

COUNCIL ASSESSMENT REPORT

Panel Reference	PAN 65906
DA Number	DA 2021/379
LGA	Gilgandra Shire
Proposed Development	<p>Development consent is sought for the extension of an existing basalt extractive industry and crushing operation for up to 490,000 tonnes per annum with a total resource of 4.95 million tonnes. The quarry will be located on Lot 1 DP 1265657. The quarry will use a private haul road over Lot 2 DP 1265657 and Lot 52 DP 43558 to access the Oxley Highway.</p> <p>Associated works include vegetation removal, installation of a site office, staff amenities, a lunch room and above ground diesel storage tank, stormwater runoff and sediment controls, and site remediation over time.</p> <p>The development will be undertaken in two phases:</p> <p>Phase 1 – Approximately 2.5 Mt over 5 years at a production rate of up to 490,000 tpa to supply hard rock products primarily to the Inland Rail Project.</p> <p>Phase 2 – Approximately 2.4 Mt over 20 years at a production rate of between 80,000 and 120,000 tpa to supply hard rock products to local markets.</p> <p>The extraction area will be increased to 8.4 hectares. The processing and stockpiling area will increase to 7.8 hectares. A sediment basin and road will occupy 0.8 hectares. The total disturbance footprint will increase to 17 hectares.</p> <p>The development is defined as an extractive industry and is permitted in the RU1 Primary Production zone under Gilgandra LEP 2011.</p> <p>The development is generally compliant with the prevailing planning controls subject to conditions of approval.</p>
Street Address	2697 Oxley Highway, Collie
Applicant/Owner	<p>Applicant: Wesley Maas, Regional Hardrock Gilgandra Unit Trust</p> <p>Owner: Regional Hardrock Gilgandra Unit Trust</p>
Date of DA lodgement	21 January 2021
Total number of Submissions Number of Unique Objections	<ul style="list-style-type: none"> • One public submission • One objection raising four issues of concern
Recommendation	Approval

Regional Development Criteria (Schedule 7 of the SEPP (State and Regional Development) 2011)	7 <i>Development for the purposes of—</i> (a) <i>extractive industries, which meet the requirements for designated development under clause 19 of Schedule 3 to the Environmental Planning and Assessment Regulation 2000.</i>
List of all relevant s4.15(1)(a) matters	<ul style="list-style-type: none"> • Gilgandra Local Environmental Plan 2011 • Gilgandra Development Control Plan 2011 • State Environmental Planning Policy (Koala Habitat Protection) 2020 • State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 • State Environmental Planning Policy (State and Regional Development) 2011 • State Environmental Planning Policy No 55 – Remediation of Land
List all documents submitted with this report for the Panel's consideration	<ul style="list-style-type: none"> • Schedule of Conditions and GTAs (Appendix 1) • Plan Set (Appendix 2) • Public Submissions (Appendix 3) • Agency Submissions (Appendix 4) • EIS and Appendices (Appendix 5 – under separate cover) • Additional Information Supplied by Applicant (Appendix 6) • Greenhouse Gas Emissions Assessment (Appendix 7)
Clause 4.6 requests	<ul style="list-style-type: none"> • None
Summary of key submissions	<ul style="list-style-type: none"> • Dust • Water supply • Operating hours • Traffic and intersection with Oxley Highway
Report prepared by	Mike Svikis, RPIA (Life Fellow) – Consultant Planner on behalf of Gilgandra Shire Council
Report date	6 September 2021

Summary of s4.15 matters

Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report?

Yes

Legislative clauses requiring consent authority satisfaction

Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed, and relevant recommendations summarized, in the Executive Summary of the assessment report?

Yes

e.g. Clause 7 of SEPP 55 - Remediation of Land, Clause 4.6(4) of the relevant LEP

Clause 4.6 Exceptions to development standards

If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment report?

Not applicable

Special Infrastructure Contributions

Does the DA require Special Infrastructure Contributions conditions (S7.24)?

Note: Certain DAs in the Western Sydney Growth Areas Special Contributions Area may require specific Special Infrastructure Contributions (SIC) conditions

Not applicable

Conditions

Have draft conditions been provided to the applicant for comment?

Note: in order to reduce delays in determinations, the Panel prefer that draft conditions, notwithstanding Council's recommendation, be provided to the applicant to enable any comments to be considered as part of the assessment report

Yes

EXECUTIVE SUMMARY

Development Application 2021/379 (planning portal reference PAN 65906) was lodged with Gilgandra Shire Council on 21 January 2021 as a designated development accompanied by an EIS. It was publicly exhibited from 8 February to 7 March 2021, and one public submission was received. Agency submissions were received from Biodiversity, Conservation and Science Directorate (DPIE), Transport for NSW (TfNSW), NSW EPA, Department of Regional NSW – Mining, Exploration and Geoscience (MEG) and Essential Energy.

Development consent is sought to expand an existing basalt extractive industry and crushing operation on Lot 1 DP 1265657 Oxley Highway, Collie. The proposed maximum extraction rate is 490,000 tonnes per annum (tpa). The estimated total resource is 4.95 million tonnes. The quarry will use a private haul road over Lot 2 DP 1265657 and Lot 52 DP43558 to access the Oxley Highway. Associated works include vegetation removal, a site office and amenities, 24 car parking spaces, a diesel storage tank, stormwater runoff and sediment controls, and site remediation over time.

The development is proposed to be undertaken in two phases:

Phase 1 – Approximately 2.5 Mt over 5 years at a production rate of up to 490,000 tpa to supply hard rock products primarily to the Inland Rail Project.

Phase 2 – Approximately 2.4 Mt over 20 years at a production rate of between 80,000 and 120,000 tpa to supply hard rock products to local markets.

The extraction area will eventually be 8.4 hectares. The processing and stockpiling area will be 7.8 hectares. The total disturbance footprint will increase to 17 hectares. The existing private haul road occupies an area of approximately 13 hectares.

The subject land is zoned RU1 Primary Production under Gilgandra LEP 2011. The development is defined as an extractive industry and is permitted with consent in the RU1 Primary Production zone.

Key issues are:

Biodiversity – The current proposal for an extractive industry is located on land that is mostly disturbed. However, 0.8 hectares of PCT 98 (Poplar Box – White Cypress Pine – Wilga – Ironwood shrubby woodland) and four hollow-bearing trees are proposed to be removed. The most important part of the site ecologically is the balance that remains as PCT 98, albeit in a somewhat degraded state compared to 2017. The balance of the site is approximately 52 hectares. If rehabilitated and protected from quarry traffic encroachment and from grazing and other agricultural practices, it should be able to return to a native grass understorey with native tree overstorey. Habitat can be further enhanced by the installation of nesting boxes of various sizes to encourage roosting species. This will offset the PCT 98 directly and indirectly impacted by the expanded quarry and provide a vegetated buffer to surrounding farm land.

Rehabilitation and preservation of the balance of the subject land will also likely offset the greenhouse gas emissions from the quarry over both phases of production.

Water – Water resources is an important issue on this site. Water is required for dust suppression on the haul road, stockpiles and the crushing plant. The applicant has negotiated and confirmed with the owner of Lot 2 DP 1265657 that water may be harvested from the existing dams on this property and supplied to the quarry for use. This creates a potential

22.5 ML available to the quarry. In dry years there is still a predicted deficit of 5.5 ML. Options in dry years include:

- Additional water will be sourced from the existing farm bore (GW011693), which is located at the end of Ostlers Lane and estimated to have a yield of 1 L/s (31.5 ML/year).
- Soil stabilisers will be applied to the haul road surface to limit wheel-generated and windblown dust.
- Quarry operations, including transport, will be limited during periods of low water availability to prevent avoidable dust lift-off from the quarry operation and truck movements on the private haul road.
- Additional water will be purchased from off-site sources and delivered to the quarry site by tanker truck.

A condition to require the quarry operation to cease if dust suppression cannot be achieved has been imposed.

Traffic – The traffic impact of the proposal has been assessed in the EIS through intersection analysis (modelled using SIDRA), turn warrant criteria and midblock assessment.

The SIDRA analysis looked at the intersection of the Oxley Highway with the private haul road. It considered the 2025 and 2045 design years, with 2025 being the existing traffic plus the Phase 1 quarry traffic, and 2045 being the base load traffic for that timeframe plus the Phase 2 traffic. The results indicate that despite the addition of traffic generated by the proposed Phase 1 and Phase 2 development, the overall impact on the operation of the intersection is minimal, with the Level of Service generally unchanged between the “Base” and “Base + Development” scenarios.

The turn warrant criteria assessment was based on the relevant Austroads Guide to Road Design. The existing intersection with the Oxley Highway is a basic left and basic right (BAL/BAR) that was built to facilitate the existing quarry approval. Based on the assessment of project traffic against the AustRoads Warrants, the EIS concludes a BAL/BAR treatment (which is currently in place) is sufficient for the volume of traffic to be generated at both the 2025 and 2045 timeframes. An acceleration lane for vehicles exiting the private haul road and heading east is considered unnecessary. Signage will be required on the Oxley Highway to warn through traffic of trucks turning.

The midblock assessment was based on the criteria within both the TfNSW Guide and Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis. Level of Service A (LOS A) is regarded as the best outcome. It is described as “A condition of free-flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.” For both the Oxley Highway and the private haul road at both 2025 and 2045 peak levels, the modelled Level of Service remains at level A for traffic in both directions.

Noise/Vibration – A modelled noise contour map supplied with supplementary information shows the noise impact from the quarry operation and haul road in the quieter morning shoulder period (this is between 6 am and 7 am). No sensitive receivers are predicted to be affected by the 35 dB contour or greater. The quarry will be able to operate from 6 am in

Phase 1, but hours of operation will be limited to 7 am for Phase 2 of the quarry operation to reduce the potential for intrusive noise.

In relation to vibration, the key source will be blasting. The applicant proposes to undertake approximately 12 blasts per year in Phase 1 and approximately three blasts per year in Phase 2. Blast modelling indicates that blasts up to a Maximum Instantaneous Charge (MIC) of 50 kg will satisfy relevant ANZECC overpressure and vibration criteria. Blast effects resulting from the quarry are predicted to be, at worst for overpressure up to 103 dBZ, and for vibration up to 0.14 mm/s at the nearby residential receiver locations. This is less than relevant industry criteria.

Dust – The dust impact assessment has been modelled as not significantly exceeding EPA criteria but this also assumes an elevated existing dust level. Taking a precautionary approach, it is important that conditions be imposed that require dust control. The applicant has also provided undertakings that are appropriate to impose as conditions of approval, which include:

- Water sprays will be applied prior to and following drilling (for blasting).
- Water sprays will be applied during loading and unloading of materials.
- Water and/or polo citrus additive will be applied at transfer points of the crushing and screening plant.
- A water cart will be operated on the hardstand and frequently trafficked areas, including the private haulage route.

Given the potential for annoying dust impacts on the dwellings near the northern end of the private haul road, a 200-metre section of the private haul road (starting at the existing seal at the intersection/access gates) should be sealed at full cost to the developer. Ongoing maintenance of this section will also be required to maintain the seal to an acceptable wearing standard.

Site Rehabilitation – The final landform as presented in the EIS is acceptable as a general concept and will be a condition of approval. The proposed end use of the disturbed parts of the site are acceptable as:

- Low intensity grazing, primarily on the hardstand surfaces used for processing, stockpiling, quarry infrastructure and ancillary activities;
- Passive biodiversity conservation within the final void and select areas of the surface which adjoin remnant native vegetation.

The unexcavated balance of the subject land will be a PCT 98 woodland with native grass understorey.

Draft Conditions of Approval – The draft conditions recommended by this report were supplied to the applicant for consideration on 1 September 2021. On 6 September 2021, the applicant advised that they were happy for them to be supplied to the Regional Planning Panel without amendment.

Conclusion

The proposed development is permitted with consent on the subject land and is on the location of a previously approved but smaller quarry operation. There was one public objection, which raised four issues of concern. The issues raised have been addressed by modifications to the development and/or conditions recommended by this report. The proposed development has been assessed for possible negative impacts to the natural and built environments. The negative impacts anticipated will be mitigated by way of conditions.

The proposed development is considered to be of a suitable scale, form and character and generally complies with State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, Gilgandra Local Environmental Plan 2011 and Gilgandra Development Control Plan 2011. It is compatible with the surrounding environment and surrounding land uses. It will provide a valuable basalt resource, initially for the proposed Inland Rail Project and then for other infrastructure and construction uses in the region. It will create a number of jobs locally and will broaden the economic base of the LGA. The provision of this hard rock resource without excessive environmental impacts is in the public interest.

1.0 Introduction

Development Application 2021/379 (planning portal reference PAN 65906) was lodged with Council on 21 January 2021 as a designated development accompanied by an EIS (Appendix 5). The development is also Integrated Development, as per section 4.46 of the *Environmental Planning and Assessment Act 1979*, requiring the general terms of any approval proposed to be granted by the Environment Protection Authority (EPA) for the issue of an Environment Protection Licence under the *Protection of the Environment Operations Act 1997* (Appendix 1).

It was publicly exhibited from 8 February to 7 March 2021, and one public submission was received (Appendix 3). Agency submissions were received from Biodiversity, Conservation and Science Directorate (DPIE), Transport for NSW (TfNSW), NSW EPA, Department of Regional NSW – Mining, Exploration and Geoscience (MEG) and Essential Energy (Appendix 4).

The subject land has an approval for a small basalt quarry issued by Council on 29 January 2018. The approval allows the quarry to produce up to 30,000 cubic metres of material from an area of <2 hectares (including stockpiles and crushing). It is currently operational and produces material for local users.

A modification was approved by Council on 25 June 2019 to allow the use of a private haul road to service the quarry. This road has been constructed and surfaced with material from the approved quarry. The private haul road includes an intersection with the Oxley Highway approved by RMS and constructed by Gilgandra Shire Council.

This assessment has been undertaken by Mike Svikis (consultant planner) on behalf of Gilgandra Shire Council. It is presented to the Western Regional Planning Panel for determination.

2.0 Details of Proposal

Development consent is sought to expand an existing basalt extractive industry and crushing operation on Lot 1 DP 1265657 Oxley Highway, Collie. The proposed maximum extraction rate is 490,000 tonnes per annum (tpa). The estimated total resource is 4.95 million tonnes. The quarry will use a private haul road over Lot 2 DP 1265657 and Lot 52 DP 43558 to access the Oxley Highway. Associated works include vegetation removal, a site office and amenities, 24 car parking spaces, a diesel storage tank, stormwater runoff and sediment controls, and site remediation over time.

The development is proposed to be undertaken in two phases:

Phase 1 – Approximately 2.5 Mt over 5 years at a production rate of up to 490,000 tpa to supply hard rock products primarily to the Inland Rail Project.

Phase 2 – Approximately 2.4 Mt over 20 years at a production rate of between 80,000 and 120,000 tpa to supply hard rock products to local markets.

The extraction area will eventually be 8.4 hectares. The processing and stockpiling area will be 7.8 hectares. The sediment basin is 0.6 hectares and an additional 0.2 hectares will be used by the access road. The total disturbance footprint will increase to 17 hectares. The

existing private haul road occupies an area of approximately 13 hectares between the subject land and the Oxley Highway.

The resource size of 4.7 Mt has been calculated by multiplying the extraction area volume of (1,680,000 m³) (calculated based on an extraction area of 8.4 hectares and depth to an elevation of 240 metres AHD) by the density of the basalt (2.8 t/m³).

The development is defined as an extractive industry and is permitted with consent in the RU1 Primary Production zone under Gilgandra LEP 2011. It is designated development as a result of Schedule 3 of the EPA Regulations 2000 because it will produce more than 30,000 cubic metres of material per year, will disturb more than 2 hectares of land and is within 500 metres of a quarry that has operated in the last five years.

It is anticipated that over the first five years, the quarry material will be used primarily on the NSW Inland Rail Project. The project corridor crosses the Oxley Highway approximately 10 kilometres to the east.

Campaign crushing and screening will be used to produce basalt aggregates and construction materials for road base, road sheeting, infrastructure construction, rail ballast and concrete manufacture. A weigh bridge is not proposed as trucks and front-end loaders can be used to weigh material.

Plate 1: The site contains high quality basalt suitable for a range of construction uses



3.0 Description of Subject Site and Surrounds

The quarry will be located on Lot 1 DP 1265657 and will use a private haul road over Lot 2 DP 1265657 and Lot 52 DP 43558 to access the Oxley Highway (Figure 1).

Figure 1: Subject site and broader context

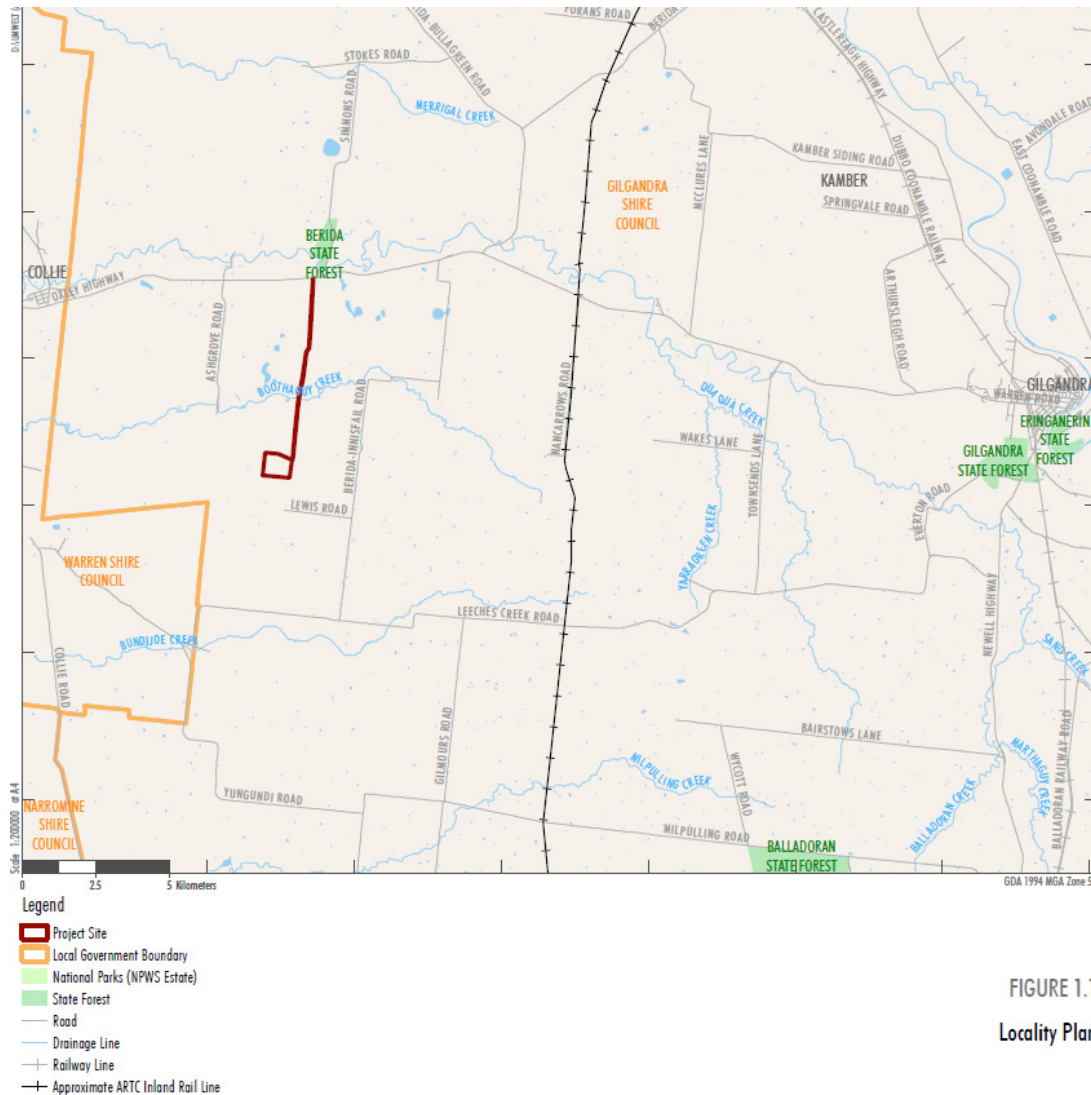


FIGURE 1.1
Locality Plan

Source: EIS

The quarry lot is approximately 69 hectares and was approved as a quarry lot (it is considerably less than the 500-hectare MLS for that location) in April 2020 by Gilgandra Shire Council (DA 2020/333). It is land locked by “Berakee” but has a legal right of way to access the Oxley Highway. This right of way passes through both “Berakee” and “Wilgaroo”, and is also the approved private haul route (Figure 2). The quarry lot is owned by Regional Hardrock Gilgandra Unit Trust.

Figure 2: Subject site, haul route and affected properties

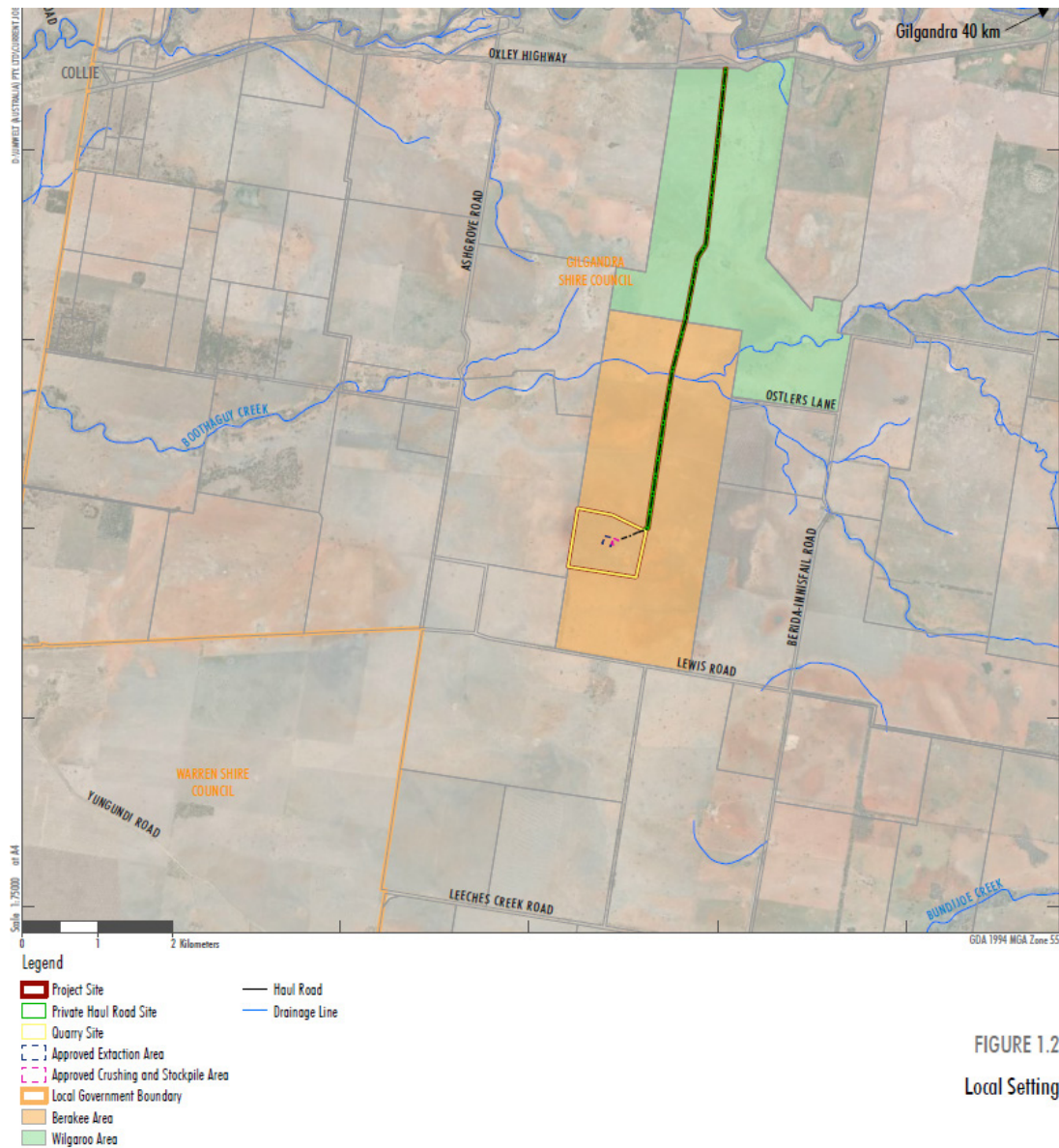


FIGURE 1.2
Local Setting

Source: EIS

The quarry lot is surrounded by broad acre grazing and cropping farms crossed by ephemeral streams and occasional patches of remnant native woodland. It is a low hill with an elevation of approximately 270 metres AHD. Surrounding land is approximately 260 metres AHD. The quarry site drains to the south-east with sheet flow to Bundijoe Creek to the south. The haul road drains to Boothaguy Creek to the north. Geologically, the quarry lot is an outcropping of Myall Glen Basalt.

The nearest unrelated dwellings are farm houses located approximately 1.5 kilometres to the south and north-west, respectively, of the proposed quarry pit. The nearest unrelated dwellings to the haul road are located approximately 750 metres to the west and 400 metres to the east of the Oxley Highway intersection (Figure 3 and Figure 4).

Figure 3: Surrounding farms and dwellings

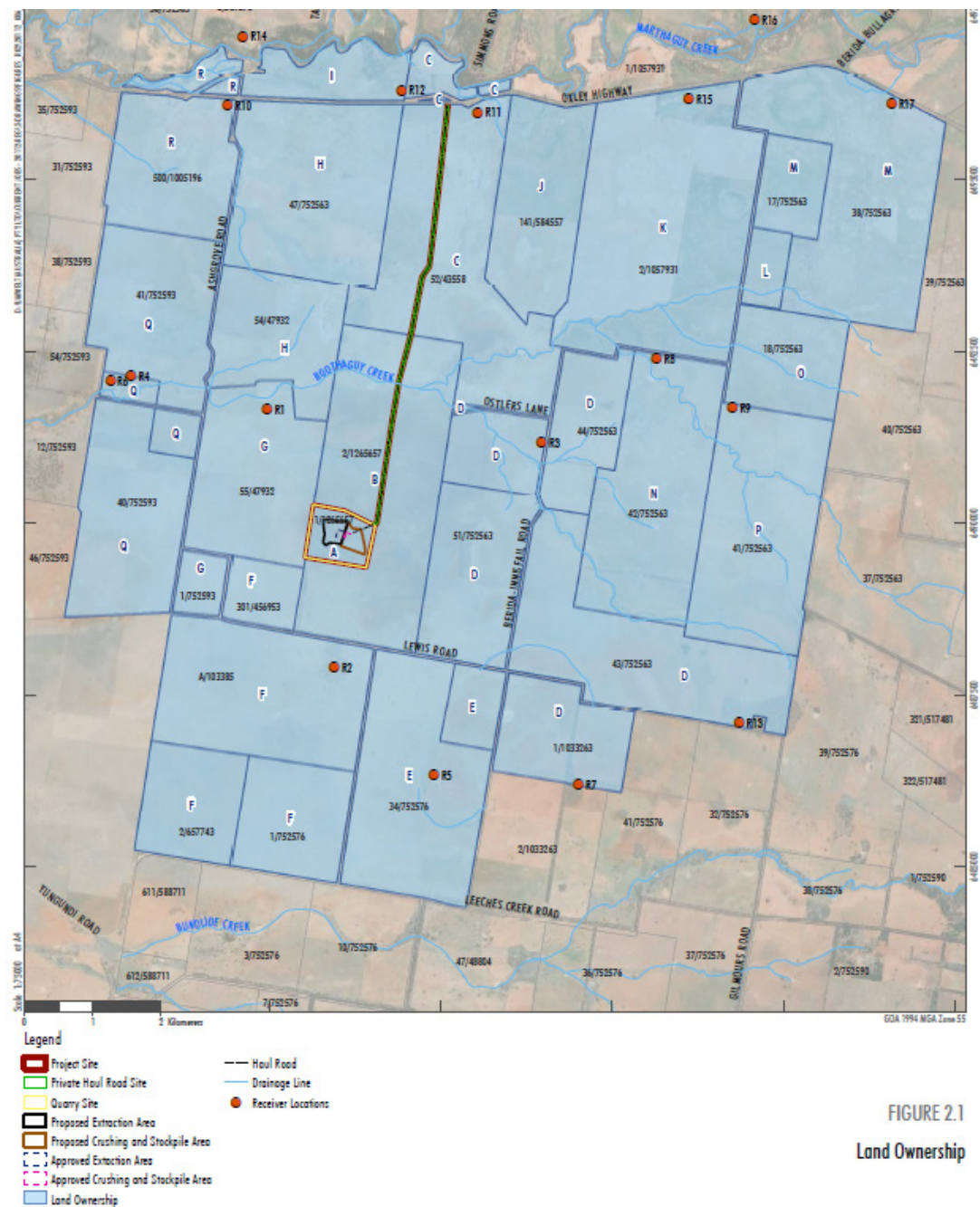


FIGURE 2.1
Land Ownership

Source: EIS

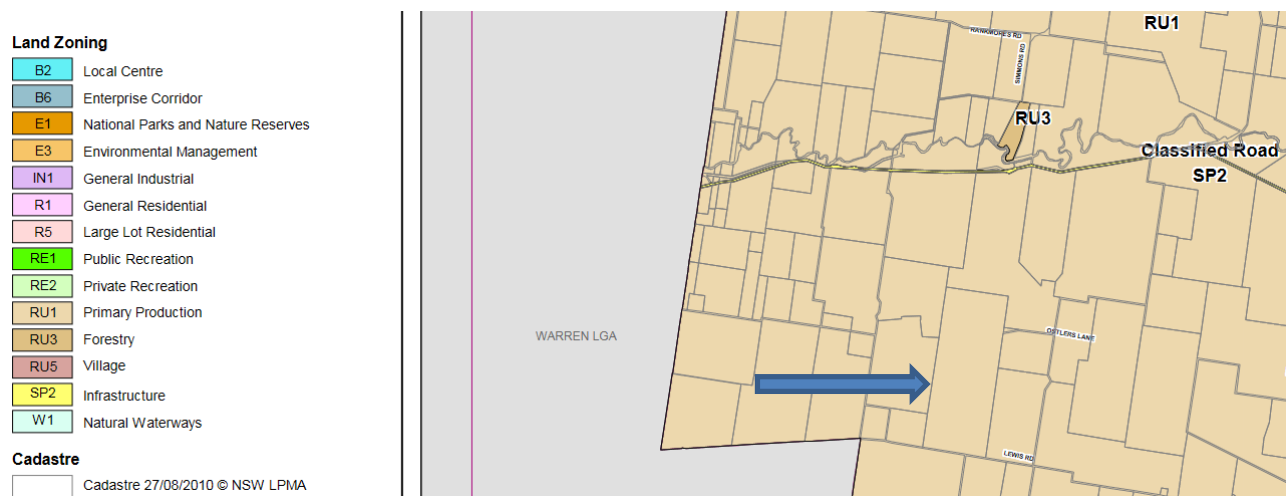
Figure 4: Key to surrounding farms and dwellings shown in Figure 3

Ref ¹	Land Parcel (Lot/DP No.)	Title Holder	Receiver ¹
A	1/1265657	Regional Hardrock Gilgandra Unit Trust	-
B	2/1265657	Sandy Creek Family Trust	-
C	52/DP43558	BT Border	R11
D	1/1033263, 42-44/752563, 51/752563	MK Mudford	R3, R13
E	2/1033263, 34/752576	WD Lewis	R5
F	301/456953, A/103385, 1/752576, 2/657743	GA Herbig	R2
G	1/752593, 55/47932	GB Lewis	R1
H	54/47932, 47/752563	Lytoco Pty Ltd	-
I	47/7522563	G Foran	R12
J	141/584557	EOSE Pty Ltd	-
K	2/1057931	EIRAM Pty Ltd	-
L	Part 18/752563	LM Border	-
M	17/752563, 38/752563	JP Foran	R17
N	44/752563	CM Kilby	R8
O	Part 18/752563	Milroy Gil Pty Ltd	-
P	41/752563	J Prout	R9
Q	40-41/752593	MP Foran	R4, R6
R	500/1005196	ME Mudford	R10

Source: EIS

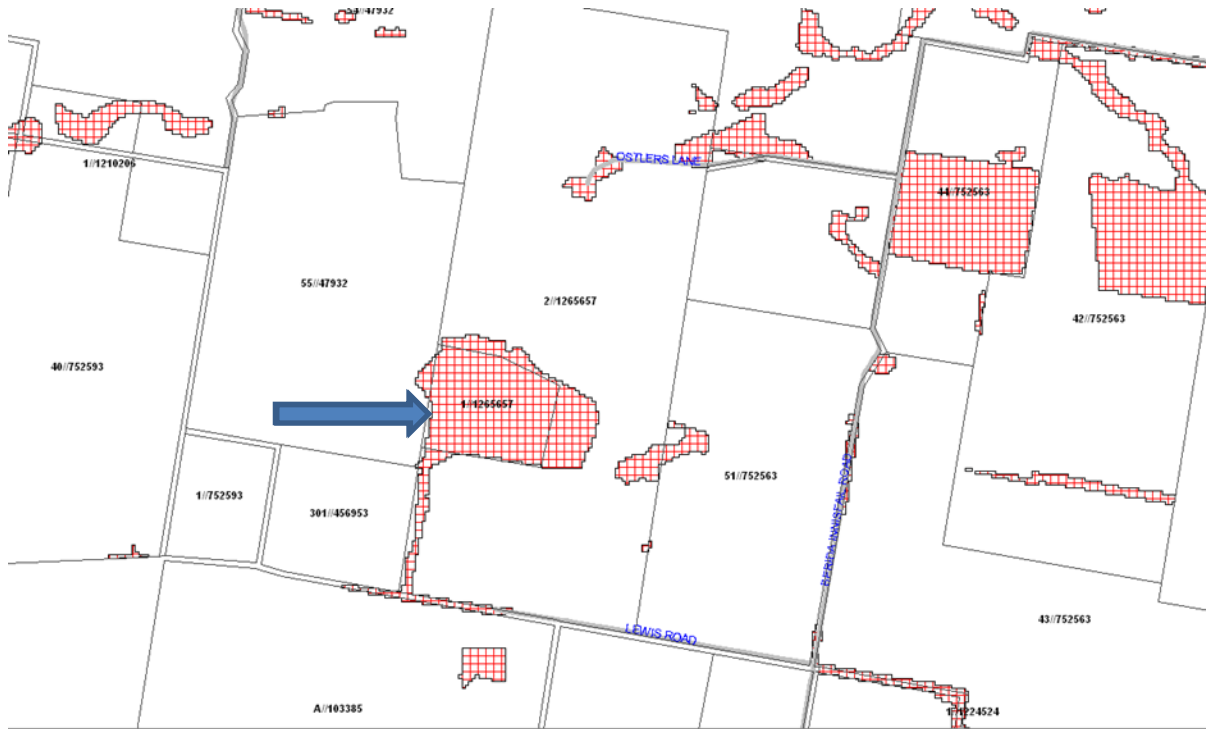
The subject land is zoned RU1 Primary Production under Gilgandra LEP 2011 (Figure 5). The development is defined as an extractive industry and is permitted with consent in the RU1 Primary Production zone.

Figure 5: Land use zones under Gilgandra LEP 2011 – site is zoned RU1



The subject land is also entirely mapped as containing vegetation of high biodiversity (Figure 6).

Figure 6: Biodiversity Sensitivity mapping under Gilgandra LEP 2011



4.0 Background of Proposal

The subject land has an existing approval for a small hard rock quarry. A key driver of the current, much larger application is that the Australian Government has committed to building a direct interstate freight rail corridor between Melbourne and Brisbane known as the Inland Rail Project. The railway route is approximately 1,700 kilometres long and involves upgrades to existing railways as well as proposed new railway lines. The Inland Rail Project is being broken down into stages. The proposed Narromine to Narrabri (N2N) section of the Inland Rail, as State Significant Infrastructure, involves the construction and operation of approximately 306 kilometres of rail track and associated facilities in a new rail corridor. This corridor is located approximately 10 kilometres east of the subject land.

SEARs were issued for the preparation of the EIS on 20 December 2020. The development application was lodged with Council on 21 January 2021 as a designated development accompanied by an EIS prepared by Umwelt for the Regional Hardrock Gilgandra Unit Trust. It was referred to a range of government agencies, including:

- Biodiversity, Conservation and Science (BCS) division of the Department of Planning, Industry and Environment (DPIE),
- Natural Resource Access Regulator (NRAR) of DPIE,
- NSW Environment Protection Authority (EPA),
- Essential Energy (EE),
- Transport for NSW (TfNSW), and
- Mining, Exploration and Geoscience (MEG) within the Department of Regional NSW.

It was also notified to neighbouring land owners and placed on public exhibition. A letter requesting further information was issued on 17 March 2021. A response to that RFI was received by Council on 6 May 2021. The matters raised in the RFI and responded to include:

- Pre-clearing and the Biodiversity Offset Scheme, etc,
- Legal entity that is making the application,
- Noise impact assessment,
- Water security.

A further letter requesting information was issued on 29 June 2021. A response to that RFI was received by Council on 12 July 2021. The matters raised in the RFI and responded to include:

- Size of the extraction and processing/stockpile area,
- Different areas of disturbance documented in the EIS,
- Tree hollows and vegetation information,
- Traffic impacts.

A third letter requesting information was issued on 15 July 2021. A response to that RFI was received by Council on 21 July 2021, but this was superseded by a revised version received on 25 August 2021. The matters raised in the RFI and responded to include:

- Greenhouse gas assessment.

5.0 Matters for Consideration

The proposed development has been assessed under the heads of consideration in section 4.15 of the *Environmental Planning and Assessment Act 1979*. The assessment has identified the following key issues, which are elaborated upon for the Panel's consideration.

5.1 Section 4.15(1)(a)(i) provisions of any environmental planning instrument

5.1.1 State Environmental Planning Policy (Koala Habitat Protection) 2020

SEPP (Koala Habitat Protection) 2020 applies to the subject land. This is because Gilgandra Shire Council is listed in Schedule 1 of Koala SEPP 2021 as being subject to Koala SEPP 2020 as the land is zoned RU1 Primary Production, is more than 1 hectare and is subject to a development application.

Comment: Step 1—Is the land potential koala habitat?

Potential koala habitat means areas of native vegetation where trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component.

A flora study initially found 24 trees in the study area and notes that only four of these now remain. All four remaining trees are *Eucalyptus populnea*, which is a listed koala food tree in Schedule 1 of the SEPP. Therefore, koala food trees now constitute 100% of the total number of trees in the upper or lower strata of the tree component and the site is therefore potential koala habitat.

Step 2—Is the land core koala habitat?

Core koala habitat means an area of land with a resident population of koalas, evidenced by attributes such as breeding females, being females with young, and recent sightings of and historical records of a population.

A fauna study found no evidence of Koalas using the trees that remain on the subject land. It concludes that the likelihood of occurrence is low and the habitat connectivity is very poor as the site is isolated from other native vegetation, and has no fresh water available. A previous fauna study in July 2017 found no records of koalas within 10 kilometres of the site and no evidence of them using the site when it had a lot more koala food trees on it than it currently does, and no active quarry operation. On balance of probabilities, the site is not core koala habitat and the consent authority is not prevented from granting consent by this SEPP.

5.1.2 State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

This SEPP outlines (in Part 3) specific matters to be considered in relation to development applications for extractive industries. These include:

12 Compatibility of proposed mine, petroleum production or extractive industry with other land uses

Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must—

- (a) consider—*
 - (i) the existing uses and approved uses of land in the vicinity of the development, and*
 - (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
 - (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*
- (b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and*
- (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).*

Comment: The existing uses in the vicinity of the subject land area are broad acre cropping and grazing. The quarry site is relatively remote from unrelated farm dwellings and the private haul road. Subject to conditions being implemented, it will be compatible with existing and future land use in this area.

13 Compatibility of proposed development with mining, petroleum production or extractive industry

- (1) *This clause applies to an application for consent for development on land that is, immediately before the application is determined—*
 - (a) *in the vicinity of an existing mine, petroleum production facility or extractive industry, or*
- (2) *Before determining an application to which this clause applies, the consent authority must—*
 - (a) *consider—*
 - (i) *the existing uses and approved uses of land in the vicinity of the development, and*
 - (ii) *whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and*
 - (iii) *any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery, and*
 - (b) *evaluate and compare the respective public benefits of the development and the uses, extraction and recovery referred to in paragraph (a)(i) and (ii), and*
 - (c) *evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).*

Comment: There is a small hard rock quarry approved on the same land as this proposal and this quarry will supersede that approval. There is no incompatibility issue.

14 Natural resource management and environmental management

- (1) *Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure the following—*
 - (a) *that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable,*

- (b) *that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable,*
 - (c) *that greenhouse gas emissions are minimised to the greatest extent practicable.*
- (2) *Without limiting subclause (1), in determining a development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions.*
- (3) *Without limiting subclause (1), in determining a development application for development for the purposes of mining, the consent authority must consider any certification by the Chief Executive of the Office of Environment and Heritage or the Director-General of the Department of Primary Industries that measures to mitigate or offset the biodiversity impact of the proposed development will be adequate.*

Comment: The extractive industry will be subject to conditions that address water resources and biodiversity. A greenhouse gas emissions assessment was undertaken (Appendix 7) reviewing the CO₂ that will be emitted from fossil fuels and explosives over the two production phases of the quarry.

The main sources of GHG emissions will be from diesel fuel consumption by mobile plant, generators to power the mobile crushing plant, road transport of the quarry products, and using Ammonium Nitrate/Fuel Oil (ANFO) explosives for blasting. There will also be indirect emissions associated with the production of diesel. The site is not connected to reticulated electricity so there is no allowance for this.

CO₂ producing materials to be used are:

Phase 1 (490,000 tpa) – 50 kl of diesel and 20 tonnes of ANFO,
Phase 2 (100,000 tpa) – 10 kl of diesel and 4 tonnes of ANFO.

CO₂ production is estimated (by Umwelt) to be:

Phase 1

Emission Source	Annual Consumption	Energy Content Factor (GJ/kL)	Emission Factor (kg CO ₂ -e)			Calculated Emissions (t CO ₂ -e/annum)
			CO ₂	CH ₄	N ₂ O	
Scope 1						
Diesel Combustion	50 kL	38.6	13.9	0.1	0.2	27.4
Explosive Use (ANFO)	20 t	-	0.17			3.4
Scope 3						
Diesel Production	50 kL	38.6	3.6			6.9
Total						37.7

Phase 2

Emission Source	Annual Consumption	Energy Content Factor (GJ/kL)	Emission Factor (kg CO ₂ -e)			Calculated Emissions (t CO ₂ -e/annum)
			CO ₂	CH ₄	N ₂ O	
Scope 1						
Diesel Combustion	10 kL	38.6	13.9	0.1	0.2	5.5
Explosive Use (ANFO)	4 t	-	0.17			0.7
Scope 3						
Diesel Production	10 kL	38.6	3.6			1.4
Total						7.6

The estimated total amount of annual greenhouse gas emissions from the quarry would approximate 38 tonnes CO₂-e per annum at maximum production (Phase 1), reducing to approximately 8 tonnes CO₂-e per annum as production reduces following the fulfilment of supply to the Inland Rail construction (Phase 2).

The applicant states that “the estimated emissions reflect a small increase and total in the context of State and National emissions and no significant greenhouse gas emissions management is warranted” and “There are no obvious alternatives to the proposed methods of extraction, processing and transport which would reduce greenhouse gas emissions.”

The applicant offers to undertake the following:

- use larger capacity and more fuel efficient road trucks to deliver quarry products,
- operate on a campaign basis to minimise inefficient operating practices,

- regularly tune and maintain mobile and fixed equipment to minimise exhaust and greenhouse gas emissions, and
- review opportunities for improvement in diesel use and energy efficiency when purchasing or replacing equipment at the quarry, to reduce greenhouse gas emissions.

No assessment of the potential to offset the CO₂ produced over the life of the quarry is offered despite widespread acknowledgement that “*Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO₂) and other greenhouse gas emissions occur in the coming decades.*” (IPCC Sixth Assessment Report, 2021). The argument that the emissions from this site are small and therefore insignificant is one of comparison. The emissions are small compared to a large mining operation but are significantly more than the original Berakee farm would have produced without the quarry. If the emissions from what will be the largest quarry in Gilgandra LGA can be ignored then most development in the Gilgandra LGA could also make the same argument.

This site has a great opportunity to use native vegetation and particularly native trees to offset the carbon produced by the quarry over its life through carbon capture. Storing carbon in regenerated native tree cover also has the additional benefit that it allows native species to proliferate as habitat regenerates, while the quality of land and water supply may also be improved as local ecosystem services are restored.

Assuming that a mature tree cleans the air by absorbing 22 kilograms of carbon dioxide and releasing oxygen in exchange (2019 UN-REDD Programme) then Phase 1 will require 1,727 trees to sequester the carbon from the quarry ($38,000/22 = 1,727$). Phase 2 will require 364 trees to sequester the carbon from the quarry. Tree density based on aerial photos taken before the initial quarry was established on the subject land indicate approximately 25 to 30 mature trees per hectare. A study of East Coast Box Gum grassy woodlands (Rawlings et al, 2010) indicated that 30 to 40 trees per hectare is typical, depending on rainfall. Based on restoration of 30 trees per hectare then the Phase 1 CO₂ can be offset by 58 hectares of woodland ($1,727/30 = 58$). Based on 35 trees per hectare then the Phase 1 CO₂ can be offset by 49 hectares of woodland ($1,727/35 = 49$).

The condition to rehabilitate the balance of the subject land not affected by the quarry (an area of 52 hectares) to protect its remaining biodiversity values is reinforced by the potential for this same area to sequester the majority (if not all) of the CO₂ produced by the quarry in Phase 1 and all of it produced by Phase 2. This will be acknowledged in the conditions.

15 Resource recovery

- (1) Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider the efficiency or otherwise of the development in terms of resource recovery.*
- (2) Before granting consent for the development, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resource recovery and the reuse or recycling of material.*
- (3) The consent authority may refuse to grant consent to development if it is not satisfied that the development will be carried out in such a way as to optimise the efficiency of recovery of minerals, petroleum or extractive materials and to minimise the creation of waste in association with the extraction, recovery or processing of minerals, petroleum or extractive materials.*

Comment: The proposed extractive industry is sufficiently large to allow more than 2 million tonnes of basalt to be obtained in the first five years and then a similar amount over a further 20 years. This will optimise the recovery of material when it is needed for the Inland Rail Project and then allow a steady supply of high quality material for local use in decades to follow. These two phases of operation are addressed in the conditions of consent.

16 Transport

- (1) Before granting consent for development for the purposes of mining or extractive industry that involves the transport of materials, the consent authority must consider whether or not the consent should be issued subject to conditions that do any one or more of the following—*
 - (a) require that some or all of the transport of materials in connection with the development is not to be by public road,*
 - (b) limit or preclude truck movements, in connection with the development, that occur on roads in residential areas or on roads near to schools,*
 - (c) require the preparation and implementation, in relation to the development, of a code of conduct relating to the transport of materials on public roads.*
- (2) If the consent authority considers that the development involves the transport of materials on a public road, the consent authority must, within 7 days after receiving the development application, provide a copy of the application to—*
 - (a) each roads authority for the road, and*

- (b) *the Roads and Traffic Authority (if it is not a roads authority for the road).*

Note—

Section 7 of the Roads Act 1993 specifies who the roads authority is for different types of roads. Some roads have more than one roads authority.

- (3) *The consent authority—*
- (a) *must not determine the application until it has taken into consideration any submissions that it receives in response from any roads authority or the Roads and Traffic Authority within 21 days after they were provided with a copy of the application, and*
- (b) *must provide them with a copy of the determination.*
- (4) *In circumstances where the consent authority is a roads authority for a public road to which subclause (2) applies, the references in subclauses (2) and (3) to a roads authority for that road do not include the consent authority.*

Comment: The approval is based on the quarry using a private haul road to access the Oxley Highway. This will alleviate pressure on local roads in the vicinity of the quarry. A condition will be imposed prohibiting use of Ostlers Lane and the Berida–Innisfail Road. Other local roads will be used by negotiation. A traffic management plan and driver code of conduct will be required as a condition of consent.

The DA and EIS were referred to TfNSW in relation to its road network and it has made a submission including proposed conditions. It does not object to the development. TfNSW concerns have been included in the recommended conditions attached to this report.

17 Rehabilitation

- (1) *Before granting consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring the rehabilitation of land that will be affected by the development.*
- (2) *In particular, the consent authority must consider whether conditions of the consent should—*
- (a) *require the preparation of a plan that identifies the proposed end use and landform of the land once rehabilitated, or*
- (b) *require waste generated by the development or the rehabilitation to be dealt with appropriately, or*

- (c) *require any soil contaminated as a result of the development to be remediated in accordance with relevant guidelines (including guidelines under clause 3 of Schedule 6 to the Act and the Contaminated Land Management Act 1997), or*
- (d) *require steps to be taken to ensure that the state of the land, while being rehabilitated and at the completion of the rehabilitation, does not jeopardize public safety.*

Comment: The proposed conditions of consent include a requirement that remnant native woodland on the subject land be rehabilitated and protected to ameliorate the impacts of the quarry over its life. The extraction site and processing areas will be rehabilitated and made safe progressively during the life of the quarry. A rehabilitation plan will be approved as part of the plan set and a more detailed site rehabilitation plan will be required within 12 months to outline progressive rehabilitation of the site over its initial five years and beyond. Site contamination is not anticipated from this quarry. Site waste will be minimal as all overburden will be reused on site and general waste will be disposed of at a licensed landfill as required. The site is land locked with no direct public road access. It will not be easily accessible to the public, either during extraction or after it has been rehabilitated.

5.1.3 State Environmental Planning Policy No 55 – Remediation of Land

Clause 7 of SEPP 55 outlines the contamination and remediation to be considered in determining development applications.

- (1) *A consent authority must not consent to the carrying out of any development on land unless—*
 - (a) *it has considered whether the land is contaminated, and*
 - (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
 - (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

Comment: A search of Council's Contaminated Land Register and Mapping Layer indicates there is no information relating to this property, nor is it impacted by a dip site. There is no evidence of past land use that may have contaminated the site as it has not been subject to cropping or horticulture. It is grazing land that was approved for a small scale basalt quarry in 2018. It is unlikely that the small quarry has resulted in any land contamination. Further detailed investigation is not warranted.

The proposed use in this application is not a residential or otherwise sensitive use as listed in the SEPP.

On balance, it is unlikely that the site is contaminated or requires remediation to enable it to be used as a hard rock quarry and associated crushing and processing of material.

5.1.4 State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of the SEPP declares certain development to be Regionally significant if it is identified in Schedule 7.

Schedule 7 is as follows:

7 Particular designated development

Development for the purposes of—

- (a) **extractive industries**, which meet the requirements for designated development under clause 19 of Schedule 3 to the *Environmental Planning and Assessment Regulation 2000*,

Comment: The proposed quarry is designated development because it will:

- obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per year; and
- disturb a total surface area of more than 2 hectares; and
- be located within 500 metres of the site of another extractive industry that has operated during the last five years.

It does not trigger the State significant development criteria.

5.1.5 Gilgandra Local Environmental Plan 2011 (GLEP 2011)

Definition, Permissibility and Zone Objectives (Clauses 1.4 and 2.3)

The development is defined as an *extractive industry* and is permitted in the RU1 Primary Production zone with consent. The development will take place entirely on land in this zone including the private haul road.

extractive industry means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming.

Note—

Extractive industries are not a type of industry—see the definition of that term in this Dictionary.)

extractive material means sand, soil, gravel, rock or similar substances that are not minerals within the meaning of the Mining Act 1992.

The objectives of the RU1 Primary Production zone are as follows:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To enable development that supports agriculture to be carried out on land within this zone in a manner that does not significantly reduce the agricultural and horticultural production potential of land in the locality.*
- *To encourage eco-tourist facilities and tourist and visitor accommodation that minimise any adverse effect on primary industry production and scenic amenity of the area.*
- *To allow the development of non-agricultural land uses that are compatible with the character of this zone.*

Comment: The proposed development complies with the majority of these objectives, and the others are not relevant or justifiably inconsistent as follows:

The proposed quarry will exploit the natural resource (basalt) at this location and is therefore not consistent with the objective to maintain or enhance it. However, this is justified as the resource is valuable and necessary to support infrastructure such as the Inland Rail Project and local roads and construction.

The proposed quarry will encourage diversity in primary industry in the locality. The local area is predominantly grazing and cropping.

The main basalt resource on this land has previously been subdivided from the balance of better agricultural land. This will not fragment or alienate the resource but has allowed a larger scale operator to purchase and develop the site.

The quarry site is relatively isolated from farm dwellings and other land uses. It is on a lot that allows it to own and maintain its own buffer. Subject to conditions, conflict can be minimised.

No agriculture is proposed on the subject land as it is characterised by relatively poor, shallow soils overlaying the basalt resource. The buffer that can be established within the subject land means the agricultural potential of better quality neighbouring lands should be unaffected.

The proposed quarry does not include eco-tourist facilities and tourist and visitor accommodation. This objective is not relevant.

The character of this locality is rural farm land with patches of remnant native woodland. The quarry as a non-agricultural land use has minimal structures and is largely hidden by woodland. It is consistent with the rural character of the locality.

Clause 5.14 Siding Spring Observatory—maintaining dark sky

- (1) *The objective of this clause is to protect observing conditions at the Siding Spring Observatory by promoting lighting practices that minimise light pollution.*
- (2) **Light emissions—general considerations for all development**
Before granting development consent for development on land to which this Plan applies, the consent authority must consider whether the development is likely to adversely affect observing conditions at the Siding Spring Observatory, taking into account the following matters—
 - (a) *the amount and type of light to be emitted as a result of the development and the measures to be taken to minimise light pollution,*
 - (b) *the impact of those light emissions cumulatively with other light emissions and whether the light emissions are likely to cause a critical level to be reached,*
 - (c) *whether outside light fittings associated with the development are shielded light fittings,*
 - (d) *the measures to be taken to minimise dust associated with the development,*

Note—

Dust tends to scatter light and increase light pollution.

- (e) *the Dark Sky Planning Guideline published in the Gazette by the Planning Secretary.*

.....

- (7) **Development on land 18 kilometres or more from observatory** *The consent authority must not (except with the concurrence of the Planning Secretary) grant development consent to development on land that is 18 kilometres or more from the Siding Spring Observatory if the consent authority considers that the development is likely to result in the emission of light of 1,000,000 lumens or more.*

.....

- (9) *The consent authority must consult with the observatory director before granting development consent to development (other than development for the purposes of a dwelling house, secondary dwelling or dual occupancy) on land that is 18 kilometres or more from the Siding Spring*

Observatory if the consent authority considers that the development is likely to result in the emission of light of 50,000 lumens or more.

Comment: The quarry site is located approximately 80 kilometres from the Siding Springs Observatory. It will not be connected to reticulated electricity and is not proposed to be operated at night. The potential for light pollution is limited to truck lights, the mobile crushing plant or site lights operated from a generator and linked to the site office and amenities.

A condition will be imposed requiring any site lights to be shielded and limited to less than 50,000 lumens. The hours of operation for the quarry will also limit the extent of lighting used. Dust control for the site and haul road will also be addressed in conditions.

It is unlikely that the development will adversely affect observing conditions at the Siding Spring Observatory.

Clause 7.1 Biodiversity protection

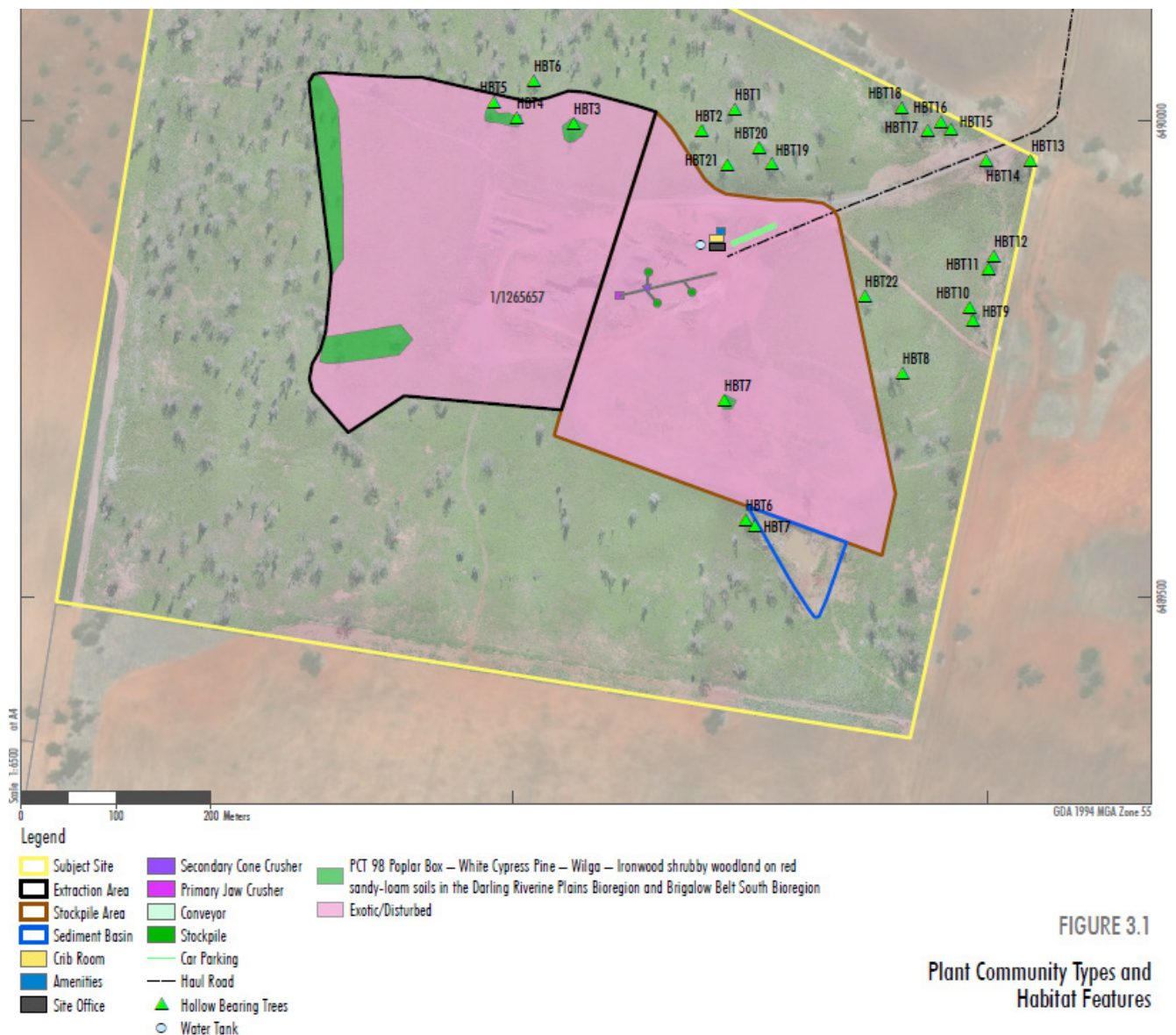
- (1) The objective of this clause is to maintain terrestrial and aquatic biodiversity, including the following—*
 - (a) protecting native fauna and flora,*
 - (b) protecting the ecological processes necessary for their continued existence,*
 - (c) encouraging the recovery of native fauna and flora and their habitats.*
- (2) This clause applies to land identified as “Biodiversity Sensitivity” on the Sensitivity Biodiversity Map.*
- (3) Before determining a development application for development on land to which this clause applies, the consent authority must consider any adverse impact of the proposed development on the following—*
 - (a) native ecological communities,*
 - (b) the habitat of any threatened species, populations or ecological community,*
 - (c) regionally significant species of fauna and flora or habitat,*
 - (d) habitat elements providing connectivity.*
- (4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—*
 - (a) the development is designed, sited and will be managed to avoid any adverse environmental impact, or*
 - (b) if that impact cannot be avoided—the development is designed, sited and will be managed to minimise that impact, or*

- (c) *if that impact cannot be minimised—the development will be managed to mitigate that impact.*

Comment: The entire quarry site and all of Lot 1 DP 1265657 is located in an area mapped as having biodiversity sensitivity (Figure 6).

The applicant has undertaken an ecological assessment of the 17 hectares proposed for the expanded extractive industry and mapped 0.8 hectares of native vegetation remaining in this area (Figure 7). Minimal assessment has been undertaken of the balance of the subject land.

Figure 7: Remnant vegetation and habitat trees mapped on the quarry site



Source: RFI response 12/07/2021

The EIS states “The Quarry site occurs over a small rise in the landscape and is surrounded by PCT 98 Poplar Box – White Cypress Pine – Wilga – Ironwood shrubby woodland (PCT 98). The previous landowner has cleared sections of this woodland as approved clearing activities for agricultural purposes under the Local Land Services Act 2013. Significant stands of this vegetation are retained along the northern and western portions of the Quarry site. The private haul road traverses open, cleared agricultural land.”

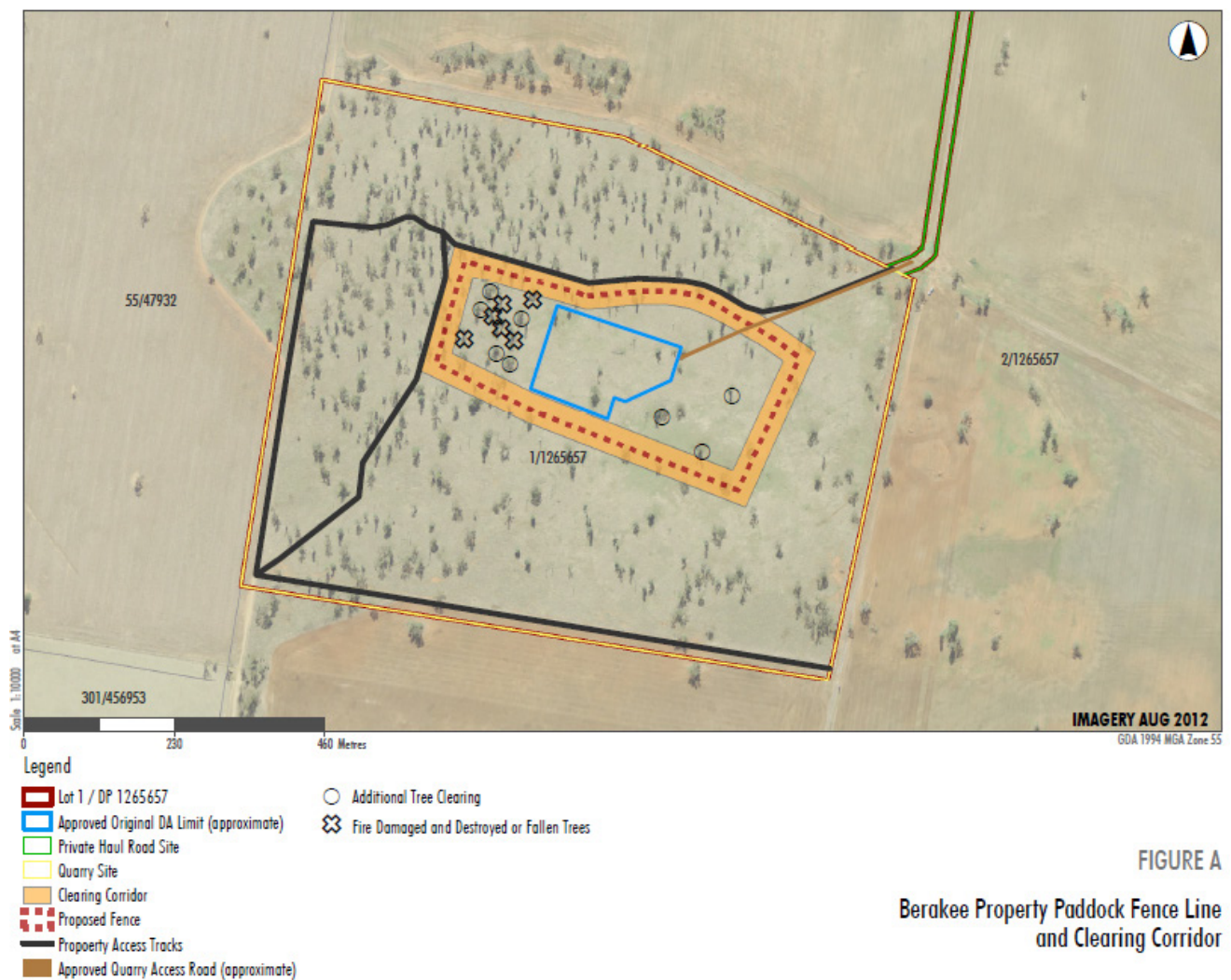
Plate 2: PCT 98 is an open woodland with native grass understorey



The EIS describes the proposed 17-hectare quarry site as a degraded form of PCT 98 Poplar Box – White Cypress Pine – Wilga – Ironwood shrubby woodland on red sandy-loam soils in the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion. Mature/senescent Poplar Box (*Eucalyptus populnea* subsp. *bimbil*) and White Cypress pine (*Callitris glaucophylla*) would normally dominate the overstorey, with scattered Kurrajong (*Brachychiton populneus*) and Western Rosewood (*Alectryon oleifolius*) also present. Ground cover in this case is dominated by exotic species where it would have been native grass land. Within the proposed impacted area, the majority has been mapped as non-native vegetation, with isolated areas of degraded PCT 98 around the retained mature trees. Only four trees with hollows remain within the 17 hectares proposed for the extractive industry. Three of these will be removed. The applicant has confirmed that nine mature Poplar Box are located in the small north-western and south-western PCT 98 patches identified in Figure 7. All are proposed to be removed.

It is not certain that the subject land has been cleared in accordance with the *Local Land Services Act 2013*. All clearing has been attributed to the former owner. The area affected by past clearing largely corresponds with that now proposed for extraction. The stated reasons for clearing include fire damage, wind damage and clearing for a fence line that was never constructed. The applicant has supplied a map identifying 14 mature trees cleared for these reasons, plus a 30-metre-wide strip cleared for a fence that was never erected (Figure 8).

Figure 8: Clearing information supplied by applicant

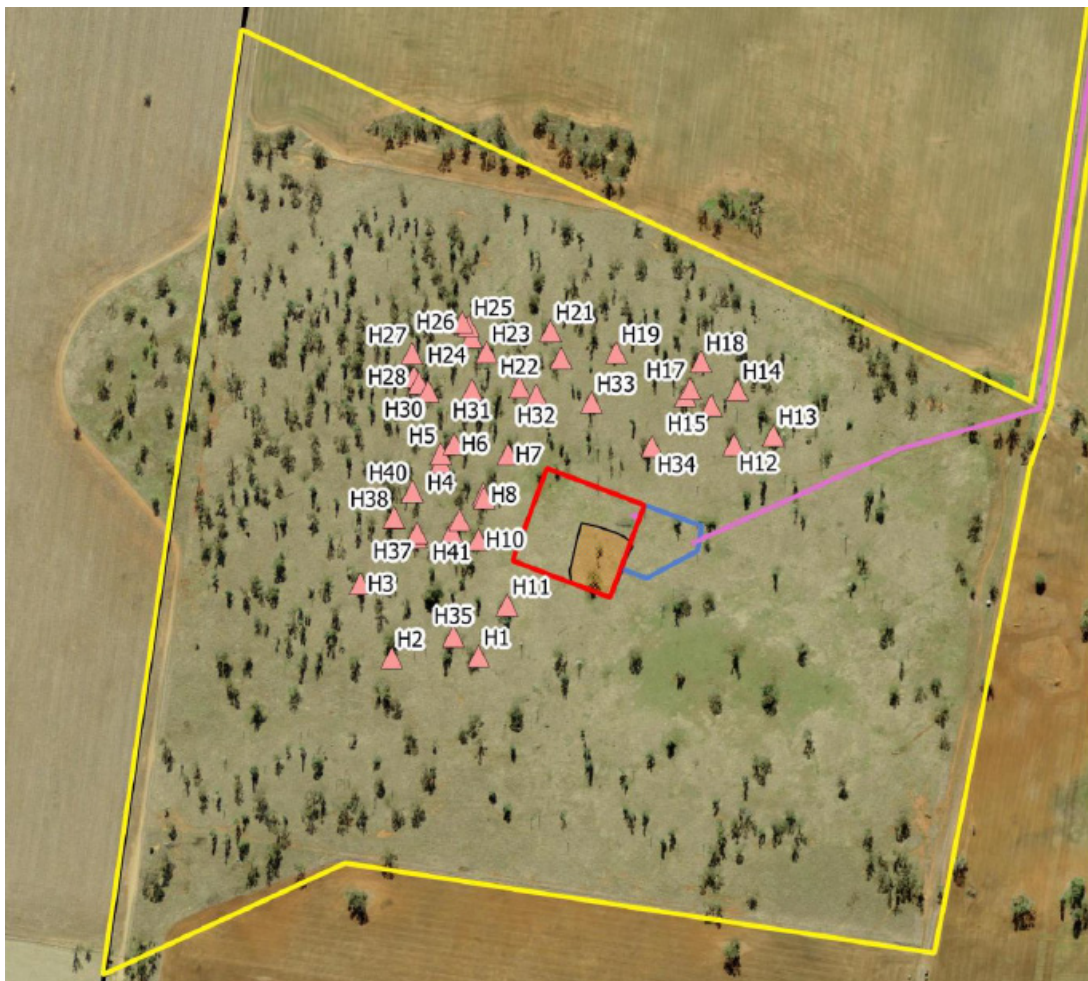


Source: RFI response 6/05/2021

The original quarry was approved to impact an area of 1.5 hectares with a further 0.5 hectares impacted by a haulage road. The current quarry including extraction site, crushing operation, material stockpiles and overburden piles occupies an area of approximately 3.8 hectares as measured at the site inspection undertaken on 24 May 2021. The difference (3.8 hectares minus 2.0 hectares) is 1.8 hectares and the applicant has assumed that this area was also lawfully cleared by the previous land owner.

Figure 6 demonstrates that remnant native vegetation communities such as PCT 98 are often small and isolated patches separated by large areas of agricultural land that have been cleared for grazing and cropping. This is not ideal as it creates edge effects, but it does not mean these areas have no value. An ecological study undertaken in 2017 to support the previous quarry approval assessed the subject land before any quarry related clearing and before any of the recent (alleged) LLS agricultural clearing. It described the PCT 98 land as an area commonly over grazed; and mostly cleared in the Central Division while still common in the Western Division. Much of the White Cyprus has been logged for fence posts. PCT 98 is not regarded as a threatened ecological community. The 2017 study describes the vegetation as having a ground cover of 90% native grasses, being Knotty Spear Grass and Rough Spear Grass, with no mid stratum and only Poplar Box and White Cyprus in the upper stratum. It was noted that 80% of Poplar Box trees present contained at least one tree hollow and most contained two or more hollows of various sizes. Tree hollows are attractive to parrots, owls and microbats, in particular, and are a key habitat feature of old growth trees. Figure 9 shows the extent of hollow-bearing trees on the site in 2017. Figure 7 shows the existing extent of hollow bearing trees currently on the site.

Figure 9: Density of hollow-bearing trees in 2017



It is clear that the subject land was correctly mapped in LEP 2011 as containing an important native ecological community. Both studies of the site (2017 and 2020) describe this as PCT 98. It is probably not the habitat of threatened flora species or populations as none have been located in two assessments. However, fauna assessment for both assessments is limited and did not include bats or any detailed assessment of birds or reptiles. The PCT 98 that remains on the site does have a high number of tree hollows of varying sizes. It is not an endangered ecological community but no assessment of regional significance has been provided by the applicant. PCT 98 is a vegetation community known to be mostly cleared in the central division of NSW and this indicates that it may well be regionally significant. As an isolated area it has limited connectivity but this is not an issue for birds or microbats, many of which require tree hollows as habitat and move from one area to another as required.

The current proposal for an extractive industry is located on land that is mostly disturbed. However, 0.8 hectares of PCT 98 including 12 mature Poplar Box trees (three of which are hollow-bearing trees) are proposed to be removed. All of the understorey will also be removed. The most important part of the site ecologically is the balance that remains as PCT 98, albeit in a somewhat degraded state compared to 2017. The balance of the site is approximately 52 hectares. If rehabilitated and protected from quarry traffic encroachment and from grazing and other agricultural practices, it should be able to return to a good quality PCT 98 with native grass understorey and native tree overstorey. Habitat can be further enhanced by the installation of nesting boxes of various sizes to encourage roosting species. This will offset the PCT 98 directly and indirectly impacted by the expanded quarry and provide a vegetated buffer to surrounding farm land. These matters can be addressed in conditions of approval.

Clause 7.2 Riparian land and water courses

- (1) *The objective of this clause is to protect and maintain the following—*
 - (a) *water quality within watercourses,*
 - (b) *the stability of the bed and banks of watercourses,*
 - (c) *aquatic riparian habitats,*
 - (d) *ecological processes within watercourses and riparian areas.*
- (2) *This clause applies to—*
 - (a) *land identified as “Sensitive Watercourse” on the Watercourse Map, and*
 - (b) *land situated within 40 metres of the top of the bank of the land so identified.*

- (3) *Before determining a development application to carry out development on land to which this clause applies, the consent authority must consider whether or not the development—*
 - (a) *will cause any adverse impact on the following—*
 - (i) *the water quality and flows within a watercourse,*
 - (ii) *aquatic and riparian species, habitats and ecosystems,*
 - (iii) *the stability of the bed, shore and banks of a watercourse,*
 - (iv) *the free passage of fish and other aquatic organisms within or along a watercourse,*
 - (v) *any future rehabilitation of a watercourse and riparian areas,*
and
 - (b) *will increase water extraction from a watercourse.*
- (4) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—*
 - (a) *the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or*
 - (b) *if that impact cannot be avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or*
 - (c) *if that impact cannot be minimised—the development will be managed to mitigate that impact.*

Comment: The extractive industry site is located on a hill, but the private haulage route crosses a mapped watercourse known as Boothaguy Creek (Figure 10).

Figure 10: Boothaguy Creek is a sensitive watercourse identified in Gilgandra LEP 2011



The haul route has already been constructed and has a bed level crossing of the riparian area that is extensively modified. The watercourse only runs in high rainfall events, is quite shallow and lacks any distinctive creek banks or riparian vegetation. No works are proposed in the vicinity of the watercourse. It is not proposed to extract water from Boothaguy Creek.

Plate 3: Boothaguy Creek is heavily modified and has no high bank and no distinct riparian tree vegetation



It is not anticipated that the use of the haul road will have any significant adverse impact on the watercourse or its riparian zone. However, if any modification to the crossing (eg culverts or pipes) is proposed, this will require development consent or a modification to this consent. A condition noting that no works are permitted will ensure that this point is clear.

If any upgrades are planned to this crossing, or should any activities be included in the final development application that are within waterfront land, NRAR will need to be consulted in regard to the requirement for a Controlled Activity Approval under the *Water Management Act 2000*.

Clause 7.6 Essential services

Development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the proposed development are available or that adequate arrangements have been made to make them available when required—

- (a) *the supply of water,*
- (b) *the supply of electricity,*
- (c) *the disposal and management of sewage,*

- (d) *stormwater drainage or on-site conservation,*
- (e) *suitable road access.*

Comment: **Water** – The application states that potable water for consumption and amenities will be sourced principally from water captured in a water tank to be located on the quarry site linked to the office or amenities structure. This will be supplemented by water purchased from commercial suppliers. The location of the roof supplying the water tank is going to be subject to relatively high dust levels given its proximity to the quarry and processing area. Roof harvest for potable water supply requires the applicant to submit for approval a Private Water Supply Quality Assurance Program. It must be prepared by a suitably qualified consultant in accordance with the *Public Health Act 2010* and the *Public Health Regulation 2012*. This will be required as a condition of consent.

The other water issue relates to water required for dust suppression on the haul road, stockpiles and the crushing plant. This is considered in detail in the Key Issues section of this assessment report.

Electricity – No reticulated power is available to the subject land and it is not proposed to connect it. Power will be supplied by a diesel generator, as required. A condition will be imposed to ensure that any diesel storage on the site meets Australian Standards for safety and environment protection.

Sewerage – The site is not serviced by any Council sewer assets or an on-site wastewater management system. A pump-out septic tank system is proposed. Given the potential for up to 24 staff and drivers using the site in Phase 1, this is not acceptable. A NSW Health approved on-site wastewater treatment and disposal system is required. Approval under section 68 of the *Local Government Act 1993* is required and this will be a condition of consent.

Stormwater – The key issues with stormwater on this site are the runoff that will be generated on the site by the crushing and processing area and the pit itself.

The existing Water Management System (WMS) comprises:

- One sediment basin: SD-1 with an approximate capacity of 3 ML.
- A dirty water diversion bund along the southern edge of the existing works boundary which directs surface flows towards SD-1.

The proposed project WMS will consist of two general catchment areas as follows:

- The dirty water catchment, which includes the stockpiling area and a portion of the processing area. This catchment has an elevated risk of coarse sediment in stormwater runoff.
- The extraction area catchment. This area will be self-containing as extraction progresses.

The intent of the proposed operational WMS is to:

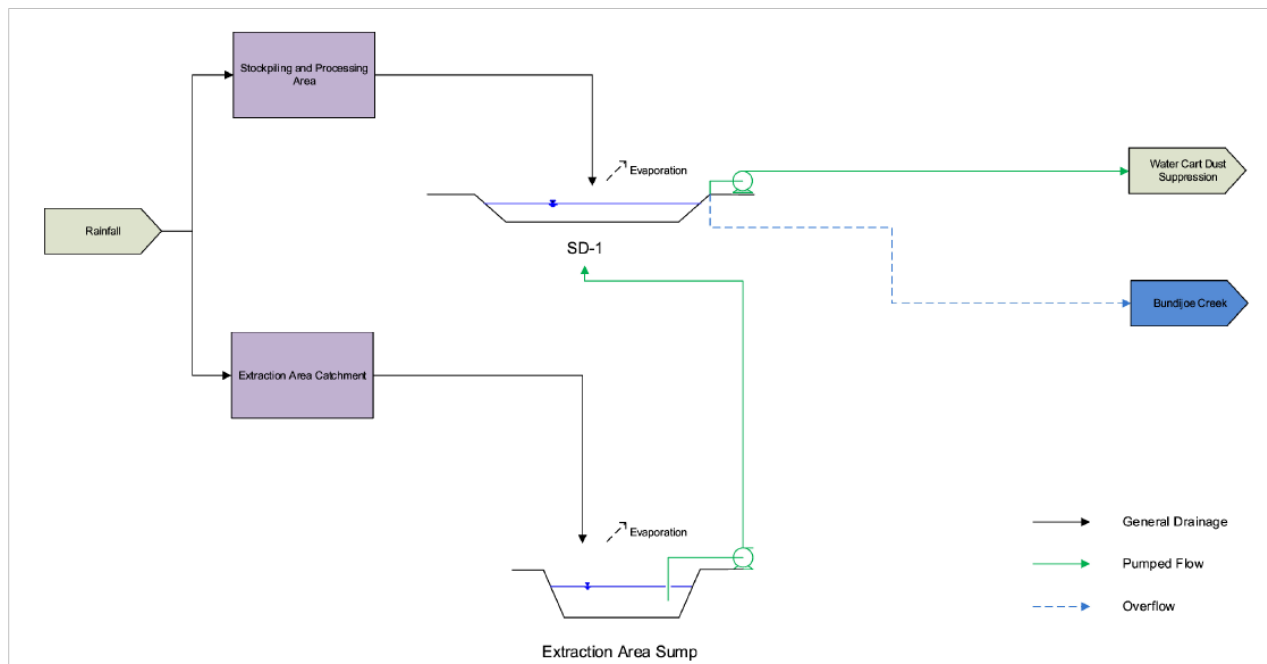
- minimise the risk of dirty water (ie water with elevated concentrations of suspended solids) discharging off site.
- minimise the import of water by maximising the reuse of captured stormwater and recycled water to meet operational water demands.

In order to achieve this:

- All excess water generated during the processing of material will be captured and reused for production demands (primarily dust suppression).
- The stockpiling area and a portion of the processing area will drain to SD-1 to allow settling of coarse solids.
- During high or prolonged rainfall events, excess water may discharge from SD-1 to a suitably designed energy dissipation structure and drain away from the project site via overland flow. This will flow towards Bundijoe Creek to the south of the subject land.

This system is illustrated in Figure 11. Conditions will be imposed in relation to stormwater controls and protection of water quality in nearby waterways.

Figure 11: Proposed stormwater management on site



The proponent shall prepare a Water Management Plan which identifies and implements strategies that:

- Mitigate the risk of dirty or contaminated water discharging off the site during the operational phase,

- Minimise importing water and maximise reuse of captured/recycled water during the operational phase,
- Provide appropriate measures to protect the environment from dirty or contaminated water, including sediment and erosion control, during construction.

It is also important that all earthworks, filling, roads or other works, are designed and constructed, including stormwater drainage, so that at no time will any ponding of stormwater occur on adjoining land as a result of this development.

Vehicular access – The extractive industry will rely on a private haul road to access the Oxley Highway. A condition will be imposed that no quarry related traffic is to use the Berida–Innisfail Road at any time other than in an emergency. This road is not in a suitable condition to accommodate quarry traffic and is a school bus route.

Plate 4: Existing intersection of private haul road with Oxley Highway



Once on the Oxley Highway, quarry trucks will be able to head west into Warren Shire or east back into Gilgandra. No additional haulage routes have been identified and it is not yet known how the quarry trucks will gain access to the Inland Rail corridor (to the east), assuming that this quarry does win a contract to supply basalt to that project. Council has been advised that local roads accessed by Inland Rail Project vehicles will be repaired as part of that project. This will be important during the high volume Phase 1 of the quarry development.

The following 20 years or more of quarry life will see reduced production rates based on local trade. It is not possible to predict where this material will go.

Gilgandra Council does not have a Section 7.11 Developer Contribution plan. It has a Section 7.12 Developer Contribution plan that levies a flat contribution rate of 0.5% on all non-residential development over \$500,000. Accordingly, Council is not able to levy a monetary contribution for local road upgrades or repairs other than by a voluntary planning agreement.

It is important that local roads are not excessively damaged by quarry traffic over the short or long term. This can be achieved by compliance with load weights, driver behaviour, responding to weather scenarios and restrictions on truck traffic volume.

Prior to the supply of quarry product from the site, it is recommended that the proponent enters into a contractual agreement with Council for the use of local public roads as haulage routes, including timeliness of dilapidation surveys and proportionate maintenance contributions or restitution timeframes. This should primarily address Phase 2 of the quarry.

It is also recommended that a Traffic Management Plan be prepared that identifies and implements strategies to mitigate the effects of quarry related traffic issues on the local road network, including but not limited to:

- Noise control,
- Dust suppression,
- Maximum number, vehicle type and timeframes of traffic movements,
- Road safety for transport operators and other motorists.

A Code of Conduct for the transportation of materials on public roads shall be developed and implemented by the proponent for the life of the quarry.

The revised application was referred to TfNSW in relation to the Oxley Highway and it advised that it has no outstanding concerns. TfNSW has recommended a number of conditions and these will be included in the approval.

Telecommunication – The site does not have Telstra or other connections and will rely on mobile phone service for telecommunication.

5.2 Section 4.15(1)(a)(ii) – the provisions of any proposed instrument

No draft planning instruments apply to the subject land.

5.3 Section 4.15(1)(a)(iii) – the provisions of any development control plan

5.3.1 Gilgandra Development Control Plan 2011 (DCP 2011)

DCP Chapter 6 – Rural Zones

Clause 6.3 Extractive industries

Community consultation has been addressed in the pre lodgement phase by the applicant. Council has also publicly exhibited all documentation and written to neighbours and government agencies. Both private and agency submissions have been addressed in this report and in proposed conditions.

Visual amenity is not a major issue in this application because the quarry is set back from public roads and private residences. Lewis Road is approximately 1.5 kilometres to the south and the Berida–Innisfail Road is approximately 2.5 kilometres to the east. The Oxley Highway is approximately 6 kilometres to the north. The topography of the site and retention of existing native vegetation will soften impacts. The closest farm house to the south is approximately 2 kilometres away and this distance will also reduce the visual impact.

Noise and vibration (and blasting) are addressed in the EIS in relation to the nearest dwellings to the extraction site, as well as road related noise from trucks. It concludes:

- The results of the predictive modelling show that noise emissions from the quarry satisfy the Project Noise Trigger Levels at all non-project related residential receivers, for the operational scenario.
- The traffic noise contribution from the quarry is predicted to remain well below the relevant day and night assessment criteria for the nearest residential receivers on the Oxley Highway.
- Considering the maximum noise levels from transient events, the EIS predicts the maximum noise level screening criteria will be easily satisfied with the highest predicted L_{Amax} noise level of <30 dB(A) at all receivers, which is well below the screening criteria of 52 dB(A).
- The predicted L_{Aeq}(15min) noise emissions for construction would comfortably satisfy the construction noise management levels for all assessed receivers with noise levels predicted to remain < 30 dB(A), well below the day period Noise Management Level of 45 dB(A).

An analysis of low frequency noise and tonality was completed at the request of the EPA and it confirmed that noise from the quarry:

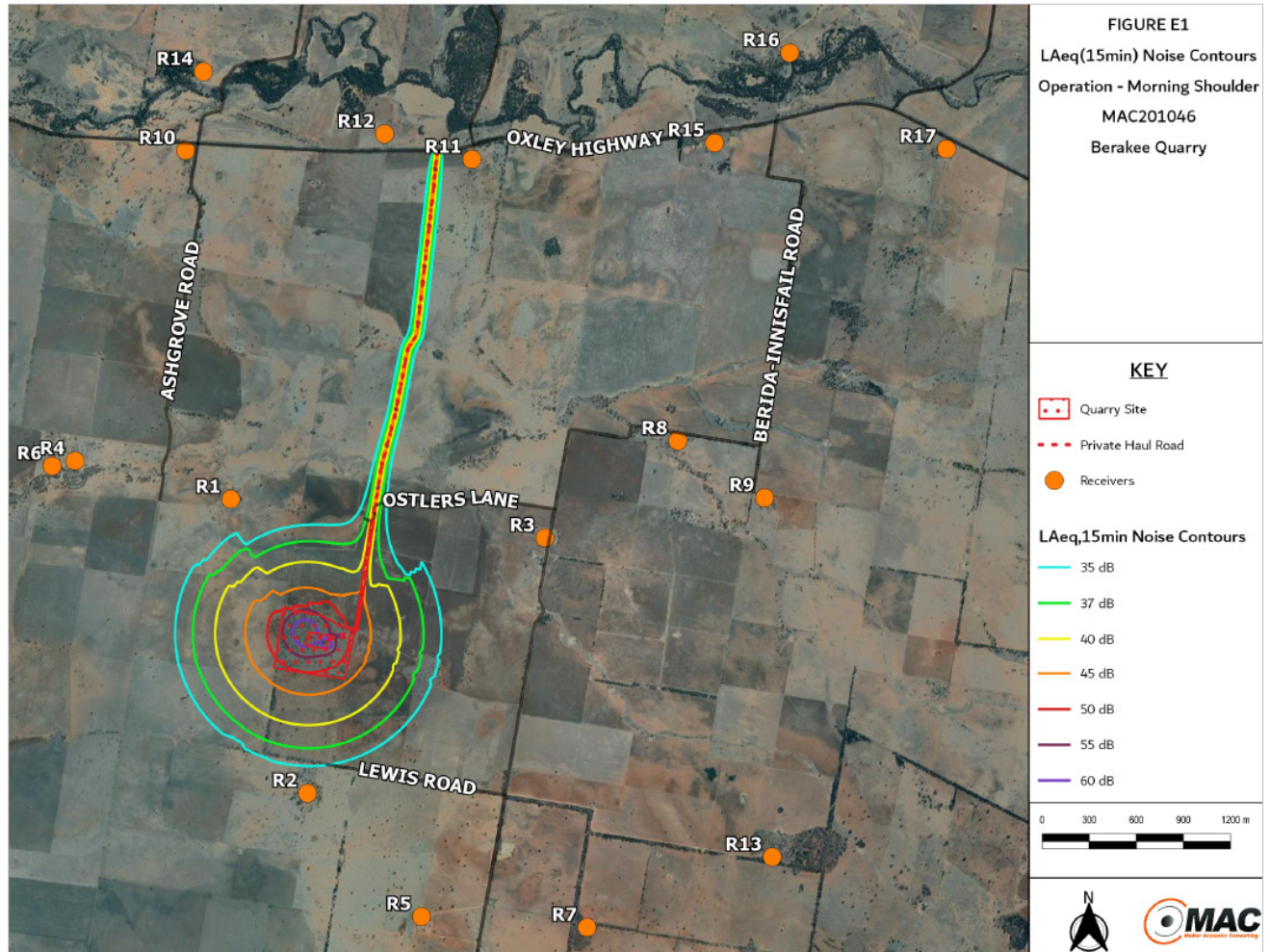
- would remain below the Z weighted noise level thresholds at each receiver, and
- would not result in dominant tones.

As a result, no correction for low frequency noise or tonality has been applied and there would be no effect on predicted noise levels.

A modelled noise contour map supplied with supplementary information shows the noise impact from the quarry operation and haul road in the morning shoulder period (Figure 12).

This is between 6 am and 7 am. No sensitive receivers are predicted to be affected by the 35 dB contour or greater.

Figure 12: Operational noise contour map for morning shoulder period (6 am to 7am)



In relation to vibration, the key source will be blasting. The applicant proposes to undertake approximately 12 blasts per year of 40,000 to 45,000 tonnes per blast. The blasting pattern will require approximately 110 drill holes at 15 metres in depth for each blast. Blast modelling indicates that blasts up to a Maximum Instantaneous Charge (MIC) of 50 kilograms will satisfy relevant ANZECC overpressure and vibration criteria.

Blast effects resulting from the quarry are predicted to be, at worst for overpressure up to 103 dBZ, and for vibration up to 0.14 mm/s at the nearby residential receiver locations. This is less than relevant industry criteria.

The nearest significant infrastructure to the quarry is the Oxley Highway, approximately 6 kilometres to the north of the quarry. The EIS states that vibration levels at the Oxley Highway will be well below 5 mm/s and, therefore, unlikely to adversely impact the road surface or condition.

Noise and vibration related matters are included in conditions supplied by the EPA in its GTAs.

Air quality and pollution control relates mainly to dust and dust control in this situation. The applicant undertook modelling of emissions to predict the potential for air quality impacts as a result of the quarry. This assessment determined that the proposal will not result in unacceptable changes to local air quality. Specifically, it is predicted that:

- The EPA's impact assessment criteria for annually averaged PM10, TSP and deposited dust will be met;
- There will be a negligible (less than 3%) increase in annually averaged PM2.5 at surrounding sensitive receivers, with background concentrations noted to already exceed criterion;
- There will be no additional days where PM10 and PM2.5 concentrations exceed the EPA's respective 50 µg/m³ and 25 µg/m³ impact assessment criteria.
- Measures consistent with best practice are recommended to control emissions to air including the use of watering during drilling, material hauling, loading and unloading and screening, as well as on exposed surfaces and stockpiles, and the use of enclosures and water sprays with dust suppressing additives during crushing.
- Additionally, it is recommended that weather forecasts should be used to identify high risk times of days for dust, with controls and the intensity of operations adjusted accordingly.

Conditions on dust control will be imposed. A condition will also require production to cease if a lack of water means that dust cannot be controlled as modelled.

Water resources is an important issue on this site. Water is required for dust suppression on the haul road, stockpiles and the crushing plant. This is considered in detail in the Key Issues section of this assessment report. Conditions will be imposed to implement the proposed Water Management System.

Transport is considered in detail in the Key Issues section of this assessment report. The quarry will only use the private haul road to get material to the public road system via the Oxley Highway. It is expected that vehicles will be predominantly 38-tonne capacity truck and dog arrangements; however, approval for access by vehicles up to B-double is requested. The existing private haul road/Oxley Highway intersection is capable of dealing with these vehicles and truck movement numbers will be limited by conditions of consent. Other proposed conditions will address haulage routes and safety issues.

DCP Chapter 14 – Car Parking

A specific ratio is not provided for extractive industry. The DCP states for land uses not specifically listed, that car parking must be provided as per the most similar use of equivalent intensity, or otherwise in accordance with the requirements of the Council and/or RTA (whichever is the greater).

The quarry site will provide for 24 car parking spaces, including one disabled car parking space, to account for the maximum number of employees anticipated to work on the quarry site at any given time. This is adequate and will be included in the conditions.

DCP Chapter 21 – Environmental Hazards

The subject land is not identified as being bushfire prone on NSW state government mapping.

5.4 Section 4.15(1)(a)(iia) – the provisions of any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4

There is no planning agreement or draft planning agreement applying to this development or the subject site.

5.5 Section 4.15(1)(a)(iv) – the regulations (to the extent that they prescribe matters for the purposes of this paragraph)

There are no prescribed matters in the regulations applying to this development or the subject site.

5.6 Section 4.15(1)(b) – the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality

The following assessment addresses the impacts that the development will have on the surrounding natural and built environment, and the social and economic impacts that the proposal may have on the locality.

5.6.1 Water

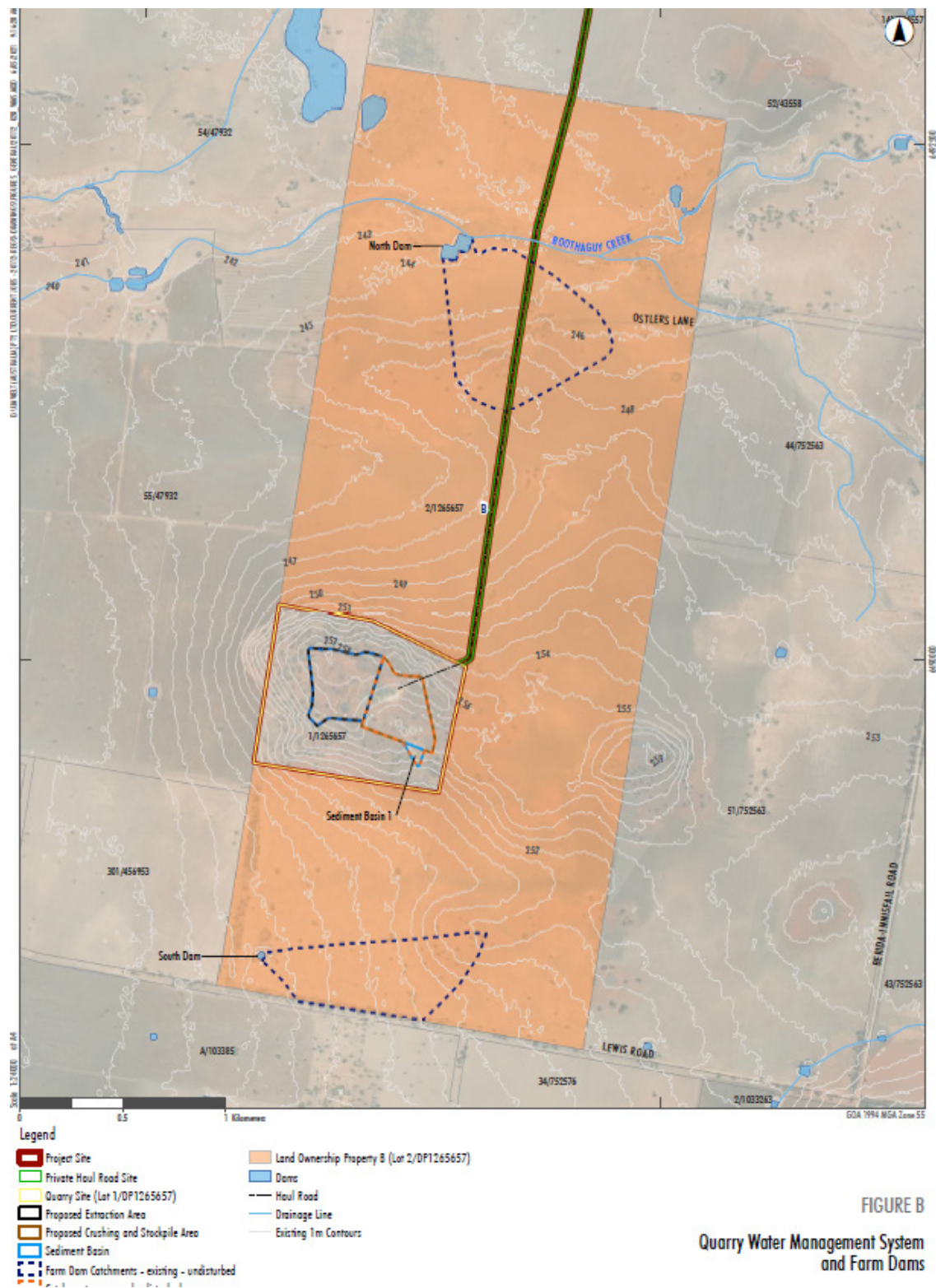
A key issue with the development is water for dust suppression for the haul road, crushing plant and stockpiles. The applicant has negotiated and confirmed with the owner of Lot 2 DP 1265657 that water may be harvested from the existing dams on this property and supplied to the quarry for use. Consideration can now be given to water sourced from both Lot 1 and Lot 2 DP 1265657 as shown in Table 1. The dams and sediment basin are shown in Figure 13.

Table 1: Water sourced from both Lot 1 and Lot 2 DP 1265657

	Lot 1 DP1265657	Lot 2 DP1265657	Total
Land holding	69 ha	756 ha	825 ha
Maximum Harvestable Right Dam Capacity (MHRDC)			49.5 ML
Dam Capacity			
• Sediment Basin 1	5 ML		
• North Dam		15 ML	
• South Dam		2.5 ML	22.5 ML

	Lot 1 DP1265657	Lot 2 DP1265657	Total
Dam Catchment			
• Sediment Basin 1	19 ha		
• North Dam		45 ha	
• South Dam		29 ha	93 ha

Figure 13: Dust suppression water sources



Source: EIS

The updated water balance model from the applicant predicts that:

- The project has access to 22.5 ML of water on site and will have sufficient water to meet operational dust suppression demands without imports for the 10th percentile water balance result (ie dry conditions).
- The maximum annual volume of water sourced from the 'Farm Dams' is predicted to be 14.5 ML, which is well below the land holding harvestable right of 49.5 ML/year.
- The maximum water import demand is predicted to be 5.5 ML.
- A sensitivity model was undertaken with a total catchment of 150 hectares and 'Farm Dams' capacity of 30 ML (a doubling of available catchment and increase in dam storage capacity of 70%). The predicted maximum import demand was 3.3 ML indicating that, in very dry years, little benefit is gained from increasing dam capacity and catchment area.

During very dry years, there may not be sufficient water captured on the two properties to supply demand. Notwithstanding the fact that under the very dry years (10th percentile or lower), elevated dust generation across the landscape is likely to be a feature as ground moisture levels and vegetation cover are reduced. The applicant makes the following commitments:

- Additional water will be sourced from the existing farm bore (GW011693), which is located at the end of Ostlers Lane and estimated to have a yield of 1 L/s (31.5 ML/year).
- Soil stabilisers will be applied to the haul road surface to limit wheel-generated and windblown dust.
- Quarry operations, including transport, will be limited during periods of low water availability to prevent avoidable dust lift-off from the quarry operation and truck movements on the private haul road.
- Additional water will be purchased from off-site sources and delivered to the quarry site by tanker truck.

In response to this information, it is appropriate that conditions be applied to identify a trigger for 10th percentile dry years such that the applicant in these conditions either has to temporarily cease production and haul road use or supply Council with evidence that soil stabilisers and additional water have been sourced and used on the site and dust is adequately suppressed.

5.6.2 Traffic

The site is linked by a private haul road, about 6 kilometres long, to the Oxley Highway. In the vicinity of the site, the Oxley Highway is a two-way, two-lane road with a posted speed limit of 110 km/hr and lane widths of 3.5 metres and sealed shoulders of at least 0.5 metres. The Oxley Highway is approved by TfNSW for use by heavy vehicles up to 25/26-metre B-double vehicles. The private haul road is a compacted gravel road of 7.0 metres with a 0.75-metre shoulder on both sides and roadside drainage (table and spoon drains) of approximately 1.5 metres on both sides. It is the applicant's responsibility to maintain the private haul road.

Plate 5: Private haulage road has a thin gravel cover with shoulders and drainage

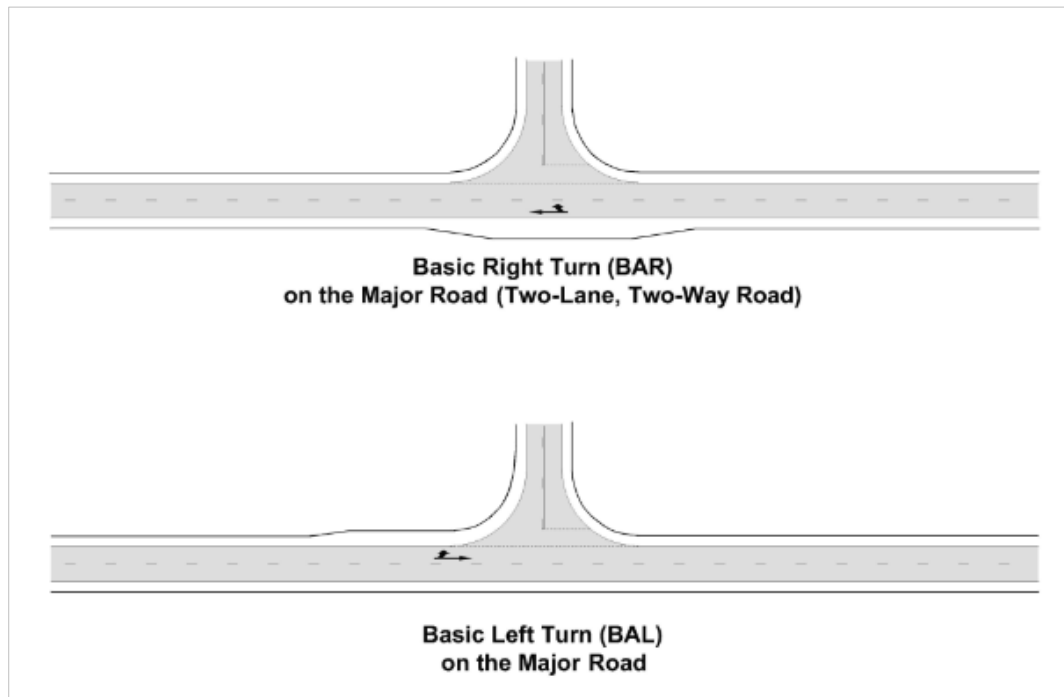


The traffic impact of the proposal has been assessed in the EIS through intersection analysis (modelled using SIDRA), turn warrant criteria and midblock assessment.

The SIDRA analysis looked at the intersection of the Oxley Highway with the private haul road. It considered the 2025 and 2045 design years, with 2025 being the existing traffic plus the Phase 1 quarry traffic and 2045 being the base load traffic for that timeframe plus the Phase 2 traffic. The results indicate that despite the addition of traffic generated by the proposed Phase 1 and Phase 2 development, the overall impact on the operation of the intersection is minimal, with the Level of Service generally unchanged between the “Base” and “Base + Development” scenarios.

The turn warrant criteria assessment was based on the relevant Austroads Guide to Road Design. The existing intersection with the Oxley Highway is a basic left and basic right (BAL/BAR) that was built to facilitate the existing quarry approval (Figure 14).

Figure 14: Basic left and basic right (BAL/BAR) is already in place on the Oxley Highway



Based on the assessment of project traffic against the AustRoads Warrants, the EIS concludes a BAL/BAR treatment (which is currently in place) is sufficient for the volume of traffic to be generated at both the 2025 and 2045 timeframes. An acceleration lane for vehicles exiting the private haul road and heading east is considered unnecessary given that:

- the highest traffic generation from the project will be restricted to the initial five years of operation and then decline;
- the amount of opposing eastbound traffic on the Oxley Highway is relatively low, at some 20 vehicles during the peak hour, or one vehicle every three minutes, allowing for sufficient gaps in the traffic stream to accommodate the peak hour generation from the quarry;
- there are adequate sight lines to/from the west for vehicles emerging from the private haul road such that there is no road safety deficiency.

The midblock assessment was based on the criteria within both the TfNSW Guide and Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis. Level of Service A (LOS A) is regarded as the best outcome. It is described as “A condition of free-flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.” For both the Oxley Highway and the private haul road at both 2025 and 2045 peak levels, the modelled Level of Service remains at level A for traffic in both directions.

The applicant has provided undertakings that are appropriate to impose as conditions of approval. It is also appropriate that conditions be imposed that ensure the continuing safety of other road users and the protection of Council’s local road assets from damage by quarry vehicles.

In this regard, it is appropriate that a sign be erected warning both east and westbound Oxley Highway traffic that trucks are turning/entering up ahead.

It will be the applicant's responsibility to regularly inspect the intersection of the private haul road and the Oxley Highway and maintain it in good working condition. They will also need to maintain and re-compact the private haul road.

Council considers that the hours of operation proposed in the EIS are excessive for both Phase 1 and Phase 2 of the quarry operation. Reduced hours will be outlined in the conditions.

A Traffic Management Plan will be prepared which identifies strategies to manage the ongoing impacts of quarry traffic or address quarry traffic related matters raised by the local community or Council.

A Driver Code of Conduct, identifying required driver behaviour and enforcement mechanisms for drivers of heavy vehicles, including subcontractors, regularly accessing the quarry, should be developed and needs to be enforced by the quarry operator.

To prevent damage to public roads, all laden quarry trucks will need to comply with mass limits prior to leaving the quarry site.

All loads must be covered prior to leaving the quarry site to prevent loose materials falling onto the roadway or the creation of excessive dust.

5.6.3 Dust

The Secretary's Environmental Assessment Requirements (SEARs) identified dust (particulate matter in the form of Total Suspended Particles [TSP], deposited dust, and fine particles (particles with an aerodynamic diameter less than 10 and 2.5 microns [PM₁₀ and PM_{2.5}])) arising from construction activities, the operation of the quarry and/or road haulage as the primary air quality related risk associated with the proposal. The EIS includes an assessment that was completed in accordance with the "Approved Methods for the Modelling and Assessment of Air Pollutants in NSW" (EPA, 2016).

The NSW EPA key criteria for dust emissions are as follows:

Pollutant	Averaging Period	Criteria	Source
PM ₁₀	24-hour	50 µg/m ³	EPA (2016)/DoE (2016)
	Annual	25 µg/m ³	
PM _{2.5}	24-hour	25 µg/m ³	EPA (2016)/DoE (2016)
	Annual	8 µg/m ³	
TSP	Annual	90 µg/m ³	EPA (2016)/NHMRC (1996)
Deposited dust (insoluble solids)	Annual (maximum increase)	2 g/m ² /month	EPA (2016)/NERDDC (1998)
	Annual (maximum total)	4 g/m ² /month	

Source: Modified after Jacobs (2021) – Table 3.2

Key findings include that in 2018 (which was a representative meteorological year for the purpose of the assessment) the inferred background PM_{2.5} concentrations around the proposal exceeded the NSW EPA's impact assessment criteria. Considering the elevated

background levels, it was determined that the assessment would need to demonstrate “that no additional exceedances of the impact assessment criteria will occur as a result of the proposed activity and that best management practices will be implemented to minimise emissions of air pollutants as far as is practical” as per EPA (2016).

The EIS included modelling of the air quality at the site, which found that:

- **Annually averaged PM10, TSP and deposited dust:** No additional exceedances of the EPA’s impact assessment criteria are predicted at surrounding sensitive receivers;
- **Annually averaged PM2.5:** A negligible (less than 3%) increase in annually averaged PM2.5 is predicted at surrounding sensitive receivers as a result of the proposal, with background concentrations noted to already exceed criterion; and
- **Daily PM2.5:** No additional days of PM10 and PM2.5 concentrations above the EPA’s respective 50 µg/m³ and 25 µg/m³ impact assessment criteria.

The following figures show the comparison between the deposited dust from the existing approved operation (Figure 15), the Phase 1 proposed operation (which is the worst case because extraction and haulage rates are at their highest) (Figure 16) and Phase 2 proposed operation (which is after the Inland Rail project is completed) (Figure 17).

Figure 15: Modelled dust from existing approved operation

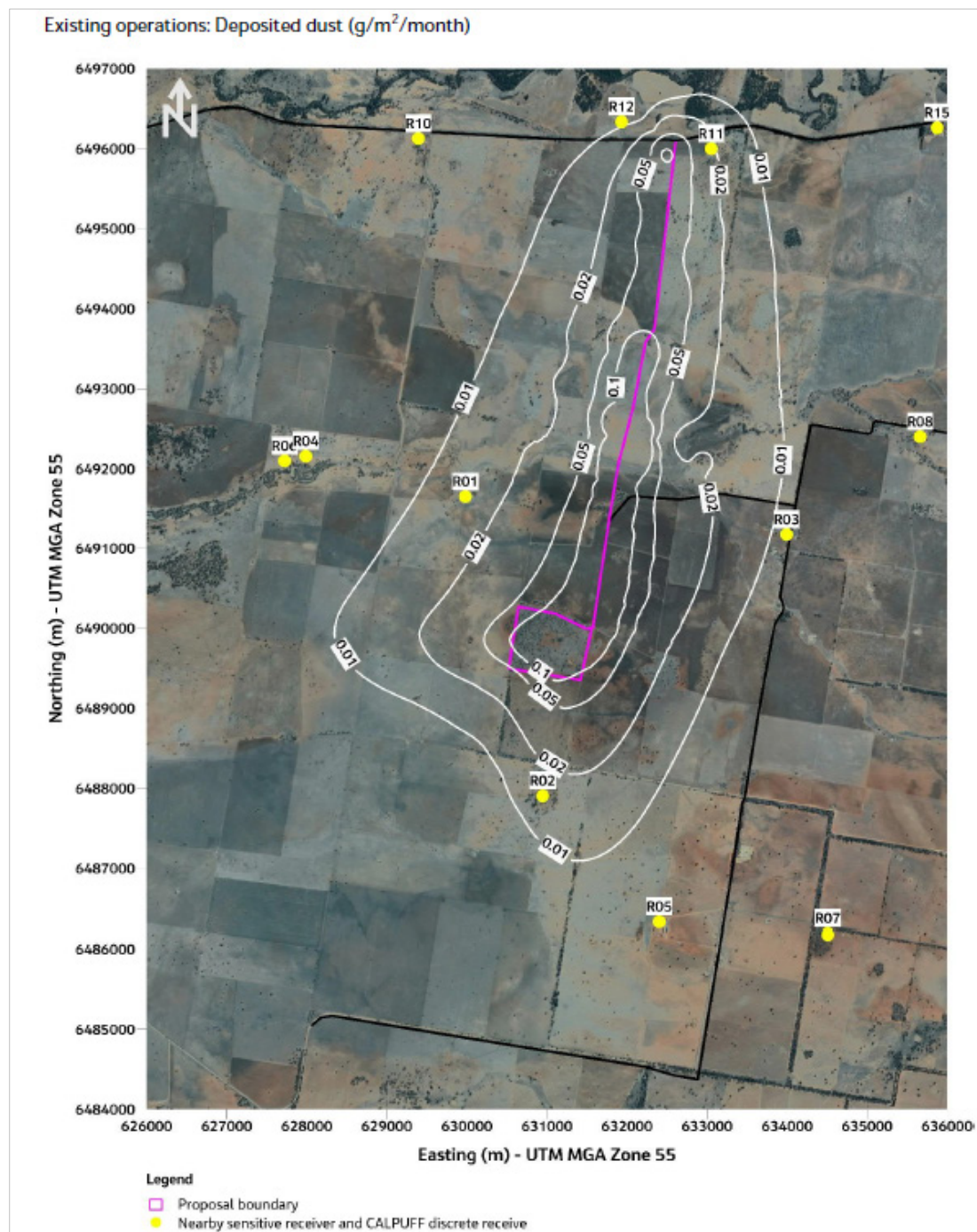


Figure 16: Modelled dust from the proposed Phase 1 operation

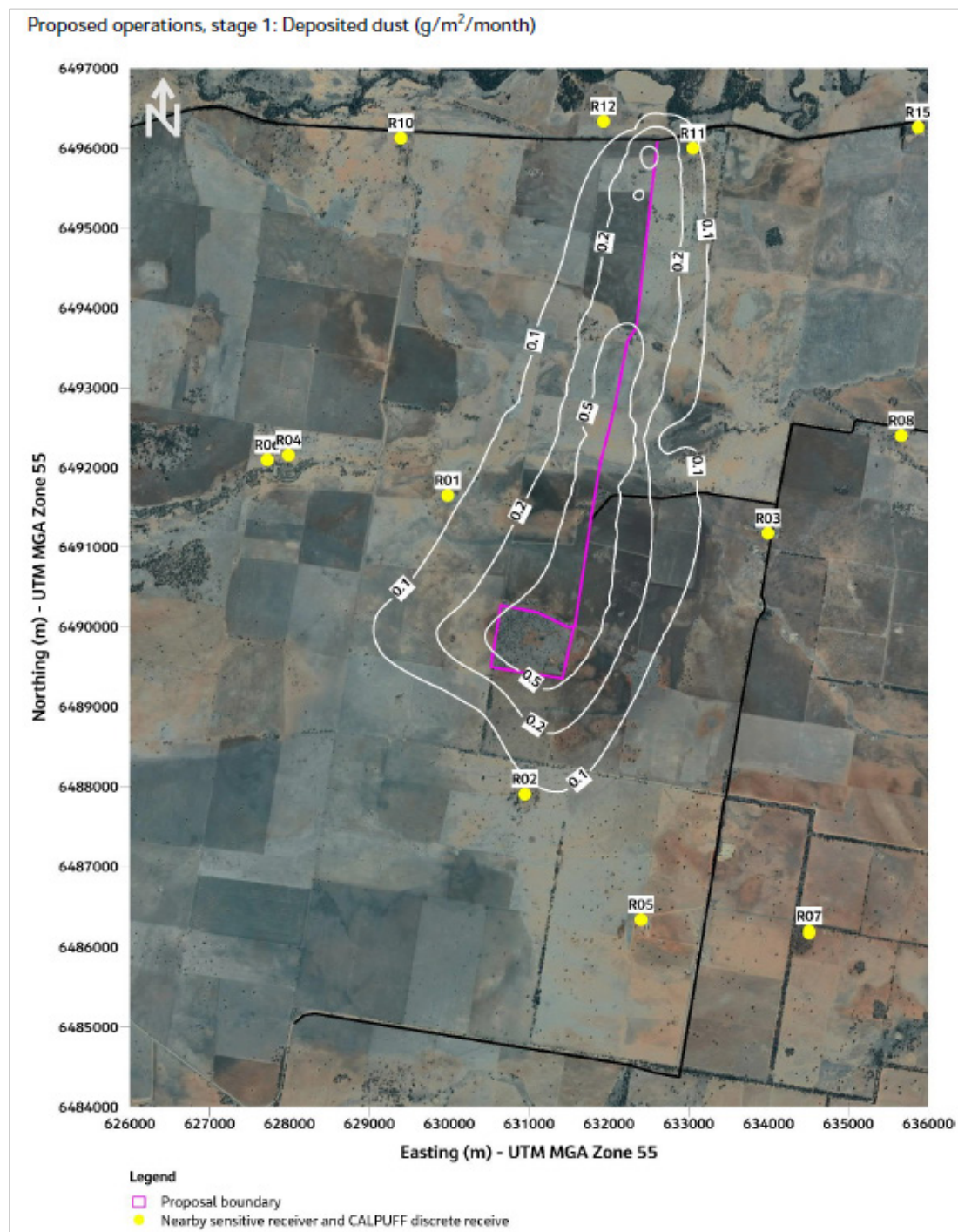
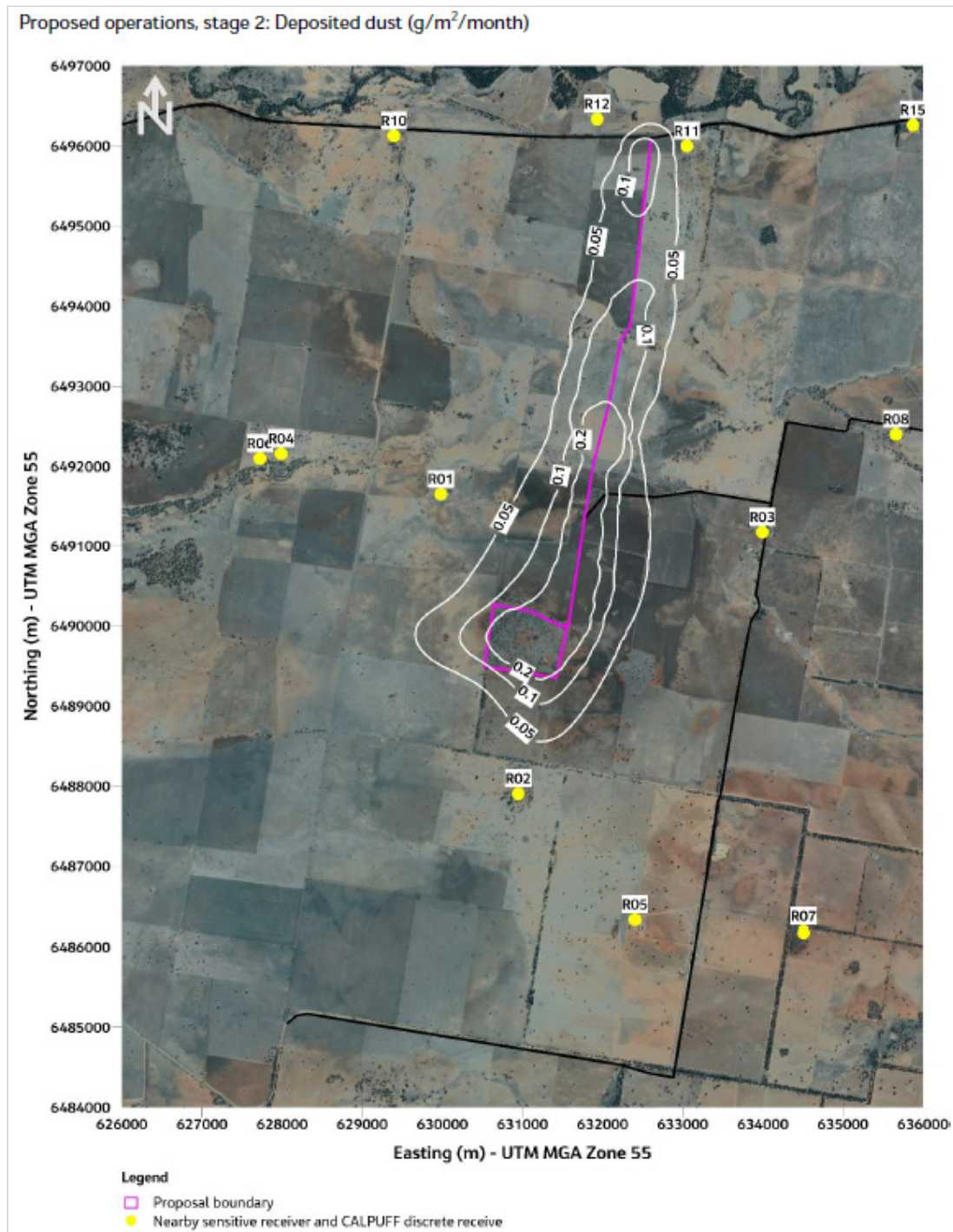


Figure 17: Modelled dust from the proposed Phase 2 operation



Although the dust impact has been modelled as not significantly exceeding EPA criteria, this also assumes an elevated existing dust level. Taking a precautionary approach, it is important that conditions be imposed that require dust control. The applicant has also provided undertakings that are appropriate to impose as conditions of approval, which include:

- Water sprays will be applied prior to and following drilling (for blasting).

- Water sprays will be applied during loading and unloading of materials.
- Water and/or polo citrus additive will be applied at transfer points of the crushing and screening plant.
- A water cart will be operated on the hardstand and frequently trafficked areas, including the private haulage route.

Given the potential for annoying dust impacts on the dwellings near the northern end of the private haul road, a 200-metre section of the private haul road (starting at the existing seal at the intersection/access gates) should be sealed at full cost to the developer. Ongoing maintenance of this section will also be required to maintain the seal to an acceptable wearing standard.

5.6.4 Biodiversity

The entire quarry site and all of Lot 1 DP 1265657 is located in an area mapped as having biodiversity sensitivity (Figure 6). This issue is addressed in section 5.1.5 of this report.

5.6.5 Noise

This issue is addressed in section 5.3.1 of this report.

5.6.6 Aboriginal Heritage

Field investigations for Aboriginal heritage were undertaken by a Senior Archaeologist on Tuesday 29 September 2020 accompanied by Messrs Wayne and Russell Bamblett representing the Gilgandra Local Aboriginal Land Council (LALC).

No landforms within the study area were assessed as likely to contain subsurface archaeological deposits. One previously unrecorded Aboriginal site, a scarred tree, was recorded during the fieldwork investigations. The scarred tree is located along the western boundary of Lot 1 DP 1265657. The scarred tree is located on a low crest in an area with scattered mature and regrowth trees. The tree exhibits one cultural scar which is elongated with irregular regrowth on one side. It is not in the proposed extraction area.

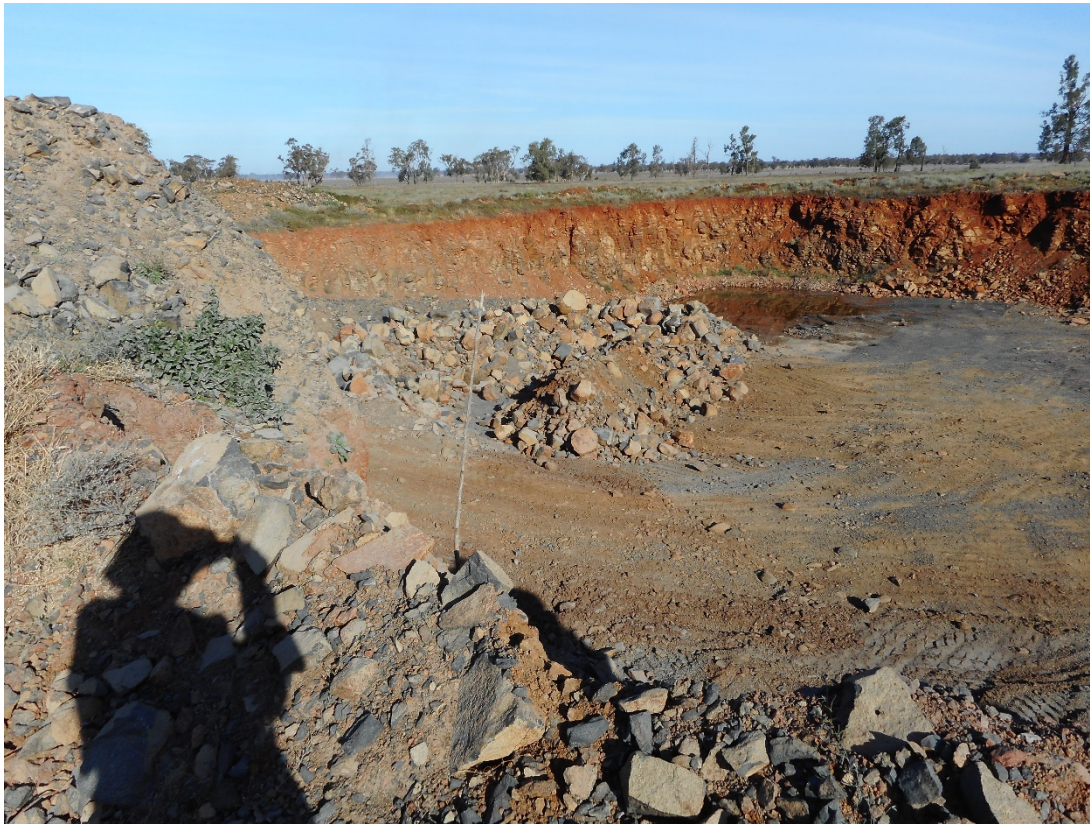
The following management measures should be undertaken as conditions of consent:

- All land disturbing activities must be confined to the assessed area. Should the parameters of the proposed work extend beyond the assessed area, then further archaeological assessment will be required by a suitably qualified archaeologist.
- Inductions for staff undertaking the proposed work should indicate the location of the scarred tree and explain the legislative protection requirements for all Aboriginal sites and objects in NSW under the NPW Act and the relevant fines for non-compliance. Staff should be briefed on the Unanticipated Find Protocol and the identification of Aboriginal objects within the local region, with particular emphasis placed upon stone artefact identification.
- In the unlikely event that Aboriginal skeletal material is encountered, the Unanticipated Skeletal Remains Protocol should be followed.

5.6.7 Agricultural Land

The quarry site occurs as a low hill rising to an elevation of approximately 270 metres AHD. It occurs over the Berakee Basalt Hydrogeological Landscape (HGL). Geology includes residual materials derived from tertiary basalts and tuffs. The soil of the site occurs as red and red-brown sandy loam and light clay loam soils with significant gravels present. Surface stone in the form of basalt cobbles and scatters of small shale-like fragments are present across the project site, particularly in the immediate vicinity of the proposed extraction area. Observations of excavations on the project site indicate a soil layer of between 200 and 400 mm transferring to weathered basalt (Plate 6).

Plate 6: Existing quarry excavation shows that soil on the site is shallow



The NSW Soil and Land Information database (eSPADE) identifies the quarry site as Land and Soil Capability (LSC) Class 2 (Figure 18), which suggests that the land is capable of sustaining high impact land uses. However, the eSPADE mapping is based on relatively broad scale mapping and does not appear to account for the Myall Glen Basalts landscape over the quarry site. Notably, an area to the north where the quarry access road joins Ostlers Lane, which also occurs over the Myall Glen Basalts, is assigned a lower LSC Class 3. Based on the occurrence of surface stone and the relatively shallow soil layer, an LSC Class 3 is possibly a more accurate reflection of the limitations imposed. The site also occurs on land which has been classified by broad scale mapping as Biophysical Strategic Agricultural Land (BSAL).

Impacts on agricultural land include the direct impact of a 17-hectare quarry, where no agriculture will take place for the life of the quarry. Plus the loss of a further 13 hectares, being

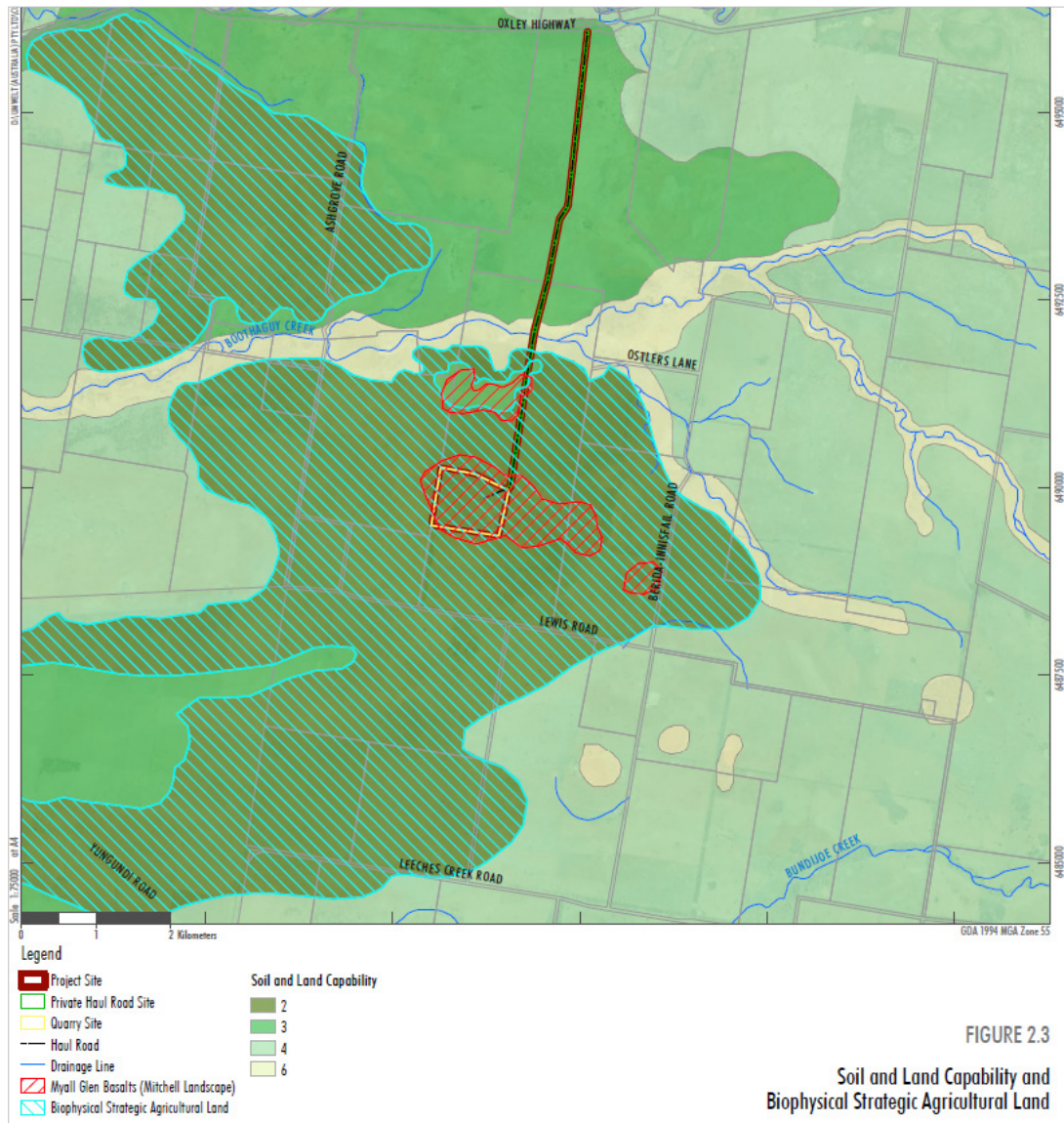
the land occupied by the private haul road (6 kilometres x 22 metres), for the life of the quarry. Any land required for habitat rehabilitation will also be lost to agricultural production.

Of these impacts, the quarry land and habitat rehabilitation area are currently open woodland with shallow soils that are only suitable for grazing. The private haul road crosses better quality agricultural land that has a history of cropping when soil moisture permits.

The EIS suggests that the quarry site can be rehabilitated to a form suitable for grazing or habitat restoration. This is realistic in the stockpile and crushing area, but may prove difficult in the quarry pit unless topsoils stripped from the site are carefully retained and the site is progressively restored. The private haul road can be easily removed at the end of the quarry's life and this land restored to the same form as adjacent cropping land. The habitat rehabilitation area will not be available for agriculture over the long term but this is poor quality land overlaying the Myall Glen Basalts.

In a worst case scenario, the impact on agricultural land will be 69 hectares on the quarry lot and 13 hectares for the private haul road (82 hectares in total). In Gilgandra LGA, the combined area of classes 2, 3 and 4 agricultural land is 363,295 hectares. The potential loss of agricultural land on this site is 0.02% percent of the agricultural land in these classes. This is acceptable when considered against the basalt resource that the site has the potential to produce.

Figure 18: Soil and land capability and BSAL



5.6.8 Social and Economic Impacts

Gilgandra LGA is predominantly rural and at the 2016 census, the population was 4,236 (with greater than 70% residing in Gilgandra town). In 2016, agriculture was the main industry of employment in the LGA, representing over 25% of all employment. This quarry has the potential to diversify the employment base. It is close enough to Gilgandra township that workers can reside in the town and work at the quarry.

The basalt material has been proven as hard and dense, with qualities which allow for its use in road construction and maintenance, concrete manufacture, rail infrastructure construction and maintenance, and general construction and landscaping.

The quarry is ideally placed to supply hard rock aggregates and construction material to the Inland Rail Project, which will be constructed approximately 10 kilometres east of the site. This

is a nationally significant project that will be built in the next five years. After the Inland Rail Project is completed, the quarry will provide access within the local area to a significant and high quality resource for the purpose of road maintenance and construction, concrete manufacture and construction more generally.

Social impacts are likely to be localised given the site is relatively isolated and located on a standalone 69-hectare lot (large enough for an internal buffer) with a private haul road. Issues for neighbours are likely to be noise/blasting, dust and traffic. These are all addressed in this report and impacts are acceptable subject to conditions.

Economic impacts are likely to be positive. Following an initial investment of \$2.25 to \$2.75 million for equipment purchase, haul road upgrade and other materials, the applicant anticipates an ongoing contribution of approximately \$3.3 to \$4.6 million per year to the local and regional economy as follows:

- Wages (direct employees only): \$1.2 to \$2.0 million pa.
- Consumables, goods and services: \$1.5 to \$2.0 million pa.
- Contractors and suppliers: up to \$200,000 pa.
- Rates and taxes: up to \$400,000 pa.

The applicant anticipates that between 12 and 24 people will be employed at the quarry during Phase 1, depending on production rates. Based on past experience, the quarry will be likely to generate six to eight full-time equivalent positions for drivers. Phase 2 will revert to 2–3 staff, plus additional contractors during extraction and processing campaigns.

5.6.9 Waste

The basalt resource at the quarry lies immediately beneath the topsoil, which is typically less than 0.6 metres deep. Very little overburden is anticipated from the proposed extraction activities and it will all be stored on site for reuse. Should any rock material be extracted that is not suitable for sale and despatch, it will be temporarily stockpiled before being placed over the final floor of the extraction area as part of final profiling and rehabilitation activities.

Similarly, crusher dust and oversize material will be stockpiled temporarily on the stockpiling and processing area prior to placement over the final floor of the extraction area as part of final profiling and rehabilitation activities. The crusher dust may be retained in stockpiles for longer periods and blended with stripped and stockpiled soil to improve the nutrient concentration and water retention of the soil material used in rehabilitation.

For general site waste, covered bins or skips will be located within office and workshop areas, as required. Where located in open areas, the bins will be fitted with animal-proof lids. They will be collected on a regular basis by a licensed waste contractor and transported to a licensed waste disposal/recycling facility.

Any waste oil generated at the site will be placed within bunded tank(s) within the crushing and stockpile area. It will be collected on a regular basis by a licensed waste contractor and transported to a licensed waste disposal/recycling facility.

Wastewater from toilets, lunch room, etc, will be treated and disposed of on site in an approved on-site wastewater treatment system.

These matters will be addressed in conditions of consent.

5.6.10 Site Rehabilitation

A key issue with any extractive industry is rehabilitation of the site once the material has been removed. The life of this quarry is estimated at 20 years in two phases. Phase 1 will be intense and involve high extraction rates and high truck movements to service the Inland Rail Project. It is likely to be completed in five years and approximately 2.5 million tonnes (about half the extraction estimate) will be removed in this time. Phase 2 will involve considerably lower extraction rates and extraction will continue for an estimated 15 years.

It is important that rehabilitation commences in Phase 1. It should include both the extraction site and stockpile and processing area if it is not all required for Phase 2.

The final landform as presented in the EIS is acceptable as a general concept and will be a condition of approval. The proposed end use of the disturbed parts of the site are acceptable as:

- Low intensity grazing, primarily on the hardstand surfaces used for processing, stockpiling, quarry infrastructure and ancillary activities;
- Passive biodiversity conservation within the final void and select areas of the surface which adjoin remnant native vegetation.

It is currently proposed to retain the private haul road for ongoing use in the management of agricultural operations on the “Berakee” and “Wilgaroo” properties. However, should either of the two land owners request the decommissioning and removal of this road, the gravel materials used to construct the road would be excavated and either sold or returned to the quarry site for replacement in the final void. Previously stripped soil would be replaced over the road surface and this returned to agricultural land.

5.6.11 Developer Contributions

Gilgandra Council does not have a Section 7.11 Developer Contribution plan. It has a Section 7.12 Developer Contribution plan that levies a flat contribution rate of 0.5% on all non-residential development over \$500,000. The applicant estimates the cost of the development at \$1.1 million and has supplied a Cost Summary Report as set out in Gilgandra S94A Developer Contributions Plan. This amount has already been submitted to Council in anticipation of approval.

5.7 Section 4.15(1)(c) – the suitability of the site for the development

The subject site is considered appropriate for the proposed extractive industry. It is compatible with neighbouring land uses such as grazing and broad acre cropping. The proposal is not anticipated to have any significant negative impacts on the surrounding receiving environments, subject to compliance with the recommended conditions of consent.

The proposed development is considered to be of a suitable scale, form and character and generally complies with State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, Gilgandra Local Environmental Plan 2011 and Gilgandra Development Control Plan 2011.

5.8 Section 4.15(1)(d) – any submissions made in accordance with this Act or the regulations

The development application and EIS (Council reference DA 2021/379 and planning portal reference PAN 65906) were placed on public exhibition from 8 February to 7 March 2021, and one public submission was received. Agency submissions were received from Biodiversity, Conservation and Science Directorate (DPIE), Transport for NSW (TfNSW), NSW EPA, Department of Regional NSW – Mining, Exploration and Geoscience (MEG) and Essential Energy.

Public Submissions

Submission issues raised	Response
<p>Messrs Foran</p> <p>1 Dust (particularly that generated along the haul road)</p> <ul style="list-style-type: none"> potential impacts of this dust on our agricultural land. the private haul road should be sealed for its full length. 	<p>Dust impacts on agricultural land have been modelled and are represented by deposited dust contours in the EIS (see Figures 15, 16 and 17 of this report). Phase 1 has the most intense extraction and haulage rates, and generates the most dust. It will last for about five years. The dust during this period will be less than 0.12 g/m²/month at any sensitive receiver, including Kareelah and Old Ashgrove. The EPA standard for deposited dust is 4 g/m²/month averaged over one year. Kareelah is expected to receive 2.7 g/m²/month averaged over one year (at most) so the development will not exceed this standard. Significant dust impacts on agricultural land are not anticipated as a result of this quarry.</p> <p>Sealing the full length of the private haul road is not warranted but it is noted that the two closest dwellings to the private haul road (R11 and R12) are both close to the Oxley Highway intersection and would receive a benefit of reduced dust if the first 200 metres of the private haul road were sealed. This would also save on dust control water at this intersection and avoid watering trucks operating in the first 200 metres, which is a safety issue. This is recommended as a condition of consent.</p>

Submission issues raised	Response
<p>2 Water</p> <ul style="list-style-type: none"> concerned about water usage out of Boothaguy Creek and underground water accessed via bores. potential surface water impacts associated with the project. 	<p>Dust control on this site will require a large supply of water. The applicant has secured 22.5 ML of water from its own land and the adjacent farm. It has also obtained access to an existing bore at the end of Ostlers Lane. Despite this, there is potential for a water shortage in drought years and a condition will be imposed that extraction stops if dust cannot be controlled. There is no application to pump from Boothaguy Creek and when it has surface water, all other dams will also be available. It is not anticipated that the quarry will use underground water on a regular basis. New groundwater bores are not part of this application.</p>
<p>3 Product transportation hours</p> <ul style="list-style-type: none"> extending the product transportation hours to the level detailed in the EIS will significantly impact our family (on Kareelah). 7 am to 7 pm would minimise the disruption. the reported level of road noise change is not reflective for houses nearby the haulage route or alongside the Oxley Highway. 	<p>The applicant has requested extended operating hours (5 am to 10 pm), but this has not been justified and is not supported. It would be disruptive and potentially dangerous to operate heavy vehicles at these hours in this location.</p> <p>It is recommended that operating hours be limited to:</p> <p>Phase 1</p> <ul style="list-style-type: none"> a) Monday to Saturday – 6 am to 6 pm. b) At no time on Sundays or public holidays. <p>Phase 2</p> <ul style="list-style-type: none"> a) Monday to Friday – 7 am to 6 pm. b) Saturday – 7 am to 4 pm. c) At no time on Sundays or public holidays. <p>The road noise was modelled on a dwelling set back 100 metres from the Oxley Highway. Kareelah is set back 200 metres. Although Kareelah is closer to the haulage road, it is still more than 600 metres away. Given that truck movements will be limited to day time when background noise levels are higher, it is not anticipated that there will be any significant noise impact on Kareelah or other sensitive receivers.</p>

Submission issues raised	Response
<p>4 The intersection of the private haul road with the Oxley Highway</p> <ul style="list-style-type: none">• the current intersection is not adequate or safe for the proposed extension to the quarry.• an upgrade to the intersection, including an extension of the slip lane which could serve the dual purpose of an acceleration lane, would make the intersection much safer.	<p>The current intersection of the private haul road and the Oxley highway is a BAL/BAR. It has been modelled through to 2045 and is predicted to be safe in both phases of the quarry. TfNSW reviewed the modelling and confirms that a rural BAL/BAR is the required intersection treatment.</p> <p>It is agreed that a slip lane would be safer but it is not warranted and has not been offered by the applicant.</p> <p>In the interests of road traffic safety, Council will impose conditions as follows:</p> <ul style="list-style-type: none">• Limit site activity to predominantly day time.• Limit peak truck movements to 20 per hour (10 in and 10 out).• Any gate, grid or similar structure installed in the private haul road is to be set back a minimum 40 metres from the edge of the Oxley Highway.• A sign is to be erected on either side of the private haul road warning of trucks entering the highway.

Agency Submissions

Submission issues raised	Response
<p><i>DPIE – Biodiversity, Conservation and Science Directorate</i></p> <p>BCS believes the proponent has not yet adequately demonstrated that the proposal does not trigger the Biodiversity Offset Scheme (BOS). Evidence that the previous clearing of native vegetation with the extension footprint has been undertaken lawfully and for a purpose detailed within Schedule 5A of the <i>Local Land Services Act 2013</i> (LLS Act) is required to determine whether the current assessment is adequate and whether the BOS will apply.</p>	<p>The applicant responded to the issue of “pre-clearing” by providing evidence that a previous land owner had engaged with LLS (including a site inspection on 12 February 2019) and then undertook a range of “farm related” clearing actions that removed at least 20 mature hollow-bearing trees from the site and disturbed the understorey. It is inconclusive as to whether the clearing admitted by the previous owner correlates with the amount of cleared land currently on the site. LLS has confirmed they gave advice to the land owner but has not confirmed if the clearing that resulted from that advice is consistent with the LLS Act.</p> <p>It is inconclusive as to whether this site has been pre-cleared or if it is a coincidence that the area now occupied by the quarry and proposed for the expanded quarry was the subject of farm related clearing under the LLS Act.</p> <p>What can be concluded is that the Poplar Box – White Cypress Pine – Wilga – Ironwood shrubby woodland (PCT 98) that once occupied the 17-hectare proposed quarry site has been reduced to 0.8 hectares. It is reasonable that measures be undertaken to protect the balance of the PCT 98 on the wider quarry site, both from quarry related intrusion and farm related clearing. Protection and rehabilitation of the PCT 98 that remains is addressed in a number of conditions.</p>

Submission issues raised	Response
<p><i>Transport for NSW</i></p> <ul style="list-style-type: none">• A Traffic Management Plan including a Driver Code of Conduct must be prepared before the quarry commences. It must be implemented for the life of the development.• The maximum extraction shall be restricted to 490,000 tpa of product for Phase 1 operations and 120,000 tpa for Phase 2.• A maximum of 10 trucks shall be despatched or received (up to 20 movements total) at the quarry within any hourly period.• The design vehicle is restricted to a 26-metre B-double or PBS Level 2B vehicles.• Council needs to confirm that the BAL/BAR has been constructed to standards.• A formal agreement in the form of a Works Authorisation Deed (WAD) is required between the developer and TfNSW prior to works commencing in the Oxley Highway road reserve.• A Road Occupancy Licence (ROL) is required prior to any works commencing within 3 metres of the travel lanes of the Oxley Highway.	<p>TfNSW has no outstanding concerns in relation to this development application. It has recommended a number of conditions and these will be included in the approval.</p>

Submission issues raised	Response
<p><i>EPA</i></p> <p>Initially requested additional information as follows:</p> <ul style="list-style-type: none"> the proponent must clarify who the specific legal entity is that is applying for the development application and what specific legal entity will hold the Licence (EPL), should approval be granted. the Noise and Vibration Impact Assessment (NVIA) is inadequate. the proponent must demonstrate that enough water is available through appropriately licensed sources (where applicable) to ensure that dust suppression measures operate properly and efficiently at all times and where it is not, must propose suitable alternative dust suppression measures. 	<p>The proponent confirmed that the future holder of the EPL will be Regional Group Australia Pty Ltd CAN 634 578 699.</p> <p>An additional NVIA has been submitted to address issues raised by the EPA. These matters have now been resolved.</p> <p>The proponent has sourced additional water from existing dams on adjacent land and can now show that a water deficit will only occur in drought circumstances. Conditions will be imposed that extraction shall cease if there is not sufficient water to control dust and alternative dust control is not in place.</p> <p>General terms of Agreement have been supplied and will be included in the approval.</p>
<p><i>Essential Energy</i></p> <p>Provided general comments for inclusion as notes on any approval issued.</p>	<p>General comments have been included as notes in draft approval conditions.</p>
<p><i>Department of Regional NSW – Mining, Exploration and Geoscience (MEG)</i></p> <p>MEG is satisfied that the proponent has adequately assessed the resource to be extracted. It has no concerns with the proposed expansion.</p> <p>MEG requests that the proponent be required to provide annual production data for the site as a condition of any new development consent.</p>	<p>Provision of annual production data to MEG has been included in the approval as a condition of consent.</p>
<p><i>DPIE – NRAR</i></p>	<p>Did not respond to the development referral.</p>

5.9 Section 4.15(1)(e) – the public interest

The proposed development is permitted with consent on the subject land and is on the location of a previously approved but smaller quarry operation.

There was only one public objection, which raised four issues of concern. The issues raised have been addressed by modifications to the development and/or conditions recommended by this report.

The proposed development is considered to be of a suitable scale, form and character and generally complies with State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, Gilgandra Local Environmental Plan 2011 and Gilgandra Development Control Plan 2011. It is compatible with the surrounding environment and surrounding land uses. It will provide a valuable basalt resource, initially for the proposed Inland Rail Project and then for other infrastructure and construction uses in the region. It will create a number of jobs locally and will broaden the economic base of the LGA.

The provision of this hard rock resource without excessive environmental impacts is in the public interest.

6.0 Conclusions

The application has been assessed having regard to the relevant matters for consideration prescribed by section 4.15 (1) of the *Environmental Planning and Assessment Act 1979*.

The proposed development is in the public interest as it will create positive social and economic impacts in the short and long term without significant environmental impacts, subject to the proposed conditions.

The proposed development has been assessed for possible negative impacts to the natural and built environments. The negative impacts anticipated will be mitigated by way of conditions.

It is considered that the reports and assessments provided with the application have satisfied the relevant matters within section 4.15 of the *Environmental Planning and Assessment Act 1979*.

It is determined that through the application of the attached conditions, the proposed quarry can produce a significant resource for infrastructure and construction while providing an acceptable environmental outcome.

7.0 Recommendation

It is recommended that:

- 1 Development Application DA 2021/379 be **APPROVED** subject to conditions attached at Appendix 1 and plan set at Appendix 2.

Appendices

- Appendix 1: Schedule of Conditions and GTAs from EPA
- Appendix 2: Plan Set
- Appendix 3: Public Submissions
- Appendix 4: Agency Submissions
- Appendix 5: EIS and Appendices
- Appendix 6: Additional Information Supplied by Applicant
- Appendix 7: Greenhouse Gas Emissions Assessment