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General Manager
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Council Ref: DA2023/046 (10.2023.00000046.001)
Planning Panel Ref: PPSNTH-288-Gunnedah
NSW Planning Portal Ref: PAN-204159

By email
Attention: Mr Wade Hudson Manager Development Assessment

Dear Sir,

RESPONSE TO COUNCIL REQUEST FOR ADDITIONAL INFORMATION (RFI): PROPOSED CONTINUATION & EXPANSION OF COUNCIL-OPERATED QUARRY, No. 809 OAKEY CREEK ROAD, PIALLAWAY NSW 2342: "BOLGERS PIT"

1.0 *Background*

On behalf of Gunnedah Shire Council Outline Planning Consultants Pty Ltd prepared an Environmental Impact Statement (EIS) and lodged a Development Application (DA) in support of a continuation and expansion of a Council-operated quarry at the above address.

The Development Application (DA) and accompanying EIS were lodged on the NSW Planning Portal (Ref: PAN-204159) and subsequently accepted by Council on 20 July 2024- refer **Annexure A**. Public exhibition of the DA did not occur until 29 February 2024, with a further public exhibition of the DA held from 1 May 2024.Refer **Annexure B**.

Council has lodged a Request for Additional Information (RFI) dated 8 May 2024, 293 days after the above DA lodgement date. Refer **Annexure C**.The following is submitted in response.

2.0 *Notification requirements EP&A Regulation*

As Council is no doubt aware, there is a substantial body of case law which makes it clear that to be of any effect in preventing legal challenges and/or in order for the consent to become effective, public notices given for the purposes of designated development need to **strictly** meet the requirements of the *Environmental Planning & Assessment Regulation 2021* (EP&A Regulation) which specifies the content of such a notice: *Director General NSW Department of Industry and Investment v Mato Investments Pty Ltd* [2014] NSWCCA 132.

Moreover, a notice which is inadequate in a material respect is no notice at all: *Hoxton Park Residents Action Group Inc v Liverpool City Council* [2011] NSWCA 349; 81 NSWLR 638): *Protect Our Parks Incorporated v Wollongong City Council and Ors* [2016] NSWLEC 99 at [135] and [140].

The public notification requirements for designated development are set down Section 56 of the EP&A Regulation- refer **Annexure D**.

Council's notification of the development proposal was defective in a material respect in that no details were provided in the notification (sent to residents), as required by Section 56 of the EP&A Regulation:

- Mis-identification of the land to which the proposed development relates. It should only refer to Lot 139 in Deposited Plan 751012, excluding Lot B in Deposited Plan 432415 (EP&A Regulation s.56(6)(a)).
- Failure to identify the application as designed development and integrated development, as required by EP&A Regulation s.56(6)(d).
- Failure to include a statement of the 'integrated development' approvals required and the approval bodies for approvals, as required by EP&A Regulation s.56(6)(g).
- Failure to provide a statement regarding objections and the right to appeal to the Court, as required by EP&A Regulation s.56(6)(i).

In addition to the above, it is relevant to note that DA2023/046 seeks consent for the continuation and expansion of a Council-operated quarry. As such, it is to be considered as a Council-related development.

Section 66A of the *Environmental Planning & Assessment Regulation 2021* (EP&A Regulation) requires that Councils must adopt and have a policy that specifies how conflicts of interest in connection with council-related development applications will be handled. In this regard Gunnedah Shire Council has in place a policy entitled "*Council Related Development Applications Conflict of Interest*" adopted by Council on 15 March 2023.

However, it is a mandatory requirement of Section 36A of the EP&A Regulation that all Council-related development applications must be accompanied by the management strategy statement. It is understood that such a statement/policy did not accompany the notification of DA2023/046.

Outline Planning Consultants are well aware of this mandatory provision, having recently prepared an independent town planning assessment on behalf of Bathurst Regional Council for a proposed go-kart racing facility on Council-owned land near Mount Panorama, at Bathurst.

Having regard for the above, the development application for Bolgers Pit will need to be re-advertised and residents/government agencies notified strictly in accordance with the above-mentioned provisions of the EP&A Regulation.

3.0 *Relevant 'integrated development' approval has been obtained from EPA*

The proposal is "integrated development" pursuant to the provisions of s.4.46 of the EP&A Act for the purposes of this development application to Council.

As Council is no doubt aware, development applications which require an integrated development approval or concurrence from State agencies must incorporate any conditions or General Terms of Approval stipulated by the government agency as part of any consent granted.

In this case, the relevant approval authority is the Environment protection Authority (EPA) pursuant to the provisions of Sections 439a), 47 and 55 of the *Protection of the Environment Operations Act 1997* (POEO Act).

Importantly, the EPA has provided it's General Terms of Approval (GTA Notice No. 1637800) for the project, issued pursuant to section 4.46 of the EP&A Act.

The EPA's GTA Notice No. 1637800 advises, inter alia:

"*The EPA has reviewed the information provided and has determined that it is able to issue a licence for the proposal, subject to conditions. The applicant will need to make a separate application to the EPA to obtain this licence*."

This approval from the EPA resolves any relevant noise, blasting, waste and drainage issues.

4.0 Response to Council RFI

Our response to Council's RFI is contained in the accompanying Table 4.1. Importantly, it is relevant to that any request for further information is proportionate to the nature of the development proposed. In this regard it is relevant to note the following features of the proposed quarry development:

- This is not a commercial quarry that will operate for 12 months of the year, or generate significant truck traffic. The quarrying proposed to be undertaken on site is proposed to be on a short-term, campaign basis. This can be gauged by the fact that at maximum production the quarry will operate for about 6 weeks per annum.
- The quarry project is modest in scale. The EIS refers to maximum volumes of production (40,000 tonnes per annum) and maximum rates of generation of truck movements for the purposes of predicting 'worst case' impacts. However, the historical rate of extraction of the resource here has ranged between 556 tonnes pa (2017) up to 18,355 tonnes pa (2018).
- The use of local roads by quarry truck from/to Bolgers Pit will be to enable the repair or to maintain the local Council road system.

Table 4.1: Response to Council's RFI

Matter raised by Council RFI	***Response***
1. Clarification of development details and content of Environmental Impact Assessment (EIS)	**Many of the comments in the RFI show a misreading or misunderstanding the EIS or lack of knowledge as to how quarries actually work. The two minor typographical errors are noted but are not repeated elsewhere in the EIS.**
"(a) Confirm the operational life for the development proposal. Based on the extraction volume sort (734,000) and the annual tonnage (40,000 tonnes per annum), the development is expected to have an approximate life resource of 8 years."	**Noted, but not agreed**. This is a misreading of the EIS. ▸ The EIS is for a quarry proposed to extract up to 40,000 tonnes per annum (pp.46 and 54 of EIS). In addition, the variable nature of quarrying was highlighted in the EIS: " *Importantly, Bolgers Pit will not be operated continuously, but on a campaign basis only when there is a Council roads project that needs to be supplied with quarry product from this borrow pit.*" (p.54 of EIS) ▸ The life of the quarry will, in the end, be dependent on the resource available. A potential life of 20 years should be allowed for, as a minimum.
" (b) Clarify the total resource for which consent is being sort. 2.4 of the EIS refers to a total resource of 800,000 tonnes, where the remaining references within the EIS refers to 734,000 tonnes. Is the additional 66,000 tonnes overburden, as per the included Note?"	To clarify, the total amount of material to be excavated is 800,000 tonnes, of which 734,000 tonnes comprises the extractive resource (p.26 of EIS). Council is correct in assuming that the 66,000 tonnes is overburden or material not suitable for road making purposes.
"(c) Confirm that the total development area is 6.115ha, including internal haul roads, stockpile and equipment storage areas, existing extracted quarry footprint and the proposed extraction area."	**Not agreed**. This is a misreading of the EIS. To clarify, the project site has an area of 2.715ha (eg. refer pages 7, 15 and 46 of the EIS), excluding the the internal haul route and some previously worked areas- the latter not included in the quarry area calculations as they form a part of the existing quarry.
" (d) Confirm that the development is seeking approval for extraction to occur for a total of 6 weeks within a 12 month period as per comments within 7.3.1 of the EIS."	**Noted, but not agreed**. This is a misreading of the EIS. 6 weeks was the time period referred to if the quarry was to operate at full production, generating up to 40 loaded trucks per day. This was provided in order to give the reader an idea of the small-scale, intermittent nature of quarry operations proposed on the project site. At lower rates of production this time period would be extended beyond 6 weeks. Refer to Sections 3.1 and 3.5.4 of the EIS for details.

Matter raised by Council RFI	Response
" The Environmental Impact Statement (EIS) appears to contain an error, stating that the site is zoned RU2 and that the development meets the zone objectives. Provide amended assessment to the development's compliance with zone objectives for the RU1 Primary Production Zone, being the zone within which the development site is situated."	**Noted**. ▸ Confirming the minor typographical error on page 11 of the EIS. Thank you for identifying the error. On this page the reference should read "RU1", not "RU2". ▸ There are no other such errors elsewhere in the EIS. A closer reading of the EIS would reveal that the EIS correctly considers the compliance of the proposal with the RU1 zoning.
" (f) Provide an assessment in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021, which considers if the development is a 'Hazardous Industry' for any of the volumes of substances which may be kept onsite"	**Noted, but not agreed**. ▸ The Guidelines for this SEPP state that "the key consideration in the assessment of a potentially offensive industry is that the consent authority is satisfied there are adequate safeguards to ensure emissions from a facility can be controlled to a level at which they are not significant." This was satisfactorily addressed to the extent necessary in the EIS and has been assessed in relation to the objectives and provisions of this SEPP. Hazards and risks are addressed in Table 4.1 of the EIS. It is therefore considered that the project will not be hazardous to the surrounding area. ▸ The operator of the site will implement measures to limit any potential hazardous impact. ▸ No hazardous substances are proposed to be permanently stored on site. If, during a campaign extraction, fuels are to be stored on site they will be housed in bunded areas ie earthen mounds surrounding such storage or in self-bunded storage tanks. The EPA's General Terms of Approval (GTA Notice No. 1637800) provides that:"*O4.1 All chemicals, fuels, and oils, must be stored in a bunded area which complies with the specifications of the relevant Australian Standard and legislative requirements*." ▸ Management practices on the site during operation will ensure that there is no build up or emission of hazardous material on or from the site, as required by the Guidelines. It has been indicated that all explosives and detonators will not be stored on the development site. Contractors, when attending the site during blasting, will bring all explosives and equipment required. Therefore, there is no permanent onsite storage, handling and management procedures required for explosives. ▸ The development is not regarded as being potentially a 'hazardous industry'. This has been the position of Council for other quarries approved by Council, for example: ▪ Approval of DA2018/021 '"North Aminya" Lot 50 DP 751007 & Lot 2 DP 126172 Oxley Highway, Carroll in January 2019; and ▪ Approval of Marys Mount Quarry (DA1012/185): "*It is concluded that SEPP33 does not apply to the proposed development as the development is not defined as 'potentially hazardous industry' or 'potentially offensive industry' or the 'industry' definition contained within the Gunnedah Local Environmental Plan, 2012*." (p.7 of Council assessment report)

Matter raised by Council RFI	Response
" (g) Demonstrate how the statement 'the proposed quarry development would not compromise good quality agricultural land or other viable activities' is justified, including consideration of impacts to groundwater and discharge of potentially contaminated water over the site and onto adjoining agricultural lots"	**Noted, but not agreed**. This was satisfactorily addressed to the extent necessary in the EIS. The low agricultural suitability or value to agriculture is evidenced in the EIS by the following: ▸ The land proposed for the quarry extension is generally steep land, with shallow soils -as can be seen from Photograph 2.4 in the EIS. ▸ The soils of the Melville soil landscape within the Project Site have generally moderate to high limitations for grazing and high limitations for cropping, possessing a Class 4-5 agricultural suitability (p.27 of the EIS). ▸ The Project Site is not identified as comprising Biophysical Strategic Agricultural Land (Source: New England-North West Regional Plan 2036 Figure 5) on p.28 of the EIS. The minimum volume proposed for a sediment basin is 1,600m³. The water balance assessment by Martens & Associates, in Appendix K of the EIS, demonstrates that for all modelled years (average, dry and wet) the site shall generate, capture and store sufficient runoff within the sediment basin. The only "contamination" likely will be suspended sediment. Any fuel spills will be immediately cleaned up (refer EIS Table 4.1). The EPA's General Terms of Approval (GTA Notice No. 1637800) provides for measures to monitor water quality and controlling any discharges off-site- refer to GTA conditions P1 (Location of monitoring/discharge points and areas), L1 (Pollution of waters), L2 (Concentration limits), M1 (Monitoring records) and M2 (Requirement to monitor concentration of pollutants discharged). Condition O.3.1 of the EPA's General Terms of Approval (GTA Notice No. 1637800) provides that "*Prior top commencing operations a Soil and Water Management Plan (SWMP) must be prepared and implemented…in accordance with the requirements for such plans outlined in Managing Urban Stormwater: Soils and Construction*.." This requirement thus becomes a condition of any consent, once issued. Based on bore data from Water NSW records, the proposed floor of the quarry is located well above any groundwater resources located in the near vicinity, by 50 metres or more. Discussed in more detail under item 2(a) below.
(h) Provide development plans which illustrate location of bunded areas, including elevations of expected landform including bunds.	**Not agreed**. This is an unreasonable request that does not reflect how quarries actually operate. ▸ Quarries are dynamic land uses, with stormwater management and other mitigation measures- like bunds- moving around as the quarry progressively develops. Bunds are not a fixed item. ▸ As the quarry will be used only on a temporary, short-term basis during any one year, with all quarry plant and equipment brought onto the site during any quarrying campaign, the need for any bunds will be limited, and largely dependent on such factors as the need for any on-site storage of fuel or oils during any campaign crush.

Matter raised by Council RFI	Response
	▸ The EPA's General Terms of Approval (GTA Notice No. 1637800) provides that:"*O4.1 All chemicals, fuels, and oils, must be stored in a bunded area which complies with the specifications of the relevant Australian Standard and legislative requirements*." These requirements will be adhered to as a condition of any Environment Protection Licence (EPL) that is subsequently granted by the EPA for this quarry operation. ▸ The EIS provides sections showing existing and final topography on the site. Elevations may be useful if buildings were proposed, however, none are proposed in this case. As such, elevations are not required.
" (i) 3.5.8 of the EIS refers to access over Lot B DP 432415 via an existing access road. Confirm the proposed access point to the site. Confirm if Lot B DP 432415 is required to be included within the development application for any purpose"	**Noted**. This is a typographical error. Thank you for identifying this error. To clarify, the quarry access is wholly contained within Lot 139 in Deposited Plan 751012. All other sections of the EIS make this clear, and is also illustrated in Figure 2.3 and Figure 2.7 of the EIS.
" (j) Provide details of any onsite Diesel storage including capacity and bunding for machinery and Diesel Generators. If storage is not to occur onsite, identify how refueling will occur. The traffic movements, including number and frequency of fuel deliveries should be included within the consideration of the Traffic Impact Assessment (TIA)."	**Noted, but not agreed**. ▸ Refueling will, in most instances, be by way of fuel tanker delivering fuel to the machinery operating on site. As the quarry will be used only on a temporary, campaign (short-term) basis during any one year, with all quarry plant and equipment brought onto the site during any quarrying campaign, the need for any on site fuel storage -or bunds- will be very limited, if not non-existent- and largely dependent on such factors as the need for any on-site storage of fuel or oils during any campaign crush. In any case, this does not trigger the need for any change to the Traffic Impact Assessment. ▸ If any bunds are required they will be subject to ongoing EPA requirements as stated in condition O4.1 of the EPA's General Terms of Approval (GTA Notice No. 1637800). In other words, this will be a requirement administered by the EPA, once development consent has been granted and an EPL issued.
"(k) How will all waste types generated onsite, including general waste (rubbish) be managed onsite prior to disposal or recycling?"	**Noted**. This matter is satisfactorily addressed in Section 3.7 of the EIS. No additional information is required to address this matter.
"(l) Will the development require repair or servicing of vehicles or machinery onsite?"	**Noted**. Running repairs and/or servicing of plant and machinery are a common feature of any operating quarry. No additional information is required to address this matter.
"(m) Confirm the accuracy of weighing of extraction volumes through front-end loader weighing systems."	**Noted**. ▸ The nature of quarrying proposed to be undertaken on site, being on a short-term, campaign basis, does not justify the installation of weigh-bridge. If this were a larger quarry operation, for example, extracting say 300,000 tonnes per annum, a weigh-bridge may be justified. In contrast, this quarry seeks approval for a relatively small rate of extraction, namely, up to 40,000 tonnes per annum.

Matter raised by Council RFI	Response
	▸ In summary, this system utilises an on-board weighing system on front end loaders and excavators employed at the quarry. This system also ensures loading each truck to the correct capacity to optimise efficiency and to ensure quarry trucks do not leave the site overloaded. This system is typically used in quarries that do not have on-site weigh-bridges. ▸ Accurate records can also be kept regarding the time and date of loading of all quarry haulage vehicles, an effective way of monitoring quarry truck movements generated by the quarry. ▸ Loader weighing scales are in commercial use. Various companies sell loader weighing scales for use in quarries and other applications. An example is provided in **Annexure E**. ▸ Weighing quarry loads using scales on a front-end loader is a method accepted elsewhere by both other local councils and by the EPA at other quarries, for example, at Sheridans Hard Rock Quarry at Hernani on the Dorrigo Plateau (EPL No. 20077), in the Clarence Valley LGA. DA2014/0098 consent condition 38 requires the following:"*38. The quarry is to have and maintain on-board weighing systems installed on all front end loaders, excavators and all other loading machinery in order to keep accurate records of extraction rates annual. The stored weighing data is to be provided to Council every three (3) months from approval of the application to modify the consent under MOD2016/0035*." ▸ It is also relevant to note that Bellingen Shire Council, a major customer of Sheridan's Hard Rock Quarry, accepts this weighing system for the purposes of calculating payments for quarry products purchased from the quarry. ▸ This practice of recording weights by machines with scales is also recognised by the Northern Regional Planning Panel in the consent granted 20 January 2015 to a hard rock quarry at Nymboida (DA2014/0024), Condition 19(l) states: "*l) All quarry trucks existing the site shall do so via a weigh-bridge to be installed prior to commencement or quarrying activities, or all trucks are to be loaded by a machine with scales to enable accurate records of loads*."
" (n) Provide a copy of the Drive [sic] *Code of Conduct referred to in Table 4.1 of the EIS."*	**Noted**. The EIS proposes a Driver Code of Conduct, to be required as a condition of consent, as has been applied by Gunnedah Council the Northern Regional Planning panel and other local councils in other quarry approvals. ▸ Consent condition D2(c) of DA2018/021 for a quarry at '"North Aminya" Lot 50 DP 751007 & Lot 2 DP 126172 Oxley Highway, Carroll in January 2019 requires a Driver Code of Conduct prior to commencement. of quarry operations. ▸ Consent condition C5 of DA2012/185 for Marys Mount Quarry requires a Driver Code of Conduct prior to commencement. of quarry operations. ▸ Narrabri Council consent condition 26 of DA2020/85 for Wave Hill Quarry, Tarriaro, requires a Driver Code of Conduct prior to commencement. of quarry operations. ▸ Tamworth Council consent condition 11 of DA0199/2012 for Mt Winton Quarry requires a Driver Code of Conduct prior to commencement. of quarry operations.

Matter raised by Council RFI	Response
" (o) Provide a copy of Bolgers Pit Environmental Management Plan for consideration as part of this development. "	**Noted**. The EIS proposes a Quarry Environmental Management Plan, to be required as a condition of consent, as has been applied by Gunnedah Council and the Northern Regional Planning Panel in other quarry approvals. The following examples are provided: ▸ Consent condition D2 of DA2018/021 for a quarry at '"North Aminya" Lot 50 DP 751007 & Lot 2 DP 126172 Oxley Highway, Carroll in January 2019 requires a Quarry Environmental Management Plan prior to commencement. of quarry operations. ▸ Consent conditions C2, C4 and C10 of DA2012/185 for Marys Mount Quarry requires various management plans to be prepared prior to the commencement of quarrying. [NOTE: No requirement in the consent for a Quarry Environmental Management Plan] ▸ All of the key elements of the quarry management plan, specific to this quarry, are already contained within the EIS. A closer reading of the EIS will reveal that this is the case. ▸ Consent condition 23 imposed by the Northern Regional Planning Panel and Narrabri Council in an approval granted in 2021 in the case of the Wave Hill Quarry, Tarriaro. ▸ Consent condition 1 (Part B) imposed by the Northern Regional Planning Panel and Gwydir Shire Council in an approval granted in 2018 in the case of the "Tikitere" quarry, at 1135 Croppa Creek Road, North Star.
2. Water and water resource impacts	**Many of the comments in the RFI show a misreading or misunderstanding the the EIS or lack of knowledge as to how quarries actually work. For example, the sediment basin captures sediment washed down from disturbed parts of the quarry.** **The likelihood of any alleged 'contamination' is vey low, as confirmed by the contamination report by Ballpark Environmental, provided in Appendix E of the EIS.** **The likelihood of quarrying activities intersecting with local groundwater has been clarified, and is considered to be most unlikely.**
"(a) Provide comment regarding potential interaction of water within the Sump with Groundwater. Is there risk from water from within the Quarry footprint containing contaminates which may affect groundwater. *The EIS states that groundwater occurs to 320RL. The EIS and supplied quarry cross sections indicate that the quarry floor is proposed to be excavated to 320RL. It is assumed that the sump extends below the quarry floor."*	**Noted, but not agreed**. ▸ Sediment from runoff within the quarry will be contained within the main sediment basin, the sediment principally containing clays, colluvium and sandstone material. The petrographic report accompanying the EIS (Appendix C) shows the quarry resource contains no potential contaminants. ▸ The Preliminary Site Investigation by Ballpark Environmental (Appendix E of EIS) revealed that no notices had been issued for the site under the *Environmentally Hazardous Chemicals Act* (1985) or the *Contaminated Land Management Act* (1997) (CLM). Ballpark Environmental conclude that the site: "…*has an acceptable low level of risk for site contamination and is suitable for its proposed ongoing industrial use as a quarry*." ▸ Groundwater levels on lands within 1km of the site were identified following a search of the NSW Department of Primary Industries – Office of State Water records.

Matter raised by Council RFI	Response
	▸ The EIS refers to a groundwater level of RL320m AHD. This is an overly conservative number. Instead, it is relevant to note that this is the inferred groundwater level at three site to the north of the site within a separate drainage sub-catchment and at elevation. However, at the two nearest licensed groundwater bores to the site, at bores 6 and 12 as identified in Figure 2.8 of the EIS, **groundwater is likely to be at least 40 metres below RL320m AHD**. ▪ At GW064563 (ground RL approx. 327mAHD), located only 67.9m away from the proposed quarry, identified as groundwater bore 6 in EIS Figure 2.8, no groundwater was encountered at a depth of 46.9m below ground level ie. RL 280.1m AHD, **40 metres below the floor level of the proposed quarry**. ▪ At GW054789 (ground RL approx. 300mAHD), located 627.3 away from the proposed quarry, identified as groundwater bore 12 in EIS Figure 2.8, no groundwater was encountered at a depth of 54.9m below ground level ie. RL 245.1mAHD, **75 metres below the floor level of the proposed quarry.** Refer **Annexure F**. Given the above, there is little probability of the proposed quarry works, including sediment basin, intersecting with local groundwater.
"(b) How will the Sump or Sediment Basin be maintained to ensure that the minimum capacity of 1,6000m3 is maintained? How will the capacity be monitored? Where will sediment removed from Sump be disposed to?"	**Noted**. This will be administered by the EPA once an EPL is issued pursuant to the provisions of GTA condition O3.1 which requires preparation of a Soil and Water Management Plan (SWMP) per *Managing Urban Stormwater: Soils and Construction including, Volume 1, 4th edition* (Landcom, March 2004) *and Volume 2E Mines and Quarries* (Department of Environment and Climate Change, June 2008) (the Blue Book)- which includes protocols for maintaining and monitoring erosion and sediment works in quarries. Water collected within sediment basins, and the receiving environment will be monitored prior to release. Only water meeting discharge requirements will be released and be undertaken in a controlled manner.
"(c) Confirm how far from the Quarry development area and extraction area is the unnamed 2nd order watercourse noted in figure 2.5 of the EIS. The Figure and the EIS do not comment on the distance."	**Noted**. **Clearly explained in the EIS**. Refer EIS page 29:" *Approximately 130m away to the south of the Project Site is an intermittent, unnamed 2nd order watercourse that drains into a flat alluvial plain*." and Figure 2.7, which clearly identifies the subject watercourse.
"(d) Is there a need for onsite water storage for the purpose of dust suppression. The EIS indicates that the development does not extract water from any watercourse or bore. Confirm where this water will be sourced. If water is sourced offsite, traffic for deliveries must be considered within the TIA."	**Noted**. For the purposes of the MUSIC water balance assessment by Martens & Associates (EIS Appendix K) a proportion of water stored on site is assumed to be used for dust suppression. They conclude that: *The water balance assessment demonstrates that for all modelled years (average, dry and wet) the site shall generate, capture and store sufficient runoff within the basin to provide for all non-potable water demands (4.7ML/year)*." (p.14) A water truck can use water from this water source when required for dust suppression purposes. Alternatively, Council may wish to bring in a water truck with water obtained from other, off-site water sources.
"(e) Where is staff water requirements sourced from as well as where and how is it to be stored onsite.	**Noted**. As has been the practice in the past, the need for potable water for staff can be met by staff bringing in their own drinking water for each day that they are on the job working from the site.

Matter raised by Council RFI	Response
3. Traffic Impact Assessment & Haulage Route	**The proposed development will generate truck traffic (and dust when conditions are dry/windy) on the local road system. However, the Council RFI should also have regard for the following:** ► **The use of local roads by quarry truck from/to Bolgers Pit will be to enable the repair or to maintain the local Council road system.** ► **This is not a commercial quarry that will operate for 12 months of the year, or generate significant truck traffic.** ► **The EIS refers to maximum volumes of production (40,000 tonnes per annum) and maximum rates of generation of truck movements for the purposes of predicting 'worst case' impacts. However, the historical rate of extraction of the resource here has ranged between 556 tonnes pa (2017) up to 18,355 tonnes pa (2018).** ► **The proposed development is a local council borrow pit that will supply on a campaign basis road making material for the local road system for relatively short periods of time, with the no quarry truck traffic (or dust) impacts for the remainder of any one year year. This can be gauged by the fact that at maximum production the quarry will operate for about 6 weeks.** ► **Refer to Streetwise RFI response in Annexure G.**
"(a) Confirm haulage route sort [sic] *for the movement of material to and from the site. It should be noted that should the development be recommended for approval it is likely a condition will be included which prescribes the approved haulage route. The use of any additional road network that is not considered for the suitability of the road network may result in safety impacts from haulage vehicles to motorists and other road users.* *I noted that the EIS excludes consideration of Hogarth Street, Breez and Denver Lane which are both currently used by Council's haulage vehicles.*	**Noted.** ► This statement misses the point. Quarry-related truck traffic is not traveling to more distant markets outside of the local area, like a commercially run quarry would do. The reason for the use of local roads by heavy quarry truck from/to Bolgers Pit will be to repair or maintain the local road system, in particular gravelled road surfaces. The road safety aspects of truck traffic using local roads has been given due consideration in the traffic impact assessment by traffic consultants Streetwise in the EIS. ► Prior to undertaking any Council project, Gunnedah Council is under a statutory obligation to consider safety issues. ► To clarify, existing haul routes also include the connection between Clifton Road (south) and the Kamillaroi Highway at Breeza, Hogarth Street, Breez and Denver Lane. It also includes all other local council roads that Council may identify for remedial road works. ► Oakey Creek Road is the primary haul route, with truck movements either north of south ultimately dependent on where local council road works may be required over Council's extensive local road network. Given the circumstances, to dictate one specific set of haul routes is neither appropriate or reasonable. ► The EIS assesses the impact of quarry truck traffic on the main local roads in the locality. Other local roads in need of repair or maintenance will also be used by this truck traffic, from time to time. It will be Council's prerogative as to what local roads it may wish to repair or maintain using gravel from Bolgers Pit.

Matter raised by Council RFI	Response
	▸ It is thus considered unreasonable and unjustified for Council to impose a condition regarding what specific local roads may be utilised by Council trucks carrying road making material to repair or maintain local council roads. It will be at the discretion of Council as to what local roads it may wish to repair or maintain in the area. The imposition of such a condition would fail the *Wednesbury* test of reasonableness most recently cited by Pritchard J in *Woollahra Municipal Council v Cameron* [2024] NSWLEC 27 dare 28 March 2024.
"(b) Confirm that Werris Creek Road is part of the intended Haulage Route as this road is outside of the Gunnedah Local Government Area and would require referral to Liverpool Plains and Tamworth Regional Council's as the local road authority for this road."	**Noted, but not agreed**. To clarify, all truck movements are to be confined to the local council roads within the Gunnedah local government area. In the alternative, if this was an issue Council would have had ample opportunity to have consulted with the other local council nominated.
"(c) The TIA should provide updated traffic counts. The count period and occurrences do not appear to be appropriate as the dates and locations of counts appear to coincide with road closures occurring within the region from areas of flooding. This may affect the results produced within the TIA and affect the considerations of the development impacts."	**Noted, but not agreed**. ▸ The area is a sparsely populated rural area. The TIA shows that the road system, owned and maintained by Gunnedah Council, accommodates low volumes of traffic on all local roads. No further assessment is thus required. Refer to Streetwise RFI response in **Annexure G**. ▸ StreetWise undertook manual traffic counts at a number of intersections in November 2022, as part of the site inspection and assessment. They are still considered to be current. Refer to Streetwise RFI response in **Annexure G**. ▸ Given the nature of the land uses and population known to exist in the locality a revised TIA would show the same traffic impacts. No further assessment is thus required. Refer to Streetwise RFI response in **Annexure G**.
"(d) Provide updated considerations of road conditions for the two 90o bends and two causeways which do not appear to be 7m wide and may be a safety concern for road users and haulage trucks to pass concurrently. Are there safety risks with these sections of the road network? EIS refers to 'generally 7m wide', and photographs used within the EIS show the widest section of road which is not typically of the whole route."	**Noted**, **but not agreed**. Refer to Streetwise RFI response in **Annexure G**. ▸ The local road network already accommodates regular usage by light and heavy vehicles- principally associated with agricultural pursuits undertaken in the local area. ▸ StreetWise inspected the existing 90° bends, causeways and other potential hazards on each of the haul roads within the local road network. The bends and causeways are well signposted, and local traffic is aware of the requirement for reduced speed and need for courtesy when meeting heavy vehicles at these locations.
"(e) Provide consideration of the safety of the intersection of Clifton Road (Hogarth Street) and Kamillaroi Highway for vehicles turning off the highway heading towards the site, including safety of vehicles queuing on the highway, especially if the railway crossing is closed due to rail traffic."	**Noted**. Acceptable impacts likely. Refer to Streetwise RFI response in **Annexure G**.

Matter raised by Council RFI	Response
"(f) How has the statement that the local road network servicing is in satisfactory condition been determined? The proposed haulage route includes a number of blind corners and narrow creek crossings which may create a safety concern if more frequent heavy vehicle movements were to occur within the road network."	**Noted, but not agreed**. Refer also to Streetwise RFI response in **Annexure G**. ▸ This statement misses the point. The reason for the use of local roads by heavy quarry truck from/to Bolgers Pit will be to repair or maintain the local road system. Most of the Council road system in the locality comprises a gravelled surface in need of sporadic maintenance and/or repair- hence the need for a local source of road making material suited to this purpose. Trucks carrying gravel material will only be required on roads that are in need of maintenance or repair. ▸ It should also be noted that the current haul routes have previously been utilised by Gunnedah Shire Council for a number of years, while the major roads are currently approved by TfNSW for use by 25m B-Double vehicles.
"(g) Provide details of expected 'regular' frequency to ensure road retains a safe formation. The condition of Clifton Road is noted as being dependent on regular maintenance for suitability of the haulage route. Is the frequency required structured into Council's maintenance program for the road network?	**Noted, but not agreed**. This statement misses the point. ▸ The local road network already accommodates regular usage by light and heavy vehicles- principally associated with agricultural pursuits undertaken in the local area. ▸ All local Council roads will be maintained and/or repaired by Council on an 'as needed' basis. ▸ StreetWise consider that the likelihood of conflict between quarry-generated haulage movements, and heavy vehicle movements generated by rural activities is low.
"(h) Have road conditions and suitability of road formations and safety been considered with surrounding agricultural road users included? Agricultural activities generate high volumes of Heavy vehicles during perdiods [sic] *of high activity, such as harvests. Have these movements been considered?*	**Noted**. ▸ The TIA comprehensively addresses this matter. ▸ The local Council roads will be maintained and/or repaired on an 'as needed' basis. ▸ Streetwise conclude that "..*Clifton Road, Oakey Creek Road and Piallaway Road have adequate capacity to cater for the existing and future traffic volumes, including quarry-generated movements, with minimal impact on existing traffic patterns or road safety*." (p.20 EIS Appendix F)
"(i) Is there any safety concerns with the position of the bus stops along the haulage route and occurring from haulage vehicles using the road network during School Bis [sic] *times?"*	**Noted**. Refer also to Streetwise RFI response in **Annexure G**. ▸ Council truck drivers are required to exercise all due care in driving on local council roads. The haulage vehicle drivers would likely know of any regular school bus pick-up or drop-off locations on the haul roads, and be aware to slow down and be alert to the potential for school kids in the area. ▸ As part of the initial traffic assessment, StreetWise checked the school bus services, and did not find any bus routes that utilised roads in the vicinity of the quarry. StreetWise also did not observe any bus-stops during the site inspection. However, the existing quarry currently operates periodically throughout the year, but does not generate a large number of hourly movements when the quarry is in use.

Matter raised by Council RFI	Response
"(j) Clarify inconsistencies between 5.4 and 8.3 of the TIA. 8.3 reports no increase in haulage movements from the operation of the quarry, where 5.4 reports an increase in just over half of the current haulage vehicle movements. 8.3 should be reconsidered for Road Safety for the increase in vehicle on the haulage route."	**Noted, but not agreed.** To clarify, it is proposed to limit the output from Bolgers Pit to 40,000 tonnes per year. However, the quarry will continue to be utilised occasionally, dependent on the scheduling of council projects, and the requirement for crushed rock. It is not proposed to increase the current daily or weekly outputs, but the total number of annual haulage trips has the potential to increase by around 50%, if Council extract the full 40,000 tonnes of rock from the quarry. However, there will be no noticeable increase in daily or weekly quarry-generated vehicle movements, and therefore no increased risk to road safety to other road users who may utilise the local roads on a daily basis. Refer to Streetwise RFI response in **Annexure G**.
"(k) Address comments that the majority of the road network is sealed as per 7.3.5 of the EIS. There are large sections of the road considered in the TIA that are unsealed."	**Noted, but not agreed**. ▸ Under the heading "pavement condition:" EIS Section 7.3.5 it accurately describes local road conditions. To clarify further, roads in the broader road system outside of the immediate local area, including the Oxley Highway and Kamillaroi Highway, are sealed roads. ▸ The TIA by Streetwise, accompanying the EIS, describes the road network around the quarry site, which includes Kamillaroi Highway, Werris Creek Road, Clifton Road (south) and Piallaway Road – all of which are sealed roads. The report also describes Oakey Creek Road and Clifton Road (north), which are unsealed. However, apart from a few kilometres in the vicinity of the quarry, the majority of the haulage routes are sealed. Refer also to Streetwise RFI response in **Annexure G**.
"(l) Provide details of how the comment within the TIA 'it is considered that any dust or noise generated by quarry activities will have no significant impact on residences, schools or other community activities' has been determined? There are residential receivers adjoining the road along sections of the unsealed roads indicated within this report which area likely to be impacted by dust generated along the haul route. What level of cumulative traffic generated is required for dust impacts from vehicle movements to be considered as impacting these development prior to this being a significant impact? "	**Noted, but not agreed**. The generation of dust caused by vehicles traveling along unsealed local Council roads is inevitable, in particular during dry or windy conditions. However, regard needs to be had for the fact that dust generated by truck traffic arising from the development is more short-term in nature, with other land uses responsible for ongoing dust generation for the majority of the year. Having regard for the above and the points below, cumulative impacts are considered to be satisfactory. ▸ Dust will be generated by Council trucks traveling along local roads to repair or maintain local roads. This impact will be inevitable, but necessary, if these road improvements are to be effected. ▸ The dust generated by Council trucks traveling along local roads to repair or maintain local roads will be of short duration only. This can be gauged by the fact that at maximum production the quarry will operate for about 6 weeks. ▸ Dust will be generated by other road users- the latter causing dust nuisance over much more extended periods of time than the quarry, in particular during major harvest periods. ▸ Alternatively, Council may need to give to consideration to the progressive sealing of roads in front of rural dwellings most severely impacted by dust from passing traffic.
"(m) Provide maintenance program indicated in 3.1.1 of the Traffic Impact Assessment (TIA)."	**Noted, but not agreed**. The local Council roads will be maintained and/or repaired on an 'as needed' basis. Council will prepare maintenance programs as and when required in accordance with its statutory duties provided under the *Local Government Act*- outside the scope of the EIS.

Matter raised by Council RFI	*Response*
4. Noise impact assessment	**Many of the comments in the RFI show a misreading or misunderstanding the EIS, or lack of understanding of noise impacts or how this Council quarry will actually work, as detailed in the following. Refer also to Vipac RFI response in Annexure H.**
"(a) The Noise Impact Assessment is to be updated to consider traffic noise generated along Denver Lane should it be included within the vehicle haul route."	**Noted, agreed**. Refer to the accompanying revised noise impact assessment report by acoustic consultants Vipac (**Annexure H**), which considers traffic noise along this road. Noise impacts are considered to be within acceptable noise standards.
"(b) The Noise Impact Assessment is to be updated to address noise impacts for operation of the site during the hours 7:00am-8:00am Saturday, which are considered within the NSW EPA Noise Policy for Industry to be night period and require more constrained noise generation limits."	**Noted, but not agreed**. There is no evidence, beyond mere assertion in the Council RFI, that this is the case. Contrary to what is claimed in the Council RFI, the period 7.00am to 8.00am is defined in the NSW EPA Noise Policy for Industry as "day", not night- refer to excerpt from Noise Policy for Industry in **Appendix I**. No such "constrained noise generation limits" apply.
"(c) Was the operation of a Diesel Generator as an electrical power source considered within the Noise Impacts Assessment? If not the Noise Impact Assessment is to be updated to include the impacts on the surrounding environment and receivers."	**Noted, but not agreed**. The quarry plant modelled in the Vipac acoustic assessment is diesel powered, and does not rely on an external power source reliant on a diesel generator- refer EIS Appendix I being the acoustic assessment by Vipac. As such, there is no need for a diesel generator or, for that matter, further noise modelling to assess the noise from a diesel generator.
"(d) The Nosie [sic] *and Vibration Impact Assessment indicate that during neutral weather conditions, exceedances are recorded at receivers NSR2 and NSR3. Provide mitigation measures that would ensure that there are no noise level exceedances occur during neutral weather conditions."*	**Noted, but not agreed**. This a misleading statement. There is no evidence, beyond mere assertion that this is the case. In fact no exceedances are recorded at receives NSR2 and NSR3 during 'Neutral' or 'Worst Case' scenarios. Refer to **Annexure J** for an excerpt from the Vipac acoustic assessment report included in EIS Appendix I.
"(e) Results of Table 8-2 of the Nosie [sic] *and Vibration Impact Assessment appear to be considered incorrectly against the noise levels for Highways and Arterial Roads. The table should be updated to be assed against local roads within Table 4-3."*	**Noted**. If so, the noise criteria would reduce to 55 dBA, a noise criteria which all residences modelled would still comply with. Refer to **Annexure J** for an excerpt from the Vipac acoustic assessment report included in EIS Appendix I.
"(f) 8.4 of the Nosie [sic] *and Vibration Impact Assessment indicates that total traffic noise level should be limited to 2dB(A) above that of the corresponding existing noise level at any residential property. However, Table 8-2 indicates 5 receivers with a greater than 2dB(A) difference from existing to future. What mitigation measures are required to ensure that this increase is not experienced. This should also include any receivers considered along any additional roads for the haulage route (Denver Lane or Hogarth Street)."*	**Noted, but not agreed**. This noise criteria is only applicable if existing traffic noise levels already exceed the criteria- not the case here. All modelled traffic noise levels are compliant.

Matter raised by Council RFI	Response
"(g) Provide comment as to why results of Table 7-2 and 7-3 are different for cumulative results. There is no explanation provided which explains the discrepancy."	**Noted, but not agreed**. The reference is incorrect. This should be a reference to the Vipac air quality assessment, not the Vipac noise assessment. To clarify, Table 7-2 of the Vipac air quality impact assessment shows the maximum predicted 24 hour and annual average PM10 levels, whereas Table 3-3 shows predicted cumulative 24 hour PM10 levels.
5. Dust and air quality impacts	**Many of the comments in the RFI show a misreading or misunderstanding of air quality impacts and the issued SEARS. Refer also to Vipac RFI response in Annexure K.**
"(a) Dust Impact assessment does not include any consideration of dust generated along the Haulage Route from haulage vehicles as well as service and light vehicles attending the site. The Dust Impact Assessment is to include consideration of residences along or within 200m of any unsealed section of the haulage route."	**Noted**. The air quality impact assessment does not address dust generated by heavy traffic. However, the air quality impact assessment complies with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, as required by the SEARS. Dust will be generated by Council trucks traveling along local roads to repair or maintain local roads. These times will be limited to 6 weeks or more in any one year. All other dust impacts resulting will be from other, non-quarry related traffic. This impact will be inevitable, but necessary, if these road improvements are to be effected. A study by WR Reed entitled *Haul road dust control* (October 2007) measured dust from haul trucks on a haul route carrying limestone and coal preparation waste. The study found that primarily wind, distance and road treatment conditions notably affected the dust concentrations at locations next to, 15m from, and 30m away from the unpaved haulage road. Airborne dust measured along the unpaved haul road showed that high concentrations of fugitive dust can be generated with these concentrations rapidly decreasing to nearly background levels within 30m of the unpaved road. In terms of the quarry haul route the following setbacks are noted: ▸ R2 "Inventure" residence located approx. 26m from Oakey Creek Road, with some intervening vegetation. ▸ R3 residence located approx. 46m from Oakey Creek Road, with some intervening vegetation. ▸ R5 residence located approx. 51m from Clifton Road, with little or no intervening vegetation. ▸ R6 residence located approx. 20m from Piallaway Road, with little or no intervening vegetation. ▸ R7 residence located approx. 15m from Piallaway Road, with little or no intervening vegetation. It is relevant to note that Oakey Creek Road will be the road used by quarry truck traffic on the most regular basis. Withe the exception of residence R2 all other residences are set back well in excess of 30m from the haul road.

Matter raised by Council RFI	Response
	The EIS recognises the potential for such dust to be generated and the following mitigation measures have been proposed: ▸ All loads leaving the site are covered, with tailgates effectively sealed, to minimise dust and debris . ▸ All gravel roads to be regularly maintained and graded by Council. Council periodically waters roads during the undertaking of road works, to reduce dust nuisance. ▸ Miscellaneous dust sources such as spillages from trucks and silt from sediment controls are to be regularly cleaned up. ▸ Regular inspections for excessive visible dust generation will be undertaken and appropriate controls will be implemented when such events occur. ▸ Monitoring and reporting of dust complaints. As noted above, alternatively, Council may need to give to consideration to the progressive sealing of roads in front of rural dwellings most severely impacted by dust from passing traffic- in this case, R2 ”Inventure” being the priority. These measures will be incorporated into and form a part of an overall quarry environmental management plan.
“(b) 2.11 of the EIS refers to differences in wind roses due to Melville Range, have these differences been considered in providing conclusion and estimates for dust impacts?”	**Noted**. The Vipac air quality impact assessment utilises a 3-dimensional meteorological field “*for the air dispersion modelling that includes a wind field generator accounting for slope flows, terrain effects and terrain blocking effects*” (p. 14 of Vipac Air Quality Impact Assessment accompanying the EIS).
“(c) What are the dust abatement measures referred to within the EIS and how extensive are these measures? How effective are these in reducing the dust generation from the site and within the haulage route?”	**Noted**. Refer Section 4 of the EIS for details. The measures proposed are considered to be effective and practical.
“(d) With regards to Table ES-2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment, provide comment as to how there can be no additional exceedance over the 24 hour average PM10 criteria when Table ES-1 indicates exceedances at all receivers over the 50 Criteria. If these are already in exceedance, provide commentary as to what impact does the development have? Council does not accept that the development is already exceeding the criteria so no further consideration is required. “	**Noted, but not agreed**. There is no evidence, beyond mere assertion in the Council RFI, that this is the case. Council has clearly misinterpreted or not understood the data presented. ▸ Contrary to what is claimed in the Council RFI, Table ES-1, which assesses air quality impacts of the project in isolation, shows that all PM10 levels predicted are well below the criteria. For example, the highest PM 10 24 hour level is predicted at SR4, with a predicted concentration of 10.11 ug/m3, well below the criteria of 50 ug/m3. ▸ Table ES-2 assesses cumulative air quality impacts. As such, it cannot be directly compared to the predictions in Table ES-1.
“(e) Justify assumptions made in 7.2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment.”	**Noted, but not agreed**. There is no need to justify the assumptions made. The modelling assumptions made are in compliance with the relevant provisions of *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, as required by the SEARS.

Matter raised by Council RFI	Response
6. Blast events	**Blasting to be undertaken by a licensed blasting contractor who are responsible for drilling, blasting and the delivery of bulk explosives to the quarry on a campaign basis. All recognised safety procedures and protocols will be observed. The explosives will be detonated, fragmenting the in-situ rock. Based on past blast monitoring, a Maximum Instantaneous Charge (MIC) of 200kg has been adopted, compliant with the EPA's vibration and overpressure requirements.**
"(a) How many blasts are expected to occur in any one calendar year for the purposes of winning of material? The EIS only indicates a maximum number of blasts per day and maximum yield to be used."	**Noted**. At 40,000 tonnes per annum maximum production no more than two (2) blasts would ordinarily be required. Ultimately, much will depend on the amount of material that Council needs for road making in the locality in any one year.
"(b) Provide consideration of Fly Rock from blasts. Is Fly Rock likely to affect nearby residential receivers or agricultural activities	**Noted**. ▸ Good blast design is the best way to avoid flyrock. ▸ Flyrock is typically caused as a result of a poorly executed blast event. Flyrock is usually caused by the incorrect selection or application of burden, insufficient stemming length or blast holes initiated out of sequence or overcharging of drill holes with explosives. ▸ Council has engaged experienced blasting contractors to carry out blasting on site, thus minimising any potential for flyrock.
7. Visual impacts	**Importantly, the existing quarry is already a part of the local rural landscape. The visual impact of quarrying is already established, with minimal additional visual intrusion proposed, given that the project seeks a modest lateral extension of the quarry by up to 50m to the east over already cleared land, with the northern portion cleared of most vegetation: *Bottomline Group Pty Ltd v Snowy Monaro Regional Council* [2020] NSWLEC 1115.**
"(a) Provide details of the position of any storage areas for overburden. Include any stabilisation required to ensure that erosion of stockpiles does not occur. A visual assessment of stockpile and overburden placement where visible from public reserves or adjoining residences is required."	**Noted**. The quarry is proposed to be laterally extended by a modest area- the bulk of the quarry footprint already established. Overburden will continue to be deposited onto or near the existing overburden emplacement area located on the western periphery of the quarry. As the visual assessment in Section 7.3.9 of the EIS shows, this emplacement area assists in obscuring views of the lower parts of the quarry when viewed from proximate vantage points on Oakey Creek Road.
"(b) Are any visual mitigation measures required for the development to reduce the visual impact of the development from public reserves or any adjoining receivers?"	**Noted**. The visual assessment in the EIS demonstrates that the proposed quarry development will have a Low to Nil visual impact when viewed from surrounding residences and Oakey Creek Road, thus satisfying the tests of visual impact required by *Tenacity Consulting v Warringah Shire Council* [2004] NSWLEC 140. No further measures are warranted.
"(c) Is there an opportunity to introduce vegetation planting along Western High Bank or close to this area to assist with reducing visual impacts of the East face of the excavated quarry during operation?"	**Noted**. The quarry site is modest in size, with the lower sections obscured by a tall bund that runs along the western side of the quarry. A quarry confined to only a small area with limited visibility from nearby residences has a Low visual impact only.Once final depth is achieved the replanting of overburden emplacement and benches can then commence, reducing the visual impact of the quarry even further.

Matter raised by Council RFI	Response
"(d) Demonstrate how the statement 'The proposed quarry development would not causes any adverse impacts on visual amenity' is justified. The development does not propose any visual mitigation measures and the artist impression shows clear visibility of the quarry excavation during the life of the development."	**Noted, but not agreed**. ▸ The visual assessment in Section 7.3.9 of the EIS clearly shows that the proposed quarry development would not causes any adverse impacts on visual amenity. ▸ Contrary to what Council's RFI contends, much of the quarry is visually obscured by the tall partly vegetated bund that runs along the western side of the quarry. ▸ The fact that parts of the quarry may be visible in part does not equate to an adverse impact. The visual assessment in the EIS demonstrates that the proposed quarry development will have a Low to Nil visual impact when viewed from surrounding residences and Oakey Creek Road, thus satisfying the tests of visual impact required by *Tenacity Consulting v Warringah Shire Council* [2004] NSWLEC 140.
8. Biodiversity impacts	▸ **The total quarry area the subject of the EIS, including approximately 0.8ha proposed for lateral expansion of the quarry footprint, is approximately 2.71ha.** ▸ **The land is already cleared of vegetation, save for a few isolated trees. Cleared agricultural land surrounds the quarry to the west and to the south.** ▸ **The quarry and surrounds are not mapped as containing Koala habitat or included on the Biodiversity Values Map. The risk of serious and adverse biodiversity impacts are, having regard for the above, minimal.**
"(a) Provide a Koala Assessment in accordance with the Chapter 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 for the entire development site. The assessment should demonstrate if the development site, as a whole, is considered to be Potential or Core Koala Habitat, as per sections 3.2, 3.6 and 3.7 of this SEPP. The current assessment is noted as being only for the quarry footprint."	**Noted**. ▸ The land has been identified as not comprising potential or core koala habitat, nor have there been any sightings of Koalas anywhere near the site. ▸ No further assessment is considered necessary as the potential impact to koala will be negligible and vegetation adjacent to the development site would not be considered potential koala habitat according to the definition in the State Environmental Planning Policy (Biodiversity and Conservation) 2021. The area is dominated by *Callitris glaucophylla* with the a Eucalyptus canopy generally absent. ▸ Refer also to RFI response by Bower Ecology in **Annexure L** .
"(b) Identify the vegetation communities to be removed from site and provide detailed calculation of vegetation canopies to validate that the vegetation to the impacted is less than 1ha as per Section 7.2 of the Biodiversity Conservation Regulation 2017."	**Noted**, but show a misreading or misunderstanding of ecological impacts as set down in the Bower Ecology report accompanying the EIS. ▸ Details were provided in the ecological assessment accompanying the EIS. ▸ Refer also to RFI response by Bower Ecology in **Annexure L.**
"(c) Confirm that vegetation removal is to occur outside of the approved quarry footprint, regardless of comments within 4.1 of the EIS. The approved quarry footprint is regarded as the footprint of the current quarry. Development plans show vegetation to be removed outside of the current Quarry Pit in areas that are the subject of this Development Application. "	**Noted, agreed.** Council's statement above is correct. That is: ▸ The development plans show vegetation will be removed outside of the current quarry pit, and this vegetation has been assessed as part of the development application. ▸ Details are provided in the ecological assessment prepared by Bower Ecology accompanying the EIS. ▸ Refer to also RFI response by Bower Ecology in **Annexure L** .

Matter raised by Council RFI	Response
9. Rehabilitation	**A rehabilitation program is proposed over the quarry, once the quarry resource is exhausted.** ► **All quarry plant and equipment and other infrastructure will be decommissioned and removed.** ► **Quarry benches will be capped with a layer of overburden and topsoil, and planted with native species characteristic of vegetation within the surrounding landscape.** ► **Under the rehabilitation plan, the western berm and benches of the quarry are to be rehabilitated with trees (planting density of 5 m centres) and shrubs (planting density of 10 m centres) planted from tubestock. Species planted will reflect the PCTs in the local area, including species observed during site surveys, and subject to commercial availability. Target tree species will comprise a combination of *Callitris glaucophylla* (75%), *Eucalyptus microcarpa* (15%) and *Eucalyptus albens* (10%); target shrub species will comprise a combination of *Acacia pendula* and *Geijera parviflora*. Species used may be substituted or added depending on commercial availability at commencement of rehabilitation works, but must be consistent with the flora adjacent to the quarry.** ► **The quarry pit will be filled to the extent possible using overburden and other material from on-site sources and returned to agricultural use.** ► **The sediment basin will be retained for erosion control and as a water supply for stock. No runoff to pose a threat to downstream water quality.** ► **Appropriate bushfire hazard controls to be implemented – refer Sections 3.9 and 4 of EIS.** ► **On completion of quarrying the site is to be rehabilitated to form a free draining and sustainable landform as consistent as possible with surrounding landforms and in compliance with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 2E Mines and Quarries* (DECC, 2008).**
"(a) Provide Council a copy of a Draft Rehabilitation Plan. The Draft Rehabilitation Plan is to include species planted within rehabilitation, period that rehabilitation will occur and an indicative final section and landform. "	**Noted, but not agreed**. The EIS proposes a Quarry Environmental Management Plan, to be required as a condition of consent, as has been applied by Gunnedah Council and other local councils in other quarry approvals. This would include details of rehabilitation. ► Consent condition D2 of DA2018/021 for a quarry at '"North Aminya" Lot 50 DP 751007 & Lot 2 DP 126172 Oxley Highway, Carroll in January 2019 requires a Quarry Environmental Management Plan prior to commencement. of quarry operations. ► Consent conditions C2, C4 and C10 of DA2012/185 for Marys Mount Quarry requires various management plans to be prepared prior to the commencement of quarrying. ► Consent condition 23(xx) of DA2020/0085 imposed by the Northern Regional Planning Panel and Narrabri Council in an approval granted in 2021 in the case of the Wave Hill Quarry, Tarriaro, requires the production of a rehabilitation plan as part of the requirement for an overall quarry management plan.

Matter raised by Council RFI	Response
	▸ All of the key elements of the quarry management plan, specific to this quarry, are already contained within the EIS. A closer reading of the EIS will reveal that this is the case. For example, the Ecological Assessment (Appendix J of the EIS) provides details of the species to be planted within the rehabilitation areas. Figures 3.1 and 3.2 of the EIS show final landforms.
"(b) Does the development afford any opportunities for progressive rehabilitation of the site?"	**Yes**. It is proposed that there will be progressive revegetation of quarry benches as quarrying proceeds on the site., with trees to be grown on quarry benches- refer to Table 3.3 and Appendix J of the EIS for further details.
"(c) Confirm Rehabilitation inspection periods indicated in 7.3.11 of EIS."	**Noted, but not agreed**. This level of detail will be contained in the proposed Quarry Environmental Management Plan, to be required as a condition of consent.
"(d) Council has concern about possible contamination issues from a free draining quarry void, should contaminates be suspended within the water discharged out of the quarry footprint. Provide details which confirm how it is to be confirmed that water leaving the quarry area will be free of contaminates."	**Noted, but not agreed**. This comment based on a misreading or misunderstanding of the proposal, as described in the EIS. These concerns are not warranted. Only the quarry itself will be free draining, with all drainage directed to the sediment basin. As noted in Table 3.3 of the EIS the sediment basin is to be retained for erosion control and as a water supply for stock. The sediment dam is not proposed to drain freely to the lands downslope. Any concerns about threats to downstream water quality or contamination are without justification. Refer also to response to "2. Water and water resource impacts" for further details.
"(e) Is the current land owner aware of the indicated obligation to manage weeds, ongoing, in quarry rehabilitation area? "	**Noted, but not agreed**. As lessee, Council has the responsibility to manage the quarry, including the management of weeds and ultimate rehabilitation of the site.

5.0 *Council delay with assessing the development application*

Council has lodged a Request for Additional Information (RFI) dated 8 May 2024, 293 days after lodgement of the DA for the proposed development.

Council's attention is drawn to the NSW Department of Planning and Environment (DP&E) published on 5 October 2023 and entitled *Guidelines on the Withdrawal of Development Applications* (Guidelines). The new Guidelines state, inter alia that:

> "*4. Councils are not to engage in practices of delay in assessing applications, including unnecessarily asking applicants to provide information not necessary for the assessment of the proposal ……*"

Outline Planning Consultants are concerned that Council's RFI will result in a further, unnecessary delay in the assessment of the development application for the quarry development.

Outline Planning Consultants believe that Council has had more than ample time to identify all relevant issues, and we now question the procedural fairness in Council now seeking additional advice and documentation at this late juncture in the DA assessment process.

6.0 *Conclusions and updated project evaluation*

Outline Planning Consultants are firmly of the view that the proposed quarry will achieve satisfactory town planning and environmental outcomes for the reasons as outlined above. The site is presently extensively cleared and modified, with no significant adverse planning, environmental, amenity or other impacts likely to arise as a result of the proposed quarry development proceeding.

The evidence presented in this EIS document and in the RFI response above satisfactorily answers the queries raised by Council in its RFI.

No further documentation is required for the purposes of determining the application.

The proposed continuation and expansion of the existing quarry at Bolgers Pit is modest in nature and is an acceptable form of development. The project will enable the continued extraction and lateral expansion of an existing Council borrow pit that will provide a much-needed resource which supports Council's ongoing repair and maintenance of local roads in the general locality. The quarry project would contribute to the economy locally and through employment generation and the provision of materials for road projects in the Gunnedah Shire.

Bolgers Pit is one of the most strategically important borrow pits that Gunnedah Shire Council relies upon for the supply of known, quality road base material for local council road making purposes. In terms of its benefits to the wider Shire-wide community, its future availability is important for the future supply of road making material required by Council to repair, maintain and to upgrade its extensive roads network.

The proposed intermittent use of the quarry site means that its impacts, in particular dust generated by quarry truck traffic on unsealed local council roads, are confined to short periods of time only in any one year. Various mitigation measures are proposed to address this, short duration, impact.

Assessment of the project against the matters for consideration under the *Environmental Planning and Assessment Act 1979* demonstrates the proposed quarry project:

- Is permissible with consent. Extractive industries are a permissible use on the Project Site.It has an appropriate zoning (RU1) which permits quarrying operations.
- Is consistent with the objects of the Act.
- Is generally consistent with relevant environmental planning instruments and consistent with strategic and forward planning strategies applicable to the locality and region.
- Has considered and been formulated consistent with the principles of Ecologically Sustainable Development.
- The land the subject of the proposed quarry development is almost totally cleared and disturbed land.
- There are no significant environmental constraints to further quarrying development, nor is there any apparent need for ecological offsets. The quarry project is unlikely to impact on threatened species, populations or ecological communities or their habitats, including Koalas. No groundwater interference is likely, with acceptable impacts in terms of noise, air quality, hazards, blasting, or visual impacts.
- All runoff from within the quarry is to diverted to the on-site detention basins to be then re-used within the quarry. Stormwater bunds are already in place to divert 'clean' water from upslope areas around the working quarry.
- Most project impacts can be addressed with appropriate mitigation measures.
- Is the highest and best use of the Project Site.
- The project already enjoys General Terms of Approval, issued by the EPA.

On the basis of the detailed assessment undertaken, it is concluded that the Project has town planning merit and can be approved subject to appropriate conditions. This also includes the imposition of a consent condition requiring the preparation of a site-specific quarry management plan for Bolgers Pit, an approach adopted by Gunnedah Shire Council and the planning panel in the case of other quarry developments approvals in the Gunnedah Shire. In so doing, this will ensure that any quarry management plan is ultimately consistent with the final form of the environment al protection licence (EPL), issued by the EPA, that will enable the proposed quarry project to proceed.

The project is warranting of support and development consent can be granted.

However, having regard for Council's non-compliance with the strict notification requirements under the EP&A Regulation, as detailed in Section 2.0 of this RFI response, the development application will need to be re-advertised and re-notified.

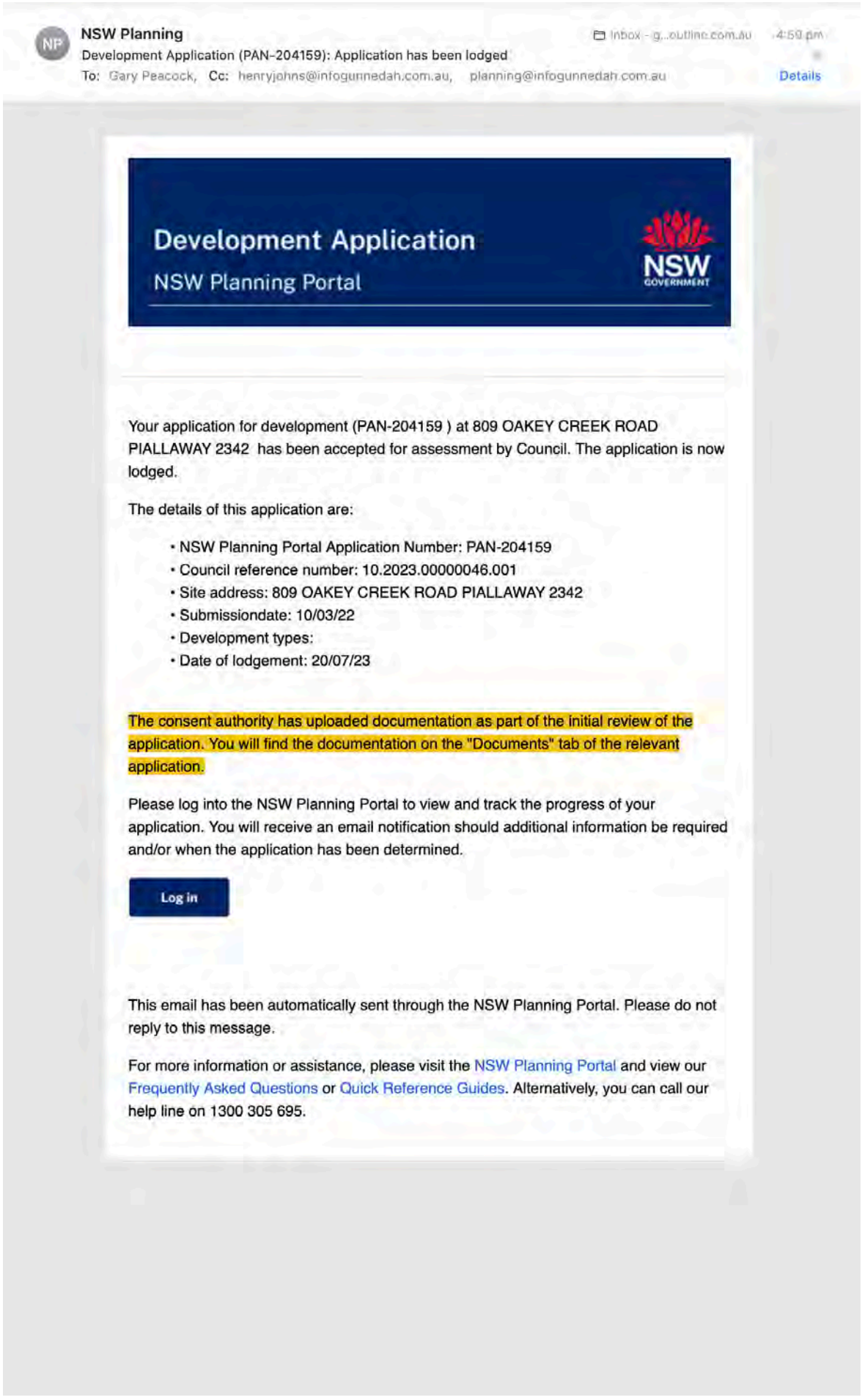
If you have any queries please do not hesitate to contact the writer direct on telephone: 02 9262 3511 or mobile direct: 0418 242 762.

Yours sincerely

GARY PEACOCK
BTP UNSW
Member Planning Institute of Australia (PIA)
DIRECTOR
email: gpeacock@outline.com.au

ANNEXURE A

NSW Planning Portal Ref: PAN-204159 -
DA accepted by Council on 20 July 2023



NP **NSW Planning** Inbox - g...outline.com.au 4:59 pm

Development Application (PAN-204159): Application has been lodged

To: Gary Peacock, Cc: henryjohns@infogunnedah.com.au, planning@infogunnedah.com.au Details

Development Application

NSW Planning Portal

NSW GOVERNMENT

Your application for development (PAN-204159) at 809 OAKEY CREEK ROAD PIALLAWAY 2342 has been accepted for assessment by Council. The application is now lodged.

The details of this application are:

- NSW Planning Portal Application Number: PAN-204159
- Council reference number: 10.2023.00000046.001
- Site address: 809 OAKEY CREEK ROAD PIALLAWAY 2342
- Submissiondate: 10/03/22
- Development types:
- Date of lodgement: 20/07/23

The consent authority has uploaded documentation as part of the initial review of the application. You will find the documentation on the "Documents" tab of the relevant application.

Please log into the NSW Planning Portal to view and track the progress of your application. You will receive an email notification should additional information be required and/or when the application has been determined.

Log in

This email has been automatically sent through the NSW Planning Portal. Please do not reply to this message.

For more information or assistance, please visit the NSW Planning Portal and view our Frequently Asked Questions or Quick Reference Guides. Alternatively, you can call our help line on 1300 305 695.

ANNEXURE B

Council DA and public exhibition details-
from Council DA Tracker website on 5 June 2024

Application: Development Application (2023/46/1)

Detailed information related to the application:

Show All / Hide All

Details

Description: Industry (rural/warehouse/extractive)
Submitted Date: 20/07/2023
Application Type:Development Application

Properties

809 Oakey Creek Rd, Piallaway 2342 NSW (Lot: B DP: 432415)

People

Decision

Estimated Cost

Tracking

Description	Commenced Date	Due Date	Completed Date
External Referral	23/02/2024	22/03/2024	23/02/2024
Advertising/Public Notification	29/02/2024	30/04/2024	30/04/2024
Notification Neighbour	29/02/2024	30/04/2024	30/04/2024
Advertising/Public Notification	01/04/2024	28/04/2024	30/04/2024
Notification Neighbour	01/04/2024	30/04/2024	
Request Additional Information	08/05/2024	01/07/2024	

Documents

No data.

Notified Addresses

ANNEXURE C

Council RFI dated 8 May 2024

Gunnedah Shire Council

Mr G Peacock
gpeacock@outline.com.au

08 May 2024

Dear Sir/Madam

Request Additional Information - Development Application No. 2023/046

Site Description: **Lot: B DP: 432415, Mimbil, 809 Oakey Creek Road, Piallaway**

I refer to the Development Application which you lodged, for which a total of 294 assessment days have elapsed. It is requested that you provide the following information to facilitate Council's evaluation of the development:-

1. Clarification of Development details and content of Environmental Impact Assessment (EIS):

a) Confirm the operational life for the development proposal. Based on the extraction volume sort (734,000) and the annual tonnage (40,000 tonnes per annum), the development is expected to have an approximate life resource of 8 years.

Note: Should a consent be recommended, a condition is likely to be included which requires rehabilitation to commence at the end of the operational life, if not prior (if staged rehabilitation occurs).

b) Clarify the total resource for which consent is being sort. 2.4 of the EIS refers to a total resource of 800,000 tonnes, where the remaining references within the EIS refers to 734,000 tonnes. Is the additional 66,000 tonnes overburden, as per the included Note?

c) Confirm that the total development area is 6.115ha, including internal haul roads, stockpile and equipment storage areas, existing extracted quarry footprint and the proposed extraction area.

d) Confirm that the development is seeking approval for extraction to occur for a total of 6 weeks within a 12 month period as per comments within 7.3.1 of the EIS.

e) The Environmental Impact Statement (EIS) appears to contain an error, stating that the site is zoned RU2 and that the development meets the zone objectives. Provide amended assessment to the development's compliance with zone objectives for the RU1 Primary Production Zone, being the zone within which the development site is situated.

f) Provide an assessment in accordance with *State Environmental Planning Policy (Resilience and Hazards) 2021*, which considers if the development is a 'Hazardous Industry' for any of the volumes of substances which may be kept onsite.

g) Demonstrate how the statement 'the proposed quarry development would not compromise good quality agricultural land or other viable activities' is justified, including consideration of impacts to groundwater and discharge of potentially contaminated water over the site and onto adjoining agricultural lots.

h) Provide development plans which illustrate location of bunded areas, including elevations of expected landform including bunds.

i) 3.5.8 of the EIS refers to access over Lot B DP 432415 via an existing access road. Confirm the proposed access point to the site. Confirm if Lot B DP 432415 is required to be included within the development application for any purpose.

j) Provide details of any onsite Diesel storage including capacity and bunding for machinery and Diesel Generators. If storage is not to occur onsite, identify how refueling will occur. The traffic movements, including number and frequency of fuel deliveries should be included within the consideration of the Traffic Impact Assessment (TIA).

k) How will all waste types generated onsite, including general waste (rubbish) be managed onsite prior to disposal or recycling?

l) Will the development require repair or servicing of vehicles or machinery onsite?

m) Confirm the accuracy of weighing of extraction volumes through front-end loader weighing systems.

n) Provide a copy of the Drive Code of Conduct referred to in Table 4.1 of the EIS.

o) Provide a copy of Bolgers Pit Environmental Management Plan for consideration as part of this development.

2. Water and Water Resource Impacts

a) Provide comment regarding potential interaction of water within the Sump with Groundwater. Is there risk from water from within the Quarry footprint containing contaminates which may affect groundwater.

The EIS states that groundwater occurs to 320RL. The EIS and supplied quarry cross sections indicate that the quarry floor is proposed to be excavated to 320RL. It is assumed that the sump extends below the quarry floor.

b) How will the Sump or Sediment Basin be maintained to ensure that the minimum capacity of 1,6000m^3 is maintained? How will the capacity be monitored? Where will sediment removed from Sump be disposed to?

c) Confirm how far from the Quarry development area and extraction area is the unnamed 2nd order watercourse noted in figure 2.5 of the EIS. The Figure and the EIS do not comment on the distance.

d) Is there a need for onsite water storage for the purpose of dust suppression. The EIS indicates that the development does not extract water from any watercourse or bore. Confirm where this water will be sourced. If water is sourced offsite, traffic for deliveries must be considered within the TIA.

e) Where is staff water requirements sourced from as well as where and how is it to be stored onsite.

3. Traffic Impact Assessment & Haulage Route

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a) Confirm haulage route sort for the movement of material to and from the site. It should be noted that should the development be recommended for approval it is likely a condition will be included which prescribes the approved haulage route. The use of any additional road network that is not considered for the suitability of the road network may result in safety impacts from haulage vehicles to motorists and other road users.

I noted that the EIS excludes consideration of Hogarth Street, Breez and Denver Lane which are both currently used by Council's haulage vehicles.

b) Confirm that Werris Creek Road is part of the intended Haulage Route as this road is outside of the Gunnedah Local Government Area and would require referral to Liverpool Plains and Tamworth Regional Council's as the local road authority for this road.

c) The TIA should provide updated traffic counts. The count period and occurrences do not appear to be appropriate as the dates and locations of counts appear to coincide with road closures occurring within the region from areas of flooding. This may affect the results produced within the TIA and affect the considerations of the development impacts.

d) Provide updated considerations of road conditions for the two 90° bends and two causeways which do not appear to be 7m wide and may be a safety concern for road users and haulage trucks to pass concurrently. Are there safety risks with these sections of the road network? EIS refers to 'generally 7m wide', and photographs used within the EIS show the widest section of road which is not typically of the whole route.

e) Provide consideration of the safety of the intersection of Clifton Road (Hogarth Street) and Kamilaroi Highway for vehicles turning off the highway heading towards the site, including safety of vehicles queuing on the highway, especially if the railway crossing is closed due to rail traffic.

f) How has the statement that the local road network servicing is in satisfactory condition been determined? The proposed haulage route includes a number of blind corners and narrow creek crossings which may create a safety concern if more frequent heavy vehicle movements were to occur within the road network.

g) Provide details of expected 'regular' frequency to ensure road retains a safe formation. The condition of Clifton Road is noted as being dependent on regular maintenance for suitability of the haulage route. Is the frequency required structured into Council's maintenance program for the road network?

h) Have road conditions and suitability of road formations and safety been considered with surrounding agricultural road users included? Agricultural activities generate high volumes of Heavy vehicles during perdiods of high activity, such as harvests. Have these movements been considered?

i) Is there any safety concerns with the position of the bus stops along the haulage route and occurring from haulage vehicles using the road network during School Bis times?

j) Clarify inconsistencies between 5.4 and 8.3 of the TIA. 8.3 reports no increase in haulage movements from the operation of the quarry, where 5.4 reports an increase in just over half of the current haulage vehicle movements. 8.3 should be reconsidered for Road Safety for the increase in vehicle on the haulage route.

k) Address comments that the majority of the road network is sealed as per 7.3.5 of the EIS. There are large sections of the road considered in the TIA that are unsealed.

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l) Provide details of how the comment within the TIA 'it is considered that any dust or noise generated by quarry activities will have no significant impact on residences, schools or other community activities' has been determined? There are residential receivers adjoining the road along sections of the unsealed roads indicated within this report which area likely to be impacted by dust generated along the haul route. What level of cumulative traffic generated is required for dust impacts from vehicle movements to be considered as impacting these development prior to this being a significant impact?

m) Provide maintenance program indicated in 3.1.1 of the Traffic Impact Assessment (TIA).

4. Noise Impact Assessment Results

a) The Noise Impact Assessment is to be updated to consider traffic noise generated along Denver Lane should it be included within the vehicle haul route.

b) The Noise Impact Assessment is to be updated to address noise impacts for operation of the site during the hours 7:00am-8:00am Saturday, which are considered within the NSW EPA Noise Policy for Industry to be night period and require more constrained noise generation limits.

c) Was the operation of a Diesel Generator as an electrical power source considered within the Noise Impacts Assessment? If not the Noise Impact Assessment is to be updated to include the impacts on the surrounding environment and receivers.

d) The Nosie and Vibration Impact Assessment indicate that during neutral weather conditions, exceedances are recorded at receivers NSR2 and NSR3. Provide mitigation measures that would ensure that there are no noise level exceedances occur during neutral weather conditions.

e) Results of Table 8-2 of the Nosie and Vibration Impact Assessment appear to be considered incorrectly against the noise levels for Highways and Arterial Roads. The table should be updated to be assed against local roads within Table 4-3.

f) 8.4 of the Nosie and Vibration Impact Assessment indicates that total traffic noise level should be limited to 2dB(A) above that of the corresponding existing noise level at any residential property. However, Table 8-2 indicates 5 receivers with a greater than 2dB(A) difference from existing to future. What mitigation measures are required to ensure that this increase is not experienced. This should also include any receivers considered along any additional roads for the haulage route (Denver Lane or Hogarth Street).

g) Provide comment as to why results of Table 7-2 and 7-3 are different for cumulative results. There is no explanation provided which explains the discrepancy.

5. Dust and Air-quality Impacts

a) Dust Impact assessment does not include any consideration of dust generated along the Haulage Route from haulage vehicles as well as service and light vehicles attending the site. The Dust Impact Assessment is to include consideration of residences along or within 200m of any unsealed section of the haulage route.

b) 2.11 of the EIS refers to differences in wind roses due to Melville Range, have these differences been considered in providing conclusion and estimates for dust impacts?

c) What are the dust abatement measures referred to within the EIS and how extensive are these measures? How effective are these in reducing the dust generation from the site and within the haulage route?

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d) With regards to Table ES-2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment, provide comment as to how there can be no additional exceedance over the 24 hour average PM10 criteria when Table ES-1 indicates exceedances at all receivers over the 50 Criteria. If these are already in exceedance, provide commentary as to what impact does the development have? Council does not accept that the development is already exceeding the criteria so no further consideration is required.

e) Justify assumptions made in 7.2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment.

6. Blast Impacts

a) How many blasts are expected to occur in any one calendar year for the purposes of winning of material? The EIS only indicates a maximum number of blasts per day and maximum yield to be used.

b) Provide consideration of Fly Rock from blasts. Is Fly Rock likely to affect nearby residential receivers or agricultural activities?

7. Visual Impacts

a) Provide details of the position of any storage areas for overburden. Include any stabilisation required to ensure that erosion of stockpiles does not occur. A visual assessment of stockpile and overburden placement where visible from public reserves or adjoining residences is required.

b) Are any visual mitigation measures required for the development to reduce the visual impact of the development from public reserves or any adjoining receivers?

c) Is there an opportunity to introduce vegetation planting along Western High Bank or close to this area to assist with reducing visual impacts of the East face of the excavated quarry during operation?

d) Demonstrate how the statement 'The proposed quarry development would not causes any adverse impacts on visual amenity' is justified. The development does not propose any visual mitigation measures and the artist impression shows clear visibility of the quarry excavation during the life of the development.

8. Biodiversity Assessment & Impacts to Habitat

a) Provide a Koala Assessment in accordance with the Chapter 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 for the entire development site. The assessment should demonstrate if the development site, as a whole, is considered to be Potential or Core Koala Habitat, as per sections 3.2, 3.6 and 3.7 of this SEPP. The current assessment is noted as being only for the quarry footprint.

b) Identify the vegetation communities to be removed from site and provide detailed calculation of vegetation canopies to validate that the vegetation to the impacted is less than 1ha as per Section 7.2 of the *Biodiversity Conservation Regulation 2017*.

c) Confirm that vegetation removal is to occur outside of the approved quarry footprint, regardless of comments within 4.1 of the EIS. The approved quarry footprint is regarded as the footprint of the current quarry. Development plans show vegetation to be removed outside of the current Quarry Pit in areas that are the subject of this Development Application.

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9. Rehabilitation

a) Provide Council a copy of a Draft Rehabilitation Plan. The Draft Rehabilitation Plan is to include species planted within rehabilitation, period that rehabilitation will occur and an indicative final section and landform.

b) Does the development afford any opportunities for progressive rehabilitation of the site?

c) Confirm Rehabilitation inspection periods indicated in 7.3.11 of EIS.

d) Council has concern about possible contamination issues from a free draining quarry void, should contaminates be suspended within the water discharged out of the quarry footprint. Provide details which confirm how it is to be confirmed that water leaving the quarry area will be free of contaminates.

e) Is the current land owner aware of the indicated obligation to manage weeds, ongoing, in quarry rehabilitation area?

It would be appreciated if this information requested above could be provided to Council by close of business Monday, 1 July 2024. In the event that the listed information is unable to be provided prior to this date, please contact Council to request an extension to the allotted period.

Council is unable to accept responses via email, post or submission of hardcopy of documents. It is required that all additional information be returned by uploading to the pre-existing Development Application on the NSW Planning Portal at https://planningportal.nsw.gov.au/.

If you have any questions regarding this development application please contact Council's Planning and Environmental Services on 02 6740 2100.

Yours faithfully

Wade Hudson
Manager Development Assessment

Contact: 6740 2100
Reference: 2023/046
wh:lw

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ANNEXURE D

s.56(1)-(7) of the EP&A Regulation

Environmental Planning and Assessment Regulation 2021

Current version for 13 May 2024 to date (accessed 5 June 2024 at 12:29)

Part 3 Division 5 Section 56

Timeline

56 Notice of development applications

(1) This section applies to a development application for the following only—

(a) designated development,

(b) nominated integrated development,

(c) threatened species development,

(d) Class 1 aquaculture development,

(e) State significant development.

(2) As soon as practicable after a development application is lodged, the consent authority must —

(a) publish notice of the application on the consent authority's website, and

(b) give notice of the application to—

(i) the public authorities that, in the consent authority's opinion, may have an interest in the determination of the application, and

(ii) the persons that own or occupy the land adjoining the land to which the application relates.

(3) Subsection (2)(b)(i) does not require notice to be given to relevant concurrence authorities or approval bodies.

(4) Subsection (2)(b)(ii) does not apply to a notice that relates to an application for public notification development or designated development.

(5) The fee payable to a consent authority for the giving of notice under this section, other than for State significant development, is specified in Schedule 4.

(6) The notice under subsection (2)(a) and (b) must contain the following information—

(a) a description and address of the land on which the development will be carried out,

(b) the name of the applicant and the consent authority,

(c) a description of the development,

(d) whether the development is designated development, nominated integrated development, threatened species development, Class 1 aquaculture development or State significant development,

(e) a statement that the application and the documents accompanying the application, including any environmental impact statement, are available on the consent authority's website for the minimum period required under the Act,

(f) a statement that a person may, during the public exhibition period, make submissions to the consent authority about the application and that the submissions must specify the grounds of objection, if any,

(g) for development that is also integrated development—a statement of the required approvals and the approval bodies for the approvals,

(h) for State significant development—whether the Minister has directed that the Independent Planning Commission must hold a public hearing,

(i) for designated development—

(i) a statement that, unless the Independent Planning Commission has held a public hearing, a person who objected to the development by making a submission and who is dissatisfied with the determination of the consent authority to grant development consent, may appeal to the Court, and

(ii) a statement that, if the Independent Planning Commission holds a public hearing, the Commission's determination of the application is final and not subject to appeal.

(7) For the purposes of this section—

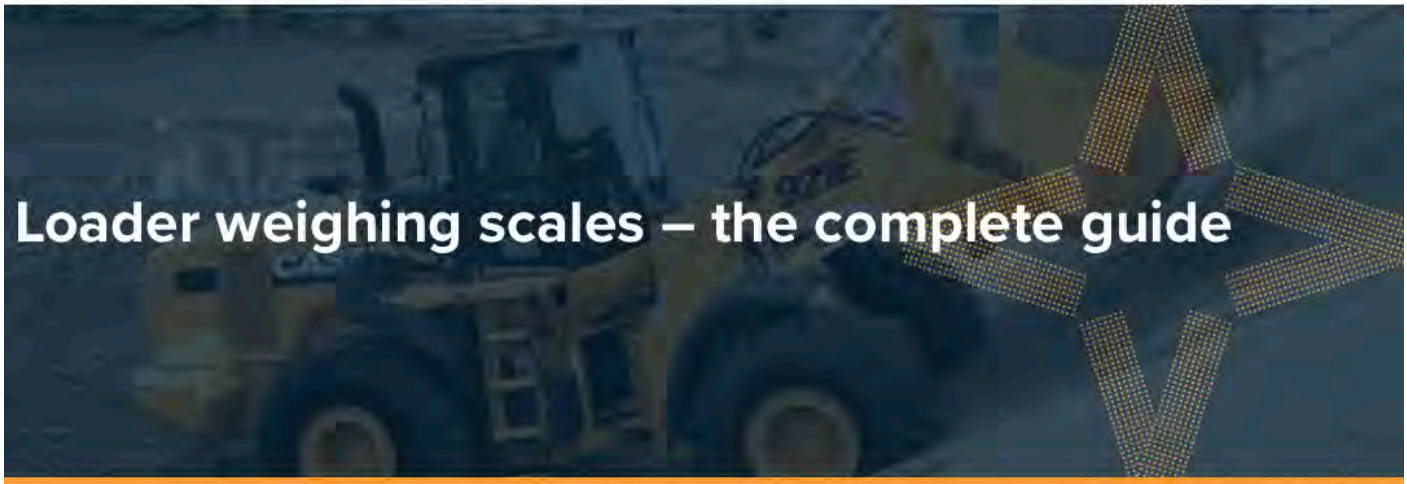
(a) if land is a lot in a freehold strata scheme—a notice to the owners corporation is taken to be a notice to the owner or occupier of each lot in the strata scheme, and

(b) if land is a lot in a leasehold strata scheme—a notice to the lessor under the leasehold strata scheme and to the owners corporation is taken to be a notice to the owner or occupier of each lot in the strata scheme, and

(c) if land is owned or occupied by more than 1 person—a notice to 1 owner or 1 occupier is taken to be a notice to all owners and occupiers of the land.

ANNEXURE E

Loader weighing scales- from Aptella website



Loader weighing scales – the complete guide

A brief introduction to loader scales

New technology that aims to maximise operational results has always been highly adopted across industries dealing with bulk material processing, holding a known ability to yield enticing results. It's rare to discover such a simple yet vital piece of technology that can work to underpin day-to-day operations so, when such a product surfaces, it's guaranteed to create a lasting impact.

Loader weighing scales have become a favoured investment across industries where ascertaining product weight is an essential consideration in risk prevention, process optimisation, and commercial transacting. This small device holds an exceptional reputation amongst consumers with an ability to significantly streamline business operations, presenting itself as an indispensable asset across a broad range of applications.

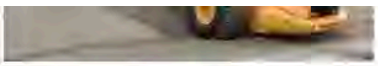
So, whether involved in construction work, quarrying, landscaping, or even waste management, **loader scales** are likely to completely optimise organisational services, providing access to precise weight readings, enhanced inventory management, and risk reduction.

Despite clear benefits associated with loader scale technology, many operators and local businesses are yet to invest, with an unclear vision of what these systems truly offer. Though not all benefits are completely tangible, loader scale products provide immense value and a cost-effective medium to maximise return-on-investment. So, where is this 'value' derived from?

The value behind loader weighing scales

The utility and value of **loader weighing scales** is typically underestimated despite playing a pivotal role throughout a diverse range of industries. While often perceived as a simple piece of technology, scale systems provide a functional solution to critical considerations surrounding bulk haulage services. It can often be difficult to quantify intangible benefits associated with products similar to loader scales, so, here is where the true 'value' can be found.

Live inventory control and material management



Live inventory control and material management

While most companies that work with processed or pre-packaged material have little trouble when auditing inventory levels, products that don't conform to typical specifications can struggle with costly material management processes and complicated inventory control. When dealing with bulk material such as rocks, fill, or alternative construction material, weight tends to be the core determinant in regards to sales quantity. Utilising loader scales essentially optimises certain processes, preventing delivery variances which can lead to contractual disputes or affect your bottom line. In tandem, material accuracy can also assist in more efficient inventory management and transactional transparency.

Enhanced process efficiency

An evident feature of the loader scales is the ability to enhance process efficiency, reducing downtime and promoting higher profit margins. The use of this technology essentially eliminates a traditional loading step, measuring material weight in real-time with every bucket lift, making standalone and randomised weigh-in processes obsolete. While this alone promotes more efficient operations, loader weighing scales also help digitalise material conveying with recorded weight data that can be later used to construct monthly stockpile reports or even transact from with the best trade approved loader scale system.

Loading error prevention

One of the final value-added features comes in terms of data accuracy which is often overlooked given its virtual nature. The issue of both over and under-loading a front end loader is not atypical but it can occur more frequently than anticipated. Not only can such problems exhaust inventory levels or damage customer relations but, without accurate readings highway regulations can also be voided in reference to Australia's Chain of Responsibility Laws. Precise material data not only promotes performance but can also prevent potential misconduct.

Understanding how loader scales work

To better understand the benefits associated with front loader scales, it is essential to understand how they operate and the technology driving this simple, yet effective product. These systems essentially work by turning the weighing process into a one-step operation.

Loader measurement scales utilise a series of sensors and other componentry in tandem with a user-friendly display to accurately and consistently measure unique payloads. Leading systems will often rely on up to five parts to precisely measure material – offering unmatched results. Such parts may include:

- Pressure transducers are typically used, connecting to the loaders hydraulic system in order to sense accumulative pressure within the lift cylinders as material is transported.
- Triggers work in tandem with other components to offer precise sensing throughout lifting processes to ensure consistent and reliable weighing dynamics.
- Indicators are often used to provide an intuitive interface to the loader scales, conveying essential real-time data to the operator.
- Slope compensation kits can be installed to compensate for uneven terrain, allowing information to be disseminated as accurately as possible across sloped surfaces and various site conditions.
- Most scale systems will offer a printer to convey valuable information to management or clients, printing receipts for use across daily and weekly performance reports.

ANNEXURE F

Groundwater bores in vicinity of quarry (Office of State Water records)

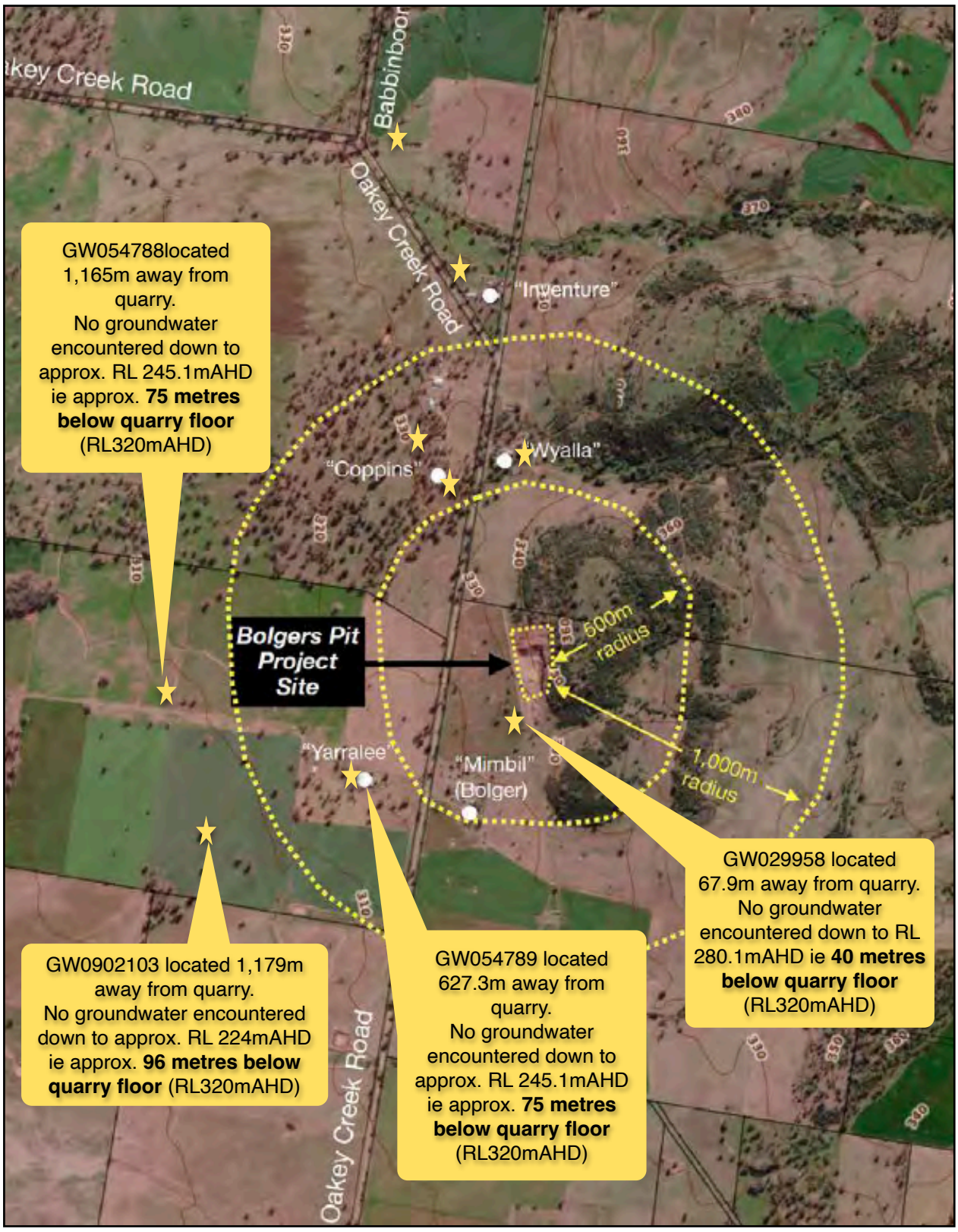


FIGURE F1: Bolgers Pit and nearest groundwater bores in same sub-catchment (Bores identified by yellow stars)

(Source: NSW Government MinView and Water NSW Realtime Data groundwater websites)

ANNEXURE G

Streetwise response to Council RFI

3. Traffic Impact Assessment & Haulage Route

a) **Confirm haulage route sort for the movement of material to and from the site. It should be noted that should the development be recommended for approval it is likely a condition will be included which prescribes the approved haulage route. The use of any additional road network that is not considered for the suitability of the road network may result in safety impacts from haulage vehicles to motorists and other road users. I noted that the EIS excludes consideration of Hogarth Street, Breez and Denver Lane which are both currently used by Council's haulage vehicles.**

StreetWise Response:

The material from Bolgers Pit quarry is generally used for council infrastructure projects including road upgrades, road maintenance and repairs to road damage in the south-eastern section of the Gunnedah Shire Council area. The StreetWise TIA details a number of previously approved haul routes, which permit transport of quarry material to the Oxley Highway and Kamillaroi Highway via a number of local roads including Oakey Creek Road, Clifton Road, Denver Lane etc. The highways are classified by TfNSW as heavy vehicles routes, and are suitable for use by laden haulage vehicles.

Any road project undertaken by Gunnedah Shire Council, which can't be accessed via the approved haul routes or TfNSW classified heavy vehicle routes will need to be assessed by Council in regard to safety and impacts on the local road network.

However, any road maintenance or repair projects are likely to be relatively small, and have minimal impacts on road safety or road safety. Any larger road upgrade projects will be scheduled well in advance, giving Council the opportunity to plan the project, assess impacts of the projects (including heavy vehicle movements), prepare traffic management plans, and communicate with residents and other road users.

b) **Confirm that Werris Creek Road is part of the intended Haulage Route as this road is outside of the Gunnedah Local Government Area and would require referral to Liverpool Plains and Tamworth Regional Council's as the local road authority for this road. The TIA should provide updated traffic counts.**

StreetWise Response:

Material from Bolgers Pit is generally utilised for road projects within the Gunnedah Shire Council area, and any reference to a future haul route towards Werris Creek should be deleted from the report.

StreetWise undertook a manual traffic count at the intersection of Werris Creek Road and Piallaway Road, Currabubula, as part of the onsite assessment. The count was taken in November 2022, and are considered current.

c) The count period and occurrences do not appear to be appropriate as the dates and locations of counts appear to coincide with road closures occurring within the region from areas of flooding. This may affect the results produced within the TIA and affect the considerations of the development impacts.

StreetWise Response:

StreetWise undertook manual traffic counts at a number of intersections in November 2022, as part of the site inspection and assessment. The author travelled from Port Macquarie and also drove around the Tamworth area without observing any major roads closed or otherwise impacted by flooding. StreetWise also obtained traffic volumes from TfNSW for major roads in the area (Oxley Highway and Kamillaroi Highway), and the manual traffic counts appeared to match the historic traffic volumes provided by TfNSW.

Also, the traffic volumes were relatively low at each location, and the Level of Service would likely be 'A' (i.e. free flow) on the major and local roads. All roads impacted by the quarry would likely have capacity to cater for significant increases in volume, if required, with minimal reduction in safety or efficiency.

d) Provide updated considerations of road conditions for the two 90^{o} bends and two causeways which do not appear to be 7m wide and may be a safety concern for road users and haulage trucks to pass concurrently. Are there safety risks with these sections of the road network? EIS refers to 'generally 7m wide', and photographs used within the EIS show the widest section of road which is not typically of the whole route.

StreetWise Response:

It should be noted that the haul routes described in the TIA are currently approved as haul routes for transporting quarry material. StreetWise observed the roads to be in reasonable condition at the time of inspection, including the unsealed sections of Oakey Creek Road and Clifton Road (north). The condition and available width of the unsealed sections of road are obviously dependent on regular maintenance by council. StreetWise inspected the existing 90^{o} bends, causeways and other potential hazards on each of the haul roads within the local road network. The bends and causeways are well signposted, and local traffic is aware of the requirement for reduced speed and need for courtesy when meeting heavy vehicles at these locations. As discussed elsewhere, many of the rural properties in the area also generate heavy vehicle movements, so local residents are accustomed to occasional conflict at these locations.

e) **Provide consideration of the safety of the intersection of Clifton Road (Hogarth Street) and Kamilaroi Highway for vehicles turning off the highway heading towards the site, including safety of vehicles queuing on the highway, especially if the railway crossing is closed due to rail traffic. How has the statement that the local road network servicing is in satisfactory condition been determined? The proposed haulage route includes a number of blind corners and narrow creek crossings which may create a safety concern if more frequent heavy vehicle movements were to occur within the road network.**

StreetWise Response:

The existing intersection of Clifton Road (Hogarth Street) and Kamilaroi Highway includes a sealed shoulder on the eastbound side which can provide approximately 100m of queuing length of the side road is closed due to train movements (see below) without impacting on southbound traffic flows.

Any heavy vehicles queuing to turn right at this location from the southbound lane of the Kamillaroi Highway may result in short delays if more than 2 truck and dog trailers are queued in the side road. However, the following should be considered:

- As discussed in the TIA, the maximum haulage vehicle movements to be generated by the quarry are 10 trips per hour (i.e. 5 in & 5 out). This equates to an average 12 minute gaps between haulage vehicles. Therefore the likelyhood of 3 truck & dogs generated by the quarry queuing at the rail

crossing at the same time as a slow train passing through the crossing is minimal.

- The haulage truck generation rate shown above (i.e. 10 movements per hour) is a maximum, and likely to be far less than this rate.
- The existing quarry currently operates occasionally throughout the year. StreetWise are not aware of any previous queuing issues at this location
- Each haulage truck driver is in communication with the quarry and other drivers at all times via mobile phone, and 2-way radio. If there was a queuing issue at this location, any approaching driver can be notified, and have a break in a suitable location away from the railway crossing.

f) How has the statement that the local road network servicing is in satisfactory condition been determined? The proposed haulage route includes a number of blind corners and narrow creek crossings which may create a safety concern if more frequent heavy vehicle movements were to occur within the road network.

The proposal to limit Bolgers Pit quarry to 40,000 tonnes of material per year is not going to generate any significant increase in the daily or weekly number of haulage trips. It is simply giving the operators scope to produce more quarry material and undertake more road projects, if required. The operators propose to continue the current quarry operations i.e. for a few weeks at various times during the year (to service occasional road projects in the south-east portion of the council area), which generate approximately 5 laden trips per hour at peak times. In other words, the quarry may operate more weeks per year, but there will be no significant increase in daily or weekly heavy vehicle movements generated by the quarry.

StreetWise inspected the existing haul roads and other local roads as part of the assessment. The inspection included:

- Location of existing roadside hazards
- existing signage, guideposts and delineation
- available sight distance at intersections and driveways
- road alignment and road widths
- suitability of existing speedzones
- review of recent crash data

It should also be noted that traffic volumes on all of the local roads inspected are low, which minimises the likelihood of conflict between vehicles at curves, narrow bridges etc. Also, the haulage of quarry material from Bolgers Pit will only occur intermittently throughout each year and only between 7:00am and 3:00pm on weekdays.

Please also note that the author of the StreetWise TIA is a Level 3 Road Safety Auditor, who has been involved in over 600 Road Safety Audits in the past 15 years.

g) Provide details of expected 'regular' frequency to ensure road retains a safe formation. The condition of Clifton Road is noted as being dependent on regular maintenance for suitability of the haulage route. Is the frequency required structured into Council's maintenance program for the road network?

StreetWise Response:

The condition of unsealed roads is generally dependent on weather conditions and traffic volumes. Rather than specify a 'regular' maintenance program, StreetWise have recommended that Council monitor the local roads, and maintain them when required, particularly the unsealed roads which require regular grading to ensure a smooth surface and adequate road width.

h) Have road conditions and suitability of road formations and safety been considered with surrounding agricultural road users included? Agricultural activities generate high volumes of Heavy vehicles during periods of high activity, such as harvests. Have these movements been considered?

StreetWise Response:

Yes. The vehicle movements generated by rural activities are generally seasonal, and vary in size and number, dependent on the activity. However, the quarry currently operates within that same community, and the operators would be aware of the seasonal heavy vehicle movements generated by local properties. Similarly, the property owners would be aware of regular haulage movements generated by the quarry.

Given that the current volumes on Oakey Creek Road and surrounding road network are low, and:

- The quarry operations are intermittent throughout the year, based on scheduling of council projects
- When in operation, the estimated **maximum** number of haulage trips to be generated by the quarry are 5 in and 5 out (between 7am and 3pm). The actual number of haulage trips generated by the quarry is likely to be less.

Therefore, the likelihood of conflict between quarry-generated haulage movements, and heavy vehicle movements generated by rural activities is low. Any potential issues can be minimised by communication between the quarry operators and neighbouring properties, including:

- signage detailing quarry operating times

- signage warning drivers to watch for heavy vehicle movements generated by seasonal rural activities

i) **Is there any safety concerns with the position of the bus stops along the haulage route and occurring from haulage vehicles using the road network during School Bus times?**

StreetWise Response:

As part of the initial traffic assessment, StreetWise checked the school bus services, and did not find any bus routes that utilised roads in the vicinity of the quarry. StreetWise also did not observe any bus-stops during the site inspection. However, the existing quarry currently operates periodically throughout the year, but does not generate a large number of hourly movements when the quarry is in use. The haulage vehicle drivers would likely know of any regular school bus pick-up or drop-off locations on the haul roads, and be aware to slow down and be alert to the potential for school kids in the area.

Comments can be included in the Drivers Code of Conduct in regard to safety around school bus pick-up / set-down locations along approved haul routes.

j) Clarify inconsistencies between 5.4 and 8.3 of the TIA. 8.3 reports no increase in haulage movements from the operation of the quarry, where 5.4 reports an increase in just over half of the current haulage vehicle movements. 8.3 should be reconsidered for Road Safety for the increase in vehicle on the haulage route.

StreetWise Response:

It is proposed to limit the output from Bolgers Pit to 40,000 tonnes per year. However, the quarry will continue to be utilised occasionally, dependent on the scheduling of council projects, and the requirement for crushed rock. It is NOT proposed to increase the current daily or weekly outputs, but the total number of annual haulage trips has the potential to increase by around 50%, if Council extract the full 40,000 tonnes of rock from the quarry. However, there will be no noticeable increase in daily or weekly quarry-generated vehicle movements, and therefore no increased risk to road safety to other road users who may utilise the local roads on a daily basis.

k) Address comments that the majority of the road network is sealed as per 7.3.5 of the EIS. There are large sections of the road considered in the TIA that are unsealed.

StreetWise Response:

The TIA describes the road network around the quarry site, which includes Kamillaroi Highway, Werris Creek Road, Clifton Road (south) and Piallaway Road – all of which are sealed roads. The report also describes Oakey Creek Road and Clifton Road (north), which are unsealed. However, apart from a few kilometres in the vicinity of the quarry, the majority of the haulage routes are sealed.

l) Provide details of how the comment within the TIA 'it is considered that any dust or noise generated by quarry activities will have no significant impact on residences, schools or other community activities' has been determined? There are residential receivers adjoining the road along sections of the unsealed roads indicated within this report which area likely to be impacted by dust generated along the haul route. What level of cumulative traffic generated is required for dust impacts from vehicle movements to be considered as impacting this development prior to this being a significant impact?

StreetWise Response:

The proposal seeks to set an extraction limit of 40,000 tonnes per annum from Bolgers Pit. However, while this may double the current annual output from the quarry, there is unlikely to be any significant increase in the numbers of daily or weekly haulage trips i.e. setting the annual extraction limit to a maximum of 40,000 tonnes gives Council the opportunity to utilise the hard rock from quarry more often.

It should be noted that Bolgers Pit does not operate regularly, and is only used occasionally during the year when crushed rock is required for council projects in the area. It is proposed to continue the occasional usage when required.

As discussed in the TIA, there is unlikely to be any significant increases in daily or weekly heavy vehicle movements generated when Bolgers Pit is operating, and therefore no increase in the amount of dust or noise which is currently generated.

Also, as with many other quarries and other activities on unsealed surfaces, the operators are required to control the impacts of dust and noise generated by the activity. The EIS prepared as part of the application includes assessment of noise and dust generation, and recommended measures to minimise the impacts.

m) Provide maintenance program indicated in 3.1.1 of the Traffic Impact Assessment (TIA).

StreetWise Response:

StreetWise's traffic report stated *"Gunnedah Shire Council regularly grade and maintain this road, and have provided appropriate signage, as shown in Figures 3.1a and 3.1C."* This statement was based on inspection of the existing road (recently graded), and discussions with council staff at the time. StreetWise did not have access to Council's maintenance schedule for unsealed roads at the time of preparing the report.

ANNEXURE H

Vipac response to Council RFI re: noise impacts, and duly revised noise impact assessment report dated June 2024

Vipac Engineers and Scientists Ltd
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RFI Response - Noise

Job No.:	70B-22-0096	**Doc. No:**	78653-0-draft
Attention:	Gary Peacock	**Author:**	Patrick Drake
Company:	Outline Planning Consultants Pty ltd	**Reviewed by:**	N/A
Email:	gpeacock@outline.com.au	**Issued by:**	[Issuer's name will appear here]
Subject:	RFI Response - Noise		

Dear Gary,

The following letter is in response to the request for additional information issued on the 8th of May, 2024 by Gunnedah Shire Council in relation to the development application No. 2023/046 for the proposed lateral expansion of 'Bolgers Pit' (809 Oakey Creek Road, Piallaway). This letter should be read in conjunction with the revised Noise and Vibration Impact Assessment (report ref: 70B-22-0096-TRP-36720-4) dated 24th of June, 2024.

We trust this meets your requirements in addressing each item appropriately. Should you have any queries, please do not hesitate to contact Vipac.

Yours faithfully,

Vipac Engineers & Scientists Ltd

The issuer's signature will appear here once the document has been issued.

[Issuer's name will appear here]

[Issuer's title will appear here]

1. Noise Impact Assessment Items

Vipac provide the following commentary on each item raised by Gunnedah Shire Council.

> *a) The Noise Impact Assessment is to be updated to consider traffic noise generated along Denver Lane should it be included within the vehicle haul route.*

Although it is not part of the proposal, Denver Lane has been included in the haul route traffic noise assessment in Section 6 of the revised report. The associated Traffic Impact Assessment has not included Denver Lane as part of its survey, therefore appropriate assumptions surrounding expected AADT values have been used as a result. Haul route noise impacts along Denver Lane are predicted to comply with the relevant criteria without the need for acoustic mitigation.

> *b) The Noise Impact Assessment is to be updated to address noise impacts for operation of the site during hours 7:00am-8:00am Saturday, which are considered within the NSW EPA Noise Policy for Industry to be night period and required more constrained noise limits.*

This is incorrect. The notes below Table 2-2 in Section 2.4 of the Noise Policy for Industry states the following:

'Time of day is defined as follows:

- Day – the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays.
- Evening – the period from 6pm to 10pm
- Night – the remaining periods.

Consequently. 7:00am-8:00am on Saturday is during the 'Day' period. No further assessment required.

> *c) Was the operation of a Diesel Generator as an electrical power source considered within the Noise Impact Assessment? If not, the Noise Impact Assessment is to be updated to include the impacts on the surrounding environment and receivers.*

There is no Diesel Generator proposed to operate on the site and has not been assessed as a result.

> *d) The Noise and Vibration Impact Assessment indicated that during neutral weather conditions, exceedances are recorded at receivers NSR2 and NSR3. Provide mitigation measures that would ensure that there are no noise level exceedances occur during neutral weather conditions.*

This is incorrect. There are no predicted exceedances at any applicable receptor during neutral and worst case weather conditions across all scenarios. No further assessment or mitigation investigation is required.

> *e) Results of Table 8-2 of the Noise and Vibration and Impact Assessment appear to be considered incorrectly against the noise levels for Highways and Arterial Roads. The table should be updated to be assessed against the local roads within Table 4-3.*

Principal haulage routes are to be assessed against the criteria for arteria/sub-arterial roads in accordance with Section 2.2.2 of the New South Wales Road Noise Policy (RNP). The report also states this in Section 4.2. It is evident that the predicted traffic noise levels comply with both criteria (i.e. $L_{Aeq,1hr}$ 55 and $L_{Aeq,15hr}$ 60), irrespective of the road category classification.

> *f) 8.4 of the Noise and Vibration Impact Assessment indicates that total traffic noise level should be limited to 2dB(A) above that of the corresponding existing noise level at any residential property. However, Table8-2 indicates 5 receivers with a greater than 2db(A) difference existing to future. What mitigation measures are required to ensure that this increase is not experienced. This should also include any receivers considered along any additional roads for the haulage route (Denver Lane or Hogarth Street).*

This is incorrect. The aforementioned criteria is only applicable to receptors at which the existing traffic noise levels already exceed the criteria, of which there are none anticipated. No further assessment or mitigation assessment is required.

> *g) Provide comment as to why results of Table 7-2 and 7-3 are different for cumulative results. There is no explanation provided which explains the discrepancy.*

This comment appears to have been made in error. This is applicable to the Air Quality Assessment, not Noise.

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Outline Planning Consultants Pty ltd

Bolgers Pit

Noise and Vibration Impact Assessment

70B-22-0096-TRP-36720-4

24 June 2024

Job Title:	Bolgers Pit
Report Title:	Noise and Vibration Impact Assessment
Document Reference:	70B-22-0096-TRP-36720-4

Prepared For:	**Prepared By:**
Outline Planning Consultants Pty ltd Level 3, Suite 2301 4 Daydream Street Warriwood, New South Wales, 2102, Australia **Contact:** Gary Peacock **Tel:** 0418242762	Vipac Engineers and Scientists Limited Level 2, 146 Leichhardt Street, Spring Hill, QLD 4000, Australia **Tel:** +61 7 3377 0400

Author:	Patrick Drake 24 June 2024	Senior Acoustic Consultant
Reviewer:	Jackson Yu 9 February 2023	Principal Acoustic Consultant, Team Leader (B.I.E.)
Issued By:	Patrick Drake The issuer's signature will appear here once the document has been issued.	Senior Acoustic Consultant

Revision History:

Rev. #	*Comments / Details of change(s) made*	*Date*	*Revised by:*
Rev. 00	Original issue	9 Feb 23	
Rev. 01	Amends as per client comments on 24/02/2023	8 Mar 23	HM, PD
Rev. 02	Minor client comment update	14 Mar 23	PD
Rev. 03	Client comment	22 Mar 23	PD
Rev. 04	Minor Update	24 Jun 24	PD

Executive Summary

Vipac Engineers and Scientists Ltd was engaged by Outline Planning Consultants Pty Ltd on behalf of Gunnedah Shire Council (the Proponent) to prepare a noise and vibration impact assessment to support a development consent for the lateral expansion of an active quarry (the Project) at No. 809 Oakey Creek Road, Piallaway NSW 2342, known as 'Bolgers Pit'. The Proponent wishes to regularise the use of this quarry and to laterally expand the active quarry pit through the development approval process. The project site has an area of 2.71ha, which includes land proposed for lateral expansion of the quarry.

The purpose of this assessment is to evaluate the potential impacts of noise and vibration generated by the expansion and to provide recommendations to mitigate any potential impacts that might have an effect on any sensitive receptors.

Noise modelling has been undertaken using the SoundPLAN 8.2 computational noise modelling software package for three different operational scenarios supplied by Outline Planning Consultants (excavator only noise source, middle-west noise sources, and northeast noise sources scenarios).

Noise emissions have been calculated and are predicted to comply at all receptors during the middle west noise sources, and northeast noise sources scenarios for all weather condition scenarios. Noise levels are predicted to exceed at NSR2 and NSR3 during neutral weather conditions, with the addition of NSR4 during worst case weather conditions in the excavator only scenario.

Investigating predicted site-specific wind directions from wind roses generated from TAPM-CALMET modelling (Vipac AQ report: 70B-22-0096-TRP-47532-2), operational noise levels are predicted to comply for all receptors without the need for acoustic mitigation.

Traffic noise impacts along four designated haul routes are predicted to comply without the need for acoustic mitigation.

Vibration emissions during blasting are predicted to comply provided the MIC quantities outlined in this report are not exceeded. Vibration emissions during normal operation are predicted to comply largely due to the substantial distance between the site and the nearest receptors.

Table of Contents

1 Introduction

1.1 Overview

Vipac Engineers and Scientists Ltd was engaged by Outline Planning Consultants Pty Ltd on behalf of Gunnedah Shire Council (the Proponent) to prepare a noise and vibration impact assessment to support a development consent for the lateral expansion of an active quarry (the Project) at No. 809 Oakey Creek Road, Piallaway NSW 2342, known as 'Bolgers Pit'. The Proponent wishes to regularise the use of this quarry and to laterally expand the active quarry pit through the development approval process. The project site has an area of 2.71ha, which includes land proposed for lateral expansion of the quarry.

1.2 Study Objectives and Requirements

The NSW Environment Protection Authority (EPA) has considered the details of the proposals as provided by the Department of Planning, Industry and Environment (DPIE) and identified the information it requires to issue its general terms of approval[1]. The key requirements specified in relation to noise and vibration and how the requirements are addressed within this document are summarised in Table 1-1. Vipac have attempted to contact the EPA to further discuss the requirements below in order to approach each requirement appropriately.

The purpose of this assessment is to evaluate the potential impacts of noise and vibration generated from the Project which addresses the specific EPA requirements and provide recommendations to mitigate any potential impacts that might have an effect on nearby sensitive receptors.

Table 1-1 - Summary of EAR

Requirements	How Requirement is Addressed
4.1 Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/interim-construction-noise-guideline	Construction noise associated with quarry and mining is not covered by the Interim Construction Noise Guideline (in accordance with Section 1.2 of the Guideline). Instead it states construction noise for quarries is assessed under the Noise Policy for Industry. Construction noise is addressed as the 'Excavator Only' scenario throughout the report.
4.2 Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/assessing-vibration	Vibration levels from the quarry road traffic movements along the surrounding road networks were assessed in Section 6 at the closest receivers along the haul routes. Vibration from Quarry operation is addressed in Section 7.1.
4.3 If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990). These are available at: https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/interim-construction-noise-guideline	Blasting impacts are addressed in Section 7.2.
4.4 Operational noise from all industrial activities (including private haul roads and private railway lines) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Noise Policy for Industry* (EPA, 2017). https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017)	Operational noise of the existing quarry operations (in current quarry stage, see Section 2.3.1), as well as the future quarry operations (in the future quarry pit stage, see Section 2.3.2) were modelled and illustrated under Section 5.2.1. Details of the modelling and methodology are shown in Section 5, results are shown in Section 8.1. Road traffic noise from existing quarry truck movements

	along the haul routes were also assessed in the road traffic noise impact assessment in Section 8.3.
4.5 Noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the *NSW Road Noise Policy* and associated application notes (EPA, 2011). https://www.epa.nsw.gov.au/your-environment/noise/transport-noise	A road traffic noise impact assessment was conducted for the potential increase in quarry truck movements along the haul routes in Section 8.3 at a number of closest receivers along the haul routes.

2 Project Description

'Bolgers Pit' is one of Council's larger borrow pits, located at No. 809 Oakey Creek Road, Piallaway NSW 2342, in the south-east portion of the Gunnedah Shire, located approximately 32km to the south-east of the Gunnedah township. The Proponent wishes to regularise the use of this quarry and to laterally expand the active quarry pit through the development approval process. The project site has an area of 2.71ha, which includes land proposed for lateral expansion of the quarry.

2.1 Site Location

Bolgers Pit site is located in the Gunnedah Shire in northern NSW. Gunnedah Shire is a largely rural area, with most of the population living in the township of Gunnedah and the villages of Breeza, Carroll, Curlewis, Mullaley and Tambar Springs. The nearest village, Breeza, lies approximately 29km to the south west.

The surrounding area comprises mainly rural properties on large agricultural holdings, with livestock grazing and the growing of grain the predominant land uses. Most of the land to the west is cleared and cultivated land, with forested land immediately to the east and to the north.

The Project Site location, approximate quarry footprint and proposed expansion are illustrated in Figure 2-1 and Figure 2-2.

Figure 2-1: Project Site Location

Figure 2-2: Proposed Expansion

2.2 Noise Sensitive Receptors

The locality is sparsely populated, with the nearest rural residences described in the following:

- NSR1 – The active quarry face is approximately 1150m to the south of a rural dwelling, located on the east side of Oakey Creek Road ('Iventure'), NSR1.
- NSR2 – The active quarry face is approximately 576m to the south-west of the nearest rural dwelling, located on the west side of Oakey Creek Road ('Coppins'), NSR2.
- NSR3 – The active quarry face is approximately 562m to the south of a rural dwelling, located on the east side of Oakey Creek Road ('Wyalla'), NSR3.
- NSR4 – The active quarry is approximately 592m to the north-east of a rural dwelling, located on the west side of Oakey Creek Road ('Yarralee'), NSR4.
- *NSR5 – The active quarry face is approximately 447m to the north-east of a rural dwelling, located on the east side of Okay Creek Road (Mimbil'), NSR5*

Note that the building at NSR5 ('Mimbil') was confirmed by Outline Planning Consultants (the Town Planner) to be the residence of the Quarry owner and is not considered to be a sensitive receptor for the purposes of this assessment.

The locations of the nearest potentially affected noise sensitive receivers to the quarry are shown in Figure 2-3.

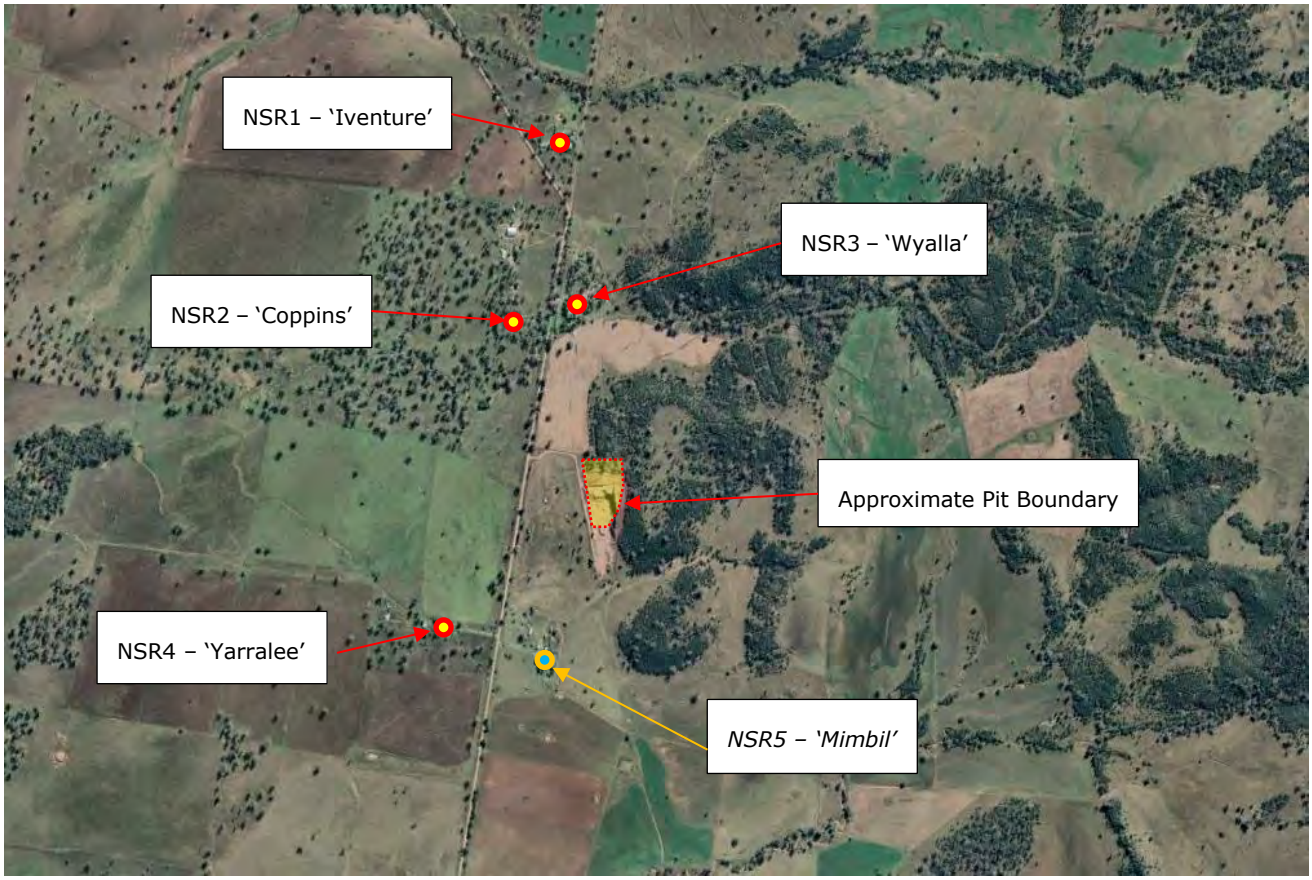


Figure 2-3: Sensitive Receptor Locations

2.3 Quarry Operation

2.3.1 Existing Operation

The existing operations involve extraction from the north-eastern section of the quarry pit, with processing of quarry products within the processing area and stockpiling of quarry products prior to dispatch by road via Oakey Creek Road.

The site does not contain any existing infrastructure, save for sediment ponds and road access back from the quarry pit to Oakey Creek Road. All quarry processing plant is brought into the site on a campaign basis, as required. To date, the quarry has produced up to 18,355 tonnes of quarry product in any one year (2018). The quarry material at this quarry is won by blasting of the quarry rock.

2.3.2 Proposed Operation

Council proposes to regularise the use of the site as a quarry at the same time as seek approval for a modest lateral extension of the quarry with a rate of extraction of up to 40,000 tonnes per annum and a total additional resource of just over 306,000 cubic metres (equivalent to about 734,000 tonnes). Table 2-1 summarises the key project components.

Table 2-1: Key Project Components

Quarry component	Summary description
Extraction Method	Excavator used to remove weathered sandstone, with drill and blast used for unweathered sandstone.
Resource	Weathered and unweathered sandstone, benched where required.
Disturbance area	2.715ha.
Processing	Crushing and screening of unweathered and weathered sandstone material.
Annual extraction	Up to 40,000 tonnes per annum.
Transport	Access to the quarry to be from Oakey Creek Road, the existing quarry haul route. A mix of 6-7 axle quarry trucks (24-30 tonnes carrying capacity) and truck and dog combination (32 tonnes), with smaller trucks may be used. It is anticipated that the quarry may generate up to 40 loaded quarry trucks per day.
Hours of operation	Limited to 7.00am to 6.00pm Monday to Friday (ie. 11 hours operation per day) and 7.00am to 1.00pm on Saturdays (ie. 6 hours operation). Hours of blasting are to be restricted to 9.00am to 3.00pm Monday to Friday.

3 Existing Noise Environment

3.1 Noise Monitoring

Environmental noise monitoring took place at two locations in proximity of the Bolgers Pit between June 7th and June 14th, 2022 with Rion NL-42 Noise Loggers. The noise monitoring locations are detailed in Figure 3-1. The noise loggers were configured to measure instantaneous noise levels with a 'Fast' time weighting and 'A' frequency weighting over 15 minute intervals. A field reference check was conducted for the microphone immediately before and after the measurement sequence and the microphone was appropriately fitted with a windshield.

Weather data was obtained from the Gunnedah Airport AWS (Station ID: 055202), with no adverse weather recorded during the logging period. The noise monitoring data graphs over the time period are provided in Appendix C.

Table 3-1: Equipment List

Instrument	Serial Number	Next Calibration Date
Rion NL-42 Type 2 Sound Level Meter/Logger	01186132	11/02/2024
Rion NL-42 Type 2 Sound Level Meter/Logger	01010767	13/04/2024
Nor139 Environmental Type 1 Sound Level Meter/Logger	1392998	9/05/2024
ONO SOKKi SC-2120 Acoustic Calibrator	35100926	8/02/2023

Table 3-2 presents a summary of the current noise levels at the monitoring locations (the location of the noise monitoring locations are shown in Figure 3-1).

Figure 3-1 - Noise Monitoring Locations

Table 3-2 – Unattended Noise Monitoring Results

Logger Location	Period	L_{Aeq}	L_{A90}	RBL
1 (North)	Day	46	33	27
	Evening	40	22	18
	Night	37	20	16
2 (South)	Day	44	33	26
	Evening	35	22	19
	Night	38	21	17

4 Criteria

The noise criteria are determined in accordance with the NSW Noise Policy for Industry (NPI, 2017), the NSW Road Noise Policy (RNP, 2011) and the NSW Interim Construction Noise Guideline (ICNG, 2009). Vibration criteria are determined in accordance with the NSW Assessing Vibration: A Technical Guideline (2006).

4.1 NSW EPA Noise Policy for Industry (NPI)

The project specific noise criterion limits the noise that a development can make in accordance with the *NSW Noise Policy for Industry 2017* (NPI) in order to limit the effects of the development on the existing noise sensitive receptors.

4.1.1 Project Specific Noise Criterion

The project specific noise criterion limits the noise that a development can make in accordance with the NSW Noise Policy for Industry (NPI) (2017) in order to limit the impact of the development on the existing noise sensitive receptors.

The NPI sets limits on the noise that may be generated by a wide array of facilities and includes guidance that is applicable for the assessment of potential noise impacts from the operational stages of developments. These limits are dependent upon the existing noise levels at the site and are designed to ensure changes to the existing noise environment are minimised and deal with the intrusiveness of the noise and the amenity of the environment. The most stringent of the limits is taken as the Project Specific Noise Level which is the most stringent of the amenity criteria or the intrusiveness criteria for the location.

The amenity criteria for this project are recommended acceptable $L_{Aeq,T}$ noise levels for residences in rural areas as provided in Table 2.2 of the NPI. Amenity criteria are formulated to protect against cumulative impacts.

The intrusiveness noise criterion requires that the $L_{Aeq,15minutes}$ for the noise source, measured at the most sensitive receiver under worst-case conditions, should not exceed the Rated Background Level (RBL) by more than 5dB, represented as follows:

- $L_{Aeq,15minutes}$ < RBL+ 5dB

Noise levels associated with the quarry at nearby noise sensitive receptors (located in the surrounding area) should not exceed the Project Specific Noise Levels detailed in Table 4-2 which have been determined from the lower of the amenity and intrusiveness criteria.

4.1.2 Amenity Noise Criterion

The amenity criterion is specific to land use and associated activities. It aims to limit continuing increases in noise levels. The maximum ambient noise level within an area should not exceed the acceptable noise levels specified in Table 4-1.

Table 4-1: Amenity Noise Levels

Receiver	Noise Amenity Area	Time of Day	L_{Aeq}, dB(A)
Residential	Rural	Day (7am-6pm)	50
		Evening* (6pm-10pm)	45
		Night* (10pm-7am)	40

*The Quarry proposes to operate under the existing operating hours (7am-6pm). Therefore, only the day period has been considered for assessment.

4.1.3 Intrusiveness Noise Criteria

The intrusiveness criterion states that the equivalent continuous noise level of the source should not be more than 5 decibels above the rated background level when measured over a 15 minute period. It aims to control intrusive noise impacts in the short term for residences.

$$L_{Aeq,\ 15\ minute} \leq \text{rating background level} + 5\ dB$$

4.1.4 Project Specific Noise Levels

The project specific noise criterion was determined in accordance with the NPI using the RBL from the results of the noise monitoring locations 1 and 2.

Table 4-2: Project Specific Noise Levels (dB (A))

Receptor	Time of Day	Rating Background Level (RBL)	Intrusiveness Criterion	Amenity Criterion	Project Specific Noise Level
All	Day	35*	40	50	**40**

*NSW NPI states that where the rating background noise level is found to be less than 35dB(A) for the daytime periods, then it is set to 35dB(A).

4.2 NSW Road Noise Policy (RNP)

The requirements of the *NSW Road Noise Policy 2011* (RNP) are applicable to this assessment. Table 4-3 summarises the road category to establish the noise assessment criteria based on the type of roads proposed for use. The criteria for the applicable categories of the roads surrounding the project site are detailed in Table 4-3.

Table 4-3 - Road Traffic Noise Assessment Criteria for Residential Land Uses

Road Category	Type of project / land use	Assessment Criteria/ Target Noise Level, dB(A)	
		Day (7am-10pm)	Night ** (10pm-7am)
Local Roads	Existing residences affected by additional traffic on existing local roads generated by land use developments.	**$L_{Aeq,\ (1\ hour)}$ 55 (external)**	*$L_{Aeq,\ (1\ hour)}$ 50 (external)*
Freeway/arterial/sub-arterial Road* (Clifton Rd, Hogarth St, Oakey Creek Rd, Howe St, Piallaway Rd)	Existing residences affected by additional traffic on existing local roads generated by land use developments.	**$L_{Aeq,\ (15\ hour)}$ 60 (external)**	$L_{Aeq,\ (9\ hour)}$ 50 (external)

Note: These criteria are for assessment against façade- corrected noise levels when measured in front of a building façade.
*Principal haulage routes are to be assessed against the criteria for arteria/sub-arterial roads in accordance with Section 2.2.2 of the RNP.
**The quarry only operates during the daytime period only, night-time criteria is therefore not applicable.

In addition to the criteria detailed in the table above, the magnitude of increase in the total traffic noise level at a location due to a proposed project or traffic-generating development must be considered. Residences experiencing increases in total traffic noise level above the relative increase criteria in Table 4-4 should also be considered for mitigation.

Table 4-4 Relative Increase Criteria for Residential Land Uses

Road Category	Type of project / land use	Total traffic noise level increase, dB(A)	
		Day (7am-10pm)	Night (10pm-7am)
Freeway/arterial/sub-arterial Road	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road	**Existing traffic $L_{Aeq,\ (15\ hour)}$ + 12 dB (external)**	*Existing traffic $L_{Aeq,\ (9\ hour)}$ + 12 dB (external)*

A relative increase of 12 dB represents slightly more than an approximate doubling of perceived loudness (AS2659.1–1988) and is likely to trigger community reaction, particularly in environments where there is a low existing level of traffic noise.

4.3 Vibration Criteria

The NSW DEC guideline *Assessing Vibration: A Technical Guideline* (2006) is based on guidelines contained in British Standard BS 6472-2008 'Evaluation of human exposure to vibration in buildings (1-80Hz)'.

The guideline provides preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. At vibration values below the preferred values, there is a low probability of adverse comment or disturbance to building occupants. Where all feasible and reasonable mitigation measures have been applied and vibration levels are still beyond the maximum level, it is recommended the operator negotiate directly with the affected community.

The guideline defines three vibration types and provides direction for assessing and evaluating the applicable criteria. Table 2.1 of the DEC guideline provides examples of the three vibration types and are summarised as continuous vibration, impulsive vibration and intermittent vibration. The relevant type of vibration for this project is intermittent vibration. Intermittent vibration (as defined in the DEC guideline) is assessed using the vibration dose concept which relates to vibration magnitude and exposure time. Intermittent vibration is representative of activities such as impact hammering, rolling or general excavation work (such as an excavator tracking). Section 2.4 of the guideline provides acceptable values for intermittent vibration in terms of vibration dose values (VDV) which requires the measurement of the overall weighted root mean square (rms) acceleration levels over the frequency range 1 Hz to 80 Hz; the criteria are presented in Table 4-5.

Table 4-5: Acceptable Vibration Dose Values (VDV) for Intermittent Vibration ($m/s^{1.75}$).

Location	Daytime (7am-10pm), VDV		Night time (10pm-7am), VDV	
	Preferred Value	Maximum Value	Preferred Value	Maximum Value
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60
Critical areas (e.g. hospital operating theatres)	0.10	0.20	0.10	0.20

Structural vibration criteria for building damage due to blasting is considered the same as that induced by transient groundborne vibration due to general construction activities. Vibration levels for potential building damage contained in *British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration* are referenced in *British Standard BS 5228-2:2009* and *Australian Standard AS 2187.2:2006*. The vibration levels in BS 7385-2:1993 are adopted as building damage criteria from construction activities and are shown as follows:

TABLE J4.4.2.1

TRANSIENT VIBRATION GUIDE VALUES FOR COSMETIC DAMAGE (BS 7385-2)

Line	Type of building	Peak component particle velocity in frequency range of predominant pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structure. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

NOTES:

1 Values referred to are at the base of the building.

2 For line 2, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) should not be exceeded.

5 Noise Modelling

Noise modelling has been undertaken using the SoundPLAN 8.2 computational noise modelling software package. The use of the SoundPLAN software and referenced modelling methodology is accepted for use in the State of NSW by the EPA for environmental noise modelling purposes. Vipac have undertaken numerous noise modelling and impact assessments previously using SoundPLAN for a range of projects, including infrastructure development and industrial projects.

5.1 Geographical Data

Outline Planning Consultants supplied topographical details of the current pit to Vipac and Table 5-1 below lists the drawings received and used in the noise prediction model and have been included in Appendix D.

Table 5-1 - Drawings Used

Drawing Title	Description	Date
Bolgers Pit Conceptual Design	2m Contours	22/04/2022
Bolgers Pit Conceptual Design Section	RL Cross Sections	22/04/2022
Bolgers Pit Conceptual Design Section	RL Cross Sections	04/05/2022

Terrain data of the surrounding areas extending to the nearest receptors was obtained from Google Earth and was spliced with the data from Table 5-1 to create a complete model of the pit and surrounding area.

5.2 Noise Sources

Details of the plant and equipment that will be used during the operation of the Quarry has been provided by the Quarry operator and is detailed in Table 5-2. Sound Power Levels (SWL) have primarily been taken from measurements conducted by Vipac of the machinery that were in operation at McCormack's Pit in Gunnedah, on the 7th of June 2022. It is Vipac's understanding that this equipment will rotate between quarries within the Gunnedah shire on an as needs basis, and that this equipment will be used at Bolgers Pit.

Table 5-2 - Sound Power Levels of Site Machinery Items (Lw).

Description	Sound Power levels, L_w (dB(A))
Machinery to be used at Quarry	
Terex Finlay I1312 Impact Crusher	114
Terex Finlay 683 Supertrak 12x5 Screen	121
Caterpillar IT6T2H Wheeled Loader	99
Komatsu PC300 Excavator	107[1]
Haul Truck[2]	91

[1]The Komatsu Excavator was not available at the time to conduct noise measurements, and specification information available online does not detail a specific SWL. The Sound Power Level has been derived from a recently approved assessment conducted by EMM for the Gunlake Quarry Continuation Project (report ref: SSD-12469087).

[2]Measurement conducted by Vipac from previous noise surveys of a Kenworth Rigid Tipper driving at low speeds.

All noise sources have been modelled as operating simultaneously for 100% of the time over the 15 minute assessment period.

Predicted octave band results (shown in Appendix B) show no tonality at any receptor. Additionally, no intermittency characteristics were observed when conducting the attended measurements of the Quarry plant and equipment on site. As a result, noise from the Quarry:

- Does not exhibit any prominent (tonal) sound frequency that would have the potential to result in greater annoyance;
- Does not exhibit any notable, intermittent fluctuations (i.e. does not increase rapidly by 5-10dB, depending on time of day, on at least two occasions during a 30 minute period, then maintaining that noise level for at least 60 seconds) that would have the potential to result in greater annoyance; and
- Does not exhibit any impulsive characteristics that would have the potential to result in greater annoyance, with the exception of the excavator.

5.2.1 Noise Source Scenarios & Locations

A total of three scenarios were modelled to represent the different operational stages of the quarry and are detailed below. The excavator only scenario represents the excavator stripping a very small section of land in the north east corner (0.09ha) and transferring material that has been blasted from the top of the quarry footprint to the haul trucks and equipment at the bottom of the pit. The other two scenarios represent the processing of the existing quarry face material using the combination of the loader, crusher, and screen equipment on the bottom of the quarry pit. The middle-west noise sources scenario represents the operation of the equipment to the current existing quarry façade to be extracted and the current worst-case distances to NSR4. The northeast noise sources scenario represents the final stages of the quarry extraction phase, the worst-case distance to the northern receivers (NSRs 1 – 3), and worst-case line of sight to the southwestern receiver (NSR 4). Note that the haul truck is operational in all scenarios.

1. North Excavator Only Scenario
    a. Excavator only operation on top of the existing northern unexcavated quarry section.
2. Middle-West Noise Sources
    a. Screen, loader, and crusher noise sources at the bottom of the pit (321RL) near the existing quarry façade to be excavated (middle section), on the western boundary of the pit.
3. North East Noise Sources
    a. Screen, loader, and crusher noise sources at the bottom of the pit (321RL) near the final quarry façade to be excavated (north eastern section).

Locations of quarry equipment for reach noise source scenarios are shown in Figure 5-1 through to Figure 5-3.

5.2.1.1 North Excavator Only Scenario

Figure 5-1 - North Excavator Only - Noise Sources Location

5.2.1.2 Middle-West Noise Sources

Figure 5-2 – Middle-West Noise Sources - Noise Sources Location

5.2.1.3 North East Noise Sources

Figure 5-3 - North East Noise Sources - Noise Sources Location

5.3 Weather Conditions

Noise propagation over long distances can be significantly affected by the weather conditions, mainly source-to-receiver winds and temperature inversions, as both these conditions can increase noise levels at sensitive receptors.

The CONCAWE methodology can predict to one of six meteorological categories (CAT). To determine which category is modelled, the Pasquill Stability Classes need to be determined for the Quarry. For this assessment the weather conditions, including stability class frequencies at the Quarry have been obtained from The Air Pollution Model (TAPM). TAPM is a three-dimensional prognostic model developed and verified by Commonwealth Scientific and Industrial Research Organisation (CSIRO). TAPM data was generated for the air quality assessment has been used for uniformity. The wind parameters were compared for the Bureau of Meteorology (BOM) and TAPM data and were found to be very similar.

Atmospheric stability refers to the tendency of the atmosphere to resist or enhance the motion of noise. The Pasquill-Gifford Stability Classes define the amount of turbulence in the air, of which the most widely used categories are Classes A-F. The TAPM generated meteorology determined the stability class for each hour of the year. The frequency of each stability class occurrence is shown in Table 5-3. Temperature inversions are defined as Class F. These conditions only occur with clear and calm conditions during the evening and night time periods. During temperature inversions noise emissions from distant sources can be amplified.

Table 5-3: Annual Stability Class Distribution Predicted [TAPM, 2019]

Stability Class	Description	Frequency of Occurrence (%)	Average Wind Speed (m/s)
A	Very unstable low wind, clear skies, hot daytime conditions	2.8	1.3
B	Unstable clear skies, daytime conditions	14.3	2.2
C	Moderately unstable moderate wind, slightly overcast daytime	19	3.7
D	Neutral high winds or cloudy days and nights	29.9	6.0
E	Stable moderate wind, slightly overcast night-time conditions	13	4.1
F	Very stable low winds, clear skies, cold night-time conditions	21	1.9

The long term wind roses recorded daily at the Gunnedah station at 9am and 3pm are provided in Figure 5-4. Winds are shown to be primarily from the southeast at 9am and from the northwest and southeast directions at 3pm. Stronger winds (>40km/hr or >11.1m/s) are extremely rare.

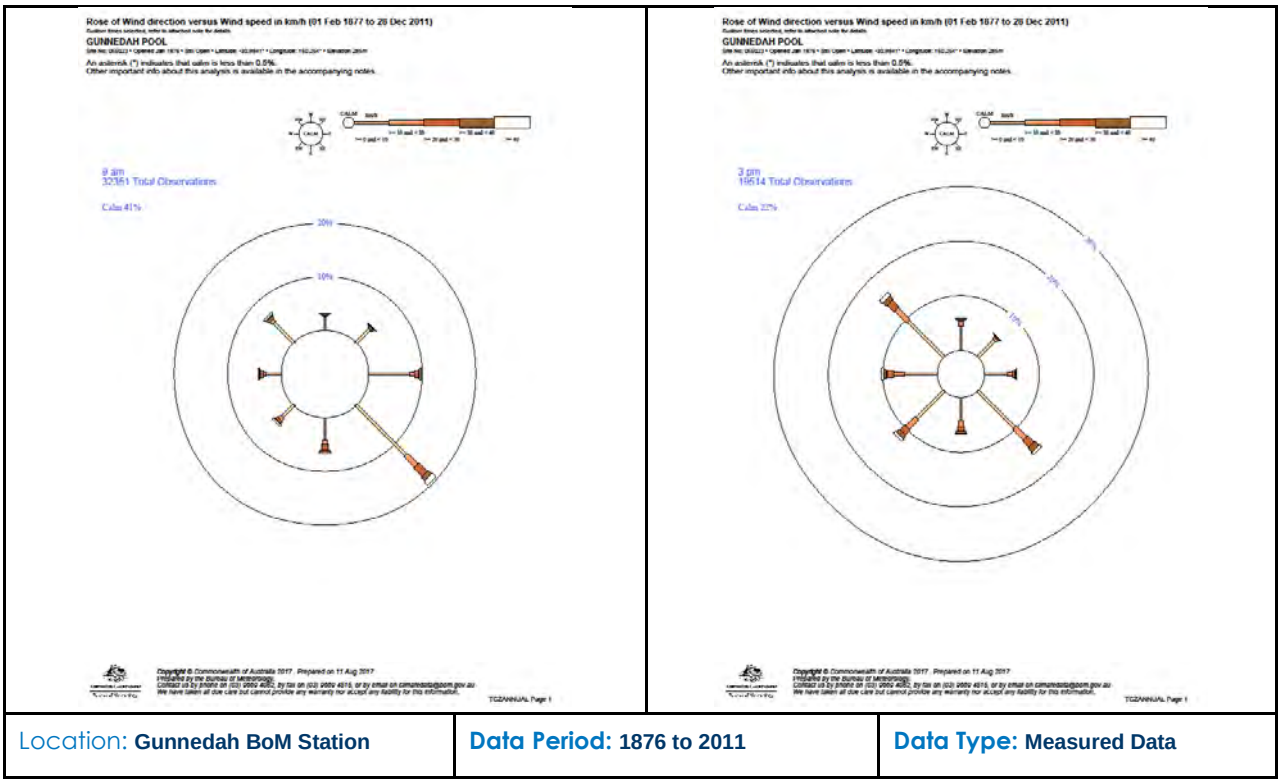
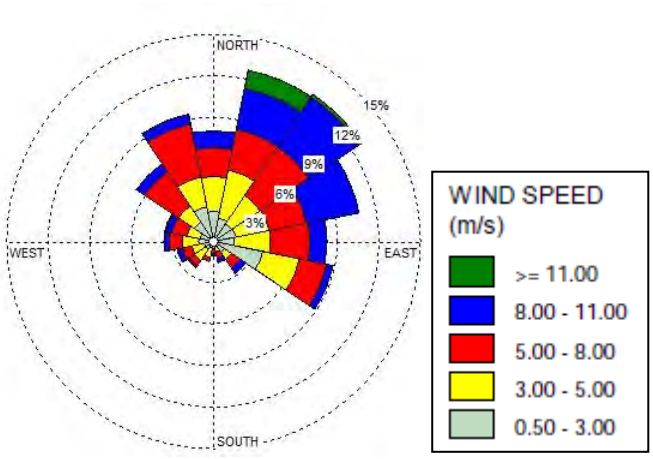
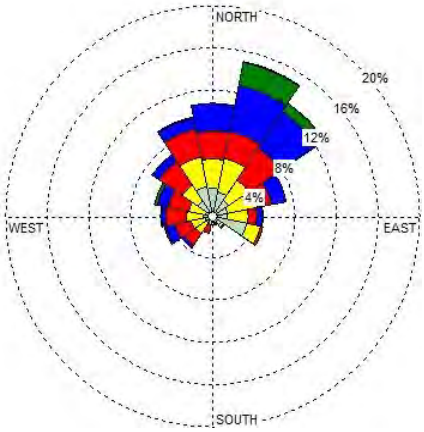


Figure 5-4: Annual Wind Roses for Gunnedah Weather Station (1876 to 2011)

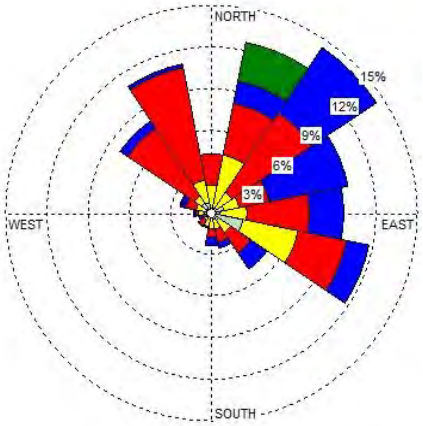
Wind roses generated from previous TAPM-CALMET modelling (Vipac AQ report: 70B-22-0096-TRP-47532-0) have been included and reproduced in Figure 5-5, which shows the dominant wind directions is north-easterly for all seasons.



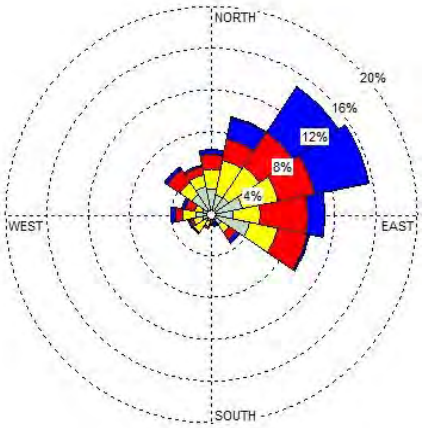
Annual (Calm – 3.2 %)



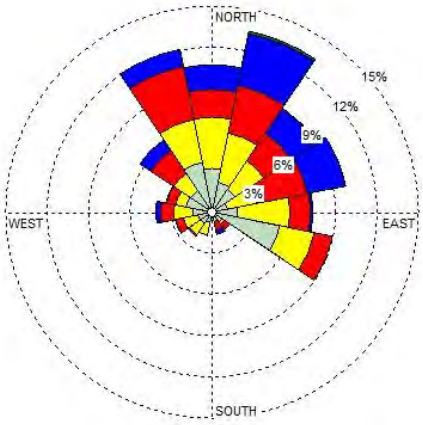
Spring (Calm – 3.3 %)



Summer (Calm – 1.3 %)



Autumn (Calm – 3.7 %)



Winter (Calm – 4.3 %)

Figure 5-5: Site-Specific Wind Roses by Season for the TAPM-CALMET Derived Dataset, 2016

5.3.1 Modelled Weather Scenarios

Taking into consideration the time of day the Quarry currently operates and is proposing to operate, the following weather scenarios have been assessed:

Average/Neutral Climatic Conditions:

- Class D (average/neutral) conditions occur for more than 29.9% of the time. Class D has been modelled for the average climatic condition scenarios for day, with 0m/s wind speeds.

Worst Case Climatic Conditions:

- Worst case climatic conditions during the day period have been assessed as per Class D, but with 2.9m/s wind speeds blowing towards the receivers.

North Easterly Winds Case Climatic Conditions:

- Climatic conditions based on calculated TAPM-CALMET wind directions (as per Figure 5-5) during the day period have been assessed as per Class D, but with 2.9m/s wind speeds blowing from the dominant direction (i.e. NE).

Stability classes A, B, and C are associated with an unstable atmosphere and are generally unfavourable for noise propagation. Condition D is a neutral condition for noise propagation while conditions E and F are unfavourable as stable conditions further facilitate noise propagation.

6 Traffic Noise Impact Assessment

6.1 Traffic Noise Impact Methodology

The Calculation of Road Traffic Noise (CoRTN) method of traffic noise prediction has been used, which is a method approved by the EPA. The traffic data presented in the Traffic Impact Assessment (by StreetWise Road Safety & Traffic Services) demonstrates the expected AADT volumes on the surrounding road networks and have been used in this traffic noise impact assessment.

The assessment considers two worst-case scenarios:

- All (i.e. existing and proposed increase = 40 laden trucks) quarry truck movements on the existing haul routes.
- The existing traffic (current AADT volumes) on the haul routes.

Existing and future traffic volumes are currently below the minimum threshold for CoRTN to predict road traffic noise levels reliably. Section 2, paragraph 30 of CoRTN stipulates that a minimum of 1,000 vehicles in an 18-hour period are required to predict noise levels (inclusive of a low traffic flow correction). Calculations using traffic flow data that is below 1,000 vehicles in an 18-hour period are considered unreliable, and CoRTN recommends noise measurements be conducted when evaluating such cases.

Noise measurements of the surrounding road network have not been undertaken, however, as a proof of concept, the low traffic flow correction that results from calculating noise impacts from a road with a minimum AADT of 1,100 (18-hour volume of 1,034) has been applied to the predicted results for this assessment.

It is noted that this correction is conservative, as a low traffic flow correction decreases as traffic flow numbers increase. For example:

- The low traffic flow correction is applicable to roads with 1000 to 4000 vehicles in an 18-hour period.
- The low traffic flow correction for 1,034 vehicles (mentioned above) equates to a -2dB(A) correction.
- As the traffic flow increases, the correction reduces i.e. 4,000 vehicles equates to no correction required.
- As the existing and future numbers are below 1,000, it is expected that should a correction be applied for these numbers, it would be greater than a -2dB(A) correction, and therefore a -2dB(A) correction applied to these values is considered conservative.

The existing AADT on each highway running through Breeza, Carroll, and Currabubula, with the existing traffic volumes on side roads (haul routes 1 to 3) (as per Section 4.1 of the Streetwise report) has been reproduced below in Table 6-1, the haul routes are shown in Figure 6-1. The nearest sensitive receptors along the haul routes are outlined in Section 6.1.1.

As a conservative assessment, an additional 80 truck movements per day (i.e. laden and unladen) were assumed as a 'worst case'.

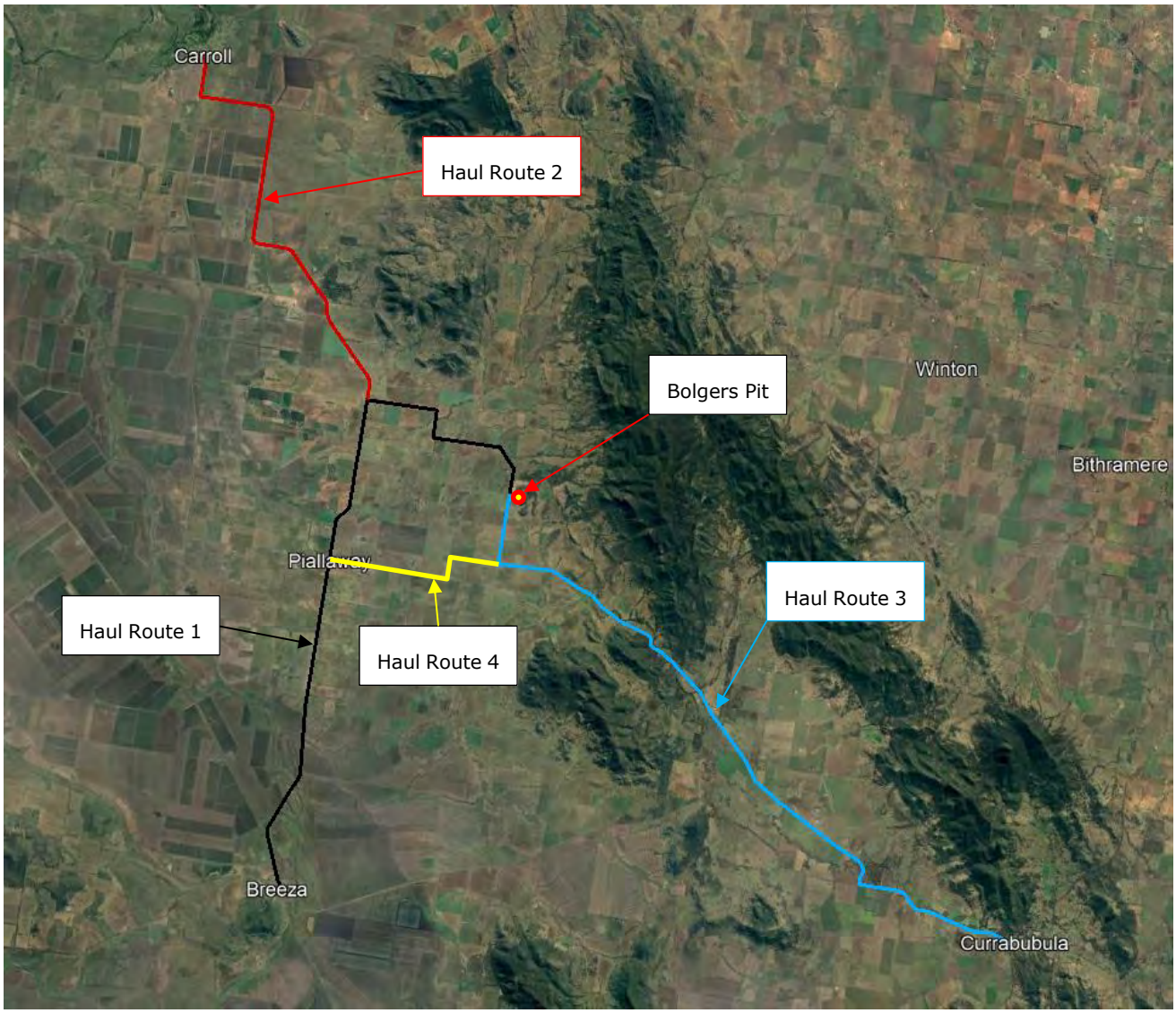


Figure 6-1 - Haul Routes

Table 6-1 – Current Traffic Volumes Alongside Additional Quarry Truck Movements Per Day from the Quarry

Haul Route	Road	Existing AADT on Highway	Existing AADT on Haul Routes	Additional Total Quarry Truck Movements per Day	Future AADT Volumes (Existing + Additional)
1	Access to and from Kamillaroi Hwy at Breeza via Clifton Rd, Hogarth St, and Oakey Creek Rd	1240	149 [1]	80	229
2	Access to and from Oxley Hwy at Carroll via Clifton Rd, Howe St, and Oakey Creek Rd	- [2]	200 [2]		280
3	Access to and from Werris Creek Rd at Currabubula via Oakey Creek Rd and Piallaway Rd	1920	115 [3]		195
4*	Denver Lane	-[4]	200[4]		280

[1] Approximately 12% of all vehicle movements turned in or out of the side road (Hogarth St) from Kamillaroi Hwy.
[2] No manual traffic count at this intersection was completed by StreetWise, however, traffic volumes on the side road (Howe St) were estimated to be very low (less than 20 movements per hour). A conservative 200 expected existing AADT on Haul Route 2 was assumed.
[3] Approximately 6% of all vehicle movements turned in or out of the side road (Piallaway Rd) from Werris Creek Rd.
[4]No manual traffic count at this section was completed by Streetwise, however, traffic volumes assumptions on this road were provided by Streetwise on the 21st of June 2024, which indicated none of the local minor roads in the vicinity of the site would have current volumes exceeding 200 vehicles per day.
*Denver Lane is not proposed as an official haul route for the project but has been included at the request of Gunnedah Shire Council as per their request for additional information on the 8th of May 2024.

6.1.1 NSRs Along Haul Routes

The nearest NSRs to the three haul routes have been illustrated below in Table 6-2.

Table 6-2 - NSRs to the 3 Haul Routes

Haul Routes	NSRs	Aerial Imagery
Haul Route 1	R1	

R2

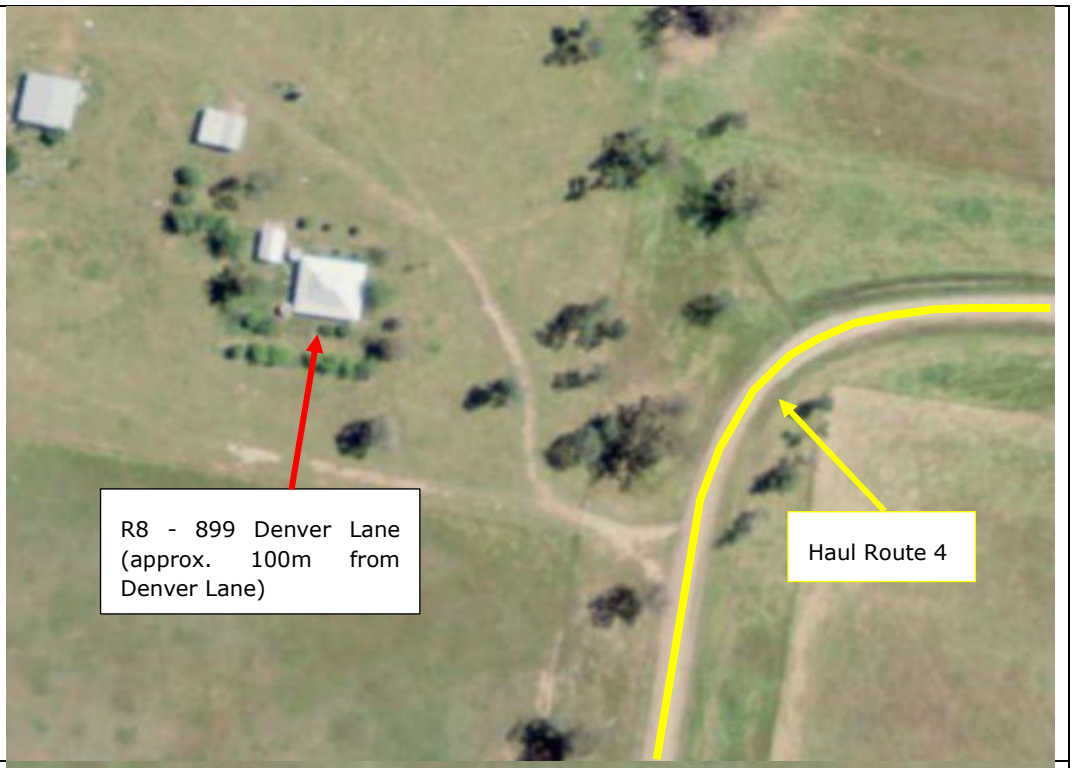
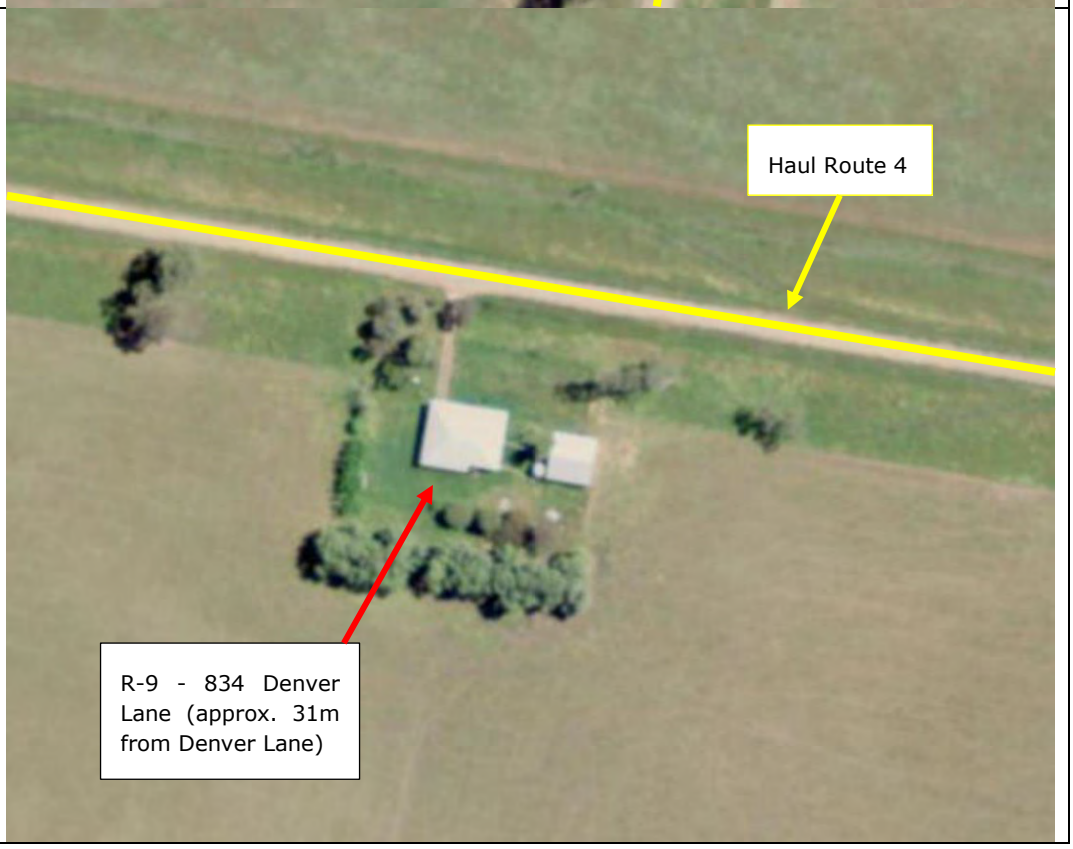

Oakey Creek Rd
Oakey Creek Rd
Oakey Creek Rd
R2 – 'Iventure' (approx. 26m from Oakey Creek Rd)
Haul Route 1

R3


Oakey Creek Rd
Oakey Creek Rd
Haul Route 1
R3 – Residence along Oakey Creek Rd (approx. 46m from Oakey Creek Rd)

Haul Route 2	R4	
	R5	

Haul Route 3	R6	
	R7	

Haul Route 4	R8	
	R9	

6.1.2 Traffic Noise Impact Calculation Parameters

The worst-case scenario of a maximum of 80 additional truck (i.e. laden and unladen) movements has been assessed under four scenarios:

- All trucks using Haul Route 1,
- All trucks using Haul Route 2,
- All trucks using Haul Route 3, and
- All trucks using Haul Route 4.

Assessing these four scenarios where 100% of the truck movements pass by any given sensitive receptor on any haul route (whichever haul routes they take), is considered worst case because the movements in and out of the quarry will likely be split across all four haul routes as the quarry truck movements would be dictated by supply location, effectively dispersing the movements more evenly. This displacement is likely to reduce potential noise impacts on the nearest sensitive receptors, when compared to the worst-case predictions used in this assessment.

Vipac has conducted initial noise calculations for the two worst-case scenarios detailed above. The traffic noise assessment has also considered the following assumptions:

- L_{Aeq} values were calculated from the L_{A10} values predicted by the CoRTN algorithms using the well-validated approximation of $L_{Aeq} = L_{A10} - 3$.
- Previous research in Australia has established a negative correction to the CoRTN predictions of -1.7dB for façade-corrected levels. This correction for Australian conditions has been included in this assessment.
- A low traffic flow correction (mentioned previously) of -2dB(A) to the existing and predicted results.
- A conservative assumption of 94% of the AADT values to occur within the 15-hour daytime period.
- Calculated speed limits of the following:
    - Hogarth St – 40km/hr (assumed lower speed due to close distance to intersection),
    - Oakey Creek Rd – 80km/hr (assumed from Oakey Creek Rd 80km/hr posted speed limit),
    - Clifton Rd – 80km/hr (assumed from Oakey Creek Rd 80km/hr posted speed limit),
    - Howe St – 40km/hr (assumed lower speed due to close distance to intersection),
    - Piallaway St – 80km/hr (assumed from Oakey Creek Rd 80km/hr posted speed limit), and
    - Denver Lane – 80km/hr (assumed from Oakey Creek Rd posted speed limit).
- A heavy vehicle percentage of approximately:
    - 12.3% on Haul Route 1 (as per Traffic Impact Assessment),
    - 11% on Haul Route 2 (as per Traffic Impact Assessment),
    - 6.6% on Haul Route 3 (as per Traffic Impact Assessment), and
    - 20% on Haul Route 4 (conservative assumption).
- Distance attenuation to the nearest sensitive receptors to each road shown in Table 6-2 and below:
    - R1 - approx. 19m from the nearest road edge.
    - R2 - approx. 26m from the nearest road edge.
    - R3 - approx. 46m from the nearest road edge.
    - R4 - approx. 37m from the nearest road edge.
    - R5 – approx. 51m from the nearest road edge.
    - R6 – approx. 20m from the nearest road edge.
    - R7 – approx. 15m from the nearest road edge.
    - R8 – approx. 100m from the nearest road edge.
    - R9 – approx. 31m from the nearest road edge.
- An angle of view of 160 degrees (except for R1, 270 degrees).
- A conservative assumption of 50% soft ground absorption.
- No correction of grade or road surface.
- Sensitive receptors are assumed to have direct, unobstructed line of sight to the roads, with no shielding from intervening structures applicable.
- Receptor heights modelled at 1.8m above ground, 1m from the façade (i.e. façade-corrected).

Potential vibration levels from quarry truck movements are likely to be less than 0.5 mm/s PPV (Peak Particle Velocity) for receptors along the adjacent public roads, which is well below all accepted criteria for structural damage and human comfort from ground borne vibration.

7 Vibration Impact Assessment

7.1 Construction/Operational Vibration (Non-Blasting)

Both continuous/quasi-continuous and intermittent vibration has been considered. Most machinery items are likely to generate some continuous or quasi-continuous vibration during their operation, and some intermittent or transient vibration could be caused by machinery during start-up compaction (and possibly during loading of trucks).

Ground-borne vibration resulting from activities on site are compared against the applicable criteria relating to human comfort and potential structural damage (usually in terms of Peak Particle Velocity, PPV). The recommended limits or guide values (refer Section 4.3) for transient vibration to ensure minimal risk of cosmetic damage to residential buildings (and community buildings) are in the range 15 to 20 mm/s PPV (depending on the frequency), with higher limits of 50 mms/ for industrial buildings. The stipulated human comfort criterion (lower limit) for vibration is typically 1 mm/s PPV (to an upper limit of 2 mm/s).

The ground vibration predictions for machinery were based on previously measured data by Vipac or sourced data for construction machinery from various vibration databases and literature references (Ref: *Ground Vibration Engineering* (Srbulov, 2010), *Construction Vibrations* (Dowding, 2000), CALTRANS *Construction Vibration Manual* (US CALTRANS, 2013), US FTA *Transit Noise & Vibration Manual* (2018)).

The calculation formulae used for ground vibration predictions (in terms of Peak Particle Velocity, V_{PPV} in mm/s) for vibratory compaction rollers are given as follows (Ref: BS 5228-2; Hiller & Crabb, 2000):

Table 7-1 :Ground Vibration Prediction Formulae

Normal compaction passes:	$V_{PPV} = ks * n^{0.5} * (A/(x+w))^{1.5}$	[mm/s]	ks	75	50% exceedance probability
			ks	143	33% exceedance probability
			ks	276	5% exceedance probability
Transient startup/shutdown:	$V_{PPV} = kt * n^{0.5} * (A^{1.5}/(x+w)^{1.3})$	[mm/s]	kt	65	50% exceedance probability
			kt	106	33% exceedance probability
			kt	177	5% exceedance probability
	x	distance along ground from roller to receiver (m)			
	n	number of vibrating drums in roller			
	A	nominal amplitude of vibrating roller (mm)			
	w	width of vibrating drum (m)			

** Note: The exceedance probability represents the level of conservatism in the predictions, where a 5% predicted level would be the most conservative or worst case situation (higher prediction) to represent the maximum level predicted for 95% of possible cases and therefore only 5% of cases likely to exceed the predicted level.*

A conservative prediction of the potential ground-borne vibration impacts associated with the proposed equipment on site has been made (primarily quasi-continuous vibration). Ground vibration levels (in mm/s PPV) from other construction machinery items (e.g. excavator, crusher) are typically in the range of 0.1 to 1 mm/s at distances of 25 to 50 m. Truck traffic (over rough/irregular road surfaces) will typically generate ground vibration levels of 0.1 to 0.5 mm/s (or less) at distances of 25 to 50 m. Considering the nearest sensitive receptors are at far greater distances (>400m) away, predicted vibration levels would meet the human comfort criteria and are well below structural damage criteria for all nearby buildings.

7.2 Blasting Vibration and Airblast Overpressure

Ground vibration and airblast overpressure are two common environmental effects of blasting that can cause human discomfort and damage to buildings and other structures. The quarry is proposing to operate between 7am and 6pm Monday to Friday and 7am and 1pm on Saturdays, however blasting is only proposed between 9am and 3pm Monday to Friday.

Due to the discontinuous nature of the geology encountered during the soil study (*Banks, Robert G. 2001, Soil Landscapes of the Tamworth 1:100 000 Sheet, Department of Land and Water Conservation, Sydney*), it is difficult to accurately model potential blast impacts. The soil study states the following:

SOILS **Variation and Distribution**

Soils are extremely diverse and variable over tens of metres. Soil type and position in landscape cannot be predicted except on a site-by-site basis due to the high variability of parent materials. Due to high diversity and unpredictability of soil type, no soil material information or distribution information has been provided for this landscape. Development proposals in this landscape need to consider special purpose site-specific investigations of soil properties.

Soil types found in within this landscape included Black, Grey, Red and Brown Vertosols; Red, Brown and Black Dermosols; Red, Brown and Yellow Kurosols; Red, Brown and Black Chromosols; sandy Tenosols, Rudosols, Calcarosols, Red Ferrosols and Red, Yellow and Brown Sodosols.

Since this soil landscape is too variable and complex to make statements about soil patterns, there is no soil distribution diagram for this landscape.

Figure 7-1 - Excerpt from Soil Study

Considering the extreme diversity of soil types that vary frequently throughout the landscape, it is considered more appropriate to rely on previous blast monitoring results conducted for the quarry in 2019 and 2020.

As shown in Table 7-2 below, vibration and overpressure monitoring has been conducted at the two nearest sensitive receptors (NSR5 'Mimbil' to the south and NSR3 'Wyalla' to the north) of blasting operations with a Maximum Instantaneous Charge (MIC) of between 105kg to 200kg.

Table 7-2 - Previous Measured Blasting Results at Bolgers Pit

Criteria	**Blasting 30th Jan 2019** **MIC 200kg**	**Blasting 27th August 2019** **MIC 105kg**	**Blast 23rd July 2020** **MIC 197kg**
Airblast Overpressure 115dB Linear Peak (Maximum of 120dB Linear Peak)	Not triggered (i.e. below applicable criteria)		112.7dB Linear Peak measured at NSR 3 Not triggered at NSR 5
Ground Vibration 5mm/second (Maximum 10mm/second)			1.05mm/s measured at NSR 3 Not triggered at NSR 5.

It is expected that the reason for the for the low/nil readings measured above may be as a result of the above mentioned complex geology and the discontinuous nature of rock types over a very small area encountered throughout the landscape.

As a result, it will be recommended for all future blasting to remain at or below an MIC of 200kg and for monitoring to occur with all future blasting operations to ensure compliance is achieved at the closest receptors.

8 Results

8.1 Predicted Operational Quarry Noise Levels

Noise prediction modelling has been carried out to assess the potential impact associated with the Quarry operations at the nearest noise sensitive receptors for the proposed operational scenario.

The predicted noise levels representative of each of the operational scenarios for neutral conditions, worst-case conditions, and north easterly winds case weather conditions during the day period are presented in Table 8-1. These results have been reproduced graphically as Noise Contour Maps and are shown in Appendix A.

Table 8-1 – Predicted Noise Levels: Daytime (dB $L_{Aeq\ 15min}$)

Rec #	Criteria	*Excavator Only**			**Middle-West Noise Sources**			**Northeast Noise Sources**		
		Neutral	*Worst Case*	*North Easterly Winds Case*	**Neutral**	**Worst Case**	**North Easterly Winds Case**	**Neutral**	**Worst Case**	**North Easterly Winds Case**
NSR1	40	*24.5*	*29.4*	*17.5*	17.7	22.5	12.1	18.3	23.1	12.3
NSR2		*33.5*	*37.7*	*28.6*	26.7	30.7	22.4	27.4	31.4	23.3
NSR3		*33.9*	*38.1*	*27.7*	26.7	30.7	21.5	28.2	32.1	23.0
NSR4		*30.2*	*34.7*	*34.7*	33.6	37.8	37.7	32	36.4	36.4
*NSR5***		*31.4*	*35.8*	*35.8*	*47.9*	*51.9*	*51.9*	*45.6*	*49.8*	*49.7*

**The Excavator Only scenario is a very small aspect of the operations at the quarry, expected to take half a day to finalise the stripping of the north east corner.*

***NSR5 is owned by the Quarry land owner and is not considered as a sensitive receptor for the purposes of this assessment.*

Noise levels are predicted to comply at all receptors in all scenarios during all modelled weather conditions.

8.2 Operational Noise Results Discussion

With information provided by Outline Planning Consultants Pty Ltd staff (via email correspondence on Thursday 2nd February 2023), the quarry was confirmed to operate on a campaign basis for short periods of time during any one year. With the total extraction rate of 40,000 tonnes per annum, 32 tonne load carrying trucks (with a maximum of 40 trucks per day), the quarry would supply material for a total of just over 6 (5 day) weeks in any one year, with the quarry lying dormant for the remainder of that year.

Based on the predicted results above for the operational scenarios located in the Middle-West and Northeast, noise levels are predicted to comply without the need for additional acoustic attenuation measures.

8.3 Haul Route Traffic Noise Assessment Results

Calculations were conducted to assess the potential noise impacts associated with the additional quarry truck movements on the proposed haul routes.

Road traffic noise monitoring was not conducted as part of this traffic noise assessment, therefore validation of a traffic noise model used to predict noise levels at the nearest receivers cannot be undertaken, however, it is anticipated that existing traffic noise levels for all other receptors are below the current criteria for both local roads and principal haulage routes.

Table 8-2 below presents the traffic noise predictions for existing traffic, alongside future predicted traffic volumes at the nearest residential receptors.

Note that because noise levels of the existing traffic are unknown, the results are intended to provide a conservative indication based on a worst-case scenario of the sole use of heavy vehicles travelling to and from the site.

Table 8-2 – Cumulative Indicative Traffic Noise Impact Predicted Results

Noise Levels, $L_{Aeq,\ 15\ hour}$ dB(A)– façade corrected					
Receptor	**Predicted Existing Traffic**	**Predicted Future Traffic**	**Criteria**	**Predicted Compliance?**	*Maximum Difference* (Existing v Future) ≤2dB(A)*
R1	44.3	46.9	60	✓	*2.6*
R2	44.5	46.9		✓	*2.4*
R3	42.7	43.4		✓	*0.7*
R4	39.4	41.9		✓	*2.5*
R5	42.1	43.5		✓	*1.4*
R6	42.5	45.5		✓	*3*
R7	43.9	46.8		✓	*2.9*
R8	39.8	41.2		✓	*1.4*
R9	45.7	47.1		✓	*1.4*

*Only applicable for receptors where it is anticipated existing traffic noise levels already exceed the criteria.

8.4 Haul Route Traffic Noise Results Discussion

As stated in Section 3.4 of the Road Noise Policy, with regard to existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use development, any increase in total traffic noise level should be limited to 2dB above that of the corresponding existing noise level at any residential property. Considering the predicted existing traffic noise levels for each of the closest receptors on each road is below the criteria, this assessment is not applicable, although the increase has been included for transparency.

It can be seen in Table 8-2 that existing and future traffic noise levels at existing residential receptors are predicted to comply with the criteria without the need for acoustic mitigation.

Given the increase in noise levels between existing and future traffic flow are also well below the relative increase criteria detailed in Table 4-4 (existing traffic + 12dB), the increased traffic from the proposed development is predicted to comply with the relevant road traffic noise criteria.

Therefore, traffic noise associated with the additional quarry truck movements on the proposed haul routes associated with the quarry are predicted to comply with the criteria without the need for acoustic mitigation measures.

9 Mitigation Recommendations

Noise levels for the proposed operational scenarios have been predicted to comply with the criteria outlined in Section 4.1.4 in neutral, worst case, and north easterly winds case weather conditions for most receivers.

Predicted noise levels from the traffic noise impact assessment complied with the criteria outlined in Section 4.2, therefore, no noise mitigations are required for haul route noise emissions.

Blasting impacts are predicted to comply with the inclusion of the below recommendations.

9.1 Vibration – Blasting

As stated in Section 7.2, accurate modelling of future blasting cannot be undertaken given the complexity of the surrounding soil landscape. As previous monitored blasting at the site has measured compliance with MIC quantities of 200kg and below, the following is recommended:

- All future blasting to remain at or below an MIC of 200kg and for monitoring to occur with all future blasting operations to ensure compliance is achieved at the closest receptors.
- Should larger explosive quantities be required in the future, a detailed assessment may be required accompanied by further blast monitoring.

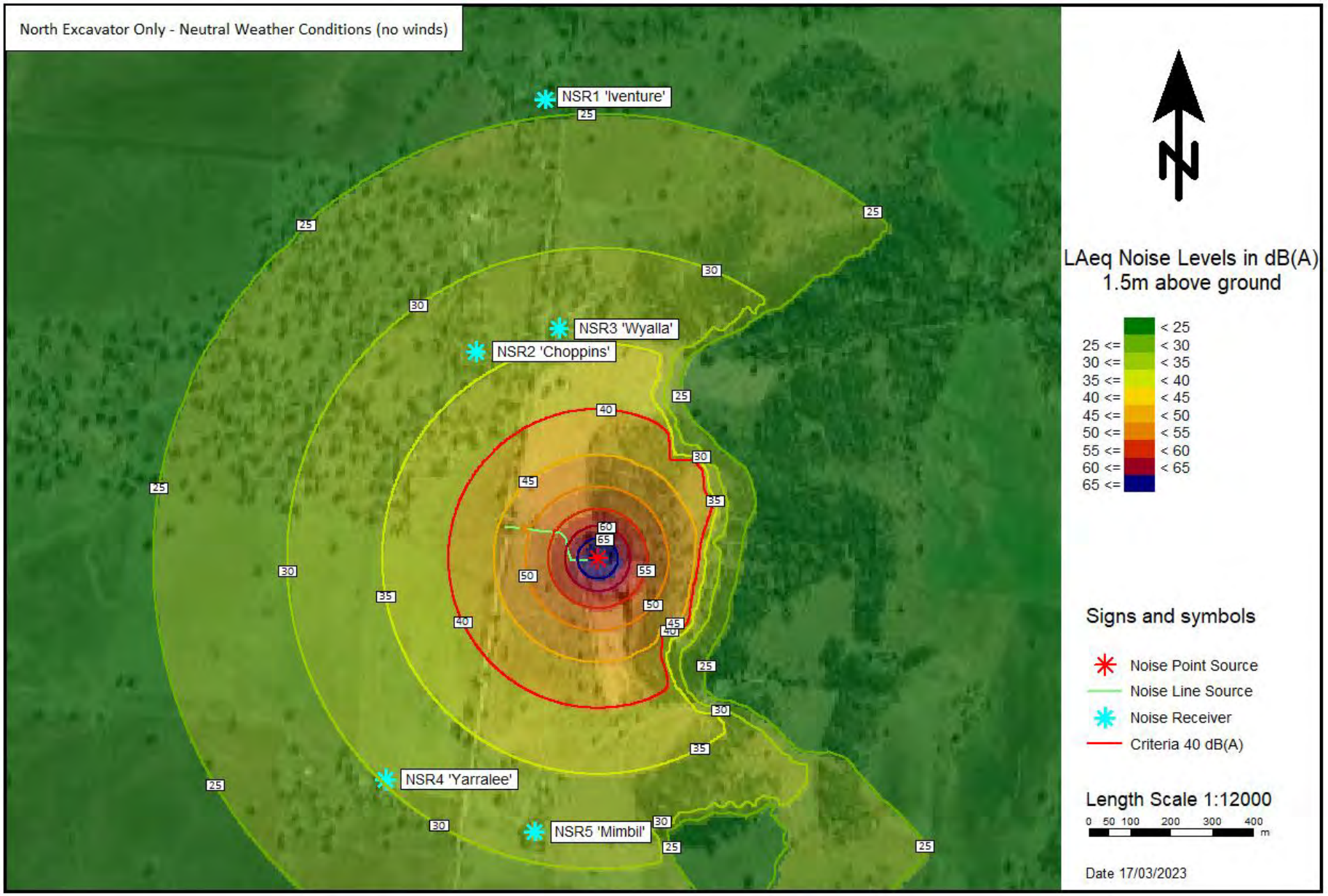
10 Conclusion

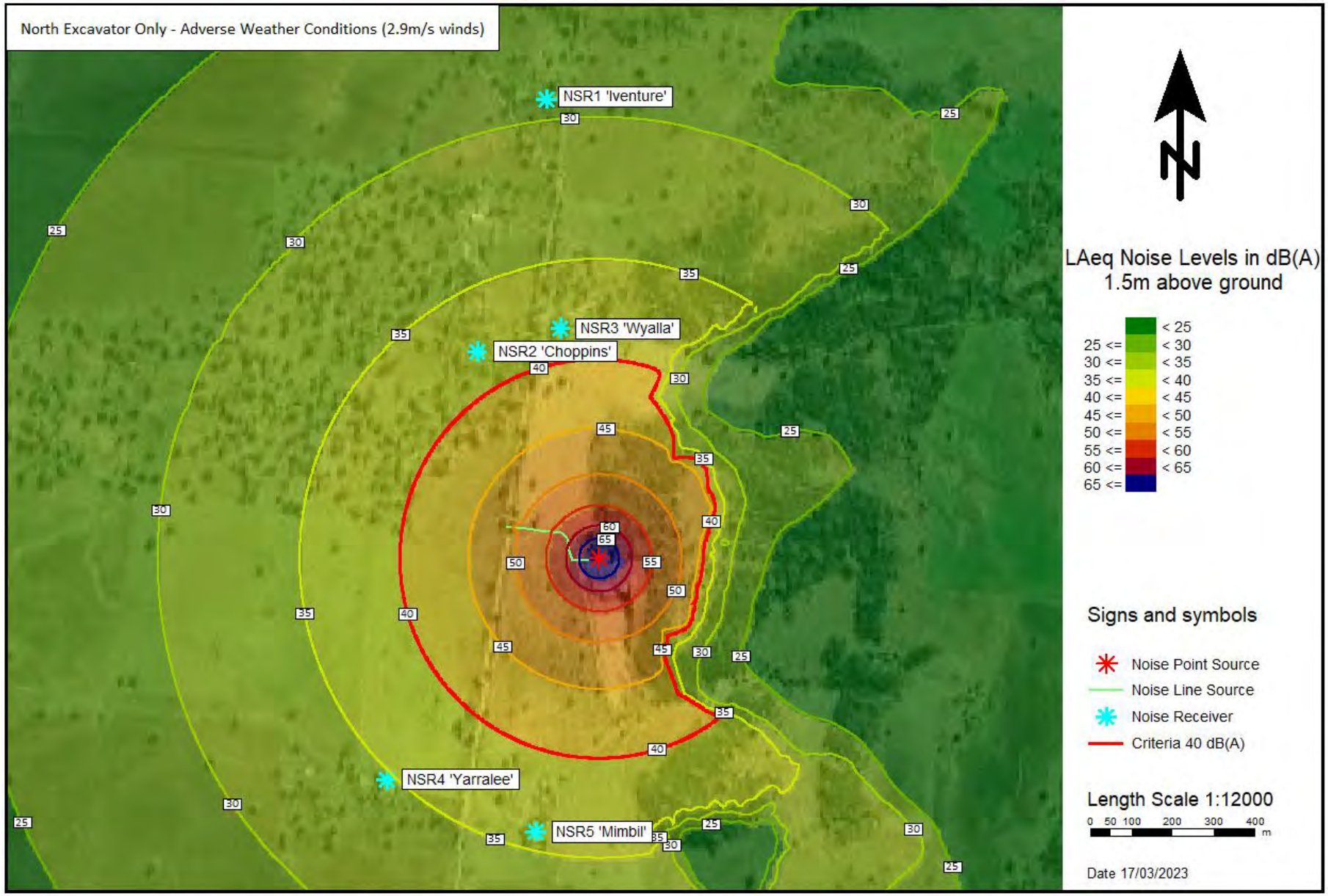
A noise and vibration impact assessment has been carried out in support a to support a development consent for the lateral expansion of an active quarry at No. 809 Oakey Creek Road, Piallaway NSW 2342, known as 'Bolgers Pit'. The Proponent wishes to regularise the use of this quarry and to laterally expand the active quarry pit through the development approval process. The project site has an area of 2.71ha, which includes land proposed for lateral expansion of the quarry.

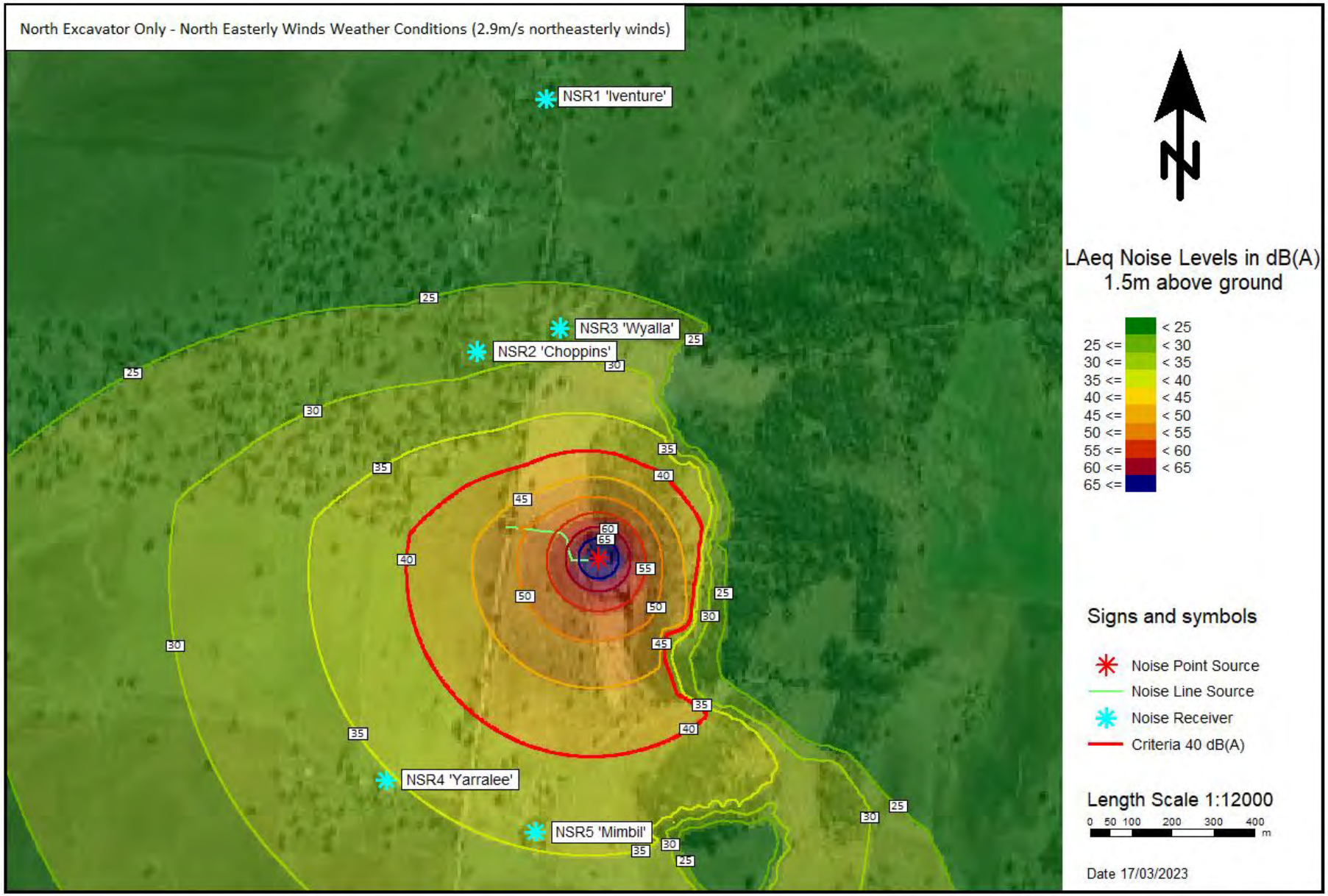
Future noise levels were predicted using SoundPLAN modelling software for the proposed scenarios where crushing and ancillary equipment would operate during existing hours of operation during the day periods.

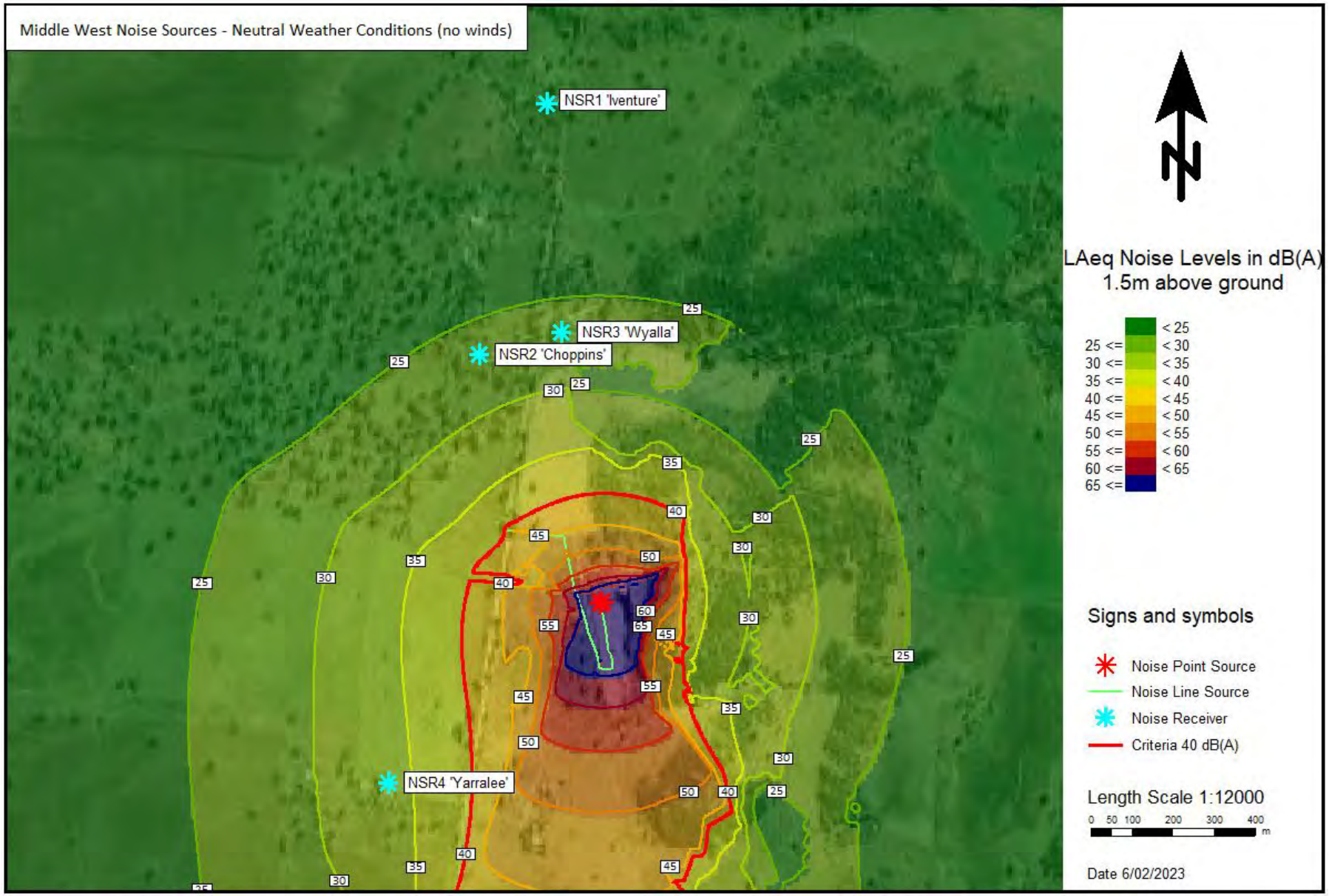
Mitigation measures have been recommended within this report and it is expected that noise and vibration emissions from the Quarry during operation can be adequately managed at the nearest noise sensitive receptors.

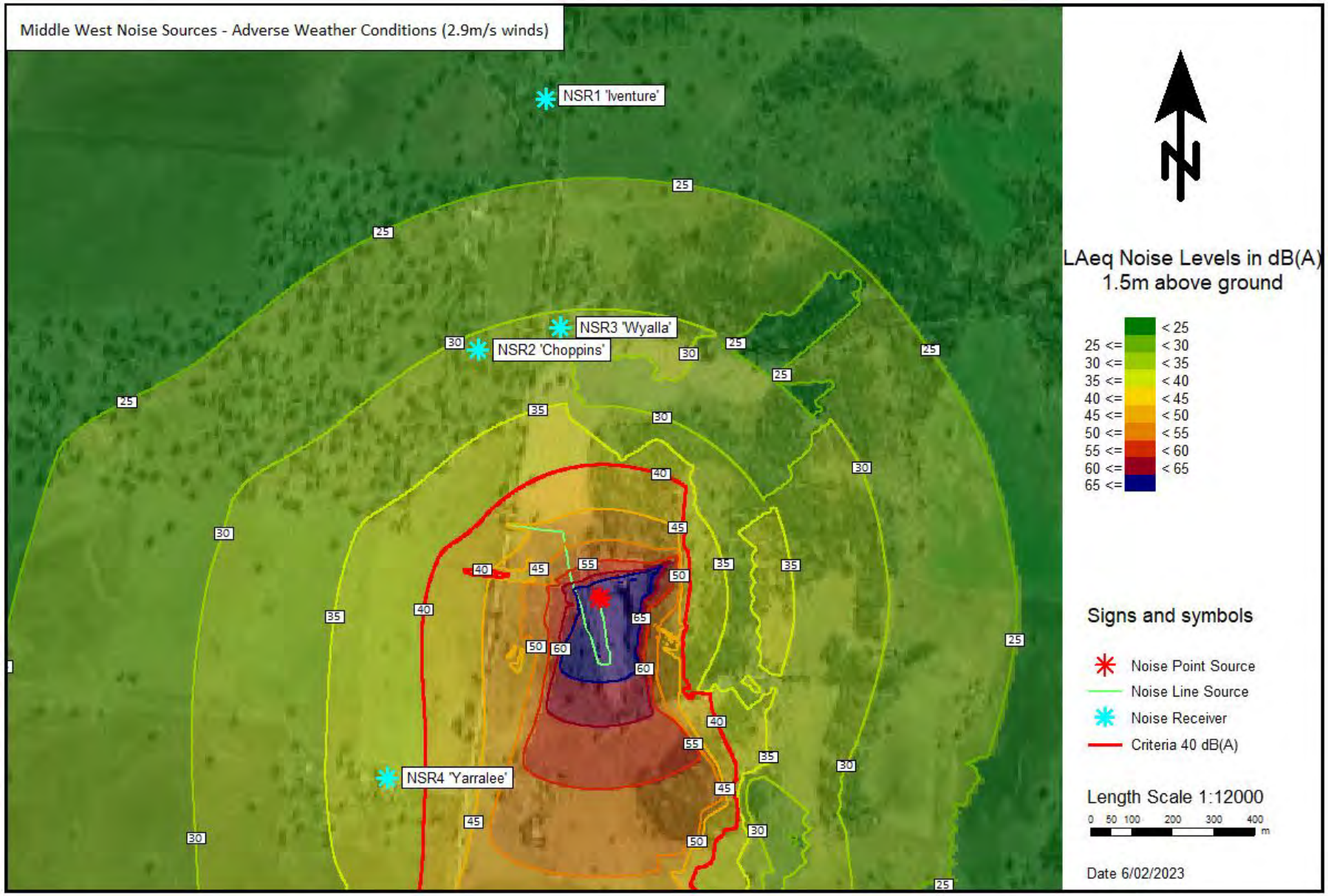
Appendix A Noise Contours

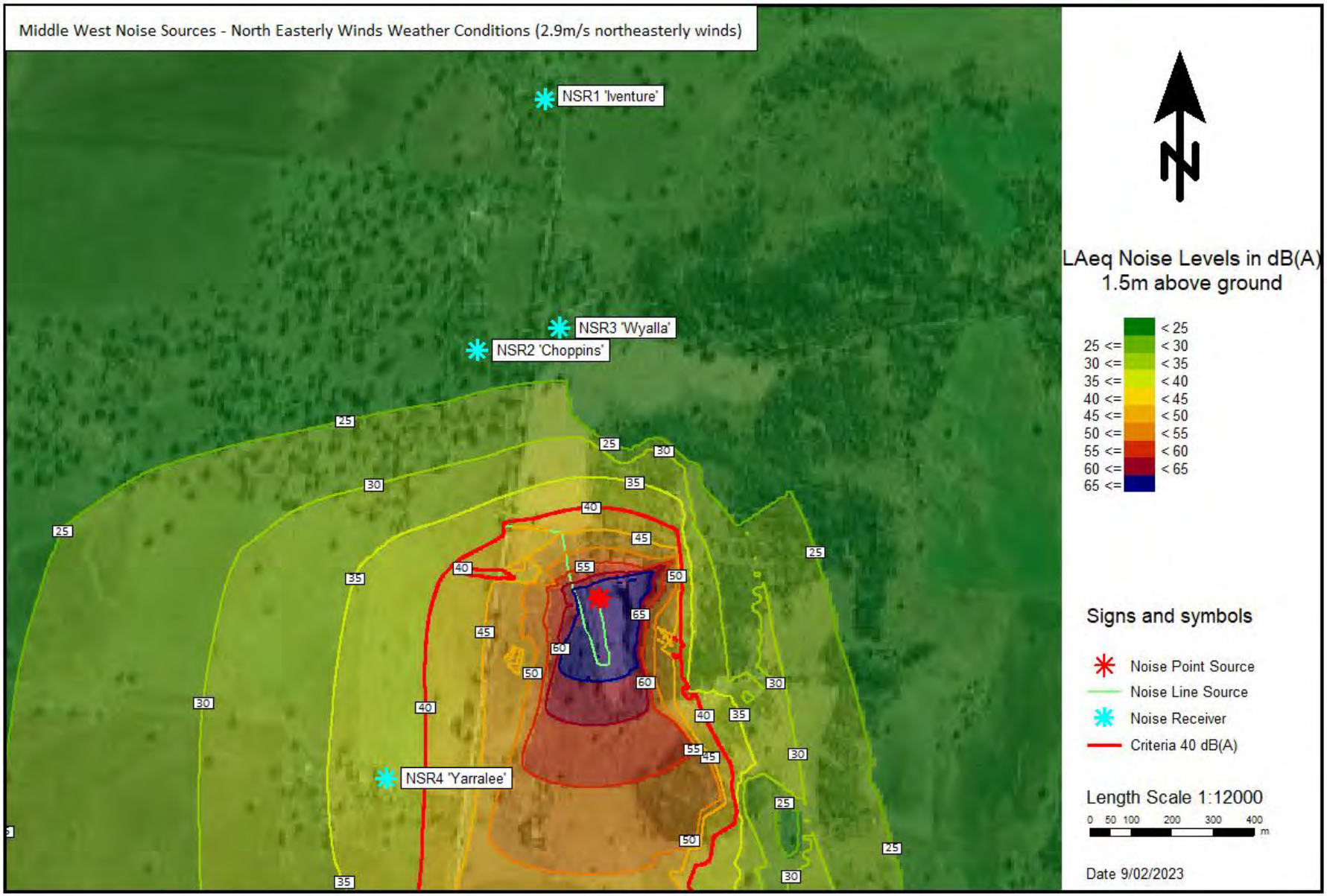

North Excavator Only - Neutral Weather Conditions (no winds)
NSR1 'Iventure'
NSR2 'Choppins'
NSR3 'Wyalla'
NSR4 'Yarralee'
NSR5 'Mimbil'
LAeq Noise Levels in dB(A)
1.5m above ground
< 25
25 <= < 30
30 <= < 35
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 17/03/2023

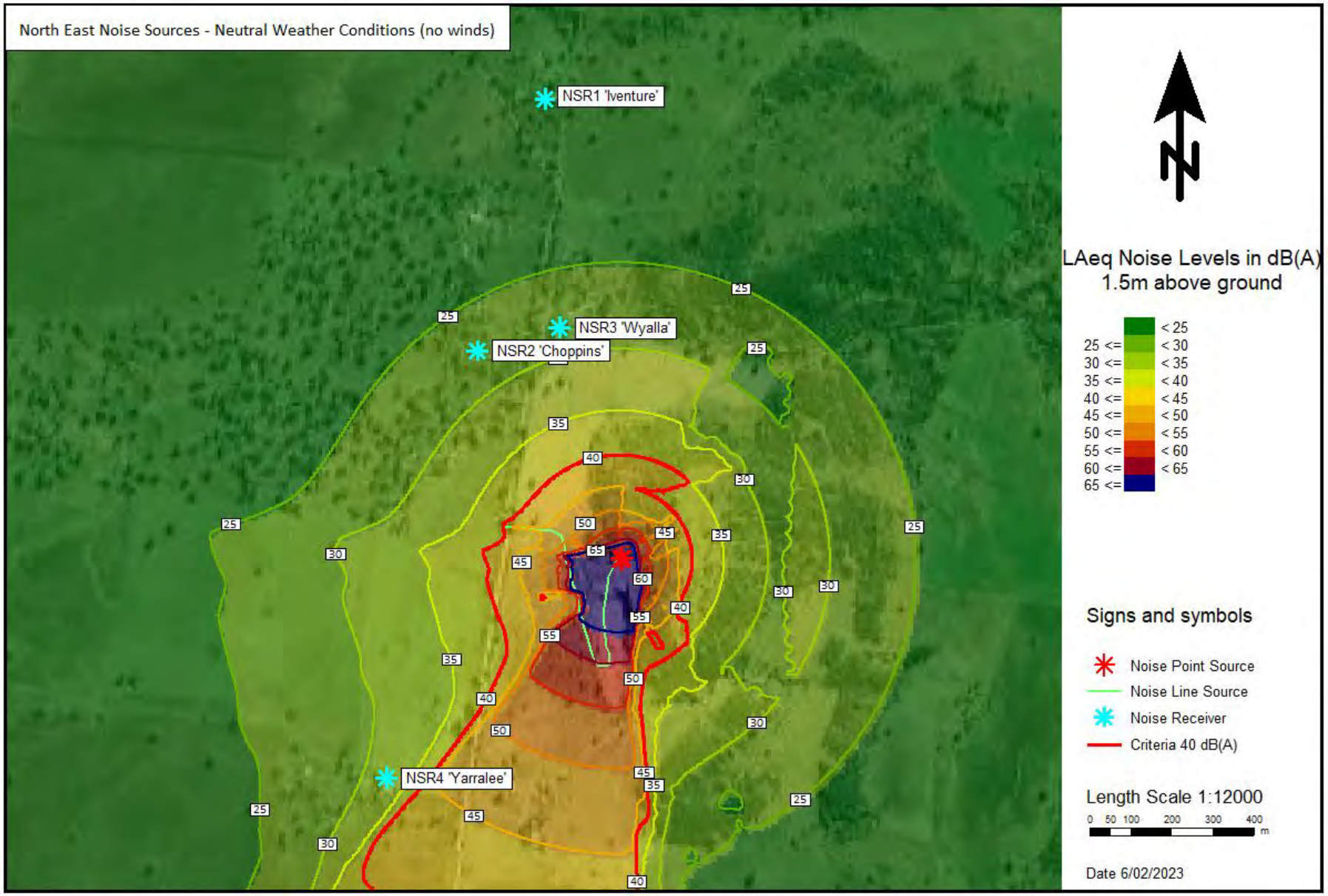

North Excavator Only - Adverse Weather Conditions (2.9m/s winds)
NSR1 'Iventure'
NSR2 'Choppins'
NSR3 'Wyalla'
NSR4 'Yarralee'
NSR5 'Mimbil'
LAeq Noise Levels in dB(A)
1.5m above ground
25 <= < 25
30 <= < 30
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 17/03/2023

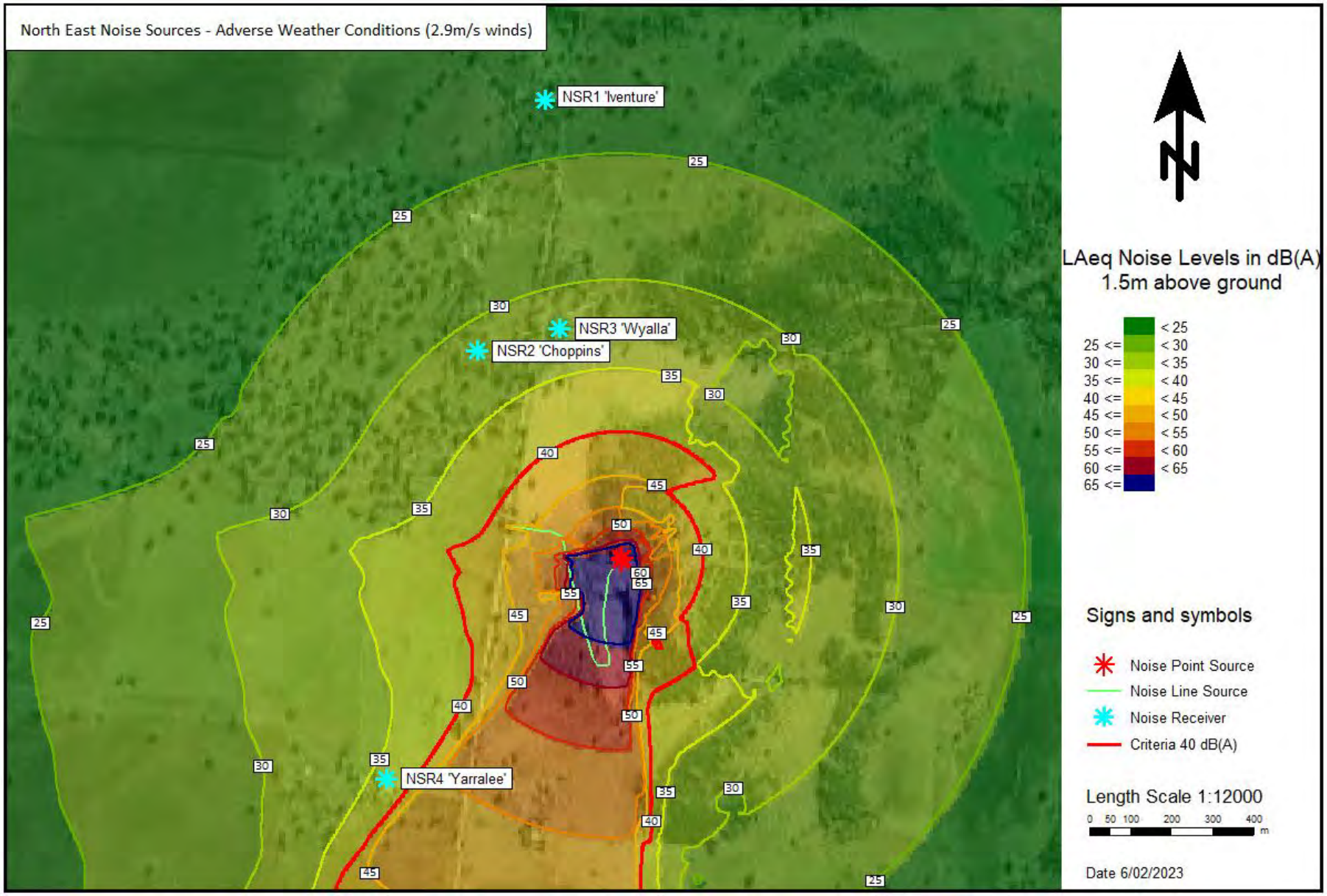

North Excavator Only - North Easterly Winds Weather Conditions (2.9m/s northeasterly winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
NSR5 'Mimbil'
LAeq Noise Levels in dB(A)
1.5m above ground
25 <= < 25
30 <= < 30
35 <= < 35
40 <= < 40
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 17/03/2023

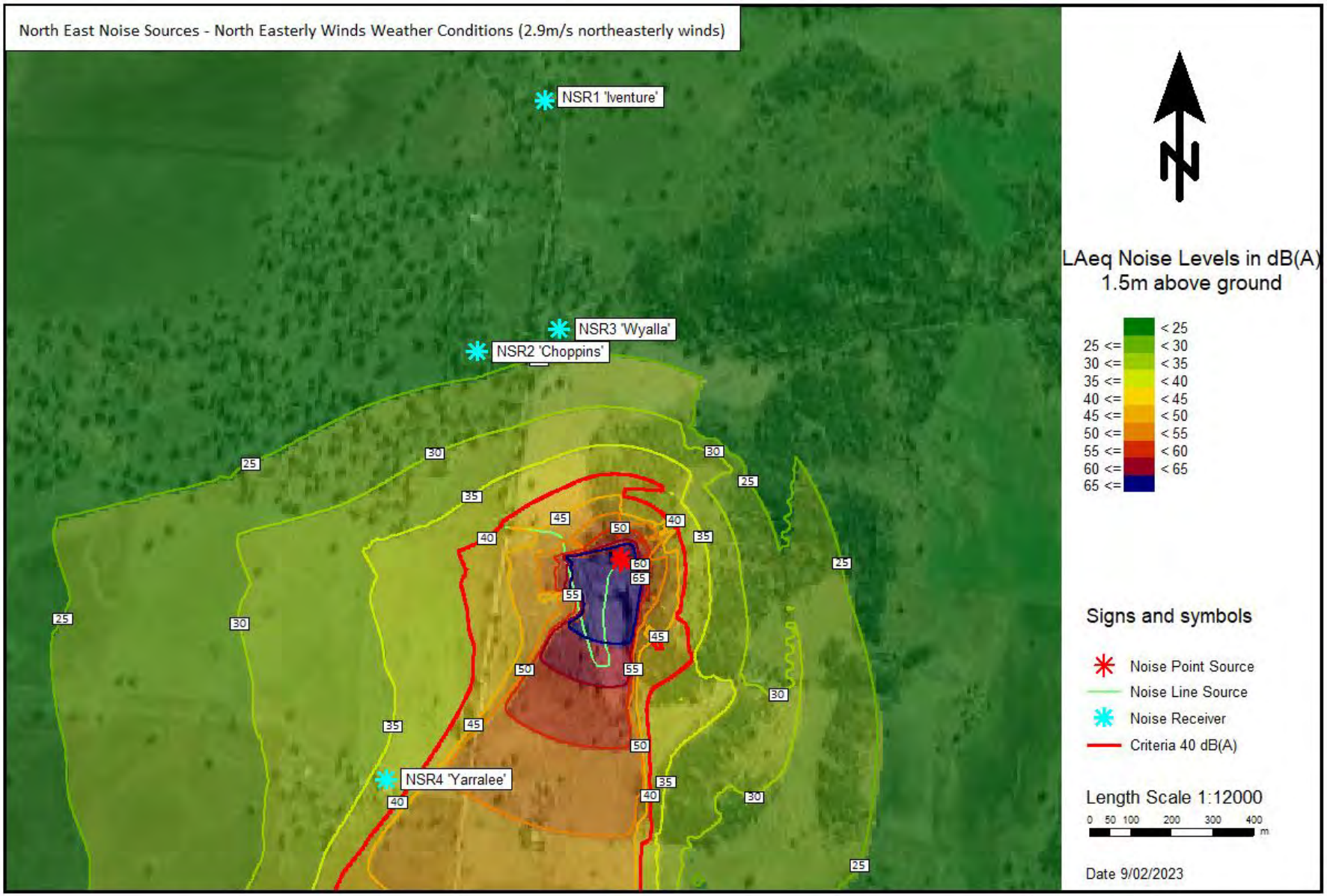

Middle West Noise Sources - Neutral Weather Conditions (no winds)
NSR1 'Iventure'
NSR2 'Choppins'
NSR3 'Wyalla'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
< 25
25 <= < 30
30 <= < 35
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 6/02/2023


Middle West Noise Sources - Adverse Weather Conditions (2.9m/s winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
< 25
25 <= < 30
30 <= < 35
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 6/02/2023


Middle West Noise Sources - North Easterly Winds Weather Conditions (2.9m/s northeasterly winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
25 <= < 25
30 <= < 30
35 <= < 35
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <= < 65
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 9/02/2023


North East Noise Sources - Neutral Weather Conditions (no winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
< 25
25 <= < 30
30 <= < 35
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 6/02/2023


North East Noise Sources - Adverse Weather Conditions (2.9m/s winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
< 25
25 <= < 30
30 <= < 35
35 <= < 40
40 <= < 45
45 <= < 50
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 6/02/2023


North East Noise Sources - North Easterly Winds Weather Conditions (2.9m/s northeasterly winds)
NSR1 'Iventure'
NSR3 'Wyalla'
NSR2 'Choppins'
NSR4 'Yarralee'
LAeq Noise Levels in dB(A)
1.5m above ground
25 <= < 25
30 <= < 30
35 <= < 35
40 <= < 40
45 <= < 45
50 <= < 55
55 <= < 60
60 <= < 65
65 <=
Signs and symbols
Noise Point Source
Noise Line Source
Noise Receiver
Criteria 40 dB(A)
Length Scale 1:12000
0 50 100 200 300 400 m
Date 9/02/2023

Appendix B 1/3 Octave Results

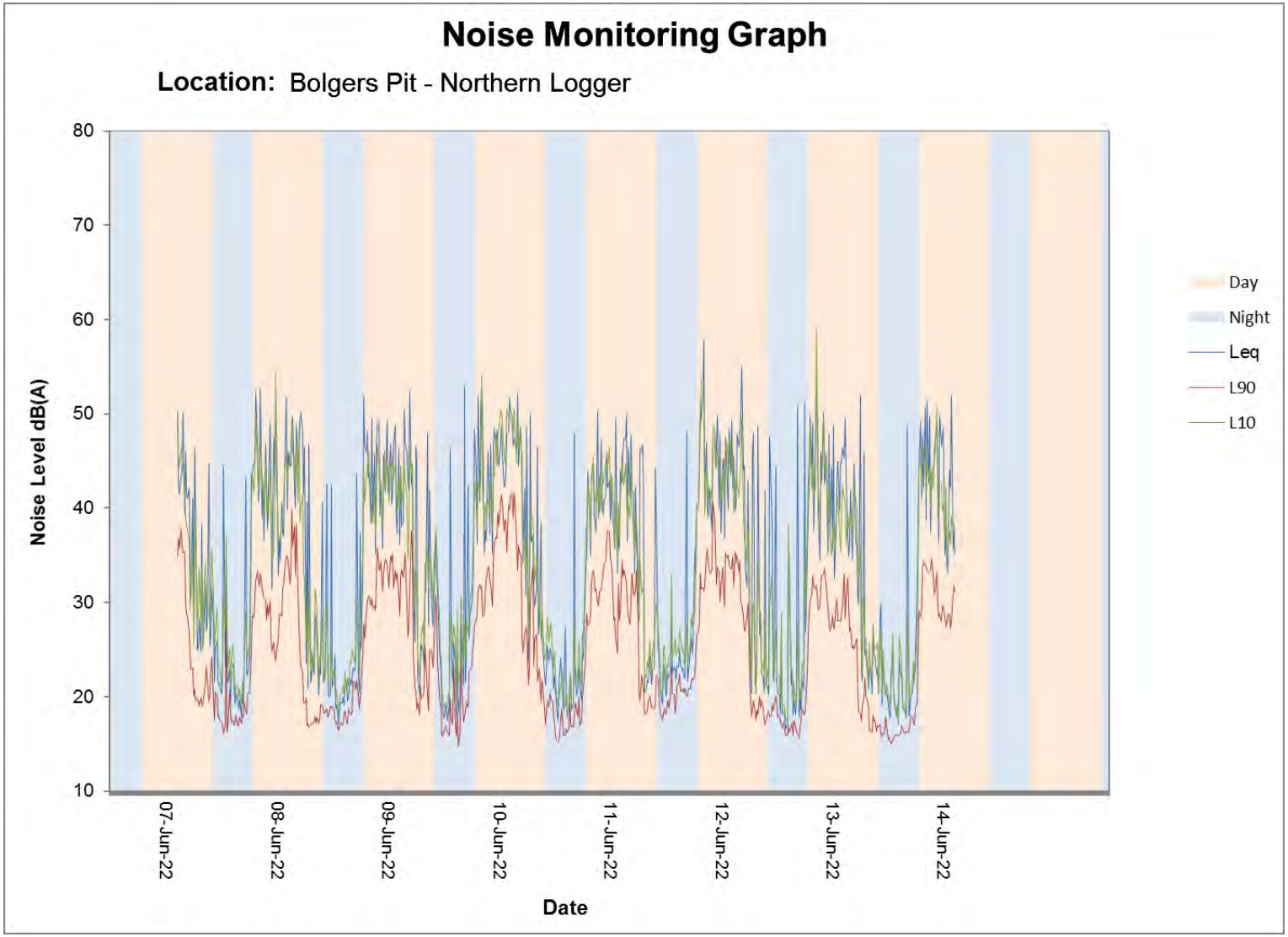
Bolgers Pit
Assessed receiver spectra in dB(A) - Quarry Operations North East Noise Sources Adverse Weather **7**

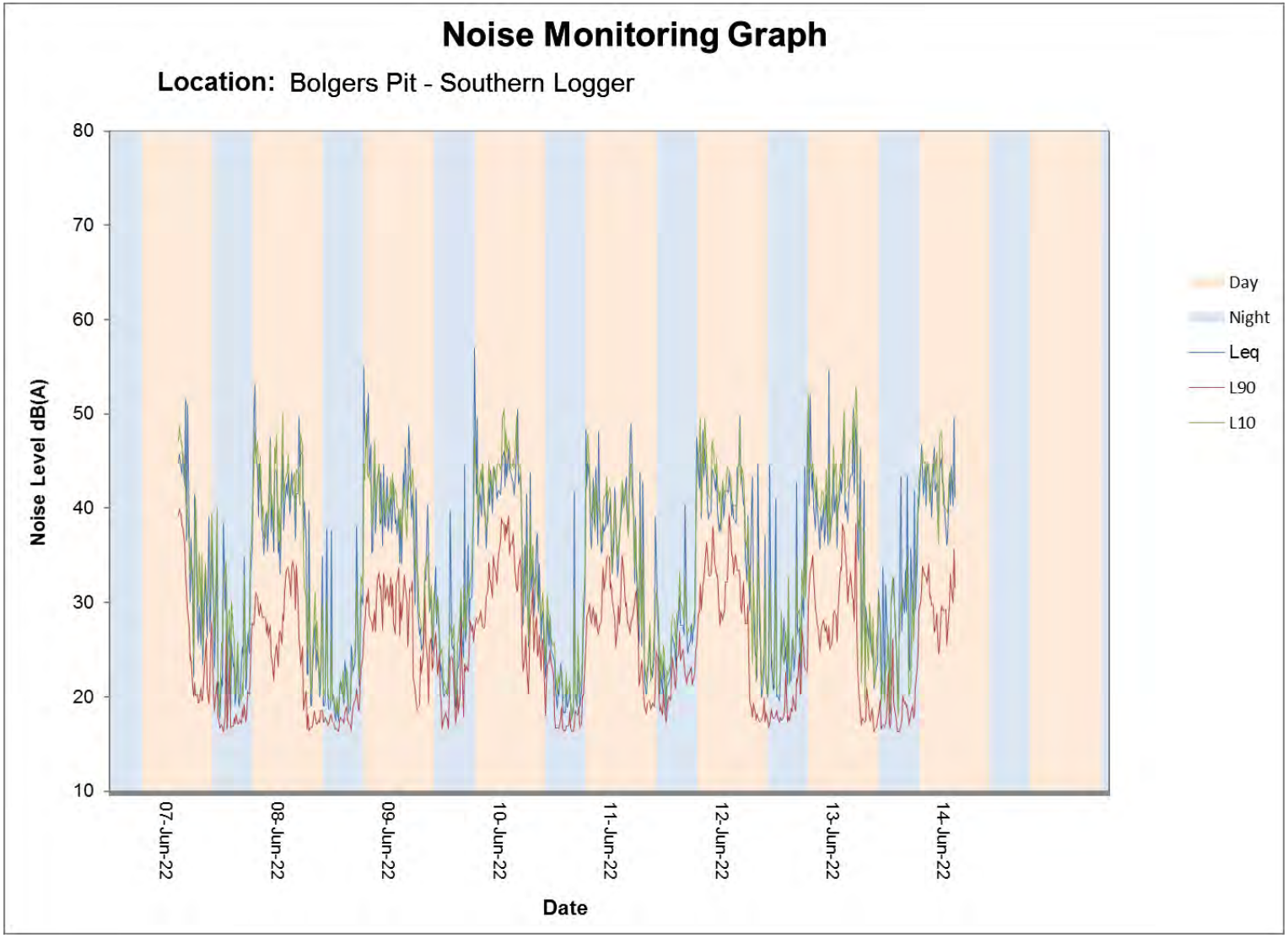
50Hz dB(A)	63Hz dB(A)	80Hz dB(A)	100Hz dB(A)	125Hz dB(A)	160Hz dB(A)	200Hz dB(A)	250Hz dB(A)	315Hz dB(A)	400Hz dB(A)	500Hz dB(A)	630Hz dB(A)	800Hz dB(A)	1kHz dB(A)	1.25kHz dB(A)	1.6kHz dB(A)	2kHz dB(A)	2.5kHz dB(A)	3.15kHz dB(A)	4kHz dB(A)	5kHz dB(A)	6.3kHz dB(A)	8kHz dB(A)	10kHz dB(A)
Receiver NSR1 'Iventure' LrD 23.1 dB(A)																							
-4.3	2.6	-1.3	0.1	-1.4	4.3	2.6	2.9	5.4	16.0	13.4	12.0	13.5	15.4	14.0	13.2	8.6	3.5	-1.3	-13.8	-23.9	-45.0	-74.7	
Receiver NSR3 'Wyalla' LrD 32.1 dB(A)																							
4.3	11.2	7.3	9.1	7.6	13.3	11.3	11.8	14.5	22.4	20.1	18.9	21.5	23.9	23.2	24.5	21.5	18.7	17.4	10.1	3.7	-8.7	-25.9	-51.5
Receiver NSR4 'Yarralee' LrD 36.4 dB(A)																							
10.2	17.7	14.5	16.7	15.8	21.9	19.4	19.3	21.5	30.0	26.9	24.9	26.3	27.7	25.9	25.5	21.0	16.5	13.1	3.0	-5.7	-22.1	-43.7	-75.9
Receiver NSR4 'Yarralee' LrD 31.4 dB(A)																							
4.4	11.3	7.5	9.1	7.7	13.4	10.7	11.1	13.7	21.9	19.5	18.4	20.9	23.2	22.5	23.7	20.5	17.6	16.2	8.5	1.9	-11.1	-29.0	-55.6
Receiver NSR5 'Mimbil' LrD 49.8 dB(A)																							
16.4	24.3	21.7	24.9	24.4	30.9	28.9	29.4	32.1	40.8	38.4	37.2	39.5	41.8	41.0	41.8	38.5	35.2	33.4	25.0	17.9	3.7	-16.0	-45.4

Vipac Engineers & Scientists Pty Ltd 1

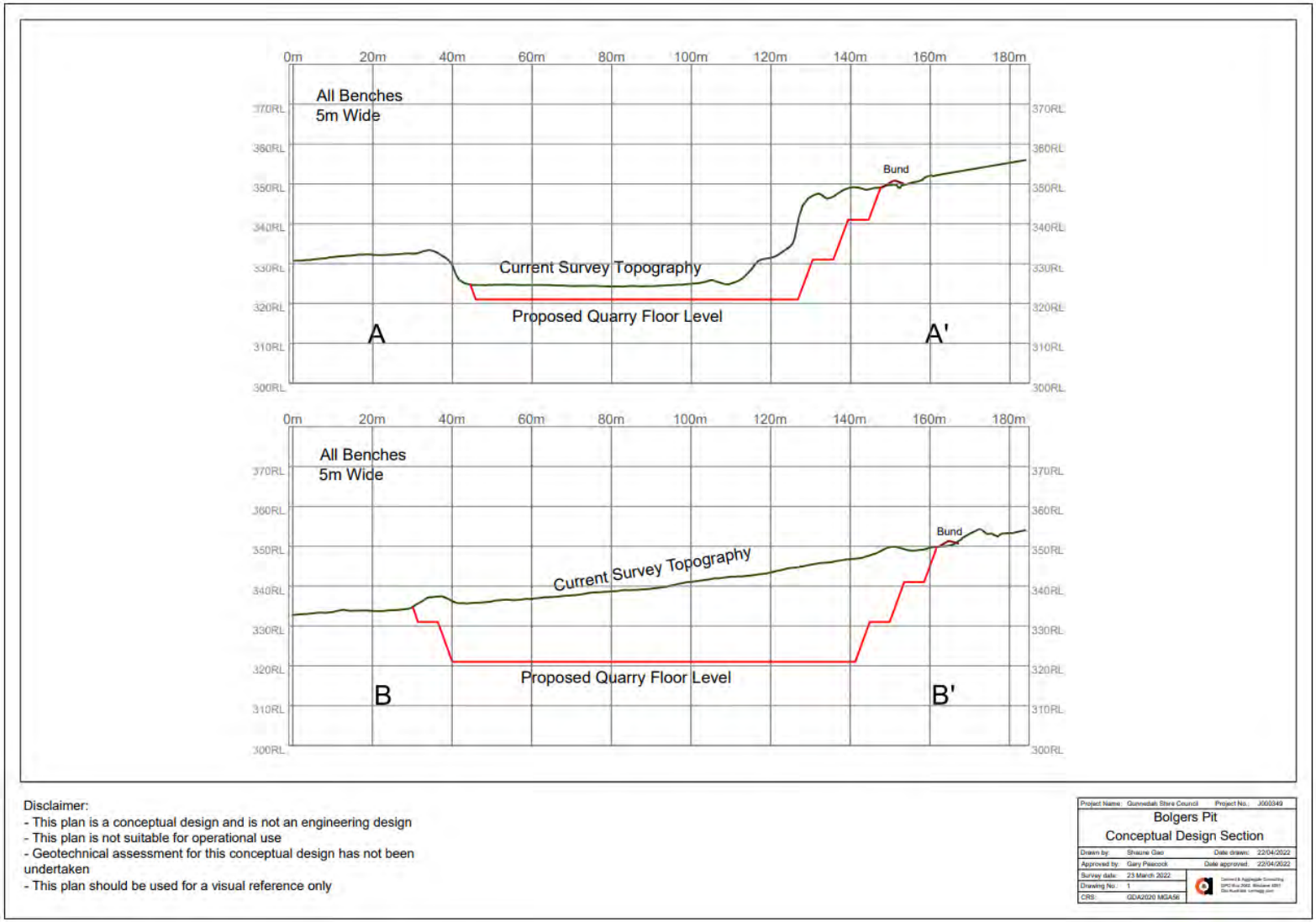
SoundPLAN 8.2

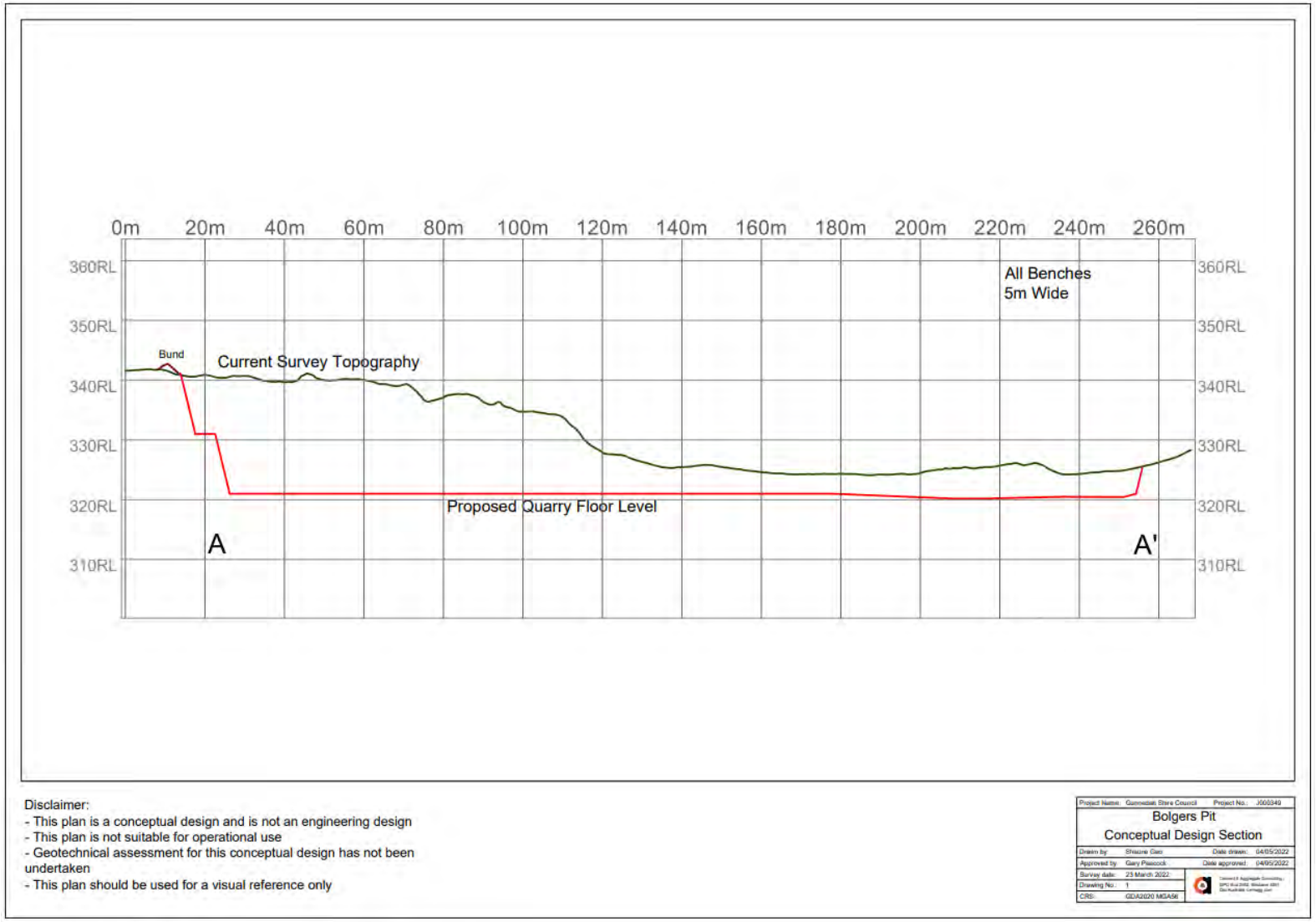
Appendix C Noise Monitoring Graphs

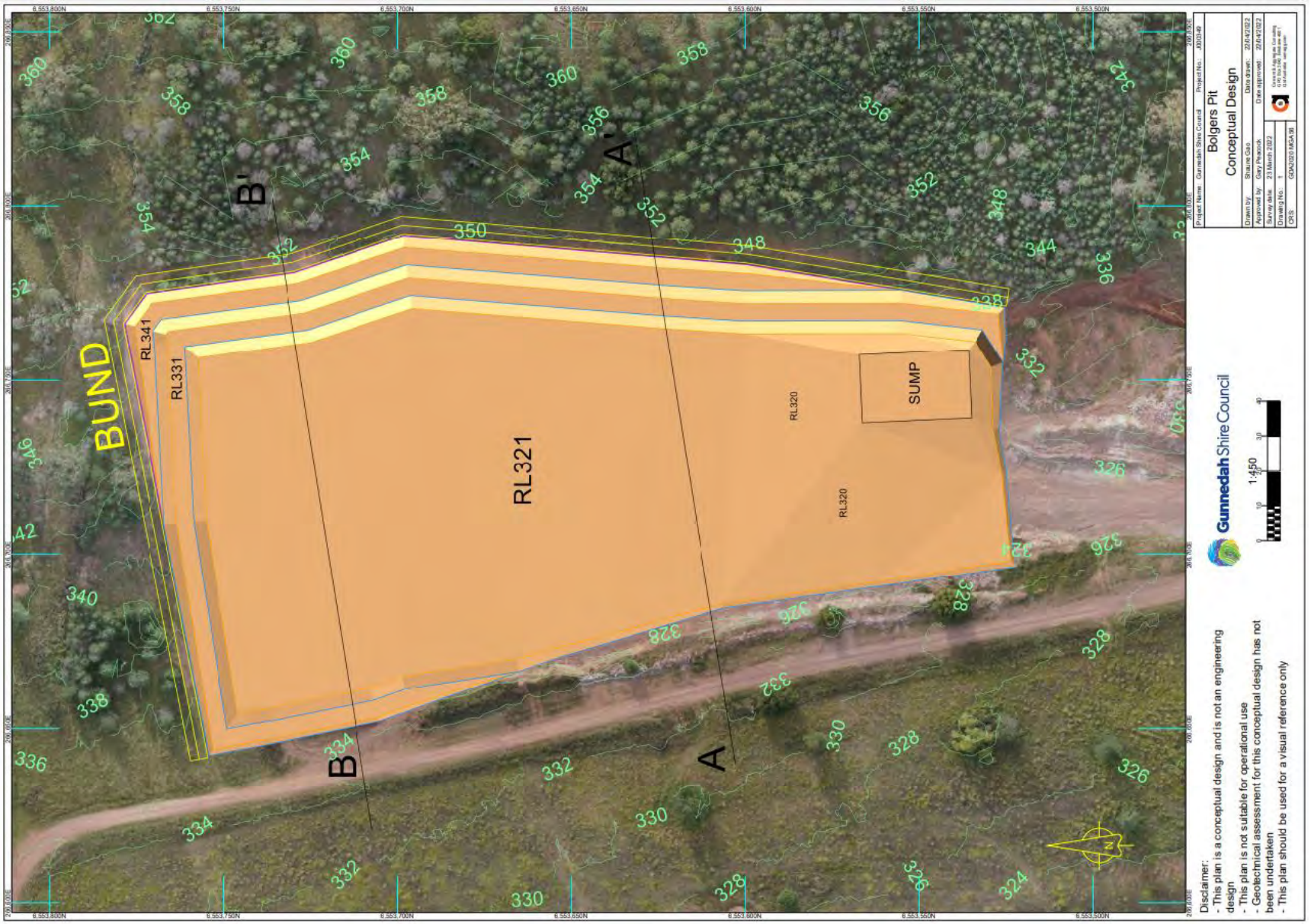



Noise Monitoring Graph
Location: Bolgers Pit - Southern Logger
Noise Level dB(A)
80
70
60
50
40
30
20
10
07-Jun-22
08-Jun-22
09-Jun-22
10-Jun-22
11-Jun-22
12-Jun-22
13-Jun-22
14-Jun-22
Date
Day
Night
Leq
L90
L10

Appendix D Topographical Drawings Received by Outline Planning Consultants Pty Ltd




0m
20m
40m
60m
80m
100m
120m
140m
160m
180m
200m
220m
240m
260m
360RL
350RL
340RL
330RL
320RL
310RL
All Benches
5m Wide
Bund
Current Survey Topography
Proposed Quarry Floor Level
A
A'
Disclaimer:
- This plan is a conceptual design and is not an engineering design
- This plan is not suitable for operational use
- Geotechnical assessment for this conceptual design has not been undertaken
- This plan should be used for a visual reference only
Bolgers Pit
Conceptual Design Section


BUND
RL341
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A
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Bolgers Pit
Conceptual Design
Gunnedah Shire Council
1:450
Disclaimer:
- This plan is a conceptual design and is not an engineering design
- This plan is not suitable for operational use
- Geotechnical assessment for this conceptual design has not been undertaken
- This plan should be used for a visual reference only

ANNEXURE I

Excerpt from EPA's *Noise Policy for Industry (2017)*

The long-term method for determining background noise (summarised in Table A1) is designed to ensure that the level for intrusive noise will be achieved for approximately 90% of the time periods over which annoyance reactions may occur (taken to be periods of 15 minutes).

Definitions and technical considerations to help users interpret and apply the methods are set down in the following sections.

Table A1: Methods for determining background noise.

Features	Method	
	Long term	**Short term**
When to use	During planning and approval stage where there is significant potential for noise impact, e.g. extractive industries and industrial developments. Note: Would normally be required where a background level exceeding the minimum rating background noise levels (in any time period) has been adopted in the assessment.	During complaint assessments, compliance checks, when determining the effect of background noise on a source noise measurement, and for low-risk developments.
Type of monitoring	Continuous sampling accompanied by periods of operator-attended monitoring.	Individual sampling, operator-attended measurements.
Length of monitoring	Equivalent to one week's worth of valid data covering the days and times of operation of the development (see Section A5).	15-minute measurements covering the times of operation of the development.
Conditions for monitoring	Average wind speed < 5 m/s[1], no rain, no extraneous noise (see Sections A1.2 and A4).	Average wind speed < 5 m/s[1], no rain, no extraneous noise (see Sections A1.2 and A4).
Monitoring location	Reasonably most- or potentially most-affected residence(s).[3]	Reasonably most- or potentially most-affected residence(s)[3] and/or location of complaint.[3]
Assessment time periods	Day (7 am–6 pm) Evening (6 pm–10 pm) Night (10 pm–7 am) (see Section A3 for exceptions)	Times when maximum impacts occur (see glossary).
Base measure	$L_{A90,15min}$	$L_{A90,15min}$
Analysis method	Determine the assessment background level for each day, evening and night by using the 10th percentile method[2]. The rating background noise level is the median assessment background level over all days for each period. Note: Current generation noise logging instrumentation with high sampling rates and increased storage capabilities allows for the calculation of $L_{AF90,(day/evening/night)}$ dB(A) noise levels. These period L_{A90} levels may be adopted as the ABL for the purposes of calculating the rating background noise level.	The rating background noise level is the measured $L_{AF90,15min}$ value, or, where a number of measurements have been made, the lowest $L_{A90,15min}$ value.

Notes:

1. Refers to the wind speed at the microphone height.
2. See Fact Sheet B for how to determine the assessment background level using the 10th percentile method.
3. Where it is impractical or not possible to monitor at the reasonably most- or potentially most-affected location(s), the location selected should be fully justified as being representative of background noise levels.

ANNEXURE J

Excerpt from Vipac's Noise and Vibration Impact Assessment
accompanying the EIS

8 Results

8.1 Predicted Operational Quarry Noise Levels

Noise prediction modelling has been carried out to assess the potential impact associated with the Quarry operations at the nearest noise sensitive receptors for the proposed operational scenario.

The predicted noise levels representative of each of the operational scenarios for neutral conditions, worst-case conditions, and north easterly winds case weather conditions during the day period are presented in Table 8-1. These results have been reproduced graphically as Noise Contour Maps and are shown in Appendix A.

Table 8-1 – Predicted Noise Levels: Daytime (dB $L_{Aeq\ 15min}$)

Rec #	Criteria	*Excavator Only**			Middle-West Noise Sources			Northeast Noise Sources		
		Neutral	*Worst Case*	*North Easterly Winds Case*	**Neutral**	**Worst Case**	**North Easterly Winds Case**	**Neutral**	**Worst Case**	**North Easterly Winds Case**
NSR1	40	*24.5*	*29.4*	*17.5*	17.7	22.5	12.1	18.3	23.1	12.3
NSR2		*33.5*	*37.7*	*28.6*	26.7	30.7	22.4	27.4	31.4	23.3
NSR3		*33.9*	*38.1*	*27.7*	26.7	30.7	21.5	28.2	32.1	23.0
NSR4		*30.2*	*34.7*	*34.7*	33.6	37.8	37.7	32	36.4	36.4
*NSR5***		*31.4*	*35.8*	*35.8*	*47.9*	*51.9*	*51.9*	*45.6*	*49.8*	*49.7*

**The Excavator Only scenario is a very small aspect of the operations at the quarry, expected to take half a day to finalise the stripping of the north east corner.*

***NSR5 is owned by the Quarry land owner and is not considered as a sensitive receptor for the purposes of this assessment.*

Noise levels are predicted to comply at all receptors in all scenarios during all modelled weather conditions.

8.2 Operational Noise Results Discussion

With information provided by Outline Planning Consultants Pty Ltd staff (via email correspondence on Thursday 2nd February 2023), the quarry was confirmed to operate on a campaign basis for short periods of time during any one year. With the total extraction rate of 40,000 tonnes per annum, 32 tonne load carrying trucks (with a maximum of 40 trucks per day), the quarry would supply material for a total of just over 6 (5 day) weeks in any one year, with the quarry lying dormant for the remainder of that year.

Based on the predicted results above for the operational scenarios located in the Middle-West and Northeast, noise levels are predicted to comply without the need for additional acoustic attenuation measures.

8.3 Haul Route Traffic Noise Assessment Results

Calculations were conducted to assess the potential noise impacts associated with the additional quarry truck movements on the existing haul routes.

Road traffic noise monitoring was not conducted as part of this traffic noise assessment, therefore validation of a traffic noise model used to predict noise levels at the nearest receivers cannot be undertaken, however, it is anticipated that existing traffic noise levels for all other receptors are below the current criteria for both local roads and principal haulage routes.

Table 8-2 below presents the traffic noise predictions for existing traffic, alongside future predicted traffic volumes at the nearest residential receptors.

Note that because noise levels of the existing traffic are unknown, the results are intended to provide a conservative indication based on a worst-case scenario of the sole use of heavy vehicles travelling to and from the site.

Table 8-2 – Cumulative Indicative Traffic Noise Impact Predicted Results

Noise Levels, $L_{Aeq,\ 15\ hour}$ dB(A)– façade corrected					
Receptor	**Predicted Existing Traffic**	**Predicted Future Traffic**	**Criteria**	**Predicted Compliance?**	*Maximum Difference* (Existing v Future) ≤2dB(A)*
R1	44.3	46.9	60	✓	*2.6*
R2	44.5	46.9		✓	*2.4*
R3	42.7	43.4		✓	*0.7*
R4	39.4	41.9		✓	*2.5*
R5	42.1	43.5		✓	*1.4*
R6	42.5	45.5		✓	*3*
R7	43.9	46.8		✓	*2.9*

*Only applicable for receptors where it is anticipated existing traffic noise levels already exceed the criteria.

8.4 Haul Route Traffic Noise Results Discussion

As stated in Section 3.4 of the Road Noise Policy, with regard to existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use development, any increase in total traffic noise level should be limited to 2dB above that of the corresponding existing noise level at any residential property. Considering the predicted existing traffic noise levels for each of the closest receptors on each road is below the criteria, this assessment is not applicable, although the increase has been included for transparency.

It can be seen in Table 8-2 that existing and future traffic noise levels at existing residential receptors are predicted to comply with the criteria without the need for acoustic mitigation.

Given the increase in noise levels between existing and future traffic flow are also well below the relative increase criteria detailed in Table 4-4 (existing traffic + 12dB), the increased traffic from the proposed development is predicted to comply with the relevant road traffic noise criteria.

Therefore, traffic noise associated with the additional quarry truck movements on the existing haul routes associated with the quarry are predicted to comply with the criteria without the need for acoustic mitigation measures.

ANNEXURE K

Vipac's response to RFI re: air quality impacts

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MEMORANDUM

Job No.:	70B-22-0096	**Doc. No:**	83362-0-draft
Attention:	Gary Peacock	**Author:**	Stephen Thomas
Company:	Outline Planning Consultants Pty ltd	**Reviewed by:**	Samir Sidhu
Email:	gpeacock@outline.com.au	**Issued by:**	Stephen Thomas
Subject:	Vipac Response to Gunnedah Shire Council Request for Additional Information 08 May 2024		

Dear Gary,

Please find Vipac Engineers & Scientists' (Vipac) response to the Gunnedah Shire Council (Council) Request for Additional Information – Development Application No. 2023/046 related to the Bolgers Pit Air Quality Impact Assessment, prepared by Vipac on behalf of Outline Planning Consultants Pty. Limited, dated 16 Feb 2023 (the Report) which provided the comments outlined below.

5. *Dust and Air quality impacts*

a. Dust Impact assessment does not include any consideration of dust generated along the Haulage Route from haulage vehicles as well as service and light vehicles attending the site. The Dust Impact Assessment is to include consideration of residences along or within 200m of any unsealed section of the haulage route.

b. 2.11 of the EIS refers to differences in wind roses due to Melville Range, have these differences been considered in providing conclusion and estimates for dust impacts?

c. What are the dust abatement measures referred to within the EIS and how extensive are these measures? How effective are these in reducing the dust generation from the site and within the haulage route?

d. With regards to Table ES-2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment, provide comment as to how there can be no additional exceedance over the 24 hour average PM10 criteria when Table ES-1 indicates exceedances at all receivers over the 50 Criteria. If these are already in exceedance, provide commentary as to what impact does the development have? Council does not accept that the development is already exceeding the criteria so no further consideration is required.

e. Justify assumptions made in 7.2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment.

Vipac Response

Vipac responds to the issues raised by Council in Table 1.

Table 1: Vipac Response to Matters Raised by Council – Air Quality Impact Assessment

Matters Raised by Council	Vipac Response
a. *Dust Impact assessment does not include any consideration of dust generated along the Haulage Route from haulage vehicles as well as service and light vehicles attending the site. The Dust Impact Assessment is to include consideration of residences along or within 200m of any unsealed section of the haulage route.*	**Noted.** Impacts from dust potentially generated by internal and external haulage on unsealed roads for the project site have been assessed in the air quality impact assessment. Please see section 6.1.5 and Appendix A.2 of the Vipac Report with reference to emissions from wheel generated dust sources. It is further noted that a study by WR Reed entitled Haul road dust control (October 2007) measured dust from haul trucks on a haul route carrying limestone and coal preparation waste. The study found that primarily wind, distance and road treatment conditions notably affected the dust concentrations at locations next to, 15m from, and 30m away from the unpaved haulage road. Airborne dust measured along the unpaved haul road showed that high concentrations of fugitive dust can be generated with these concentrations rapidly decreasing to nearly background levels within 30m of the unpaved road. In terms of the quarry haul route the following setbacks are noted: • R2 ”Inventure” residence located approx. 26m from Oakey Creek Road, with some intervening vegetation. • R3 residence located approx. 46m from Oakey Creek Road, with some intervening vegetation. • R5 residence located approx. 51m from Clifton Road, with little or no intervening vegetation. • R6 residence located approx. 20m from Piallaway Road, with little or no intervening vegetation. • R7 residence located approx. 15m from Piallaway Road, with little or no intervening vegetation. It is relevant to note that Oakey Creek Road will be the road used by quarry truck traffic on the most regular basis. With the exception of residence R2 all other residences are set back well in excess of 30m from the haul road. The EIS recognises the potential for such dust to be generated and the following mitigation measures have been proposed: • All loads leaving the site are covered, with tailgates effectively sealed, to minimise dust and debris. • All gravel roads to be regularly maintained and graded by Council. Council periodically waters roads during the undertaking of road works, to reduce dust nuisance. • Miscellaneous dust sources such as spillages from trucks and silt from sediment controls are to be regularly cleaned up. • Regular inspections for excessive visible dust generation will be undertaken and appropriate controls will be implemented when such events occur. • Monitoring and reporting of dust complaints. As noted above, alternatively, Council may need to give to consideration to the progressive sealing of roads in front of rural dwellings most severely impacted by dust from passing traffic-in this case, R2 ”Inventure” being the priority. These measures will be incorporated into and form a part of an overall quarry environmental management plan.

b. *2.11 of the EIS refers to differences in wind roses due to Melville Range, have these differences been considered in providing conclusion and estimates for dust impacts?*	**Noted**. The Vipac air quality impact assessment utilises a 3- dimensional meteorological field that is demonstrated to be representative for the project site and surrounding area. The meteorological dataset is used "*for the air dispersion modelling that includes a wind field generator accounting for slope flows, terrain effects and terrain blocking effects*" (p. 14 of Vipac Air Quality Impact Assessment accompanying the EIS).
c. *What are the dust abatement measures referred to within the EIS and how extensive are these measures? How effective are these in reducing the dust generation from the site and within the haulage route?*	**Noted**. The dust abatement measures are described in Section 4 of the EIS and Appendix A of the Vipac Report. In addition, as noted in Section 6.1.4 of the Vipac Report, some of the planned dust control measures are not easily quantifiable but will still serve to reduce dust emissions. The dispersion modelling study has taken a conservative approach and have not incorporated the effectiveness of these controls in the development of the emissions inventory. The dust controls are proposed in accordance with Australian National Pollutant Inventory (NPI) and United States Environmental Protection Agency (USEPA) AP-42 emissions estimation methodology and are widely adopted in Australia and internationally for similar types of projects.
d. *With regards to Table ES-2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment, provide comment as to how there can be no additional exceedance over the 24 hour average PM10 criteria when Table ES-1 indicates exceedances at all receivers over the 50 Criteria. If these are already in exceedance, provide commentary as to what impact does the development have? Council does not accept that the development is already exceeding the criteria so no further consideration is required.*	**Noted, but not agreed**. As specified in the EAR, the Vipac air quality impact assessment is carried out in accordance with the document, Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (2022). As outlined in Section 7 of the Vipac Report, the model predictions for cumulative 24 hour average PM10 are above the relevant criteria of 50 µg/m^3 because of elevated background derived from the NSW EPA Air Quality Monitoring Station. The NSW EPA reports that the elevated background is due to impacts from dust storms and/or bushfire smoke. The NSW EPA provides guidance including a worked example in the Approved Methods document when dealing with elevated background. *In such circumstances, a licensee must 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*. The Vipac Report adopts the methodology outlined in the worked example and demonstrates that the proposed project does not contribute to any further exceedances of the criteria. It is therefore concluded that no additional assessment is therefore required.
e. *Justify assumptions made in 7.2 of the Bolgers Pit Noise, Vibration and Air Quality Impact Assessment.*	**Noted, but not agreed**. As discussed for Vipac Response to 5d (above), the Vipac air quality impact assessment is carried out in accordance with the document, Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (2022) as specified in the EAR.

Yours sincerely,

VIPAC ENGINEERS & SCIENTISTS LTD

Dr Stephen Thomas

Air Quality Principal

ANNEXURE L

Bower Ecology's response to RFI re: ecological impacts

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22 June 2024

Ref: 0025

Gary Peacock
Outline Planning Consultants
No. 432 Carool Road
Carool NSW 2486

Dear Gary,

Request Additional Information - Development Application No. 2023/046

Bower Ecology prepared an Ecological Assessment Report (dated 3/3/2023) to support the Environmental Impact Statement for the proposed continuation and expansion of Bolgers Pit, a council-operated quarry. The quarry is located at 809 Oakey Creek Road, Piallaway NSW 2342.

The Development Application (DA) and accompanying EIS were lodged on the NSW Planning Portal (Ref: PAN-204159) and subsequently accepted by Council on 20 July 2024. Council has lodged a Request for Additional Information (RFI) dated 8 May 2024, 293 days after the above DA lodgement date. This letter addresses the requests related to the biodiversity assessment, per Clause 8 of the Council RFI. Council's comments per the RFI are noted below, with a response then provided under each.

Council Request:

a) *Provide a Koala Assessment in accordance with the Chapter 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 for the entire development site. The assessment should demonstrate if the development site, as a whole, is considered to be Potential or Core Koala Habitat, as per sections 3.2, 3.6 and 3.7 of this SEPP. The current assessment is noted as being only for the quarry footprint.*

Response:

The koala assessment and survey undertaken as part of the Ecological Assessment (Bower Ecology 2023) revealed no evidence of koala. Per the Ecological Assessment (Bower Ecology 2023), the expansion of operations will result in approximately 0.8 ha of clearing of land that does not constitute potential koala habitat (or core koala habitat).

The development site is the land related to the continuation & expansion of the quarry. The vegetation within the development site did not contain species listed in Schedule 1 (feed tree species) of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (the SEPP). Hence, the development site does not contain 'potential koala habitat' pursuant to Section 3.6 of the SEPP. Section 3.6(3)(a) of the SEPP states that '*if the council is satisfied that the land is not a potential koala habitat, it is not prevented, because of this Chapter, from granting consent to the development application'*. Further, as the land is not potential koala habitat, it does not need to comply with section 3.7 of the SEPP, which relates to whether the land is 'core koala habitat'. Despite this, as the vegetation within the development site isn't potential koala habitat, it is therefore not core koala habitat.

No further assessment is considered necessary as the potential impact to koala will be negligible and vegetation adjacent to the development site would not be considered potential koala habitat according to the definition in the SEPP. A photo of the adjacent vegetation is provided in Figure 1 and Figure 2, showing the area is dominated by *Callitris glaucophylla* with the a *Eucalyptus* canopy generally absent.

I wish to also draw your attention to Section 3.3 of the Ecological Assessment (Bower Ecology 2032), which further contextualises the general scarcity of koala habitat in the local area. Section 3.3 stated:

The NSW BioNet Threatened Species database found only two records of threatened species within 5 km of the site. Both these records were of koalas (Phascolarctos cinereus); one record was from 2006 and the other from 2015. The Gunnedah Koala Conservation Plan for Landcare and Community Groups (Koala Conservation Plan) shows koala records across the area surrounding the site up to 2015; no records are proximate to the quarry site. Considering the date of koala mapping in the aforementioned Koala Conservation Plan (5 August 2015), an up-to-date equivalent figure using contemporary BioNet records has been included in this report. It supports mapping in the Koala Conservation Plan, showing no recent koala records in proximity to the quarry site.

Figure 1: Vegetation to the east of the site. Photo looking south. Habitat assessment point 3 in the ecological assessment by Bower Ecology 2023

Figure 2: Vegetation to the east of the site, in the far background. Photo looking east showing minimal Eucalyptus overstorey

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Council Request:

b) Identify the vegetation communities to be removed from site and provide detailed calculation of vegetation canopies to validate that the vegetation to the impacted is less than 1ha as per Section 7.2 of the Biodiversity Conservation Regulation 2017.

Response:

As per the Ecological Assessment by Bower Ecology (2023), Plant Community Type (PCT) 101 was identified as the PCT that will be impacted by the project. This is *Poplar Box - Yellow Box - Western Grey Box grassy woodland on cracking clay soils mainly in the Liverpool Plains, Brigalow Belt South Bioregion*.

Areal measurement of native vegetation via aerial photography was shown in Figure 12 of the Ecological Assessment. The same figure is reproduced below as Figure 2. The figure shows native vegetation clearing will be less than 1 ha.

Council Request:

c) Confirm that vegetation removal is to occur outside of the approved quarry footprint, regardless of comments within 4.1 of the EIS. The approved quarry footprint is regarded as the footprint of the current quarry. Development plans show vegetation to be removed outside of the current Quarry Pit in areas that are the subject of this Development Application.

Response:

Council's statement above is correct. That is, development plans show vegetation will be removed outside of the *current* quarry pit, and this vegetation has been assessed as part of the development application. Details are provided in the ecological assessment prepared by Bower Ecology (2023).

Please let me know if you require anything else.

Regards,

Steve Jarman
Principal Ecologist

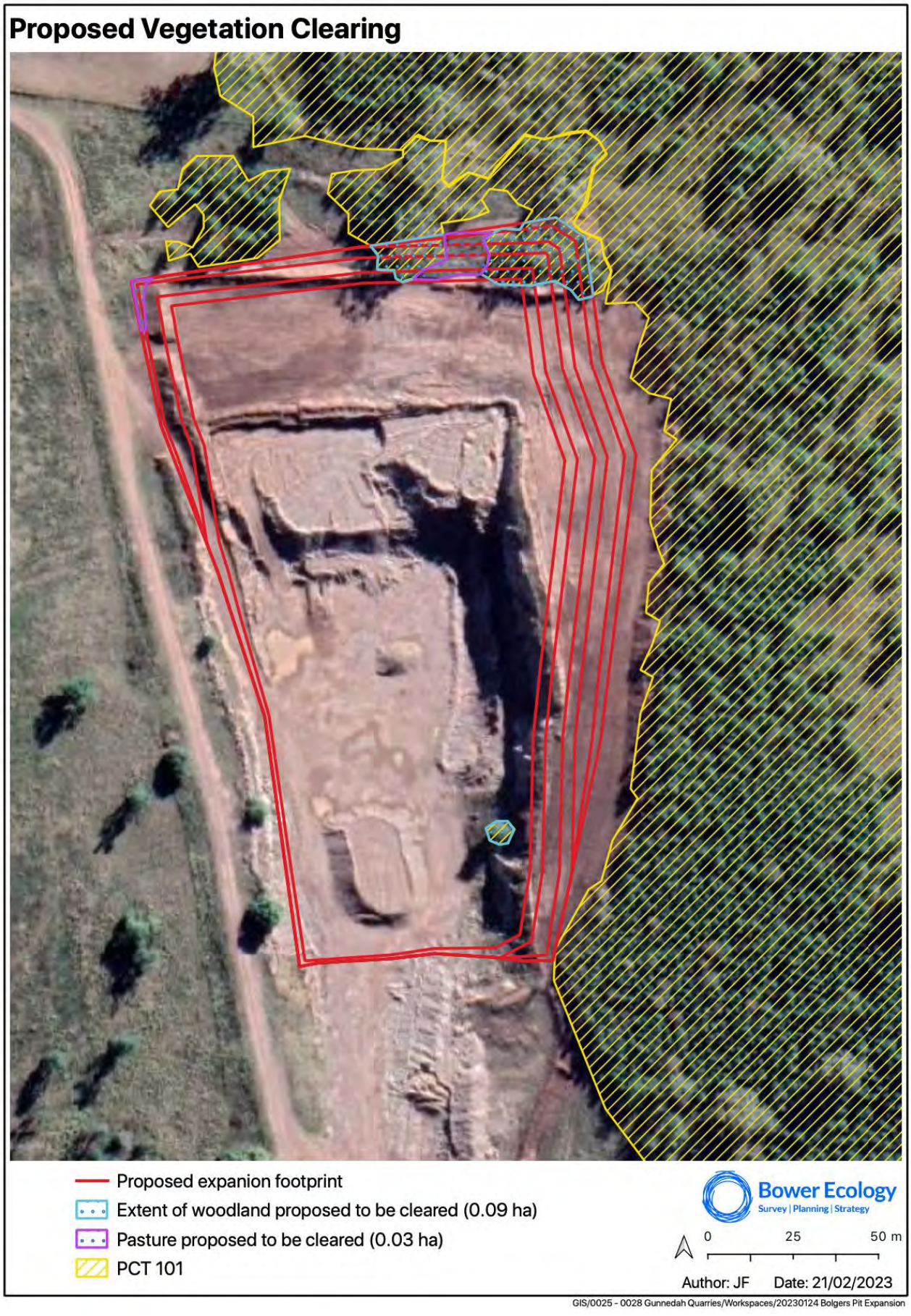

Figure 3: Proposed expansion footprint and native vegetation clearing extent.