

JANDRA QUARRY  
EXTENSION

*Environmental Impact  
Statement*

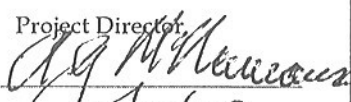
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CSR CONSTRUCTION MATERIALS

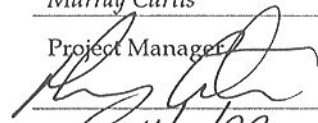
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38070RP2



Report No. 38070RP2

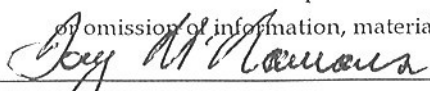
This report was prepared in accordance with the scope of services set out in the contract between ERM Mitchell McCotter Pty Ltd ACN 002 773 248 (ERMMM) and CSR Construction Materials. To the best of our knowledge, the proposal presented herein accurately reflects the Client's intentions when the report was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In preparing the report, ERMMM used data, surveys, analyses, designs, plans and other information provided by the individuals and organisations referenced herein. While checks were undertaken to ensure that such materials were the correct and current versions of the materials provided, except as otherwise stated, ERMMM did not independently verify the accuracy or completeness of these information sources.

Approved by: Tony McNamara  
Position: Project Director  
Signed:   
Date: 15/10/99

Prepared by: Murray Curtis  
Position: Project Manager  
Signed:   
Date: 14/10/99

ERM Mitchell McCotter Quality System



EIS prepared by	
name	Tony McNamara
qualifications	BA, MELG Law, Dip Urb Studies, Grad Dip LG Mgt, LGTCP, FRAPI
address	C\ - ERM Suite 3/146-148 Gordon Street Port Macquarie NSW 2444
in respect of	Jandra Quarry Extension
development application	
applicant name	CSR Limited
applicant address	Pitt Street TAREE NSW 2444
land to be developed:	Jandra Quarry
address	Pacific Highway Possum Brush
lot no, DP/MPS, vol/fol etc	Lots 2, 11, 12, 13, 14 & 15 DP 790056
proposed development	Expand and continue the operation of an existing 'State Significant' extractive industry to include: <ul style="list-style-type: none"> <li><input type="checkbox"/> expanded operating hours;</li> <li><input type="checkbox"/> lift production levels to 250,000 tonnes per annum;</li> <li><input type="checkbox"/> expand extractable reserves to 16.5 million tonnes;</li> <li><input type="checkbox"/> installation of additional site facilities and processing plant;</li> <li><input type="checkbox"/> upgrade quarry access road intersection with Pacific Highway; and</li> <li><input type="checkbox"/> demolish existing dwellings on the quarry site.</li> </ul>
environmental impact statement certificate	<input type="checkbox"/> an environmental impact statement (EIS) is attached. I certify that I have prepared the contents of this Statement and to the best of my knowledge: <ul style="list-style-type: none"> <li><input type="checkbox"/> it is in accordance with clauses 54 and 55 of the Environmental Planning and Assessment Regulation 1994; and</li> <li><input type="checkbox"/> it is true in all material particulars and does not, by its presentation or omission of information, materially mislead.</li> </ul>
signature	
name	Tony McNamara
date	19/10/99



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# EXECUTIVE SUMMARY

## BACKGROUND

CSR owns and operates Jandra Quarry situated on 118 ha of freehold land located approximately 18 km south of Taree on the mid north coast of New South Wales. Consent for the operation of the quarry was initially granted to Jandra Blue Metal Quarry Pty Ltd on 16 September 1985 by the Land and Environment Court. The development application proposed to extract and process from the quarry approximately 50,000 tonnes of hardrock per annum within an area of approximately five hectares on the site.

In July 1991 approval was obtained from Greater Taree City Council for an increased production limit to 150,000 tonnes per annum and increased maximum permissible weekly removal rate to 10,000 tonnes to meet increased demand.

CSR Construction Materials Limited purchased Jandra in 1996 and commenced full-scale production in early 1997. The present operation crushes and screens material and provides a pre-coating facility for sealing aggregates. At the current extraction rate the remaining 560,000 tonnes of marketable rock within the existing consent will last just over four years. CSR is seeking approval to increase the quarry area to approximately 17.3 ha to allow extraction of sufficient rock that would secure the economic viability of its investment.

CSR also owns a river gravel extraction operation on the Manning River at Taree. This gravel extraction operation has been a significant supplier to the local concrete industry as well as to the Bulahdelah, Forster and Gloucester areas for over 30 years. However, only minimal reserves (under 6 months) remain in the current extraction lease with little prospect of extending to a new lease. Therefore, CSR propose to close the Manning River operation and move its production to Jandra. Due to CSR's loss of production in the Taree region from the closure of the Manning River operation it is proposed to increase the production level at Jandra to an average 250,000 tonnes per annum to cover CSR's existing and future demand for product to the construction market.

Geological investigation has shown that there are some 16.5 million tonnes of fresh rock (greywacke) available for extraction, with an additional 3.6 million tonnes of weathered rock suitable for blending in roadbase products. The resource is considered to be of high quality and relatively easy to extract and transport.

The consolidation of CSR's Jandra and Manning River operations will result in efficiency and operational advantages that will ensure the long-term viability of CSR's presence in the area. It is generally recognised that a hardrock quarry is a

more stable, less dynamic operation than river extraction, with greater control over impacts and mitigation measures. In addition, the closure of the Manning River operation will enable the release of land suitable for at least 80 residential lots in Taree West.

Approval to increase the existing quarry area would significantly expand reserves to allow planning for the company's future. In addition to market factors and the economical viability of CSR's current operations, the approval to continue extraction of the resource at Jandra Quarry will allow a regionally and state significant operation to continue well into the future.

Jandra Quarry is *Regionally Significant* as defined by the Department of Mineral Resources due to its supply into more than one local government area. The quarry currently supplies aggregate south beyond Bulahdelah in the Great Lakes local government area (LGA) and north into the Hastings LGA. The quarry is also listed as *Regionally Significant* by the North Coast Extractive Industries Standing Committee.

Under a direction of the Minister of Urban Affairs and Planning (gazetted on 3 September 1999) the proposal is a *State Significant* development as the quarry is *Regionally Significant*, has reserves of over five million tonnes and its production level will be over 200,000 tonnes per annum.

## DESCRIPTION OF THE PROJECT

In this application CSR seeks to gain approval to:

- expand operating hours from 6.00 am to 6.00 p.m. Monday to Friday and 6.00 am to 3.00 p.m. Saturdays. Ancillary operations such as refuelling, servicing and maintaining plant will be undertaken between 6.00 am and 9.00 p.m. Monday to Saturday;
- expand the existing site facilities area;
- lift approved production levels from 150,000 tpa to an average 250,000 tpa;
- significantly expand reserves to allow planning for the company's future. This includes extraction down to RL 20 and will provide 16.5 million tonnes of fresh rock;
- remove the restrictions on blasting to enable the adoption of normal commercial blasting practices;
- relocation and upgrading of the existing pre-coating facility;
- locate on-site, from time to time on an as needed basis, a mobile pugmill and a mobile asphalt plant;

- construct a new weighbridge and office complex south-west of the current weighbridge;
- upgrade the intersection of the quarry access road and the Pacific Highway; and
- demolish the three existing dwellings located on the site.

There will be no change to the crushing and screening processing plant as with the extended hours it will be able to adequately process the required tonnage.

## ENVIRONMENTAL ASSESSMENTS

A range of environmental studies were completed during the preparation of this environmental impact statement. These studies and their scope of work were defined by consultation with relevant government authorities, addressing the scale and nature of the proposed development and the environment of the area. These assessments included investigations of:

- compatibility with local, regional and state planning;
- the local and regional environmental setting;
- assessment of the quality of surface and groundwater and potential impacts of the project;
- assessment of air quality and likely impacts;
- assessment of likely noise and vibration impacts of the project;
- an assessment of the project on the landscape and visual characteristics of the area;
- interactions with terrestrial and aquatic ecology;
- an assessment of archaeology and heritage characteristics of the area and likely impacts;
- an assessment of the impacts of the project on roads and traffic;
- an assessment of bushfire threat and necessary mitigation measures;
- an assessment of the possible social and economic impacts of the proposal; and
- issues related to ecologically sustainable development.

The overall conclusions of the assessments were that the proposed development had no adverse environmental impacts, which could not be satisfactorily addressed with a series of recommended mitigation measures. The major impacts and mitigation measures are as follows:

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### MAJOR ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Mitigation Measures	Environmental Impacts
1. Revegetation of semi-cleared areas outside the proposed extraction site to provide an enhanced wildlife corridor.	1. Loss of 14.3 ha of forest vegetation.
2. Progressive revegetation of quarry benches, restricting excavations to north of the main east-west ridgeline through the site and a staged quarry plan to minimise additional visual impacts.	2. Increase in the visibility of the quarry, primarily from the Pacific Highway.
3. A letter of intent for a coexistence agreement has been signed by CSR and the property owners to the south to restrict activities on the adjoining land during blasting activities in the proposed eastern extension only.	3. Potential for safety concerns to users on a portion of the adjoining rural property to the south during blasting activities.
4. All quarry vehicular traffic to access the site via a single access road with direct access from an upgraded intersection with the Pacific Highway.	4. The removal of artefacts from five identified Aboriginal archaeological sites.

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### CONCLUSIONS

The justification for this project has been assessed against the criteria specified by the Department of Urban Affairs and Planning in their guidelines for extractive industries.

The predominant requirement is that the project complies with the principles of Ecologically Sustainable Development. The assessment demonstrates that the project complies with these principles.

Due to the fact that the proposal is the extension to an existing *State Significant* quarry that has direct access to the Pacific Highway, the overall finding of the EIS is that there would be no adverse impacts subject to implementation of the recommended mitigation measures. The environmental impact statement concludes that the project can proceed with the implementation of the identified measures.

# JANDRA QUARRY E X T E N S I O N



PRM

ENVIRONMENTAL  
RESOURCE  
MANAGEMENT  
CORPORATION

1 INTRODUCTION



# INTRODUCTION

## 1.1 BACKGROUND

On 16 September 1985 the Land and Environment Court granted development consent for the establishment of Jandra Blue Metal Quarry (referred to below as Jandra). This comprised a hardrock quarry and processing plant on Lot 6 in DP 255621, Parish of Beryan, County of Gloucester. The development application proposed to extract and process from the quarry approximately 50,000 tonnes of hardrock per annum within an area of approximately five hectares (ha) on the site.

In July 1991 approval was obtained from Greater Taree City Council (GTCC) for an increased production limit to 150,000 tonnes per annum (tpa) and increased maximum permissible weekly removal rate to 10,000 tonnes to meet increased demand. It was noted at this time that the description of Jandra was changed from Lot 6 in DP 255621 to Lot 14 in DP 790056 due to land resumption by the Roads and Traffic Authority (RTA).

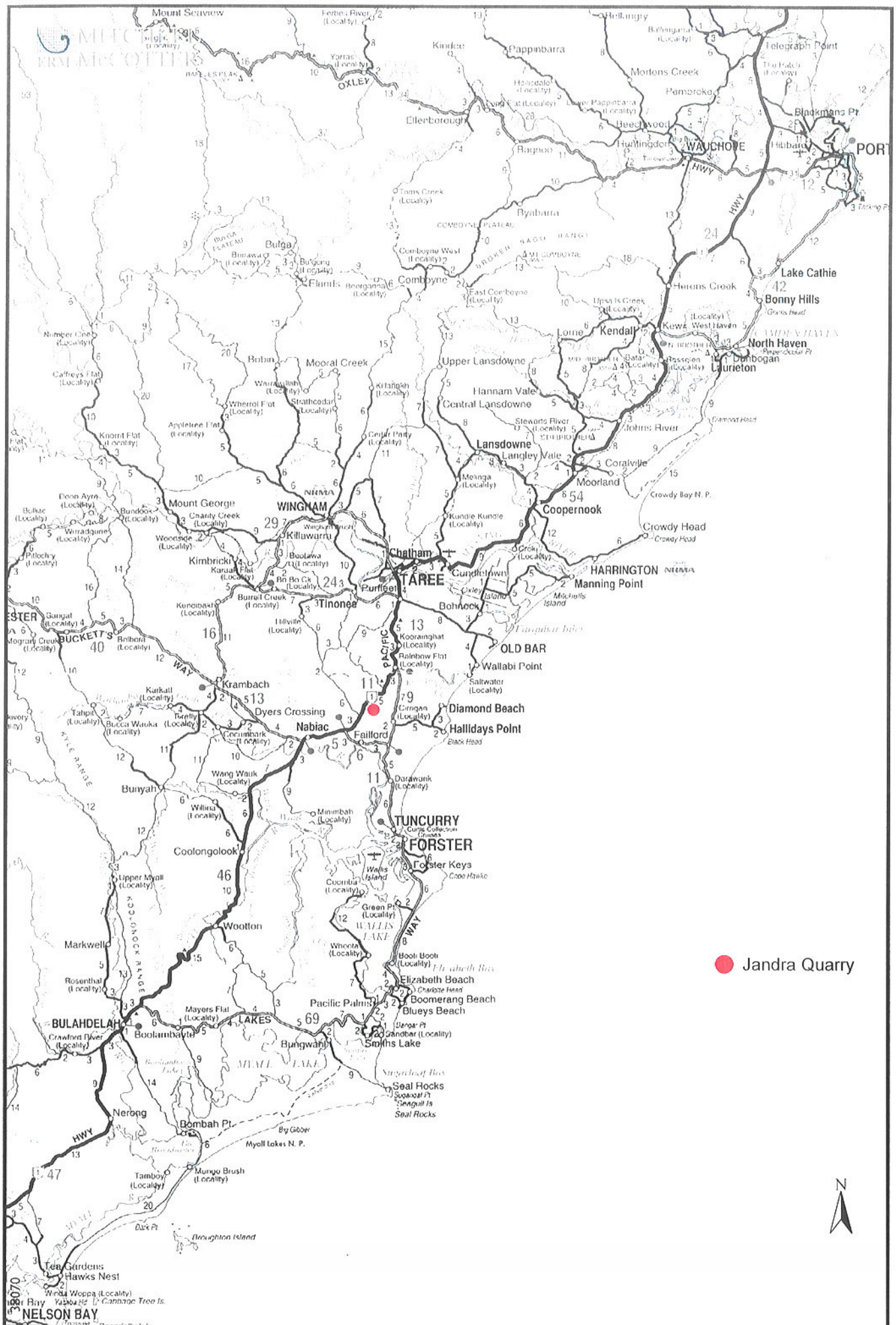
CSR Construction Materials Limited (referred to below as CSR) purchased Jandra in 1996 and commenced full-scale production in early 1997. Following additional land acquisitions the existing site is now described as Lot 2, 11, 12, 13, 14 and 15 in DP 790056. It is located approximately 18 km south of Taree on the mid north coast of New South Wales. The present operation crushes and screens material and provides a pre-coating facility for sealing aggregates. Regional and locational maps of existing quarry operations are shown in *Figure 1.1* and *Figure 1.2* respectively. An aerial photograph of the site is shown as *Figure 1.3*.

At the time of acquisition CSR calculated that reserves of legally extractable rock contained within the five ha approved area totalled 960,000 tonnes. Since then the company has extracted some 400,000 tonnes of material. At the current extraction rate the remaining 560,000 tonnes will last just over four years.

Geological investigations have shown a substantial available hardrock resource (greywacke) of at least 19 ha on the site. This is contained within a CSR owned area of 118 ha. The company is seeking approval to increase the quarry area to approximately 17.3 ha to allow extraction of sufficient rock that would secure the economic viability of its investment. It should be noted that the area subject to this proposal does not represent all the greywacke on CSR's land.







Scale: 1:550,000

Figure 1.1 REGIONAL MAP OF EXISTING QUARRY OPERATIONS (Source: NRMA, 1995)



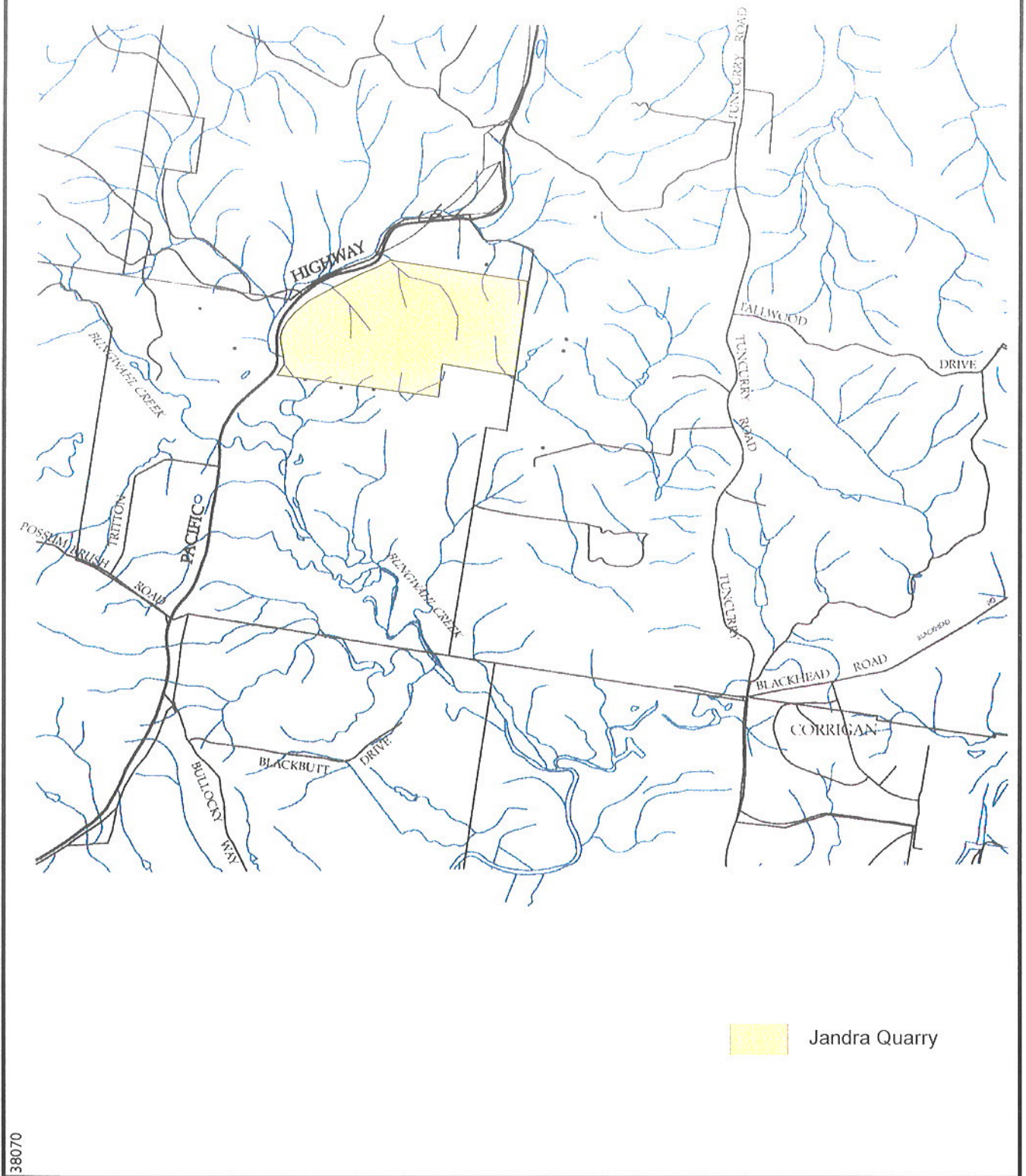


Figure 1.2 LOCATIONAL MAP OF EXISTING QUARRY OPERATIONS  
(Source: CMA 1:25,000 Nabiac Topo Sheet)





38070

Figure 1.3 AERIAL PHOTOGRAPH OF JANDRA QUARRY

Scale Approximately: 1:10,400



Approval to increase the existing quarry area would significantly expand reserves to allow planning for the company's future. A four stage process is proposed involving extraction down to relative level (RL) 20 and providing 16.5 million tonnes of fresh rock.

The current approval will only enable operation of the quarry to continue for a further four years. This application seeks to allow the quarry to continue extraction of the available resource. This application proposes to alter CSR's current operating conditions that were established in the 1985 and 1991 approvals. Alterations include extended operating hours, increased production levels to an average 250,000 tpa and changes to noise and blasting conditions. The latter due to CSR's recent acquisition of a neighbouring property. The application also includes the installation of a mobile pugmill as well as a mobile asphalt plant which will be brought on-site on an as needed basis. In addition, CSR propose to construct a new weighbridge and associated office complex and upgrade the intersection of the quarry access road and the Pacific Highway. The proposal will also require the eventual demolition of three dwellings currently located on the site.

This Environmental Impact Statement (EIS) sets out CSR's proposed development on the Jandra site and provides an assessment of potential impacts in terms of physical, biological and human interactions with the existing environment. Environmental management procedures and mitigation measures that would minimise potential impacts are provided.

## 1.2 THE NEED FOR ADDITIONAL RESOURCE

Market information in the coastal region from Johns River to Bulahdelah has been collated by CSR. Demand for hardrock quarry products including roadbase, asphalt aggregate, spray-seal aggregate and concrete aggregate has been calculated as 640,000 tonnes per annum for the foreseeable future. Principal suppliers to this market are five hardrock (including Jandra), two river gravel and two shale quarries.

One of the river gravel quarries is CSR's Manning River operation located at Taree. This gravel extraction operation is a significant supplier to the local concrete industry as well as to the Bulahdelah, Forster and Gloucester areas. However, only minimal reserves (under 6 months) remain in the current extraction lease with little prospect of extending to a new lease. Therefore, CSR propose to close the Manning River operation and move its production to Jandra. The closure of the Manning River operation will enable the release of land suitable for at least 80 residential lots in Taree West.

This proposed closure of the Manning River operation has been prompted by concerns that applications for the extension of the existing extraction lease may have difficulty meeting DLWC and NSW Fisheries approval requirements. In addition, consolidation of CSR's Jandra and Manning River operations will result in efficiency and operational advantages that will ensure the long-term viability of CSR's presence in the area. It is generally recognised that a hardrock quarry is a more stable, less dynamic operation than river extraction, with greater control over impacts and mitigation measures.

Geological investigation has shown that there are some 16.5 million tonnes of fresh rock available for extraction, with an additional 3.6 million tonnes of weathered rock suitable for blending in roadbase products. The resource is considered to be of high quality and relatively easy to extract and transport. It would significantly contribute to meeting current and future demand with the proposed increase in annual production covering the loss of production from the closure of the Manning River operation.

In addition to market factors and the economical viability of CSR's current operations, the Jandra quarry represents a resource of state and regional significance.

Jandra Quarry is *Regionally Significant* as defined by the Department of Mineral Resources due to its supply into more than one local government area. The quarry currently supplies aggregate south beyond Bulahdelah in the Great Lakes local government area (LGA) and north into the Hastings LGA. The quarry is also listed as *Regionally Significant* by the North Coast Extractive Industries Standing Committee (DUAP, 1999)

Under a direction of the Minister of Urban Affairs and Planning (gazetted on 3 September 1999) the proposal is a *State Significant* development as the quarry is *Regionally Significant*, has reserves of over five million tonnes and its production level will be over 200,000 tpa.

Approval to continue to extract this resource will allow a regionally and state significant operation to continue operation.

### 1.3 PURPOSE OF THIS EIS

This EIS has been prepared for CSR as owner of the Jandra Quarry to accompany a development application to the Department of Urban Affairs and Planning (DUAP) to extend quarry operations, to alter operating conditions, to locate a mobile pugmill and a mobile asphalt plant on-site from time to time, to construct a new weighbridge and associated office complex and to upgrade the intersection of the quarry access



road and the Pacific Highway. The application will result in revised operating conditions including extension to operating hours, increased production levels and changes to noise and blasting conditions to enable the adoption of normal commercial blasting practices. Extension of quarry operations will not involve any changes in the operation of the processing plant.

## 1.4 OBJECTIVES OF THE PROPOSAL

The objectives of the proposal are:

- to significantly extend an existing approved quarry operation;
- to alter current operating conditions to accommodate a higher production rate and introduce new site practices;
- to supply high quality hardrock material to meet local and regional market requirements;
- to conform with the requirements of relevant statutory authorities in the development and operation of the quarry; and
- to progressively rehabilitate the quarry with suitable revegetation strategies.

## 1.5 CONSULTATION WITH REGULATORY AUTHORITIES AND THE COMMUNITY

### 1.5.1 *Consultation with Regulatory Authorities*

The consultation process with government departments included a Planning Focus Meeting, letters to the departments requesting input, telephone discussions and meetings with various authority representatives.

#### *i. Planning Focus Meeting*

A Planning Focus Meeting was held on 30 November 1998 at the quarry to discuss the project with all relevant government authorities and to obtain their input into the study. Authorities represented at the meeting included:

- Greater Taree City Council (GTCC);
- NSW Environmental Protection Authority (EPA); and
- NSW Department of Mineral Resources (DMR).

Government authorities that were invited to the meeting but did not attend included:

- Department of Urban affairs and Planning (DUAP);
- Department of Land and Water Conservation (DLWC);
- National Parks and Wildlife Service (NPWS);
- NSW Fisheries;
- Roads and Traffic Authority (RTA); and
- NorthPower.

The authority representatives that attended the Planning Focus Meeting advised that written responses from the relevant authorities would detail specific issues identified during the meeting.

#### *ii. Director General's Requirements*

In accordance with the requirements of Clause 85 of the Environmental Planning and Assessment Regulation 1994 (EP&A Regulation), the Director General of the Department of Urban Affairs and Planning (DUAP) was consulted to determine key issues to be addressed in the EIS. The Director General issued her requirements on 24 December 1998. A copy of the Director-General's requirements is provided as *Appendix A*.

Those requirements specify that the EIS is to conform with Clauses 54 and 55 of the EP&A Regulation, together with an additional key issue being the "*examination of the proposal in relation to Hunter Regional Environmental Plan*". This particular issue is discussed in Section 2.3.1 of this EIS. The Director also refers to the Department's document "*EIS Guideline for Extractive Industries - Quarries*".

As the proposal is an "integrated development" under the Environmental Planning and Assessment Act 1979 (EP&A Act), DUAP also sought EIS requirements from relevant agencies providing general terms of approval before determination. These are set out in *Appendix A*.

iii. *Government Authorities Contact*

During preparation of the EIS various statutory authorities with responsibilities for land use or environmental matters were requested to provide information regarding issues to be addressed in the preparation of the EIS. Responses were received from:

- Greater Taree City Council;
- Environment Protection Authority;
- Roads and Traffic Authority;
- NSW Department of Mineral Resources;
- NSW National Parks and Wildlife Service;
- Department of Land and Water Conservation; and
- NSW Fisheries.

The issues detailed by the government authorities are summarised in *Table 1.1* below. A copy of the responses received from the authorities is provided in *Appendix B*.

Table 1.1 GOVERNMENT AUTHORITY CONSULTATION

Authority	Issue Précis	EIS Reference
GTCC	<input type="checkbox"/> visual impact;	Section 6.2
	<input type="checkbox"/> site rehabilitation; and	Section 3.11
	<input type="checkbox"/> land use impacts on residents to the south.	Section 3.6, 4.4 & 6.1
EPA	<input type="checkbox"/> noise, blasting and dust impacts;	Sections 6.1 & 4.4
	<input type="checkbox"/> asphalt plant air emissions;	Section 4.4
	<input type="checkbox"/> sediment controls;	Section 3.10
	<input type="checkbox"/> additional processing plant; and <input type="checkbox"/> pollution control licence.	Section 3.7 Section 1.6
RTA	<input type="checkbox"/> access road intersection; and	Section 6.6
	<input type="checkbox"/> traffic noise.	Section 6.1
DMR	<input type="checkbox"/> resource and market assessment.	Sections 3.1 to 3.4
NPWS	<input type="checkbox"/> areas of native vegetation;	Chapter 5
	<input type="checkbox"/> areas of potential significance for native fauna; and	Chapter 5
	<input type="checkbox"/> areas of archaeological potential.	Section 6.5
DLWC	<input type="checkbox"/> stormwater management plan;	Section 3.10
	<input type="checkbox"/> impacts on surface water quality;	Section 4.3
	<input type="checkbox"/> describe and identify impacts on the groundwater regime;	Section 4.3
	<input type="checkbox"/> soil erosion, sedimentation and land degradation issues; and	Sections 3.10, 4.2 & 4.3
	<input type="checkbox"/> permit required under the Rivers and Foreshores Improvement Act	Section 1.6
NSW Fisheries	<input type="checkbox"/> fish habitat protection; and	Section 5.6
	<input type="checkbox"/> downstream water quality	Section 4.3

### 1.5.2 Consultation with the Community

The community consultation program undertaken by CSR as part of the EIS process has included a newsletter and meetings and discussions with nearby landholders.

The newsletter (*Appendix C*) was distributed to nearby residents via meetings, or mail providing information on current operation of the quarry, the proposed development, likely impacts and details of the EIS process. The purpose of the

newsletter and meetings was to advise interested people of the proposed expansion of quarrying activities and to seek comments on issues to be addressed in the EIS.

A summary of issues raised by nearby residents following discussions with CSR is given in *Table 1.2*.

*Table 1.2* COMMUNITY CONSULTATION

Landholder	Issue Précis	EIS Reference
D & R Loveday	<input type="checkbox"/> no issues raised.	-
C Jones	<input type="checkbox"/> visual impacts; and	Section 6.2
	<input type="checkbox"/> noise impacts.	Section 6.1
J Stennett	<input type="checkbox"/> no issues raised.	-
M & M Mowbray	<input type="checkbox"/> visual impacts; and	Section 6.2
	<input type="checkbox"/> noise and blasting impacts.	Section 6.1
R Middleton	<input type="checkbox"/> visual impacts; and	Section 6.2
	<input type="checkbox"/> noise impacts.	Section 6.1
YALA	<input type="checkbox"/> coexistence agreement in train	Section 3.12
G Dubos	<input type="checkbox"/> advised will discuss on quarry visit	-
P & L Groves	<input type="checkbox"/> vibration; and	Section 6.1
	<input type="checkbox"/> visual	Section 6.2
J Smith	<input type="checkbox"/> request to mail newsletter	-
H Barnes and L Pykett	<input type="checkbox"/> request to mail newsletter	-

## 1.6 APPROVALS REQUIRED

The development is permissible with the consent of Greater Taree City Council. It is also a *designated development* as defined in Schedule 3 of the EP&A Regulation. Consequently, an EIS must accompany the development application.

This EIS has been prepared in accordance with Clauses 54 and 55 of the EP&A Regulation and the Director General's requirements.

The proposal is also an *integrated development* under the EP&A Act. This means the proposal requires development consent and also at least one approval, permit, licence, authority or consent under other associated legislation, set out in Clause 91(1) of the EP&A Act.

Additional environmental approvals may be needed under other legislation as follows.

i. *Protection of the Environment (Operations) Act 1997*

The Protection of the Environment (Operations) Act 1997 (PoEO Act) was introduced on 1st July 1999. It repeals the Clean Air Act 1961, the Clean Waters Act 1970, the Pollution Control Act 1970, the Noise Control Act 1975 and the Environmental Offences and Penalties Act 1989. These Acts and the major regulatory and enforcement provisions of the Waste Minimisation and Management Act 1995 have effectively been consolidated by the PoEO Act. The Minister for the Environment has redeveloped the majority of regulations under the pollution control acts and additional regulations have been introduced.

The quarry currently holds a pollution control licence (No. 002796) issued under the Pollution Control Act 1970 which includes specific licence conditions in regard to noise and blasting controls, water management and air pollution management.

The PoEO Act replaced existing approvals and licensing requirements with a single schedule of activities requiring an environmental protection licence that will regulate all forms of pollution. Previous requirements for a separate pollution control approval and license under each Act has been replaced with an integrated system of licensing.

An environmental protection licence is required for the following activities in relation to the proposed development at Jandra Quarry:

- asphalt plant with an intended production capacity of more than 150 tonnes per day or 30,000 tonnes per annum;
- crushing grinding or separation works that process rock with an intended processing capacity of more than 150 tonnes per day or 30,000 tonnes per annum; and
- extractive industry that extracts more than 30,000 cubic metres of rock per annum.

The EPA advise that the quarry will continue to be licensed under the PoEO Act and that the existing pollution control licence conditions will apply to the expanded quarry. The licence will be varied to regulate the asphalt plant operations.

ii. *Rivers and Foreshores Improvement Act 1948*

A permit is required for the proposed quarry extension under the Rivers and Foreshores Improvement Act 1948 as the quarry operation will require excavation within 40 metres of ephemeral creeks, being minor tributaries of Bungwahl and Talawahl creeks.

*iii. Roads Act 1993*

Approval will be required under the Roads Act for the proposed intersection upgrade works at the intersection of the quarry access road and the Pacific Highway.



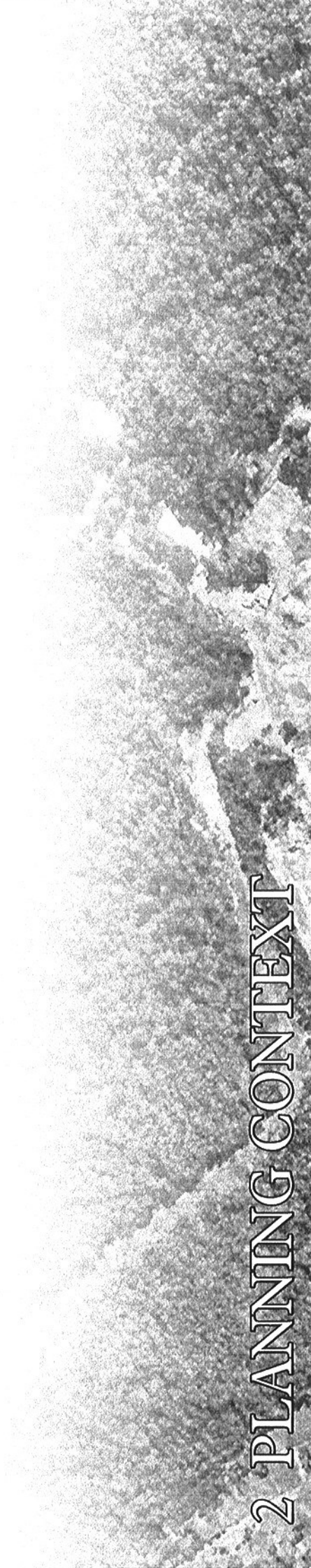


# JANDRA QUARRY E X T E N S I O N



ENVIRONMENTAL  
RESOURCE  
MANAGEMENT  
SOLUTIONS

2 PLANNING CONTEXT





## PLANNING CONTEXT

### 2.1 OVERVIEW

This section deals with the details of the relevant planning legislation and regulations applying to the project.

The relevant planning legislation is the EP&A Act. The subordinate legislation derived from the EP&A Act includes:

- the Greater Taree Local Environment Plan 1995;
- the Hunter Regional Environmental Plan 1988;
- the Hunter Urban Settlement Strategy;
- State Environmental Planning Policy No 11 - Traffic Generating Developments; and
- State Environmental Planning Policy No 44 - Koala Habitat Protection.

The Threatened Species Conservation Act 1995 (TSC Act) is relevant to this development. Furthermore, relevance of the Native Vegetation Conservation Act 1997 (NVC Act) has been considered (see section 2.2.3) following the repeal of SEPP 46 - Protection and Management of Native Vegetation.

### 2.2 STATE PLANNING

#### 2.2.1 *State Significant Development*

State Significant development is defined by Section 76A(7) of the Environmental Planning and Assessment Act 1979. Development can be declared to be State Significant by a number of different methods detailed under that Section. Sub-section(b)(iii) includes *development that is declared by the Minister, by notice in the Gazette, to be State significant development.*

Government Gazette No 8315 of 3 September 1999 contained a declaration by the Minister for Urban Affairs and Planning making a number of classes of development State Significant including :

*"An extractive industry, if in the opinion of the consent authority:*

1. *the resource has been identified as being of State or regional significance in a strategic plan adopted by the Director-General; or*
2. *the total resource (the subject of the development application) is greater than 5 million tonnes; or*
3. *the proposed extraction rate is greater than 200,000 tonnes per annum; or*
4. *the project is to be located in an "environmentally sensitive area of State significance."*

In regard to the above criteria, the Jandra quarry has been identified as a regionally significant resource in a document entitled *Extractive Industries and Minerals on the North Coast* prepared by the North Coast Extractive Industries Standing Committee and the Department of Urban Affairs and Planning. The quarry is not included in a strategic plan at this point of time however it is likely that this will occur when the North Coast planning Strategy is extended to include the Greater Taree City area, following the recommendations of the Standing Committee.

Criteria 2 and 3 do apply to the Jandra Quarry extension proposal and accordingly the development application is State Significant development.

Pursuant to Section 76A(9) the Minister is the consent authority.

### ***2.2.2 Integrated Development***

The proposal is an 'integrated development', a concept introduced by the EP&A Act. Integrated development is development that requires development consent and also at least one approval, permit, licence, authority or consent from the relevant approval body under specific clauses in associated legislation set out in Clause 91(1) of the Act.

Integrated development may be a local development or State Significant development. The development application made for an integrated development must be forwarded by the consent authority or minister to the authority required to give approval under the other legislation (the 'approval body'). The approval process that follows is detailed in the Environmental Planning and Assessment Amendment Act 1997.

For this proposal, DUAP has sought the requirements of DLWC and EPA. EIS requirements from these relevant agencies provide general terms of approval before determination.

### *2.2.3 Designated Development*

Under Clause 53C of the Environmental Planning and Assessment Regulation 1994, development described in Schedule 3 to the Regulation is declared to be designated development for the purposes of the Act. Section 78A of the Act specifies that an application for designated development must be accompanied by an environmental impact statement.

This proposal fits the definition of extractive industry under Schedule 3 which states:

*“Extractive industries that obtain extractive materials by methods including excavating, dredging, tunnelling or quarrying or that store, stockpile or process extractive materials by methods including washing, crushing, sawing or separating and:*

- (1) obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per annum; or*
- (2) disturb or will disturb a total surface area of more than 2 hectares of land by:*
  - (a) clearing or excavating; or*
  - (b) constructing dams, ponds, drains, roads or conveyances; or*
  - (c) storing or depositing over burden, extractive material or tailings; or*
- (3) are located:*
  - (a) in or within 40 metres of a natural waterbody wetlands or an environmentally sensitive area; or*
  - (b) within 200 metres of a coastline; or*
  - (c) in an area of:*
    - (i) contaminated soil; or*
    - (ii) acid sulphate soil; or*
  - (d) on land that slopes at more than 18 degrees to the horizontal; or*

- (e) *if involving blasting, within:*

  - (i) *1,000 metres of a residential zone; or*
  - (ii) *500 metres of a dwelling not associated with the development; or*

- (f) *within 500 metres of the site of another extractive industry that has operated during the last 5 years."*

#### 2.2.4 State Environmental Planning Policies

##### *i. State Environmental Planning Policy 11 - Traffic Generating Developments (SEPP 11)*

SEPP 11 makes provisions for the referral of certain classes of development to the relevant traffic authority. The policy requires that applications for development consent for activities specified in Schedule 1, which includes extractive industries, be referred to the traffic authority.

GTCC, as the consent authority, advises that an extractive industry with daily production exceeding 1,000 tonnes must be referred to the Regional Traffic Committee. The proposed development has a potential daily production in excess of 1,000 tonnes. In addition, the proposed development includes intersection upgrade works within the Pacific Highway road reserve. Therefore referral of the development application to the Regional Traffic Committee is likely.

##### *ii. State Environmental Planning Policy 44 - Koala Habitat Protection (SEPP 44)*

SEPP 44 came into force on 13 February 1995 and is required to be considered under Section 79(C) of the EP&A Act. It aims to:

*"encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline."*

This policy has application to this land in that it is intended to lodge a development application for the development of an extractive industry and the land has an area of greater than one hectare. The SEPP sets out the procedure to be followed in assessing the value of the land as koala habitat. Under the policy if the land is identified as potential koala habitat then a further assessment is carried out to determine whether the land constitutes core koala habitat and if so a further procedure needs to be addressed to determine whether development consent can be granted in relation to core koala habitat.

The results of the detailed assessment under SEPP 44 is discussed in *Appendix J* and Section 5.4 of the EIS. It has been determined that the land is not core koala habitat and therefore the policy will not prevent the proposed development from proceeding.

### 2.2.5 Other Approvals

#### *i. Native Vegetation Conservation Act 1997 (NVC Act)*

The NVC Act came into force on 1 January 1998 and repeals SEPP 46 - Protection and Management of Native Vegetation. The objects of this Act are:

- to provide for the conservation and management of native vegetation on a regional basis;
- to encourage and promote native vegetation management in the social, economic and environmental interests of the State;
- to protect native vegetation of high conservation value;
- to improve the condition of existing native vegetation;
- to encourage the revegetation of land;
- to prevent the inappropriate clearing of vegetation; and
- to promote the significance of native vegetation.

in accordance with the principles of ecologically sustainable development.

(Note: the principles of ecologically sustainable development are discussed in Section 8.4.4.)

According to clause 12(f) of the NVC Act, clearing that is excluded from the Act is "any development that is, or that is part of designated development within the meaning of the EP&A Act". Proposed extension of the quarry is a designated development as described above. Therefore, the NVC Act does not apply.

#### *ii. Protection of Environment (Operations) Act 1997*

The PoEO Act came into force in NSW on 1st July 1999. This Act requires an environmental protection license for scheduled developments and activities to be issued by the EPA as described in Section 1.6.

*iii. Rivers and Foreshores Improvement Act 1948*

Information from DLWC (provided in *Appendix B*) indicates that a permit is required under the Rivers and Foreshores Improvement Act 1948 for the Jandra Quarry Extension.

*iv. Roads Act 1993*

Approval from the RTA is required for intersection upgrade works proposed within the Pacific Highway road reserve.

## 2.3 REGIONAL PLANNING

### *2.3.1 Hunter Regional Environmental Plan No. 1, 1989 (HREP)*

The HREP provides both a policy framework and a strategy for development in the Hunter Region over a 20 year period. The Hunter Region incorporates most of the catchments of the Hunter and Manning rivers and the coastal waterways of the Myall, Wallis Lake, Port Stephens and Lake Macquarie areas.

The HREP planning strategies concerning mineral resources and extractive materials state that consent authorities should:

- manage mineral resources and extractive materials to ensure that adverse impacts on the environment and population are minimised;
- ensure that development proposals for land containing mineral resources and extractive materials are reviewed in relation to the potential problems of rendering those resources unavailable; and
- ensure that the impacts associated with the transportation of mineral resources and extractive materials will be minimised.

Clause 41(1) of the HREP lists matters for consideration by a consent authority when dealing with a development application for an extractive industry. The relevant matters are as follows:

*(a) should consider the conservation value of the land concerned and apply conditions which are relevant to the appropriate post-mining or extraction land uses.*

Comment : An ecological assessment of the land has been undertaken as part of this EIS. It is proposed to maintain and enhance habitat corridors on the site in locations



not utilised for extraction. Quarry benches will be progressively revegetated and other cleared area used for quarry operations will be rehabilitated such that the site can once again function as a sustainable ecosystem which reflects the natural ecology of the area. The post extraction use of the land is not fully assessed in this EIS. However, it is anticipated the likely best use of the remaining void would be for landfill.

*(c) should consult with officers of the department of Mineral Resources, and of the Department of Agriculture, to determine appropriate post-mining or extraction land uses;*

Comment : Consultation has occurred with Department of Mineral Resources officers but not with Department of Agriculture officers. The land is unsuitable for agriculture and consultation with Department of Agriculture is not considered necessary. The life of the extractive resource is expected to be a minimum of 66 years and the resultant void will be in the order of 1 to 2 million cubic metres. Post extraction uses are seen as being limited to landfill at this stage.

*(d) should ensure the progressive rehabilitation of mined or extracted areas;*

Progressive rehabilitation is planned for the upper benched areas, primarily to improve the visual impact of the site and stabilise disturbed areas. The balance of the site will be involved with extraction, processing or stockpiling for the life of the quarry and progressive rehabilitation will not be feasible.

*(e) should minimise the likelihood and extent of a final void and the impact of any final void, or facilitate other appropriate options for the use of any final void;*

As described above, a final void is an outcome of the proposed operation. The void area is planned to be limited to within various ridgelines to limit visual impact. A landfill is likely to be the best use of the void in the future.

*(f) should minimise any adverse effect of the proposed development on groundwater and surface water quality and flow characteristics.*

Section 4.3.3 of the EIS identifies that the quarry operation will not impact on groundwater. A strategy for managing surface water is contained in section 3.10.

*(g) should consider any likely impacts on air quality and the acoustical environment*

Air quality and acoustics are dealt with in Sections 4.4 and 6.1 respectively of this EIS.

*(h) should be satisfied that an environmentally acceptable mode of transport is available;*

Transport is addressed in section 6.6 of this EIS.

*(1) should have regard to any relevant Total Catchment Management strategies.*

The Jandra Quarry is within the catchment of Bungwahl Creek, Wallamba River and Wallis Lake. DLWC and Great Lakes Council are in the process of developing a catchment management plan for Wallis Lake and a river care plan for the Wallamba River. There are no existing total catchment management strategies for these waterbodies relevant to the proposal.

The HREP seeks to ensure that suitable land is provided in an efficient and economic manner to cater for the growth of the Hunter Region. The priority of the government is to establish a secure resource base for the continuing development of infrastructure to service new growth areas. The proposal is consistent with these long-term goals as it will contribute to the supply of materials necessary for the development of infrastructure in the Taree and surrounding areas.

### **2.3.2 Hunter Coastal Urban Settlement Strategy (HCUSS)**

The HCUSS has been prepared to ensure that urban growth in the Hunter coastal area is planned and managed in a responsible manner which is environmentally and economically acceptable to the community.

The HCUSS requires councils to protect mineral resources and extractive materials, which are important for construction/building purposes and for future urban expansion.

The extraction of mineral resources and extractive materials should only occur after detailed environmental assessment has been undertaken.

GTCC has recognised that the extractive materials in the Jandra Quarry locality require protection from impacts of inappropriate development. Provisions for the protection of these resources are included in Greater Taree Development Control Plan 1995 which is discussed further in Section 2.4.2.

## **2.4 LOCAL PLANNING**

### **2.4.1 Greater Taree Local Environmental Plan 1995**

The site owned by CSR is described as Lot 2, 11, 12, 13, 14 and 15 in DP 790056. The subject site and its surrounds are zoned *Rural 1(a)* under the provisions of the Greater Taree Local Environmental Plan 1995 (LEP 1995). This zone generally

encourages the agricultural use of land and extractive industries are permitted with the consent of Council.

Under LEP 1995, the Council must consider a number of issues when assessing development applications for extractive industries. These issues are:

- rehabilitation of land;
- removal of waste material and refuse;
- secure public safety in the surrounding area; and
- protection of the amenity of the locality.

#### *2.4.2 Greater Taree Development Control Plan 1995*

Greater Taree Development Control Plan 1995 (DCP 1995) aims to achieve consistent control of development on land that is covered by the provisions of LEP 1995. It contains specific requirements related to various types and locations of proposed development.

DCP 1995 identifies a buffer area which surrounds Jandra Quarry. The DCP states that for a development application for land within the buffer area, Council shall consider:

- the environmental conditions within the buffer area and any hazards likely to be encountered by the proposed development;
- the likely risks to persons proposing to reside or be employed in the proposed development;
- the nature and intensity of the proposed development; and
- the likely influence of the proposed development on the continued operation or potential future of any development or activity within the buffer area.

The purpose of the buffer area is to provide protection of the extractive resources that exist in the Jandra Quarry locality by ensuring that land use conflicts do not occur as a result of new development.

## 2.5 OTHER GUIDELINES AND POLICIES

A number of guidelines and policies apply to development of sensitive lands on or near the coast including the *Coastline Management Manual*, *Floodplain Development Manual*, *Estuary Management Manual* and *Guidelines on Public Works Requirements for Sand and Gravel Proposals In or Near Estuaries*. Due to the nature and location of the proposed development, these guidelines and policies are not directly relevant to the proposal.

Relevant guidelines and policies referred to by government authorities consulted as part of the EIS process are as follows:

- EIS Guidelines for Extractive Industries - Quarries (DUAP);
- EIS Guidelines for Bitumen Plants (DUAP);
- Fish Habitat Protection Plan 1, March 1985 (NSW Fisheries);
- Environmental Noise Control Manual 1994 (EPA);
- Draft Stationary Noise Source Policy 1998 (EPA);
- Planning for Bushfire Protection (Department of Bushfire Services); and
- The Australian International Council on Monuments and Sites (ICOMOS) Charter for the Conservation of Places of Cultural Significance; The Burra Charter and its associated guidelines (NPWS).

# JANDRA QUARRY E X T E N S I O N



KPMG

ENVIRONMENTAL  
RESOURCE  
MANAGEMENT  
A MEMBER OF THE PWC GROUP

3 THE PROPOSED DEVELOPMENT



# THE PROPOSED DEVELOPMENT

## 3.1 GEOLOGICAL INVESTIGATION

### 3.1.1 Introduction

CSR purchased the site in May 1996 with initial production runs commencing in November 1996. The quarry reached full-scale production in early 1997. At the time of purchase the site had been subject to two development approval determinations, in 1985 and again in 1991 when the production limit was increased from 50,000 tpa to 150,000 tpa. Attention was focused on the geology of the approximately five hectares currently approved for extraction.

During the pre-acquisition stage CSR realised that the area had considerably more potential, and this was the basis for acquisition.

At the time of purchase the company acquired approximately 109 ha, and now, due to further acquisition, it owns around 118 ha. Property details are provided in *Table 3.1* and *Figure 3.1*.

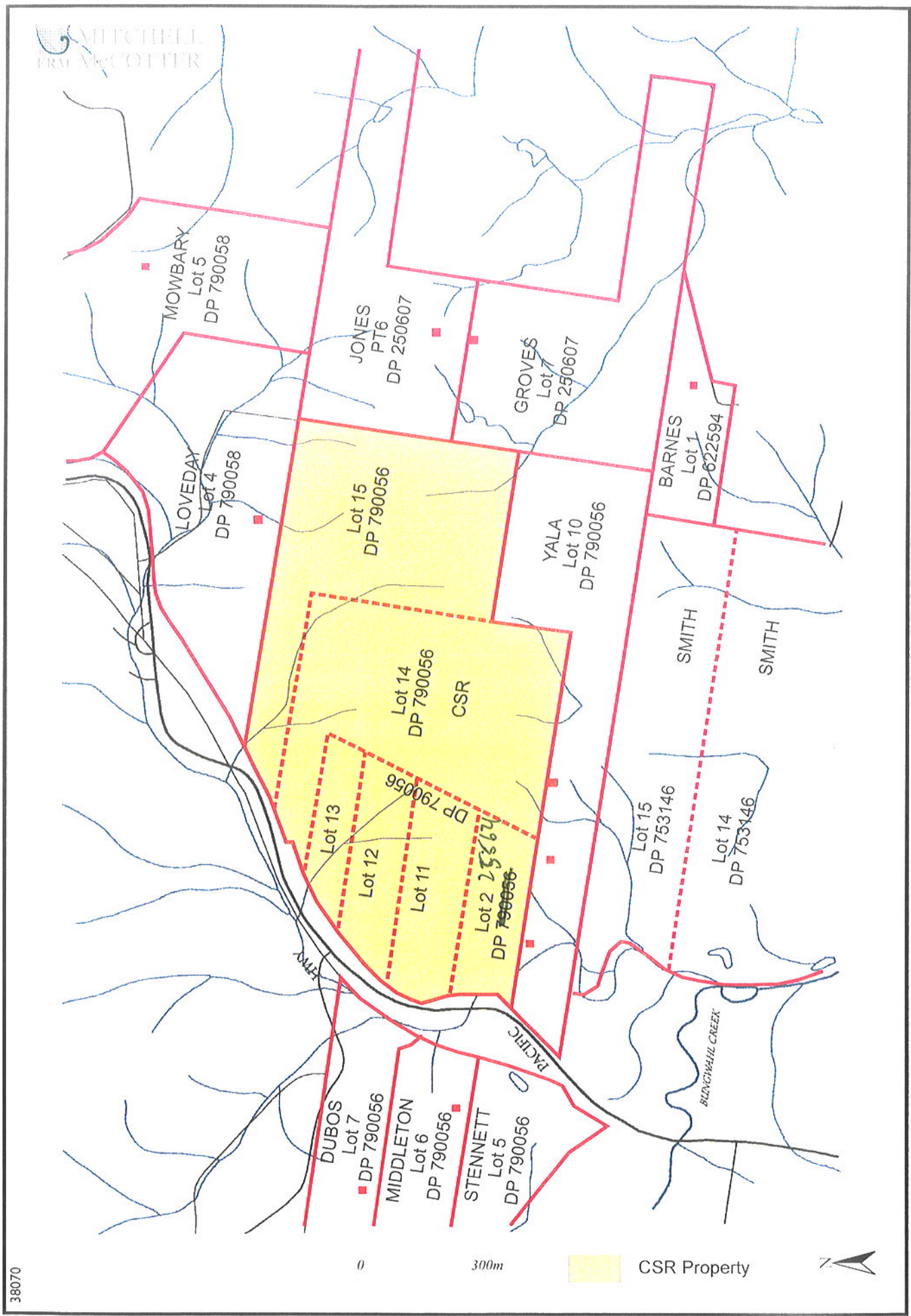
*Table 3.1* PROPERTY DETAILS

Lot	DP	Parish	Size in Hectares
Lot 2	DP <sup>255621</sup> 790056	Parish of Beryan	9.734 ha
Lot 11	DP790056	Parish of Beryan	11.62 ha
Lot 12	DP790056	Parish of Beryan	9.52 ha
Lot 13	DP790056	Parish of Beryan	7.01 ha
Lot 14	DP790056	Parish of Beryan	40.51 ha
Lot 15	DP790056	Parish of Beryan	40.20 ha
Total			118.59 ha

All land is in the county of Gloucester and within the Greater Taree local government area.







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Figure 3.1 PROPERTY DETAILS OF SITE AND NEIGHBOURS



In 1997, CSR subjected its 109 ha property to an intensive geological investigation. This included commissioning aerial photographs and enlargements, preparing detailed topographic maps from the photos, geological mapping, trenching, percussion drilling, diamond drilling, product quality testing and reserve calculations. This work is covered in detail in "*Jandra Hard Rock Quarry Geological Investigation*" (Stenhouse, 1997) which is provided in *Appendix D*.

Since Stenhouse (1997), CSR purchased an adjoining property (Lot 12). The purchase of Lot 12 has allowed final quarry planning to consider land further east than the footprint investigated in 1997.

### 3.1.2 Site Geology

The area is underlain by an undifferentiated sequence of Devonian sediments that is approximately 345 to 395 million years old. The sequence consists of interbedded mudstone, sandstone, conglomerate, tuff and chert, with local greywacke beds. Site geology is shown in *Figure 3.2*.

A major greywacke bed is present in the quarry area. This bed is up to 190 m thick and has an east west strike (about 250° magnetic) and dips to the north at between 45° and 50°. Mapping has shown the bed to be fully continuous over a strike length of at least 1,000 m, with little apparent reduction in thickness. Diamond drilling has confirmed that there is at least 30 m of greywacke below the current floor of the quarry.

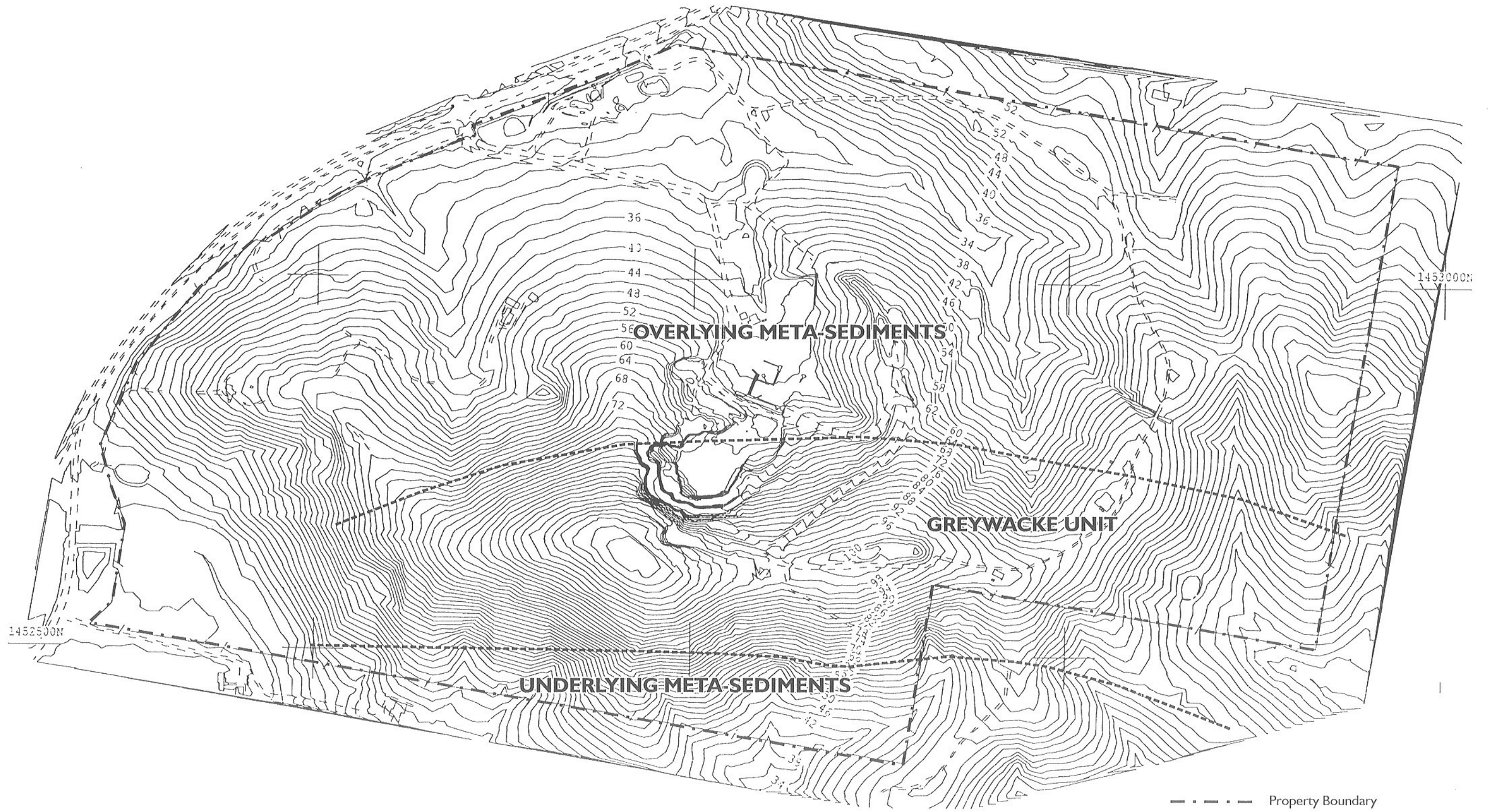
Physically the greywacke bed is a very hard durable dark grey rock with little apparent differentiation across the bed. Scattered throughout the bed are relict brachiopod shells and clasts of granitic material up to 10 cm in diameter.

No structural analysis has been carried out, but wedge type failures are evident in the upper weathered benches.

## 3.2 ROCK AND PRODUCT QUALITY

The quarry under CSR ownership has now been in full production for just over two years, producing a full range of products, but concentrating on concrete aggregates, asphalt and sealing aggregates. Aggregate from this quarry has been used in concrete for the Taree By-pass. Other products produced by the quarry include aggregates for drainage medium and pipe bedding material, crusher dust used for fill material under concrete slabs and pavers, ballast for RSA railway line maintenance, rip rap for riverbank protection and gabion rock for erosion protection mattresses. *Table 3.2* gives a summary of product quality.





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Figure 3.2 SITE GEOLOGY

0 500m



Table 3.2 JANDRA PRODUCT QUALITY SUMMARY

Test	Range <sup>1</sup>
Bulk Density (SSD)	2.65 tonnes per cubic metre
Stripping Test (pre-coated)	Nil Strip
Polished Aggregate Friction Value	50 - 53
Water Absorption	0.4 - 1.0 percent
Dry Strength	397 - 415
Wet Strength	345 - 415
Wet/Dry Strength Variation	0 - 13 percent

Notes: 1. Data from December 1996 to August 1999

Petrographic work, as reported by Stenhouse (1997), show the greywacke to be hard, non-porous and durable. It has approximately 25 percent free silica, much as a product of de-vitrification of glass shards, and is predicted to have a mild or slow potential for alkali-silica reactivity. As such, concrete designs contain measures to counteract this.

The very low wet/dry variation of 0 - 13 percent indicates a high durability. This, combined with its high polished aggregate friction value (PAFV) means that the product is of premium quality suitable for all uses. The company has found the material suitable for use as aggregates for concrete production.

Stenhouse (1997) also identifies the overlying sediments as having a value for blending into road gravel products, stating *"The overlying meta-sedimentary unit is considered suitable for blending in road-base materials to improve plasticity and workability. Materials testing of this rock is required to determine the optimum blending ratios for varying product types."*

### 3.3 RESOURCE QUANTITY

#### 3.3.1 Preamble

Extraction is currently approved within a small area of about five ha. This is contained within a CSR owned area of 118 ha, of which at least 19 ha is underlain by greywacke. The company is not seeking approval to extract all the greywacke on its land, however as the following section shows, there is a considerable volume of rock available within the area subject to this application.

### 3.3.2 Available Rock Volumes

#### i. Reserves

According to the original EIS for the quarry site (Davies, 1984) the approved extraction area had reserves totalling 493,000 m<sup>3</sup> of processable rock. At the time of acquisition, CSR calculated that the reserves (legally extractable rock) contained within the approved area totalled 960,000 tonnes. Since then the company has extracted some 400,000 tonnes of material. Of this about 90,000 tonnes of weathered rock (overburden) has been placed in stockpiles, shaped and revegetated.

At the current extraction rate the remaining 560,000 tonnes will last just over four years.

#### ii. Additional Resources Being Requested

The company is seeking approval to extract sufficient rock to secure the economic viability of its investment of \$5.6 million, and protect the existing jobs of two permanent and four casual workers at Jandra and five permanent and four truck drivers from the Manning River operation.

In assessing the volume of resource available, the company has placed the following constraints upon itself:

- only extract north of the southern ridgeline. This will avoid any visual impact upon residents to the south of the site;
- not to quarry east of the eastern most north south ridge at about (6453100N, 249100E). This will help protect residents to the east of the quarry from any major visual impact;
- not to quarry any closer than 400 m from the Pacific Highway. This will avoid the possibility of having to disrupt traffic during blasting; and
- deepening the quarry floor with two additional 15 m high benches. This would take the final RL to 20.

Within these constraints it has been calculated in the "*Jandra Quarry Quarry Development Plans*" (CSR, 1999) that there are an additional 16.5 million tonnes of rock available for extraction (see *Appendix E*). It is proposed to extract this resource in four stages which are described in Section 3.6. The volumes of each stage are summarised in *Table 3.3*.

Table 3.3 AVAILABLE RESOURCE OF GREYWACKE WITHIN PROPOSED QUARRY EXTENSION

Stage	Overburden	Weathered Rock		Fresh Rock	
	000 m <sup>3</sup>	000 m <sup>3</sup>	000 Tonnes @ 2.51/m <sup>3</sup>	000 m <sup>3</sup>	000 Tonnes @ 2.65/m <sup>3</sup>
1	61.9	619.3	1,548.2	1,685.8	4,467.4
2	44.2	489.1	1,222.7	1,640.8	4,348.0
3	34.5	300.7	751.7	1,371.6	3,634.6
4	4.5	45.1	112.7	1,537.6	4,074.6
Total	145.1	1,454.2	3,635.3	6,235.8	16,524.6

NOTE: Calculated using Surpac Mine Planning Software.

Stenhouse 1997 calculated extractable resources of just 8.88 million tonnes. The additional tonnage is due mainly to the recent (1999) acquisition of Lot 12 from Mr Ralph Williams, adopting a larger footprint for the quarry, and taking the quarry floor to RL 20.

Weathered rock may or may not be converted into product. Its use depends on road base and fill markets.

At the expanded production rate being asked for this equates to over 50 years quarry life.

### 3.4 RESOURCE SIGNIFICANCE

#### 3.4.1 Significance Test

The quarry supplies aggregate south beyond Bulahdelah and north into Hastings shire. Using the definition adopted by DMR, it is *Regionally Significant* as it supplies into more than one shire area. The quarry is also listed as *Regionally Significant* by the North Coast Extractive Industries Standing Committee (DUAP, 1999).

Similarly, under a Ministerial Direction on State Significance, this site is of *State Significance* as its reserves are over five million tonnes and its production level will be over 200,000 tpa.

#### 3.4.2 The Market and Current Suppliers

The company has been in operation in Taree for over 15 years and at Jandra for over two years. In both instances existing operations were purchased. The market information presented in this section is based on CSR's extensive experience in the market place, however, it should be regarded as a best estimate only.

Company officers have been seeking market information in the coastal region from Johns River in the north to Bulahdelah in the south. In this region the main markets



for hardrock quarry products are roadbase, asphalt aggregate, spray-seal aggregate and concrete aggregate. This market has been calculated as an estimated average of 640,000 tpa for the foreseeable future, and it is shown as product type in *Table 3.4*.

*Table 3.4* MARKET BY PRODUCT TYPE, JOHNS RIVER TO BULAHDELAH

Product	Tonnes per Annum
Road Base/Scalps	300,000
Asphalt & Sealing Aggregates	80,000
Concrete Aggregates	190,000
Other	70,000
TOTAL	640,000

Supplying this market are five hardrock, two river gravel and two shale quarries. These are detailed in *Table 3.5* and shown in *Figure 3.3*. In addition, future production levels are likely to be higher due to the significant demand for extractive materials in the region resulting from potential overlapping of six major upgrades of the Pacific Highway to be undertaken over the next five years, being the sections:

- Karuah to Bulahdelah;
- Coolongolook to Wang Wauk;
- Bundacree Creek to Possum Brush;
- Cundletown to Coopernook;
- Coopernook By-pass; and
- Coopernook to Mooreland.

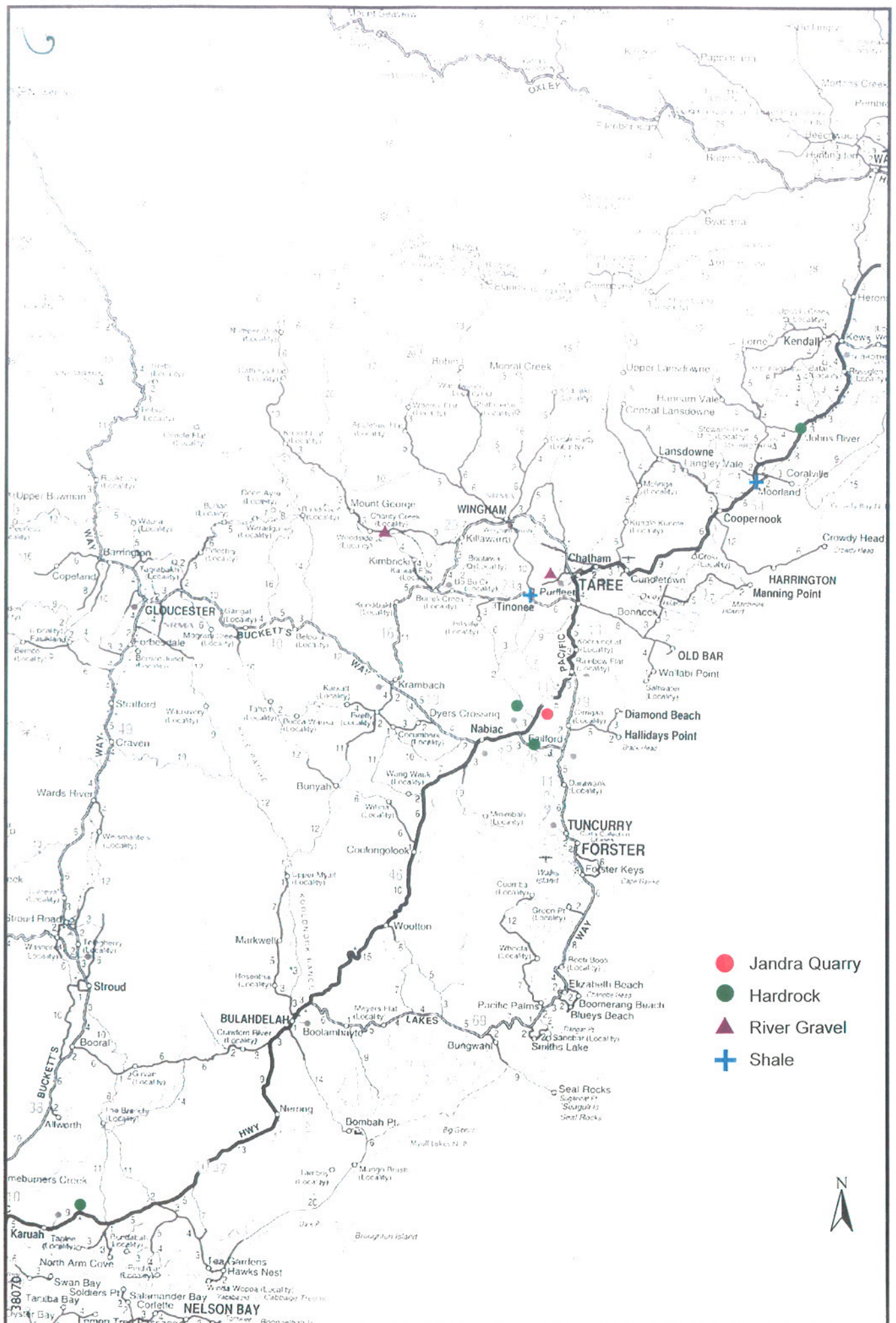


Figure 3.3 MARKET SUPPLIERS

Scale: 1:550,000



Table 3.5 ESTIMATED PRODUCTION LEVELS OF RELEVANT QUARRIES

Quarry	Location	Type	Est. 1999 Production (tonnes)	Est. 2000 Production (tonnes)
CSR	Jandra	Hardrock - Greywacke	130,000	220,000
CSR	Taree	River Gravel	90,000	Nil
Boral	Johns River and Seaham	Hardrock - Quartz Microdiorite/ Monzodiorite	90,000 <sup>1</sup>	90,000 <sup>1</sup>
Pacific Blue Metal	Possum Brush	Hardrock - Greywacke & Meta-sediments	155,000	155,000
Great Lakes Aggregates	Failford	Hardrock - greywacke & Meta-sediments	55,000	55,000
Midcoast Earthmoving	Tinonee	Shale	35,000	35,000
Scadden's	Moorland	Shale	15,000	15,000
Mountain Industries	Karuah	Hardrock	40,000 <sup>1</sup>	40,000 <sup>1</sup>
Wingham Sand & Gravel	Charity Creek	River Gravel	30,000	30,000
TOTAL			640,000	640,000

Notes: 1. Production for supply in the area between Johns River and Bulahdelah only.

CSR's Manning River gravel operation located at Taree is a significant supplier to the local concrete industry as well as to the Bulahdelah, Forster and Gloucester areas. However, only minimal reserves (under 6 months) remain in the current extraction lease with little prospect of extending to a new lease. Therefore CSR propose to close the Manning River operation and move its production to Jandra. This will include replacing coarse river sand with processed crusher dust for a significant part of the fine aggregate used in concrete. The closure of the Manning River operation will enable the release of land suitable for at least 80 residential lots in Taree West.

It is generally recognised that a hardrock quarry is a more stable less dynamic operation than river extraction, with greater control over impacts and mitigation measures.

### 3.4.3 Resource Significance

That this is a resource of state, regional and company significance cannot be argued. Its significance lies in:

- the large volume available in an environmentally acceptable operation (over 16 million tonnes);
- direct access to the Pacific Highway without disadvantaging people living along its access route;
- the premium quality of its product;
- CSR investment of \$5.6 million and its future provision of up to 11 full-time and 2 casual direct jobs and several others (e.g. truck drivers) indirectly; and
- the ability to serve markets up to 100 km away using the main Pacific Highway.

In conclusion it can be said that the company owns 118 ha of land on which a properly executed geological investigation has shown that there are some 16.5 million tonnes of fresh rock available for extraction, with an additional 3.6 million tonnes of weathered rock suitable for roadbase products.

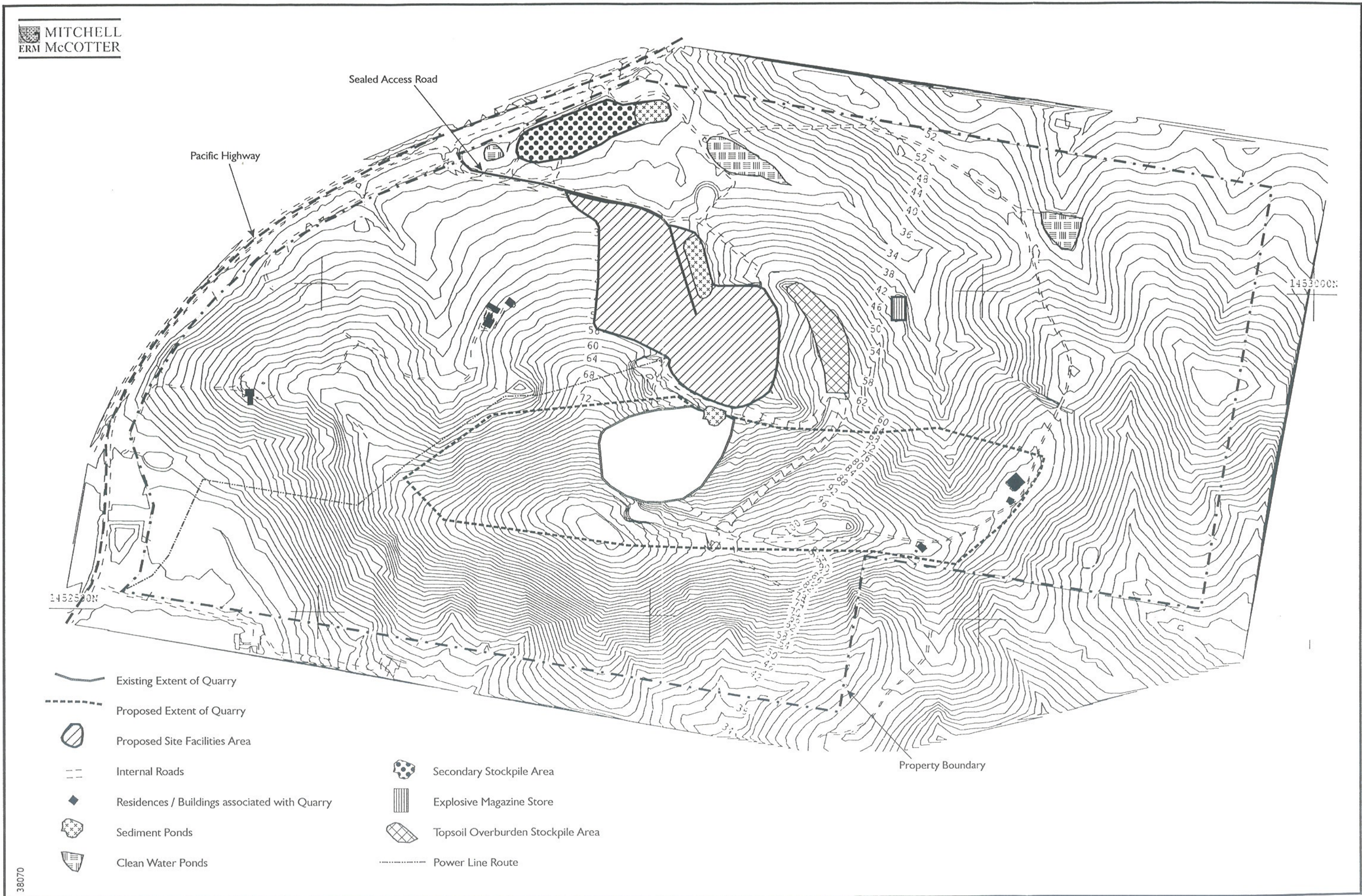
Approval to extract this resource will allow a regionally and state significant operation to continue operating that otherwise would see the operation close down in about four years time.

## 3.5 AN OVERVIEW OF THE DEVELOPMENT PROPOSAL

CSR owns and operates a quarry situated on 118 ha of freehold land. A plan of the proposed quarry layout is shown in *Figure 3.4*. Current approvals allow for an extraction rate of 150,000 tpa, place some stringent controls on operating hours and blasting, and give reserves of around 560,000 tonnes. This equates to about four years life. The present operation crushes and screens the material and provides a pre-coating facility for sealing aggregates.

In this application CSR seeks to gain approval to:

- expand operating hours from 6.00 am to 6.00 p.m. Monday to Friday and 6.00 am to 3.00 p.m. Saturdays. Ancillary operations such as refuelling, servicing and maintaining plant will be undertaken between 6.00 am and 9.00 p.m. Monday to Saturday;



- Existing Extent of Quarry
- - - Proposed Extent of Quarry
- ◌ Proposed Site Facilities Area
- - - Internal Roads
- ◆ Residences / Buildings associated with Quarry
- ◌ Sediment Ponds
- ◌ Clean Water Ponds
- ◌ Secondary Stockpile Area
- ▤ Explosive Magazine Store
- ▧ Topsoil Overburden Stockpile Area
- ⋯ Power Line Route

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Figure 3.4 PROPOSED QUARRY LAYOUT

- lift approved production levels from 150,000 tpa to an average 250,000 tpa;
- significantly expand reserves to allow planning for the company's future. This includes extraction down to RL 20 and will provide 16.5 million tonnes of fresh rock;
- expand the existing site facilities area;
- remove the restrictions on blasting to enable the adoption of normal commercial blasting practices;
- relocation and upgrading of the existing pre-coating facility;
- locate on-site, from time to time on an as needed basis, a mobile pugmill and a mobile asphalt plant;
- construct a new weighbridge and office complex south-west of the current weighbridge;
- upgrade the intersection of the quarry access road and the Pacific Highway; and
- eventually demolish the three existing dwellings located on the site.

There will be no change to the crushing and screening processing plant as with the extended hours it will be able to adequately process the required tonnage. The proposed site facility layout is shown in *Figure 3.5*.

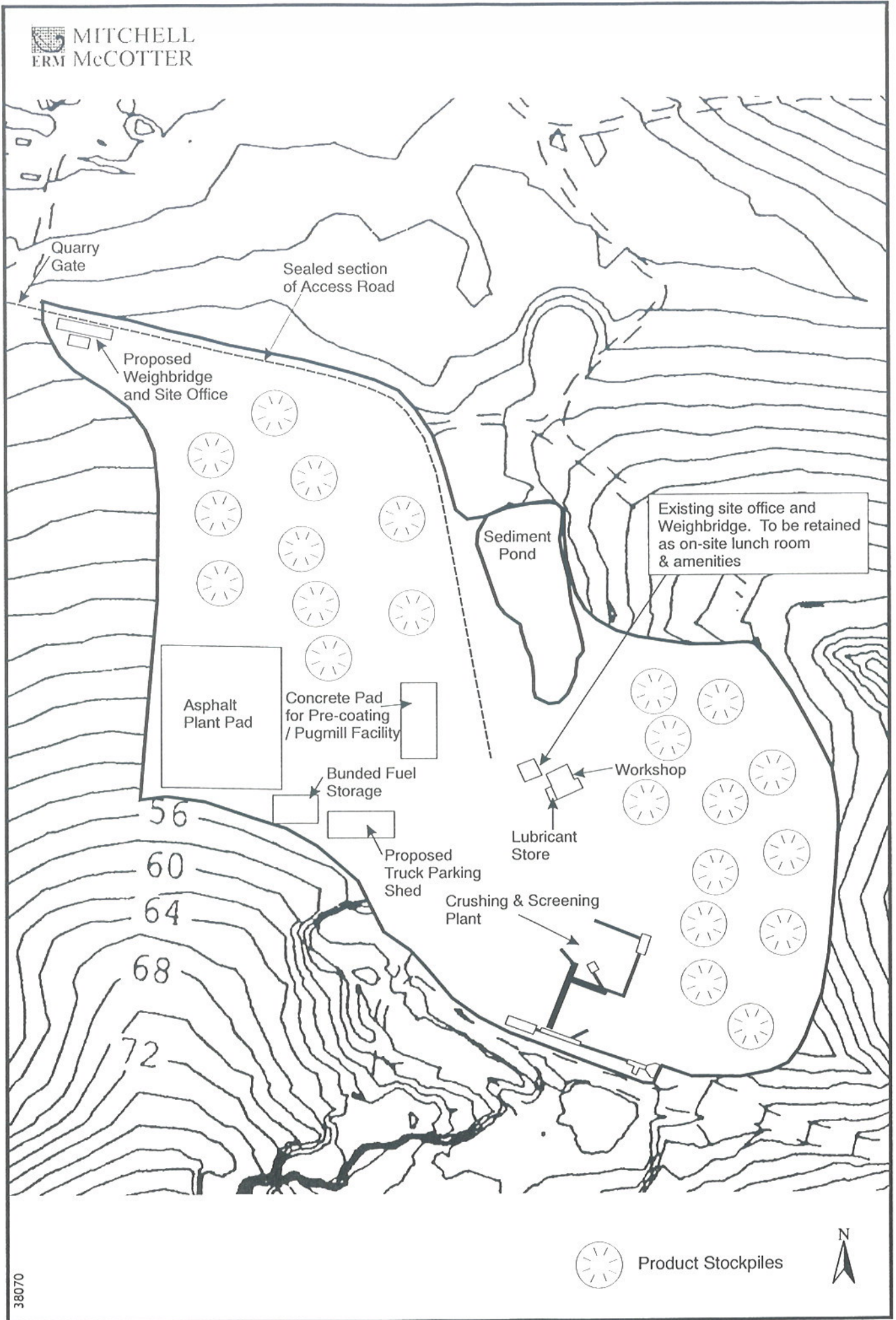
Steps necessary to achieve these aims are detailed in the following sections.

### 3.6 QUARRY DEVELOPMENT

The main haul roads to the upper benches have been established on the eastern side of the existing quarry. To avoid disrupting these for as long as possible it is proposed to initially quarry to the west.

Existing benches have been developed at 12 m heights and it is proposed to continue with 12 m separation down to RL 50. From this level it is proposed to develop two 15 m high benches. Using the following criteria, a four stage development schedule has been developed.

- terminal bench width of half the face height;
- final face angle of 75°;



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Figure 3.5 SITE FACILITIES AREA

Scale: 1:550,000