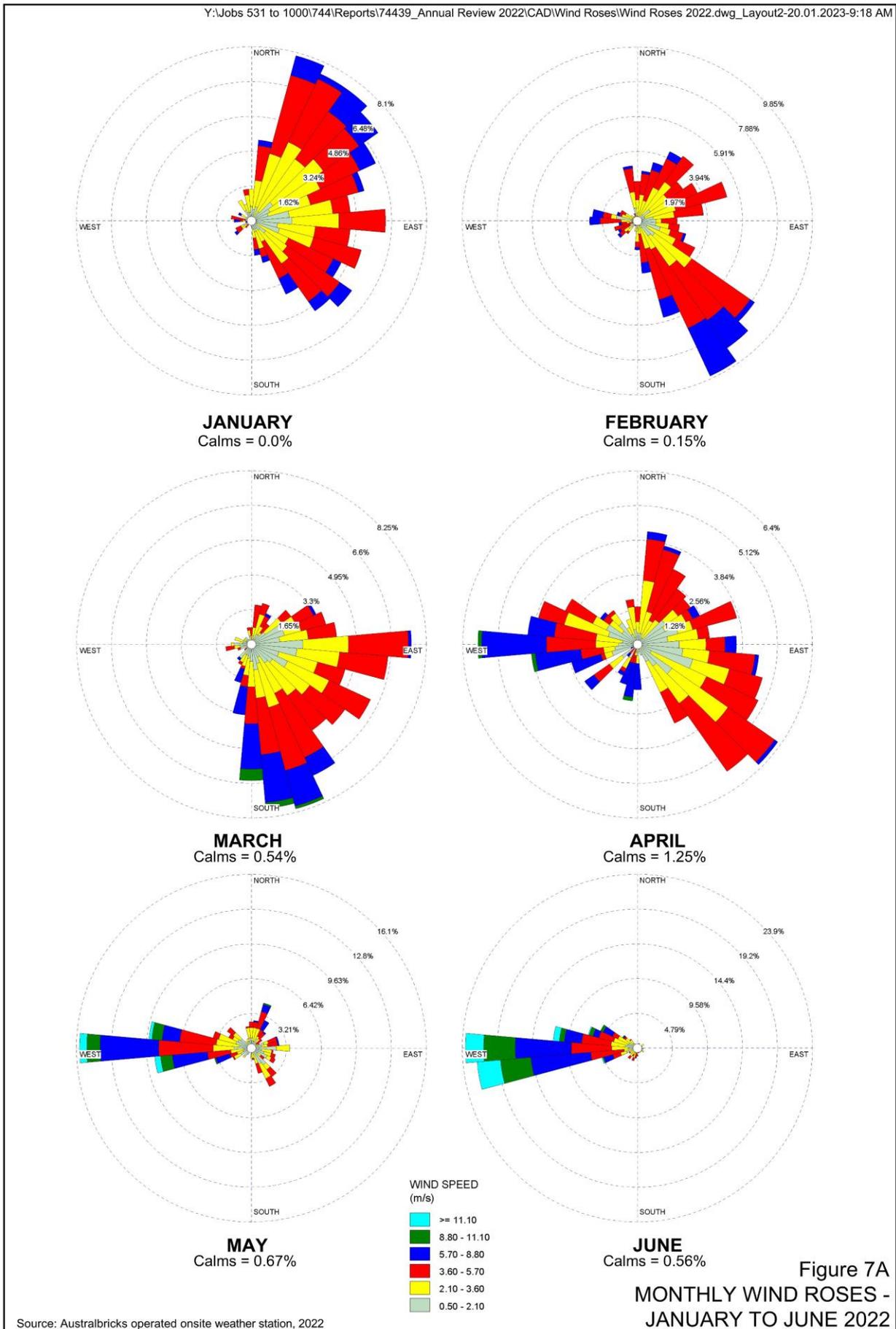
A total of 1 665.0mm of rain was recorded from 1 January 2022 to 31 December 2022, significantly above the long-term (150 year) average rainfall of 958.3mm recorded at the nearby BoM Moss Vale (Hoskins St) Station (No. 068045). The July 2022 rainfall shows a period of high intensity rainfall, during which 272.8mm of rain was recorded across seven days. The highest recorded daily rainfall occurred on 2 July 2022 with 123.0mm of rainfall recorded.

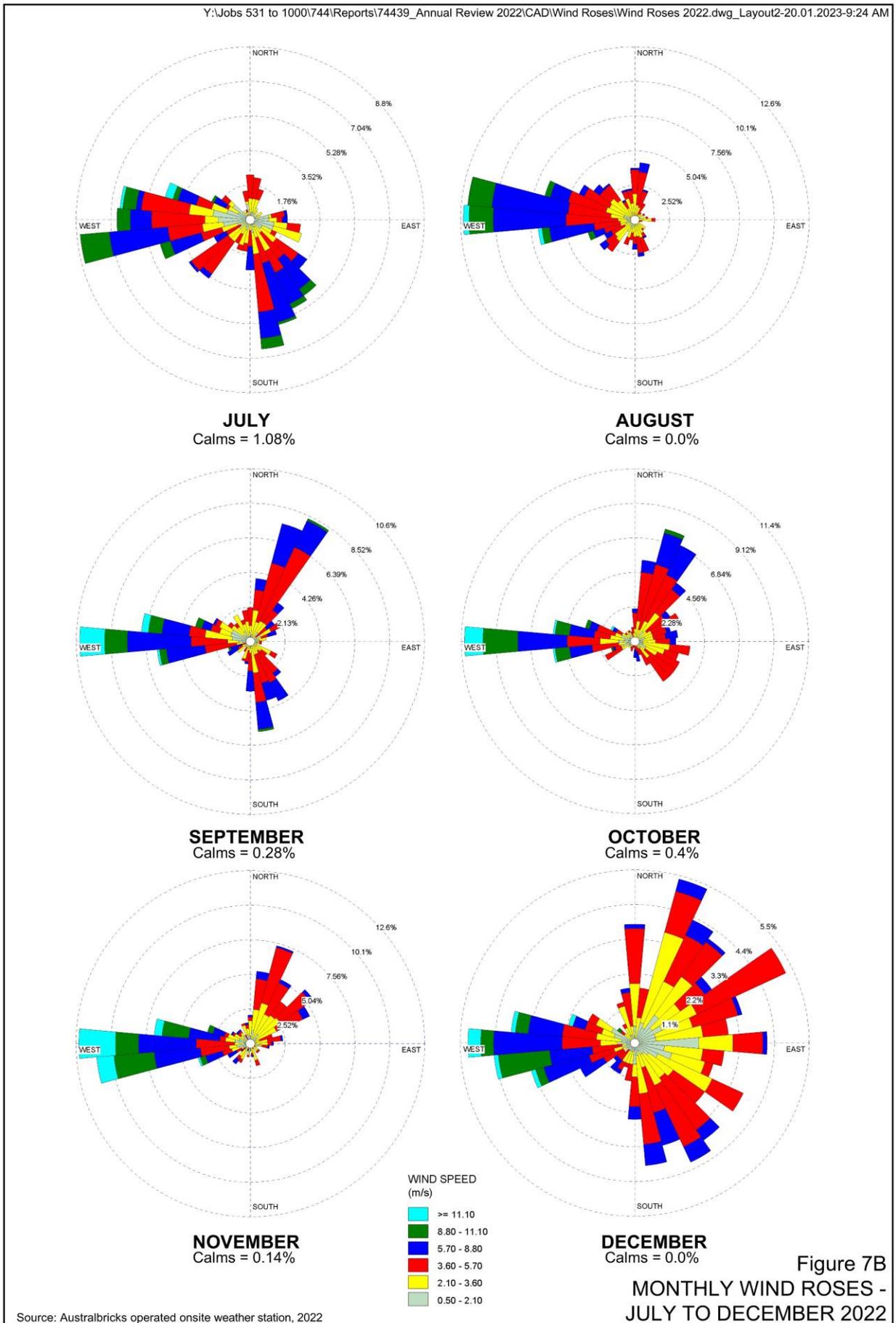
6.3 AIR QUALITY

Environmental Management

Relevant air quality management measures and monitoring are detailed within the approved Air Quality Management Plan. No specific air quality management measures were required for the activities undertaken during the reporting period. All areas of disturbance not required for ongoing operations have previously been stabilised, principally for soil stability, but also to reduce the area exposed to potential wind erosion.







Environmental Performance

Austral continued to collect air quality samples from three deposited dust gauges, Sites A1, A2 and A3 (see **Figure 6**), throughout the reporting period. The results of the dust monitoring are summarised in **Table 7** and presented graphically in **Figure 8**.

Table 7
Summary of 2022 Deposited Dust Monitoring Results

Sampling Period	Monthly Dust Deposition Rate (g/m ² /month)								
	A1			A2			A3		
	Total Insoluble	Rolling Annual Average	Ash	Total Insoluble	Rolling Annual Average	Ash	Total Insoluble	Rolling Annual Average	Ash
1/01/22 to 31/01/22	1.8	1.1	0.7	0.7	0.4	0.1	1.9	0.7	0.5
1/02/22 to 28/02/22	0.9	1.0	0.6	0.4	0.4	0.2	0.5	0.7	0.3
1/03/22 to 31/03/22	4.0	1.3	3.3	0.5	0.5	0.3	0.4	0.7	0.2
1/04/22 to 30/04/22	4.9	1.7	4.0	0.2	0.4	0.1	0.2	0.6	0.2
1/05/22 to 31/05/22	1.7	1.8	1.2	0.1	0.4	0.1	0.2	0.6	0.2
1/06/22 to 30/06/22	0.5	1.8	0.3	0.2	0.4	0.1	0.5	0.6	0.3
1/07/22 to 31/07/22	6.4	2.3	4.1	1.1	0.5	0.6	1.5	0.7	0.6
1/08/22 to 31/08/22	0.2	2.1	0.1	0.1	0.5	0.1	0.2	0.7	0.1
1/09/22 to 30/09/22	1.6	2.2	0.9	0.3	0.5	0.1	0.3	0.7	0.2
1/10/22 to 31/10/22	NR ¹	2.3	NR ¹	NR ¹	0.4	NR ¹	0.3	0.6	0.2
1/11/22 to 30/11/22	2.2	2.3	1.3	0.5	0.4	0.3	0.5	0.6	0.2
1/12/22 to 31/12/22	3.5	2.5	2.3	0.1	0.4	0.1	0.1	0.6	0.1

Source: Austral Bricks
Note 1: NR = No result. ALS spilt the samples for A1 and A2 during October 2022.

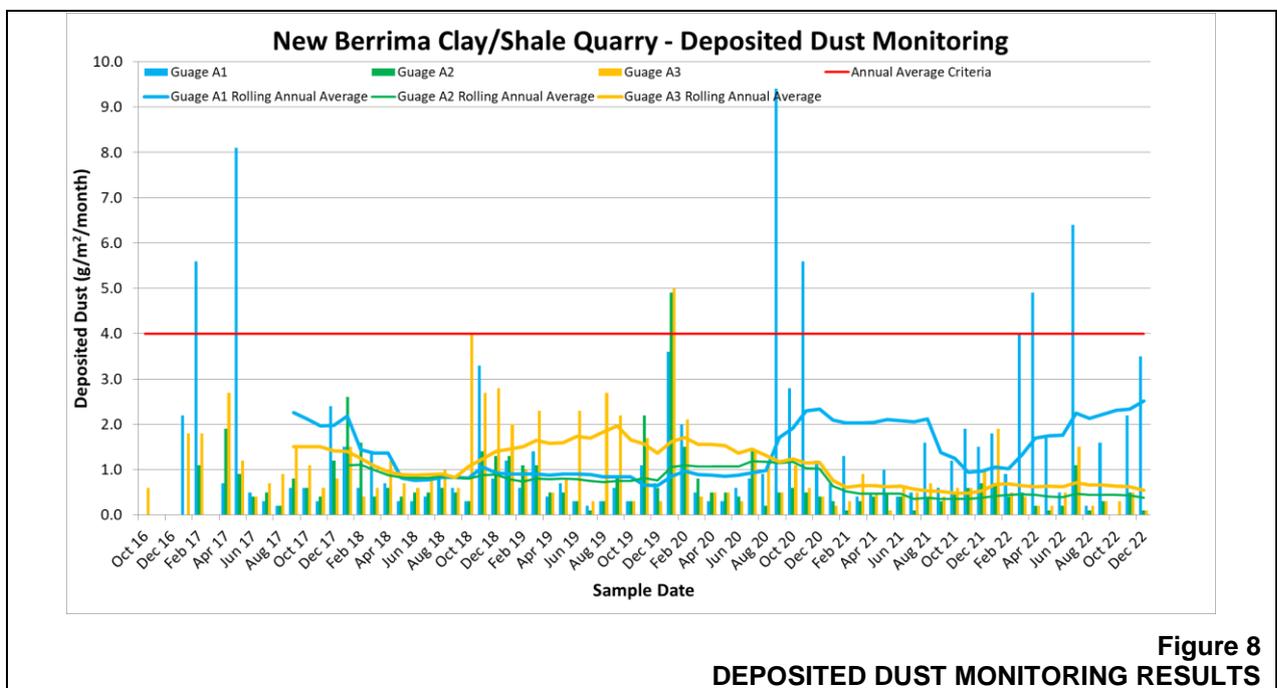


Figure 8
DEPOSITED DUST MONITORING RESULTS

The monthly total insoluble solids over the reporting period ranged from 0.1g/m²/month (Site A2 May, August, and December 2022, Site A3 December 2022) to 6.4g/m²/month (Site A1 July 2022). The rolling annual average monthly deposition rates for the reporting period were between 0.4g/m²/month and 2.5g/m²/month, which is well below the criteria of 4g/m²/month, indicating good air quality with respect to dust deposition.

Further data collection is required before any trends can be firmly established, however, between October 2018 to October 2019 the average dust levels at gauge A3 were consistently higher than gauges A1 and A2 and may have been the result of adjacent agricultural activities and use of the property access road. The spike in early 2020 across all three gauges reflects the period of State-wide bush fires experienced during this time. It is noted that site establishment and construction activities commenced November 2020 with earthworks not commencing until 2 December 2020, i.e. following the elevated results.

Since August 2020 the average dust levels at gauge A1 have consistently been higher than gauges A2 and A3. During the reporting period there continued to be spikes in monthly total insoluble solids at Site A1 during March, April, and July 2022. It is noted that very high levels of rainfall were recorded during each of these months and no Quarry activities likely to generate dust occurred. The potential source of insoluble matter at Site A1 will continue to be reviewed in light of ongoing monitoring results.

Reportable Incidents and Further Improvements

No complaints were received and no reportable incidents relating to air pollution occurred during the reporting period. No further improvements relating to air pollution are currently considered necessary. Whilst results have remained well below the applicable criteria, ongoing review of surrounding activities will be undertaken to determine any correlation with elevated results.

6.4 NOISE

Environmental Management

Noise management was undertaken in accordance with the approved Noise Management Plan as relevant. The principal noise management measures during the reporting period included use of broadband reversing alarms, proper maintenance of equipment and adherence to hours of operation. The established visual barriers also provided ongoing passive noise mitigation. It is noted that the completion of the Quarry road sealing program in early 2022 will also limit truck body noise.

Environmental Performance

During the reporting period noise monitoring was undertaken on one occasion, as required by the Noise Management Plan. An overview of the monitoring results for the reporting period is provided in **Table 8** and a copy of the monitoring reports are provided as **Appendix 4**. In summary, total noise levels at all monitoring locations remained below the applicable noise criteria during all monitoring events.

Table 8
Summary of 2022 Noise Monitoring Results

Location	Time	dB(A) ,Leq	Quarry Contribution dB(A), Leq	Criterion B(A) Leq	Wind speed (m/s), dir	Identified Noise Sources
30 September 2022						
N1	12:02 pm	50	Inaudible	42	7.5 @ 125° (SE)	Wind, frogs, train, Hume Highway.
N2	12:23 pm	44	Inaudible	49	7.3 @ 160° (SE)	Wind, frogs, birds, cattle, Hume Highway.
N3	12:42 pm	48	Inaudible	44	6.4 @ 166° (SE)	Wind, cattle, Hume Highway
Source: Spectrum Acoustics						

Reportable Incidents and Further Improvements

No complaints were received and no reportable incidents relating to noise occurred during the reporting period. No further improvements relating to noise are currently considered necessary. Monitoring during operations will continue on an annual basis in accordance with the Noise Management Plan. It is planned to update to the Noise Management Plan to clarify that noise monitoring is not required when no operational activities are undertaken during the reporting period.

6.5 ABORIGINAL HERITAGE

Environmental Management

Four key Austral personnel have previously undertaken Aboriginal heritage induction training in accordance with the Aboriginal Heritage Management Plan. These personnel were responsible for all site inductions and delivered Aboriginal cultural awareness information as part of the induction.

Whilst not a commitment, in addition to the management measures outlined within the Aboriginal Heritage Management Plan, Austral installed suitable fencing during October 2018 to minimise the risk of inadvertent access to the areas identified as being of high archaeological constraint. No additional management measures were required during the reporting period.

Environmental Performance, Reportable Incidents and Further Improvements

No Aboriginal heritage sites were identified during the reporting period and no further improvements are currently deemed necessary. No reportable incidents occurred during the reporting period.

6.6 BIODIVERSITY

No native vegetation will be disturbed by the Quarry and, as such, there are no specific biodiversity management or performance measures required.

Notwithstanding, during the reporting period, approximately 7,000 trees were planted as part of the northern, central, and southern visibility barriers and for the southern tree screen (see **Figure 4**). During the next reporting period inspections and maintenance of the planted trees will be undertaken as required (see **Figure 5**).

Ongoing weed control activities continued to be undertaken across the entire Mandurama property during the reporting, principally through slashing and targeted application of herbicide.

During the reporting period grazing pressure from Kangaroos was substantially reduced from previous periods. Austral Bricks had previously applied to National Parks to control kangaroo numbers with no response has been received to date. The extent of grazing pressure from Kangaroos and status of establishment of the planted trees will continue to be reviewed and non-lethal methods applied if required.

No incidents or further improvements relating to biodiversity are currently deemed necessary.

6.7 WASTE MANAGEMENT

All general waste and recyclables were collected within waste receptacles located at the site office and removed from site as required by Remondis. Minimal volumes of waste were generated with only one bin removal required. No scheduled equipment maintenance was undertaken on site.

The on-site portaloo is managed by South Coast Liquid Treatment Pty Limited.

No additional waste reduction or management measures were required during the reporting period and no specific improvements are planned for the next reporting period.

7 WATER MANAGEMENT

7.1 WATER TAKE

As outlined within the Water Management Plan, the existing and planned water storages on site are either exempt from the harvestable right dam capacity (being for pollution control purposes) or within the harvestable right dam capacity for the property. As a result, water licencing is not required. Notwithstanding, the volume of water utilised for Quarry operations is recorded. During the reporting period no water was required to be utilised for dust suppression purposes given the minimal and low impact nature of the activities.

It is noted that Water Supply Works and Water Use Approval 10CA102968 and associated Water Access Licence 25683 issued on 1 July 2011 for accessing water from the Wingecarribee River are used solely for irrigation purposes within the Mandurama property. No water was accessed under this licence for Quarry purposes.

7.2 SURFACE WATER

Environmental Management

Relevant surface water management measures and monitoring are detailed within the approved Water Management Plan. Construction of the Quarry's water management system was completed during the 2021 reporting period. As such, the primary management activities required during the current reporting period involved site inspections by Austral personnel following significant rainfall events. No erosion or sedimentation issues were noted.

Water quality monitoring was also carried out in accordance with the Water Management Plan at the eight site locations identified in **Figure 6** and summarised below.

- WS2 represents the upstream Wingecarribee River monitoring location and WS8 represents the downstream location,
- WS1, WS5b, WS6 and WS7 represent monitoring locations within ephemeral drainage lines within the Quarry Site which ultimately report to the Wingecarribee River.
- WS4 is located within an ephemeral drainage line in the southern part of the Quarry Site which reports to Stony Creek.
- WS3 is located within Stony Creek upstream of any Quarry activities.

Monitoring is required to be undertaken at the following frequencies / in the following circumstances.

- Surveillance monitoring at all locations identified above, when water is available for sampling, four times per year.
- Prior to discharge of water from a 'dirty water' dam, or during conditional discharge at licenced discharge points at locations WS4 and WS5b.
- Within 24hrs of wet weather discharge from a 'dirty water' dam (if safe access is available). Wet weather discharge equates to discharge occurring due to rainfall event exceeding 36.2mm in a 5 day period.

Environmental Performance

On-site establishment activities were completed during the reporting period with all disturbances beyond the extraction area having been stabilised during the previous reporting period. As a result, SEEC (erosion and sediment control specialists) were requested and undertook inspections of the Quarry’s water management systems on 11 March and 6 July 2022. SEEC confirmed that the catchments reporting to all sediment basins were sufficiently stabilised such that the basins could be operated as ‘clean water’ dams until such time further disturbances are required within those catchments. A copy of the SEEC report is provided as **Appendix 6**.

Therefore, as outlined within the Water Management Plan, any water outflows from the basins do not constitute discharges and are not required to be monitored. Currently the only ‘dirty water’ catchment is the extraction area which drains to the Quarry sump. In the event that water was required to be pumped out of the Quarry sump, this would be managed as a ‘dirty water’ discharge with all appropriate treatment and monitoring to be undertaken as required.

Notwithstanding the above, additional due diligence monitoring was undertaken during the reporting period. The results of all monitoring undertaken during the reporting period is discussed as follows.

Surveillance and Due Diligence Monitoring

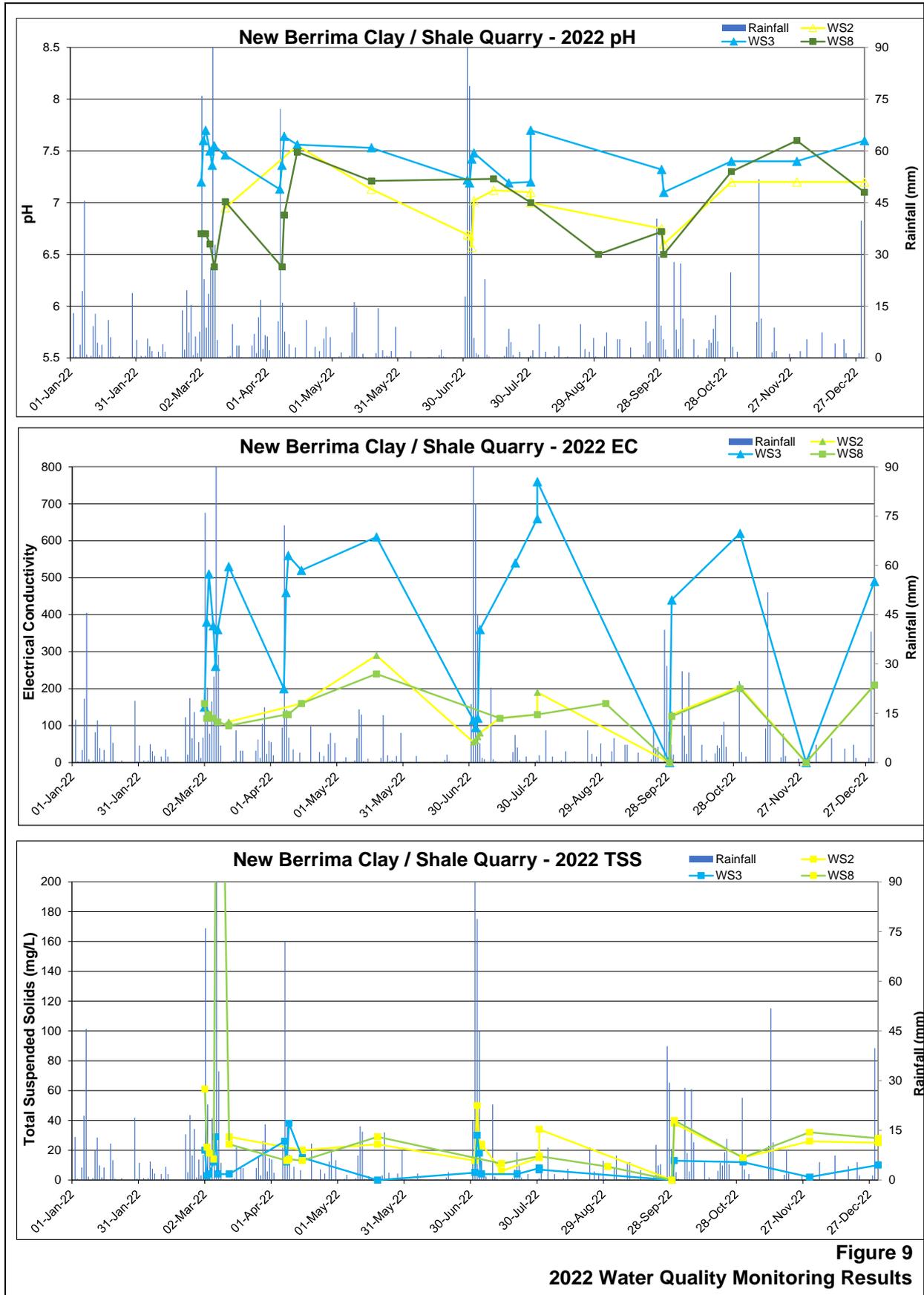
Prior to this reporting period an extensive baseline monitoring program was undertaken with monthly data collected from May 2017 to October 2020 (i.e. prior to commencement of site establishment activities). A summary of baseline monitoring data together with all operational data is provided in **Appendix 5** and a discussion of baseline water quality is presented within the approved Water Management Plan.

Table 9 summarises surveillance and due diligence monitoring undertaken at WS2 (Wingecarribee River upstream), WS8 (Wingecarribee River downstream), and WS3 (Stony Creek) during the reporting period whilst **Figure 9** presents a graphical summary of key water quality parameters for the 2022 reporting period. For context, a graphical summary of long-term monitoring data including both baseline and operational data is also presented in **Figure 10**.

Table 9
Summary of Surveillance and Due Diligence Water Quality Monitoring – WS2, WS8 and WS3

Sample Site	Baseline			2022			
	Min	Mean	Max	Min	Mean	Max	No. Samples
pH							
WS2	6.2	7.2	7.8	6.57	6.98	7.55	15
WS8	6.2	7.3	7.7	6.68	6.89	7.60	18
WS3	6.6	7.2	8.1	7.10	7.41	7.70	24
Electrical Conductivity (mS/cm)							
WS2	102	250	350	55	139	290	13
WS8	105	238	390	100	147	240	16
WS3	215	463	970	95	414	760	22
Total Suspended Solids (mg/L)							
WS2	3	15	77	6	24	50	14
WS8	4	11	250	9	49	480	17
WS3	2	26	380	2	13	38	22

Source: Austral Bricks **Bold** values beyond the range of baseline results.



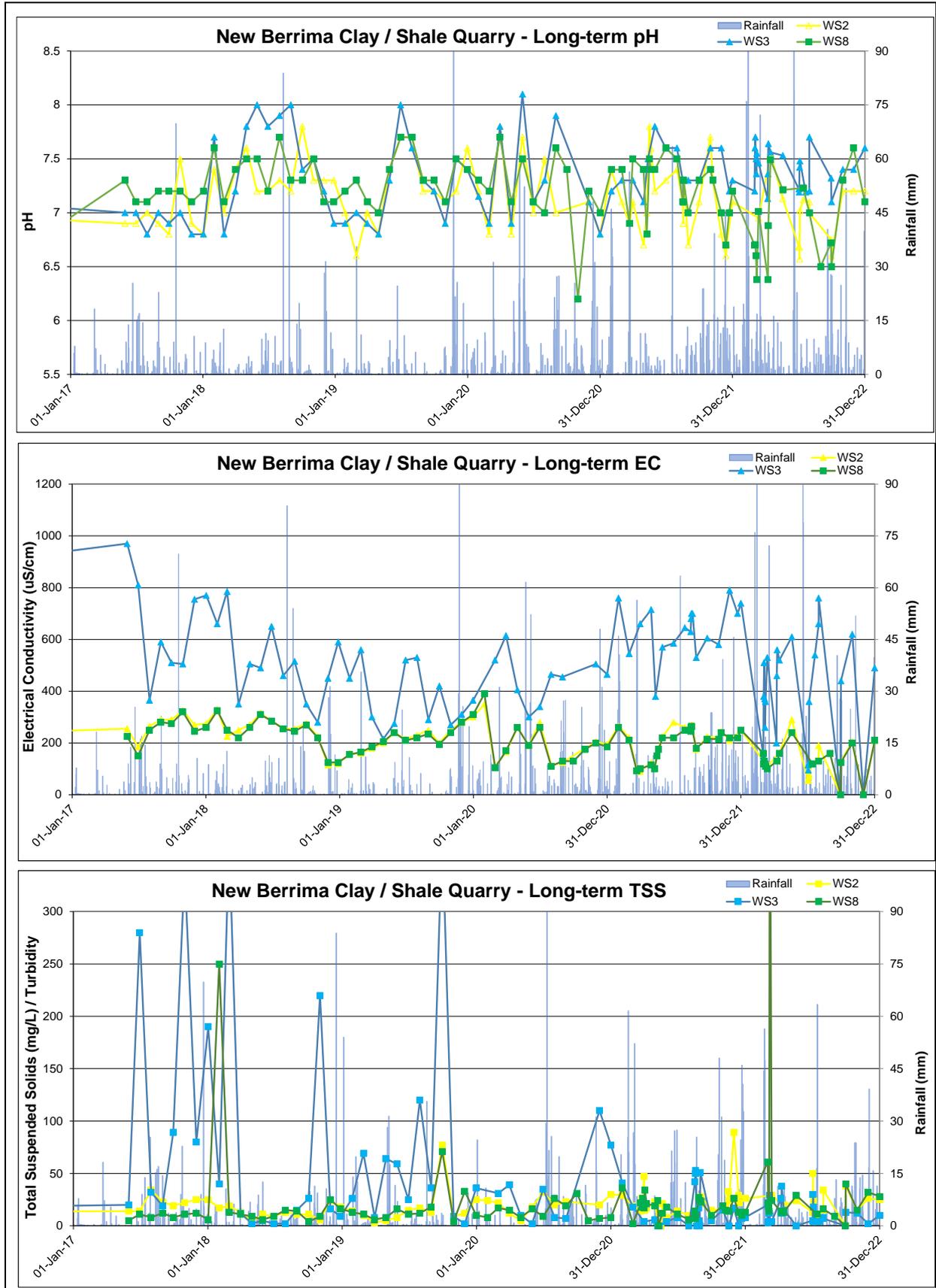


Figure 10
 Long-term Water Quality Monitoring Results

The results for 2022 are generally consistent with the baseline monitoring results with results being within the baseline range except for the minimum electrical conductivity values for all sites which were slightly below the minimum baseline and the maximum total suspended solids in Wingecarribee River downstream (WS8) which recorded one sample above the maximum baseline. The results indicate that the Quarry has not had any impact upon off-site water quality during the reporting period. No trends or correlations are currently evident from the data.

It is noted that, during the reporting period, sufficient water was available within WS4, WS5b, WS6 and WS7 to collect samples on several occasions, principally due to overflows from the on-site basins (following sign off as clean water catchments). A summary of this data is presented in **Table 10**.

Table 10
Summary of Additional Surveillance and Due Diligence Water Quality Monitoring

Sample Site	2022			
	Min	Mean	Max	No. Samples
pH				
WS4	7.78	7.99	8.48	4
WS5b	7.12	7.45	7.82	5
WS6	7.24	7.54	7.85	3
WS7	7.25	7.65	8.40	3
Electrical Conductivity (mS/cm)				
WS4	330	450	570	2
WS5b	380	410	440	3
WS6	190	190	190	1
WS7	790	790	790	1
Total Suspended Solids (mg/L)				
WS4	2	61	120	2
WS5b	2	19	48	3
WS6	42	42	42	1
WS7	32	32	32	1

Source: Austral Bricks NA = No Baseline Data Available

No baseline data is available to compare this data to as these sampling points have historically been dry. However, whilst discharge criteria did not apply, all pH results remained within the range of 6.5 to 8.5 and TSS remained below 50mg/L on six out of the seven samples. This is indicative of the highly successful rehabilitation work that has been completed across the Quarry and that generalised runoff from the Quarry site is not a source of pollution to surrounding waters.

Discharge Monitoring

Table 11 presents a summary of the results of water quality monitoring during all conditional and wet weather discharges during the reporting period. In summary, 73 discharges occurred during the reporting period, including:

- five conditional discharges that required treating prior to discharge;
- 12 conditional discharges that did not require treating prior to discharge; and
- 56 wet weather discharges on 14 separate days (with multiple dams overtopping on each event).

Of the 17 conditional discharges (treated and untreated), no exceedances of water quality criteria for pH, TSS or oil and grease were recorded. Although the water quality criteria do not apply to wet weather discharges, of the 56 wet weather discharges, no exceedance of pH or oil and grease were recorded and 47 of the discharges recorded TSS below the criteria.

Table 11
Summary of Discharge Water Quality

Page 1 of 2

Date sampled	Sample Point	Discharge Type ¹	Notes	pH	TSS (mg/L)	Oil and Grease
				Criteria ²		
				6.5 – 8.5	≤50mg/L	Non-visible
10/01/2022	WS6	Conditional Discharge - Treated		6.90	<5	Nil-visible
10/01/2022	WS5b	Conditional Discharge - Treated		6.90	<5	Nil-visible
10/01/2022	WS4	Conditional Discharge - Treated		7.00	<5	Nil-visible
3/02/2022	WS4	Conditional Discharge - Untreated		7.60	2	Nil-visible
3/02/2022	WS5b	Conditional Discharge - Untreated		7.00	8	Nil-visible
2/03/2022	WS4	Wet Weather Discharge		7.30	13	Nil-visible
2/03/2022	WS5b	Wet Weather Discharge		6.60	33	Nil-visible
2/03/2022	WS6	Wet Weather Discharge		6.80	190	Nil-visible
2/03/2022	WS7	Wet Weather Discharge		6.50	16	Nil-visible
3/03/2022	WS4	Wet Weather Discharge		7.40	11	Nil-visible
3/03/2022	WS5b	Wet Weather Discharge		6.80	23	Nil-visible
3/03/2022	WS6	Wet Weather Discharge		6.90	72	Nil-visible
3/03/2022	WS7	Wet Weather Discharge		6.80	10	Nil-visible
4/03/2022	WS4	Wet Weather Discharge		7.30	11	Nil-visible
4/03/2022	WS5b	Wet Weather Discharge		7.00	10	Nil-visible
4/03/2022	WS6	Wet Weather Discharge		6.90	66	Nil-visible
4/03/2022	WS7	Wet Weather Discharge		6.90	9	Nil-visible
6/03/2022	WS4	Wet Weather Discharge		7.20	5	Nil-visible
6/03/2022	WS5b	Wet Weather Discharge		6.80	16	Nil-visible
6/03/2022	WS6	Wet Weather Discharge		6.80	52	Nil-visible
6/03/2022	WS7	Wet Weather Discharge		6.90	5	Nil-visible
7/03/2022	WS4	Wet Weather Discharge		7.36	16	Nil-visible
7/03/2022	WS5b	Wet Weather Discharge		7.16	59	Nil-visible
7/03/2022	WS6	Wet Weather Discharge		6.95	810	Nil-visible
7/03/2022	WS7	Wet Weather Discharge		6.75	10	Nil-visible
8/03/2022	WS4	Wet Weather Discharge		7.18	16	Nil-visible
8/03/2022	WS5b	Wet Weather Discharge		6.83	28	Nil-visible
8/03/2022	WS6	Wet Weather Discharge		6.86	430	Nil-visible
8/03/2022	WS7	Wet Weather Discharge		6.80	10	Nil-visible
13/03/2022	WS4	Conditional Discharge - Untreated		8.07	5	Nil-visible
13/03/2022	WS5b	Conditional Discharge - Untreated		7.40	10	Nil-visible
13/03/2022	WS6	Conditional Discharge - Treated		7.76	48	Nil-visible
13/03/2022	WS7	Conditional Discharge - Untreated		7.28	4	Nil-visible

Table 11 (Cont'd)
Summary of Discharge Water Quality

Date sampled	Sample Point	Discharge Type ¹	Notes	pH	TSS (mg/L)	Oil and Grease
				Criteria ²		
				6.5 – 8.5	≤50mg/L	Non-visible
7/04/2022	WS4	Wet Weather Discharge		7.32	9	Nil-visible
7/04/2022	WS5b	Wet Weather Discharge		6.75	26	Nil-visible
7/04/2022	WS6	Wet Weather Discharge		6.86	98	Nil-visible
7/04/2022	WS7	Wet Weather Discharge		6.72	27	Nil-visible
8/04/2022	WS4	Wet Weather Discharge		7.62	14	Nil-visible
8/04/2022	WS5b	Wet Weather Discharge		6.96	19	Nil-visible
8/04/2022	WS6	Wet Weather Discharge		6.95	71	Nil-visible
8/04/2022	WS7	Wet Weather Discharge		6.93	28	Nil-visible
9/04/2022	WS4	Wet Weather Discharge		7.39	6	Nil-visible
9/04/2022	WS5b	Wet Weather Discharge		7.08	17	Nil-visible
9/04/2022	WS6	Wet Weather Discharge		6.97	41	Nil-visible
9/04/2022	WS7	Wet Weather Discharge		6.96	8	Nil-visible
15/04/2022	WS4	Conditional Discharge - Untreated		8.03	2	Nil-visible
15/04/2022	WS5b	Conditional Discharge - Untreated		7.53	2	Nil-visible
15/04/2022	WS6	Conditional Discharge - Treated		8.11	5	Nil-visible
15/04/2022	WS7	Conditional Discharge - Untreated		7.25	4	Nil-visible
19/05/2022	WS4	Conditional Discharge - Untreated		7.82	<2	Nil-visible
19/05/2022	WS5b	Conditional Discharge - Untreated		7.28	<2	Nil-visible
19/05/2022	WS6	Conditional Discharge - Untreated		7.35	10	Nil-visible
19/05/2022	WS7	Conditional Discharge - Untreated		7.46	4	Nil-visible
2/07/2022	WS4	Wet Weather Discharge		6.65	2	Nil-visible
2/07/2022	WS5b	Wet Weather Discharge		6.85	9	Nil-visible
2/07/2022	WS6	Wet Weather Discharge		6.54	14	Nil-visible
2/07/2022	WS7	Wet Weather Discharge		6.61	18	Nil-visible
3/07/2022	WS4	Wet Weather Discharge		7.21	6	Nil-visible
3/07/2022	WS5b	Wet Weather Discharge		6.84	4	Nil-visible
3/07/2022	WS6	Wet Weather Discharge		7.05	37	Nil-visible
3/07/2022	WS7	Wet Weather Discharge		6.78	6	Nil-visible
4/07/2022	WS4	Wet Weather Discharge		7.37	12	Nil-visible
4/07/2022	WS5b	Wet Weather Discharge		7.12	2	Nil-visible
4/07/2022	WS6	Wet Weather Discharge		7.21	2	Nil-visible
4/07/2022	WS7	Wet Weather Discharge		6.81	8	Nil-visible
5/07/2022	WS4	Wet Weather Discharge		7.76	4	Nil-visible
5/07/2022	WS5b	Wet Weather Discharge		7.10	10	Nil-visible
5/07/2022	WS6	Wet Weather Discharge		6.76	11	Nil-visible
5/07/2022	WS7	Wet Weather Discharge		6.96	3	Nil-visible

1. Untreated = Sampling indicated water was suitable for discharge without treatment.

2. Does not apply during Wet Weather Discharge

Reportable Incidents and Further Improvements

No reportable incidents or other issues arose during the reporting period and no specific improvements are planned during the next reporting period.

7.3 GROUNDWATER

No operations were undertaken during the reporting period that would encounter groundwater. It is noted that groundwater monitoring bores are not required to be installed until extraction operations reach 660m AHD, which has not yet occurred. Notwithstanding, during July 2019 four groundwater monitoring bores were installed (see **Figure 6**) to establish baseline groundwater data. Since installation monitoring has been completed 6 monthly with all data representing baseline data. It is noted that access to the northern monitoring sites STK20S and STK20D was not possible during April and October 2022 due to ongoing wet conditions.

The results of the baseline monitoring to date are summarised in **Table 12** with key analytes presented graphically in **Figure 11**.

Further monitoring is required to provide an adequate description of baseline water quality. However, initial monitoring indicates the groundwater is slightly brackish to brackish with an acidic to neutral pH. Nitrogen and phosphorous levels have been slightly elevated but are generally consistent with the concentrations recorded within surface water. Aluminium and iron level have been slightly elevated during some monitoring events at some locations particularly at monitoring location STK20D and STK22.

In relation to groundwater levels, there has been a trend at all monitoring sites of slightly increased water levels. This is reflective of the ongoing significant rainfall since 2020 that has continued throughout 2022.

There were no reportable incidents and no further improvements are currently planned.

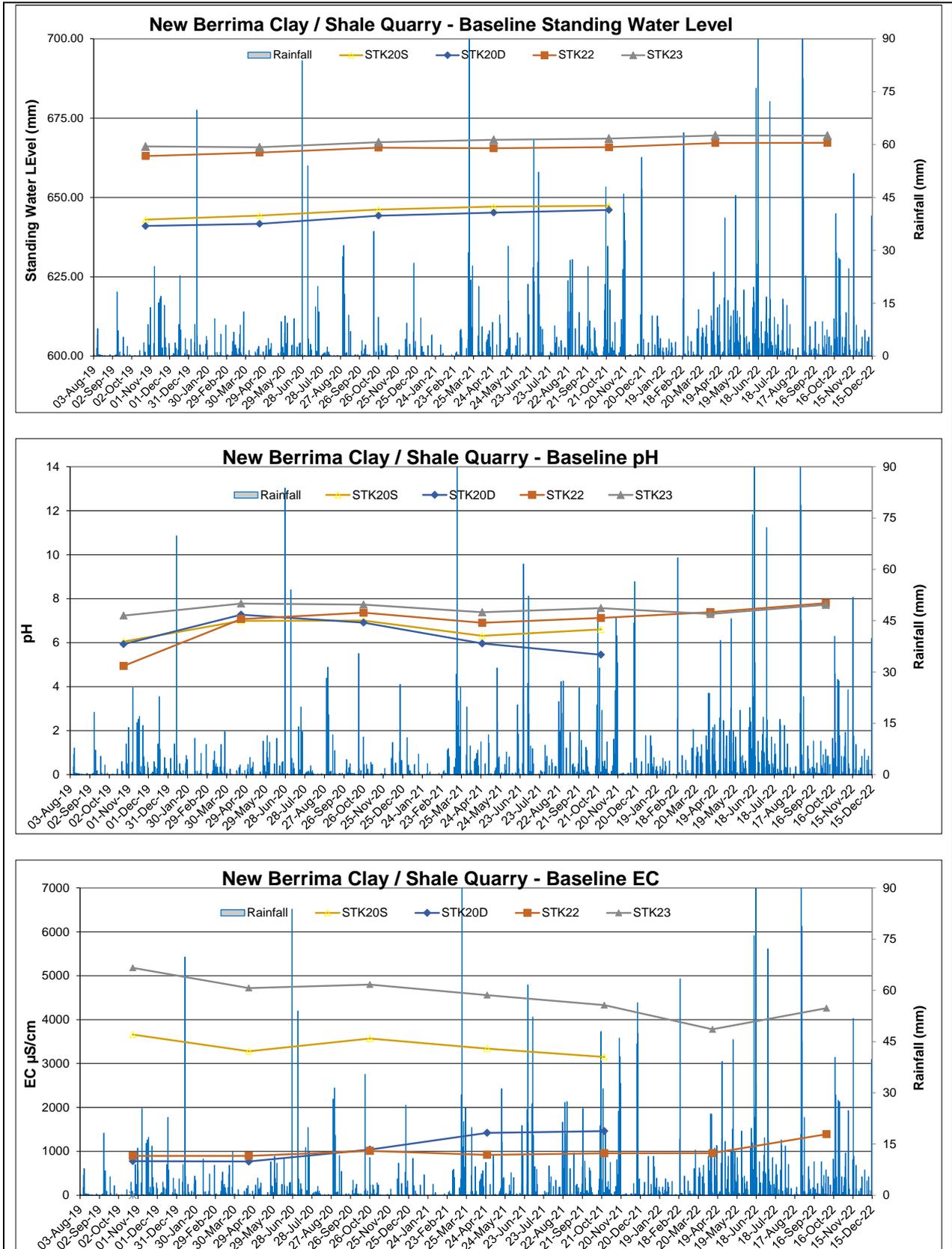


Figure 11
Baseline Groundwater Monitoring (2019-2022)

Table 12
Baseline Groundwater Quality Summary

Page 1 of 2

Parameter	Units	STK20S		STK20D		STK22		STK23	
		Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median	
Physical Parameters									
Standing Water Level	m AHD	643.03	651.88	641.01	651.53	663.05	667.26	665.80	669.55
		646.65		644.75		665.70		668.18	
pH		6.1	7.0	5.5	7.3	4.9	7.8	7.2	7.8
		6.6		6.0		7.1		7.6	
EC	µS/cm	3150	3660	768	1460	3	1390	3780	5180
		3340		1040		919		4560	
Major Anions and Cations									
Sodium	mg/L	197	258	60	68	97	144	199	296
		235		67		104		236	
Potassium	mg/L	6	8	4	16	16	19	14	35
		6		10		17		17	
Calcium	mg/L	88	129	21	69	28	61	268	316
		104		37		38		279	
Magnesium	mg/L	170	215	26	66	24	44	218	263
		199		48		26		232	
Chloride	mg/L	810	1160	154	504	137	300	1060	1420
		927		240		152		1150	
Sulfate	mg/L	20	199	1	4	2	14	33	122
		145		3		2		44	
Bicarbonate	mg/L	72	973	5	409	103	310	442	1690
		136		118		238		482	
Fluoride	mg/L	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2
		0.1		0.1		0.2		0.2	
Nutrients									
Nitrate	mg/L	0.03	0.61	0.06	0.07	0.01	0.06	0.01	0.26
		0.27		0.06		0.01		0.11	
Total Ammonia	mg/L	0.04	0.58	0.12	1.30	0.20	2.89	0.03	0.33
		0.14		0.85		1.95		0.17	
TKN	mg/L	0.40	2.10	0.20	9.30	6.20	17.50	0.10	0.90
		0.70		2.20		11.90		0.25	
Total Phosphorus	mg/L	0.04	4.43	0.05	0.96	0.08	2.68	0.01	0.19
		0.31		0.07		0.22		0.03	
Reactive Phosphorus	mg/L	0.00	0.00	0.03	0.03	0.01	0.18	0.00	0.00
		below LOR		0.03		0.03		below LOR	
Metals									
Aluminium	mg/L	0.000	0.000	0.050	0.520	0.220	1.260	0.010	0.060
		below LOR		0.205		0.560		0.020	
Arsenic	mg/L	0.002	0.017	0.002	0.004	0.002	0.006	0.002	0.060
		0.010		0.004		0.005		0.002	

Table 12 (Cont'd)
Baseline Groundwater Quality Summary

Parameter	Units	STK20S		STK20D		STK22		STK23	
		Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median	
Metals (Cont'd)									
Cadmium	mg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		below LOR		below LOR		below LOR		0.000	
Chromium	mg/L	0.000	0.000	0.002	0.004	0.001	0.010	0.002	0.003
		below LOR		0.003		0.005		0.002	
Cobalt	mg/L	0.016	0.049	0.002	0.003	0.002	0.006	0.002	0.004
		0.033		0.003		0.003		0.003	
Copper	mg/L	0.002	0.002	0.002	0.002	0.001	0.001	0.003	0.003
		0.002		0.002		0.001		0.003	
Lead	mg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002
		below LOR		below LOR		below LOR		0.002	
Manganese	mg/L	0.963	3.080	0.941	2.420	0.814	0.943	0.004	0.239
		1.370		1.504		0.907		0.194	
Nickel	mg/L	0.031	0.079	0.001	0.007	0.002	0.012	0.002	0.003
		0.039		0.002		0.004		0.003	
Selenium	mg/L	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		below LOR		below LOR		below LOR		below LOR	
Zinc	mg/L	0.009	0.033	0.011	0.019	0.009	0.014	0.007	0.023
		0.011		0.012		0.011		0.015	
Iron	mg/L	0.700	58.400	21.200	31.400	1.220	19.600	0.090	6.910
		13.600		22.400		10.500		0.160	

8 REHABILITATION

8.1 REHABILITATION PERFORMANCE DURING THE REPORTING PERIOD

Figures 4 and 5 show the disturbance and rehabilitation status of the Quarry Site at the end of this reporting period and predicted at the end of the next reporting period. Table 13 provides a summary of the disturbance and rehabilitation areas and Plates 5 to 17 present examples of rehabilitation activities during the reporting period and progression of rehabilitation from previous periods.

Table 13
Summary of Areas Disturbed and Rehabilitation

Quarry Area Type	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	Year 5 (ha)	Year 6 (ha)	Year 7 (ha)
Total Quarry footprint	16.04 ¹	16.04 ¹	16.04 ¹
Total active disturbance	16.04 ¹	16.04 ¹	16.04 ¹
Land being prepared for rehabilitation	0	0	0
Land under active rehabilitation	0	0	0
Completed rehabilitation	0	0	0

Notes: 1. Area updated based on updated aerial photography (reduced from 16.8ha). Includes approximately 7.3ha of temporary rehabilitation and areas of limited disturbance between site components.

During the reporting period no additional areas were available for rehabilitation. However, as discussed in Section 4.1, native tree species were planted on the visibility barriers and the southern tree screen. Ongoing maintenance activities were also undertaken including the replacing of approximately 20 to 30 trees, slashing around trees, and weed management.

It should be noted that, as the areas which have been rehabilitated may be disturbed into the future for either operations or final rehabilitation works, all areas of rehabilitation have been classified as temporarily rehabilitation. As such, no final rehabilitation has been undertaken to date.

It is also noted that the northern and southern tree screens do not technically constitute rehabilitation as these areas have not been disturbed by Quarry activities. As such, these areas are not included in Table 13. However, the tree screens represent an increase of 1.6ha of native vegetation established on-site.

8.2 ACTIONS FOR THE NEXT REPORTING PERIOD

Rehabilitation planned during the next reporting period will principally involve maintenance of temporarily rehabilitated areas and ongoing weed (and pest) management.



Plate 5 Central Visibility Barrier: Before Stabilisation (Previous Period)
Source: Austral Bricks Date: September 2021



Plate 6 Central Visibility Barrier: After Stabilisation (Previous Period)
Source: Austral Bricks Date: October 2021



Plate 7 Central Visibility Barrier: After Planting of Trees
Source: Austral Bricks Date: February 2023



Plate 8 Northern Bund Following Topsoiling (Previous Period)

Source: Austral Bricks Date: July 2021



Plate 9 Northern Bund - Rehabilitated

Source: Austral Bricks Date: February 2023



Plate 10 Rehabilitated Construction Haul Road

Source: Austral Bricks Date: January 2022



Plate 11 Rehabilitated Construction Haul Road

Source: Austral Bricks Date: February 2023



Plate 12 Northern Bund and Visual Screen – Tree Plantings
Source: Austral Bricks Date: February 2022



Plate 13 Northern Visual Screen – Shale Woodland
Source: Austral Bricks Date: May 2022



Plate 14 Northern Visual Screen – Shale Woodland
Source: Austral Bricks Date: February 2023



Plate 15 Southern Visual Screen – Trees Planted
Source: Austral Bricks Date: February 2022



Plate 16 Southern Bund – Trees Planted
Source: Austral Bricks Date: February 2022



Plate 17 Stabilised Overburden Area and Haul Road
Source: Austral Bricks Date: February 2022

9 COMMUNITY

9.1 COMMUNITY COMPLAINTS

No complaints were received during the reporting period and no complaints have been received in previous reporting periods.

9.2 COMMUNITY LIAISON

The key community liaison activity during the reporting period continued to be through engagement with the Community Consultative Committee (CCC) and the committee meetings held. Four meetings of the CCC were held in 2022, namely on 09 February, 15 June, 7 September and 7 December. A copy of the CCC meeting minutes are posted on Austral's website (<https://australbricks.com.au/environmental-documentation/>) under "New Berrima (NSW)".

These meetings continue to provide the opportunity for the Company to provide updates to the CCC members and for the members to ask questions regarding the status of operations activities. The CCC meeting during June was able to be held on site and included site inspections by CCC members.

10 INDEPENDENT AUDIT

Two independent environmental audits (IEAs) of the Quarry have been conducted to date in accordance with *Schedule 5 Condition 9* of PA 08_0212. These were undertaken during August 2017 and October 2020.

All recommendations from the August 2017 audit have previously been completed. As a result of the 2020 audit one recommendation was made in relation to a non-compliance with the timeframe for submission of the 2017 independent audit (further discussed in Section 11). A summary of the audit recommendation, the proposed action/response and current status is presented in **Table 14**.

Table 14
2020 Independent Audit Action Response Plan Status

Audit Recommendation	Action / Response	Status Update
Austral Bricks should ensure that the Independent Audit Reports are submitted within 12 weeks of commencement of each audit	Ensure that 2020 IEA (and response) is submitted within the 12 week timeframe per Condition 5(9A) not the 3 month timeframe per Condition 5(10).	The 2020 IEA and response was submitted on 20 October 2020, <10 weeks from commencement of the 2020 IEA on 13 August 2020.
	During a future modification application for PA 09_0212 request removal of Condition 5(10) to reduce potential for confusion of required submission dates.	Not yet applicable. Specific timing is not applicable / action will be opportunistic based on any future modification applications lodged for other purposes.

The next independent audit is planned to be undertaken in September 2023.

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

During the reporting period there were no:

- reportable incidents or exceedances; or
- official cautions, warning letters, penalty notices or prosecution proceedings.

Two non-compliance were identified during the preparation of the Annual Review, namely Project Approval Condition 2/2A which requires compliance with all conditions of consent and Condition 3/18 which requires the Water Management Plan to be implemented. Whilst the Water Management Plan was implemented to a very high level, the additional analytes (major cations, anions, metals and nutrients) were not analysed in four opportunistic surveillance monitoring events as required by the Water Management Plan.

This occurred as a result of a misinterpretation of the requirements following a change in staff. Given that all ground-disturbing activities had been completed during the previous reporting period, all ground disturbance rehabilitated through hydromulching, and no activities with potential to result in surface water impacts occurred, it was thought by Austral personnel that the additional analyses were not required.

Whilst no operational or ground-disturbing activities are planned to be undertaken during the 2023 reporting period, Austral have included a quarterly reminder within their internal compliance tracking system to undertake the surveillance monitoring regardless of the status of site activities.

12 **ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD**

Activities planned to be completed during the next reporting period are outlined in Section 4.3 and planned improvements in environmental management practices in Sections 6 and 7. In summary, the key activity planned for the next reporting period is the construction of the upgrades to the intersection of Taylor Avenue and New Berrima Road.

A further review and update, where necessary, to the management plans (excluding the Water Management Plan which was submitted to DPE during September 2022) will also be completed during the next reporting period given the completion of site establishment activities with any aspects not relevant to ongoing operations to be removed. Any learnings from the site establishment and construction phase will also be reflected in the management plans.

Appendices

(Total No. of pages including blank pages = 71)

- Appendix 1 Compliance Review of Project Approval 08_0212
- Appendix 2 Compliance Review of M(MO)L6
- Appendix 3 Meteorological Data Recorded during 2022
- Appendix 4 Noise Monitoring Report prepared by Spectrum Acoustics
- Appendix 5 Summary of Water Quality Data
- Appendix 6 Review of Sediment Basins prepared by SEEC

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Appendix 1

Compliance Review of Project Approval 08_0212

(Total No. of pages including blank pages = 30)

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Page 3 of 29

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 2: ADMINISTRATION CONDITIONS (Cont'd)				
DEMOLITION				
2/11	The Proponent must ensure that all demolition work on site is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.	Not Applicable	No demolition undertaken during the reporting period.	D, A
PROTECTION OF PUBLIC INFRASTRUCTURE				
2/12	The Proponent must: a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.	Not Applicable	No repairs or relocation of public infrastructure occurred during this reporting period.	D, A
OPERATION OF PLANT AND EQUIPMENT				
2/13	The Proponent must ensure that all plant and equipment used at the site is: a) maintained in a proper and efficient condition; and b) operated in a proper and efficient manner.	Compliant	All mobile equipment utilised during the reporting period was maintained properly. This was aided through completion of operator pre-start checklists and visual checks of operational activities by the Austral Raw Materials and Mining Manager.	A, D
STAGED SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM				
2/14	With the approval of the Secretary, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis. <i>Notes:</i> <ul style="list-style-type: none"> • While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program. 	Not Applicable	The Management Plans prepared relate to all stages of operations.	D
* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*																									
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)																													
NOISE (Cont'd)																													
Visibility Barrier and Stockpile Dimensions																													
3/3A	The Visibility Barriers and surplus overburden stockpile (refer Figure 1 Appendix A) must be constructed to meet the dimensions specified in Table 1A, unless the Secretary agrees otherwise.	Compliant	The Visibility Barriers have been constructed to meet the minimum dimensions specified / the approved site layout. It is noted that the Southern Barrier length is ~339m which is consistent with the length shown on the approved site layout. The maximum length of the barrier is constrained to the west by existing tree line and east by the powerline easement. Table 1A will require update in future modification to be consistent with Figure 1 of Appendix A). The existing overburden stockpile maximum elevation is 682.0m AHD.	D, A																									
<i>Table 1A: Visibility Barriers and Surplus Overburden Stockpile Dimensions</i>																													
<table border="1"> <thead> <tr> <th>Structure</th> <th>Height</th> <th>Base Width (m)</th> <th>Length (m)</th> <th>Surface Area (ha)</th> </tr> </thead> <tbody> <tr> <td>Central Barrier (minimum)</td> <td>675 (m AHD)</td> <td>30 - 45</td> <td>420</td> <td>1.5</td> </tr> <tr> <td>Northern Barrier (minimum)</td> <td>672 (m AHD)</td> <td>35 - 50</td> <td>160</td> <td>0.7</td> </tr> <tr> <td>Southern Barrier (minimum)</td> <td>4 metres above the natural land surface</td> <td>20</td> <td>350</td> <td>0.7</td> </tr> <tr> <td>Overburden Stockpile (maximum)</td> <td>683 (m AHD)</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					Structure	Height	Base Width (m)	Length (m)	Surface Area (ha)	Central Barrier (minimum)	675 (m AHD)	30 - 45	420	1.5	Northern Barrier (minimum)	672 (m AHD)	35 - 50	160	0.7	Southern Barrier (minimum)	4 metres above the natural land surface	20	350	0.7	Overburden Stockpile (maximum)	683 (m AHD)	-	-	-
Structure	Height	Base Width (m)	Length (m)	Surface Area (ha)																									
Central Barrier (minimum)	675 (m AHD)	30 - 45	420	1.5																									
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Southern Barrier (minimum)	4 metres above the natural land surface	20	350	0.7																									
Overburden Stockpile (maximum)	683 (m AHD)	-	-	-																									
Noise Criteria – Bund Construction																													
3/4	During the construction of the Visibility Barriers, the Proponent must ensure that the noise generated on site does not exceed the criteria in Table 1.	No Longer Applicable	The visibility barriers were constructed during the 2021 reporting period. No exceedances to any noise criteria were recorded during that time.	D, A																									
<i>Table 1 – Noise Criteria – Bund Construction</i>																													
<table border="1"> <thead> <tr> <th>Receiver</th> <th>L_{Aeq} (15 min) dB(A)</th> </tr> </thead> <tbody> <tr> <td>R2</td> <td>43</td> </tr> <tr> <td>All other receivers</td> <td>38</td> </tr> </tbody> </table>					Receiver	L _{Aeq} (15 min) dB(A)	R2	43	All other receivers	38																			
Receiver	L _{Aeq} (15 min) dB(A)																												
R2	43																												
All other receivers	38																												
<p>Notes:</p> <ul style="list-style-type: none"> Receiver locations are shown in Figure 4 of APPENDIX A. Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. 																													
Noise Criteria																													
3/5	Except for the period when the Visibility Barriers are being constructed, the Proponent must ensure that the noise generated by the project does not exceed 38dB(a) LAeq (15min) at any residence on privately-owned land.	Compliant	Annual independent noise monitoring was undertaken during the reporting period. No exceedances to any noise criteria were recorded. Furthermore, no complaints have been received.	D, A																									
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>																													

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*																
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)																				
NOISE (Cont'd)																				
Noise Criteria (Cont'd)																				
3/5 (Cont'd)	However, this criterion does not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.																			
Hours of Operations																				
3/6	The Proponent must comply with the operating hours in Table 2. <i>Table 2 – Operating Hours</i>	Compliant	No activities were undertaken outside of the approved hours of operation.	A																
<table border="1"> <thead> <tr> <th>Day</th> <th>Transport</th> <th>Quarrying Operations</th> <th>Construction</th> </tr> </thead> <tbody> <tr> <td>Monday – Friday</td> <td>7 am to 4 pm</td> <td>7 am to 5 pm</td> <td>7 am – 5 pm</td> </tr> <tr> <td>Saturday</td> <td>8 am to 1 pm</td> <td>8 am to 1 pm</td> <td>8 am – 1 pm</td> </tr> <tr> <td>Sundays and Public Holidays</td> <td>None</td> <td>None</td> <td>None</td> </tr> </tbody> </table>					Day	Transport	Quarrying Operations	Construction	Monday – Friday	7 am to 4 pm	7 am to 5 pm	7 am – 5 pm	Saturday	8 am to 1 pm	8 am to 1 pm	8 am – 1 pm	Sundays and Public Holidays	None	None	None
Day	Transport	Quarrying Operations	Construction																	
Monday – Friday	7 am to 4 pm	7 am to 5 pm	7 am – 5 pm																	
Saturday	8 am to 1 pm	8 am to 1 pm	8 am – 1 pm																	
Sundays and Public Holidays	None	None	None																	
<i>Note: Maintenance activities may occur at any time provided they are inaudible at privately-owned residences.</i>																				
Operating Conditions																				
3/7	The Proponent must:																			
	a) implement best practice noise management to minimise the construction, operational, low frequency and traffic noise of the project;	Compliant	Appropriate noise management was implemented for the activities undertaken during the reporting period. No noise management issues arose during the reporting period.	A																
	b) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply;	Not Yet Applicable	Applicable conditions have not yet occurred during periods of site activity.	A																
	c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and	Compliant	As above for item a).	A																
	d) regularly assess noise monitoring data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this approval, to the satisfaction of the Secretary.	Not Yet Applicable	No issues with noise have arisen to date and no complaints have been received.	A																
Noise Management Plan																				
3/8	The Proponent must prepare a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:	Compliant	The Plan was submitted to the Secretary on 18 March 2016 and approved on 13 May 2016. The Plan was last updated and approved 28 September 2018.	D																
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>																				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*									
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)													
NOISE (Cont'd)													
Noise Management Plan (Cont'd)													
3/8 (Cont'd)	<p>a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the construction of the Visibility Barriers;</p> <p>b) describe the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> • best management practice is being employed on site; • the noise impacts of the project are minimised during meteorological conditions when the noise limits in this approval do not apply; and • compliance with the relevant conditions of this approval; <p>c) describe the proposed noise management system in detail; and</p> <p>d) include a monitoring program that:</p> <ul style="list-style-type: none"> • is capable of evaluating the performance of the project; • includes a protocol for determining exceedances of the relevant conditions in this approval; and • evaluates and reports on the effectiveness of the noise management system on site. <p>The Proponent must implement the approved management plan as approved from time to time by the Secretary.</p>												
AIR QUALITY													
Air Quality Criteria													
3/9	<p>The Proponent must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated on site do not exceed the criteria in Table 3, Table 4 and Table 5 at any residence on privately-owned land, or on more than 25% of any privately-owned land.</p> <p><i>Table 3 – Long-Term Impact Assessment Criteria for Particulate Matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^a Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulates (TSP)</td> <td>Annual</td> <td>^a 90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>^a 30 µg/m³</td> </tr> </tbody> </table>	Pollutant	Averaging period	^a Criterion	Total suspended particulates (TSP)	Annual	^a 90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³	Compliant	<p>All appropriate dust management measures were implemented during the reporting period. A key measure includes the rehabilitation of disturbance areas no longer required. Deposited dust monitoring to date also indicates compliance with the applicable criteria.</p>	D, A
Pollutant	Averaging period	^a Criterion											
Total suspended particulates (TSP)	Annual	^a 90 µg/m ³											
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³											
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>													

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
AIR QUALITY (Cont'd)				
Air Quality Management Plan				
3/11	d) minimise the surface disturbance of the site generated by the project.	Compliant	Disturbances have been limited and completed areas hydromulched to reduce the area subject to wind (and water) erosion.	A, D
	<p>The Proponent must prepare an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the construction of the Visibility Barriers</p> <p>b) describes the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> • best management practice is employed; • the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events; and • compliance with the relevant conditions of this approval; <p>c) describes the proposed air quality management system; and</p> <p>d) includes an air quality monitoring program that:</p> <ul style="list-style-type: none"> • is capable of evaluating the performance of the project; • includes a protocol for determining any exceedances of the relevant conditions of approval; • adequately supports the air quality management system; and • evaluates and reports of the adequacy of the air quality management system. <p>The Proponent must implement the approved management plan as approved from time to time by the Secretary.</p>	Compliant	The Plan was submitted to the Secretary on 18 March 2016 and approved on 13 May 2016. The Plan was last updated and approved 28 September 2018.	D
METEOROLOGICAL MONITORING				
3/12	During the life of the project, the Proponent must ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the "Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales" guideline.	Compliant	A station was established on site on 19 September 2016 and remains operational.	D, O
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
SOIL AND WATER				
	<i>Note: The Proponent is required to obtain the necessary water licences for the project under the Water Act 1912 and/or Water Management Act 2000.</i>	Not Yet Applicable	No water licences currently required.	D
Riparian Buffer Distance				
3/13	The Proponent must maintain a minimum buffer distance of 515 metres (measured from the top of bank) between extraction area and Wingecarribee River.	Compliant	No extraction activities occurred within the nominated buffer during the reporting period.	D, A
Surface Water Discharging				
3/14	The Proponent must ensure that all surface water discharges from the site comply with section 120 of the POEO Act or, if an EPL has been issued regulating water discharges from the site, the discharge limits (both volume and quality) set for the project in the EPL.	Compliant	No exceedances were reported during any conditional discharges (see Section 7.2 of this Annual Review).	A
Surface Water Supply				
3/15	The Proponent must ensure it has sufficient water for all stages of the project, and if necessary, adjust the scale of quarrying operations on site to match its available supply.	Compliant	Dirty water captured within the sump will provide sufficient water for dust suppression if required.	D, A
On-Site Sewerage Management				
3/16	The Proponent must manage on-site sewage to the satisfaction of Council and EPA.	Compliant	A porta-loo is retained on site and managed by a licenced contractor. Satisfaction of Council and EPA has not been determined.	A
Storage of Chemicals & Petroleum Products				
3/17	The Proponent must ensure all chemicals and/or petroleum products on site are stored in accordance with Australian Standard AS1940-2004, The Storage and Handling of Flammable and Combustible Liquids, and in appropriately bunded areas with impervious flooring and of sufficient capacity to contain 110% of the largest container stored within the bund. The flooring and bund(s) must be designed in accordance with: <ul style="list-style-type: none"> the requirements of relevant Australian Standards; and DECC's Storing and Handling Liquids: Environmental Protection – Participants Manual. 	Compliant	A bunded pallet within the storage container was used for storage of minor volumes of oils and grease.	A
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
SOIL AND WATER (Cont'd)				
Water Management Plan				
3/18	<p>The Proponent must prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must be prepared in consultation with the EPA, WaterNSW and DPI – Water by suitably qualified and experienced persons whose appointment has been approved by the Secretary, and be submitted to the Secretary for approval prior to the construction the Visibility Barriers on site.</p> <p>In addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include a:</p> <p>a) Site Water Balance that:</p> <ul style="list-style-type: none"> • includes details of: <ul style="list-style-type: none"> – sources and security of water supply, including contingency planning for future reporting periods; – water use on site; – water management on site; – reporting procedures, including comparisons of the site water balance each calendar year; and • describes the measures that would be implemented to minimise clean water use on site; <p>b) Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> • detailed baseline data on surface water flows and quality in the water-bodies that could be affected by the project; • a detailed description of the surface water management system on site, including the: <ul style="list-style-type: none"> – clean water diversion systems; – erosion and sediment controls; and – water storages. • a plan for identifying, extracting, handling, and the long-term storage of potentially acid forming material on site; 	Non-Compliant	<p>The Plan was submitted to the Secretary on 18 March 2016 and approved on 9 June 2016. The Plan was updated and approved 8 October 2020. A further updated Plan was submitted to DPE 20 September 2022 and remains under assessment.</p> <p>During the 2022 Reporting Period the additional analytes (major cations, anions, metals and nutrients) were not analysed as part of the surveillance monitoring specified within the Water Management Plan. Therefore the Water Management Plan was not fully implemented during the reporting period. This is further discussed in Section 1 and 11 of the Annual Review.</p>	D
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
SOIL AND WATER (Cont'd)				
Water Management Plan (Cont'd)				
3/18 (Cont'd)	<ul style="list-style-type: none"> • detailed plans, including design objectives and performance criteria, for: • the water storage dams; and <ul style="list-style-type: none"> – reinstatement of drainage lines on the rehabilitated areas of the site; – control of water pollution from rehabilitated areas of the site; • performance criteria for surface water quality attributes relevant to water quality impacts on biological diversity and aquatic ecological integrity, including salinity, heavy metals, sediment load, pH, hardness and biological oxygen demand; • a program to monitor: <ul style="list-style-type: none"> – the effectiveness of the water management system; – surface water flows and quality in local water ways; and – ecosystem health of local water ways; • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project; and <p>c) Groundwater Management Plan, which includes:</p> <ul style="list-style-type: none"> • detailed baseline data on groundwater levels, yield and quality in the area, that could be affected by the project; • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor: <ul style="list-style-type: none"> – groundwater inflows to the quarrying operations; – the impacts of the project on: <ul style="list-style-type: none"> o local alluvial aquifers; o any groundwater bores on privately-owned land that could be affected by the project; 			
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Page 13 of 29

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
SOIL AND WATER (Cont'd)				
Water Management Plan (Cont'd)				
3/18 (Cont'd)	<ul style="list-style-type: none"> ○ the seepage/leachate from water storages or backfilled voids on site; and ○ groundwater dependent ecosystems; • a plan to respond to any exceedances of the groundwater assessment criteria; <p>The Proponent must implement the approved management plan as approved from time to time by the Secretary.</p>			
Groundwater Monitoring				
3/18A	The Proponent must install 3 pairs of nested piezometers prior to the quarry pit floor reaching 660m AHD, in consultation with DPI – Water and to the satisfaction of the Secretary.	Compliant	Whilst extraction operations have not yet reached the 660m AHD level, acceptance of the monitoring approach was received from NRAR on 27 May 2019 and the piezometers installed during July 2019.	D
VISUAL				
Establishment of Effective Vegetative Screens				
3/19	The Proponent must vegetate (with grasses, shrubs and trees) the Visibility Barriers as soon as practicable after the completion of the construction of the bunds, to the satisfaction of the Secretary.	Compliant	Native trees and shrubs were planted on the barriers during the reporting period and have successfully established.	D, A
3/19A	Prior to transporting any product from the site, the Proponent must establish a 0.68ha tree screen adjacent to the Northern Visibility Barrier, as shown on Figure 1 in Appendix A. The screen must include native plant species from the <i>Southern Highlands Shale Woodland Endangered Ecological Community</i> .	Compliant	Whilst product transportation has not occurred to date, the northern vegetation screen has been planted with native plant species from the Shale Woodland EEC.	A, D
Advertising				
3/20	The Proponent must not erect or display any advertising structure(s) or signs on the site without the written approval of the Secretary. <i>Note: This condition does not require approval for any business identification, traffic management, and/or safety or environmental signs.</i>	Not Yet Applicable	No advertising structures are required or have been erected for the quarry.	D, A
* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

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Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
VISUAL (Cont'd)				
Operating Conditions				
3/21	The Proponent must: a) implement all reasonable and feasible measures to minimise the visual impacts and any off-site lighting impacts of the project; and b) maintain and improve the effectiveness of the bunds and vegetative screens over the life of the project.	Not Yet Applicable	No lighting was required to be used on-site during the reporting period.	A
		Compliant	Visibility Barriers completed, hydromulched and planted with native trees. The native tree screens have also been planted. Slashing and weed spraying have been undertaken to aid establishment of the trees.	D, A
3/22	Deleted	-	-	-
TRANSPORT				
Road Upgrades (Local Roads)				
3/23	Prior to transporting any extractive material from the site, the Proponent must: a) construct the junction of the site access road with Berrima Road to Basic Right Turn and Basic Left Turn Treatment standard for a 19m semi-trailer; b) construct a raised concrete median in Berrima Road on the south bound approach to its junction with MR372; c) provide appropriate traffic signage and line-marking, in accordance with AUSTRROADS <i>Guide to Road Design</i> and to the satisfaction of the Council.	Compliant	Construction has been completed with road sealing and line marking undertaken during the reporting period. Product transportation has not yet commenced.	A, D
Road Upgrades (Main Roads)				
3/24	Prior to transporting any extractive material from the site, the Proponent must: a) construct the Berrima Road/Taylor Avenue junction to give priority to MR372 incorporating Rural BA Left and Right turn treatments for a 19m semi-trailer; b) provide appropriate traffic signage and line-marking, in accordance with AUSTRROADS <i>Guide to Road Design</i> and to the satisfaction of the Council and the RMS.	Note Yet Applicable	No product transportation has occurred to date. Austral has continued to consult with Council regarding the resolution of matters required to enable the upgrade works to be completed.	A
* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
TRANSPORT (Cont'd)				
Road Upgrades (Main Roads) (Cont'd)				
3/24 (Cont'd)	If the Council undertakes or proposes to undertake a superior treatment of this intersection upgrade, then this condition may be fulfilled by the Proponent paying a monetary contribution to the Council equivalent to the cost of the upgrades specified under this condition, as assessed by a qualified independent valuer or quantity surveyor appointed by the Secretary. The costs of the valuation are to be paid by the Proponent. Any dispute over the interpretation of this condition or a satisfactory valuation can be referred by any party to the Secretary for resolution. The decision of the Secretary in any such dispute shall be final.			
Transport Route				
3/25	The Proponent must ensure heavy vehicles associated with the Project travel along haulage routes specified in the EA and the haulage route diagram in Figure 3 of APPENDIX A to this approval to the satisfaction of the Secretary.	Not Yet Applicable	Despatch of clay/shale has not yet commenced.	A
Road Maintenance Contribution				
3/26	The Proponent must pay to Council an annual contribution of 91.2 cents per cubic metre of extractive material exported from the site (indexed annually to Consumer Price Index) for the life of the Project. The volume of extractive material exported from the site must be established by way of a volumetric survey of the site carried out by a registered surveyor. Each annual volumetric survey must be provided to Council to allow verification of the contribution amount. The first annual payment falls due 12 months from the commencement of operation. <i>Note: The Proponent must provide a base-line survey of the site to the Council prior to the commencement of operations.</i>	Not Yet Applicable	Despatch of clay/shale has not yet commenced.	A
* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
TRANSPORT (Cont'd)				
Parking				
3/27	The Proponent must provide sufficient parking for all project-related traffic, in accordance with Council's parking code.	Compliant	Dedicated parking areas are available on site with no on-street parking required.	A
Operating Conditions				
3/28	The Proponent must ensure that:			
	a) vehicles on site do not exceed a speed limit of 30 kilometres per hour;	Compliant	Company policy nominates a speed limit of 30kph on site.	A
	b) all loaded vehicles entering or leaving the site have their loads covered; and	Not Yet Applicable	Despatch of clay/shale has not yet commenced.	A
	c) all loaded vehicles leaving the site are cleaned of sand and other materials before they leave the site so they do not track dirt onto the public roads.	Not Yet Applicable	Despatch of clay/shale has not yet commenced.	A
Transport Management Plan				
3/29	The Proponent must prepare a Transport Management Plan for the project to the Secretary. This plan must:	Compliant	The Plan was submitted to the Secretary on 18 March 2016 and approved on 13 May 2016. The Plan was last updated and approved 28 September 2018. It is noted that correspondence with Berrima Buslines on 3 May 2022 that they do operate buses on the transportation route and do not plan to. In the event a bus was to operate on the route it is their preference not to install a CB radio due to language encountered on an open channel radio and the presence of children on the bus. Transport operations have not yet commenced.	D, A
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

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Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
TRANSPORT (Cont'd)				
Transport Management Plan (Cont'd)				
3/29 (Cont'd)	The Proponent must implement the approved management plan as approved from time to time by the Secretary.			
3/30	Should the Traffic Management Plan (TMP) for the proposed works require a reduction of the speed limit on Berrima Road and/or Taylor Avenue, a Speed Zone Authorisation must be obtained from RMS Traffic Operations Unit (TOU) prior to commencing work within the road reserve.	Not Yet Applicable	Authorisation not currently required.	A
WASTE				
3/31	The Proponent must: a) monitor the amount of waste generated by the project; b) investigate ways to minimise waste generated by the project; c) implement reasonable and feasible measures to minimise waste generated by the project; d) ensure that all waste generated by the project is lawfully disposed of to an appropriate facility; and e) report on waste management and minimisation in the annual review, to the satisfaction of the Secretary.	Compliant Compliant Compliant Compliant Compliant	Information on waste volume provided in Section 6.6 of this document. All contractors are required to remove their own waste from site. All contractors are required to remove their own waste from site. All contractors are required to dispose of all wastes lawfully. See Section 6.6 of this document.	D A A A D
ABORIGINAL HERITAGE				
Aboriginal Heritage Management Plan				
3/32	The Proponent must prepare an Aboriginal Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must: a) be prepared in consultation with OEH and the relevant Local Aboriginal Land Council; b) be submitted to the Secretary for approval prior to any ground disturbance; and c) include a: • protocol for the engagement of an Aboriginal Site Officer for any necessary ground disturbance monitoring;	Compliant	The Plan was submitted to the Secretary on 18 March 2016 and approved on 13 May 2016. The Plan was last updated and approved 28 September 2018. A further administrative update was approved 9 November 2018.	D
* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
ABORIGINAL HERITAGE (Cont'd)				
Aboriginal Heritage Management Plan (Cont'd)				
3/32 (Cont'd)	<ul style="list-style-type: none"> • program for the recording, notifying, salvage and surface collection of any Aboriginal objects/sites that may be encountered within the project area; • description of the measures that would be implemented if any Aboriginal skeletal remains are discovered during the project; and • protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of the Aboriginal heritage of the objects/sites. <p>The Proponent must implement the approved management plan as approved from time to time by the Secretary.</p>			
3/32A	<p>If any item or object of potential Aboriginal heritage significance is identified during works associated with the project, the Proponent must ensure that:</p> <ol style="list-style-type: none"> a) all work in the immediate vicinity of the potential Aboriginal item or object ceases immediately; b) a 10m buffer area around the potential item or object is cordoned off; and c) the OEH is contacted immediately. <p>Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the <i>National Parks and Wildlife Act 1974</i>.</p>	Not Applicable	No Aboriginal heritage objects or objects suspected of being of Aboriginal origin were located during the reporting period.	D, A
LANDSCAPE				
Rehabilitation Objectives				
3/33	The Proponent must rehabilitate the site to the satisfaction of the DRG. This rehabilitation must be consistent with the proposed rehabilitation strategy in the EA (MOD 1), and comply with the objectives in Table 6.	Not Yet Applicable	No areas of final rehabilitation have yet become available. All feasible / practicable temporary rehabilitation has been undertaken on available / completed areas.	D, A
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

**Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period**

Condition No.	Requirement	Compliance	Comment	Basis*												
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)																
LANDSCAPE (Cont'd)																
Rehabilitation Objectives (Cont'd)																
3/33 (Cont'd)	<p>Table 6 – Rehabilitation Objectives</p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>Site (as a whole)</td> <td>Safe, stable & non-polluting</td> </tr> <tr> <td>Surface Infrastructure</td> <td>To be decommissioned and removed, unless the DRG agrees otherwise</td> </tr> <tr> <td>Quarry Walls</td> <td>Final slopes of 1:3 (vertical : horizontal), except the southwestern wall of Bench 1 Vegetated with native endemic flora species to be consistent with surrounding landscape and to minimise visual impacts</td> </tr> <tr> <td>Quarry Pit Floor</td> <td>Suitable for grazing or other agricultural activities</td> </tr> <tr> <td>Other Land affected by the project</td> <td>Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> local native species: and a landform consistent with the surrounding environment </td> </tr> </tbody> </table>			Feature	Objective	Site (as a whole)	Safe, stable & non-polluting	Surface Infrastructure	To be decommissioned and removed, unless the DRG agrees otherwise	Quarry Walls	Final slopes of 1:3 (vertical : horizontal), except the southwestern wall of Bench 1 Vegetated with native endemic flora species to be consistent with surrounding landscape and to minimise visual impacts	Quarry Pit Floor	Suitable for grazing or other agricultural activities	Other Land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> local native species: and a landform consistent with the surrounding environment 	
Feature	Objective															
Site (as a whole)	Safe, stable & non-polluting															
Surface Infrastructure	To be decommissioned and removed, unless the DRG agrees otherwise															
Quarry Walls	Final slopes of 1:3 (vertical : horizontal), except the southwestern wall of Bench 1 Vegetated with native endemic flora species to be consistent with surrounding landscape and to minimise visual impacts															
Quarry Pit Floor	Suitable for grazing or other agricultural activities															
Other Land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> local native species: and a landform consistent with the surrounding environment 															
Progressive Rehabilitation																
3/34	The Proponent must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies must be employed when areas prone to dust generation cannot yet be permanently rehabilitated.	Compliant	Hydromulching has been undertaken to stabilise disturbances. Monitoring indicates dust generation has not been adverse.	D, A												
Landscape Management Plan																
3/35	The Proponent must prepare a Landscape Management Plan for the project to the satisfaction of the Secretary. This plan must: <ol style="list-style-type: none"> be prepared in consultation with OEH and Council, and submitted to the Secretary for approval prior to carrying out any development on site under this approval; describe the short, medium and long term measures that would be implemented to: <ul style="list-style-type: none"> manage the remnant vegetation and habitat on site; rehabilitate the riparian land adjacent to the Wingecarribee River on site; and ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval; 	Compliant	The Plan was submitted to the Secretary on 18 March 2016 and approved on 13 May 2016. The Plan was last updated and approved 28 September 2018.	D												
* = Basis for assessment of compliance																
D = Documentation Sighted A = Advised by Austral Employee O = Observation																

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
LANDSCAPE (Cont'd)				
Landscape Management Plan (Cont'd)				
3/35 (Cont'd)	<p>c) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, including triggering remedial action (if necessary);</p> <p>d) include a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:</p> <ul style="list-style-type: none"> • ensuring compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval; • enhancing the quality of existing vegetation and fauna habitat; • restoring native endemic vegetation and fauna habitat within the biodiversity areas and rehabilitation area; • maximising the salvage of resources within the approved disturbance area – including vegetative and soil resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; • collecting and propagating seed; • minimising the impacts on fauna on site, including undertaking pre-clearance surveys; • controlling weeds and feral pests; • controlling erosion; • managing grazing and agriculture on site; • controlling access; and • bushfire management; <p>e) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;</p>			
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 4: ADDITIONAL PROCEDURES (Cont'd)				
INDEPENDENT REVIEW (Cont'd)				
4/2 (Cont'd)	<p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision the Proponent must:</p> <p>a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:</p> <ul style="list-style-type: none"> • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and • if the project is not complying with these criteria, then identify the measures that could be implemented to ensure compliance with the relevant criteria; <p>b) give the Secretary and landowner a copy of the independent review; and</p> <p>c) comply with any written requests made by the Secretary to implement any findings of the review.</p>			
4/3	<p>If the independent review determines that the project is complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.</p> <p>If the independent review determines that the project is not complying with the relevant criteria in Schedule 3, then the Proponent must:</p> <p>a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until the project complies with the relevant criteria; or</p> <p>b) secure a written agreement with the landowner to allow exceedances of the relevant criteria,</p> <p>to the satisfaction of the Secretary.</p>	Not Applicable	No requests for an independent review are known to have been submitted to date.	A
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING (Cont'd)				
ENVIRONMENTAL MANAGEMENT (Cont'd)				
Management Plan Requirements (Cont'd)				
5/3 (Cont'd)	<p>c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> • impacts and environmental performance of the project; and • effectiveness of any management measures (see (c) above); <p>e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>f) a program to investigate and implement ways to improve the environmental performance of the project over time;</p> <p>g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and <p>h) a protocol for periodic review of the plan.</p> <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>			
Annual Review				
5/4	<p>By the end of December 2016, and annually thereafter, the Proponent must review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the works that are proposed to be carried out over the next year;</p>	Compliant	The first Annual Review was prepared for 2016 and the report updated as directed by the Secretary. This Annual Review has been prepared in accordance with this condition.	D
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Table A1-1 (Cont'd)
Compliance Review of PA 08_0212
for New Berrima Clay/Shale Quarry for the Reporting Period

Condition No.	Requirement	Compliance	Comment	Basis*
SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING (Cont'd)				
ENVIRONMENTAL MANAGEMENT (Cont'd)				
Revision of Strategies, Plans and Programs (Cont'd)				
	<p>Within 4 weeks of conducting any such review, the Proponent must advise the Secretary of the outcomes of the review, and provide any revised documents to the Secretary for review and approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p>			
Community Consultative Committee				
5/6	<p>The Proponent must establish and operate a CCC for the project to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Department's <i>Community Consultative Committee (CCC) Guidelines for State Significant Projects</i> (November 2016, or its latest version), and be operating prior to any development being carried out on site under this approval.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval. In accordance with the guideline, the Committee should comprise an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community. 	Compliant	<p>The first meeting of the CCC was held on 7 September 2016. The CCC has been operated in accordance with the guidelines and as directed by the committee (see Section 9 of this document).</p>	D
REPORTING				
Incident Reporting				
5/7	<p>The Proponent must notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent must notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>	Not Yet Applicable	<p>No reportable incidents occurred during the reporting period.</p>	A
<p>* = Basis for assessment of compliance D = Documentation Sighted A = Advised by Austral Employee O = Observation</p>				

Appendix 2

Compliance Review of M(MOL)6

(Total No. of pages including blank pages = 3)

Table A
Compliance Review – M(MO)L 6

Page 1 of 2

Cond. No.	Conditional Requirement	Compliance	Comments	Basis*
General Conditions				
1. Notice to Landholders				
(a)	<p>Within 90 days from the date of grant or renewal of this mining lease, the lease holder must give each landholder notice in writing:</p> <p>(i) that this mining lease has been granted or renewed; and</p> <p>(ii) whether the lease includes the surface.</p> <p>The notice must include a plan identifying the lease area and each landholder and individual land parcel within the lease area.</p>	Not Applicable	The lease is wholly contained within land owned by the leaseholder.	D, A
(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.	Not Applicable	There are not more than 10 landholders to give notice to.	D, A
2. Security				
	<p>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.</p> <p>The amount of the security deposit to be provided has been assessed at \$489,000.</p>	Compliant	A bank guarantee (Cert No AUSTRAL BR00089) for \$489,000 was established 16 October 2018.	D, A
3. Cooperation Agreement				
	<p>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:</p> <ul style="list-style-type: none"> • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts; and • rehabilitation issues. 	Not Applicable	There are no overlapping authorisations.	D, A
<p>Yes# No# - Complied / not complied with. Compliance no longer required to be assessed * = Basis for assessment of compliance D = Documentation sighted</p>				
			<p>A = Advised by Company Employee O = Observation during inspection</p>	

Table A (Cont'd)
Compliance Review – M(MO)L 6

Page 2 of 2

Cond. No.	Conditional Requirement	Compliance	Comments	Basis*
General Conditions				
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.	Not Yet Applicable	No Assessable Prospecting Operations were undertaken during this reporting period.	A
(b)	The Minister may require the lease holder to provide such information as required to assist the Minister to consider an application for approval.	Not Yet Applicable	No information request has been made nor has any application for approval.	A
(c)	An approval granted by the Minister under this condition may be granted subject to terms.	Not Yet Applicable	Noted	-
(d)	The lease holder must comply with the approval granted to the holder under this condition.	Not Yet Applicable	No Assessable Prospecting Operations were undertaken during this reporting period.	A
Yes# No# - Complied / not complied with. Compliance no longer required to be assessed * = Basis for assessment of compliance D = Documentation sighted				
			A = Advised by Company Employee O = Observation during inspection	

Appendix 3

Meteorological Data Recorded during 2022

(Total No. of pages including blank pages = 2)

Table A3-1
2022 Daily Rainfall Records – New Berrima Clay/Shale Quarry Weather Station

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	7.6	6.2	0.2	0	17.8	2.2	0.2	2.4	3.2	0
2	13	0.6	76	2.2	0.2	0	123	0.2	0	0.4	0	2
3	0.4	0.2	22.8	0	0	0.2	78.8	0	3.4	0.2	1.8	0.2
4	0	0.6	8.8	0	0.4	0	45	9.8	7.4	0	0.2	0
5	3.8	5.6	18.6	0	1.6	0	5.8	0	0.2	27.8	0	5.4
6	19.4	3.4	26.2	10.6	0	2	1.4	0	0.2	8.2	0	0.2
7	45.6	2	111	72.2	0	0.2	1	1.8	0	2.6	0	0
8	1	0.2	32.8	16	0	0	0	0.2	0	27.4	0	0
9	0	0.2	5.2	7.6	0.6	0	0	0.2	5.4	11.4	0.2	0
10	0.6	1.8	0.2	0.4	7.4	0	22.8	0	5.4	0.2	0	0
11	9.2	0.4	0	4	16.2	0	1	0.6	0	0	0.2	0
12	12.8	4	0	0	14.6	0	0.4	0.2	0	0	10.4	7.4
13	4.4	1.8	0	0.2	0.4	0	0	3.4	0	0	51.8	0
14	0.8	0	0.4	3	0.2	0.2	0	0	0	5.4	11.4	0
15	3.8	0	0.6	0.2	1.2	0.2	0.2	0	3	0.2	0	0
16	0.2	0.2	9.8	0.2	0.2	0	0	0.2	0	0.8	0	0
17	0	0	0.2	0.2	0	0	0	0.4	0	0	0	0
18	11	0	3.6	0	0	0	0	0	0	0.2	0	4.2
19	6	0	3.6	11	0	0.8	0.6	0.2	0	0	1.6	0.2
20	0.4	0	0.2	0.2	0	2.4	3.2	0.2	0	2.8	8.8	0
21	0.2	13.8	0	0.2	1.4	0.4	8.4	0.2	1	5.2	2	0
22	0	2.4	0	0	14.4	0.2	4.6	0	10.6	4.4	0	5.4
23	0.6	19.6	0	3.2	0	0	0.8	9.8	4.4	8.4	0	1.4
24	0	7.4	0.2	0.2	2.2	0	0.2	0	4.8	12.4	0	0
25	0	15.4	3.6	2	0.4	0	0	2.6	0.2	4.8	0	0
26	0	0.8	7	0.2	0.6	0.2	1.8	0	0	0.2	0	0
27	0	6.2	1.4	5.6	0.4	0	0	1.8	40.4	0	1.2	0
28	0	1.4	11.8	9	2	0	0	0.2	29.4	0	0.2	0
29	18.8		16.8	0.2	0	0	0	5.8	9.4	0	0.2	1.4
30	0.4		2.6	6	9	0	0.2	0.4	5.4	0	0.2	39.8
31	5.2		6.6		0.2		0.6	0.2		24.8		0.2
Total	157.6	88	377.6	160.8	73.8	6.8	317.6	40.6	130.8	150.2	93.4	67.8

Table A3-2
Monthly Rainfall Records – New Berrima Clay/Shale Quarry Weather Station

Year / Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2016	-	-	-	-	-	-	-	-	-	35.0	33.0	49.8	-
2017	34.8	80.8	180.6	24.2	25.0	19.4	19.4	17.6	2.0	39.6	88.4	33.6	565.4
2018	55.2	95.6	20.0	21.2	15.8	52.2	4.4	17.0	10.2	57.8	119.0	71.0	539.4
2019	54.6	7.0	115.4	9.0	13.6	61.4	9.6	21.0	43.0	18.8	10.4	1.2	365.0
2020	27.8	257.2	55.6	49.2	67.6	18.8	150.4	146.0	21.4	100.4	70.4	66.0	1030.8
2021	70.8	129	201	6.4	172	49.8	22.2	86.2	24.4	66.8	153	114	1095.6
2022	157.6	88.0	377.6	160.8	73.8	6.8	317.6	40.6	130.8	150.2	93.4	67.8	1665
Minimum	27.8	7.0	20.0	6.4	13.6	6.8	4.4	17.0	2.0	18.8	10.4	1.2	365.0
Average	66.8	109.6	158.4	45.1	61.3	34.7	87.3	54.7	38.6	66.9	81.1	57.6	876.9
Maximum	157.6	257.2	377.6	160.8	172.0	61.4	317.6	146.0	130.8	150.2	153.0	114.0	1665.0

* Weather station commissioned 18/09/2016

Appendix 4

Noise Monitoring Report prepared by Spectrum Acoustics

(Total No. of pages including blank pages = 16)



Document No: 08421/9434

ATTENDED NOISE MONITORING – September 2022 New Berrima Clay/Shale Quarry New Berrima, NSW

Prepared for:
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.....
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Principal / Director

October 2022

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APPENDIX A Description of Acoustical Terms

APPENDIX B Noise Limits

APPENDIX C Calibration Certificate

EXECUTIVE SUMMARY

Attended noise monitoring has been carried out for the New Berrima Clay/Shale Quarry (NBCSQ) on 30th September 2022. Monitoring was carried out in accordance with requirements of EPL20377, Project Approval 08_0212, the New Berrima Clay/Shale Quarry Noise Management (NBCSQ) Plan and other relevant Australian Standards and guidelines.

The site-specific operational criteria were not exceeded at any location or at any time throughout the monitoring period.

Noise from NBCSQ operations was inaudible at all locations throughout the monitoring period.

NBCSQ was compliant with Environmental Protection Licence (EPL) 20377 and New Berrima Clay/Shale Quarry Project Approval 08_0212 conditions for September 2022.

1.0 INTRODUCTION

This report presents the results of attended noise compliance monitoring and measurements conducted for the New Berrima Clay/Shale Quarry (NBCSQ) on 30th September 2022. Monitoring was undertaken in accordance with requirements of the NBCSQ Noise Management Plan (NMP) dated September 2018. The noise monitoring programme and procedures in the NMP have been developed in accordance with the NBCSQ Environmental Protection Licence (EPL) no 20377, and the Project Approval (PA 08_0212). To aid in the understanding of this report a description of acoustical terms is attached as **Appendix A**.

1.1 Noise Monitoring Locations

The NMP (Section 3.2) contains a table (Table 4) detailing the on-site locations for attended noise monitoring as reproduced below in **Table 1**. On-site monitoring locations are adopted as proxies for off-site receivers. Compliance with the limits at the on-site locations implies compliance with the (lower) criteria at off-site receivers. The monitoring locations are shown on **Figure 1**.

Monitoring Point	Description
N1	North of the extraction area
N2	East of the extraction area
N3	South east of the extraction area

The NBCSQ has a meteorological station installed on site with all meteorological data available through an online portal. This data is used to supplement the attended noise monitoring data.

1.2 Monitoring Frequency and Duration

The NMP indicates that attended monitoring is to be conducted quarterly at each location during construction activities, and annually once extraction activities begin. Each survey is to consist of one 15 minute measurement at each location. For the purposes of attended noise monitoring, operating hours are defined in the NMP as being 7:00am - 5:00pm Monday to Friday and 8:00am – 1:00pm Saturdays, with no operations commencing on Sundays or Public Holidays. Monitoring is conducted as required in Condition L2.1 of the EPL.

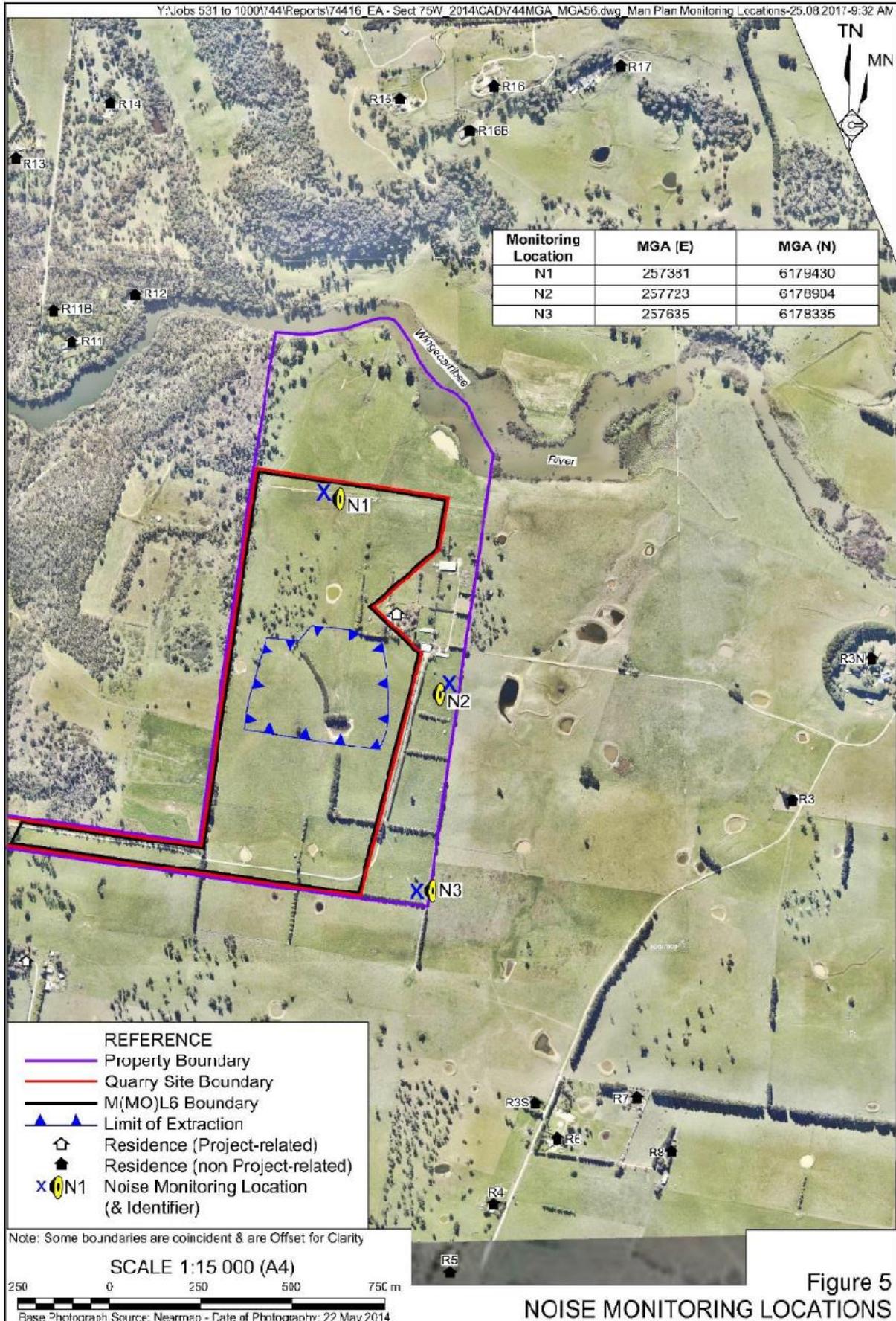


Figure 1: Noise Monitoring Locations

2.0 CRITERIA AND CONDITIONS

2.1 Noise Assessment Criteria

The noise assessment criteria are detailed in Condition L2.1 of the EPL and Table 4 of the NMP. The criteria vary for each receiver monitoring location and are shown in **Table 2**. Noise criteria for all residences listed in the EPL and NMP are shown in **Appendix B**.

Location	Noise Limit at any time - dB(A),Leq(15min)
N1	42
N2	49
N3	44

2.2 Applicable Meteorological Conditions

The noise limits apply under all meteorological conditions except for any one of the following;

1. Wind speeds greater than 3m/s at 10m above ground level; or
2. Stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or
3. Stability category G temperature inversion conditions.

2.3 Other Conditions

To determine compliance with the Leq (15 min) operational noise criteria the modification factors detailed in Fact Sheet C of the NSW Noise Policy for Industry must be applied, as appropriate, to the measured noise levels.

3.0 NOISE MONITORING PROCEDURE

3.1 Monitoring Equipment

Attended noise monitoring was conducted with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Class 1 characteristics as defined in AS IEC61672.1-2019 and has current NATA calibration. Calibration certificates are included in Appendix C. Field calibration is carried out at the start and end of each monitoring period.

A-weighted noise levels were measured over the 15-minute monitoring periods with data acquired at 1 or 2 second statistical intervals and the meter set to “fast” response. Each 1 or 2 second measurement is accompanied by a third-octave band spectrum from 20 - 20k Hz which is required for analysing INP ‘modifying factors’. Time based field notes allow for determination of the relative contributions to the overall noise level of all significant noise sources.

3.2 Measurement Analysis

The 15 minute Leq noise level for each monitoring period is shown in the tables below. Bruel & Kjaer “Evaluator” analysis software was used to identify the contributing significant noise sources to the overall noise level. Both the total measured noise level and the identified noise contributing sources are shown in the tables.

3.3 Meteorological Data

Meteorological data used in this report were taken from the weather station at the NBCSQ.

4.0 RESULTS AND DISCUSSION

4.1 Measured Noise Levels

4.1.1 NBCSQ Operations

Measured noise levels for each monitoring location are summarised in **Table 3**.

Location	Time	dB(A), Leq	NBCSQ Contribution dB(A), Leq	Criterion dB(A) Leq	Wind speed (m/s),dir	Identified Noise Sources
N1	12:02 pm	50	Inaudible	42	7.5 @ 125° (SE)	Wind, frogs, train, Hume highway,
N2	12:23 pm	44	Inaudible	49	7.3 @ 160° (SE)	Wind, frogs, birds, cattle, Hume highway
N3	12:42 pm	48	Inaudible	44	6.4 @ 166° (SE)	Wind, cattle, Hume highway

4.2 Discussion of Results

The results in Table 3 show that, under the operating and meteorological conditions at the times, for the 15 minute compliance measurement periods, the noise from the NBCSQ operations was inaudible at all monitoring locations.

APPENDIX A

DESCRIPTION OF ACOUSTICAL TERMS

Table A1
Definition of acoustical terms

Term	Description
dB(A)	The quantitative measure of sound heard by the human ear, measured by the A- Scale Weighting Network of a sound level meter expressed in decibels (dB).
SPL	Sound Pressure Level. The incremental variation of sound pressure above and below atmospheric pressure and expressed in decibels. The human ear responds to pressure fluctuations, resulting in sound being heard.
STL	Sound Transmission Loss. The ability of a partition to attenuate sound, in dB.
L _w	Sound Power Level radiated by a noise source per unit time re 1pW.
Leq	Equivalent Continuous Noise Level - taking into account the fluctuations of noise over time. The time-varying level is computed to give an equivalent dB(A) level that is equal to the energy content and time period.
L1	Average Peak Noise Level - the level exceeded for 1% of the monitoring period.
L90	"Background" Noise Level - the level exceeded for 90% of the monitoring period.

APPENDIX B

NOISE LIMITS

EPL 20377**L2 Noise limits**

L2.1 Noise from the premises must not exceed the noise limits in the table below:

Identification Point	Noise Limit at any time - dB(A) LAeq(15 minute)	Location
N1	42	North of the quarry void and labelled N1 on map titled "Environmental Monitoring Locations" dated 20 November 2015 (DOC16/206245).
N2	49	East of the quarry void and labelled N2 on map titled "Environmental Monitoring Locations" dated 20 November 2015 (DOC16/206245).
N3	44	South east of the quarry void and labelled N3 on map titled "Environmental Monitoring Locations" dated 20 November 2015 (DOC16/206245).

PA 08_0212**Noise Criteria – Bund Construction**

4. During the construction of the **Visibility Barriers**, the Proponent **must** ensure that the noise generated on site does not exceed the criteria in Table 1.

Table 1- Noise Criteria - Bund Construction

Receiver	$L_{Aeq(15 min)}$ dB(A)
R2	43
All other receivers	38

Notes:

- Receiver locations are shown in Figure 4 of APPENDIX A.
- Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

Noise Criteria

5. Except for the period when the **Visibility Barriers** are being constructed, the Proponent **must** ensure that the noise generated by the project does not exceed 38dB(a) $L_{Aeq(15min)}$ at any residence on privately-owned land.

However, this criterion does not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

APPENDIX C

CALIBRATION CERTIFICATE

Australian Calibration Laboratory
Suite 4.03, Level 4, 3 Thomas Holt Drive, Macquarie Park NSW 2113, Australia
Accredited for compliance with ISO/IEC 17025 - Calibration. Laboratory No. 1301

CERTIFICATE OF CALIBRATION

Certificate No: CAU2100868

Page 1 of 11

CALIBRATION OF:

Sound Level Meter:	Bruel & Kjaer	2250	No: 2747794
Microphone:	Bruel & Kjaer	4189	No: 2733511
Preamplifier:	Bruel & Kjaer	ZC-0032	No: 15339
Supplied Calibrator:	Bruel & Kjaer	4231	No: 2466354
Software version:	BZ7224 Version 4.6	Pattern Approval:	PTB
Instruction manual:	BE1712-22	Identification:	N/A

CUSTOMER:

Spectrum Acoustics Pty Ltd
Suite 1, 12 Alma Road
New Lambton NSW 2305

CALIBRATION CONDITIONS:

Preconditioning: 4 hours at 23 °C
Environment conditions: *see actual values in Environmental conditions sections*

SPECIFICATIONS:

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used to perform the periodic tests. The measurements included in this document are traceable to Australian/National standards.

PROCEDURE:

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System B&K 3630 with application software type 7763 (version 8.3 - DB: 8.30) and test procedure 2250-4189.

RESULTS:

	Initial calibration		Calibration prior to repair/adjustment
X	Calibration without repair/adjustment		Calibration after repair/adjustment

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of Calibration: 06/12/2021

Sajeeb Tharayil
 Calibration Technician

Certificate issued: 06/12/2021

Craig Patrick
 Approved signatory

Reproduction of the complete certificate is allowed. Part of the certificate may only be reproduced after written permission.



Appendix 5

Summary of Water Quality Data

(Total No. of pages including blank pages = 10)

Table 1
Baseline Data (2008 – October 2020)

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS5b		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median		Median	
pH		7.7	7.7	6.2	7.8	6.6	8.1	NS		6.4	6.7	NS		NS		NS		6.2	7.7
		7.7	7.2	7.2	6.6	6.7	6.2			7.7									
EC	µS/cm	393	393	102	350	215	970			120	135							105	390
		393.0	250.0	462.5	127.5	237.5													
Sodium	mg/L	26.9	26.9	8.2	44.0	10.0	80.0			17.0	18.0							8.0	45.0
		26.9	23.0	27.0	17.5	22.0													
Potassium	mg/L	27.1	27.1	1.2	10.0	1.8	26.0			2.1	4.8							2.1	13.0
		27.1	5.1	6.9	3.5	5.0													
Calcium	mg/L	13.6	13.6	3.6	23.0	24.0	92.0			3.9	4.6							5.0	26.0
		13.6	14.0	58.5	4.3	15.0													
Magnesium	mg/L	7.9	7.9	2.3	11.0	5.7	28.0			2.3	2.8							2.6	9.4
		7.9	6.1	9.6	2.6	6.0													
Chloride	mg/L	60	60	15	53	19	195			35	37							18	53
		60.0	33.0	50.5	36.0	32.5													
Sulfate	mg/L	2	2	2	82	3	285			2	2							4	83
		2.0	24.0	27.0	2.0	31.0													
Bicarbonate	mg/L	NT	NT	29	82	17	315	12	21	8	79								
		NT	51.5	180.0	16.5	48.5													
Phosphate	mg/L	NT	NT	0.1	0.3	0.1	1.3	0.1	0.1	0.1	0.3								
		NT	0.1	0.1	0.1	0.1													
Fluoride	mg/L	NT	NT	0.1	1.7	0.1	0.3	0.1	0.1	0.1	0.4								
		NT	0.1	0.2	0.1	0.1													
Nitrate	mg/L	NT	NT	0.1	4.6	0.1	4.7	0.1	0.1	0.1	4.4								
		NT	1.2	0.1	0.1	1.2													

Table 1 (Cont'd)
Baseline Data (2008 – October 2020)

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS5b		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median		Median	
Total Ammonia	mg/L	NT	NT	0.0	1.6	0.1	3.3			0.1	0.3							0.1	0.3
		NT		0.1		0.1				0.2									0.1
TKN	mg/L	7.3	7.3	0.1	3.8	0.1	17.0			1.5	1.7							0.1	2.4
		7.3		1.1		1.2				1.6									1.2
Total Phosphorus	mg/L	0.2	0.2	0.0	2.0	0.0	2.5			0.2	0.8							0.0	0.2
		0.2		0.1		0.4				0.5									0.1
TSS	mg/L	32	32	3	77	2	380			61	290							4	250
		32.0		15.0		26.0				175.5									11.0
Turbidity	NTU	NT	NT	5.3	75.0	0.6	180.0			80.0	180.0							3.5	70.0
		NT		18.0		10.0				130.0									16.0

NS = No Sample

NT = Not Tested

Note: No samples were taken between 2008 and May 2017. 2008 represented by single sample only.

Table 2
Operational Data – 2020 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
pH		NS		6.8	7.1	6.8	7.1	NS		NS		NS		NS		7.0	7.2
		NS		7.0		7.0		NS		NS		NS		NS		7.1	
EC	µS/cm	NS		195	205	465	505	NS		NS		NS		NS		185	200
		NS		200.0		485.0		NS		NS		NS		NS		192.5	
Sodium	mg/L	NS		17.0	18.0	35.0	36.0	NS		NS		NS		NS		15.0	16.0
		NS		17.5		35.5		NS		NS		NS		NS		15.5	
Potassium	mg/L	NS		4.6	5.2	16.0	20.0	NS		NS		NS		NS		4.5	4.9
		NS		4.9		18.0		NS		NS		NS		NS		4.7	
Calcium	mg/L	NS		13.0	15.0	41.0	47.0	NS		NS		NS		NS		14.0	15.0
		NS		14.0		44.0		NS		NS		NS		NS		14.5	
Magnesium	mg/L	NS		6.8	7.8	12.0	13.0	NS		NS		NS		NS		6.9	7.7
		NS		7.3		12.5		NS		NS		NS		NS		7.3	
Chloride	mg/L	NS		30	32	72	72	NS		NS		NS		NS		28	32
		NS		31.0		72.0		NS		NS		NS		NS		30.0	
Sulfate	mg/L	NS		12	14	5	30	NS		NS		NS		NS		57	63
		NS		13.0		17.5		NS		NS		NS		NS		60.0	
Bicarbonate	mg/L	NS		60	62	160	175	NS		NS		NS		NS		12	13
		NS		61.0		167.5		NS		NS		NS		NS		12.5	
Phosphate	mg/L	NS		0.0	0.0	0.3	0.3	NS		NS		NS		NS		0.0	0.0
		NS		below LOR		0.3		NS		NS		NS		NS		below LOR	
Fluoride	mg/L	NS		0.2	0.2	0.3	0.3	NS		NS		NS		NS		0.1	0.1
		NS		0.2		0.3		NS		NS		NS		NS		0.1	
Nitrate	mg/L	NS		0.8	1.0	0.0	0.0	NS		NS		NS		NS		0.6	1.0
		NS		0.9		below LOR		NS		NS		NS		NS		0.8	

Table 2 (Cont'd)
Operational Data – 2020 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
Total Ammonia	mg/L			0.1	0.1	0.8	1.0									0.0	0.0
				0.1		0.9										below LOR	
TKN	mg/L			0.1	0.1	0.5	1.0									1.1	1.8
				0.1		0.7										1.5	
Total Phosphorus	mg/L			1.3	1.5	2.5	7.1									0.1	0.1
				1.4		4.8										0.1	
TSS	mg/L			20	30	77	110									7	8
				25.0		93.5										7.5	
Turbidity	NTU			23.0	46.0	13.0	38.0									15.0	22.0
				34.5		25.5										18.5	

NS = No Sample

NT = Not Tested

LOR = Limit of Reaction (Detection)

Note: Operational period commenced November 2020 and is represented by two samples only (November and December 2020).

Table 3
Operational Data – 2021 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5b		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
Physical Parameters																	
pH		NS		6.6	7.8	7.1	7.8	NS		NS		NS		NS		6.7	7.6
				7.1		7.3										7.3	
EC	µS/cm			90	280	380	790									100	265
				225		660										220	
TSS	mg/L			8	89	4	53									2	36
				21		12										16	
Turbidity	NTU			14	90	2	32									17	55
				26		5										25	
Dissolved Oxygen	mg/L			8	9	8	9									6	9
				8		9										9	
Hardness	mg/L	2	89	140	275	2	89										
		78		238		70											
Total Organic Carbon	mg/L	14	16	21	21	0	0										
		15		21		below LOR											
Major Anions and Cations																	
Sodium	mg/L	NS		8	29	7	54	NS		NS		NS		NS		8	30
				18		39										20	
Potassium	mg/L			2	6	6	83									3	7
				4		16										4	
Calcium	mg/L			7	19	16	89									8	20
				14		61										14	
Magnesium	mg/L			4	11	10	110									4	11
				9		16										8	

Table 3 (Cont'd)
Operational Data – 2021 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5b		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
Major Anions and Cations (Cont'd)																	
Chloride	mg/L			12	52	49	215									13	52
				38		91										37	
Sulfate	mg/L			4	25	5	130									4	25
				12		37										12	
Bicarbonate	mg/L			33	89	54	285									35	76
				59		173										56	
Fluoride	mg/L			0.1	0.2	0.1	0.8									0.1	0.2
				0.1		0.2										0.1	
Nutrients																	
Nitrate	mg/L			0.27	2.10	0.70	1.20									0.27	2.20
				1.55		0.95										1.40	
Total Ammonia	mg/L			0.10	0.20	0.90	8.60									0.10	0.20
				0.10		8.40										0.10	
TKN	mg/L			1.30	1.90	0.70	6.40									0.80	1.90
				1.50		1.25										1.40	
Total Phosphorus	mg/L			0.10	0.33	0.10	1.50									0.10	0.35
				0.17		0.20										0.15	
Phosphate	mg/L			0.12	0.12	0.18	0.24									0.10	0.18
				0.12		0.21										0.10	

Table 3 (Cont'd)
Operational Data – 2021 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5b		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
Metals																	
Aluminium	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Arsenic	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Cadmium	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Chromium	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Cobalt	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Copper	mg/L	NS		0.590	1.200	0.000	0.080	NS		NS		NS		NS		0.770	0.780
				0.895		0.070										0.775	
Lead	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Manganese	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.010	0.010
				0.000		0.000										0.010	
Zinc	mg/L	NS		0.000	0.000	0.000	0.000	NS		NS		NS		NS		0.000	0.000
				0.000		0.000										below LOR	
Iron	mg/L	NS		0.0	0.0	0.0	0.2	NS		NS		NS		NS		0.1	0.5
				0.0		0.0										0.2	

Table 4
Operational Data – 2022 Reporting Period

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
pH				6.57	7.55	7.10	7.70	7.78	8.48	7.12	7.82	7.24	7.85	7.25	8.40	6.38	7.60
				7.02		7.41		7.85		7.28		7.54		7.29		6.8	
EC	µS/cm			55	290	95	760	330	570	380	440	190	190	790	790	100	240
				130.0		450.0		450.0		410.0		190.0		790.0		130.0	
Sodium	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Potassium	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Calcium	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Magnesium	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Chloride	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Sulfate	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Bicarbonate	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Phosphate	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Fluoride	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	
Nitrate	mg/L			NT	NT												
				NT		NT		NT		NT		NT		NT		NT	

NS

Table 4 (Cont'd)
Operational Data – 2022 Reporting Period

Page 2 of 2

Parameter	Units	WS1		WS2		WS3		WS4		WS5		WS6		WS7		WS8	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
		Median		Median		Median		Median		Median		Median		Median		Median	
Total Ammonia	mg/L	NT		NT		NT		NT		NT		NT		NT		NT	
		NT		NT		NT		NT		NT		NT		NT		NT	
TKN	mg/L	NT		NT		NT		NT		NT		NT		NT		NT	
		NT		NT		NT		NT		NT		NT		NT		NT	
Total Phosphorus	mg/L	NT		NT		NT		NT		NT		NT		NT		NT	
		NT		NT		NT		NT		NT		NT		NT		NT	
TSS	mg/L	6.0	50	2.0	38	2.0	120	2.0	48	42	42	32	32	9	480		
		24.0		11.0		61.0		6.0		42.0		32.0		18.0			
Turbidity	NTU	23.0	55.0	2.4	80.0	1.1	14	9.2	11.0	4.0	4.0	6	6	18.0	230.0		
		34.0		8.9		7.6		9.4		4.0		6.0		28.0			

NS = No Sample

NT = Not Tested

LOR = Limit of Reaction (Detection)

Appendix 6

Review of Sediment Basins

prepared by
SEEC

(Total No. of pages including blank pages = 8)



STRATEGIC ENVIRONMENTAL
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[our reference:](#) 21000225-L-01-20220706

[your reference:](#)

6 July 2022

CC: Scott Hollamby, RWC

Dear Peter,

Review of Sediment Basins: New Berrima Clay and Shale Quarry

Background and Introduction

As requested, I have conducted a review of the current site conditions at Austral Bricks' New Berrima Clay and Shale Quarry, to determine which of the existing sediment basins are required to comply with Blue Book Volume 1 (Landcom, 2004) and Volume 2E Mines and Quarries (DECC, 2008) requirements.

The recommendations herein are based on an appraisal of the current conditions at the site at the time of my inspections on the 11 March and the 6 July 2022.

Review of sediment basin sizing

Following my inspections on the 11 March and follow up on the 6 July 2022, I have undertaken a review of the requirement for sediment basins on this site based on current catchment conditions. I note that significant revegetation has occurred across the site since the date of the most recent Revision of the Water Management Plan (WMP) (Figure 1 and Photos 1 to 6). The following table (Table 2) provides the revised calculations for the eight existing sediment basins.

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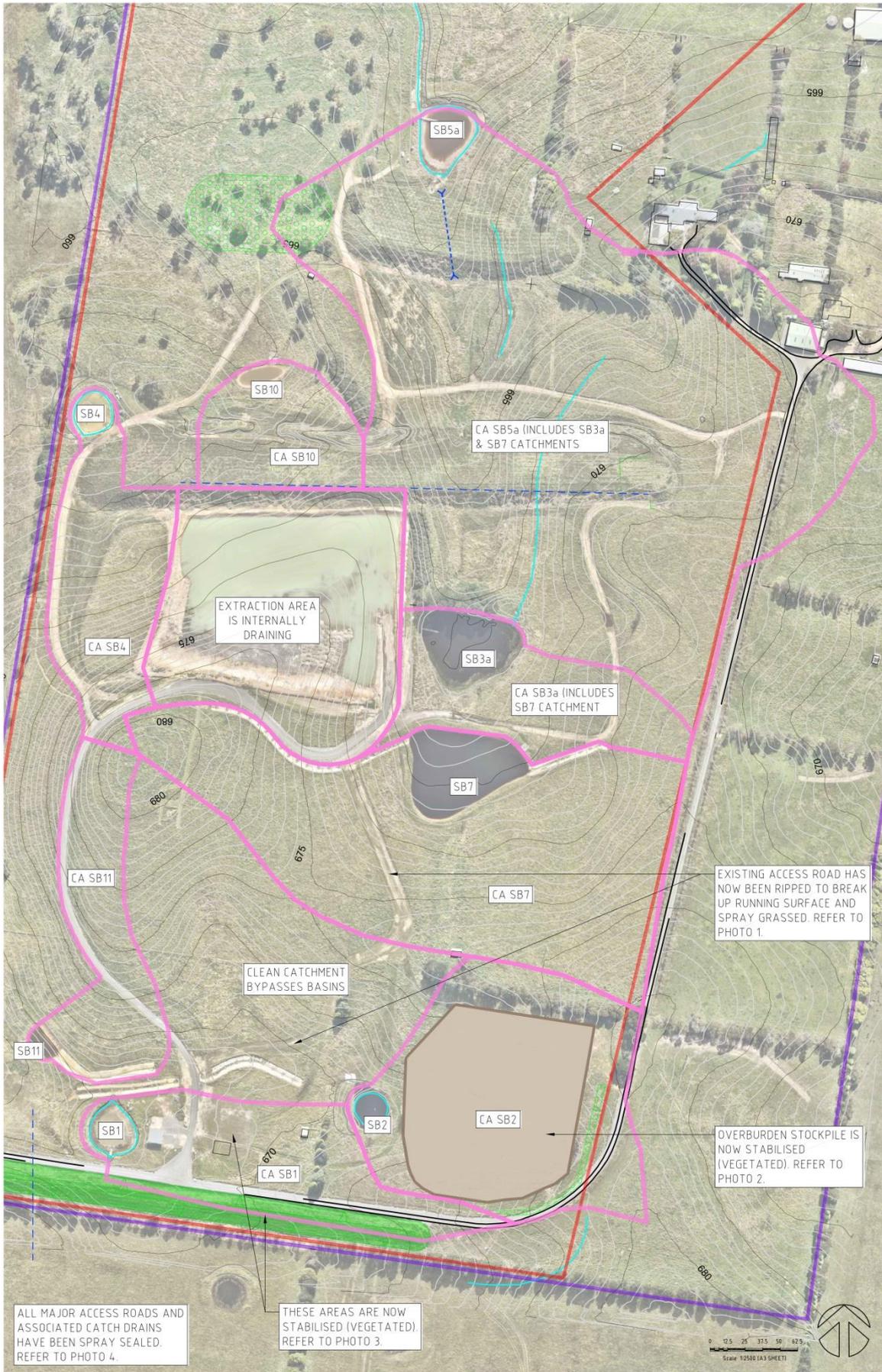


Figure 1 - Sediment Basin Catchment Boundaries.

Table 2 – Revised sediment basin calculations.

Basin ID	Total Catchment Area (ha)	Catchment Area Disturbed (ha)	LS-factor*	Soil Loss (t/ha/yr)	Catchment Soil Loss (t/yr)	Is a basin required? Y/N**	Total Basin Volume (m ³)
SB1	1.74	0.09	0.65	140	12.6	N	-
SB2	2.98	0.1	3.94	846	84.6	N	-
SB3a	6.35	0.2	1.19	255	51	N	-
SB4	1.53	0.15	1.47	316	47.4	N	-
SB5a	16.72	0.4	1.68	361	144.4	N	-
SB7	4.88	0.1	1.47	316	31.6	N	-
SB10	0.91	0.07	7.84	1683	117.8	N	-
SB11	1.3	0.08	2.31	495	39.6	N	-

* A composite LS-factor has been adopted in each catchment, which has been determined based on variable catchment slope gradients and slope lengths.

** A sediment basin is required to comply with Blue Book (Landcom, 2004 and DECC, 2008) guidelines if the catchment soil loss exceeds 200 t/yr.

R-Factor is 2580 for all catchments.

K-Factor is 0.064 for all catchments.

P-Factor is 1.3 for all catchments (disturbed area only).

C-Factor is 1 for all catchments (disturbed area only).

Refer to Figure 1 for catchment boundaries.

Based on current site conditions, all existing sediment basins are not currently required to comply with Blue Book standards, as the potential soil loss in each catchment is <200 t/yr.

Conclusions

Based on current site conditions, sediment basins SB1, SB2, SB3a, SB4, SB5a, SB7, SB10 and SB11 are currently not required to comply with Blue Book standards, as the potential soil loss in each catchment is <200 t/yr. However, it is SEECs understanding that the above sediment basins are to be retained and will continue to be utilised as sediment basins at various stages during the operational life of the quarry. Should new ground disturbances occur within the catchments of these sediment basins the Blue Book standards should be complied with until re-stabilisation is completed and further inspection and sign off is undertaken.

Additional Recommendations

If any ground disturbance occurs in the catchments reporting to SB1, SB2, SB3a, SB4, SB5a, SB7, SB10 and SB11 an Erosion Hazard Assessment should be undertaken to determine if a sediment basin should be reinstated.

If you would like to discuss any aspect of the above report, please feel free to contact me on 02 4862 1633 or 0405 413 159 or at lorourke@seec.com.au.

Yours faithfully,



Liam O'Rourke
Environmental Scientist, SEEC

Site photographs from 11 March and 6 July 2022 site inspections



Photo 1 - Previous access road has been hydromulched and has achieved at least 70% ground cover.



Photo 2 - Overburden stockpile has been hydromulched and has achieved at least 70% ground cover.



Photo 3 – Site compound surface has been stabilised. Laydown area and amenity barriers have also been stabilised (i.e. hydromulched) and has achieved at least 70% ground cover.



Photo 4 – All major site access roads and associated catch drains are now spray sealed.



Photo 5 - All amenity barriers have been hydromulched and have achieved at least 70% ground cover. Central amenity barrier shown.



Photo 6 - Catchment reporting to SB4. Note establishment of vegetation on the existing access track which is no longer in use (access restricted).