Ref: 14164

6 December 2016

de Groot &
Benson Pty Ltd

Consulting
Engineers &
Planners

The General Manager
Port Macquarie Hastings Council
PO Box 84
PORT MACQUARIE NSW 2444

Attention Chris Gardiner

Dear Chris,

Re: DA 2015/953 - Development Application for Extractive Industry.
Lot 161 and Part Lot 52 DP 754445, Broken Bago State Forest
Bago Road, Herons Creek

Reference is made to the above Development Application. The purpose of this letter is to:

1. Summarise matters raised in submissions to the public exhibition of Addendum No. 2 to the *CTK Natural Resources Pty Ltd Lookout Road Quarry Environmental Impact Statement (EIS)* prepared in October 2016. The Addendum Report and the previously exhibited EIS reports were publicly exhibited from 19 October to 18 November 2016; and

2. Request that Council finalise their Assessment Report to the Joint Regional Planning Panel (JRPP).

On 24 November 2016, Council's planner, Chris Gardiner, emailed a list of matters raised in submissions and recommended that those matters be addressed prior to the preparation of an Assessment Report by Council to be considered by the JRPP.

A meeting between Council staff, the applicants and their consultants was held on 25 November 2016 to discuss the matters raised in submissions and to the agree on the extent of any additional assessments required. Accordingly, a summary of the matters raised and our comments in regard to those matters is attached to this letter as Annexure A..

It is noted that Council recommended approval of DA 2015/953 on 2 September 2016 subject to consent conditions, however in response to matters raised by at the public meeting, the JRPP deferred determination of the matter until:

1. *An assessment of alternative sites has been undertaken;*
2. *An updated noise impact assessment; and*
3. *A social & economic impact assessment,*

are completed by applicant and assessed by council as the Panel resolved they were not adequately considered in the EIS and a proper assessment was therefore not possible.

Accordingly, Addendum No. 2 addressed those matters and concluded that:

1. The subject site is the most suitable in terms of proximity to transport, isolation from sensitive receivers, separation of environmentally significant land and quality of the resource.

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2. That noise impact arising from all stages of the development meets the EPAs requirements as defined under the *Protection of the Environment Operations Act 1997*.
3. The social and economic impact of the development is positive in terms of employment creation and provision of a valuable resource to the construction industry from a site that is sufficiently isolated from sensitive receivers. The EIS and the Addendums provide a comprehensive assessment of impacts arising from the quarry to the surrounding natural and built environment and mitigation measures to address those impacts. Additionally, the applicants will enter into a Voluntary Planning Agreement to ensure that the cost of the maintenance of Bago Road are met by the developer, not Council or the community.

A summary table of the issues raised in submissions to the exhibition of Addendum No 2 is attached to this letter as Annexure A. It is therefore considered that Council has sufficient information to recommend approval of the proposed quarry and to update their previous assessment report to the JRPP.

As discussed at the meeting of 25 November 2015, Council's senior planner advised that Council are unable to complete their further assessment of the Development Application in time to meet the deadline for reports for a December Joint Regional Planning Panel (JRPP) determination meeting. In this regard, it is respectfully requested that Council aim to complete their assessment report in December 2016 with a view to arranging a JRPP meeting as soon as possible in 2017.

It is further requested, that Council make their assessment report available to the applicants as early as practicable to enable sufficient time for review prior to the JRPP meeting.

Should you have any further queries, please contact Rob de Groot on [redacted], or mobile [redacted] or by email at [redacted]

Yours faithfully

[redacted]

ENCL:

Forestry Corporation of NSW letter 14 November 2016

ANNEXURE A-1 -	**SUMMARY** Matter raised in email from Chris Gardiner (24 November 2016)
Matter	**Response**
Ecological Assessment	
The peer review by Gingra Ecological Surveys identifies some potential methodology/reporting issues with the Statutory Ecological Assessment submitted with the EIS. It would be appreciated if your ecologist could provide a response on these matters.	1. The letter prepared by Roger Lembit is not a "peer review" of the Statutory Ecological Assessment prepared by NatureCall Environmental. Neither Council nor the JRPP requested a peer review of the ecological assessment. 2. A response prepared by NatureCall Environmental to the matters raised in the submission by Roger Lembit is attached as Annexure A-2. 3. Letter from Forestry Corporation of NSW (FC NSW) confirming area available for timber harvesting operations in the PMHC LGA is attached as Annexure C
Noise Assessment	
A response has been prepared by EMM and is detailed below for the various matters raised.	
The noise contours provided as part of Addendum 2 are inconsistent with the Table 5.2 of the original NBIA. Receivers R5 and R8 were predicted to have noise emission levels of 35dB(A) with 3m/s source to receiver winds in Table 5.2 of the original NBIA. However, the noise contours in Addendum 2 show the 35dB(A) contour not reaching either of these receivers.	The noise contour figures show the 35 dB contour re-appearing to the south in between receivers R5 and R8 where ground level becomes relatively elevated. The fact that it doesn't reach either of these residences is likely due to rounding of noise levels. It is well established and accepted by acousticians that noise contours are only approximations of noise across an area derived through interpolation of data points. Therefore, Table 5.2 of the NBIA results are the accurate results for each assessment location.
The location of the pumps at the water supply dam has not been updated to the revised location proposed in EIS Addendum 1.	Noted. This would not alter the predicted noise levels at the nearest residences given the relatively low sound power level of the pumps and the fact that the revised location is further from the residences.
The existing dwellings at 92 and 124 Old Mill Road have not been included as receivers in the assessment. Can you please provide the predicted noise levels for these receivers	The houses located at 92 and 124 Old Mill Road were not considered as noise assessment locations because it is expected that operational noise criteria would be achieved at these locations given they are predicted to be achieved at the nearer locations in their direction (eg R5 and R7). See map at Annexure B showing the location of 92 and 124 Old Mill Road in relationship to assessment locations R5 and R7. In addition, the noise contours demonstrate that the noise criteria are predicted to be achieved at these houses for all proposed stages of quarry operation.
The extent of noise reduction modelled for separation distance, topography, vegetation, etc has been questioned in a number of the submissions. Could you provide an explanation of the noise reduction that has been assumed in the model? It is noted that the dwelling at 124 Old Mill Road would have unimpeded line of sight to the quarry in the worst case scenario for parts of Stage 3 and 4.	Noise modelling was based on three-dimensional digitised ground contours of the surrounding land and surface infrastructure. Noise predictions were carried out using the Brüel and Kjær Predictor Version 11 software. 'Predictor' calculates total noise levels at assessment locations from concurrent operation of multiple noise sources. The model has considered factors such as the lateral and vertical location of plant, source-to-receptor distances, ground effects, atmospheric absorption, topography of the site and surrounding area and applicable meteorological conditions. Predictor applies recognised noise algorithms that are accepted by the NSW EPA, in this case, in accordance with *ISO 9613 Acoustics – Attenuation of sound during propagation outdoors*.

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The NBIA does not address potential sleep disturbance for operations between 6.00am and 7.00am. One of the submissions also suggests that the Industrial Noise Policy requires that a default drainage wind value be applied for temperature inversion during the night time period where sources are at a higher elevation than the receptors with no intervening topography. We could potentially address both these issues by amending the hours of operation to prevent any activities commencing prior to 7.00am.	It is agreed that Council can amend the consent condition regarding hours of operation to prevent any activities commencing prior to 7.00am.
Social impact assessment	

The social impact assessment has not included consultation with the people most likely to be impacted by the proposed development. Even a Social Impact Comment (SIC) under Council's Social Impact Assessment Policy requires consultation with persons directly affected by the development.	The Secretary's Environmental Assessment Requirements (SEARs) required:
	- An assessment of the likely social and economic impacts of the development, including any impacts associated with the demand for utilities and services, and
	- An assessment of the likely economic impacts of the development, including consideration of both the significance of the resource and the costs and benefits of the project;
	- Rehabilitation – including
	  - A detailed description of the proposed rehabilitation measures that would be undertaken throughout the development and during quarry closure;
	  - A detailed rehabilitation strategy, including justification for the proposed final landform and consideration of the objectives of any relevant strategic land use plans or policies; and
	  - The measures that would be undertaken to ensure sufficient financial resources are available to implement the proposed rehabilitation strategy.
	The SEARs were addressed comprehensively in Section 4.10 of the EIS and further in Section 4 of the Addendum Report. Council's SIC has regard to a development's impact on the local area and Community participation in the project will only be required from persons directly affected. I.e. neighbours and key stake holders.
	
	Forestry Corporation of NSW are the persons directly affected by the proposed quarry. FCNSW has given their full support to the proposal.
	
	Nearby land owners were consulted in the following ways:
	1. Council's statutory notification and public advertising of the development
	2. Joint meeting between the proponents (CTK) and Mobbs family and Bago winery.
	3. Separate meeting with Noel Collyer of Hanson Group

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	4. Separate meeting with landowner Paul Hoole 5. Site meeting with Volcanic Resources (2 occasions) 6. Flyers (2) prepared by CTK distributed to land owners. Council's Development Assessment Planner states in the Assessment Report (p.50) that, *It is not considered that there would be any benefit from requiring the Applicant to carry out further community consultation of their own*. Clearly, as at September 2016, there was no identified need for any additional consultation.
No surveys of the local area have been carried out to validate the demographic data relied upon in the assessment.	Demographic data was sourced from Council's website, (http://profile.id.com.au/port-macquarie-hastings) community profile.ID. There is no evidence that the Profile ID data is unreliable and should be "validated". Profile ID data is sourced from ABS and is modelled using "REMPLAN economy" software. Profile ID data was also used in the Volcanic Resources (approved) EIS (refer Council Assessment Report to the JRPP DA 2014-960, 5/8/15).
Economic Impact Assessment	
The amount of employment stated to be generated by the development appears to be overstated compared to other similar quarries. Can you provide an explanation of how the number of jobs has been estimated?	**Justification of employment numbers:** Full time on-site staff positions are projected to be as follows: 1. Site Manager (also responsible for coordinating toolbox meetings, and ensuring all personnel are appropriately inducted and trained regarding environmental management, monitoring procedures and environmental emergency procedures). 2. Crushing Plant operator 3. Excavator operator 4. Front end loader operator 5. Dump Truck operator 6. Maintenance Mechanic 7. Weighbridge operator (including customer liaison) 8. Administration Assistant Part time/ casual on-site positions as follows: 1. Environmental monitoring officer 2. Quality control officer 3. Security officer In addition to the on-site positions listed above, it is projected that there will be an additional off site ***Corporate manager*** position, whose duties will include contract management, accounting management, legal management, compliance with statutory obligations, marketing, liaison with drilling and blasting contractors, traffic control, management of geotechnical testing, surveying and stockpile reconciliations, human resource recruiting, management of rehabilitation, environmental reporting, and reporting to Forestry Corporation.

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	In summary, the number of full time equivalent positions will be of the order of ten (10). The foregoing (quarry) employment numbers relate to the target quarry operation where 200,000 tonnes per annum (of saleable quarry product) is generated. It is acknowledged that there will be a transition period between the initial start-up phase and the ultimate target production phase. The business model of CTK Natural Resources seeks to graduate from the start-up phase to the ultimate target production phase in the shortest possible time (projected to be less than three years).
The assessment does not consider potential negative impacts of job losses from existing quarries	**The moderating impact of possible job losses elsewhere:** The background to this issue stems from a series of objections (to the subject development application) from a single nearby competitor and neighbouring parties who seek to support his position. However, it is important to keep those objections in perspective, noting that there has not been a single additional objection from any of the other 12 quarries that currently operate in the region. In a macro economic sense, this phenomenon can be explained by the Industry expectation that there will be substantial growth in infrastructure activities in the region in the years and decades ahead to accommodation population growth, and consequential increasing demand for quarry products. There is no rational justification for arguing that any of the existing quarries in the region will go out of business as a consequence of the introduction of one new competitor. Notwithstanding the above, it is acknowledged, in a worst-case scenario, that the establishment of a new quarry operated by CTK Natural Resources may result in the loss of perhaps two (2) Jobs elsewhere. In this worst-case scenario, the net number of new full-time equivalent positions generated by the CTK Natural Resources quarry would reduce from ten (10) to eight (8).
Overall Economic Impact	Notwithstanding the matters set out above relating to new (quarry) employment numbers, the argument associated with the economic multiplier generated by new jobs created (as a consequence of the operation on the subject quarry), pales into insignificance when compared to the economic perspective of the Forestry Corporation of New South Wales. Firstly, Council will note the evidence submitted by the Forestry Corporation (in separate correspondence) that the financial yield from the recent harvesting of timber from the quarry precinct amounted to a figure of less than $40,000. Council will also note from that evidence that the period of rotation for future harvests will be of the order of 40 years. Secondly, the value of royalties flowing to the Forestry Corporation (from quarry operations) will be higher than the yield from timber harvesting by a factor of several hundred times.

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	The consequential economic benefit will flow on to the local community through a whole range of enhanced Forestry activities and the associated growth in job opportunities.
Alternative Sites	
Lot 2 DP 814356 is the only alternative site documented to have been investigated.	The following alternative sites were assessed: - Lot 2 DP 814356 situated on the southern side of Milligans Road to the west of the subject land. - Compartment 42 (south side of Milligans Rd) - Compartment 43 (the subject site)
When the JRPP discussed this matter at their meeting in September they indicated that consideration should include 'alternatives', not just 'alternative sites'. Alternatives could include: - *Do nothing;* - *Establish a smaller quarry/shorter quarry life;* - *Alternative designs considered for the chosen quarry site.*	The 'do nothing' option is rejected by CTK NR and FC NSW on the basis that this option represents a considerable and significant lost economic opportunity. A shorter quarry lifespan of 20 years was investigated by the proponents. This option was found to be economically unattractive having regard achieving a financial return on investment on the cost of the capital outlay in establishing the quarry. FC NSW have provided a letter stating the commercial value for forestry timber harvesting operations within the land proposed for the quarry. The 'value' of the timber recently harvested within the subject site was $38K. Quarry royalties from quarry operations will be significantly greater than the economic return from plantation timber.
Condition A(12) Rehabilitation Obligations	
Council's Condition	**Amendment to Condition**
(12) (A196) Progressive rehabilitation of the site shall be carried out generally in accordance with the Rehabilitation Plan prepared by Naturecall Environmental and dated December 2015, with the following additional requirements: *a. Rehabilitation for each stage of the quarry shall be completed prior to commencing extraction in the subsequent stage.* *b. A validation report shall be submitted to Council at the completion of the final stage of rehabilitation, confirming that the site has been investigated for potential contamination, any necessary remediation has been completed successfully, and the site is suitable for the proposed future use (forestry).*	(12) (A196): Progressive rehabilitation of the site shall be carried out generally in accordance with the Rehabilitation Plan prepared by Naturecall Environmental and dated December 2015, with the following additional requirements: a. Stabilisation of the quarry shall be completed as soon as practicable after sections of the quarry reach their finished surface levels. The stabilisation shall be recognised as the completion of the site preparation to a condition that leaves the site stable and ready to plant seedlings. The stabilisation shall include the spreading of topsoil, site grading, seeding to stabilise the disturbed areas, and the installation of sediment and erosion control works as required. b. The area of the site (including the quarry management centre) disturbed by excavation, building work and extraction activities shall not exceed 4 hectares at any time. c. A validation report shall be submitted to Council at the completion of the final stage of rehabilitation, confirming that the site has been investigated for potential contamination, any necessary remediation has been completed successfully, and the site is suitable for the proposed future use (forestry).

ANNEXURE A-2 -	**Naturecall Environmental – Response to submission from Mrs Maureen Churnside (incorporating letter from Mr Roger Lembit)**
Matter	**Response**
The following table addresses the claimed inadequacies made in the submission to satisfy Council and the JRPP that the ecological assessment and rehabilitation plan meet current legislative requirements, policies and guidelines. Naturecall further note that the submission by Mr Lembit was attached to an email sent to council by local objector Maureen Churnside. The submission purports to have been prepared by Mr Roger Lembit of Gingra Ecological Surveys, however the document is not on a letterhead, has not been addressed to Council or Naturecall, and is not dated nor signed. As such, this document cannot be considered a 'peer review' as indicated by Council.	
The EIS mis-states the conclusions of the flora and fauna report in Section 4.8 of the EIS. It is simply wrong to state that the development will not remove or modify habitat.	Section 4.8 correctly states: • It is unlikely that the proposed development will have any impacts on any threatened species or populations and their habitats as listed under the TSC Act. • The proposal will not have an adverse effect on the life cycle of any threatened species such that viable local populations of the species are likely to be placed at risk of extinction. • The proposal will not result in removal or modification of habitat for threatened species. • The proposal will not fragment or isolate habitat from other areas of habitat. • The proposal will not have an adverse effect on critical habitat for any threatened species (either directly or indirectly).
It is clear that the ultimate scale of the development may well extend beyond the current 20 ha proposal, the EIS makes it clear that the 'resource' extends beyond the currently proposed development footprint. In that context, the Ecological Assessment ought to have incorporated a comprehensive flora and fauna assessment across the subject land.	The proposed quarry is limited to the areas clearly defined and assessed in the EIS and supporting documents. Any future proposal for works outside this area would be subject to a new assessment.
There is no clear indication of the extent of land proposed to be cleared, nor of the current vegetation composition of components of the areas proposed for clearing. Figures given within the EIS, Addendum and Ecological Assessment are either contradictory, inconsistent or include overlapping areas.	The EIS clearly defines the amount of land to be cleared. The Ecological assessment provides descriptions of the vegetation and habitat types present within the quarry footprint and this level of detail is not required in the EIS.
Drawings within the Addendum EIS and the Ecological Assessment and Rehabilitation Plan are inconsistent in relation to whether there are to be one or two overburden areas. It is unclear whether these areas are sufficient for storage of soil and timber proposed for use in the Rehabilitation Plan	The documentation submitted with the development application clearly shows that there will be two overburden areas.
Drawing PM-004 (the Master Plan) in the Addendum EIS does not show the required extent of the Asset Protection Zone (APZ), nor the precise location	The asset protection zone is clearly shown on drawing PM-009 titled "management centre layout plan", and is also clearly shown on drawing PM-014 titled "bushfire management proposal".

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of any second (easternmost) overburden area. This second overburden area is not shown in Drawing PM-005 (Quarry Layout Plan) either.	In addition to those representations of the asset protection zone, the extent of the APZ is also comprehensively shown in Appendix "G" (to the EIS) titled "Bush fire hazard assessment". It is not necessary to show the asset protection zone on every drawing within the EIS. With respect to the overburden stockpile areas, the geographic extent of the principal (western) stockpile area is clearly shown on drawing PM-004. That drawing also points to the approximate centrepoint of a second (potential) stockpile area on the eastern side of the quarry precinct. Acknowledging the very shallow (and variable) soil profile across the site, it is entirely possible that there may be no need for a second (eastern) stockpile. In the event that there is a need for a second stockpile, it's horizontal extent is impossible to determine at this time. It will only be possible to be precise in the determination of the existence and horizontal extent of the (possible) eastern stockpile after the topsoil has been stripped from the site. The impact of the stabilisation and rehabilitation program will also have a bearing on the need (or otherwise) for an eastern overburden stockpile area. Another factor impacting on the need (or otherwise) for an eastern overburden stockpile area is the provisional management decision to limit the extent of the disturbed area (at any one time) to an area not greater than 4 ha. That management decision will be firmed up and documented in the (post DA) quarry management plan.
Drawing PM-010 of the Addendum EIS does not show all areas of potential clearing associated with the proposed development. Additional areas which may be cleared include clearing either side of the security fence, vegetation clearing within the Asset Protection Zone and clearing along the water pipeline and potential operational clearing around the proposed dam.	The documentation submitted with the development application clearly defines and illustrates all areas that will be cleared as part of the proposal.
The OEH website (http://www.environment.nsw.gov.au/vegetation/buffer.htm) provides details on the extent of routine clearing which would currently be permissible under the Native Vegetation Act and Regulation. Permissible clearing of native vegetation would include additional areas not shown in Drawing PM-010 as mentioned above and any assessment of impacts should take this into consideration.	This statement is irrelevant. The Native Vegetation Act does not apply to the proposal as the subject land comprises State Forest.
Proposed Hard Rock Quarry, Lookout Road, Herons Creek' presents a narrow assessment of the subject land largely restricted to the proposed	The November 2015 Statutory Ecological Assessment (SEA) clearly defines the definitions of Study Site, Study Area Subject Land and Locality within Section 2.2.

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development footprint. Given the resource extends across a larger area of the subject land the ecological assessment should have covered the entire subject land. This would have enabled proper understanding of the ecological values of the land and the context in which the development is proposed to take place.	It is noted that the proposed quarry is limited to the areas clearly defined and assessed in the SEA and Addendum SEA. Any future proposal for works outside this area would be subject to a new assessment. The SEA and Addendum SEA addressed the requirements of the Secretary's Environmental Assessments Requirements (SEARs) issued pursuant to S78A(8) of the Act and Schedule 2 of the Regulation.
The generalised geological description given on page 11 is inconsistent with that in the EIS and with the purpose of the development proposal, ie. Quarrying of rhyolite.	The primary focus of assessing quaternary geology with regards to Ecological Assessment is to determine the presence or absence of alluvially derived soils. This information would be of critical importance in determining the presence or absence of Floodplain Endangered Ecological Communities (EECs) which must meet both the floristic and geomorphological characteristics, as defined by the NSW Scientific Committees Final Determinations. Given this, the information presented within section 2.3 and figure 3 appropriately address this ecologically focussed impact assessment. In addition, all information presented within Section 2.3 has been derived and appropriately referenced from credible sources and studies.
Thirty minutes is a relatively short survey time for a 400m^2 flora survey quadrat assessed for the first time (rather than a regular monitoring site). The usual time is at least 50 minutes and an average time of 60 minutes would be expected.	The November 2015 SEA clearly defines all floristic survey methodologies within Section 3.0. Section 3.1.1.1 states that a total of five vegetation plots were conducted by two ecologists over the site (60 person minutes each). This time was sufficient to record the vegetation structure and floristics accurately. In addition, 30-60 minute random meander transects were also conducted to account for variations across the site and record additional species. This not only meets and exceeds the NSW Government, Department of Environment and Conservation – *Threatened Biodiversity Survey and Assessment: Guidelines* for Development and Activities but also meets the "usual time" suggested by Mr Lembit.
The Assessment does not present data for each quadrat, but it appears, based on stated survey effort and the floristic list, that a full floristic survey was not achieved, with a suite of ground layer species being not recorded.	Mr Lembit has stated that his assumptions have been based on two aspects; stated survey effort and floristic list. As per the response above, the SEA flora survey methodologies exceeded both NSW Government Guidelines and Mr Lembits suggest "usual time", hence any assumptions drawn from this would suggest the survey effort has more than allowed for a full floristic survey. The floristic list details 111 plant species recorded throughout the study site. Given the high disturbance history of the site and regularly maintained nature of the Hardwood Forestry this would be more than sufficient to constitute a "full floristic survey". It is clear that this comment and the comment above has been made without due consideration for state guidelines and with very limited site familiarisation. Rather, the comments appear to have been made without detailed review of the SEA and under Mr Lembit's personal ideals.
The fauna survey effort included many accepted techniques and resulted in	A full description of fauna survey methodology is presented within Section 4.0.

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the successful detection of a representative range of arboreal mammals, birds, bats and frogs. It did not include techniques such as trapping and placement of hair tubes which may have allowed the detection of a broader range of mammals and the seasonality of the survey was such that reptile detection was unlikely. There is no clear statement of the number of days over which bird surveys took place.	Fauna survey techniques utilised were determined by undertaking potential occurrence assessment which is presented in A1.1 and A1.2. From habitat assessment and Local records (OEH, Bionet) it was determined that many of the small ground mammals such as New Holland Mouse and Eastern Chestnut Mouse were unlikely to occur hence, Elliot A Trapping was not considered necessary. Under the same methodology, a number of arboreal mammals such as Yellow-bellied Glider and Squirrel Glider were assessed as having some potential to occur on site. Adequate targeted survey for these species was utilised which included spotlighting, call playback, stag watches which exceeded DEC guidelines. A total of four hours was spent on herpetological searches. It is acknowledged that this occurred outside of the recommended survey times (NSW DEC). As stated in Section 4.1.8 to counteract any limitations, qualitative and quantitative habitat evaluation combined with historic data provided sufficient data to produce a conservative potential occurrence assessment, from which no threatened reptile species were found to have potential to occur. This approach is considered best practice to address the Principle of Uncertainty. Naturecall acknowledge that no clear definition was made in regards to the number of days over which the bird survey was undertaken. The report refers to a one hour census being undertaken each morning as well as opportunistically during other activities. The statement "each morning" refers to the four days in which Naturecalls' Ecologists were on site, which meets and exceeds NSW DEC guidelines.
Figure 6 uses Forest Type mapping as a surrogate to show the distribution of vegetation types across the subject land. Forest Type mapping is not an accepted method in ecology for identifying vegetation classes and cannot reliably be used to determine the presence of an endangered ecological community. The authors should have prepared an updated vegetation map of the whole site, including the quarry footprint, based on their plot data and observations and available OEH regional vegetation mapping. No adequate map of native vegetation has been included within the EIS documents.	Forest Type mapping was utilised within Figure 6 to depict NSW State Forestry Corporation Mapping which is appropriately referenced. Figure 6 must be considered in conjunction with Section 3.2.1 – Site Vegetation Communities which states *"The site vegetation generally comprises immature regrowth very tall open forest dominated by Blackbutt with Broad-leaved White Mahogany, White Stringybark and Tallowwood as associates. The composition of canopy species is fairly uniform over the site, however understorey and shrub layer species and structure vary widely depending with the topography and aspect. The majority of the forest could be considered dry sclerophyll with some localised areas (eg along drainage lines) evidencing a lower fire history and hence a more mesic understorey, grading into wet sclerophyll."* As per the statement made in Section 3.3 – *"Vegetation mapping (Forestry Corporation NSW, undated) and inspection of these areas during the survey found that the vegetation in the study area consists of a dry to moist open forest dominated by Blackbutt with Turpentine, White Stringybark and Tallowwood"* and details of flora survey methodology described in section 3.1, it is clear that the NSW Forestry Corporation Mapping was intensively ground truthed, and was, at no stage relied on to determine if the study area meets the floristic characteristics of an EEC.
The text on page 70 does not deal with the issue of prevention of harm to fauna isolated within the security fence.	Section 7.1.3 (page 70) clearly describes a recommendation to mitigate potential harm to fauna. It states: "Notwithstanding that limited vegetation may remain within the enclosure, it recommended that the fence does not have any barbed wire to further reduce the risk of entanglement and injury to fauna".

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Weed management issues are dismissed and demonstrate a lack of knowledge of the issues surrounding weed management in quarries generally. This is despite the vegetation description on page 22 stating that 'Lantana camara is present throughout to varying degrees ranging from dense thickets to scattered juveniles'. Other potential invasive weed species detected at the site (from Appendix 2 of Assessment) were Rhodes Grass (Chloris gayana) and Whisky Grass (Andropogon virginicus). It is likely that Giant Parramatta Grass (Sporobolus fertilis) would be another invasive grass of concern, although it was not detected. *The logging operation conducted by the Forestry Corporation has resulted in a more open vegetation structure with areas of disturbed soil. This vegetation structure would favour native birds such as Currawongs, which may be a vector for spread of Lantana and other woody weeds. The disturbed soils would be open to invasion by weeds such as Lantana.*	The SEA does not need to comprehensively address weed management issues over the site as this is dealt with in the Rehabilitation Plan. Section 6.7 of the Rehabilitation Plan clearly defines minimum weed control efforts which are far greater than the statutory obligations defined within the *Noxious Weeds Act 1993*. Rather the Rehabilitation Plan seeks to manage the occurrence of all noxious, environmental and Weeds of National Significance. It is insulting for Mr Lembit to suggest that Naturecall did not detect an invasive weed species when it is clear that he has not visited site.
Figure 11 does not account for possible clearing within the APZ, the assessment generally excludes consideration of the APZ.	The description of the proposed development in the SEA (Section 2.1) clearly states that an APZ will form part of the quarry development and has been taken into account when assessing impacts.
Whilst, in some circumstances it may be appropriate to consolidate species of similar ecology within a single assessment (seven part test), this ought not to be done when species are known to be present on site. Each species confirmed as being present should have its own Assessment of Significance (seven part test).	Naturecall have produced hundreds of Seven Part Test Assessments under this widely accepted structure. In addition only two species were confirmed as being present within the study area, from which, Yellow-bellied Glider was given its own subsection under Part (a) of the assessment.
In any case the Assessment of Significance is flawed as there has been no such Assessment based on the proposed development in its entirety. When, as in this case, the development proposal is amended in light of additional requirements or new information, the Assessment of Significance, must take place anew.	The entire extent of impacts associated with the proposal have been assessed in the SEA and addendum. Any further proposal to remove or modify habitat outside this area would be subject to further investigations and impact assessments.

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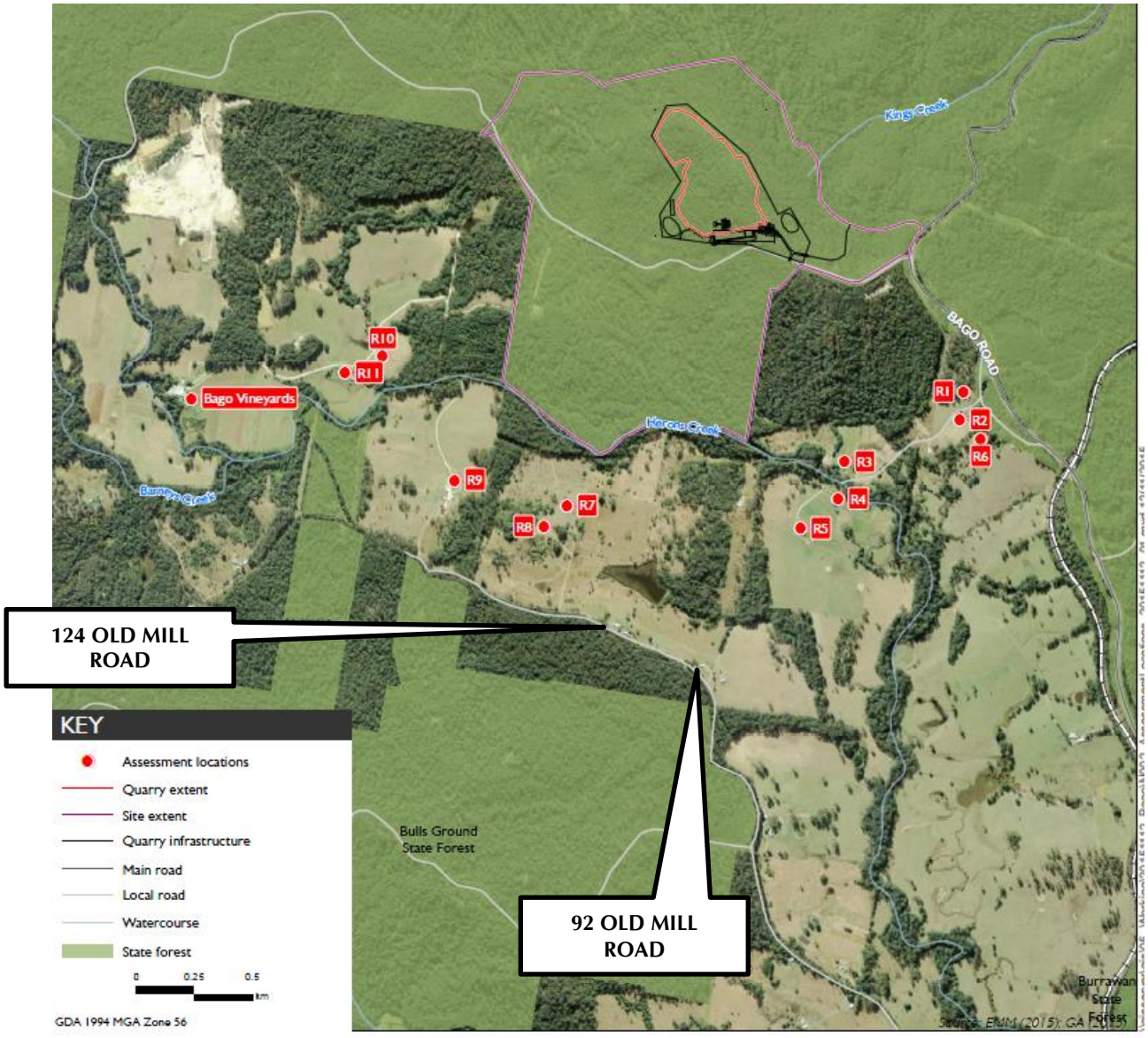
Matter	**Response**
It is not appropriate for an Assessment of Significance to cover an additional component of a development, such as a relocated dam, without a proper assessment of the cumulative impact of the whole development.	The cumulative impact of the development has been assessed in the SEA. This includes clearing for the dam and all other aspects of the proposal. The addendum SEA has assessed impacts associated with the relocation of the dam.
The Assessment should address the long term fauna values of whole site, not just in context of harvesting of the Blackbutt plantation.	The SEA has included qualitative and quantitative assessment of habitat within the study area. It is noted that the study area will be returned to a forestry plantation after the life of the quarry, hence the potential for the site to have value to fauna in the long term is minimal.
The Assessment provided on behalf of the proponent cannot be relied upon as an assessment of the likely impact on threatened species. The extent of land which potentially could be cleared for the development has not been clearly stated and excludes classes of permissible clearing which proceed, including clearing associated with operation of the security fence, pipeline dam and the bush fire asset protection zone. Clearing of native vegetation which is a component of a hardwood plantation, including shrub and ground layer plants, is still clearing, regardless of harvesting status and plans. The establishment and management of an APZ is effectively habitat modification.	The extent of the development footprint (study site) and the Study Area has been clearly defined in Section 2.2 as well as visually represented in Figures 2 and 3. In addition, the SEA and Addendum clearly meet all legislative requirements to allow proper assessment of the proposal.
It is not appropriate (page 2) to dismiss impact on the basis of proposed rehabilitation works, particularly given there is no proposed offset for loss of native forest or for loss of habitat value of the hardwood plantation. Quarries in other parts of New South Wales have been required to provide conservation offsets. The current offset principles exclude use of on-site rehabilitation areas for offsetting for quarries such as this.	It is noted that the study site will be returned to a Blackbutt plantation after the life of the quarry which will be subject to the same harvesting cycles. Further, most of the vegetation on the quarry site has now been harvested by State Forests. As such, an offset for the loss of vegetation is not considered required and at present there is no legislative requirement to offset.
This addendum report has a narrow focus on the impacts of construction of the dam and there is no proper assessment of cumulative impact.	The main SEA report clearly addresses the impacts associated with the entire development footprint, including the dam. The addendum SEA was only prepared to address the impacts of relocating the dam to a new area.
The rehabilitation Plan is a conceptual document and doesn't satisfactorily demonstrate the aim for reforestation to a mixture of managed hardwood plantation and native forest will be achieved.	The rehabilitation plan is preliminary and is suitable for the Development Application. A detailed rehabilitation plan along with other associated management plans will be submitted with the Construction Certification (CC) documentation.

ANNEXURE A-2 -	**Naturecall Environmental – Response to submission from Mrs Maureen Churnside (incorporating letter from Mr Roger Lembit)**
Matter	**Response**
There is no analysis of whether the post quarrying soils will be fertile enough to support plantation forestry. Neither are there specific measures to restore key aspects of ecosystem function in rehabilitation projects including the role of legumes/Casuarinas in nutrient cycling and maintaining healthy populations of soil invertebrates. No post rehabilitation monitoring for invertebrate health is included.	This will be detailed in the final rehabilitation plan to be submitted with the CC.
On page 22, the rehabilitation plan should include the species lists, the appropriate time to collect seed for storage and begin propagation at the commencement of clearing, not at some future date.	This level of detail is not required at DA stage. Specific measures such as this will be detailed in the final rehabilitation plan to be submitted with the CC.
The rehabilitation plan is generalised and lacks specificity. There is no real sense that the plan includes specific measures relating to either hardwood plantation re-establishment or restoration towards benchmark vegetation communities currently represented on the site and subject land.	As stated above.
On page 22 the text on seed storage demonstrates lack of knowledge of diversity of seed viability among different plant groups.	The Rehabilitation Plan states that seed storage methods will include the stated measures. It is beyond the scope of this plan to include details of various seed storage methods per species.
The rehabilitation plan provides no clear calculation to demonstrate that the designated overburden area(s) will provide sufficient space for storage of topsoil, logs and boulders required.	The documentation submitted with the DA clearly shows that there will be two overburden areas which will be of sufficient size to provide for storage of topsoil logs and boulders.
On page 23, there needs to be a specific requirement that control of Lantana should occur prior to commencement of overburden removal. In particular, the dense thickets of Lantana referred to on page 22 of the Ecological Assessment need to be treated prior to works.	To be detailed in the final rehabilitation plan.
On page 25 the proposed methods for revegetation do not appear to align with the aim of re-establishing a commercially viable hardwood plantation.	On page 25, the Rehabilitation Plan includes a number of measures to restore the site to a plantation, including *"the suite of species to be used for rehabilitation is to conform with the species present prior to vegetation clearing activities eg Blackbutt plantation."*
Table 6 includes no criterion relating specifically to weeds.	To be detailed in the final rehabilitation plan.

Annexure B

EMM – NOISE ASSESSMENT LOCATIONS



Noise assessment locations

Broken Bago Quarry
Noise Impact Assessment

Annexure C = FCNSW Letter

Forestry Corporation of NSW ABN 43 141 857 613
Hardwood Forests Division
Maher Street Wauchope NSW 2446
(PO Box 168 Wauchope NSW 2446)
T 02 6585 3744
F 02 6585 2392
www.forestrycorporation.com.au

14/11/2016
Ref No.: F2015/00470

Rob de Groot
De Groot & Benson Pty Ltd
PO Box 1908
COFFS HARBOUR NSW 2450

Dear Rob,

Development Application - 2015/953 - Extractive Industry and Associated Infrastructure Lot 161 and Part Lot 52 DP 754445 Lookout Road HERONS CREEK Economics

Reference is made to the documentation currently on public exhibition in relation to the above development application, and your email request (dated 14th November 2016) for additional information associated with the economic impact assessment. Forestry Corporation of NSW' (FCNSW) response, specifically in relation to the proposed quarry site within Compartment 43 of Broken Bago State Forest, is as follows:

- **Commercial value of timber harvested from the quarry site.**

The 16.6 ha area of plantation harvested produced a gross volume of 792.298 m^3 of timber.

Gross value of the timber harvested was $38,312.00.

- **Number of (temporary) jobs created during planting and harvesting phases of the plantation.**

Re-established the plantation involves series of tasks as follows:

- ✓ Site preparation/harvesting debris stacking and burning
- ✓ Ripping planting lines
- ✓ Preplanting weed control
- ✓ Planting seedlings
- ✓ Post planting weed control

To re-establish the 16.6 ha harvested would take estimated 312 man hours and 109 machine hours. FCNSW average cost of re-establishment of hardwood plantation areas of

this nature is an estimated $3,300/ha. FCNSW has an existing pool of contractors and permanent staff who undertake all of our plantation re-establishment.

Harvesting of the plantation was undertaken by long term (3 to 5 years) contractors engaged to work in similar configuration forest structures in this part of the state. The 3 person harvesting crew in this case would have comprised a felling machine operator, a snigging machine operator and a processing machine operator on the dump site. An unknown number of separately contracted haulage trucks would have been involved. Harvesting would have taken two to three weeks.

- **The normal time period between planting and harvesting a plantation.**

Depending on the “site quality” (a measure of how productive a specific site is for growing trees) and specific timber products in demand at a specific time, a plantation is replanted every 30 to 50 years. The quarry site was harvested after 46 years (planted 1970) and is only rated at an “average” site at best. If planted immediately, it is likely the next “rotation” length will again be in excess of 40 years.

Should you require any further details please contact the undersigned at your convenience.

Yours sincerely

[redacted]

Richard Rienstra
Senior Land Administrator I Forests Stewardship