



MODIFICATION OF DEVELOPMENT CONSENT / CERTIFICATE

FORM NO. 011

Environmental Planning & Assessment Act 1979 – Section 4.55 or Section 4.30
Environmental Planning and Assessment regulation 2000 – Clause 148

Select the type of consent you are proposing to modify:

- Development Consent (under Section 4.55)
- Complying Development Certificate (under Section 4.30)
- Construction Certificate (under Clause 148)

This form is to be used to modify a Development Consent that has been granted under the Environmental Planning and Assessment Act 1979.

PROPERTY DETAILS

Lot/Section/DP Numbers can be found on the Certificate of Title or the Rates Notice for the land.

Parcel No _____ Lot No/s 755 Section _____ DP No/s 813517
Property No 1654 Street/Road Name The Escort Way
Property Name Bald Hill Quarry Town/Locality Borenore Postcode _____

APPLICANT DETAILS

Name/s Hamcon Civil
Postal Address PO BOX 404
Town/Locality DUBBO Postcode 2830
Daytime Phone _____ Mobile _____
Email chloemcallister@mgfp.com.au Fax _____
Signature/s C. McAllister Date _____

OWNERS CONSENT

- If more than one owner, **every owner must sign.**
- If you are signing on the owner's behalf as their legal representative, please state your legal authority (eg Power of Attorney, Executor, Trustee) _____ and attach evidence of this authority.
- If the property is within a strata plan, the consent of the Owners Corporation is required under seal.
- If the owner is a Company – all Directors must sign.

Full Name _____ Full Name _____
Postal Address PO BOX 404 DUBBO Postal Address _____
Signature [Signature] Signature _____
Date: 12 / 13 / 2019 Date: _____ / _____ / _____
If signing on behalf of a Company, please indicate your position within the Company.
Position _____ Position _____

CONSENT

DA Number 2014/114/B Complying Development Certificate No _____
Date of Determination 18/12/2018

MODIFICATION

Give details on the extent and manner of modification.

OFFICE USE ONLY

- Type of Modification Minor s96(1) Error or Misdescription Major s96(2)
 Minimal Environmental Impact s96(1a)

13 MARCH 2019

Attn: Kate Blackwood

Cabonne Council
PO Box 17
MOLONG NSW 2866



Assessment of Development Conditions – DA2014/114

The following statements are provided in response to the development conditions for the above application:

Condition No.	Objective	Action
1	To ensure development proceeds in the manner assessed by Council	No changes to the existing quarrying footprint are proposed as part of this modification.
2	To ensure compliance with RMS conditions	No changes to existing internal road and site access are proposed. It is noted that the internal access road is bitumen sealed and constructed to meet RMS requirements.
3	To ensure compliance with EPA conditions	
	• Performance	Works and activities will continue to be carried out in accordance with DA2014/114.
	• Noise and vibration	No changes to operating hours are proposed.
	• Air quality and odour	Management of dust suppression will continue in accordance with this condition
	• Water management	The proposal continues to comply with the PEO Act 1997 and will continue to implement the approved Erosion and Sediment Control Plan submitted to Council as part of DA2014/114
	• Waste	Waste management continues in accordance with this condition
	• Activities must be carried out in a competent manner	No changes are proposed for the processing, handling, movement, storage and treatment of materials
4	To ensure the scale of the activity does not increase beyond the scope of this approval without further assessment of possible impact	This modification proposes to increase extraction from 60,000tpa to 150,000tpa. The proposed modification has been evaluated and justified principally through consideration of its potential impacts on the environment and potential benefits to the local and wider community. This is outlined in the attached Statement of Support.

5	To reduce land use conflict and to lessen the visual impact of the development	A revised landscape management plan has been designed to reduce landuse conflicts and lessen the visual impact of the development from neighbouring properties. The vegetation proposed will be endemic species. This is outlined in the attached Statement of Support.
6	The proponent shall prepare and implement a Rehabilitation Plan for the project	No changes are proposed. Rehabilitation and management of the quarrying operations and site will continue in accordance with the approved rehabilitation plan submitted to Council as part of DA2014/114
7	To prevent soil erosion and watercourse contamination during construction of the access point onto The Escort Way and during quarrying operations	No changes are proposed. Erosion and sediment control measures will continue in accordance with the approved erosion and sediment control plan submitted as part of DA2014/114
8	To ensure that Council, Roads and Maritime Services (RMS), and the applicant are all protected against any liability claim	No changes to public liability insurance are proposed as part of this modified application.
9	To ensure that all construction work carried out within State road reserves are at no cost to the RMS	No road construction works are proposed as part of this modification application
10	To ensure that all construction work carried out within State road reserves are at no cost to the RMS and Authorised	No road construction works are proposed as part of this modification application
11	To ensure a suitable, all weather, non-dust generating internal access road is provided	No changes are proposed as part of this modified application. The internal access road is bitumen sealed and constructed to meet RMS requirements
12	To ensure on-site traffic flows in the manner assessed by Council	The site is accessible via The Escort Way. No changes to entry/exit points are proposed as part of this application
13	To ensure loading/unloading does not interfere with the amenity of the street	All loading and unloading operations will continue to take place within the confines of the site. No changes are proposed as part of this modification
14	To ensure that dust does not become a nuisance to neighbouring properties or passing motorists	Increased water for dust suppression will be drawn from existing dams on site and surplus water retained within sediment basins. This is outlined in the attached Statement of Support.
15	To ensure that arrangements are made for vehicle movements associated with the development	Vehicle movement is expected to increase as a result of the increased extraction rate. This is outlined in the attached Statement of

		Support. No changes are proposed in relation to loading areas, truck parking/waiting areas, re-fueling zones and travel routes that will be used during operation of the quarry.
16	To provide adequate onsite truck parking area	No changes are proposed to existing location of truck parking facilities
17	To ensure safe and practical access is provided to the subject land	Private access to the subject site will continue in accordance with this condition.
18	To ensure all conditions of consent are complied with and development proceeds in the manner assessed by Council	This application seeks to modify the approved conditions of consent. The proposed modification is considered 'substantially the same development which consent was granted'. This is outlined in the attached Statement of Support.

Right of Review

Noted

Right of Appeal

Noted

I trust this addresses the development conditions for the proposed modification at Lot 775 DP 813587, No. 1654 The Escort Way, Borenore, Development Application D2014-114.

Yours faithfully,

Chloe McAllister • Development Planner

6800 2772

chloemcallister@mgfp.com.au • www.maasgroupfamilyproperties.com.au

PO Box 404, Dubbo NSW 2830 • Sales Office: 28 Azure Avenue, Southlakes Estate, Dubbo NSW 2830

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Phone: (02) 6392 3247

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Contact: Kate Blackwood

THE GENERAL MANAGER
POST OFFICE BOX 17
MOLONG 2866

Website: www.cabonne.nsw.gov.au
Email: council@cabonne.nsw.gov.au

Our Ref: 2014/114

Doc ID: 539902

ABN: 41992 919 200

17 March 2014

Mark Hammond
C/- Anthony Daintith Town Planning
PO Box 1975
ORANGE NSW 2800

Dear Sir,

**DA 2014/114 AT LOT 775 DP 813587
1654 THE ESCORT WAY, BORENORE**

Please find attached Council's consent for the above development application. This consent does not include the applicable Construction Certificate, which would permit building works to commence.

Should you have any further enquiries please contact Council's Environmental Services Department on 6392 3247 between 9am and 11am Monday to Friday. Council's Environmental Services Officers are now available each Wednesday at Canowindra between the hours of 9.30am to 12.30pm at the HACC/Public Library Building in Gaskill Street Canowindra.

Yours faithfully,

H J Nicholls
DIRECTOR ENVIRONMENTAL SERVICES



A WBC STRATEGIC ALLIANCE PARTNER
"WORKING FOR OUR COMMUNITIES".





FORM 4

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION Environmental Planning and Assessment Act 1979 Section 81(1)(a)

DEVELOPMENT APPLICATION

Application Number: 2014/114

Applicant: Mark Hammond
C/- Anthony Daintith Town Planning

Applicant Address: PO Box 1975, ORANGE NSW 2800

Owner: MA & SL Hammond

Land to be Developed: Lot 775 DP 813587, 1654 The Escort Way,
BORENORE NSW 2800

Proposed Development: Extractive Industry

Assessment Number: A6667 **BCA Class:** N/A

DETERMINATION

Made On: 17 March 2014

Determination: Consent Granted Subject to Following Conditions

Consent to Operate From: 17 March 2014

Consent to Lapse On: 17 March 2019
(Where proposed development has not been commenced).

CONDITIONS OF APPROVAL

1. DEVELOPMENT IN ACCORDANCE WITH PLANS

Objective

To ensure the development proceeds in the manner assessed by Council.

Performance

Development is to take place in accordance with the attached stamped plans (Ref: DA 2014/114, Figure 1 Existing Boundaries & Site Detail and Figure 2 Extent of Operations 27th November 2013, ref 2014-032DA) and documentation submitted with the application and subject to the conditions below, to ensure the development is consistent with Council's consent. NOTE: Any alterations to the approved development application plans must be clearly identified **WITH THE APPLICATION FOR A CONSTRUCTION CERTIFICATE**.

The Principal Certifying Authority for the project may request an application for modification of this consent or a new application in the event that changes to the approved plans are subsequently made. An application to modify the development consent under s96 of the Environmental Planning and Assessment Act, 1979, as amended and will be subject to a separate fee.

2. RMS CONDITIONS

Objective

To ensure compliance with RMS conditions.

Performance

- The access from The Escort Way servicing the quarry shall be constructed and designed in accordance with Austroads Guide to Road Design Part 4A (2010) Figures 7.5 and 8.2 'Type BAR' (Basic Right Turn) and 'Type BAL' (Basic Left Turn) and any relevant Roads and Maritime Supplements. This provides a reasonable level of safety for traffic turning right into the development and allows through traffic on The Escort Way an area to pass the right turning vehicle on the left hand side. The access is to be sealed for a minimum of 20 metres from the edge of the travel lane, match existing road levels and not interfere with existing road drainage.
- Safe Intersection Sight Distance (SISD) requirements outlined in the *Austroads Guide to Road Design Part 4A* and relevant Roads and Maritime Supplements shall be provided in both directions at the vehicular access point servicing the

quarry from The Escort Way. For a 100 km/h speed zone the minimum SISD is 250 metres.

- A copy of construction plans for the proposed roadworks associated with the access is to be submitted to Roads and Maritime for approval. As roadwork is required on a state road, the developer will be required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime Services. Roads and Maritime will exercise its powers under Section 87 of the Roads Act 1993 (the Act) and/or the functions of the roads authority, to undertake roadwork in accordance with Sections 64 and 71 and/or Sections 72 and/or 73 of the Act, as applicable, for all works under the WAD.
- Advance truck warning signs (W5-22) and distance plates (W8-5) signage is to be provided at appropriate locations to give approaching motorists suitable warning of the slowing, stopping and turning manoeuvres associated with vehicles entering and leaving the development.
- Road Occupancy Licence is required prior to any works commencing within 3 metres of the travel lanes. Submission of a Traffic Management Plan incorporating a Traffic Control Plan may be required as part of this licence.

3. EPA CONDITIONS

Objective

To ensure compliance with the EPA conditions.

Performance

Except as expressly provided by these General Terms of Approval, works and activities must be carried out in accordance with the proposal contained in:

- The Development Application 2014/114 submitted to Cabonne Shire Council on 15 January 2014; and
- The accompanying Statement of Environmental Effects prepared by Anthony Daintith Town Planning and dated 13 January 2014.

The proponent must apply for and hold an in-force environment protection licence issued by the NSW Environment Protection Authority prior to the proponent carrying out any Scheduled Activity as defined by Schedule 1 of the Protection of the Environment Operations Act 1997.

The proponent must comply with any additional requirements imposed by an in-force environment protection licence issued by the NSW Environment Protection Authority.

Noise and vibration

Operating hours

Operational activities at the premises must only be conducted during the following operating hours:

- a) 7 am to 6 pm Monday to Friday;
- b) 8 am to 4 pm Saturdays; and
- c) at no time on Sundays or public holidays.

Air quality and odour

Activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

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

Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

Water management

Except as may be expressly provided by any in-force environment protection licence, the proponent must comply with Section 120 of the Protection of the Environment Operations Act 1997.

The proponent must develop and implement an Erosion and Sediment Control Plan for the premises within 3 months of the granting of development consent consistent with the EPA endorsed publication "Managing Urban Stormwater - Soils and Construction, 4th Edition" (Landcom, 2004) (or any revision) and the EPA produced addendum publication "Volume 2E: Mines and Quarries" (DECC, 2008) (or any revision).

Waste

The proponent must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Code	Waste	Description	Activity	Other Limits
NA	General or specifically exempted waste	Waste that meets all the requirements of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	A specified in each resource recovery exemption	NA

Activities must be carried out in a competent manner

Activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Maintenance of plant and equipment

All plant and equipment installed at the premises or used in connection with the activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

4. SCALE (GENERAL)

Objective

To ensure the scale of the activity does not increase beyond the scope of this approval without the further assessment of possible impact.

Performance

This approval enables the applicant to operate at a scale as submitted in the proposal. Any increase in the scale of the activity as submitted, will require the further approval of Council.

5. LANDSCAPE MANAGEMENT PLAN

Objective

To reduce landuse conflict and to lessen the visual impact of the development.

Performance

The proponent shall prepare and implement a detailed Landscape Management Plan to the satisfaction of Council.

Landscaping is to be undertaken in a manner designed to reduce landuse conflict and lessen the visual impact of the development from neighboring properties and The Escort Way. Landscaped areas shall be heavily landscaped with native trees and shrubs.

This plan is to be submitted to Council for the approval of the Director of Environmental Services within 6 months of the date of this consent; and must include the following:-

- a. Rehabilitation Plan, and
- b. Quarry Closure Plan.

6. REHABILITATION PLAN

Objective

The Proponent shall prepare and implement a Rehabilitation Plan for the project.

Performance

This plan shall include:

1. The plan objectives including a description of the short, medium, and long term measures that would be implemented to rehabilitate the site.
2. Performance and completion criteria for the rehabilitation of the site.
3. A detailed description of the measures that would be implemented over the next 3 years including the procedures for:-
 - a) progressively rehabilitating disturbed areas;
 - b) protecting areas outside the disturbance areas;
 - c) managing impacts on fauna;
 - d) landscaping the site to minimise visual impacts;
 - e) conserving and reusing topsoil;
 - f) collecting and propagating seed for rehabilitation works;
 - g) salvaging and reusing material from the site for habitat enhancement;
 - h) controlling weeds and feral pests;
 - i) controlling access; and
 - j) bushfire management;
4. A program to monitor the effectiveness of these measures, and progress against the performance and completion criteria

5. A description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - a) details of who would be responsible for monitoring, reviewing, and implementing the plan.

7. EROSION AND SEDIMENTATION CONTROL PLANS

Objective

To prevent soil erosion and watercourse contamination during construction of the access point onto The Escort Way and during Quarry operation.

Performance

An overall erosion and sedimentation control plan is to be prepared for the site to a standard acceptable to the Principal Certifying.

The plan is to note any proposed vegetation retention and planting and is to be submitted and approved by Council prior to any construction works commencing.

Specific construction zone erosion and sedimentation control plans are to be prepared to a standard acceptable to the Principal Certifying Authority and are required to be approved prior to the issue of Construction Certificates for each and any stage of the development.

8. PUBLIC LIABILITY INSURANCE

Objective

To ensure that Council, Roads and Maritime Services and the applicant are all protected against any liability claim.

Performance

Prior to the commencement of any works on Council, Roads and Maritime Services controlled land including a public road, the applicant is to affect Public Liability Insurance in the minimum amount of \$20 million. This insurance is to note both Council and Roads and Maritime Services as interested parties and is to remain current for at least the period from the issue of the Construction Certificate until the issue of a Compliance Certificate for the works. Documentary evidence of the currency of the cover is to be provided to Council prior to the issuing of a Construction Certificate.

9. WORKS UNDERTAKEN WITHIN STATE ROAD RESERVES

Objective

To ensure that all construction work carried out within State road reserves are at no cost to the Roads and Maritime Services.

Performance

A formal agreement in the form of a Works Authorization Deed (WAD) is required between the Developer and the RMS as the developer will be required to undertake 'private financing and construction' of works on a road in which the RMS has a statutory interest. This is relevant to the 'BAR' and 'BAL' component of the works.

The applicant should contact Roads and Maritime Services, P O Box 334, Parkes NSW 2870 to obtain the necessary Deed.

10. WORKS UNDERTAKEN WITHIN STATE ROAD RESERVES

Objective

To ensure that all construction work carried out within State road reserves are at no cost to the Roads and Maritime Services and Authorised.

Performance

A formal agreement in the form of a Road Occupancy Licence is required between the Developer and the RMS as the developer will be required to undertake 'private financing and construction' of works on a road in which the RMS has a statutory interest

The applicant should contact Roads and Maritime Services, P O Box 334, Parkes NSW 2870 to obtain the necessary Licence.

Submission of a Traffic Control Plan is required as part of this licence.

Evidence of a Road Occupancy Licence is to be provided to Council prior to the issuing of a Construction Certificate for the works.

11. APPLICATION OF BITUMEN SEAL TO INTERNAL ACCESS ROAD

Objective

To ensure a suitable all weather, non dust generating internal access road is provided.

Performance

The applicant is required to provide a bitumen seal to the internal access road from access point from The Escort Way to the entrance into the gravel quarry site. With a minimum width of 3.5 metres which shall be maintained at all times.

12. ENTRANCE / EXIT POINTS

Objective

To ensure on-site traffic flows in the manner assessed by Council.

Performance

Entrance / exit points are to be clearly signposted and visible from both the street and the site at all times.

13. LOADING / UNLOADING

Objective

To ensure loading / unloading does not interfere with the amenity of the street.

Performance

All loading and unloading operations are to take place at all times wholly within the confines of the site.

14. DUST SUPPRESSION

Objective

To ensure that dust does not become a nuisance to neighbouring properties or passing motorists.

Performance

The applicant will ensure to water down any nuisance dust that may arise from the development caused by machinery and traffic movements.

15. VEHICLE MANAGEMENT PLAN

Objective

To ensure that arrangements are made for vehicles movements associated with the development.

Performance

The vehicle management plan is to detail all vehicle movements within the site including loading areas, truck parking/waiting areas, re-fueling zones and travel routes that are used during operation of the gravel quarry.

The VMP shall be prepared by the applicant and then submitted for approval by Council. All persons involved in the quarry operations shall be issued with a copy of the VMP.

16. ADEQUATE ONSITE TRUCK PARKING

Objective

To provide an adequate onsite truck parking area.

Performance

At all times of operation of the gravel pit there must be adequate trucking parking available within the proposed site. With no trucks associated with the development queuing within the road reserve of The Escort Way.

17. PROVISION OF PRIVATE ACCESS

Objective

To ensure that safe and practical access is provided to the subject land.

Performance

Access must be provided to Lot 775 DP 813587 in accordance with Roads and Maritime Services requirements (Condition 14).

Prior to any Access Construction Certificate being issued, the applicant will be required to furnish Council a copy of all approvals from the RMS including approved access construction plans, Works Authorisation Deed and Road Occupancy Licence.

An Access Construction Certificate **must** be obtained prior to commencement of construction of any access to the property from The Escort Way.

A joint inspection with the Principal Certifying Authority is to be held prior to commencing construction of the access. Please telephone Council's Development Engineer on 6392 3271 to arrange a suitable date and time for the inspection.

A Compliance Certificate for the access must be submitted to Council before any Final Occupation Certificate can be issued.

18. COMPLIANCE WITH CONDITIONS OF CONSENT

Objective

To ensure all conditions of consent are complied with and development proceeds in the manner assessed by Council.


Performance


The use or occupation of the approved development shall not commence until such time as all conditions of this development consent have been complied with. The use or occupation of the development prior to compliance with all conditions of development consent may make the applicant / developer liable to legal proceedings.

Right of Appeal: If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act 1979 gives you the right to appeal to the Land and Environment Court within six (6) months after the date on which you receive this notice.

*Section 97 of the Environmental Planning and Assessment Act 1979 does not apply in the determination of a development application for State significant development or local designated development that has been the subject of a Commission of Inquiry.

Signed
(On behalf of Consent Authority)

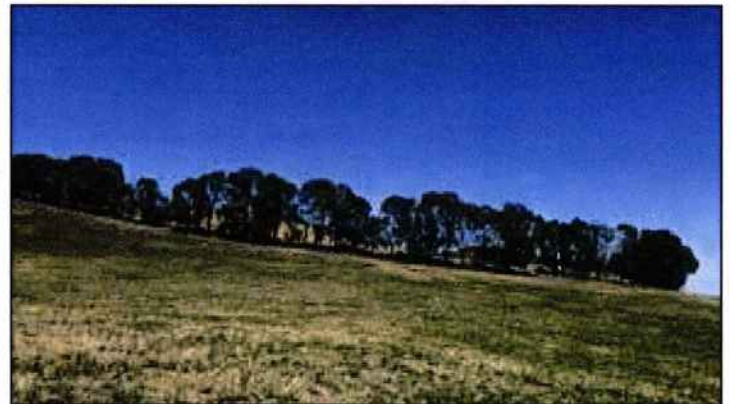

.....
H J Nicholls
DIRECTOR OF ENVIRONMENTAL SERVICES


.....
(Date)

4.55 (1A) STATEMENT OF SUPPORT

Modification of DA2014/114 to increase production of up to 150 000 tonnes per annum of Hornsfield Volcanic Silt Stone at

Bald Hill Quarry
1654 The Escort Way, Borenore



Prepared for:
Cabonne Council
99 – 101 Bank Street
Molong NSW 2866

Prepared by:
Hamcon Civil Pty Ltd
Construction Contractors

March 2019

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EXECUTIVE SUMMARY

This Statement of Environmental Effects has been prepared in support of a Section 4.55(1A) Modification Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act 1979) to modify Development Consent DA98/183 (now known as DA2014/114) which relates to quarrying Hornsfeld Volcanic Silt Stone at Bald Hill, 1654 The Escort Way, Borenore described as Lot 755 in DP 813517.

DA93/183 was originally approved by Cabonne Council on 7 March 1994 as designated development. An Environmental Impact Statement (EIS) was prepared by Central West Environmental Services and accompanied the development application. The EIS is referenced throughout this report and is shown at **Appendix A**. Further modifications have been sought and approved with Cabonne Council under DA2014/114 as follows:

TABLE 1: DEVELOPMENT APPROVALS

DA NUMBER	PROPOSED	OUTCOME
DA 93/183	Designated Development - Extractive Industry Quarry approval to obtain 30,000 t.p.a (15,000m ²)	Approved DA 17 March 1994
DA2014/114	Modification with respect to ancillary operations on site	Approved modified DA 28 July 2015
DA 2014/114 (1)	Approval to obtain up to 60,000 t.p.a (30,000m ²) of extractive material	Approved modified DA 17 March 2014
DA 2014/114 (2)	Approval to increase quarry area by 2400m ² (5%)	Approved modified DA 22 Jan 2018
DA 2014/114 (3)	Approval of maximum 4 blasts per annum	Approved modified DA 18 Dec 2018

Note: t.p.a tonne per annum

This application seeks to modify condition 1 of development consent DA2014/114(1) submitted plans being the approved *Figure 1 Existing Site Boundaries & Site Detail*, *Figure 2 Extent of Operations* and *Figure 1 Proposed Landscape Plan*, as shown at **Appendix B**. The proposed modification seeks to increase the quarrying production of up to 150,000 tonnes per annum of Hornsfeld Volcanic Silt Stone material for a period of approximately 36 years. The objectives of the proposed modification are to:

- Continue to produce a range of Hornsfeld Volcanic Silt Stone aggregates and crushed rock products for concrete manufacture, road and other infrastructure construction, land stabilisation and other development needs;
- Maximise the recovery of Hornsfeld Volcanic Silt Stone resources within the project site;
- Undertaking all activities in an environmentally responsible manner to achieve compliance with relevant criteria, goals and satisfy reasonable community expectations;
- Achieve the above objectives in a cost-effective manner to ensure the long term, economic viability of the proposal and the applicant.

The proposal is considered to be of minimal environmental impact and the modified development application is substantially the same development as the development for which the consent was originally granted. As the increased production is to be extracted from generally the same footprint as that consented to and does not require the augmentation or lowering of the existing sediment ponds. Accordingly, based on the assessment under taken, Council's approval of the Section 4.55(1A) Application is sought.

Information produced in this report is by the following documents:

- Appendix A** EIS prepared by Central West Environmental Services, and supporting documentation, 1993;
- Appendix B** DA2014/114 approved plans dated February 2018 and prepared by Anthony Daintith;
- Appendix C** Site photos by Maas Group Family Properties dated February 2019;
- Appendix D** Detail survey plans prepared by MPF Surveying, March 2019;
- Appendix E** Biodiversity & Ecological Assessment, prepared by AREA, March 2019;
- Appendix F** Preliminary Closure and Rehabilitation Plan prepared by Anthony Daintith, June 2015;

1.0 SITE ANALYSIS

1.1 The Subject Site

The subject site is described as Lot 775 in DP 813587, and is known as 'Bald Hill Quarry' at 1654 The Escort Way, Borenore.

The land has a total combined area of approximately 96.02 hectares; of the total area, the extent of the quarrying operation & extraction area as at February 2019 is approximately 5 ha.

The subject area is largely cleared of native vegetation, featuring open grasslands and sloping topography, with a height of 793 AHD, which dominates the immediate areas gentle gradients. Intermittent streams are shown to run through the site which eventually drain into Livingstone Hill Creek to the north-west of the site.



(Source: SixMaps 2019)

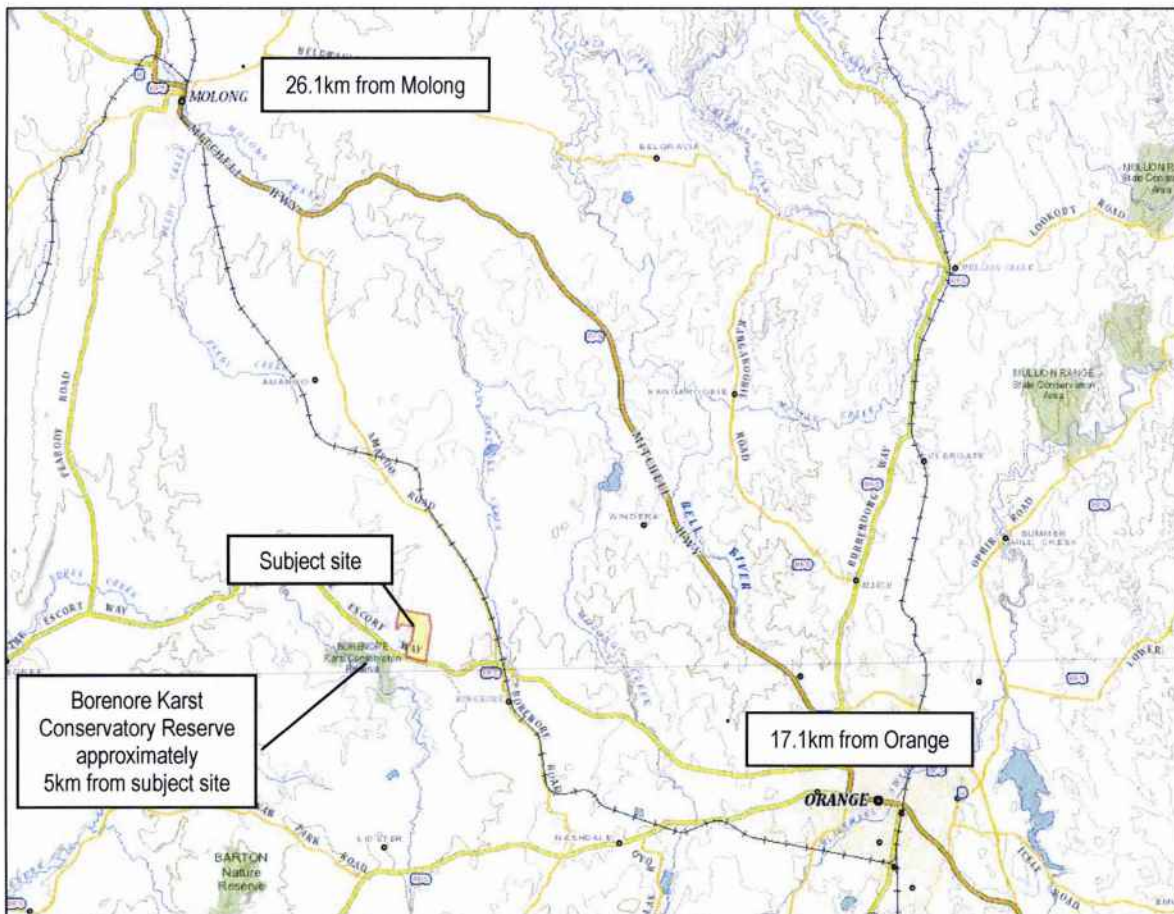
 Subject Site

Figure 1: Aerial view of the subject site

Key features of the site, including existing quarry site area, Bald Hill, vegetation bund wall & sediment ponds, and existing landscapes of the site and adjoining properties as shown at **Appendix C: Photographs & Appendix D: Detailed Site Survey Plans.**

1.2 The Locality

The site is located approximately 26km south east of Molong and approximately 17km north west of Orange Town Centre. The land surrounding the subject site consists of sloping pastures for the purposes of rural land uses. The Borenore Karst Conservatory Reserve is located south west of the site and is considered environmentally significant. **Figure 2** below provides an aerial view of the subject site and surrounding locality.



(Source: SixMaps 2019)


 Subject Site

Figure 2: Aerial view of the subject site and locality

2.0 DETAILS OF THE PROPOSAL

Pursuant to Clause 115 of Division 12 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Reg 2000) the following description of the proposed modification is provided.

2.1 Background

The existing quarry was approved by Cabonne Council on 7 March 1994 under DA93/183 as Designated Development, Extractive Industries (quarry), allowing extraction of 30,000 t.p.a (15,000m² p.a).

Further modifications have since been sought and approved with Cabonne Council under DA2014/114 with respect to the following:

- March 2014 – DA2014/114 (1) Approval to obtain up to 60,000 t.p.a (30,000m² p.a) of extractive material
- January 2018 – DA2014/114 (2) Approval to increase quarry area by 2400m²
- December 2018 – DA2014/114 (3) Approval for a maximum of four (4) blasts per annum

2.2 The Proposal

The proposed modification of DA2014/114 seeks to increase extraction production from the approved 60,000 tpa to 150,000 tpa.

In summary, the proposal would comprise the following:

- Continued use of existing internal road and RMS approved site access
- Extraction of Hornsfeld Volcanic Silt Stone and limited volumes of overburden from an extraction area of approximately 5ha, to a depth of base floor level 750m AHD;
- Production of up to 150 000 tonnes per annum of Hornsfeld Volcanic Silt Stone products for a period of approximately 36 years;
- On site crushing, screening and stockpiling of extracted material to produce a range of aggregate and crushed stone products;
- Transportation of the above products to the Applicants customers using 19 meter maximum truck and dog combination vehicles;
- Minor establishment and augmentation of ancillary infrastructure, including bund walls, water management structures, fencing; and
- Construction and rehabilitation of a final landform that would be geotechnically stable and would be suitable for a final land use of intermittent grazing consistent with the current land use.

2.2.1 Amenities, services and facilities

No changes are proposed to the amenities, services and facilities on site.

2.2.2 Site works

The proposal would include reconstruction of the vegetated amenity bund utilising topsoil and other overburden material from the processing and stockpiling area and infrastructure and services area along the southern and eastern perimeter of the site disturbance area (see **Figure 3** below.)



(Source: AREA 2019)

Figure 3: White Box Trees to be removed

As identified in the Biodiversity and Ecological report prepared by AREA at **Appendix E**, a total of three stands of White Box Trees and remnant vegetation are proposed to be removed to allow for an extension of the southern and eastern boundaries of the existing quarry by approximately 2400m².

To compensate for the vegetation loss, local plant community types are proposed to be planted around the quarry boundary in the same manner as the existing floral screen. Proposed re-planting will incorporate the recommended species and planting techniques identified in the report (AREA 2019, pp.14).

The reconstruction of the amenity bund wall, and the subsequent re-planting of the amenity bund wall are considered minor site works with minimal environmental impact for the following reasons:

- The vegetation to be removed predominately affects native vegetation planted as part of DA2014/114;
- The removal of vegetation is compensated with proposed re-planting of native plant community types identified;
- The removal of vegetation is unlikely to be of any significant impact on surrounding native species due to its close proximity of the quarry & site operations being an unlikely shelter/food source; and
- The report prepared by AREA concludes no long-term significant impact on threatened species associated with the trees and vegetation to be cleared (AREA 2019, pp.15).

No other changes to the site & surrounds are proposed as part of this application.

2.2.3 Extraction Operations

The proposal seeks to increase extraction rate up to 150,000 tonnes per annum. As a result, the following modifications to floor elevation and extraction volume are proposed:

- Extraction of Hornsfeld Volcanic Silt Stone from base floor level 759.5 AHD (as at 31/08/2018) to a depth of base floor level 750 AHD and;
- Increased production volume of Hornsfeld Volcanic Silt Stone products from 60,000 tonnes per annum (as at 17/03/2014) of up to 150 000 tonnes per annum for a period of approximately 36 years.

Extraction operations on site, including crushing, screening and stockpiling of extracted material are likely to increase operations due to the increase extraction volumes, however, is considered to have no additional significant impact to the overall proposal and surrounding locality due to the existing approved extraction operations on site.

2.2.4 Processing & Stockpiling Operations

No changes are proposed to processing operations, including operations from that already consented to.

2.2.5 Transportation Operations

No significant changes to transport operations to and from the site are proposed from that already consented to. There will likely be an increase of vehicle movement leaving the site during operating hours per day as a result of the increased extraction volumes proposed. This is unlikely to result in any significant impact to traffic related matters along The Escort Way, and surrounding road network.

2.2.6 Water management

Reconstruction and reestablishment of existing erosion and sediment control devices are proposed. Increased volumes of water would be required for dust retention and to retain a minimum moisture content in stockpiled products. Water will be drawn from existing dams on the project site, and surplus water retained within the sediment basin.

2.2.7 Hours of operation & Project Life

Hours of operation on the project site will continue to be consistent with the conditions of consent. Project life has an estimated 36 years based on proposed extraction rate 150,000 tonnes per annum.

2.2.8 Employment & economic contribution

Employment & economic contribution on the project site will continue to be consistent with the conditions of consent. It is considered the continued use of quarry would provide benefits to Cabonne and the wider community through the provision of local employment and purchase of goods and services without generating significant social, economic and environmental impacts.

2.2.9 Site decommissioning and rehabilitation

Site decommissioning and rehabilitation will continue in accordance with the approved Preliminary Closure and Rehabilitation Plan prepared by Anthony Daintith 2015, provided at **Appendix F**.

As described above, the proposal does not significantly alter or change the original development consent. Importantly, the existing quarrying footprint is generally consistent with that originally consented to under DA2014/114(2). The approved quarrying area occupies less than 5% of the total site area.

Furthermore, the proposed increase in production is considered minimal when compared to the approximate 6,000,000 tonnes of Hornsfield Volcanic Silt Stone reserves on site as identified within the approved EIS at **Appendix A**.

Figure 4 below illustrates the volume of extraction material approved under DA93/183 and DA2014/114, compared to that existing on site.

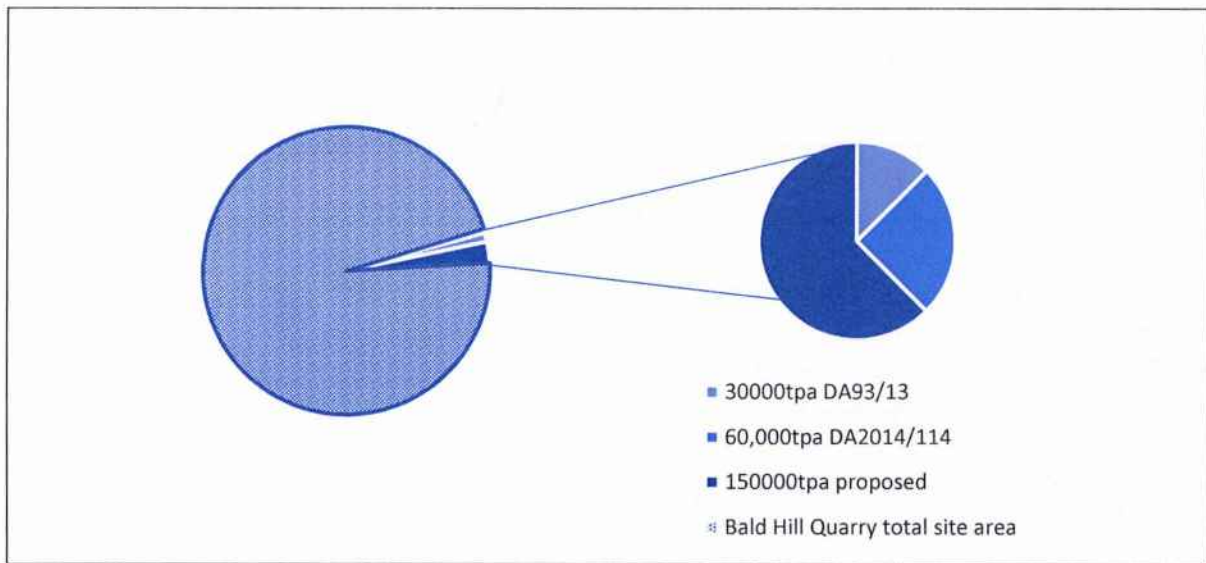


Figure 4: Maximum Site Extraction Volumes

The following sections provide a detailed assessment of the proposed modification in accordance with Section 4.55(1A) of the Environmental Planning and Assessment (EP&A) Act 1979.

3 PLANNING CONTROLS

3.1 Introduction

A range of Commonwealth and NSW Legislation, guidelines and policies apply to the proposal. These documents were reviewed to identify any environmental aspects requiring consideration in the Statement of Support. A brief summary of each relevant piece of legislation and planning instrument is provided in the following subsections.

3.2 Commonwealth Legislation

3.2.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) covers 'matters of national environmental significance'. Relevant matters of national environmental significance include:

- Listed threatened species and ecological communities; and
- Listed migratory species protected under international agreement

A Biodiversity and Ecological Assessment prepared by AREA provided at **Appendix E** and submitted as part of this proposal identifies that the proposed modification would not adversely impact on any matters of national environment significance and therefore no further assessment is required under the EPBC Act.

3.3 NSW Legislation

3.3.1 Environmental Planning and Assessment Act 1979

In New South Wales (NSW), the relevant planning legislation is the Environmental Planning and Assessment Act 1979 (EP&A Act). The EP&A Act instituted a system of environmental planning and assessment in NSW and is administered by the Department of Planning (DoP).

Part 1 Section 1.7 – Application of Part 7 of Biodiversity Conservation Act 2016

Section 1.7 of the EP&A Act requires consideration of whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats as a result of the proposed development. A biodiversity assessment has been undertaken as part of the EIS and subsequent modified development applications and does not identify any significant adverse impact on threatened species, populations or ecological communities and their habitats. Given the proposal is generally consistent with the approved quarrying footprint, combined with the sites intermittent strips of native vegetation and lack of environmental significance, the proposal is unlikely to result in any additional biodiversity impacts compared with the approved development.

Furthermore, the report prepared by AREA confirms that the site, and proposal is unlikely to have, or adversely effect any significant biodiversity species and concludes "...*The proposal will not have any significant impact on any threatened species... there will be no long-term significant environmental impacts*" (AREA 2019 pp. 14).

Part 3 – Relevant Legislation

Part 3 of the EP&A Act facilitates the preparation of relevant legislation, consisting of:

- Environmental Planning Instruments (EPIs) (including State Environmental Planning Policies (SEPP), Local Environmental Plans (LEP), and deemed EPIs); and
- Development Control Plans (DCP)

In relation to the proposed development, the relevant legislation includes:

- State Environmental Planning Policy (Mining Petroleum Production and Extractive Industries) 2007;
- State Environmental Planning Policy No.33 – Hazardous and Offensive Development;
- State Environmental Planning Policy No.44 – Koala Habitat Protection;
- State Environmental Planning Policy No 55 – Remediation of Land;
- Cabonne Local Environmental Plan 2012, and;
- Cabonne Development Control Plan 1992.

An assessment of the proposed development against the abovementioned legislation is contained in the following Sections 3.3.6 and 3.3.7.

Part 3 Section 3.17 – Designated Development

Schedule 3 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) identifies designated development for extractive industries as industries that:

- Obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per year; or
- Disturb, or will disturb, a total of more than 2 hectares of land; or
- That are located within 40m of a natural waterbody, wetland or environmentally sensitive area, in areas of contaminated soil, on land that slopes greater than 18 degrees, or, if involving blasting, within 1000m of a residential zone, or within 500m of a dwelling.

DA93/183 determined the proposed quarry as designated development seeking approval to obtain 30,000 t.p.a (15,000m² p.a). As such, an EIS was prepared and approved by Cabonne Council 17 March 1994.

In accordance with Part 2 of Schedule 3 of the EP&A Regulation it is considered that this proposal is not designated development as the development "does not significantly increase the environmental impacts of the total development compared to the existing or approved development" noting the development footprint is generally consistent with that approved. As such, the proposal can be assessed as a 4.55 modification under the EP&A Act as it is considered to be of "minimal environmental impact" and the modified development is "substantially the same development to which development consent was granted".

Part 4 Section 4.46 – Integrated Development

Section 4.46 of the EP&A Act states that development requiring consent and another activity approval is defined as Integrated Development. DA93/183 was classified as integrated development as the following approvals were sought:

- An Environmental Protection License under s47 of the Protection of the Environment Operations Act 1997; and
- Consent from Cabonne Council under s138 of the Roads Act 1997 for works to be undertaken to connect a private road to The Escort Way.

An amended EPL under s47 of the POEO Act would be required upon consent of the development, and in this regard, the proposal is considered as Integrated Development.

3.3.2 Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act 1997 (POEO Act) provides the framework for regulation and reduction of pollution and waste in NSW. The POEO Act is regulated by the Environment Protection Authority (EPA), which issue environmental protection licences (EPLs).

An EPL was issued as part of DA93/183 as the proposal involved the extraction, processing and storage of up to 30,000 t.p.a of extraction material as specified in s19 of Schedule 1 of the POEO Act.

The EPL will require modification to incorporate the proposed amendments.

3.3.3 National Parks and Wildlife Act 1974

The National Parks and Wildlife Act 1974 (NP&W Act) aims to manage and conserve nature, objects, places and features that have ecological and cultural value. The NP&W Act is enforced by the Office of Environment and Heritage (OEH).

As part of DA93/183 and subsequent modifications, various site inspections and observation surveys were undertaken which revealed “no rare or endangered species of plants or animals”.

In addition, a desktop search on the Aboriginal Heritage Information Management System has revealed no Aboriginal places or objects are located on the site. As such, this Act is not considered further within this statement.

3.3.4 Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 (BCA) aims to conserve biodiversity and promote ecologically sustainable development by preventing extinction and promoting recovery of threatened species, populations, ecological communities, and their habitats. This is achieved through eliminating and managing threats to the survival or evolutionary development of species, populations, ecological communities, such as the impacts of development.

As described above, and within the original EIS report provided at **Appendix A** and Biodiversity and Ecological Assessment prepared by Area provided at **Appendix E**, no threatened or endangered species, populations, or ecological communities are known on site, or within the vicinity of site. As such, this Act is not considered further within this statement.

3.3.5 Heritage Act 1977

The Heritage Act 1997 aims to promote and protect the State's heritage, by preventing harm to buildings, relics or places that are identified on the State Heritage Register.

A review of Cabonne Local Environmental Plan 2012 mapping and discussions with Council staff have been undertaken to ascertain the presence of Heritage Items on site.

No listed places or items have been identified on site, or within the vicinity of site. As such, this Act is not considered any further within this statement.

3.3.6 State Environmental Planning Policies

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

The SEPP (Mining Petroleum Production and Extractive Industries) 2007 (Mining SEPP) specifies matters requiring consideration in the assessment of any mining, petroleum production and extractive industry development. **Table 2** presents a summary of the matters that the Minister or his or her delegate needs to consider when assessing a new or modified proposal.

Relevant SEPP Clause	Description
12AB Non-discretionary development standards for mining - Cumulative noise - Ground vibrations	No blasting is proposed as part of this application. The proposal does not exceed in a cumulative amenity noise level for residents and their private dwellings. While it is noted that the Borenore Karst Conservatory Reserve is within 5km of the subject site, ground vibrations do not exceed 10mm/sec at any time and 5mm/sec for more than 5% of the total blasts over any period of 12 months. The site is approved for up to 4 blasts per year as part of DA2014/114(3). This proposal does not seek to change this.
12 Compatibility with other land uses	The surrounding land use is characterised with cropping and grazing rural properties and their dwellings. No significant adverse impacts to the surrounding sites as result of the proposal are identified to occur. Extractive industries are a permissible land use within the LEP zone and as such is not incompatible with the surrounding sites.
14 Natural resource and environmental management	The proposal is considered a minor modification to the approved development and as such, the environmental impacts are considered minor. No threatened species and biodiversity have been identified on or within the vicinity of the site. There is negligible impact on greenhouse gas as a result of the proposed increase in extraction rates.
15 Resource recovery	No specific measures need to be implemented to increase the efficiency of the resource recovery due to the minor modification of the development. There will be minimal waste created and the perimeter of the pit will be progressively rehabilitated.
16 Transport	There will be a continued requirement to transport material on The Escort Way which is classified as a public road. Vehicle movement would increase as a result of the proposed extraction rates however is unlikely to cause any traffic concerns along main roads and during peak times, noting anticipated average daily movement of 10 during approved and conditioned operating hours. Noting the site is serviced by the RMS approved entrance.

State Environmental Planning Policy No.33 – Hazardous and Offensive Development

Extractive industries are classified as a potentially hazardous and offensive industry, given that, without the implementation of appropriate impact minimisation measures, would pose a significant risk in relation to the locality, human health, life or property, or to the biophysical environment.

In accordance with the SEPP No.33, hazardous materials to be held or used within the project site have been identified and classified as part of the risk screening method. Noted potential hazardous goods that would be used or stored within the project site would include small amounts of diesel, which is classified as a combustible liquid. As no other flammable materials would be used or stored on site, the site is not considered to be potentially hazardous and as such, this SEPP is not considered further in this proposal.

State Environmental Planning Policy No.44 – Koala Habitat Protection

This Policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas. Cabonne Council is identified as a local government area in which potential habitat may exist, and as such, development consent may only be granted once the consent authority is satisfied the land is not a potential koala habitat.

As the site is generally cleared of native vegetation, containing intermittent strips of native vegetation, and the surrounding sites have been generally cleared of native vegetation and used for pastoral grazing, it is not considered the site is a potential koala habitat. As such, this SEPP is not considered further in this statement.

State Environmental Planning Policy No 55 – Remediation of Land

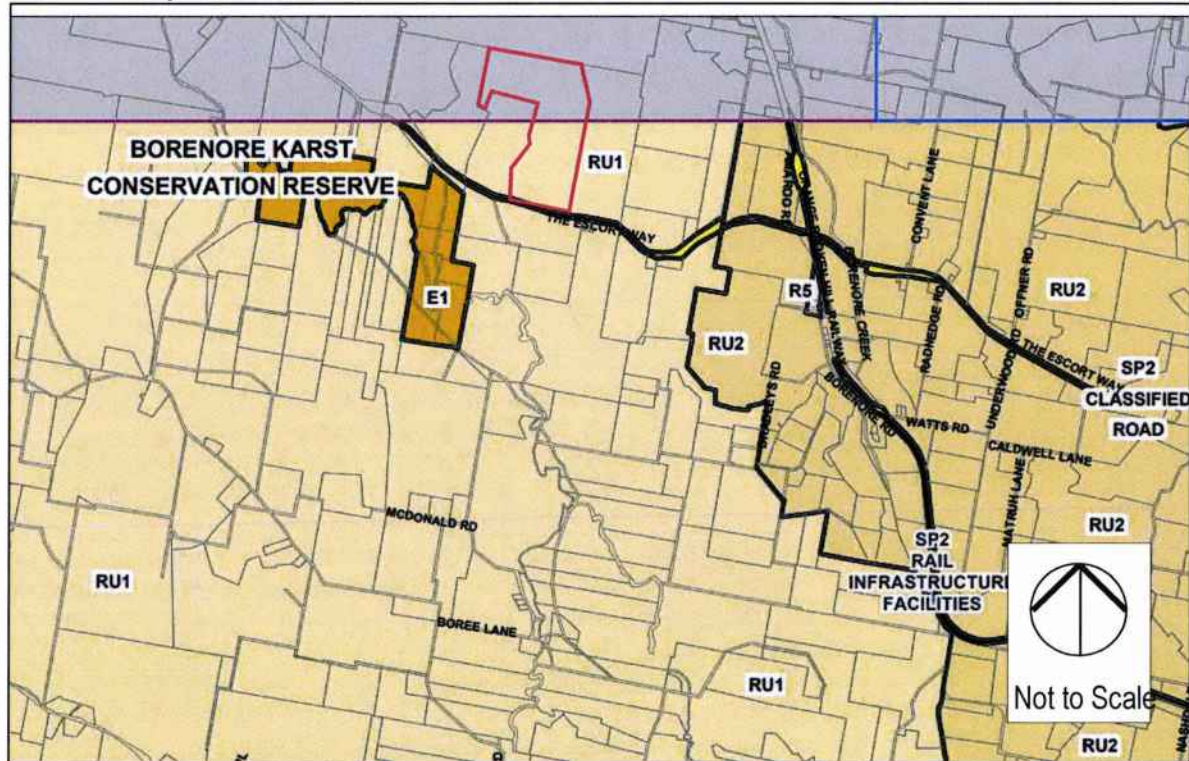
SEPP No 55 – Remediation of Land requires that consent for any development may not be granted unless the consent authority has considered whether the land is contaminated.

Pursuant to Clause 7 of the SEPP, the site is considered suitable for its intended use. The site has been used for agricultural production (grazing). These activities are unlikely to have resulted in significant contamination of the land and noting the sites existing quarry use, it is considered suitable for its intended use.

3.3.7 Cabonne Local Environmental Plan 2012

The Cabonne Local Environment Plan 2012 (Cabonne LEP) aims to provide a range of development opportunities that contribute to the social, economic, and environmental resources of Cabonne, in a manner that compliments and enhances the character and amenity of Cabonne local government area. Cabonne LEP was prepared in accordance with the relevant standard LEP instrument under Part 3 of the EP&A Act.

The subject site is zoned RU1 – Primary Production under the provisions of Council's LEP 2012, as shown below at **Figure 5**. Extractive Industries are permissible with development consent in the RU1 zone and the proposal satisfies the objectives of the zone.



(Source: Cabonne LEP 2012, Map Sheet LZN 005)

Figure 5: Extract from Zoning Plan

Objectives

The following applicable objectives of the RU1 land use are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

The following assessment is made in relation to the proposal and abovementioned zone objectives:

- No changes to the existing permissible land uses on site are proposed. The site will continue to function as an extractive industry generally within the approved site area;
- The sites curtilage of grazing pastures are maintained;
- The productive agricultural land will not be significantly altered as a result of the increased extraction volumes;
- Surrounding grazing, and cropping opportunities will be maintained as a result of the proposed modification;
- The adjoining sites are used for agricultural purposes, which does not conflict with the subject sites land uses;

As detailed throughout this Statement of Support, the proposal is considered to be consistent with the relevant objectives of the zone.

A summary of our assessment of the proposed development against the LEP map provisions provided in **Table 3**.

TABLE 3: PROJECT COMPLIANCE – CABONNE LEP 2012		
Site Area: 96.02m ²		
LEP Provisions		Complies / Comments
Permissibility	RU1 Primary Production	Proposal is permissible within the zone
Heritage Item	NO	The subject site does not encroach on any identified environmental heritage. It is unlikely the subject site will be of any adverse impact to the heritage area.
Terrestrial Biodiversity	NO	Terrestrial biodiversity areas are shown at the southern boundary of the site adjacent to The Escort Way. The proposal does not impact this area.
Flooding	NO	The subject site is not located within the nominated flood planning area, and above the 1:100 average recurrence interval flood level, and as such, a detailed flood impact assessment is not required.
Bushfire	NO	Bushfire prone land is shown located south of the subject site, however the proposal is unlikely to adversely impact upon or be affected by bushfire prone land.
Groundwater vulnerability	NO	The subject site is not located within the nominated area, and as such, a hydrogeological assessment is not required.

3.3.8 Cabonne Development Control Plan 1992

The Cabonne Development Control Plan No.5 – General Rural Zones 1992 (Cabonne DCP) provides the framework for assessment and determination of development applications by Council. No specific provisions in the DCP are applicable to this proposal.

4 ASSESSMENT OF KEY ENVIRONMENTAL MATTERS

This section will consider the following: the Assessment of Natural Environmental Impact; the Built Environment Impacts; the Site Suitability and the Public Interest in accordance with Section 4.15(1)(b), (c) and (e).

4.1 Assessment of Natural Environmental Impact – s4.15 (1)(b)

4.1.1 Micro Climate Impacts

The proposed modification is unlikely to result in any adverse effects to the micro-climate in the locality as it is a continuation of an existing operation.

4.1.2 Water Quality Impacts

The proposal is, in our opinion, unlikely to result in any adverse effects on the locality in terms of water quality. Appropriate measures are already implemented on site in respect of the stormwater and runoff and accordingly, the proposal is, in our opinion, acceptable in this regard.

4.1.3 Air Quality Impacts

The most likely potential causes of air pollution would be the generation of dust arising from extraction production and vehicle movements, and vehicle emissions, however, there is unlikely to be any additional air quality impacts as a result of the proposed modification, given dust suppression (water spraying) and moderate vehicle movements from the site would result from the proposal. Existing safeguards will be continued including regularly servicing vehicle equipment and properly maintained emission controls; enforcing vehicle speed restrictions; ensuring water carts are located on site for dust suppression, and the progressive removal of topsoil and revegetation of topsoil stockpiles to minimise dust generation. It is noted the access road is a two-coat sealed road that is to be maintained.

4.1.4 Land Contamination

The site has historically been used for agricultural production (grazing and cultivation). These activities are unlikely to have resulted in contamination of the land and therefore it is considered that no contamination occurs on the project site.

4.1.5 Flora and Fauna

The subject area is largely cleared of native vegetation, featuring open grasslands and sloping topography. There is an established windbreak of native Eucalypts along the western side of the quarry and a scattering of Eucalypts across the site. No threatened or endangered species have been identified on the project site or within proximity of the site.

Additional plantings are proposed as an amenity screen. Species selected have been chosen to enhance native flora and fauna opportunities.

4.1.6 Heritage

There are no listed heritage items on the subject land. An AHIMS search confirmed no sites are recorded within the vicinity of the property. In the unlikely event, any Aboriginal artefacts are found as part of the approved works, quarrying operations will cease, and the NSW Parks and Wildlife (Bathurst Office) would be notified immediately.

4.2 Assessment of Built Environment Impacts – S4.15 (1)(b)

4.2.1 Impact on the Areas Character

The site and surrounding locality are predominantly used for agricultural purposes. The potential impact of the use of the quarry to the surrounding land uses is considered minimal.

4.2.2 Noise Impacts

No changes to the operational arrangements are proposed as part of this modification. Noise management operations will be continued as part of this proposal, including vehicles and equipment to meet noise regulations and no works to occur outside of the approved hours of operation. In addition, bund walls and vegetation screening around the site will assist to minimise noise impact during operating hours.

4.2.3 Social and Economic Impact

Adverse socio-economic impacts are not anticipated as the proposal is merely continuation of an existing operation with minor amendments to allow increased annual extraction from the site.

The proposal would, however, have the following direct benefits:

- Continued employment of personnel from within Cabonne and surrounding LGAs;
- Ongoing local economic contribution;
- Flow-on benefits to the economy through the expenditure of wages and servicing of improved infrastructure within the region, and;
- The final landform would be rehabilitated to enable continued and further use as agricultural land.

It is considered that there would be a net socio-economic benefit resultant from the approval of the proposed modification.

4.2.4 Rehabilitation

Rehabilitation will be undertaken progressively throughout the life of the quarry. As noted in the Rehabilitation Plan at **Appendix F**, the site will be fully rehabilitated for use as agricultural land upon completion of the quarry. The return of the area to agricultural land should ensure there is no continued impact after the cessation of activities.

4.2.5 Cumulative Impacts

Having regard to the above considerations, it is considered collectively there will be no significant adverse cumulative impacts a result of the proposed modification.

4.3 Assessment of the Site Suitability – 4.15(1)(c)

4.3.1 Context and Setting

It is considered that the existing land uses on the subject site are suited in the locality and is complimentary to the surrounding land use pattern and zoning for the following reasons:

- There are no constraints posed by surrounding development to render the proposal prohibitive;
- The modification is unlikely to create any unmanageable access or transport concerns in the locality;
- No upgrading to infrastructure and government services is required;
- There are no known significant impacts in relation to heritage, land contamination, air quality, and;
- There are no known biodiversity impacts as a result of the modification.

4.3.2 Proximity to Service and Infrastructure

The site is accessible via The Escort Way. No augmentation of existing electrical and/or telephone services are required to service the quarry. On site communication is conducted via handheld transceivers provided to all employees. Portable site office & porter loos are provided at the quarry workings. No changes to the existing consent are proposed as a result of this modification.

4.3.3 Traffic, Parking & Access

The development will not substantially increase the traffic volume for the area, with minimal increased traffic movements expected. It is noted that the internal access road is bitumen sealed and the entrance to The Escort Way has been constructed and approved to meet RMS requirements. Car Parking is provided on site adjacent to the temporary office building.

It is noted that the current operations generate between 6 and 10 heavy vehicle movements per day limited by the annual 30,000 cubic metre extraction rate and dependent upon market demand.

The proposed modification would generate between 8 and 10 heavy vehicle movements per day limited by an annual 150,000 cubic metre extraction rate and influenced by market demand / tenders.

4.3.4 Hazards

The site is not in an area recognized by Council as being subject to landslip, flooding, bushfire or any other identified hazards. The proposed development will not increase the likelihood of such hazards.

4.4 The Public Interest – 4.15(1)(e)

4.4.1 The Public Interest

The proposed modification is considered to be of minor public interest due to the relatively localised nature of the operation on site. It is considered the continued use of the quarry would provide social and economic benefits through the provision of local employment and the purchase of goods and services and therefore the proposal is in the public interest.

5 CONCLUSION

Having regard to the abovementioned assessment and consideration:

- The proposed modification has been assessed in accordance with the relevant requirements of the EP&A Act and applicable planning instruments;
- The proposal is permissible in the RU1 Primary Production under the Cabonne LEP 2013 and in our opinion is consistent with the relevant objectives of the Zone;
- Hornsfeld Volcanic Silt Stone such as those identified on the project site are important for the construction and maintenance of local and regional infrastructure;
- It is considered unlikely that surrounding sites will be unreasonably adversely impacted as a result of the modification;
- No significant changes to the existing quarrying footprint are to occur;
- No changes to approved operating hours are proposed;
- The activity complies with NSW and local planning instruments and legislation;
- It is considered unlikely that the modification would have any additional adverse impacts on the local environment, and any perceived adverse impacts of the existing approval are considered minor and offset by the identified socio-economic benefits
- The proposed increased extraction volume would provide important materials required for the continued development of the region;

It is considered the proposed modification achieves the EP&A objectives for the following reasons:

- Opportunity to develop a high quality Hornsfeld Volcanic Silt Stone resource, in a location already subject to extractive industry;
- The opportunity to source a reliable local resource for road construction and maintenance projects is maintained and continued;
- The opportunity to generate employment for on-site personnel and truck drivers for upto 30 years.
- The resultant flow-on benefits through employee wages and production of goods and services locally;
- No significant adverse impacts are anticipated from the proposal;

The proposal is assessed to be supported as

- The perceived adverse impacts on the local environment would be minor and would be offset by the potential environmental and socio-economic benefits;
- It would be undertaken in accordance with the existing conditions of approval as amended by the consent authority;
- It would satisfy the matters for consideration of the Environmental Planning and Assessment Act 1979;
- The consequences of not proceeding significantly weigh heavily in favour of proceeding with the modified development proposal.

**APPENDIX A – EIS Prepared by Central West Environmental Services, and
Supporting Documentation, 1993**

Central West Environmental Services
Bruce A. Hansen
Assoc.Dip.Env.Cntl MEIA

24 TORULOSA WAY,
ORANGE N.S.W. 2800

TELEPHONE: (063) 61 4357

ENVIRONMENTAL IMPACT STATEMENT

BALD HILL GRAVEL QUARRY

BORENORE NSW

for

A.G. & B.H. DUNSTAN and D.J. & R.L. DILLON

November 1993

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (SECTION 77(3)(d))

ENVIRONMENTAL IMPACT STATEMENT

This Statement has been prepared by or on behalf of

A.G. and B.H. Dunstan and D.J. and R.L. Dillon

being the applicant making the development application referred to below.

The Statement accompanies the development application made in respect of the development described as follows:

Extraction of Gravel

The development application relates to the land described as follows:

No. "Tintinara" Street Forbes Road

Locality/Suburb Borenore

Real property description Lot 775 Deposited Plan 813587

Shire of Cabonne Parish of Boree-Nyrang, Borenore, County of Ashburnham

(e.g. Lot, D.P./M.P.S., vol/fol., Parish, Portion)

The contents of this statement, as required by Clause 34 of the Environmental Planning and Assessment Regulation, 1980, are set forth in the accompanying pages.

Name, Qualifications and Address of person
who prepared Environmental Impact Statement

Bruce A. Hansen Assoc. Dip. Env. Cntl. MEIA

24 Torulosa Way, ORANGE N.S.W. 2800

CERTIFICATE

I, Bruce Anthony Hansen of 24 Torulosa Way, ORANGE N.S.W. 2800

hereby certify that I have prepared the contents of this Statement in accordance with clauses 34 and 35 of the Environmental Planning and Assessment Regulations, 1980.

..... B. Hansen J.P.

..... 30th November 1993

Signature

Date

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Bald Hill Quarry

Section I

INTRODUCTION

- 1.1 A.G. & B.H. Dunstan of "Dilkara", Forbes Road, Borenore and D.J. and R.L. Dillon of "Tintinara" Forbes Road, Borenore intend to establish a small gravel quarry at Bald Hill Borenore.

The Quarry will be managed and operated by Barry and Tim Dean of The Central West Earthworks.

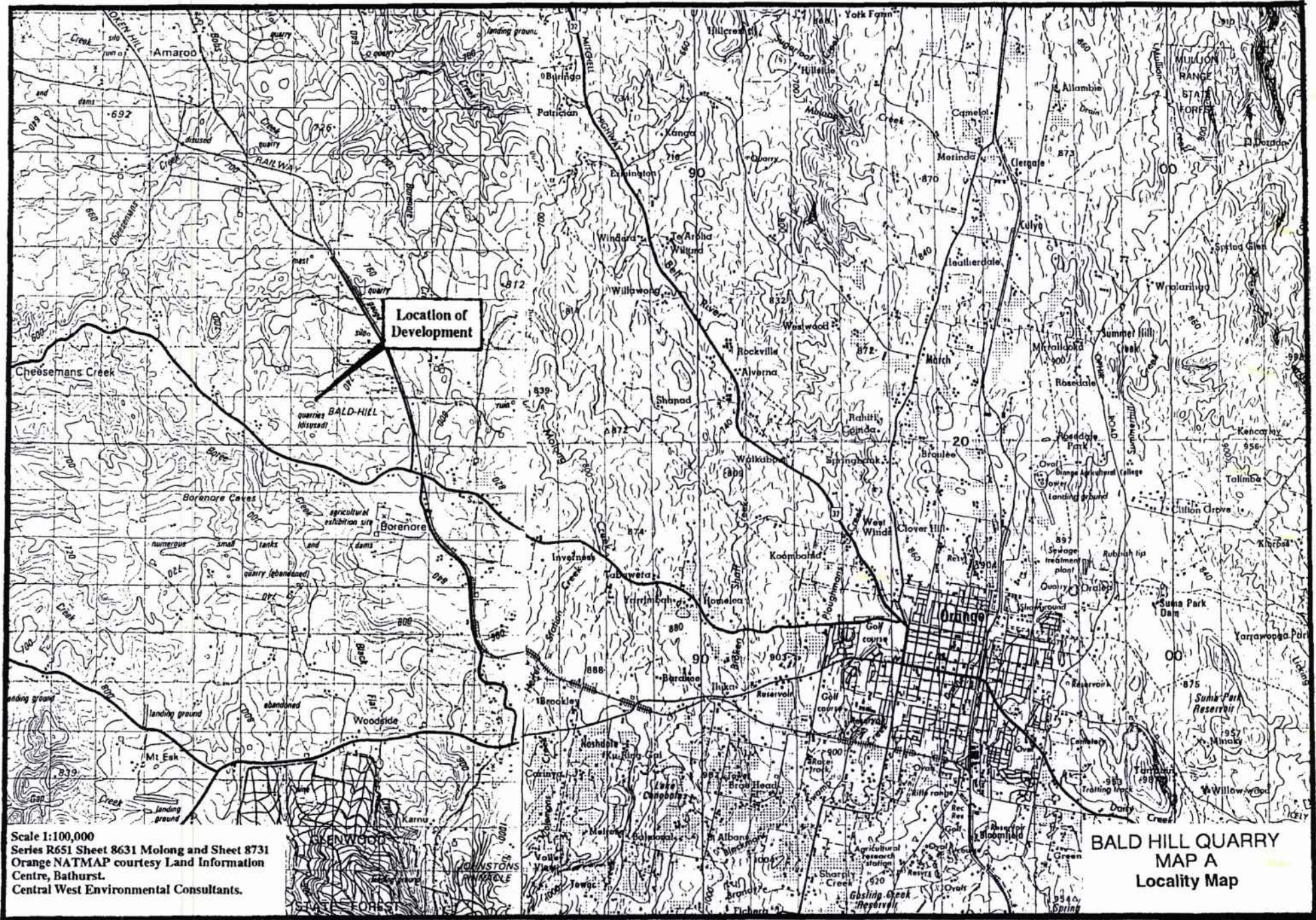
The development will occupy an approximate five (5) hectare site excised from "Tintinara", Lot 775, Deposited Plan 813587 in the Shire of Cabonne, Parish of Boree-Nyrang, Borenore, County of Ashburnham. See Map A and B. The actual Quarry area will cover 3.0 hectares. The resource will provide the operators with a good quality gravel for use in their Earthworks business for the construction of rural roads, driveways and hard standing areas.

This Proposal constitutes a Designated Development under the Environmental Planning and Assessment Act 1979 and Regulation 1980. This Environmental Impact Statement accompanies the development application lodged with Cabonne Shire Council and will describe the proposal, the existing environment as well as any other matter under the regulations or set down by the Director in relation to the proposal.

1.2 BACKGROUND

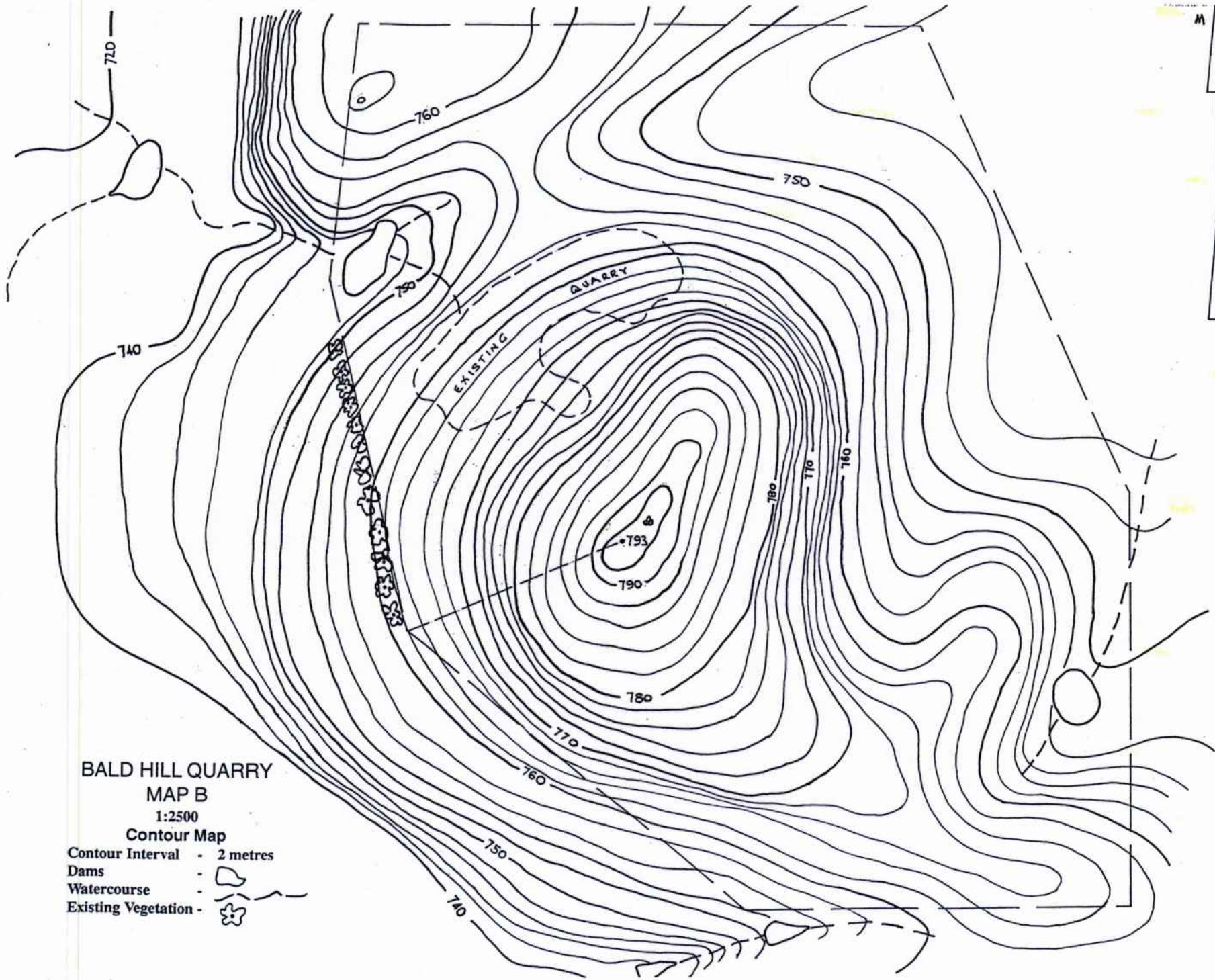
The proponents own "Tintinara" and "Dilkara" and live on the property where they are Primary Producers. They currently graze cattle and goats.

The proposed quarry site is shown on maps of the area as a Quarry (disused) and original workings date back well over 50 years. The old workings have never been rehabilitated resulting in low productivity and minor erosion. There has been intermittent use over the years since then by the previous and present Landowners. In more recent years some material has been removed by local contractors, however, the Quarry has never been developed due to the available supplies of similar material at the nearby Amaroo Quarries. The Amaroo Quarries are now either depleted of good quality resource or privately owned and for sole use of other contractors.






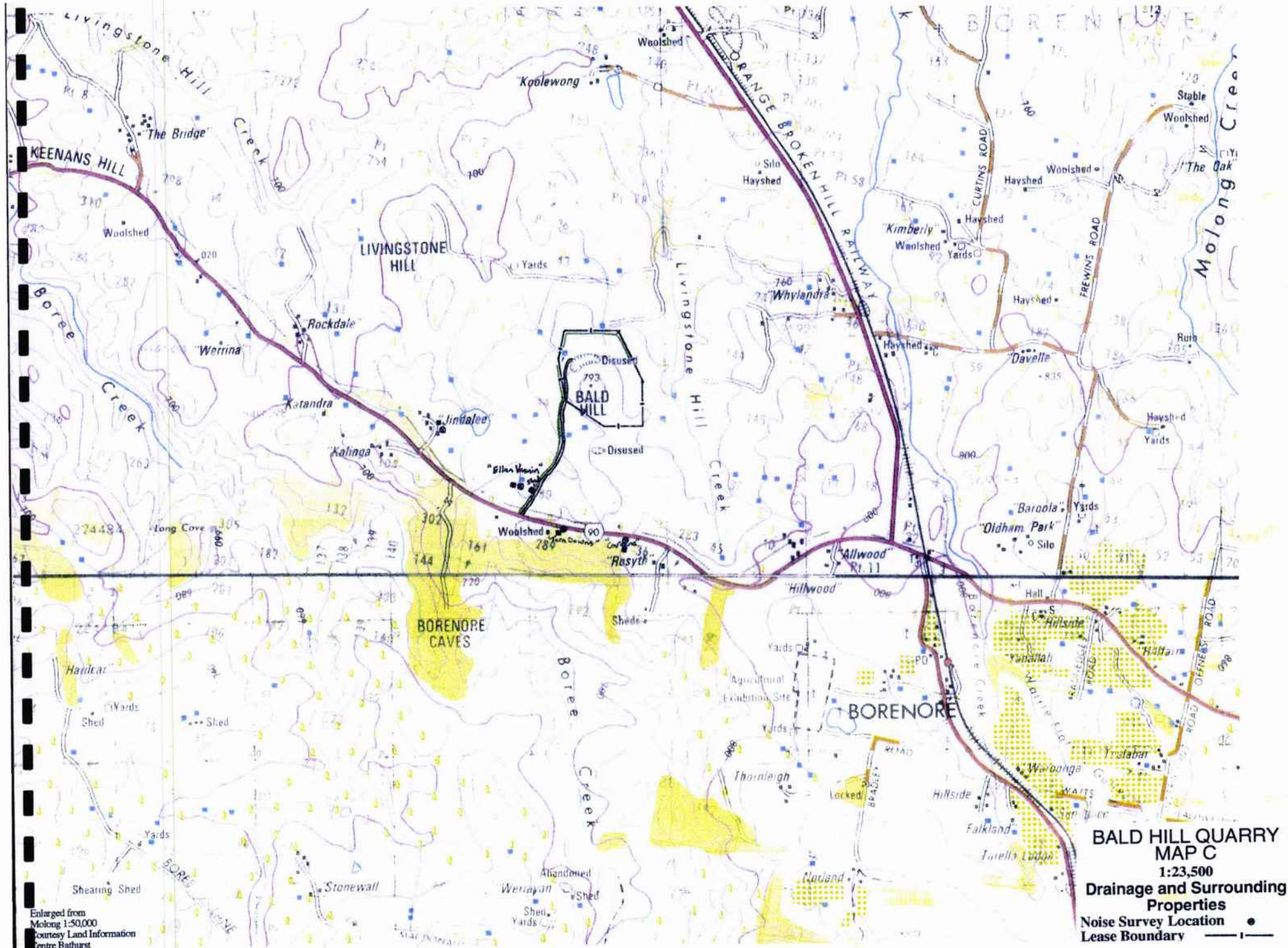
Scale 1:100,000
 Series R651 Sheet 8631 Molong and Sheet 8731
 Orange NATMAP courtesy Land Information
 Centre, Bathurst.
 Central West Environmental Consultants.

**BALD HILL QUARRY
 MAP A
 Locality Map**



BALD HILL QUARRY
MAP B
1:2500

- Contour Map
Contour Interval - 2 metres
Dams - 
Watercourse - 
Existing Vegetation - 



Enlarged from Molong 1:50,000
 Courtesy Land Information Centre Bathurst

**BALD HILL QUARRY
 MAP C**
 1:23,500
**Drainage and Surrounding
 Properties**
 Noise Survey Location ●
 Lease Boundary ———

The operators therefore, consider it an appropriate time to develop this resource thus ensuring the future viability of their business. The owners, as part of their agreement with the operators, require the operators to reshape and rehabilitate those parts of the old quarry not included in this proposal and will use future royalties to rehabilitate the other old quarry area on their property.

1.3 OBJECTIVES OF THE DEVELOPMENT

In accordance with the relevant Acts or Sections of such acts and within the guidelines, conditions and advice as set down or given by various appropriate departments and authorities these being.

- * The Environmental Planning and Assessment Act 1979 and Regulations 1980.
- * The National Parks and Wildlife Act 1974.
- * The Clean Air, Clean Waters and Noise Control Acts.
- * The Occupational Health and Safety Act and Regulations.
- * The Department of Environment and Planning.
- * The Environment Protection Authority of New South Wales.
- * The Roads and Traffic Authority.
- * The Soil Conservation Service and
- * Cabonne Shire Council.

The objectives of the development are:

1. To establish a gravel quarry capable of producing up to 15,000 cubic metres per annum
2. In doing so provide a long term Secure Supply of resource for the Operators Earthworks Business.
3. To enable the owners to fund the rehabilitation of the old quarry sites on their property.
4. To provide a profitable return to the owners and operators and in doing so, utilise an available resource in an environmentally responsible manner contributing to the growth and development of the Shire.

Section 2

DESCRIPTION OF THE DEVELOPMENT

The proposal as outlined in the introduction is to establish a gravel quarry capable of producing up to 15,000 Cubic metres of gravel per annum. This Section will describe the development in detail, including the resource, how it is to be extracted, what machinery will be used, facilities, vehicle movements, hours of operation and so forth.

2.1 The Resource

2.1.1. Geology

Bald Hill is a series of tuffaceous siltstone of Upper Ordovician age. They have been folded and fractured in a series of episodes resulting in a structural trend which runs North South. A fault runs North South to the east of the hill and is associated with a small outcrop of Tertiary basalt. This area is part of the Molong Geanticline structure and these rock types are well represented through the region.

Small folds and faults are evident in many of the exposures and are filled with fault breccias or clay seams. The rock is very fractured throughout Bald Hill. In many places the siltstones are fractured to pebble size (4-64mm). Near the top of the hill the siltstones are a little more coarsely broken and are occasionally "flaggy". The rock breaks easily with ripping or bulldozer extraction.



Plate No. 1 - The Resource

2.1.2. Siltstone Reserves

Bald Hill has a homogeneous geology of fractured siltstones with occasional veins of clay. The hill has a volume of over 6 million tonnes of siltstones and clays in the ratio of 98% to 1% respectively. Soils make up approximately 1% of Bald Hill.

Clays and siltstones will be quarried to make a suitable mix for the roadbase, there will be no wastage of quarried material.

A small section of the hill has been defined for quarrying to last 30 years at an annual extraction rate of 15,000 tpa (see Maps D, E & F). The chosen area is the site of past quarrying. The reserve volumes have been calculated allowing for past extraction, future bench volume losses and other minor waste losses. The defined area of the quarry is shown on the accompanying figure and shows an irregular wedge cut horizontally into the hill on the Northern side from the 758m contour up to the 780m contour. The quarry would have a horizontal surface area of 200m x 150m.

Total extraction over the 30 year quarry life would be about 450,000 tonnes. If future quarrying was required, or production increased, there are ample siltstone reserves available.

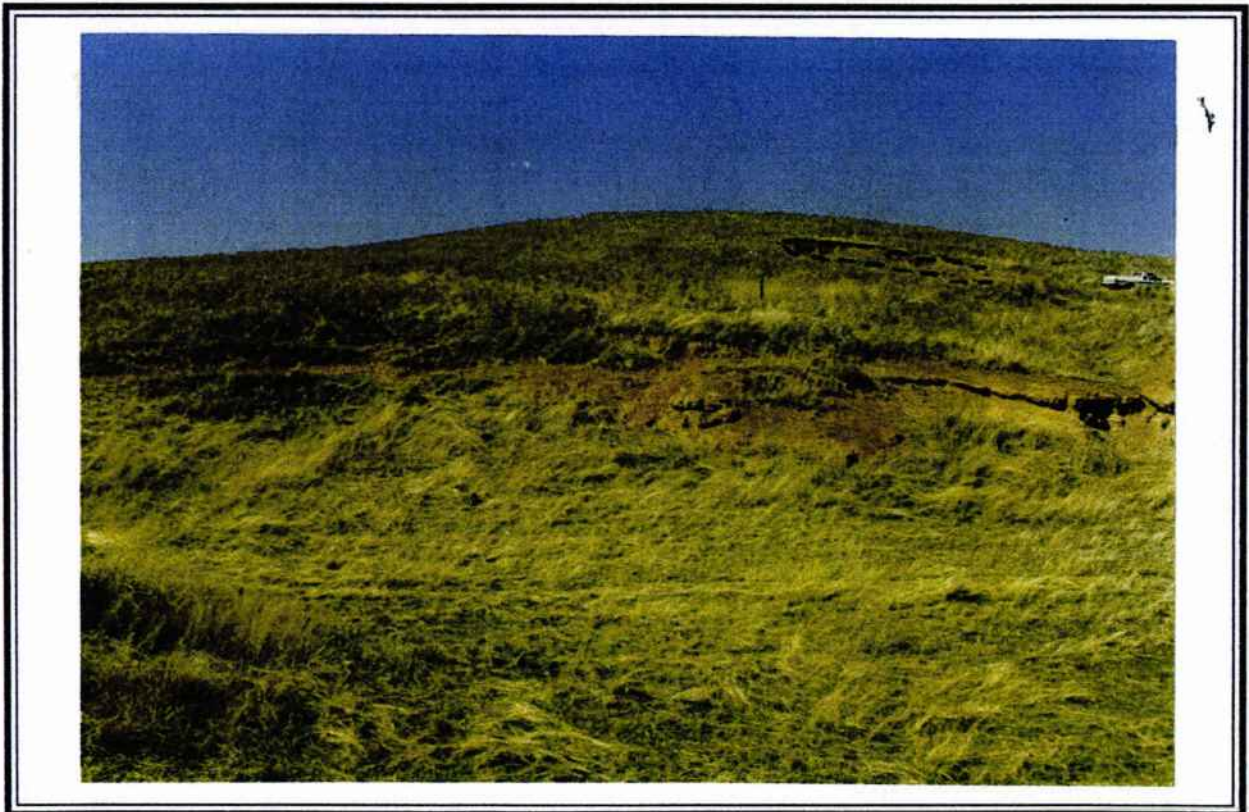


Plate No. 2

Looking at Bald Hill into the area of operation from approx. 760m RL
The old quarry area in the foreground and the existing cut outlined.

CENTRE LINE
OF QUARRY

CLAY PLUGS
SUITABLE FOR
MIXING WITH
GRAVELS

DAM

EXISTING
QUARRY

FLOOR

EAST

TIGHT

GATE

RIDGE
LINE

VEHICULAR ACCESS

SSM 29416 FD.

M N

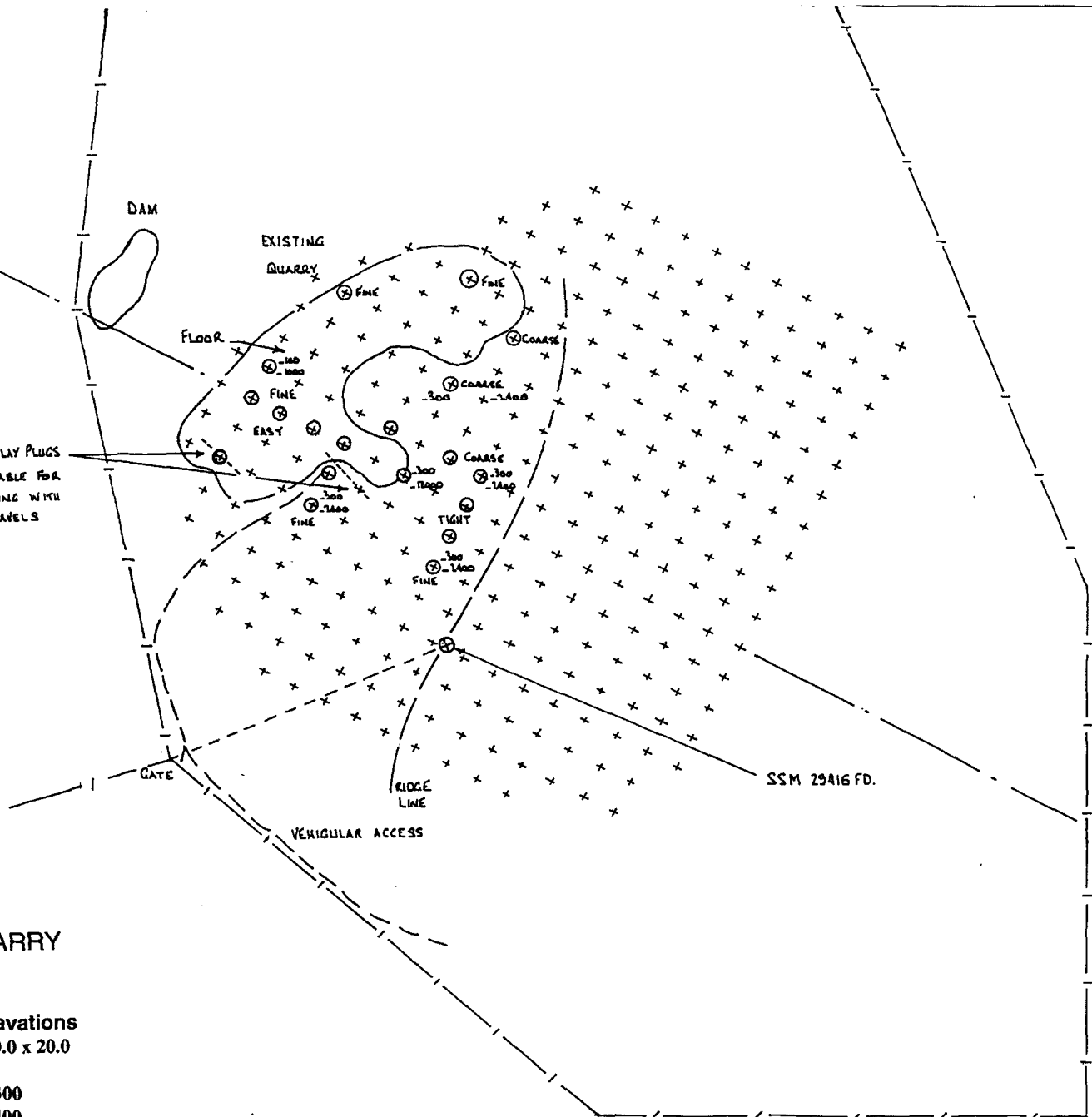
BALD HILL QUARRY MAP D

1:2500

Results of Test Excavations

Grid	-	20.0 x 20.0
Test Hole	-	0
Depth of Soils	-	300
Depth of Test	-	2400

GATES



2.2 Methods of Extraction and Processing

The gravel resource is fractured through the hill and easily removed. Much will be removed by front end loader, Komatsu WA100 Rubber Tyre. While deeper or less fractured areas may require ripping by excavator or dozer.

No drilling, blasting or secondary breaking will be required. The material requires no further processing other than some mixing in the stockpile area to achieve consistent quality.



Plate No. 3

The gravel will be extracted by using the Komatsu front end loader shown here and the gravel transported by DAF3300 Bogie Drive Tip truck.

2.3 Stockpiling

A small stockpile area will be maintained within the rim of the quarry to allow for easy loading, times of equipment breakdown or other times when extraction may not be possible. However, due to the ease of extraction a large stockpile area will not be required.

2.4 Operational Sequence

The operation will proceed by the following steps (some activities will occur simultaneously):

- * Sediment Control Structures and diversion banks will be installed.
- * Access road will be constructed using material from existing quarry.
- * The old workings will be re-shaped, areas not included for extraction will be rehabilitated using topsoil from the access road.
- * Tree planting program will commence.
- * Quarrying will commence with progressive removal and stockpiling of Topsoil.
- * The quarry will be developed and progressive rehabilitation of quarried areas will continue until the quarry is decommissioned fully rehabilitated and the area returned to its present use.

2.5 Vehicle Movements

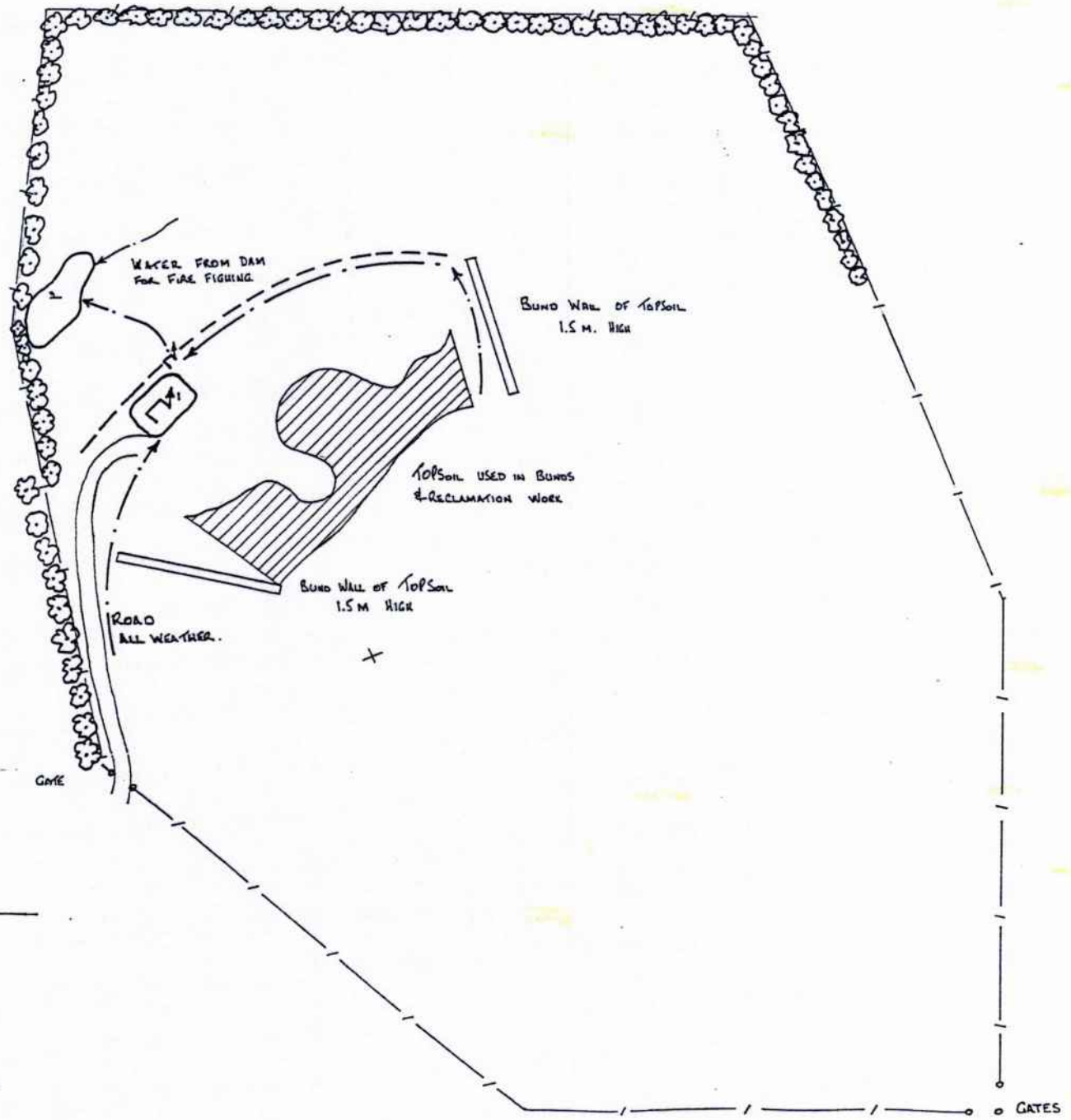
It is not expected for the quarry to reach the production rate of 15,000 tpa for some years therefore, initially truck movements will vary considerably over the year. The proponents expect this variation to be from two or three loads (i.e. six movements) per week up to six loads per day (12 movements) at very busy times.

At maximum production based on a load of 10 Cum using a DAF 3300 Bogie Drive Tip truck. There would be up to 12 truck movements per day. There will be occasional movements by service vehicles no employee parking will be necessary as the operator drives the truck and loads the truck. The loader will be parked within the quarry.




2.6 Access

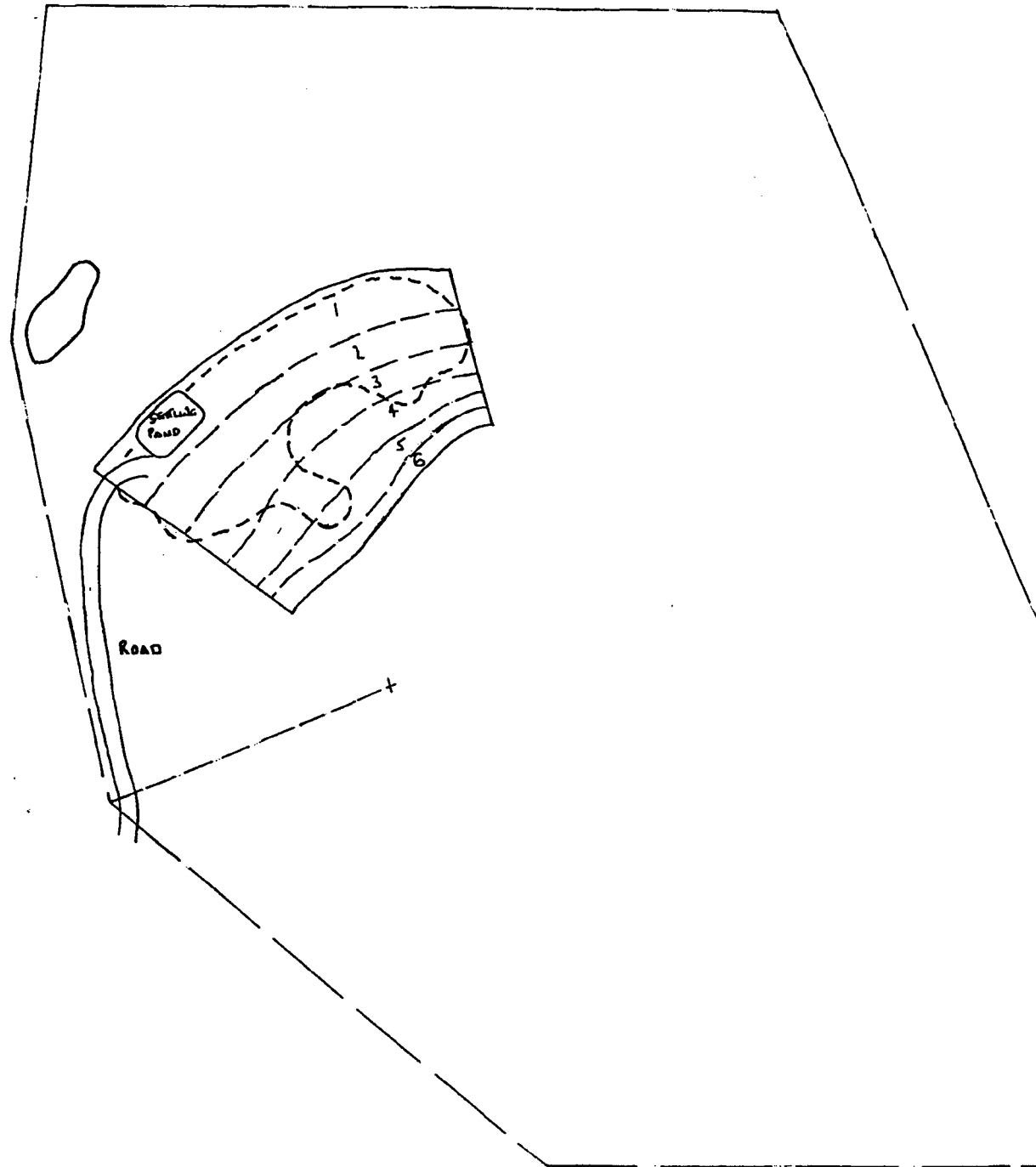
Access will be off Forbes Road Main road 61 (State Route 90). See Map C.

The proponent will initially seal the entrance to the quarry six (6) metres in from the present pavement.



BALD HILL QUARRY
MAP E
 1:2500
 Method of Operation

- Fences - 
- Trees - 
- Sediment Trap - 
- Drainage Line - 
- Settling Pond - 
- Contour Bank - 
- Borrow Soil Pit - 



Bald Hill Quarry
MAP F
1:5000
Quarry Stages Of Development

STAGE 1	TO FIVE YEARS
STAGE 2	5 TO 10 YEARS
STAGE 3	10 TO 15 YEARS
STAGE 4	15 TO 20 YEARS
STAGE 5	20 TO 25 YEARS
STAGE 6	25 TO 30 YEARS



Plate No. 4

Entrance to Quarry from Forbes Road which will be upgraded and sealed.

2.7 Amenities and Services

No amenities will be established on site. The truck driver will have ample opportunity to use amenities elsewhere. The truck will be fuelled in Orange. The loader will be fuelled from a fuel trailer towed by the service vehicle once a week or as required.

2.8 Safety and Security

The quarry will be on private land and there will be no access by anyone other than the owners, operators or their contractors. All operations will be carried out within the requirements of the Occupational Health and Safety Act and First Aid Regulations (i.e. a First Aid Kit as required will be carried in all vehicles).

The entrance to the quarry will have a cattle grid and lockable gate which will be locked at all times when the quarry is unattended. The walls of the quarry will be battered at 45° angle for future safety of persons and stock in line with its return to grazing country.

Various measures will be taken in relation to fire prevention. Appropriate extinguishers will be provided in all vehicles. A water trailer for wetting down the access road and areas within the quarry will also be fitted with a pump and hose for fire fighting. Prevention measures will include continued grazing and control of weeds and growth around fence lines.

2.9 **Hours of Operation and Employment**

Operating hours will be 7am to 6pm Monday to Friday, and 8am - 4pm on Saturdays. No operations will occur on Sundays or Public Holidays.

The development will not directly increase employment but will contribute to the continuation of the employment of 4 people by providing a secure long term supply for their present operations.

SECTION 3

THE EXISTING ENVIRONMENT

3.1 Topography, Landform and Drainage

The site is a conical shaped hill with a height of 793m (AHD) which dominates the immediate area. It is surrounded by rolling hills of pasture with undulating to moderate relief. Relief with the boundaries of the lease is 40m with slopes of around 14%. Outside the lease area drainage lines develop into intermittent streams which drain into Cheesmans Creek several kilometres to the North West. See Map C.

"
BALD HILL
"

"ELLAN VANNIN"

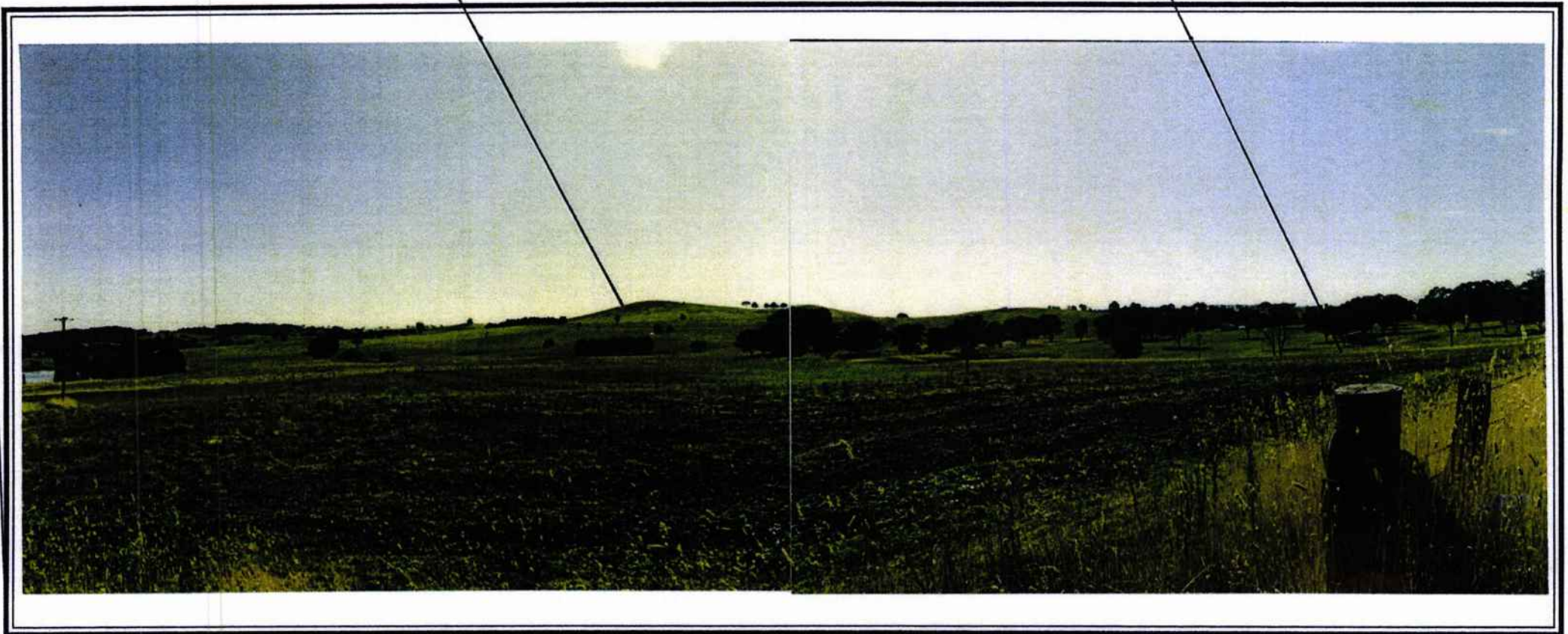


Plate No. 5
View of the Existing Environment
from the SW on Forbes Road

"Jindalee"
is approx. 200m to West
just out of frame

3.2 Soils

Kovac et al (1989) have studied the soils in the region and grouped them under the Panuara Soil Landscape. In-situ and alluvial-colluvial soils make up the Project Site soils. Red Brown Podzols are the dominant soils. They tend to vary in thickness from <1.0m to skeletal soils, only a few centimetres deep. These soils are used for grazing in the Project Area.

Yellow Solodic soils are found in the lower slopes and around the base of Bald Hill and in the drainage lines to the north of the hill. These soils are deep and poorly drained. Several test costeans cut at the base of the hill, showed a mottled colouring due to prolonged water logging and the water table was less than 1.5m below the surface level.

A summary of the soil type characteristics is tabulated below.

	Red & Brown Podzol Soils	Yellow Solodic Soils
Dominance	dominant	minor
Landform	midslope	depression
Surface Condition	loose or hardsetting	hardsetting
Drainage	moderate	imperfectly drained
Water Holding	low to moderate	moderate
pH	5.5-7.5	6.0
Fertility	low-moderate	low
Nutrient Deficiencies	N,P	N,P
Erodibility Hazard	low to moderate	moderate to high
Land Capability Classification	III, V, VI	III, V
Mass Movement	nil	nil
Existing Land Use	grazing	grazing on improved pastures
Soil Erosion	minor to moderate rilling, some gullyng	minor gully erosion
Water Table Depth	> 1.5m	< 1.5m

Table 3.1 Soil Type Characteristics
(Kovac et al, 1990)

3.3 Climate

The data for this section has been provided courtesy of the Bureau of Meteorology from The Meteorological Station at Orange Agricultural Research Centre, 16 kilometres to the South East and Borenore Post Office (rainfall only) 3.7 kilometres to the South East which are nearest to the project site.

3.3.1 Temperature

The area experiences mild summers and long cold winters. The average daily maximum for the warmest month, January, is 26.2°C (86 percentile 31.5°C, 14 percentile 21.3°C) and the coldest month, July, 8.8°C (86 percentile 11.8°C, 14 percentile 5.2°C) while average daily minimums are January 13.5°C (86 percentile 17.5°C, 14 percentile 9.3°C) and July 0.9°C (86 percentile 3.5°C, 14 percentile -1.6°C).

3.3.2 Rainfall

Average annual rainfall is 795mm. Highest rainfall occurs in July-August and the rainfall is more consistent and reliable in Winter - Early Spring. The highest number of rain days also occur in July (Av. 11) and August (Av. 10). Occasional snowfalls are experienced between June and September. Adequate moisture for revegetation should nearly always be available during late Winter early Spring.

3.3.3 Wind

Wind direction varies considerably in Summer and Autumn and changes between morning and afternoon. Morning winds in Summer are predominantly Northerly, whereas afternoon winds are predominantly South Westerly and Westerly changing to North Westerly later in Summer with a high proportion of South Easterly's. In Autumn morning winds are predominantly Easterly and South Easterly in the afternoon still most consistently South Easterly but also with a high proportion of South Westerly and Westerly. Morning winds in winter are consistently Southerly and South Easterly changing to North Westerly or South Westerly in late Winter early Spring. In late spring they are predominantly North Westerly and northerly. In the afternoon winds are mainly North Westerly and Westerly in both Winter and Spring.

Wind speed is most frequently in the range of 11-20 kilometres per hour for all months with the exception of mornings in May and June and June afternoons where 6 to 10 kilometres per hour was most common. It is rarely calm but June mornings show the greatest frequency recording calm for 5% of observations.

3.4 Flora & Fauna

3.4.1 Flora

The lease area consists of Bald Hill itself and as the name suggests it is virtually devoid of trees, a couple of small stunted Kurrajongs (*Brachychiton opoulneus* syn. *Sterculia diversifolia*) which have been well grazed by stock are struggling to survive, other than that the hill consists of an improved pasture of Rye and Clover which is relatively weed free. Around the farm weeds such as Patersons Curse (*Echium plantagineum*) and Narrawa Burr (*Salanum cinereum*) can be found but variegated thistle (*Silybum marianum*) seems to be the most obvious and wide spread. Common Bog Rush (*Schanus apogon*) is common around the lower swampy moist areas near dams and healthier larger specimens of Kurrajongs are scattered about, planted rows of Radiata Pine (*Pinus radiata*) are found along fence lines of some paddocks and Basket Willows have spread along some drainage lines. There are also planted rows of Eucalypts including a mixed stand of Eurabbie (*Eucalyptus bicostata*) and Narrow leaved Black peppermint (*Eucalyptus nicholii*) on the western side just outside the lease area which is a well advanced planting about 6-8 metres high. Although not naturally occurring in the area these are widely planted attractive and fast growing Australian trees. There are also a few River She-oak (*Casurina cunninghamiana*) in various places.

From Forbes road up to the first drainage line (400m) there is a healthy stand of remnant Eucalypts native to the area mostly consisting of White Box (*E. Albens*) Bundy (*E. Goniocalyx*) and Blakelys Red Gum (*E. Blakelyi*) with the odd Yellow Box (*E. Melliiodora*). This is a fairly even aged stand and with grazing continuing around them there is little opportunity for regeneration, there are some individual trees with heavy infestations of mistletoe.

3.4.2 Fauna

One nighttime and several day observation surveys were conducted at the site. Few native species were found to inhabit or frequent the site. No native mammals were observed on the site. Eastern grey kangaroos are common in the area and swamp wallabies are known to occur at Borenore Caves reserve as are Brush tail and Ringtail possums so it is possible some of these species may be found at "Tintinara" from time to time. Given the habitat it is extremely unlikely any small ground dwelling native species inhabit the area. Introduced species observed included rabbits, fox and the housemouse, the rabbit population appeared to be well under control. Feral cats are also known in the area. One reptile, the common brown snake was observed, black snakes and lizard species such as bearded dragon, blue tongue, blotched blue tongue and smaller skinks are common in the area. Frogs and yabbies inhabit most of the dams and twenty six (26) species of birds were observed. All are common and widespread and are listed in Table 3.2.

Table - Bird Species 3.2

Species		Native (N) or Introduced (I)	Range and Status*	
				A - abundant
			VC - very common	
			C - common	
			R - rare	
			E - endangered	
Nankeen Kestrel (<i>Falco cenchroides</i>)	N	Generally throughout Australia		C
Australian Magpie (<i>Gymnorhina tibicen</i>)	N	Widespread over most of Aust.		A
Australian Raven or Crow (<i>Corvus coronoides</i>)	N	Widespread over most of Aust.		C
Magpie lark or Peewee (<i>Grallina cyanoleuca</i>)	N	Throughout mainland Australia		A
Willie Wagtail (<i>Rhipidura leucophrys</i>)	N	Throughout mainland Australia		VC
Galah (<i>Cacatua roseicapilla</i>)	N	Widespread mainland Australia except wetter coastal areas		C
Common Starling (<i>Sturnus vulgaris</i>)	I	South East Australia & Tasmania		A
European Goldfinch (<i>Carduelis carduelis</i>)	I	South East corner of mainland Australia, Tasmania around Perth and Albany in W.A.		C
House Sparrow (<i>Passer domesticus</i>)	I	Eastern Australia South Australia, North to Cooktown, Most of Tasmania		C
Welcome Swallow (<i>Hirundo neoxena</i>)	N	All of Tasmania, NSW, Vic, SA, most of Qld, north coast to Port Hedland in W.A., rarely in Far North.		
White-faced Heron (<i>Ardea novaehollandiae</i>)	N	Throughout Australia & Tasmania		C
Black Duck (<i>Anas superciliosa</i>)	N	Throughout Australia		C

Australian Wood Duck (<i>Chenonetta jubata</i>)	N	Generally throughout Australia where water plentiful	C
Black-fronted Dotterel (<i>Charadrius melanops</i>)	N	Suitable habitat throughout Aust.	C
Spurwinged Plover (<i>Vanellus miles</i>) (race <i>novaeollandice</i>)	N	Parts of N.T. and W.A. throughout Qld, NSW, Tasmania, Vic.	C
Little grebe (<i>Podiceps ruficollis</i>)	N	Throughout Australia	C
Noisy friarbird (<i>Philemon corniculatus</i>)	N	East Australia & Coastal islands	C
Red Wattlebird (<i>Anthochaera carunculata</i>)	N	S, S.E. & S.W. Australia	C
Noisy Miner (<i>Manorina melanocephala</i>)	N	E. Australia & Tasmania in suitable habitat	C patchy
White-Plumed Honeyeater (<i>Lichenostomus penicillatus</i>)	N	Throughout much of mainland Australia except far north	C
Striated Pardalote (<i>Pardalotus striatus</i>) (race <i>ornatus</i>)	N	Mainly S.E. Australia, Eastern Vic.	C
Crimson Rosella (<i>Platycercus elegans</i>)	N	Coastal East & S.E. Australia	C
Red rumped parrot (<i>Psephotus haematonotus</i>)	N	Mostly inland S.E. Australia	C
Straw-necked Ibis (<i>Threskiornis spinicollis</i>)	N	Australia generally	C
Black-faced cuckoo-shrike (<i>Coracina novaehollandiae</i>)	N	Throughout Australia & Tasmania	C
Common skylark (<i>Alauda arvensis</i>)	I	Tasmania, se S.A., Vic, NSW, Riverina, Coast & Tablelands	C

* Simplified from Pizzey.

3.5 Existing Acoustical Environment

Noise surveys to establish the existing noise climate in the area were conducted on Tuesday, 16th March 1993 and Monday, 6th September 1993 and Monday, 1st November 1993.

The results are presented in Tables 3.3 to 3.7 below

Time	Background Noise Levels		Noise Sources	Meteorological Conditions
	AV. Min. LA90	Av. Max. LA 10		

Table 3.3 Ambient noise level survey Location 1 "Ellan Vannin"

12.30-12.40pm 16/3/93	45	49	Insects Area traffic	Temp 23oc Wind 0-5 km/hr variable Cloud 1% scattered
--------------------------	----	----	-------------------------	--

Table 3.4 Ambient noise level survey Location 1 "Ellan Vannin"

11.15-11.30am 1/11/93	34	42	Insects Area traffic Birds	
--------------------------	----	----	----------------------------------	--

Table 3.5 Ambient noise level survey Location 2 "Jndalee"

11.46am - 12.01pm 16/3/93	32	41	Insects Birds Area Traffic	Temp 22oc Wind 5km/hr from NE Cloud 0%
------------------------------	----	----	-------------------------------------	--

Table 3.6 Ambient noise level survey Location 3 "Careena"

1.00pm - 1.30pm 6/9/93	37	43	Area traffic Birds Frogs Insects	Temp 14oc Wind 10km/hr from W. Cloud 45% Low.
---------------------------	----	----	---	---

Table 3.7 Ambient noise level survey Location 4 "Tara Downs"

1/11/93 11.55-12.10	35	43	Birds Sheep Traffic	Temp 15oc Cloud 70% Wind 5km/hr NE
------------------------	----	----	---------------------------	--

The instrumentation used for these surveys is detailed in Table 3.8.

Table 3.8 Instrumentation

Bruel & Kjaer	Precision Sound Level Meter	Model No. 2215 Serial No. 739017
Bruel & Kjaer	Microphone	Type 4165 Serial No. 751371
Bruel & Kjaer	Calibrator	Type 4230 Serial No. 752247

- * The precision sound level meter was calibrated before and after each survey and was within 0.5dB(A) each time.

Noise levels are generally consistent with those of typical rural locations near a busy road. The higher level at location 1 "Ellan Vannin" was due to the constant level of noise from insects. To check for seasonal variation a second survey was carried out later in the year, there was still a considerable contribution to the noise level from insects, a large dam is located nearby and much of the area in between remains wet for most of the year but the result was more typical than the first survey.

3.6 Air Quality

Air quality is typical of rural areas where dust levels vary with the season, rainfall and level of agricultural activity, such as ploughing. The nearest road is sealed while property access is of Bald Hill gravel.

3.7 Pre-European History

Archaeological site records kept by the NSW National Parks and Wildlife Service show no recorded aboriginal sites within the vicinity of the proposed quarry. Nor was there any evidence of habitation or artefacts observed at the site.

3.8 Land Status

3.8.1 Zoning

The quarry site lies within an area zoned Rural 1A.

3.8.2 Land Ownership

The quarry site comprises freehold land owned by A.G. & B.H. Dunstan and DJ & RL Dillon the quarry will be leased and operated by The Central West Earthworks. Map C shows the proposed site in relation to surrounding properties.

3.8.3 Land Use

The present land use on site is grazing the general area comprises prime agricultural land suitable for a variety of purposes, e.g. the adjacent property owner is establishing a small vineyard. Grazing of cattle, sheep, cereal cropping and orcharding are the main activities in the area. The immediate quarry site is suitable only for grazing due to combination of shallow moderately erodible soils and slope.

Borenore Caves recreation reserve is located to the SSW the main picnic-cave area approx. 2.3km from the quarry. The Orange National field days site is located approx. 3kms to S.E.

3.9 Visibility

The present quarry cut is not readily visible from any public road and is not visible from any residence within 1.5km shielded by either topography or vegetation. The view is quite pleasant from all surrounding residences and Main road 61.

3.10 Transport Routes and Traffic

3.10.1 Transport Routes

There is only one available transport route, which is Forbes Road, Main road 61 (state route 90). This is a main road funded by the Roads and Traffic Authority. It is currently undergoing considerable upgrading along this section.

3.10.2 Traffic

Main Road 61 is the main route between Orange and Cudal, Forbes, Manildra and Parkes and carries a high traffic volume of both cars and trucks. The AADT* (Average Annual Daily Traffic) count for main road 61 at Molong Creek Bridge was 2621 vehicles in 1992 of which 13% were heavy vehicles. (*courtesy of RTA western region).

3.10.3 Rail

The western railway line to Molong passes approximately two (2) kilometres to the east at Borenore.

3.11 Services

The closest power is a few hundred metres to the south of the quarry site. No gas or telephone lines cross the quarry area.

SECTION 4

Environmental Interaction, likely or possible impacts and measures to be taken to prevent or mitigate those impacts.

4.1 Pollution and its Control

4.1.1 Water Pollution

At this stage no grease, oil or fuel, will be stored on site, vehicles will be serviced elsewhere, therefore the risk of contamination of surface or ground water from these sources will be greatly reduced.

Because the truck driver will also load the gravel there will not be any one permanently on site, therefore no permanent facilities will be necessary so there will not be any potential pollution from installation of a septic system in busy times a portable toilet will be used on site if required.

Disturbance of the site leading to erosion and sediments washing into adjacent drainage lines is the most likely potential form of water pollution. The proponents have however, incorporated in the design of the quarry various safeguards to control erosion and contain sediment laden runoff

- i) The quarry design allows all runoff to be controlled and directed (see map E). The floor of the quarry will be drained on a 2% fall to the settling pond.
- ii) A sedimentation dam with a 1 in 20 year return period will be constructed to contain runoff and allow settling of suspended solids water will then be directed to the existing dam.
- iii) Clean water from above the quarry will be directed by temporary diversion/contour banks through a small sediment trap and directly to the existing dam and on the western side through the sediment dam (see map E).
- iv) Topsoil will be stripped progressively to ensure a minimum area is laid bare at any given time.
- v) Topsoil removed will be stockpiled and vegetated with a mixture of rye and clover to ensure it is not eroded.

The Department of Conservation and Land Management will be consulted further at the time of construction of sediment, dam and erosion control measures to ensure they meet the required standard.

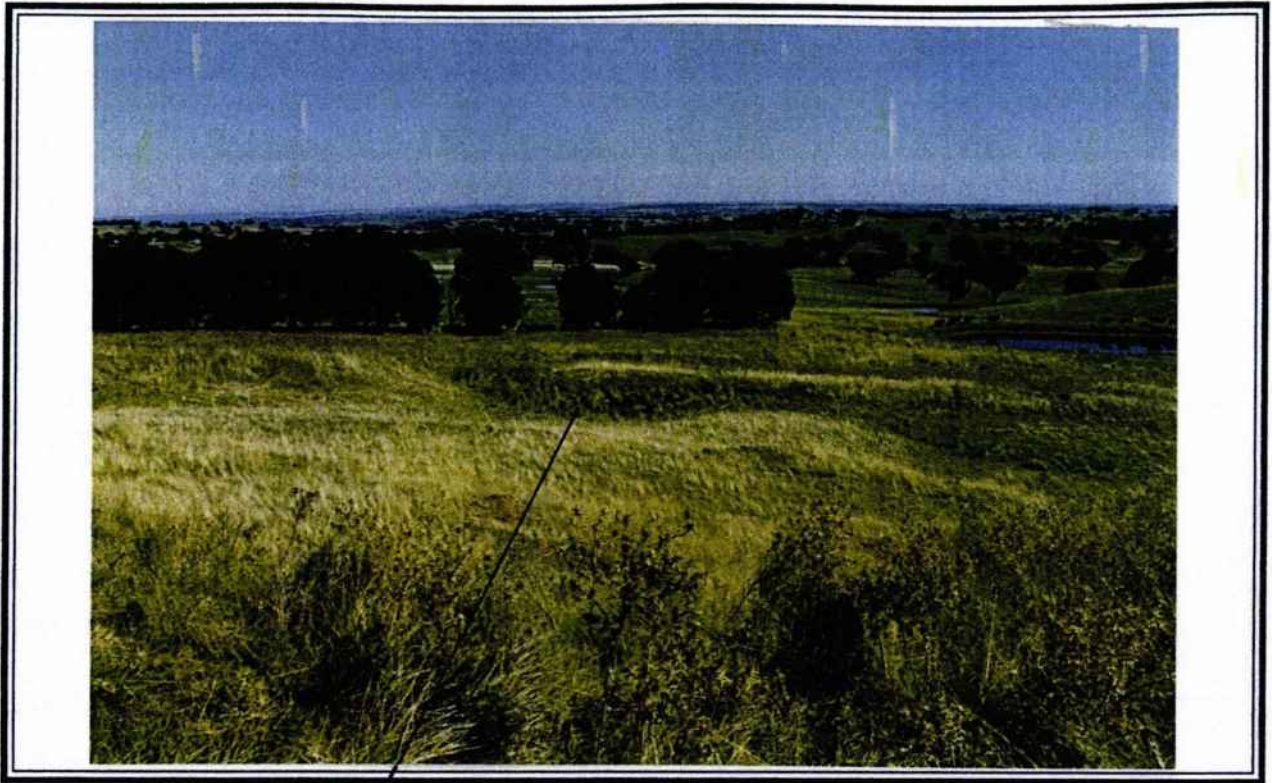


Plate No. 6

Shows approximate area for sedimentation dam, existing dam, tree screen on western boundary and view to the NW.

4.1.2 Air pollution

The most likely potential cause of air pollution would be the generation of dust arising from soil removal, gravel loading and vehicle movements. Vehicle emissions are another source of potential air pollution.

The surrounding residences are not likely to be affected by dust from the operation as an adequate buffer zone would be a minimum of 200m (Kamst 1990) the nearest residence "Ellan Vannin" is 900m to the SSW. This residence is, however, close (approx. 150m) on the western side of the access road. The prevailing winds are from the west thus significantly assisting in reducing the frequency of occurrence when this property may be affected. However, to reduce the potential for air pollution the proponents will adopt the following measures:

- i) The speed of vehicles whilst on the access road will be restricted to 30km/hr.
- ii) 3 rows of trees will be planted between the access road and the property boundary of "Ellan Vannin" consisting of a dense growing species such as turalosa pine and two rows of indigenous eucalypts and wattles.

- iii) Progressive removal of topsoil and vegetation of topsoil stockpiles will reduce the potential for wind blown dust as will progressive rehabilitation of the site.
- iv) A water trailer will be used in drier months to water the road prior to use.
- v) All vehicles and equipment will be properly maintained and fitted with appropriate exhaust emission controls.
- vi) Access Road will be progressively sealed from main gate for a distance of 300 metres over a period of three years.

4.1.3 Noise

The Environment Protection Authority (EPA) which administers the Noise Control Act, 1975, has two broad environmental noise objectives:

- i) That the noise from any single source does not greatly intrude above the prevailing background level.
- ii) That the background level does not exceed the level appropriate for the particular locality and land use.

In no. i) above this level is generally considered to be the existing background level plus 5dB(A). In addition for the purposes of assessment the Environment Protection Authority's Noise Control Manual has a schedule of recommended noise levels for various land use categories. An extract from the schedule is shown as Table 4.1.

Table 4.1 EPA recommended Outdoor Background Noise Levels

Zoning	Land Use	Time Period	L90 Background Noise Level Recommended Limits	
			Acceptable	Maximum dB(A)
Rural	Residence	Day*	45	50
	Church	Night	35	40
	Hospital			

* For Monday to Saturday is defined as 7am - 10pm. On Sundays and public holidays day is defined as 8am - 10pm.

Table 4.2 shows distance of surveyed residences from the quarry (see also Map C), the background levels (from Section 3) the planning levels and the predicted L Max contribution noise levels from the operation at each of the residences

Table 4.2

Residence	Distance from Quarry (m)	Measured Background L90 Level dB(A)	Planning Level dB(A)	Predicted L Max. Operational Noise Level Contributions dB(A)
"Ellan Vannin"	900	34	39	31
"Jindalee"	1000	32	37	30
"Careena "	1200	37	40*	28
"Tara Downs"	1150	35	40	29

* The lowest level surveyed on the southern side of Main Road 61 has been taken as the appropriate level for determining the planning level for all residences along this area.

The predicted levels in Table 4.2 are based on straight line attenuation calculations in neutral atmospheric conditions and the measured noise levels of The Central West Earthworks actual machinery which will be used on site. They do not take into account the screening affect of the hill and therefore these levels are likely to be lower and will clearly meet the EPA requirements. The equipment to be used and their measured noise levels are shown in Table 4.3.

Table 4.3 Equipment and Noise Levels

Machinery	Noise Level at 1m dB(A) max.
DAF Model 3300 * Bogie Drive Tiptruck	87
Komatsu WA 100 * Rubber Tyre Loader	89

* (see plate 2)

Occasionally a dozer or excavator may be required to rip harder areas in the quarry particularly at lower levels, a dozer with a noise level of 103dB(A) would give, if sitting on the top of the hill, a noise contribution of 44dB(A) at "Ellan Vannin" this would still be within the recommended acceptable level but as it would be operating within the rim of the quarry the level would be lower and given the limited periods when this would be used the level of impact is considered to be minor.

The impact of truck noise arising from the development would also be minor. From table 4.3 the truck the operators propose to use clearly meets the requirement of 99dB(A) (under the Noise Control Regulation 1975 Pt6 Column 2 of the Table for a vehicle of 12 tonnes or more with an exhaust height of 1500mm or more for a vehicle manufactured on or after the 1st of July 1983) and at maximum production the number of trips the truck will make (6 in 6 out) presents an increase of less than one half of one percent of the total traffic flow on main road 61. (AADT of 2621 at Molong Bridge 1992, supplied courtesy of RTA).

4.2 **Flora and Fauna**

There will be no appreciable adverse impact on the flora and fauna of the area there were no rare or endangered species of plants or animals observed at the site. The only vegetation to be disturbed will be improved pasture which will be re-established. In the long term the area will have many more trees than it presently does reducing pressure on the existing population and providing more habitat for birds.

4.3 **Visual Impact**

This site is well placed with respect to the visual catchment. The view from the southern side of Main road 61, "Jindalee" and "Ellan Vannin" is quite picturesque (see plate no. 4) and will remain so. The quarry will not be visible from any of these places as the cut will be made on the northern side of the hill. To the north the nearest residences are some distance away and are shielded by vegetation. Occasionally machinery may be seen on the crest of the hill for stripping topsoil etc but this is no different to other types of rural machinery. In the long term the area will be returned to grazing land. A tree screen will also be planted as shown on Map C & G.

4.4 **Landform and Drainage**

There will be no major impact on the landform and drainage of the area over the 30 year operation. The northern side of the hill will be altered but the crest of the hill will remain and the hill will appear as it does now looking from the south. The drainage of the present hill will remain unaltered only passing through an additional dam to the existing drainage lines.

4.5 **Roads and Access**

The impact of the operation on roads will be minor Main road 61 is a state route and is currently undergoing upgrading in the area. The proposal will add less than one half of one percent to the total traffic volume and only three and one half percent increase in heavy vehicles. At maximum production these relative percentages will decrease as the overall traffic level increase with the growth of the district. The intersection with the access road will be upgraded to a type A intersection and sealed 6 metres wide and 6 metres in from the present pavement. 99% of traffic will turn left onto MR61 towards Orange.

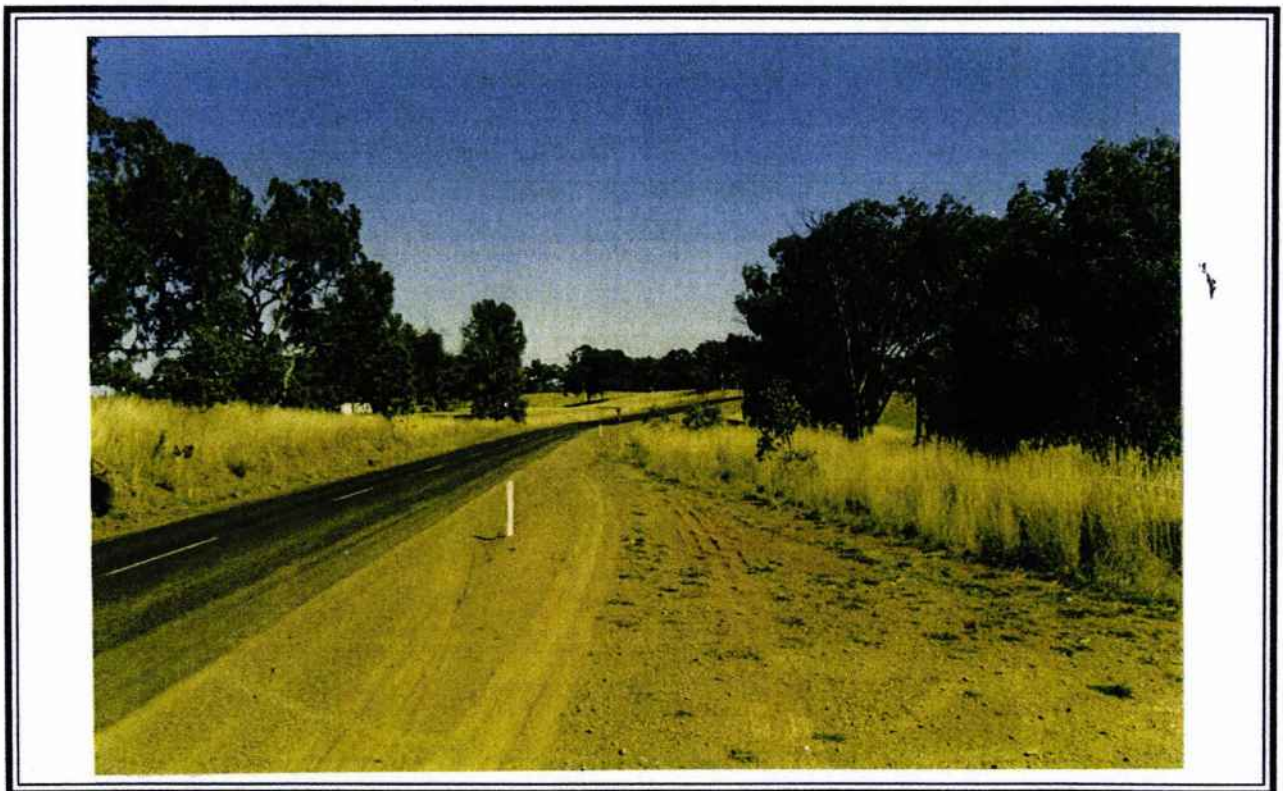


Plate No. 7
View down Forbes Road to the right (west) when turning from quarry entrance left toward Orange.



Plate No. 8
View from entrance onto Forbes Road to east.

4.6 Pre-European History

As there is no evidence of anything of Archeological significance at the site there will be no impact on our pre-European heritage.

4.7 Services

No services will be connected to the site and the proposal will have no affect on existing services in the area.

4.8 Rehabilitation

One of the initial steps in the proposed operation will be the rehabilitation of part of the old quarry area not included in the proposed quarry zone. Some of the topsoil which is removed in constructing the access road will be used to revegetate this area after it has been reshaped. Progressive rehabilitation will take place where possible, and on completion the quarry will be fully rehabilitated for use once again as grazing and shelter for stock. Bench height will be 10 metres at an angle of 45°. The surface will be ripped across the contour and topsoil spread and sown with a mix of clover, rye and fertiliser will be added and stock excluded until a successful pasture is established. Map G and Figure 4.1 show the final landform after rehabilitation.

An extensive tree planting program will begin with approval of the quarry. The existing planting of Eucalypts will be extended around the lease area as shown on Map G but species endemic to the area i.e. White Box (*E. Albens*) Bundy (*E. Goniocalyx*) and Blakelys Red Gum (*E. Blakelyi*) will be used. The planting program will commence immediately and will be staged over the first 4 years of the operation as shown on Map G. This will result in over 2 kms or the addition of over 500 trees. Some trees will also be planted in the quarry area for shade and shelter.

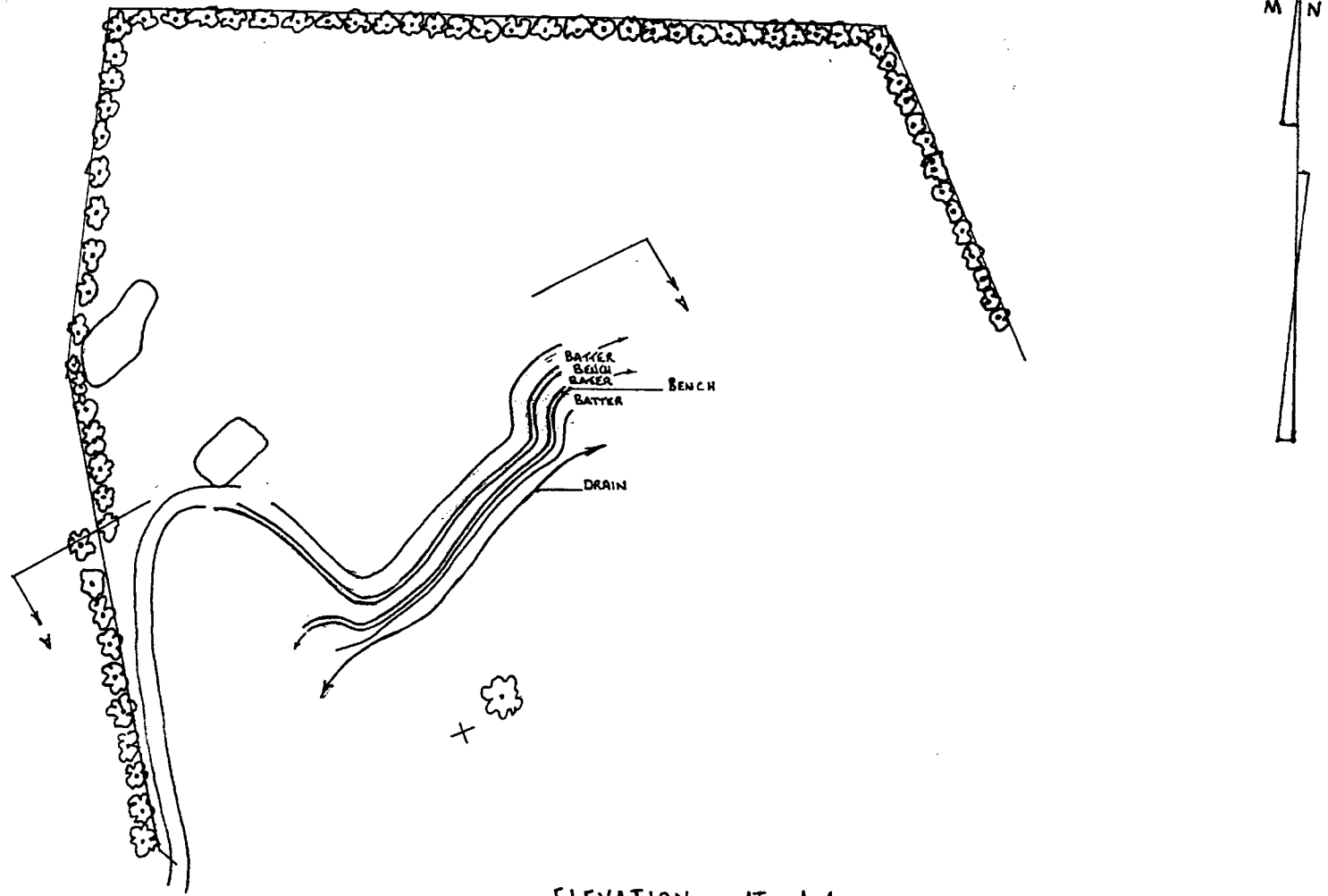
4.9 Socio-economic Factors

The principle benefit from a socio-economic point of view will be the provision of a stable long term good quality supply of gravel for the proponents ensuring the long term viability of their business. It will also provide a lower cost raw material for people of the area by reducing transport costs in bringing gravel from further away. The project also provides additional income to the land owner. There do not appear to be any adverse social or economic consequences as a result of the project.

4.10 Environmental Performance


The quarry operators will submit an annual performance report to Cabonne Council detailing the performance of the development in relation to:

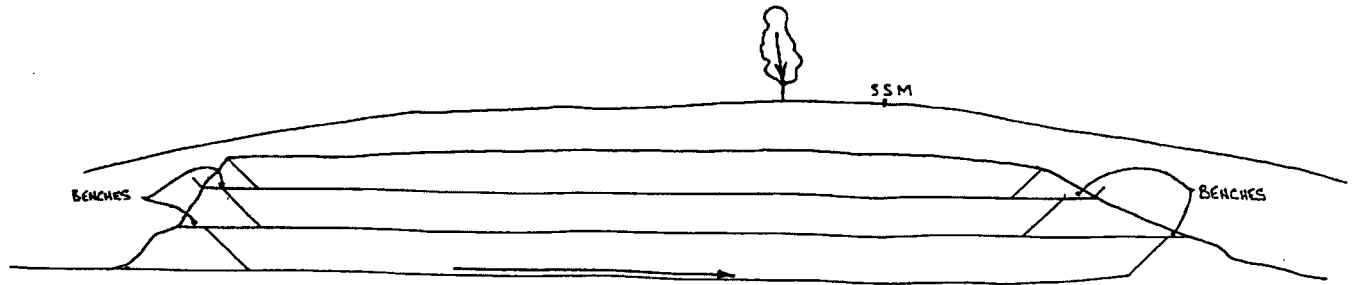
1. Quarrying operations undertaken during the preceding 12 months.
2. The implementation and effectiveness of the environmental controls relating to the development.



- ELEVATION AT A.A -
 Scale - 1:1000

BALD HILL QUARRY
 MAP G
 1:2500
 Development at 30 Years
 Final Landform

- Benches - 5.0 metres wide
- Batters - 1:1
- Benches Drained to Rear
- Trees - 



Seeching Pond #1

SECTION 5

5.1 Alternatives to the Development

The only alternatives are for the proponent to bring gravel from the eastern side of Orange as the nearby Amaroo quarries are either depleted of good quality material or privately owned and for the use of the owner or his contractor only. However, this alternative would be uneconomic due to the high transport cost.

5.2 Justification, Use of Energy & Consequences of Not Proceeding

This small local quarry is well justified both socio-economically and environmentally.

It will provide the proponents with a viable long term supply ensuring their continued employment.

Small local quarries reduce the intensity of impact. The impact of this project on the environment traffic and roads and surrounding residents is minor. Long term extraction of small amounts (provided it is economic) has a better environmental outcome. If the proponents were forced to get their gravel elsewhere, use of fossil fuels would be greater and the production rate at another quarry would need to increase, thus increasing the intensity of impact in that location.

Fossil fuels are the only alternative for the extraction and transportation of this material.

The consequences of not proceeding would be:

- 1) The proponents and land owner would lose the benefit of an economic deposit.
- 2) The proponents would be forced to purchase gravel for their business at a higher rate which may affect their competitiveness and viability.
- 3) Local customers would be forced to pay the extra cost involved in transporting gravel from further away.
- 4) The owners would lose the source of funding which they intend to use for rehabilitation of old workings.

REFERENCES

Central Mapping Authority, (1985):
Bathurst-Orange District Map 1:150 000 5th Ed.

Kovac M., Murphy B.W., and Lawrie, J.W., (1990):
Soil Landscapes of the Bathurst 1:250 000 Soil Conservation Service of NSW, Sydney.

Packham, G.H. (1966):
Bathurst 1:250 000, Geological Series, Sheet SI 55-8.

Field Guide to Birds of Australia
Graham Pizzey
Illustrated by Roy Doyle.

APPENDICES

CORRESPONDENCE



National Parks and Wildlife Service
BATHURST DISTRICT



Mr Bruce Hansen
24 Torulosa Way
Orange NSW 2800

154 Russell Street
Bathurst, N.S.W. 2795

Our reference: **SW:sw**
F 179

Your reference:

Telephone: (063) 31 9777
Fax: (063) 31 9644

**Environmental Impact Statement for proposed Bald Hill
Quarry - Boronore**

Dear Sir

I refer to your letter dated 30 June 1993 on the above matter.

There are no recorded Aboriginal sites within the vicinity of the proposed quarry. Given the location of the proposal, previous land use and nature of the proposal it is unlikely that Aboriginal sites will be affected by the proposal.

However should any sites be uncovered during operations, work is to cease immediately and this office contacted to arrange an assessment of the site and protection measures.

The Service supports your decision to use local tree species in rehabilitation works.

If you have questions in relation to the matters raised above please contact Aboriginal Sites Officer Bill Allen on (063) 319 777.

Yours faithfully

Steve Woodhall
A\District Manager
for Director General

28 July 1993.



Department of Planning

Mr Bruce Hansen
24 Torulosa Way
ORANGE NSW 2800

Remington Centre
175 Liverpool Street, Sydney 2000
Box 3927 G.P.O. Sydney 2001
DX. 15 Sydney

Telephone : (02) 391 2000 Ext: 2078
Fax No : (02) 391 2111

Contact: M. Beveridge

Our reference : S93/00412

Your reference :

Dear Mr Hansen,

PROPOSED GRAVEL QUARRY; "TINTINARA" LOT 775, DP.813587, PARISH OF BOREE-NYRANG

Thank you for your letter of 31 March, 1993 indicating that you are consulting with the Director with regard to the preparation of an environmental impact statement (EIS) for the above development.

2. As development consent is required for the proposal and it is a designated development within the meaning of Schedule 3 of the Environmental Planning and Assessment Regulation, 1980, as amended, an EIS must accompany the development application to the Cabonne Shire Council. The EIS shall be prepared in accordance with clause 34 of the Regulation and shall bear a certificate required by clause 26(1)(b) of the Regulation (see Attachment No. 1).

3. In addition, pursuant to clause 35 of the Regulation, the Director requires that the following matters be specifically addressed in the EIS:

- . proposals for site rehabilitation;
- . water management issues;
- . impacts on flora and fauna;
- . impacts on nearby properties, particularly noise, traffic and dust impacts;
- . results of consultation with:
 - . Environment Protection Authority;
 - . Department of Conservation and Land Management (Soil Conservation Service);
 - . Roads and Traffic Authority.

4. Attachment No. 2 is a guide to the type of information most likely to be relevant to the development you propose; not all of the matters raised therein may be appropriate for consideration in the EIS for your proposal; equally, the guide is not exhaustive.

5. In preparing your EIS you should approach the Cabonne Shire Council and take into account any comments Council considers may apply to its determination of the proposal.

6. Should you require any further information regarding this matter please do not hesitate to contact us again.

Yours faithfully,

B. Adams 7/5/93

B. Adams
Manager
Assessments and Major Hazards Branch
As Delegate for the Director

DEPARTMENT OF PLANNING
ATTACHMENT NO. 1

STATUTORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT STATEMENTS

In accordance with Part IV of the Environmental Planning and Assessment Act, 1979, an environmental impact statement (EIS) must meet the following requirements.

Pursuant to clause 34 of the Environmental Planning and Assessment Regulation, 1980, as amended, the contents of an EIS shall include the following matters:

- (a) full description of the designated development proposed by the development application;
- (b) a statement of the objectives of the proposed designated development;
- (c) a full description of the existing environment likely to be affected by the proposed designated development, if carried out;
- (d) identification and analysis of the likely environmental interactions between the proposed designated development and the environment;
- (e) analysis of the likely environmental impacts or consequences of carrying out the proposed designated development (including implications for use and conservation of energy);
- (f) justification of the proposed designated development in terms of environmental, economic and social considerations;
- (g) measures to be taken in conjunction with the proposed designated development to protect the environment and an assessment of the likely effectiveness of those measures;
- (g1) details of energy requirements of the proposed development and measures to be taken to conserve energy;
- (h) any feasible alternatives to the carrying out of the proposed designated development and reasons for choosing the latter; and
- (i) consequences of not carrying out the proposed development.

The EIS must also take into account any matters required by the Director of Planning pursuant to clause 35 of the Regulation, which may be included in the attached letter.

The EIS must bear a certificate as required by clause 26(1)(b) of the Regulation.

DEPARTMENT OF PLANNING
ATTACHMENT NO 2

ADVICE ON THE PREPARATION OF AN ENVIRONMENTAL IMPACT STATEMENT
(EIS) FOR AN EXTRACTIVE INDUSTRY

A definition of extractive industry may be found in paragraph (n) to Schedule 3 of the Environmental Planning and Assessment Regulation, 1980, (as amended). Extractive industries may take the form of dredging operations, quarrying operations, turf farms or various forms of land excavation etc. Processing of extracted material on the same site as the winning of the material may also constitute an extractive industry.

Extractive industries have prompted considerable public controversy in the past since, among other things, they affect visual amenity, generate heavy vehicle movements, raise dust and cause disturbance through noise and blasting. This is the prime reason for designation of extractive industries under the Environmental Planning and Assessment Act, 1979.

The purpose of this paper is to outline various issues relevant to the preparation and consideration of an EIS for extractive industries. It is intended to assist the preparation of the EIS. However, it is the applicant's responsibility to identify and address as fully as possible the matters relevant to the specific development proposal in complying with the requirements for EIS preparation (see Attachment No 1).

The matters nominated in this paper are not intended as a comprehensive identification of all issues which may arise in respect of an extractive industry. Some of the issues nominated may not be relevant to a specific proposal. On the other hand, there may be other issues, not included, that are appropriate for consideration in the EIS.

Information provided should be clear, succinct and objective and where appropriate be supported by maps, plans, diagrams or other descriptive detail. The purpose of the EIS is to enable members of the public, the consent authority (usually the Council) and the Department of Planning to properly understand the environmental consequences of the proposed development.

1. Description of the proposal.

The description of the proposal should provide general background information on the location and extent of the works proposed, an indication of adjacent developments, and details of the site, land tenure, zonings and relevant forward planning proposals and any other land use constraints.

The EIS should address the compatibility of the proposal with any regional strategy for extractive industries in the area and with the provisions of the Local Environmental Plans for existing and proposed development.

This section should provide specific information on the nature, intent and form of the development. It should, as far as possible, include such details as the processes involved (highlighting any proposed crushing or blasting), disposal of wastes, landscaping and site rehabilitation. A description should also be provided of associated operations such as the transport of materials and use of the end product if likely to have environmental implications.

Particular details that may be relevant include:

- . Characteristics and economic significance of the resource.
- . Possible availability of alternative resources.
- . Quantity of materials to be extracted.
- . Details of any blasting and/or crushing.
- . Effects of vibrations.
- . Type of machinery and equipment to be used for dredging and stockpiling operations and for any processing plant.
- . Expected life of the operation.
- . Hours of operation.
- . Details of necessary stockpiling.
- . Access arrangements - truck routes, truck numbers etc.
- . Site drainage and erosion controls.
- . Proposals for rehabilitation.

2. Description of the Environment.

This should provide details of the environment in the vicinity of the development site and also of aspects of the environment likely to be affected by any facet of the proposal. In this regard, physical, natural, social, archaeological and economic aspects of the environment should be described to the extent necessary for assessment of the environmental impact of the proposed development.

3. Analysis of Environmental Impacts.

Environmental impacts usually associated with extractive industries are listed below. Where relevant to the specific proposal, these should be addressed in the EIS, taking into account the adequacy of safeguards proposed to minimise them.

- . The flow of any affected rivers or watercourses.
- . The effect of the extraction on the sediment transport rate of any affected rivers or watercourses.
- . The bed and bank stability of any affected rivers during and after completion of the operations and any need for recurrent maintenance dredging.
- . Any possible siltation, sedimentation or downstream effects of the operation.
- . Any likely cumulative effects of the proposed operation when considered together with other operations in the vicinity.
- . Details of floods and any likely effects of the operation on flood liability of surrounding lands.
- . The possible effects of flooding on the operation.
- . Effects on flora and fauna.
- . The agricultural viability of the landholding.
- . Likely noise/vibration disturbance caused by the operations, including transport operations, on nearby residences.

- . Other impacts of trucking movements, including access over railways and onto highways.
- . Dust nuisance likely to be caused.
- . Effects on water quality of nearby watercourses.
- . Disposal of waste material.
- . Effects on the visual environment.
- . Any likely affectation of sites of Aboriginal archaeological or European heritage value if located in the vicinity of operations.
- . Impact of the operations on navigation aspects for all types of shipping (commercial, recreational, etc).

In addition, any potential for hazard or risks to public safety and any proposals to monitor and reduce environmental impacts should be included.

4. Contact with relevant Government Authorities.

In preparing the EIS, it is suggested that authorities, such as those listed below, should be consulted and their comments taken into account in the EIS.

- . The Environment Protection Authority in regard to air, water and noise impacts and relevant pollution control legislation requirements;
- . The Department of Mineral Resources concerning its responsibilities under Sydney REP No 9 Extractive Industry;
- . The Department of Water Resources concerning the implications of the proposal on their jurisdiction;
- . The Department of Conservation and Land Management regarding appropriate erosion control and rehabilitation procedures;
- . The Department of Agriculture if prime agricultural land may be affected by the proposal;
- . New South Wales Fisheries if the proposal is for extraction of resources in or adjacent to a waterway;
- . The Heritage Council of NSW if the proposal is likely to affect any place or building having heritage significance for the State; the National Parks and Wildlife Service if aboriginal places or relics are likely to be affected.
- . The Maritime Services Board in relation to navigational aspects of shipping; and
- . The Public Works Department in relation to hydrological impacts and relevant legislative requirements.

It is the responsibility of the person preparing the EIS to determine those Departments relevant to the proposed development.



Environment
Protection
Authority
New South Wales

219 Howick Street
PO Box 1388
Bathurst
NSW 2795

Telephone .063. 32 1838
Facsimile .063. 32 2387

Mr Bruce Hansen
24 Torulosa Way
ORANGE NSW 2800

Our Reference: 260128 A3 RW:BL

Your Reference:

Contact: Richard Whyte

Dear Mr Hansen

I refer to your letter of 11 May 1993 regarding a proposed gravel quarry at "Tintinara", Bald Hill, Borenore.

Regarding the general requirements of the Environment Protection Authority (EPA) that should be addressed in an Environmental Impact Statement (EIS) I wish to make the following comments:

STATUTORY REQUIREMENTS

If the development has a site area of greater than 20,000 square metres it will require the approval of the EPA within the meaning of the Noise Control Act 1975.

If physical separation or sorting of the gravel is to be conducted on site then the development will require the approval of the EPA within the meaning of the Clean Air Act 1981.

If the development requires the treatment of pollution waters, or involves a discharge to waters, then the EPA's approval and licence, respectively, is required within the meaning of the Clean Waters Act 1970.

POLLUTION CONTROL

Any EIS produced should address the following items:

1. Noise - impact from plant on neighbouring residences and control measures.
 - impact from trucks on neighbouring residences.

2. Air - the impact to control dust on neighbouring residences and control measures.
3. Water - the need to control sediment laden runoff from impacting nearby waters.

OTHER CONCERNS

Any EIS produced should address the following items:

1. The need to rehabilitate the quarry when quarrying ceases.
2. The need to control erosion associated with the quarrying activities.

I trust these comments are of assistance to you in preparing the EIS for the proposed gravel quarry.

Yours sincerely



Richard J Whyte
Regional Manager Central West
for Director-General

27 May 1993

72.5351 (RTW:MM)
Mr Wagg

Roads and Traffic
Authority
Western Region
Operations Branch

Mr Bruce Hansen
24 Torulosa Way
ORANGE NSW 2800



28 Currajong Street
Parkes
New South Wales 2870
PO Box 334
Parkes NSW 2870
DX 20256 Orange (Parkes)
Telephone (068)62 8444
Facsimile (068)62 8415

SHIRE OF CABONNE. TRAFFIC GENERATING DEVELOPMENTS.
PREPARATION OF ENVIRONMENTAL IMPACT STATEMENT - QUARRY SITE.

Dear Sir

I refer to your letter dated 11 May 1993 in which you gave a briefing on the proposed quarry at "Tintinara" and in which you requested any requirements the RTA may have in the preparation of the Environmental Impact Statement.

The Roads and Traffic Authority is responsible for the safe and efficient use of the State's Main Roads System and therefore it is interested in any development which will generate traffic and the effect of this traffic on the safety and efficiency of the road system. Additionally the proposed means of access to the site and the provisions within the site to cater for the traffic expected to use the facility as well as pedestrian, are all considered essential to the Authority's requirements.

In the case of the proposed quarry at "Tintinara" the following aspect need to be addresses within the EIS;

- 1) Weekly output of quarry
- 2) Traffic impact statement including the number of trips per day, type of vehicle, size of vehicle.
- 3) Access to site.
- 4) Haulage routes to be used.
- 5) Projected employee numbers, parking etc.

DRINK DRIVE
You'll be sorry

Should any further advice be required, please do not hesitate to contact Mr Bob Wagg (068) 62 8430 of this office.

628444

Yours faithfully

G.E. Kirchner

G E Kirchner
Operations Manager

27 May, 1993

B. Wagg

**APPENDIX B – DA2014/114 Approved Plans Prepared by Anthony Daintith,
February 2018**



adtp Anthony Daintith
TOWN PLANNING

Head Office 293 Dalton Street P.O. BOX 1975 ORANGE, NSW 2800
 ABN 48 121 454 153 Email: mail@adtp.com.au Ph 02 63624623 Fax 02 63611908
 170 Rankin Street BATHURST, NSW 2795

IMPORTANT NOTES

- THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES ONLY
- ALL DIMENSIONS AND AREAS SHOWN ARE SUBJECT TO SURVEY
- DO NOT RELY ON THIS PLAN FOR THE LOCATION & TYPE OF SERVICES THAT MAY AFFECT THE LAND. THESE SHOULD BE ASCERTAINED BY SURVEY SEARCH AND/OR FIELD SURVEY.
- FOOTING DIMENSIONS MAY BE REQUIRED FOR SERVICES OF OTHER REASONS & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN.

SCALE
 0 40 80 160 240m
 PLAN
 1 : 4000

**EXTENT OF OPERATIONS BALD HILL QUARRY
 LOT 775 DP 813587 – THE ESCORT WAY, ORANGE
 FIGURE 1 – EXISTING BOUNDARIES & SITE DETAIL**

DATE: 9.12.2013 REFERENCE: 2014-0320A SHEET: 1 OF 2

774
DP813587

EXISTING ACCESS ROAD

ENTRANCE TO QUARRY
CATTLE GRID
MAIN ENTRANCE

ENTRY EXIT

SEDIMENT DAM

760 FENCE
4B 765
0/L
EXISTING
S/L

STOCK PILE

STOCK PILE

SEDIMENT DAM

SEDIMENT DAM

OPERATIONS AREA
& BORROW AREA

CRUSHED MATERIAL

STOCK PILE

RAMP

CRUSHING PLANT

STOCK PILE

EXTENT OF QUARRY
AS OF 11th NOVEMBER 2013



9
DP1153835

adtp Anthony Daintith
TOWN PLANNING

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 170 Rankin Street BATHURST, NSW 2795

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- FUTURE EASEMENTS MAY BE ACQUIRED FOR SERVICES OR OTHER REASONS, & ALL SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN.

SCALE
 0 15 30 45 60m
 PLAN
 1 : 1000

**EXTENT OF OPERATIONS BALD HILL QUARRY
 LOT 775 DP 813587 - THE ESCORT WAY, ORANGE
 FIGURE 2 - EXTENT OF OPERATIONS 27th NOVEMBER 2013**

DATE: 9.12.2013 REFERENCE: 2014-032DA SHEET: 2 OF 2



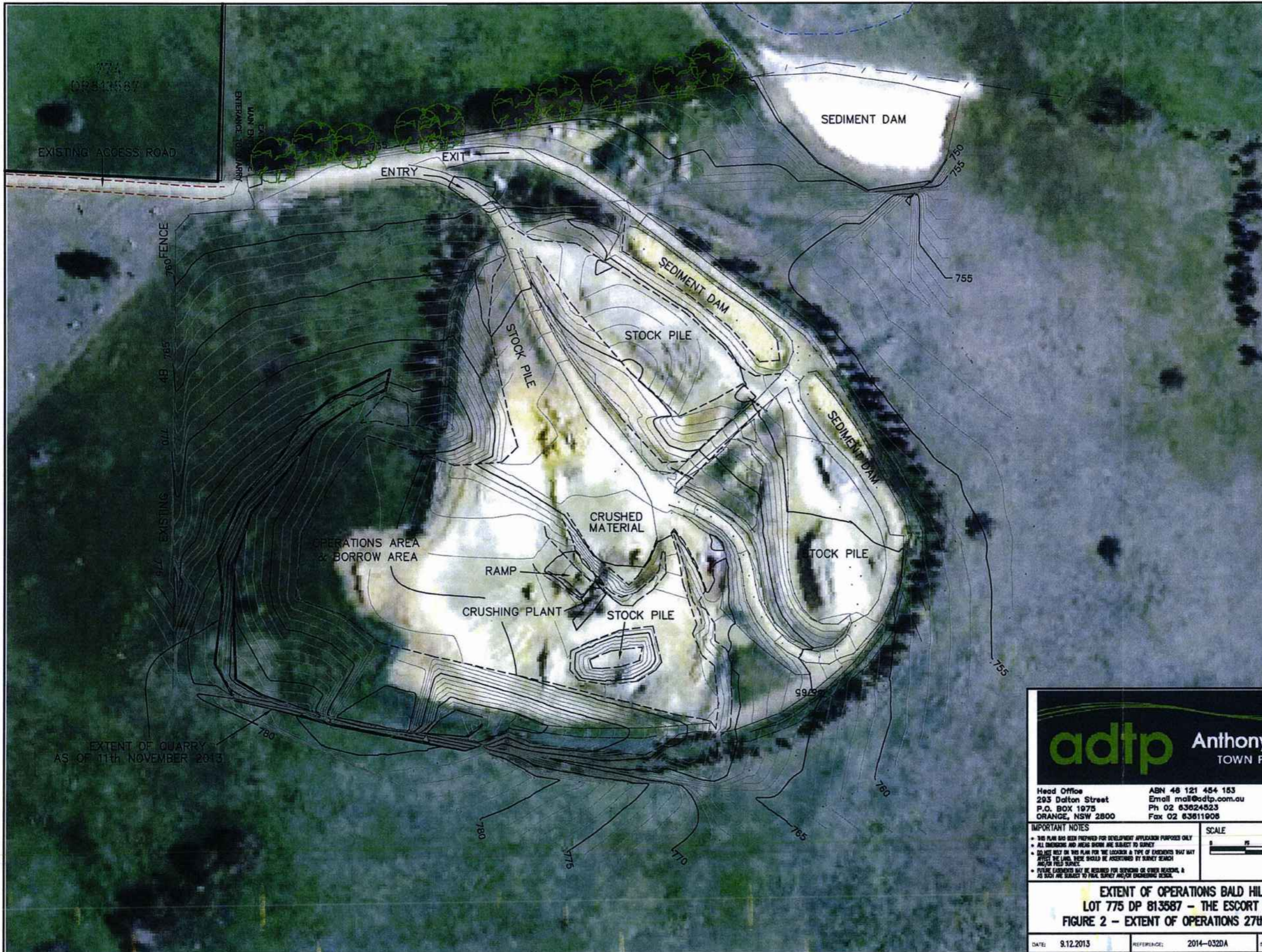
adtp Anthony Daintith
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 170 Rankin Street BATHURST, NSW 2795

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**EXTENT OF OPERATIONS BALD HILL QUARRY
 LOT 775 DP 813587 – THE ESCORT WAY, ORANGE
 FIGURE 1 – EXISTING BOUNDARIES & SITE DETAIL**

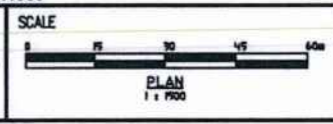


DP1153835

adtp Anthony Daintith
TOWN PLANNING

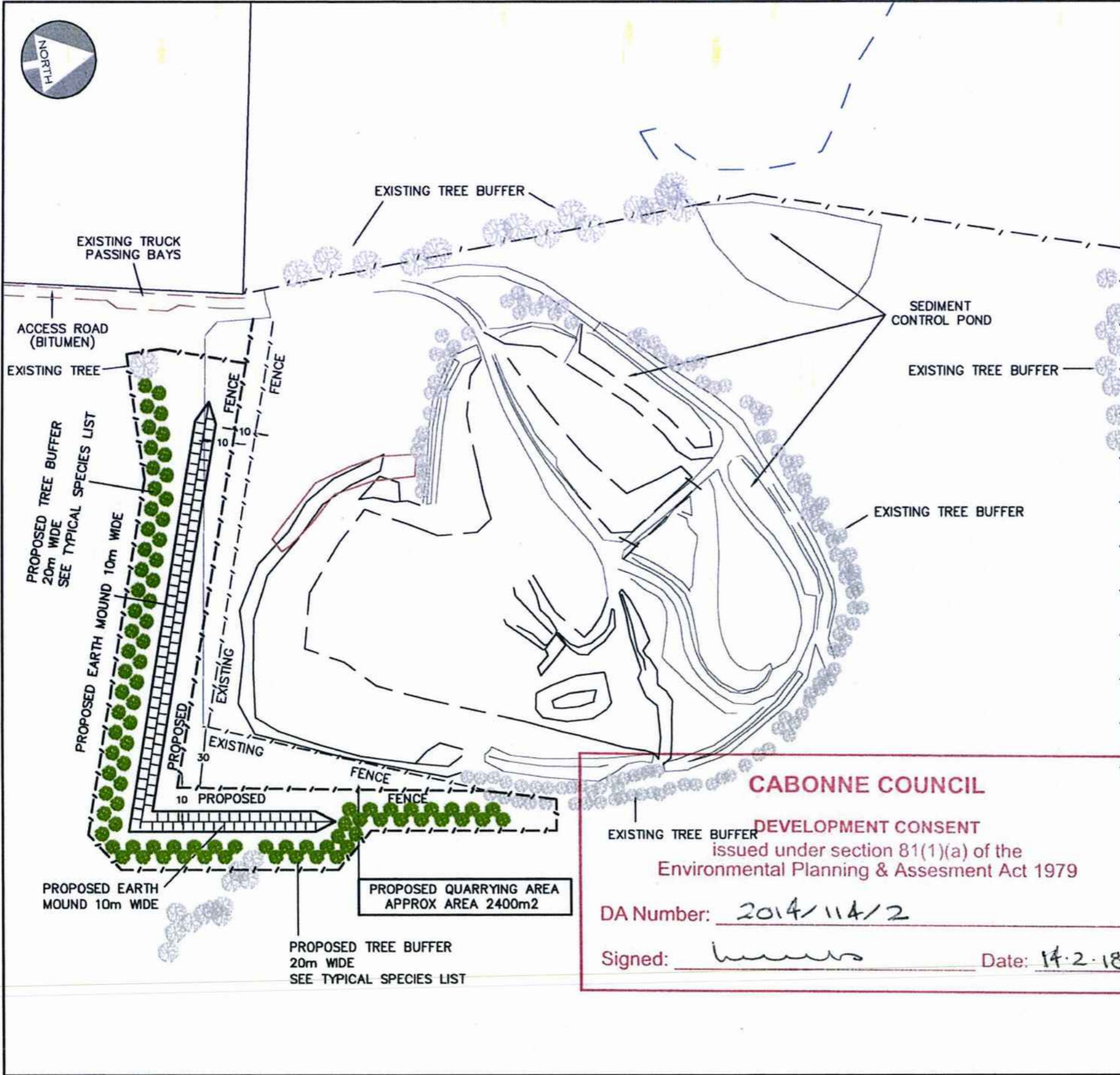
Head Office 293 Dalton Street P.O. BOX 1975 ORANGE, NSW 2800	ABN 48 121 454 153 Email mail@adtp.com.au Ph 02 63624523 Fax 02 63611908	170 Rankin Street BATHURST, NSW 2795
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**EXTENT OF OPERATIONS BALD HILL QUARRY
LOT 775 DP 813587 - THE ESCORT WAY, ORANGE
FIGURE 2 - EXTENT OF OPERATIONS 27th NOVEMBER 2013**

DATE: 9.12.2013	REFERENCE: 2014-0320A	SHEET: 2 OF 2
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**TYPICAL SPECIES
TREE BUFFER PLANTING**

MAIN PLANTINGS – APPROX 180 PLANTINGS

PLANTED AT 10m C-C

MATURE HEIGHT 20m

- ACACIA MELANXYLON
(AUSTALIA BLACKWOOD)
- YELLOW BOX
(EUCALYPTUS MELLIODORA)
- WHITE BOX
(EUCALYPTUS ALBENS)
- RED BOX
(EUCALYPTUS POLYANTHEMOS)

INFILL PLANTINGS – APPROX 120 PLANTINGS

PLANTED AT 5m C-C

MATURE HEIGHT 5-8m

SELECT FROM :

- HAKEA SALICIFOLIA
(WILLOW LEAFED HAKEA)
- GREVILLEA VICTORIAE
(MURRY VALLEY QUEEN)

NOTE: SPECIES ARE SUGGESTIONS ONLY.
PLANTS MAY BE SUBSTITUTED AS NEEDED
FOR EQUIVALENT TREE VARIETIES SUBJECT
TO AVAILABILITY

KEY

- EXISTING TREE BUFFERS
- PROPOSED TREE BUFFERS
- PROPOSED STOCK FENCE
TO PREVENT LIVESTOCK ACCESS
TO NEW TREE BUFFERS

CABONNE COUNCIL
DEVELOPMENT CONSENT
issued under section 81(1)(a) of the
Environmental Planning & Assessment Act 1979

DA Number: 2014/114/2

Signed: [Signature] Date: 14.2.18

**ANTHONY
DAINITH**
TOWN PLANNING

BATHURST 170 RANKIN STREET BATHURST NSW 2795 | ORANGE 293 DALTON STREET ORANGE NSW 2800 | PHONE 02 63624523 MOBILE 0408 249700 EMAIL anthony@odtp.com.au

IMPORTANT NOTES
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- FUTURE REQUIREMENTS MAY BE NECESSARY FOR SERVING OR OTHER REASONS, & AS SUCH ARE SUBJECT TO FINAL SURVEY AND/OR ENGINEERING DESIGN.



**MODIFICATION TO DA 2014/114/1 – EXTRACTIVE INDUSTRY
LOT 775 DP 813587 – THE ESCORT WAY, ORANGE
FIGURE 1 – PROPOSED LANDSCAPING PLAN**

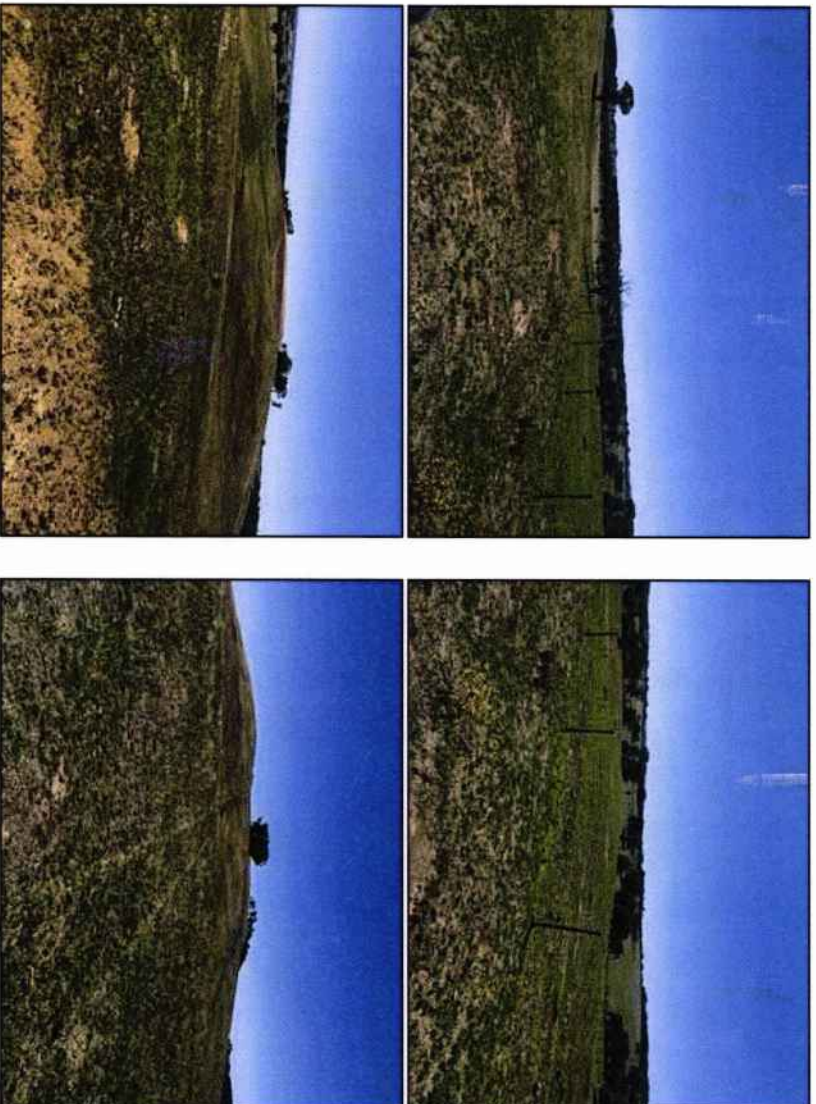
**APPENDIX C – Site Photographs, Prepared by Maas Group Family Properties,
February 2019**



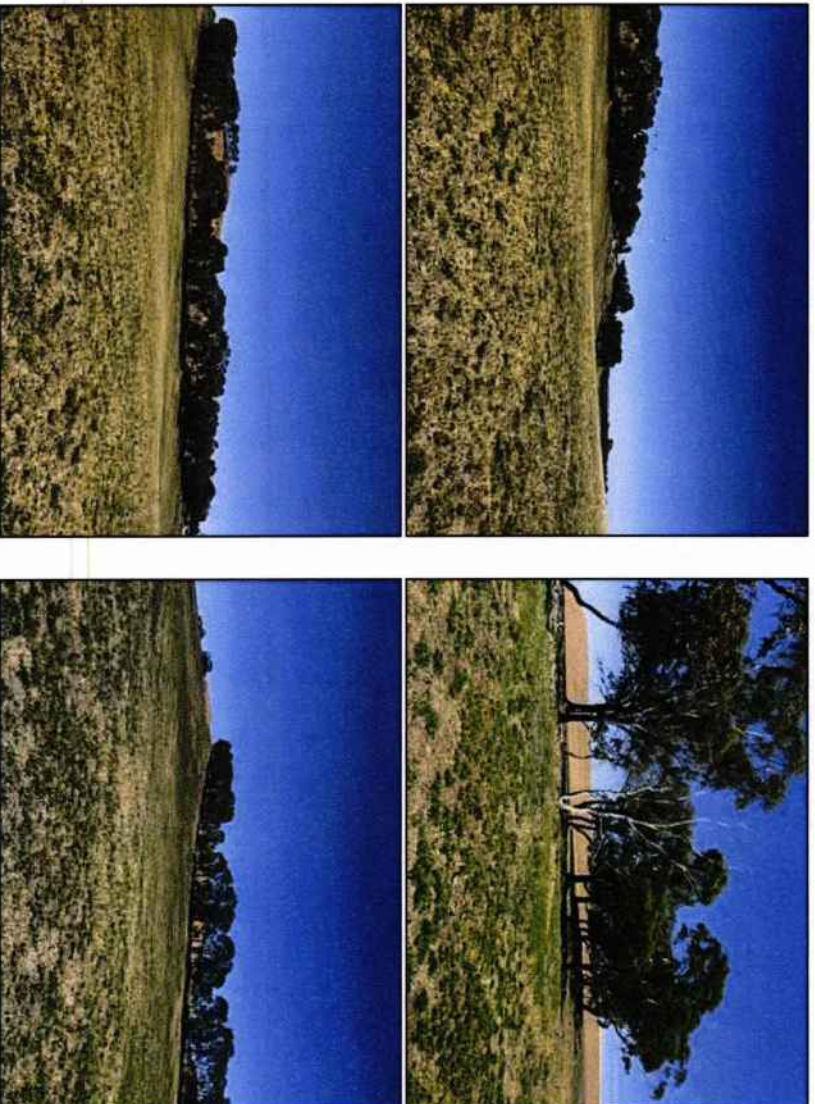
Images 1-4: Extraction site



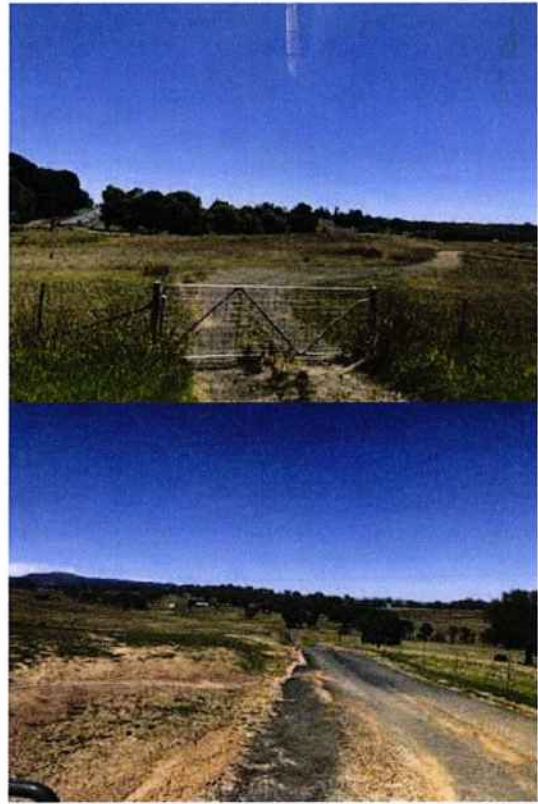
Images 5-6: Sediment Ponds



Images 7-10: Site Context




Images 11-14: Landscape Bund Walls

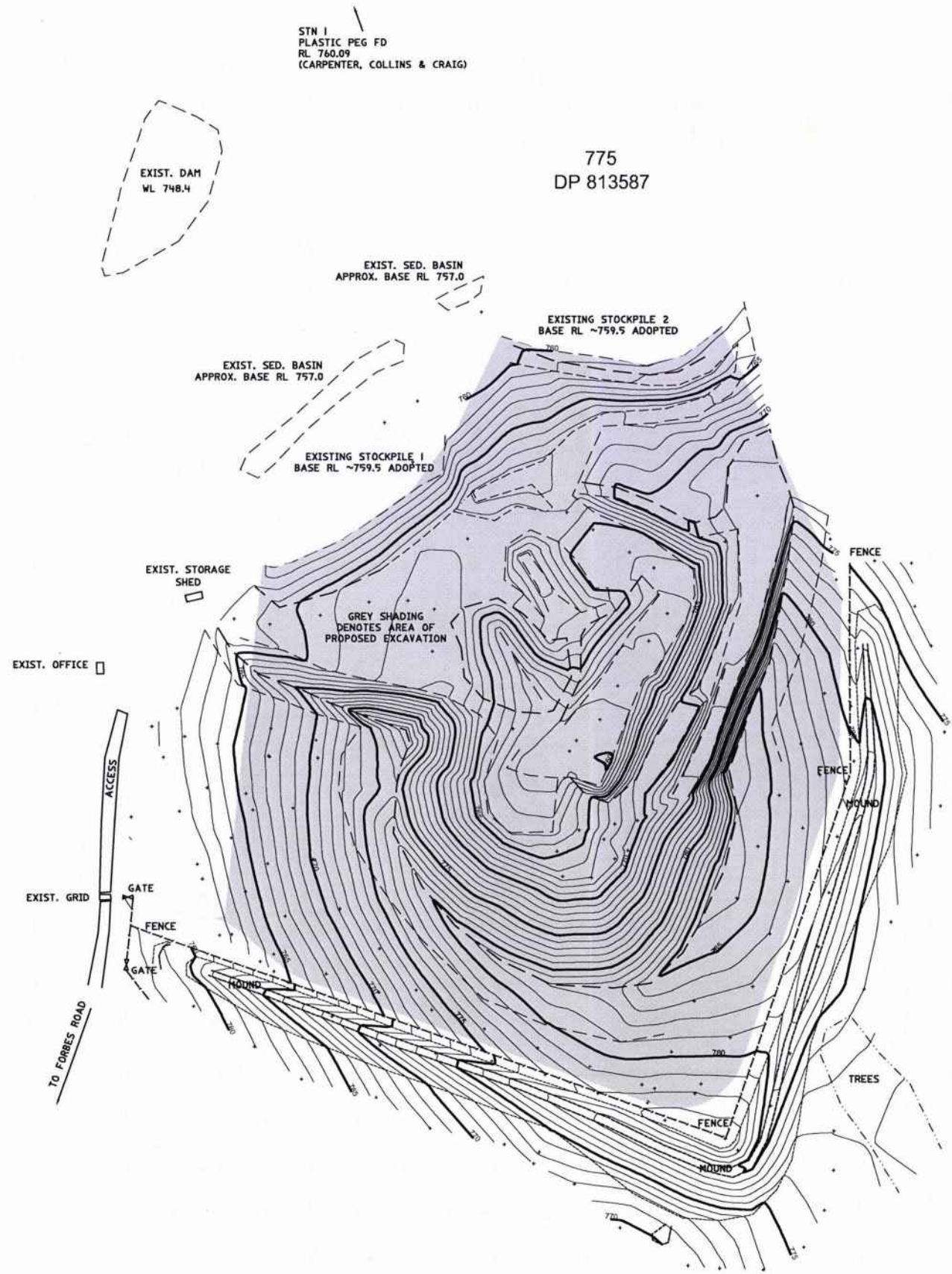


Images 15-18: Site Context

**APPENDIX D – Detailed Site Survey Plans Prepared by MPF Surveying, March
2019**




No.	DATE	APP'D	DETAILS OF AMENDMENTS	SCALES:	APPROVED: M.P.F.	CLIENT:	DRAWING TITLE:	 M.P.F SURVEYING PTY LTD ABN 92 109 448 372 Land and Engineering Surveyors Town Planning Consultants <small>15/256 ANSON STREET, ORANGE, N.S.W. 2800 P.O. BOX 495, ORANGE N.S.W. 2800 PH. (02) 6360 1161 FAX (02) 6360 3171 Email - matt@mptsurveying.com.au Web - www.mptsurveying.com.au</small>	Sheet No. 1 of 1 Sheets
				PERMANENT MARK: STN 1 R.L. 760.09	DATE: 06-03-2019	MAAS GROUP			BALD HILL QUARRY LOT 775 DP 813587
				DATUM: CCC SURVEY	DATE: 05-03-19	PROJECT:			
					DESIGN: -	DETAIL SURVEY BALD HILL QUARRY			
					DRAWING: M.P.F.				



STN 2
PLASTIC PEG FD
RL 752.7
(CARPENTER, COLLINS & CRAIG)

STN 1
PLASTIC PEG FD
RL 760.09
(CARPENTER, COLLINS & CRAIG)



4 3 2 1	06-03-19	M.P.F.	ISSUED FOR REVIEW	SCALES:	APPROVED: M.P.F.	CLIENT:	DRAWING TITLE:	 M.P.F SURVEYING PTY LTD ABN 92 109 448 372 Land and Engineering Surveyors Town Planning Consultants <small>15/296 ANSON STREET, ORANGE, N.S.W. 2800 P.O. BOX 495, ORANGE, N.S.W. 2800 PH: (02) 6360 1161 FAX: (02) 6360 3171 Email: m.p.f.surveying@optusnet.com.au Web: www.mpfsurveying.com.au</small>	Sheet No. 1 of 1 Sheets
				PERMANENT MARK: STN 1 R.L. 760.09	SURVEY: J.S.V. AND M.P.F. DATE: 05-03-19	PROJECT: MAAS GROUP			
No.	DATE	APP'D	DETAILS OF AMENDMENTS	DATUM: CCC SURVEY	DESIGN: - DATE: -	DRAWING: M.P.F. DATE: 06-03-19			

**APPENDIX E – Biodiversity & Ecological Assessment, Prepared by AREA,
March 2019**



- ✓ Environmental impact assessment, approvals and adulating
- ✓ Preliminary environmental assessment (PEA)
- ✓ Review of environmental factors (REF) & Minor Work REF
- ✓ Ecology assessments & biodiversity offsetting (BAM and Biobanking)
- ✓ Aboriginal & heritage assessments and community walkovers
- ✓ Community engagement
- ✓ Peer review & quote or tender preparation or advice

05 March 2019

Steve Guy
General Manager
MAAS Group Family Properties
PO Box 404, Dubbo, NSW 2830
0428 298 916
SteveGuy@mgfp.com.au

Address: Lot 775, DP 813587 No. 1654 The Escort Way Borenore

1 Purpose

This letter provides a desktop analysis of biodiversity and ecological constraints that may apply to the MAAS Group. This addresses requirements under s.7.3 of the *Biodiversity Conservation Act 2016*.

2 Context

Lot 775, DP 813587 No. 1654 The Escort Way is a 96.02ha lot currently containing the functioning Bald Hill Gravel Quarry occupying approximately 3.0 hectares of land.

HAMCON is proposing to increase the depth of excavation from the current pit floor level to approximately AHD 750 this necessitates the relocation of the recently constructed amenity bund walls and some existing vegetation screening as surveyed and shown within Image 1 and 2.

The work required is to remove in total three stands of White box, *Eucalyptus albens*;

- Stand 1 and 2, to remove existing trees and vegetation immediately adjacent to the quarry, on the southern and eastern quarry boundaries (note, these are planted native indigenous trees and not remnant).

Stand 3, remove remnant trees and vegetation on the south-eastern side of the quarry (see image one for proposed quarry extension). See **Image 2; White Box trees to be Removed under Proposal**

AREA has been engaged by MAAS Group to undertake a desktop review and identify ecological constraints that may apply to the project.



Image 1; Approved quarry extension (DA 2014/114(2))



Image 2; White Box trees to be Removed under Proposal



3 Profile

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	South Eastern Highlands
Bioregion	South Eastern Highlands Bioregion Orange Subregion
State	NSW
Local Government Area	Cabonne Shire LGA
Nearest town / locality	Borenore
Address	Lot 775, DP 813587, No. 1654 the Escort Way
Land use / disturbance	Agricultural (grazing and cropping)
Mitchells Landscape	Mullion Slopes
Surrounding land use	Grazing, ploughed agriculture



ABN:29 616 529 867

Advanced Regional Environmental Assessments (AREA)

4 Legislative context

Biodiversity Conservation Act 2016 No 63

Current version for 1 February 2019 to date (accessed 8 March 2019 at 14:12)

Part 7 Division 1 Section 7.3

Test for determining whether proposed development or activity likely to significantly affect threatened species or ecological communities, or their habitats

- (1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
 - (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,
 - (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
 - (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
 - (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,
 - (c) in relation to the habitat of a threatened species or ecological community:
 - (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
 - (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and
 - (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,
 - (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),
 - (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.
- (2) The Minister may, by order published in the Gazette with the concurrence of the Minister for Planning, issue guidelines relating to the determination of whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. Any such guidelines may include consideration of the implementation of strategies under the Biodiversity Conservation Program.

In regard to Section 7.3 of the BC Act this assessment has considered potential impact to listed species, populations and communities and has provided assessments of significance where required.

5 Databases Searched

This desktop assessment included review of the following databases:

Database	Result within 1500m of the proposal	Result indicate need for closer consideration.
NSW Office of Environment and Heritage BioNet Species Sightings database.	Yes, 3 threatened species of birds and 13 records have been recorded within 1500m. A 10km search yields records of 51 sightings of 11 bird species, 6 identified <i>Eucalyptus canobolensis</i> , and two sightings of Eastern Bentwing-bats.	No. Most of the records on the BioNet database are woodland birds upon which this proposal will have virtually no impact, Only three of the bird species have been recorded within the 1500m buffer zone. The PCT within the buffer is widespread in the area. It is expected that these native species would prefer to inhabit those trees outside the immediate quarry area.
NSW Office of Environment and Heritage threatened species search by IBRA subregion.	An IBRA Bioregion search of the South Eastern Highlands Orange bioregion produced; 4 frog species, 5 species of bats, 33 species of birds, 6 species of marsupials, 2 species of reptiles and 7 species of flora that were predicted to be in the area.	Yes. The vegetation for removal is large trees which may provide food or other habitat values for threatened species. The trees themselves are not threatened species, however they may form part of one of the threatened ecological communities. This is discussed further within the body of this letter.
Plant Community Type/ Vegetation	Yes, PCT iD 266 falls within the lot	No. While select trees will need to be removed the amount is deemed insignificant and. This is not expected to be a significant impact.
EPBC Act Protected Matters Report generated with a 2-kilometre buffer on the project alignment.	Yes for: <ul style="list-style-type: none"> • Listed Threatened Ecological Communities (2) • Wetlands of International Importance (5) • Listed Threatened Species (21) • Listed Migratory Species (11) • Listed Marine Species (18) • State and Territory Reserves (1) • Invasive Species (25) <p>No for all other headings in this report (Attachment B).</p>	No: Matters raised in this report are either covered during the threatened species analysis or are highly unlikely to be present in the project site, and if they were, they are highly unlikely to be impacted by the proposal.



ABN:29 616 529 867

Advanced Regional Environmental Assessments (AREA)

6 Biodiversity Assessment

6.1 NSW OEH Threatened Biodiversity Profile search

A NSW OEH Threatened Biodiversity Profile Search within the IBRA South Eastern Highlands; Orange subregion generated a list of 96 matters including:

- Six endangered species of fauna,
- Five Endangered Ecological Communities,
- Two critically endangered fauna species (Regent Honeyeater and Yellow-spotted Tree Frog),
- 46 vulnerable species of flora and fauna.

Professional judgement and cross referencing with OEH data was applied when considering which species, populations or endangered ecological communities identified on this list are likely to occur in the project footprint, and which of those have potential to be impacted by the proposal.

This process identified 15 species; 11 bird species, two mammals, one amphibian and one tree species that have habitat in the study area and might be affected.

6.2 BioNet data threatened species search

Table 1 lists the threatened species recorded on BioNet (a NSW government database) within 1500m of the project site. Only three species (two birds, one bat) have been identified within the 1500metre quarry buffer. When considering known sightings within the 1500metre buffer and the high level of human and heavy plant activity within the none are expected to be effected by the proposed removal of vegetation.

Those species identified within a 10km radius can be found in Appendices part A.

Image 3; Results of 1500metre and 10km Bionet search.

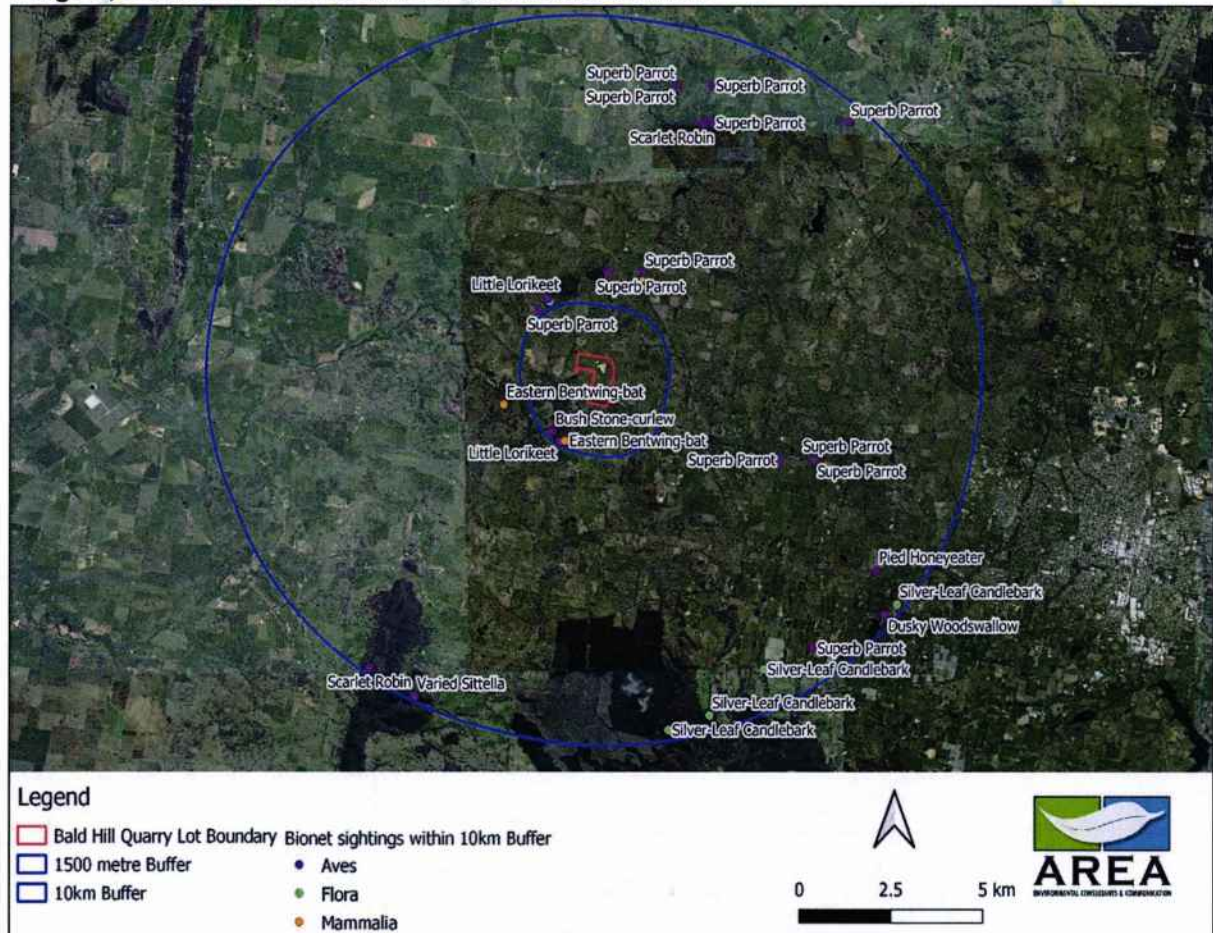


Table 1: BioNet search results within 1500m

Scientific Name	Commonwealth Status	NSW Status	Commonwealth Status	International Protection	Number of Records
<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable			3
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Vulnerable			8
<i>Burhinus grallarius</i>	Bush Stone-curlew	Endangered			2

6.3 Assessments of Significance

A test for significance was conducted for each of the 15 species potentially affected by the proposal and has been provided in Appendix A.

Like species identified in Appendix A have been grouped together for the assessment of significance process based on similar dietary requirements and use of habitat. Commonwealth assessments are grouped by their conservation status.

None of the 15 species identified will be significantly affected by the Proposal.

Tables 2 and 3 provide a summary and Appendix D provides the full assessment.

Table 2: Summary of tests for significance under NSW legislation

Common name	Scientific name	NSW status	Assessment questions					Significant?
			1	2	3	4	5	
Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	Vulnerable	N	N	N	N	N	N
Little Lorikeet	<i>Glossopsitta pusilla</i>	Vulnerable	N	N	N	N	N	N
Koala	<i>Phascolarctos cinereus</i>	Vulnerable	N	N	N	N	N	N
Yellow-Bellied Sheathtail Bat	<i>Saccolaimus flaviventris</i>	Vulnerable	N	N	N	N	N	N
Superb Parrot	<i>Polytelis swainsonii</i>	Vulnerable	N	N	N	N	N	N
Bush Stone-curlew	<i>Burhinus grallarius</i>	Endangered	N	N	N	N	N	N
Grey Crowned Babbler (Eastern sub-species)	<i>Pomatostomus temporalis temporalis</i>	Vulnerable	N	N	N	N	N	N
Little Lorikeet	<i>Glossopsitta pusilla</i>	Vulnerable	N	N	N	N	N	N
Little Eagle	<i>Hieraaetus morphnoides</i>	Vulnerable	N	N	N	N	N	N
Hooded Robin (south-eastern form)	<i>Melanodryas cucullata cucullata</i>	Vulnerable	N	N	N	N	N	N
Turquoise Parrot	<i>Neophema pulchella</i>	Vulnerable	N	N	N	N	N	N
Barking owl	<i>Ninox connivens</i>	Vulnerable	N	N	N	N	N	N

Key:

Y= Yes (negative impact), N= No (no or positive impact), P = Potential, X= not applicable, ?= unknown impact.

5-Part Test Questions:

Adverse effects on the life cycle of a species

- (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

Adverse effects on ecological communities

- (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
 - (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
 - (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

Adverse effects on habitats

- (c) in relation to the habitat of a threatened species or ecological community:
 - (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and



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ABN:29 616 529 867

Advanced Regional Environmental Assessments (AREA)

- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and
- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality

Adverse effects on areas of outstanding biodiversity value

4. (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)

Key threatening processes

5. (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process

Table 3: Summary for tests of significance under Commonwealth legislation

Common name	Scientific name	Commonwealth status	Assessment questions	
			Is it an important population	Is it a significant impact
Regent Honeyeater	<i>Anthochaera phrygia</i>	Critically Endangered	N	N
Yellow Spotted Tree Frog	<i>Litoria castanea</i>	Critically Endangered	N	N
White Box Yellow Box Blakely's Red Gum Woodland	N/A	EEC	N	N
Koala	<i>Phascolarctos cinereus</i>	Vulnerable	N	N

What is an important population of a species?

An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species range.

6.4 Threatened plant communities and mapped vegetation

The threatened plant communities identified in the threatened species search by IBRA subregion do not occur at this site, or the vegetation present at the project site is not consistent with the description for any of the identified threatened plant communities.

The areas where there is planned removal of vegetation is currently mapped as a non-native however surrounding areas are mapped as PCT ID 266, White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

Image 4; Plant Community Types within the 1500metre buffer and surrounds.

AREA Environmental Consultants & Communication

(1) 6 Belmore Street Dubbo NSW 2830

(2) "Thieles Gate" (A Voluntary Conservation Area (79 Huonbrook Rd via Mullumbimby NSW 2482

Ph 0409 852 098

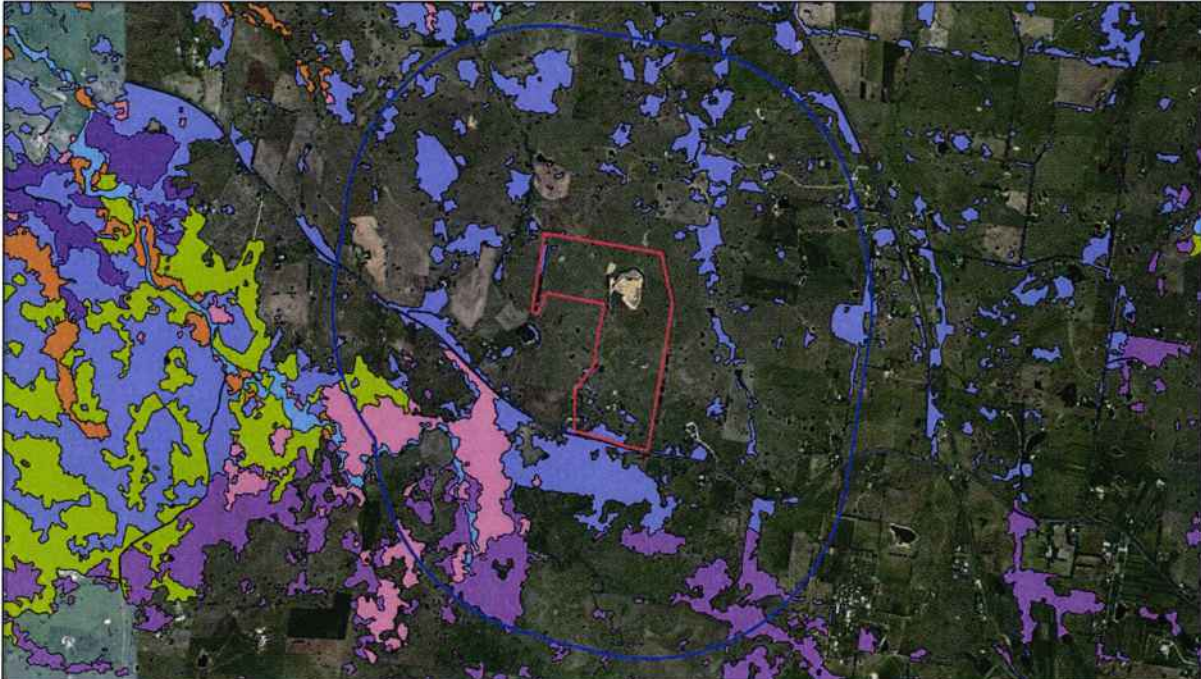
phil@areaenvironmental.com.au




AREA

ABN:29 616 529 867


Advanced Regional Environmental Assessments (AREA)



Legend


 Bald Hill Quarry Boundary


Plant Community Type

 Apple Box - Blakelys Red Gum moist valley and footslopes grass-forb open forest of the NSW South Western Slopes Bioregion

 Derived grassland of the South Eastern Highlands Bioregion and South East Corner Bioregion

 River Oak forest and woodland wetland of the NSW South Western Slopes and South Eastern Highlands Bioregion

 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

 Yellow Box - Blakelys Red Gum grassy woodland on the tablelands; South Eastern Highlands Bioregion

0 500 1000 m




6.5 Matters Protected by the EPBC Act

The EPBC Protected Matters Report, generated with a 2km buffer around the lot boundary presents a range of protected matters that may occur in the area of the proposal. The report generated has been included as Attachment B. All matters discussed by this report are all either addressed in the assessments of significance for Commonwealth listed species (refer Appendix A), or are unlikely to be in the project area, and/or are unlikely to be impacted by the proposal.

6.6 Key threatening processes

Vegetation clearing is a key threatening process. This proposal is located directly adjacent to the existing quarry and will predominantly affect planted native indigenous trees as opposed to remnant vegetation.

The removal of proposed vegetation will not significantly increase the prevalence of this key threatening process nor have any significant contribution on climate change.

6.7 Vegetation removal

From photos provided the predominant species to be removed will be White box *Eucalyptus albens*. The trees required to be removed are unlikely to provide a major source of food and shelter for native species due to their close proximity to the quarry operations. The high level of human activity and the noise generated by the heavy plant and haul trucks entering and egressing from the quarry in association with the remnant vegetation immediately to the south of the quarry combine to make any removal of the trees unlikely to be of any significant impact.

7 Findings

Within the area proposed for the quarry expansion falls three small stands of White Box *Eucalyptus albens* see **Image 2; White Box trees to be Removed under Proposal**.

Stands 1 and 2 (see **Image 5: Planted Vegetation around Quarry**) are planted trees in close proximity to the quarry boundary faces. Removal of these trees under the previously granted consent for development will not result in any significant impact.

Image 5: Planted Vegetation around Quarry



Stand 3 (see **Image 6; Stand 3 to be cleared**) has been identified as remnant vegetation. Prior development consent to establish a quarry on Lot 775, D.P.813587 will allow for the removal of this these trees.

Although this is remnant vegetation it has been determined that the removal of these trees will not have any significant impact and therefore will not require offsetting. AREA recommends planting White box *Eucalyptus albens* and associated species within the lot to compensate for the removal of this remnant vegetation.

Image 6; Stand 3 to be cleared.



8 Recommendations

It is recommended that where possible, the vegetation removal does not occur during spring to avoid critical breeding periods for most woodland species.

It is also recommended that any trees with birds nests or tree hollows present have an image captured and sent to a qualified Ecologist for identification prior to removal. Any hollow bearing trees are to have an image captured and sent to a qualified ecologist for confirmation. Hollow bearing trees are to be left a further 24 hours after surrounding trees are removed to enable any resident species of fauna to relocate prior to removal of the tree. Hollow bearing trees that have been felled are to have to stump relocated to areas of remaining vegetation and placed as ground habitat. Hollow bearing trunks are not to be destroyed/mulched.

Furthermore it is recommended that a careful visual check occurs for Koalas immediately prior to the removal of the vegetation. If a Koala is present in the tree, tree removal should be delayed until the animal vacates the tree.

It is important the construction crew are also aware of the number for the local wildlife care group for support in the case of unexpected wildlife encounters.

To compensate for the vegetation cleared AREA advise for a vegetation screen to be planted around the quarry boundary in the same manner as the existing floral screen.



AREA advise that the local PCT be matched when re-planting.

Advisable species include;

Upper Stratum Species	Middle Stratum Species	Ground Stratum Species
<i>Eucalyptus albens</i> (White box)	<i>Acacia decora</i> (Western Silver Wattle)	<i>Themeda australis</i> (Kangaroo Grass)
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	<i>Acacia implaxa</i> (Hickory Wattle)	
<i>Eucalyptus blakelyi</i> (Blakely's Red Gum)	<i>Acacia penniversis</i> var <i>penniversis</i> (Mountain Hickory)	
<i>Eucalyptus bridgesiana</i> (Apple Box)		
<i>Eucalyptus melliodora</i> (Yellow Box)		

When planting it is advised that plant lines be ripped in three lines, five metres apart.

- *Eucalyptus albens* (White Box) should make up for at least 50% of the planted upper stratum species as it is the primary vegetation species to be removed.
- Plant upper stratum species every 20 metres along ripped lines and stagger them across the three ripped lines for an even spread.
- Plant mid stratum every two metres along ripped lines
- Ground stratum species seed can be dispersed across re-vegetation areas.

Note; the listed plants are those advised by AREA but for a more comprehensive list contact us for more information.



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9 Conclusion

The Proposal will not have any significant impact on any threatened species associated with the trees and vegetation to be cleared.

With implementation of the recommendations made by AREA regarding the removal of the *Eucalyptus albens* and the planting of new vegetation within the lot there will be no long term significant environmental impacts associated with the expansion of the quarry.

Regards,

Dave Sturman

Ecological Consultant

B.Env.Sci

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We acknowledge Traditional Owners and Custodians and their ancestors

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Appendix

Appendix A: 10km Bionet Results

Scientific Name	Common Name	NSW Status	Commonwealth Status	International Protection	Number Individuals
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		1
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		22
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		7
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		4
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		9
<i>Petroica boodang</i>	Scarlet Robin	Vulnerable			2
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	Vulnerable			1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		4
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		17
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		11
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		5
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		10
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		5

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Scientific Name	Common Name	NSW Status	Commonwealth Status	International Protection	Number Individuals
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		32
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		5
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3
<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable			2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		4
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		30
<i>Litoria raniformis</i>	Southern Bell Frog	Vulnerable	Vulnerable	ACD	
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		2
<i>Litoria aurea</i>	Green and Golden Bell Frog	Vulnerable	Vulnerable	ACD	
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable			2
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable			2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		8
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable			1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		4
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable			8
<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable			1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		3

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Scientific Name	Common Name	NSW Status	Commonwealth Status	International Protection	Number Individuals
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		7
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Vulnerable			4
<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable			3
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		1
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		4
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable			
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		6
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		2
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Vulnerable			1000
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Vulnerable			8
<i>Certhionyx variegatus</i>	Pied Honeyeater	Vulnerable			4
<i>Daphoenositta chrysoptera</i>	Varied Sittella	Vulnerable			1
<i>Daphoenositta chrysoptera</i>	Varied Sittella	Vulnerable			1
<i>Petroica boodang</i>	Scarlet Robin	Vulnerable			1
<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable			2
<i>Polytelis swainsonii</i>	Superb Parrot	Vulnerable	Vulnerable		1
<i>Burhinus grallarius</i>	Bush Stone-curlew	Vulnerable			2
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Vulnerable	Endangered		

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Appendix B: Tests of significance

Matters of Environmental Significance (EPBC Act)

MNES - Critically endangered and endangered ecological communities considered:

- White box, Yellow Box, Blakely's Red Gum Woodland

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

Statement	Response
<ul style="list-style-type: none"> • reduce the extent of an ecological community 	The proposal will not affect the extent of the EEC. The proposal will only remove a small number of trees.
<ul style="list-style-type: none"> • fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines 	The proposal will not affect the area of occupancy of the EEC nor decrease connectivity.
<ul style="list-style-type: none"> • adversely affect habitat critical to the survival of an ecological community 	The proposal will not fragment an existing population into two or more populations.
<ul style="list-style-type: none"> • modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns 	Critical habitat for each EEC will not be affected.
<ul style="list-style-type: none"> • cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting 	The proposal will not disrupt the breeding cycle of each EEC.
<ul style="list-style-type: none"> • cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: <ul style="list-style-type: none"> ▪ assisting invasive species, that are harmful to the listed ecological community, to become established, or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or 	The proposal will not modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the EEC is likely to decline.
<ul style="list-style-type: none"> • interfere with the recovery of an ecological community. 	N/A

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The proposal will not result in a significant impact to these endangered ecological communities

- White box, Yellow Box, Blakely's Red Gum Woodland

What is an invasive species?

An 'invasive species' is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.

What is habitat critical to the survival of a species or ecological community?

'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

MNES - Critically endangered and endangered species considered:

- *Litoria castanea* Yellow-spotted Tree Frog

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

Statement	Response
<ul style="list-style-type: none"> • lead to a long-term decrease in the size of a population 	The proposal will not affect a local population of the species therefore there will be no decline in a population.
<ul style="list-style-type: none"> • reduce the area of occupancy of the species 	The proposal will not affect the area of occupancy of the species.
<ul style="list-style-type: none"> • fragment an existing population into two or more populations 	The proposal will not fragment an existing population into two or more populations.
<ul style="list-style-type: none"> • adversely affect habitat critical to the survival of a species 	Critical habitat for each species will not be affected.
<ul style="list-style-type: none"> • disrupt the breeding cycle of a population 	The proposal will not disrupt the breeding cycle of each species.
<ul style="list-style-type: none"> • modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline 	The proposal will not modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
<ul style="list-style-type: none"> • result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat 	The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
<ul style="list-style-type: none"> • introduce disease that may cause the species to decline, or 	The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
<ul style="list-style-type: none"> • interfere with the recovery of the species. 	The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.

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The proposal will not result in a significant impact to this species.

What is a population of a species?

A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to:

- a geographically distinct regional population, or collection of local populations, or
- a population, or collection of local populations, that occurs within a particular bioregion.

What is an invasive species?

An 'invasive species' is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.

What is habitat critical to the survival of a species or ecological community?

'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

MNES - Critically endangered and endangered species considered:

- *Anthochaera phrygia* Regent Honeyeater

Significant impact criteria

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

Statement	Response
<ul style="list-style-type: none"> • lead to a long-term decrease in the size of a population 	The proposal will not affect a local population of the species therefore there will be no decline in a population.
<ul style="list-style-type: none"> • reduce the area of occupancy of the species 	The proposal will not affect the area of occupancy of the species.
<ul style="list-style-type: none"> • fragment an existing population into two or more populations 	The proposal will not fragment an existing population into two or more populations.
<ul style="list-style-type: none"> • adversely affect habitat critical to the survival of a species 	Critical habitat for each species will not be affected.
<ul style="list-style-type: none"> • disrupt the breeding cycle of a population 	The proposal will not disrupt the breeding cycle of each species.
<ul style="list-style-type: none"> • modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline 	The proposal will not modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
<ul style="list-style-type: none"> • result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat 	The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
<ul style="list-style-type: none"> • introduce disease that may cause the species to decline, or 	The proposal will not result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
<ul style="list-style-type: none"> • interfere with the recovery of the species. 	The proposal will not result in invasive species that are harmful to a critically endangered or

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	endangered species becoming established in the endangered or critically endangered species' habitat.
Summary statement: The proposal will not result in a significant impact to this species.	
What is a population of a species? A 'population of a species' is defined under the EPBC Act as an occurrence of the species in a particular area. In relation to critically endangered, endangered or vulnerable threatened species, occurrences include but are not limited to: <ul style="list-style-type: none"> • a geographically distinct regional population, or collection of local populations, or • a population, or collection of local populations, that occurs within a particular bioregion. 	
What is an invasive species? An 'invasive species' is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.	
What is habitat critical to the survival of a species or ecological community? 'Habitat critical to the survival of a species or ecological community' refers to areas that are necessary: <ul style="list-style-type: none"> • for activities such as foraging, breeding, roosting, or dispersal • for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators) • to maintain genetic diversity and long term evolutionary development, or • for the reintroduction of populations or recovery of the species or ecological community. Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.	

Threatened Species Test of Significance (BC Act)

BC Act Threatened Species Test of Significance for species:	
• Pomatostomus temporalis temporalis Grey-crowned Babbler (eastern subspecies)	
Significant impact criteria	
An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:	
Statement	Response
Adverse effects on the life cycle of a species <ul style="list-style-type: none"> • (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	The impact is temporary and will have no direct impact on individual species of fauna.
Adverse effects on ecological communities <ul style="list-style-type: none"> • (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> ○ (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ○ (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	N/A
Adverse effects on habitats <ul style="list-style-type: none"> • (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> ○ (i) the extent to which habitat is likely to be removed or modified as a result of 	The impact is considered minor. Its proximity to quarry operations make it unlikely to be of high habitat value.

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<p>the proposed development or activity, and</p> <ul style="list-style-type: none"> o (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and o (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	
<p>Adverse effects on areas of outstanding biodiversity value</p> <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	<p>The Proposal will not have an adverse effect on any declared area of outstanding biodiversity value.</p>
<p>Key threatening processes</p> <ul style="list-style-type: none"> • (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	<p>The Proposal will involve clearing of native vegetation however the impact is considered minor given the proximity to the quarry and patchiness of the vegetation to be removed. The proposal will not contribute to any further KPT.</p>
<p>Summary statement: The Proposal will not result in a significant impact to these species.</p>	
<p>In determining the nature and magnitude of an impact, matters were considered such as:</p> <ul style="list-style-type: none"> • pre-construction, construction and occupation/maintenance phases • all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones • all direct and indirect impacts • the frequency and duration of each known or likely impact/action • the total impact which can be attributed to that action over the entire geographic area affected, and over time • the sensitivity of the receiving environment • the degree of confidence with which the impacts of the action are known and understood. <p>All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker</p>	

<p>BC Act Threatened Species Test of Significance for species: • <i>Saccolaimus flaviventris</i> Yellow-bellied Sheath-tail-bat</p>	
<p>Significant impact criteria</p>	
<p>An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:</p>	
<p>Statement</p>	<p>Response</p>
<p>Adverse effects on the life cycle of a species</p>	<p>Impact will have no direct impact on the</p>

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<ul style="list-style-type: none"> (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	species of fauna.
<p>Adverse effects on ecological communities</p> <ul style="list-style-type: none"> (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	N/A
<p>Adverse effects on habitats</p> <ul style="list-style-type: none"> (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	A small amount of vegetation will be removed however there will still be significant amounts of remnant habitat within the area.
<p>Adverse effects on areas of outstanding biodiversity value</p> <ul style="list-style-type: none"> (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	The Proposal will not have an adverse effect on any declared area of outstanding biodiversity value.
<p>Key threatening processes</p> <ul style="list-style-type: none"> (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	The Proposal will involve clearing of native vegetation however the impact is considered minor given the proximity to the quarry and patchiness of the vegetation to be removed.
<p>Summary statement: The Proposal will not result in a significant impact to these species.</p>	
<p>In determining the nature and magnitude of an impact, matters were considered such as:</p> <ul style="list-style-type: none"> pre-construction, construction and occupation/maintenance phases all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones all direct and indirect impacts the frequency and duration of each known or likely impact/action 	



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- the total impact which can be attributed to that action over the entire geographic area affected, and over time
- the sensitivity of the receiving environment
- the degree of confidence with which the impacts of the action are known and understood.

All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker

BC Act Threatened Species Test of Significance:

- *Phascolarctos cinereus* Koala

Significant impact criteria

An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:

Statement	Response
Adverse effects on the life cycle of a species <ul style="list-style-type: none"> • (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	The proposal will not affect the life cycle these species therefore there will be no decline in a population.
Adverse effects on ecological communities <ul style="list-style-type: none"> • (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> ○ (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ○ (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	Not applicable
Adverse effects on habitats <ul style="list-style-type: none"> • (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> ○ (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and ○ (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and ○ (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the decline or local extinction of any protected matter.
Adverse effects on areas of outstanding biodiversity value <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.
Key threatening processes	The Proposal will involve clearing of native vegetation however the impact is

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<ul style="list-style-type: none"> (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	<p>considered minor given the proximity to the quarry and patchiness of the vegetation to be removed.</p>
<p>Summary statement: The proposal will not result in a significant impact to this species</p>	
<p>In determining the nature and magnitude of an impact, it is important to consider matters such as:</p> <ul style="list-style-type: none"> pre-construction, construction and occupation/maintenance phases all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones all direct and indirect impacts the frequency and duration of each known or likely impact/action the total impact which can be attributed to that action over the entire geographic area affected, and over time the sensitivity of the receiving environment the degree of confidence with which the impacts of the action are known and understood. <p>All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker</p>	

BC Act Threatened Species Test of Significance for owls and raptors:	
<ul style="list-style-type: none"> <i>Circus assimilis</i> Spotted Harrier <i>Ninox connivens</i> Barking Owl <i>Hieraaetus morphnoides</i> Little Eagle 	
<p>Significant impact criteria</p> <p>An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:</p>	
Statement	Response
<p>Adverse effects on the life cycle of a species</p> <ul style="list-style-type: none"> (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	<p>The proposal will not affect the life cycle of these species therefore there will be no decline in a population.</p>
<p>Adverse effects on ecological communities</p> <ul style="list-style-type: none"> (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	<p>Not applicable</p>
<p>Adverse effects on habitats</p> <ul style="list-style-type: none"> (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other 	<p>The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the</p>

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<ul style="list-style-type: none"> ○ (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	<p>decline or local extinction of any protected matter.</p>
<p>Adverse effects on areas of outstanding biodiversity value</p> <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	<p>The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.</p>
<p>Key threatening processes</p> <ul style="list-style-type: none"> • (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	<p>The Proposal will involve clearing of native vegetation however the impact is considered minor given the proximity to the quarry and patchiness of the vegetation to be removed. The proposal will not contribute to any further KPT.</p>
<p>Summary statement: The proposal will not result in a significant impact to these species</p>	
<p><i>In determining the nature and magnitude of an impact, it is important to consider matters such as:</i></p> <ul style="list-style-type: none"> • pre-construction, construction and occupation/maintenance phases • all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones • all direct and indirect impacts • the frequency and duration of each known or likely impact/action • the total impact which can be attributed to that action over the entire geographic area affected, and over time • the sensitivity of the receiving environment • the degree of confidence with which the impacts of the action are known and understood. <p>All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker</p>	

BC Act Threatened Species Test of Significance for parrots:

- *Glossopsitta pusilla* Little Lorikeet
- *Polytelis swainsonii* Superb Parrot
- *Neophema pulchella* Turquoise Parrot

Significant impact criteria

An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:



Statement	Response
<p>Adverse effects on the life cycle of a species</p> <ul style="list-style-type: none"> • (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	<p>The proposal will not affect the life cycle these species therefore there will be no decline in a population.</p>
<p>Adverse effects on ecological communities</p> <ul style="list-style-type: none"> • (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> ○ (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ○ (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	<p>Not applicable</p>
<p>Adverse effects on habitats</p> <ul style="list-style-type: none"> • (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> ○ (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and ○ (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and ○ (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	<p>The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the decline or local extinction of any protected matter.</p>
<p>Adverse effects on areas of outstanding biodiversity value</p> <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	<p>The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.</p>
<p>Key threatening processes</p> <ul style="list-style-type: none"> • (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	<p>The Proposal will involve clearing of native vegetation however the impact is considered minor given the proximity to the quarry and patchiness of the vegetation to be removed. The proposal will not contribute to any further KPT..</p>
<p>Summary statement: The proposal will not result in a significant impact to these species</p>	
<p>In determining the nature and magnitude of an impact, it is important to consider matters such as:</p> <ul style="list-style-type: none"> • pre-construction, construction and occupation/maintenance phases • all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones • all direct and indirect impacts • the frequency and duration of each known or likely impact/action • the total impact which can be attributed to that action over the entire geographic area affected, and over time • the sensitivity of the receiving environment • the degree of confidence with which the impacts of the action are known and understood. <p>All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker</p>	



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BC Act Threatened Species Test of Significance:

- *Melanodryas cucullate cucullate* Hooded Robin (south-eastern form)

Significant impact criteria

An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:

Statement	Response
<p>Adverse effects on the life cycle of a species</p> <ul style="list-style-type: none"> • (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	The proposal will not affect the life cycle these species therefore there will be no decline in a population.
<p>Adverse effects on ecological communities</p> <ul style="list-style-type: none"> • (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> ○ (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ○ (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	Not applicable
<p>Adverse effects on habitats</p> <ul style="list-style-type: none"> • (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> ○ (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and ○ (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and ○ (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the decline or local extinction of any protected matter.
<p>Adverse effects on areas of outstanding biodiversity value</p> <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.
<p>Key threatening processes</p> <ul style="list-style-type: none"> • (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	The Proposal will involve clearing of native vegetation however the impact is considered minor given the proximity to the quarry and patchiness of the vegetation to be removed. The proposal will not contribute to any further KPT..
<p>Summary statement: The proposal will not result in a significant impact to these species</p>	
<p>In determining the nature and magnitude of an impact, it is important to consider matters such as:</p>	

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- pre-construction, construction and occupation/maintenance phases
 - all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones
 - all direct and indirect impacts
 - the frequency and duration of each known or likely impact/action
 - the total impact which can be attributed to that action over the entire geographic area affected, and over time
 - the sensitivity of the receiving environment
 - the degree of confidence with which the impacts of the action are known and understood.
- All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker

BC Act Threatened Species Test of Significance:

- *Burhinus grallarius* Bush Stone Curlew

Significant impact criteria

An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:

Statement	Response
Adverse effects on the life cycle of a species <ul style="list-style-type: none"> • (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	The proposal will not affect the life cycle these species therefore there will be no decline in a population.
Adverse effects on ecological communities <ul style="list-style-type: none"> • (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> ○ (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or ○ (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	Not applicable
Adverse effects on habitats <ul style="list-style-type: none"> • (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> ○ (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and ○ (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and ○ (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality 	The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the decline or local extinction of any protected matter.
Adverse effects on areas of outstanding biodiversity value <ul style="list-style-type: none"> • (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) 	The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.

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<p>Key threatening processes</p> <ul style="list-style-type: none"> (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process 	<p>The proposal will exacerbate removal of native vegetation, remove no hollow bearing trees and have a negligible contribution to human made climate change.</p>
<p>Summary statement: The proposal will not result in a significant impact to these species</p>	
<p>In determining the nature and magnitude of an impact, it is important to consider matters such as:</p> <ul style="list-style-type: none"> pre-construction, construction and occupation/maintenance phases all on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zones all direct and indirect impacts the frequency and duration of each known or likely impact/action the total impact which can be attributed to that action over the entire geographic area affected, and over time the sensitivity of the receiving environment the degree of confidence with which the impacts of the action are known and understood. <p>All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker</p>	

BC Act Threatened Species Test of Significance:

- Artamus cyanopterus cyanopterus*

Significant impact criteria

An action is likely to have a significant impact on a protected matter if there is a real chance or possibility that it will have:

Statement	Response
<p>Adverse effects on the life cycle of a species</p> <ul style="list-style-type: none"> (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction 	<p>The proposal will not affect the life cycle these species therefore there will be no decline in a population.</p>
<p>Adverse effects on ecological communities</p> <ul style="list-style-type: none"> (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: <ul style="list-style-type: none"> (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction 	<p>Not applicable</p>
<p>Adverse effects on habitats</p> <ul style="list-style-type: none"> (c) in relation to the habitat of a threatened species or ecological community: <ul style="list-style-type: none"> (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to 	<p>The proposal will remove habitat in a modified environment. It will not fragment an existing population into two or more populations or isolate a population. The importance of habitat affected is limited, its removal will not result in the decline or local extinction of any protected matter.</p>



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the long-term survival of the species or ecological community in the locality	
Adverse effects on areas of outstanding biodiversity value <ul style="list-style-type: none">(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)	The proposal will not have an adverse effect on any declared area of outstanding biodiversity value.
Key threatening processes <ul style="list-style-type: none">(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process	The proposal will exacerbate removal of native vegetation, remove no hollow bearing trees and have a negligible contribution to human made climate change.
Summary statement: The proposal will not result in a significant impact to these species	
In determining the nature and magnitude of an impact, it is important to consider matters such as: <ul style="list-style-type: none">pre-construction, construction and occupation/maintenance phasesall on-site and off-site impacts, including location, installation, operation and maintenance of auxiliary infrastructure and fire management zonesall direct and indirect impactsthe frequency and duration of each known or likely impact/actionthe total impact which can be attributed to that action over the entire geographic area affected, and over timethe sensitivity of the receiving environmentthe degree of confidence with which the impacts of the action are known and understood. All factors should be considered as well as any other information considered relevant to the test. Sources and currency of data and information are to be documented and referenced. Limitations, uncertainties and known gaps in information are also to be documented to inform the decision-maker	



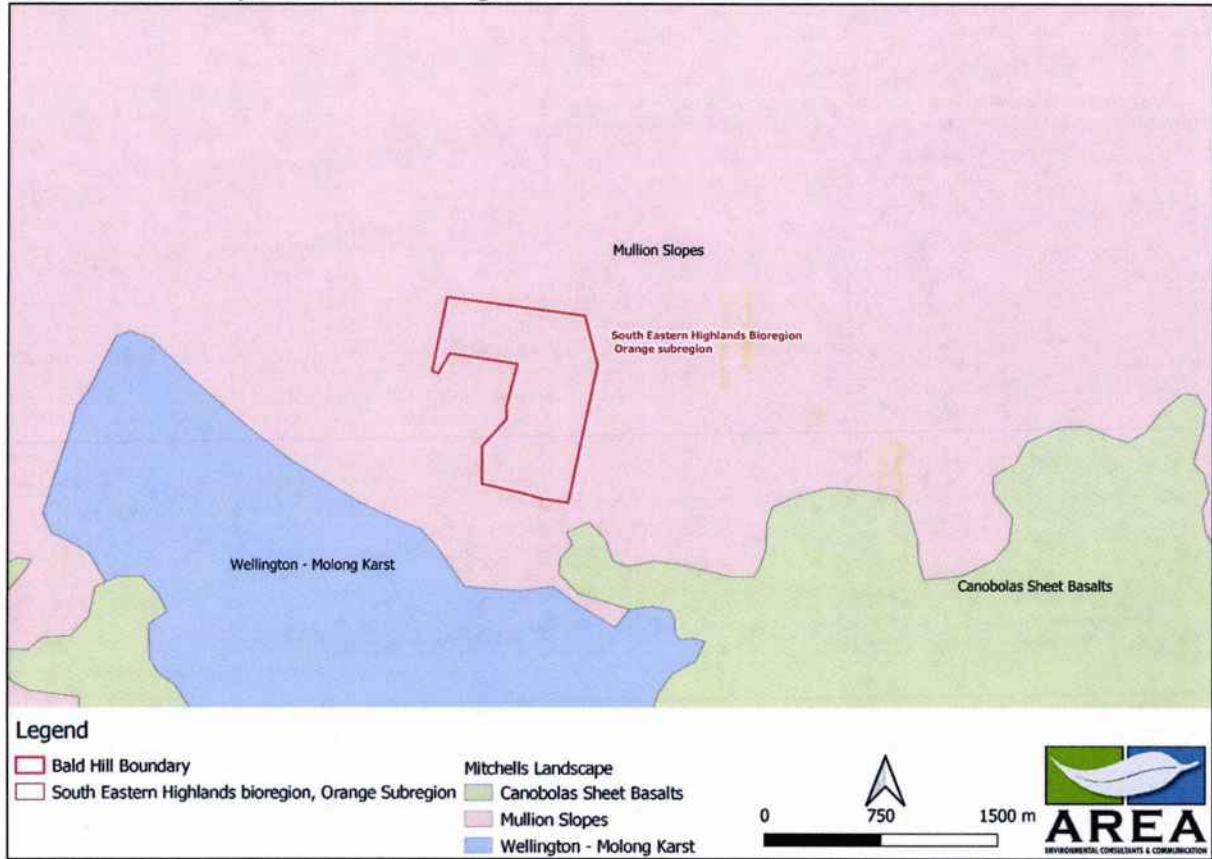
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Appendix C: Mapping

Mitchells Landscape and IBRA subregion



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Stand number 1



Legend

 Stand Number 1





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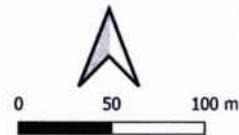
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Tree Stand number 2



Legend

 Stand Number 2



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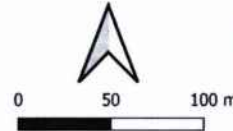
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Trees Stand Number 3



Legend

 Stand Number 3





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Appendix D: EPBC Act Protected Matters Report

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 04/03/19 12:43:56

[Summary](#)

[Details](#)

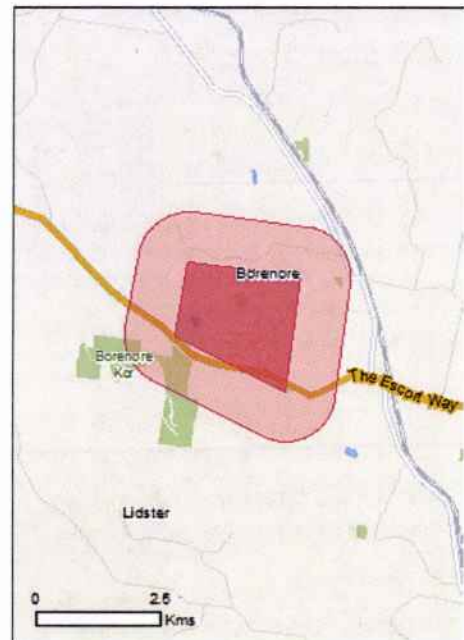
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
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[Coordinates](#)

Buffer: 1.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	5
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	21
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	25
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Banrock station wetland complex	800 - 900km upstream
Hattah-kulkyne lakes	600 - 700km upstream
Riverland	700 - 800km upstream
The coorong, and lakes alexandrina and albert wetland	900 - 1000km upstream
The macquarie marshes	200 - 300km upstream

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area

Fish

Name	Status	Type of Presence
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Mammals		
Chalinobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
Ammobium craspedioides Yass Daisy [20758]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata Black Gum [20890]	Vulnerable	Species or species habitat may occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma impar Striped Legless Lizard [1649]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within

Name	Threatened	Type of Presence
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Borenore	NSW

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		

Name	Status	Type of Presence
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom		Species or species habitat likely to occur

Name	Status	Type of Presence
[20126] Genista sp. X Genista monspessulana Broom [67538]		within area Species or species habitat may occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-33.229621 148.938426,-33.229549 148.938511,-33.231631 148.958768,-33.24886 148.956193,-33.240461 148.936194,-33.229621 148.938426

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

**APPENDIX F – Preliminary Closure & Rehabilitation Plan Prepared by Anthony
Daintith, June 2015**

PRELIMINARY CLOSURE AND REHABILITATION PLAN

Prepared for:

Mark Hammond

Development:

**Approved Extractive Industry
(Quarry)**

Address:

**Bald Hill Quarry - 1654 The Escort
Way, Borenore**

Date:

10 June 2015



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QUALITY ASSURANCE

This document has been prepared, checked and released in accordance with the Quality Control Standards established by Anthony Daintith Town Planning.

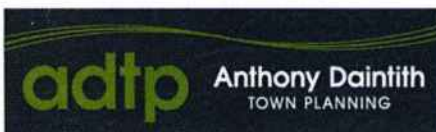
Version	Date	Description	By
1.0	10/6/2015	Approved	AD

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This document has been authorised by

Anthony Daintith (Principal)
Date: 10 June



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1. INTRODUCTION

The Bald Hill Quarry was originally approved by Cabonne Council on 7 March 1994 under DA 93/183 as Designated Development. A further DA was approved by Cabonne Council on 17 March 2014 (DA 2014/114) with respect to the quarry to increase production up to 30,000m³ per annum.

Conditions 5 and 6 of DA 2014/114 require the preparation of the Rehabilitation and Quarry Closure Plan.

This Preliminary Rehabilitation and Quarry Closure Plan incorporates rehabilitation objectives, an overall management strategy and general rehabilitation methods for Bald Hill Quarry. The Plan is structured as follows:

Chapter 2 describes delegation and review for the implementation and delivery of this preliminary closure and rehabilitation plan.

Chapter 3 presents a summary of the proposed rehabilitation schedule.

Chapter 4 describes the preferred rehabilitation strategy for the quarry.

Chapter 5 describes general rehabilitation activities.

Chapter 6 describes completion criteria for how to measure whether the rehabilitation strategies have been successful.

Chapter 7 describes monitoring that is required to measure the completion criteria described in Chapter 6 as well as intervention/maintenance.

1.2. Subject Land

The subject land is known as 1654 The Escort Way, Borenore. The total area of the subject land is approximately 96.02 hectares.

The land title description is as follows:

Table 1: Title Details

Lot	DP
775	813587

Figure 1: Locality Map

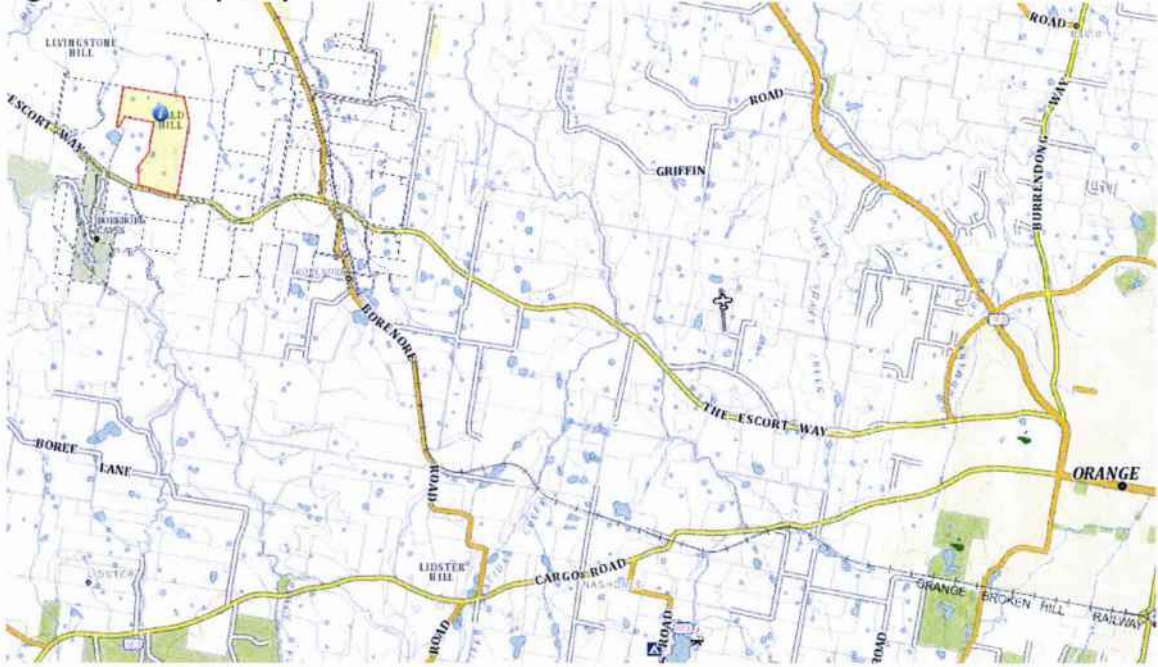


Figure 2: Aerial Photo



2 DELEGATION AND REVIEW

2.1 Roles and Responsibilities

Table 2: Roles and Responsibilities

Role	Responsibility
Quarry Manager or Representative	Ensure that adequate resources are available within Hamcon Civil and ensure that contractors meet all compliance requirements. Implement the Preliminary Closure and Rehabilitation Plan. Facilitate rehabilitation planning review
Environment Manager or representative	Implement the Preliminary Closure and Rehabilitation Plan. Review, update and further develop the preliminary closure and rehabilitation plan annually throughout the life of the quarry. Train staff in environmental awareness, site issues and requirements of the monitoring program. Facilitate the monitoring and implementation of measures outlined in this preliminary closure and rehabilitation Plan. Report non-compliances to the Quarry Manager or representative and ensure corrective actions are closed out. Advise quarry manager or representative and other management on approval requirements and provide advice to assist in achieving compliance. Investigate environmental incidents and liaise with respective government agencies where necessary.
Employees	Be familiar with the contents of the Preliminary Closure and Rehabilitation Plan. Ensure works are completed in accordance with the Preliminary Closure and Rehabilitation Plan. Report all incidents or non-compliance with the strategy to the Quarry manager immediately.
Contractors	Be familiar with this preliminary closure and rehabilitation strategy. Ensure works are completed in accordance with the preliminary closure and rehabilitation strategy. Report all incidents or non-compliance with the strategy to the Quarry manager immediately.

2.2 Review

The Preliminary Closure and Rehabilitation Plan will be reviewed annually throughout the life of the quarry. As the operational plan changes or rehabilitation activities are completed, the Preliminary Closure and Rehabilitation Plan will be updated to reflect these changes. One year prior to the confirmed closure date, the final Quarry Preliminary Closure and Rehabilitation Plan will be developed to properly address the post quarry landscape.

3 REHABILITATION SCHEDULE

A conceptual Quarry Closure and Rehabilitation Plan has been developed and is provided as an attached to this Plan.

Table 3: Summary of Rehabilitation Schedule

Item	Comment
Year quarrying started	1994
Disturbance Area (ha)	4.29 ha
Year progressive rehabilitation started	Abt 1996
Year progressive rehabilitation ends	End of mine life
Total area rehabilitated (ha)	4.29 ha

3.1 Unplanned closure

Closure of the quarry may be initiated in a number of different scenarios including: planned closure, unplanned or imminent closure and temporary closure.

In the event of unplanned closure some of the objectives, processes and implementation timeframes may vary. However, the practice of progressive rehabilitation and quarry closure planning including adequate financial provisioning will be in place. This forms a strong foundation, in the event of unplanned closure, to provide the highest chance of a successful closure to the satisfaction of the relevant agencies and stakeholders.

4 PREFERRED REHABILITATION STRATEGY

4.1 Purpose and objectives

The objectives of rehabilitation are to:

- Return the landscape outside of the quarry workings to a natural topography by removing stockpiles;
- Ensure that rehabilitated areas are returned to a stable and functional state;
- Ensure that the proposed land uses are functional and appropriate to the surroundings;
- Limit the potential for soil erosion and sedimentation;
- Ensure that soil material is stored and utilised in an appropriate manner; and
- Ensure that the long term stability of the site is provided through a sustainable vegetative cover.

This Preliminary Closure and Rehabilitation Plan describes processes and methods to meet the above objectives.

The Preliminary Closure and Rehabilitation Plan will evolve over time as activities progress and additional technical studies and investigations are completed.

This Preliminary Closure and Rehabilitation Plan covers rehabilitation of all operational activities and associated infrastructure being undertaken as part of the quarry.

4.2 Post quarry Land Use Strategy

Land uses in the area of the quarry are dominated by agriculture. The final land uses for the quarry will aim to replicate the existing surrounding land uses.

In rehabilitated areas outside of the quarry workings a final land use of cultivation will be impeded by fractured rock within or at the surface of the soil profile. Abundant near surface or surface pieces of fractured rock will limit the ability of the site to be practically and economically rehabilitated to agricultural production other than grazing.

The post quarry land use strategy is to return the land to good quality grazing land. That is land suitable for improved or native pasture with limited or no cultivation.

4.3 Preliminary Conceptual Final Landforms

Quarry

Rehabilitation is an essential component of quarry planning and development. Rehabilitation will be staged to limit the area of disturbed land open at any time.

Extraction areas will be rehabilitated. The following general rehabilitation strategy will be applied:

- All temporary infrastructure and facilities will be removed;
- Disturbed land will be reinstated to a stable form similar to the surrounding contour of the land;
- There will be no void left as land will be re-profiled to the contour;
- Permanent erosion and sediment controls will be designed to provide long term stability;
- Topsoil will be reinstated over the contoured profile;
- Topsoil will be seeded with native grasses or sterile crops during initial reinstatement works to assist in stabilising the area and reducing the potential for weed outbreaks;
- Allow natural regeneration of vegetation where viable, if not successful assisted regeneration using local species and sourced stock will be used;
- Fertilisers and soil supplements will be used only as necessary;
- Temporary access roads will be closed and rehabilitated to a condition compatible with the surrounding land; and
- Weed control and ongoing monitoring will be implemented to ensure successful regeneration.

Batter treatment

Disturbed batters shall be progressively rehabilitated as quarry cells are finished.

Batters shall be reduced to a maximum 1:5 gradient. Batters shall be ripped parallel to contour in order to reduce compaction and covered with a minimum of 50mm layer of topsoil from overburden/topsoil stockpiles.

Refer to the Quarry Rehabilitation and Closure Plan for greater details.

Surface water management

Diversion drains to remain until the site is rehabilitated. Main sediment pond to remain until site has been fully rehabilitated. Sediment ponds are to be filled.

Revegetation

Revegetation will be carried out in consultation with the leaseholder and with the relevant government department and Council to ensure the measures proposed are acceptable and have a high likelihood of success.

Preference will be given to using endemic species to the quarry for revegetation. Vegetation clearing for grazing has been extensive on the quarry site. Endemic tree and grass species to be determined in consultation with Council.

Infrastructure and buildings

Infrastructure at the quarry includes a combination of crushing and screening plant, office and maintenance areas.

Prior to final decommissioning of infrastructure and buildings; alternative uses, resale and/or recycling will be investigated.

All material that is able to be economically recycled will be removed from site. Material to be recycled includes waste metal.

When infrastructure or buildings have been designated for decommissioning, the site will undergo a rigorous pre demolition check. All sumps will be dewatered and de silted. All associated equipment will be isolated, de oiled, degassed and depressurised in an environmentally responsible manner.

Contaminated soil assessments will be conducted as required. Any necessary remediation to be undertaken in accordance with regulatory authority requirements at the time.

Site services

There are no site services that require rehabilitation at closure.

Roadways, car parks and hardstands

The infrastructure area includes product stockpile areas, interconnecting roads and light vehicle car parks. Roadways, car parks and hardstands that are designated for decommissioning and are no longer useful for grazing or conservation land uses will be rehabilitated as early as possible

Sealed areas will initially require removal of the bituminous seal which will be tested for contaminants. Bitumen will be removed from site with the remaining being used for fill in the quarry workings. The gravel layer will then be removed using a scraper or front end loader in order to minimise the removal of soil (ie topsoil/subsoil). The mixture of gravel and soil will be separated or reused for fill in the quarry workings. Where possible rehabilitated areas will be re-profiled so that they are consistent with the surrounding landscape.

The roadways, car parks and hardstands will be deep ripped to alleviate compaction, topsoiled, seeded and watered.

Re fuelling area

Contaminated soil assessments will be conducted as required. Any necessary remediation to be undertaken in accordance with regulatory authority requirements at the time.

Retention dams, diversions and surface water features

Drainage will be influenced by contour banks and dams for sediment control and capture of water for dust suppression. The dams and contour drains will be retained for grazing.

5 GENERAL REHABILITATION ACTIVITIES

5.1 Decommissioning

Site specific decommissioning plan will be developed for the quarry closer to closure. The plan will deal specifically with the sites equipment inventory and the potential for scrap and salvage.

The quarry decommissioning plan will also specifically detail how:

- Operations will be completed including equipment isolation;
- The site will be handed over to a demolition contractor.

5.2 Environmental Management

Topsoil stockpiling and application

Appropriate topsoil management during construction and rehabilitation is critical to the successful rehabilitation of the quarry. Topsoil management during the construction and operation of the quarries will include activities such as vegetation clearing, topsoil stripping, subsoil stripping, stockpiling, re profiling, ripping to remove compaction and soil conditioning/amelioration.

Topsoil management to include the following principles:

- All relevant aspects for topsoil retrieval such as stripping, stockpiling, erosion prevention and re spreading procedures, stockpile locations and inventory;
- If required, a procedure for testing stockpiled topsoil and subsoil for its physical and chemical properties;
- If required, a procedure for amelioration/improvement of topsoil and subsoil based on results of physical and chemical testing;
 - topsoil stripping quantities formulated from pre activity soil survey information; and
 - stripping and stockpile management.

Erosion and Sediment Control

An Erosion and Sediment Control Plan has been developed and is in use. Controls for erosion by runoff will be through the construction of sediment ponds and through progressive rehabilitation.

Surface water management

Currently surface water run off at the site will be captured in collection dams. Surface water conditions and surface water management measures undertaken on site will be important for closure planning and rehabilitation design as they help identify conditions to be maintained post closure, and identify potential surface water management issues that may need to be considered in closure and rehabilitation design. It is therefore recommended that additional information regarding surface water management is included in future iterations of this Preliminary Closure and Rehabilitation Plan.

With respect to closure, the potential for surface water run off to become contaminated by suspended solids will need to be taken into account.

Revegetation

A revegetation management plan will be developed for the quarry. Plant and grass species will be preferentially chosen in consultation with Council. The specific species mix for the quarry will be based on:

- The end land use including, for designated native vegetation areas and habitat requirements;
- Slope and drainage characteristics; and
- The available topsoil for placement in rehabilitation areas.

Revegetation will take place soon after the placement of topsoil. Revegetation may be by seeding, natural regrowth or planting of tube stock.

Revegetated areas will be watered regularly until established. Weed inspections and control will be undertaken regularly until vegetation cover criteria are met (70% coverage).

Weed and feral animal control

A weed and feral animal management plan will be developed for the quarry within 12 months of the proposed closure of the quarry.

Weeds will be managed across the site through a series of control measures, including:

- All vehicles and equipment must be cleaned at an approved weed wash down station and certified before being allowed on site;
- All off site soil and materials of plant origin will be certified as weed free by the supplier;
- Regular inspections of disturbed areas for weed proliferation will be done;
- A weed and pest control program will be developed and implemented for the quarry within 12 months of the proposed closure of the quarry.

Feral animal control will be assessed regularly and acted upon on a need to basis.

Fire management

Management of fire is an important and complex issue. Management must aim to achieve long term conservation of natural communities balances against the ongoing protection of life and property within and adjacent land. Fire regimes are a major determinant of the distribution and abundance of flora and fauna. They also affect nutrient cycles, erosion patterns and hydrological regimes. Fire regimes are the result of the dynamic interaction of human, physical, biological, spatial and temporal factors.

Any proposed fire management within the area will require consultation with the NSW Rural Fire Service and Council.

6 COMPLETION CRITERIA

Completion criteria for the quarry is presented as **Table 4**. The completion criteria have been presented aligning to the phase of closure relevant to the quarries. That is:

- Decommissioning – cleaning the site up;
- Landform establishment earthworks;
- Vegetation establishment – seeding and planting; and
- Sustainable final landform – a functioning landscape with minimal intervention.

6.1 Interpretation of completion criteria table

All reporting is to be completed as part of the annual environmental performance report unless otherwise specified in **Table 4**. Further detail on reporting will be documented in this report.

Table 4 makes reference to Landform Function Analysis. The procedure for how to complete this analysis will be documented in the rehabilitation monitoring management plan.

It should be noted that **Table 4** makes reference to comparison to an analogue site. An analogue site is defined as a site of similar environment features e.g. slope, soil, vegetation that can be compared to a representative rehabilitated area to compare whether the rehabilitated area is performing similarly to the undisturbed analogue site.

Table 4: Summary of Completion Criteria

Phase	Objective	Completion Criteria	Indicator that completion criteria is being met
Decommissioning	All quarry infrastructure removed Clean-up of potential/actual contamination	Buildings and foundations removed.	Buildings removed. Hazardous material audit and contamination at acceptable level. Site is assessed by a suitable qualified person
	Dust generation below acceptable limits	Dust below legislative requirements	Evidence in reporting that dust monitoring results at sensitive receptors have complied
Landform	Slopes are stable. Long-term safety	Disturbed batters shall be progressively rehabilitated as quarry cells are finished.	No evidence of slumping of slopes. Certification of slopes and quarry workings by an appropriately qualified

		<p>Batters shall be reduced to a maximum 1:5 gradient. Batters shall be ripped parallel to contour in order to reduce compaction and covered with a minimum of 50mm layer of topsoil from overburden/topsoil stockpiles.</p> <p>Refer to the Quarry Rehabilitation and Closure Plan for greater details.</p>	<p>person. Geotechnical stability of and geotechnical investigations demonstrate that stability has been achieved and reported</p>
	Site is safe for humans and animals now and in the foreseeable future	Risks assessment has been completed and risk mitigation measures have been implemented	As above. Sufficient egress to allow escape from quarry workings.
	The contour banks and mirror natural stream functions	Stable at closure and likely to remain that way into the foreseeable future	Designed and constructed in accordance with the Council guidelines.
	Appropriate management of surface water	All permanent banks and drains meet approved design criteria. All regulated structures meet design criteria. All non-permanent structures are decommissioned in accordance with regulating authority guidelines	All permanent banks and drains meet approved design criteria. All regulated structures meet design criteria. All non-permanent structures are decommissioned in accordance with regulating
	Topsoil replacement consistent with pre-activity quarry conditions	Soil based criteria typical with analogue sites or fall within desirable ranges provided by the agricultural industry (to be determined based on sampling results)	Monitoring and comparison to analogue site
	Dust levels below thresholds.	Dust based criteria typical with analogue sites	Monitoring and comparison to analogue site.
	No exposure to contamination	Surface and groundwater quality is as predicted and stable	Certification by an appropriately qualified person that the specified controls and cover is in place
Vegetation establishment	Establishment of the functionally	The diversity of shrubs and juvenile trees with	Monitoring and comparison to analogue

	important and structurally dominant species from the relevant native vegetation communities	a stem less than 5 cm is comparable to that of the analogue sites.	site
		Number of weeds species and surface area cover analogue site	Monitoring and comparison to analogue site
		Equal or greater proportion of over storey species occurring as regeneration	Monitoring and comparison to analogue site
	Monitoring and comparison to analogue site	Evidence that the vegetation type and density are of species suited to the spoil composition, slope, aspect, climate and other factors	Vegetation type and density
		Vegetation types and density are comparable Vegetation types and density are comparable	Vegetation type and density
		Minimum of 70% vegetation cover is present	Foliage cover.
		Foliage cover is comparable with the relevant reference site	Foliage cover.
		Nutrient cycling is occurring and the presence of leaf litter is assisting in limiting erosion of the soil/spoil surface.	Leaf litter, humus, depth of growing medium
		Leaf litter, humus, depth of growing medium comparable with the relevant reference site	Leaf litter, humus, depth of growing medium
	Demonstrating rehabilitation succession.	The number of tree species, shrub species, herbs and forbes and grasses species regardless of age comprising the vegetation community is comparable to that of the analogue sites	Monitoring and comparison to analogue site
Sustainable landscape	Landform generally blends in with surrounding	Soils surface cover 70%	Monitoring and reporting

	landscape and is stable ie no sodic saline soil or spoil at the surface of the landform and minimal erosion		
		Absence of gullies >300mm wide or deep and gullies stable.	Erosion monitoring and reporting
		Land function stability analysis based on key characteristics including: Soil cover; Erosion type and severity; Deposited materials; Surface resistance to disturbance; Slake test; Compaction; and Surface roughness	Final landform closure report
	Agricultural grazing	Determination of safe carrying capacity for future land use and future management strategies/agreements in place	Stocking trials indicate areas nominated for grazing as a post quarry land use are sustaining an equal rate than that calculated for relevant reference site
		Land maintenance requirements are comparable to reference sites	Landform stability when grazed. Safety of landform for stock and for undertaking management activities associated with stock
	Weed infestation less than pre-activity conditions	Equal or lesser proportion of weed species occurring in regeneration by comparison to analogue site	Rehabilitation monitoring and reporting

7 MONITORING AND MAINTENANCE

This section of the Preliminary Closure and Rehabilitation Plan describes conceptual monitoring and maintenance activities that will be undertaken post rehabilitation.

The post rehabilitation phase commences upon completion of the Preliminary Closure and Rehabilitation Plan. During post rehabilitation, monitoring will be conducted to assess whether the closure objectives and criteria are being met, while maintenance will be undertaken to address those areas where closure objectives and criteria are not being successfully met. At this stage, the identified monitoring and maintenance activities are conceptual and will need to be refined as the Preliminary Closure and Rehabilitation Plan develops in the future.

Upon completion of rehabilitation activities, maintenance and monitoring will be conducted at various intervals.

Post rehabilitation monitoring plans will need to be confirmed with relevant government authorities. All monitoring will conclude 12 months after quarry activity ends.

7.1 Surface water and groundwater

Surface water and groundwater monitoring requirements will be undertaken by a suitably qualified consultant within 12 months after quarry activity ceases.

7.2 Geotechnical and soil testing

Geotechnical monitoring and soil testing will be undertaken by a qualified geotechnical engineer who will assess the stability and quality of post rehabilitation features in the quarry. Monitoring will conclude 12 months after quarry activity ends.

The requirement for erosion monitoring will be addressed closer to closure. Monitoring will conclude 12 months after quarry activity ends.

7.3 Dust monitoring and analysis

Dust monitoring and analyses will be conducted to assess the quality of post rehabilitation corrective action to control dust generation. Monitoring will only occur during rehabilitation earthworks.

7.4 Rehabilitation monitoring

Land function stability analysis will be undertaken for the following indicators:

- Soil cover;
- Erosion type and severity;
- Deposited materials;
- Surface resistance to disturbance;
- Slake test;
- Compaction;
- Surface roughness; and
- Safe carry capacity for livestock.

Monitoring will be concluded 12 months after quarry activity ends.

The procedure for completing landform function analysis will be documented in the final rehabilitation monitoring management plan.

7.5 Weed and feral animal control

Weed and feral animal inspections will be conducted and control will be performed as required.

7.6 Maintenance

Maintenance will encompass post rehabilitation monitoring to identify areas requiring maintenance, and identify and address deviations from the expected outcomes.

Maintenance activities will include the maintenance of new vegetation (e.g. addition of fertiliser, re planting of significant areas of failed vegetation) prior to its establishment within the ecosystem; upkeep of water management structures; regular checking, replacement and probable repairs, where necessary, to newly fenced areas and signage in the event they become compromised after rehabilitation.