



BGC Voyager Quarry II Project

Extractive Industries Licence
Renewal Application

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April 2019

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1. Introduction

1.1 Proponent

BGC (Australia) Pty Ltd (the Proponent) trading as BGC Quarries is applying to renew its current Extractive Industries Licence which is due to lapse on 30th June 2019 (see attachment 1).

1.2 Background

BGC (Australia) Pty Ltd (referred to hereafter as BGC) is one of Australia's largest privately owned group of companies. It is a major supplier of granite rock in Western Australia. BGC's other interests include:

- Design and construction of residential and commercial buildings;
- Construction, manufacturer and supplier of a range of building products;
- Contract Mining;
- Civil engineering construction and maintenance;
- Cement products;
- A national road transport/hauling service;
- Property ownership and management; and
- Insurance.

BGC has been operating the Voyager II quarry on Lot 100 (formally Lot 14), Horton Road, since 2010 providing crushed granite for the manufacture of concrete, road base and other building products. The Voyager II Quarry plant has a nominal rated throughput of approximately 3,130,000 tonnes per annum (tpa) which provides 35-40% of the crushed rock required by building and construction industries in the Perth Metropolitan Region and surrounding areas.

The Voyager II Quarry comprises an open pit, a crushing plant, noise attenuation bunds, product stockpiles, a workshop and office facilities. Access to the site is via an asphalted road from Great Southern Highway.

In December 2018 the old Voyager I Quarry was purchased by BGC and Lot 14 and part of Lot 7 have been amalgamated into the new Lot 100 (see attachment 2).

1.3 Environmental Licensing

The Voyager II Quarry currently holds a Department of Water and Environmental Regulation (DWER) Licence Number 8415/2010/2 which was issued under Part V of the Environmental Protection Act 1986 (as amended) on 17 March 2016 (see attachment 3). This licence expires on 22nd March 2036.

The Voyager II Quarry went through a rigorous Public Environmental Review (PER), EPA Assessment Number 1413, for the Environmental Protection Agency (EPA) which led to the Minister for the Environment issuing Statement 706 that sets out environmental conditions BGC must comply with (see appendix A). In August 2011 the Minister for the Environment issued Ministerial Statement 872 changing the operating hours, then in April 2013 issued Ministerial Statement 934 removing condition 6, 11 and 17 and replacing condition 12 (see appendix B) of statements 706. Ministerial Statement 934 supersedes Ministerial Statement 872.

In May 2015 the Minister for the Environment removed condition 7.1 of Ministerial Statement 706. The Chairman of the EPA replaced schedule 1 of Ministerial Statement 706 with attachment 2 to Ministerial Statement 706 (see attachment 5).

1.3.1 Changes requested to current Extractive Industries Licence

As part of the renewal of BGC Quarries Extractive Industries Licence, BGC is requesting some changes/amendments to the licence conditions on the basis they have either already been met, duplicate other licence conditions or are technically unable to be complied with given the current wording. The requested changes are rationalised below:

Condition 5:

This condition was set as there was no formal access to the quarry site other than the previous access to the old Voyager I quarry. BGC have since built a new entrance to the Voyager II Quarry which meets the requirements of this condition, therefore condition 6 is obsolete.

Request that condition 6 be deleted.

Condition 8:

The number of residents wanting the survey conducted has dropped from 15 properties in 2003 to 6 at the last survey. This drop is due to the residents expressly stating they do not want the survey done or they have not responded back to requests by BGC to undertake the survey's.

Recently the DWER received a complaint from one of the neighbours, who had expressly stated to BGC that they did not want BGC to conduct the survey, claiming BGC Quarries blasting was causing structural damages to their property (Lot 4, Horton Road). It was concluded by the DWER investigation that the blasting which BGC undertakes has not caused any damage to the property (see attachment 4). This particular property is the second closest to the quarry and is an old house on stumps which has been relocated to its current location.

This condition relies heavily on third party cooperation for technical compliance.

Request that condition 8 be deleted.

Condition 10:

Currently, condition 10 lists management plans that have been closed off under compliance with Ministerial Statement 706/934. Rather than listing the documents that are no longer relevant, or using titles that may change via a review process, BGC would like to broaden the scope but still capture the same intent.

Request that condition 10 be reworded to "The applicant is to comply with the environmental plans which are prepared and approved by the Department of Water and Environmental Regulation under the imposed Ministerial Statement for the Quarry."

The current environmental management plans are available online at <http://www.bgc.com.au/construction-materials/bgc-quarries>

Condition 13:

The planning approval for the quarry is encompassed within the Extractive Industries Licence. Planning approval should be for the life of the quarry and not be constrained by the Extractive Industries Licence, BGC therefore requests that the licence be for the life of the quarry (50+ years) or to be in line with the DWER licence which expires on 22nd March 2036.

Request that condition 13 be deleted and the expiry date of licence be extended beyond the 10-year period as stated in local law.

Condition 14:

The drainage management plan forms part of the surface water management plan which is approved under the Ministerial Statements 706 and 934. A separate one should not be created solely for the Extractive Industries licence

Request that condition 14 be deleted.



Quarries

Condition 15:

This is regulated via condition 7 of Ministerial Statement 706/934 and Attachment 2 of Ministerial Statement 706 (see attachment 5).

Request that condition 15 be deleted.

Condition 16:

Airborne dust is managed under a dust management plan which complies with condition 12 of Ministerial Statement 706 and 934. This management plan is available online (<http://www.bgc.com.au/construction-materials/bgc-quarries>).

Request that condition 16 be deleted.

Condition 19 and 20:

Condition 20 is ambiguous. It should not be for the whole of the Great Southern Highway. Condition 19 adequately addresses any issues relating to damage of the Great Southern Highway caused by the extractive industry.

Request that condition 20 be deleted.

Condition 21:

There are approximately 150 truck movements to and from the quarry each day through the new entrance to Voyager II. The transport routes used to Midland are Great Southern Highway and Great Eastern Highway. Then the northern suburbs are accessed using Reid Highway and the Mitchell Freeway. The distribution centres in the southern suburbs are serviced via Roe Highway, Tonkin Highway and Leach Highway. These are all Main Roads WA approved RAV network routes. All Heavy vehicles operating within WA must comply with Main Roads RAV network, condition 21 just repeats the current these regulations.

Request that condition 21 be deleted.

2. Site Plans and Locations

2.1 Regional Description

The Voyager II Quarry area is located on Lot 100 (formally Lot 14) Horton Road, The Lakes (Avon Location 1881), which is owned by BGC. Lot 100 extends across both the Shire of Northam and the Shire of Mundaring local government areas (figure 2.1).

2.2 Site Description

Since the construction of the Voyager II Quarry on lot 100 Horton Road, BGC has excavated approximately 1-2 million tonnes (approximately 1m thick) of gravel and approximately 12 million tonnes of clay (approximately 12m thick). Voyager II covers approximately 61 hectares of land and is used to produce granite for the manufacturing of asphalt, blocks and bricks, or stockpiles for the purpose of backfilling.

Quarrying of the granite commenced in 2010, and is expected to continue for up to 50-80 years. The pit is currently 7 benches deep (approx. 15m per bench). The conventional drill, blast, load, haul, crushing and screening methods are used in the Voyager II Quarry.

2.3 Current Facility

The Voyager Quarry II site comprises of the following components:

- Two open-pits – Voyager II, currently being mined for granite and Voyager I pit which is used for water storage;
- A crushing and screening plant with a nominal rated throughput of up to 3,130,000 tonnes per annum (tpa) of crushed rock;
- Internal access and haul roads;
- Product stockpile areas;
- 2 water supply dams one of which will become part of the pit as it develops;
- Workshop and fuel storage areas; and
- Offices, amenities, crib room and weigh-bridge.

Current site layout and plans are shown in attachments 6, 7, 8 and 9.

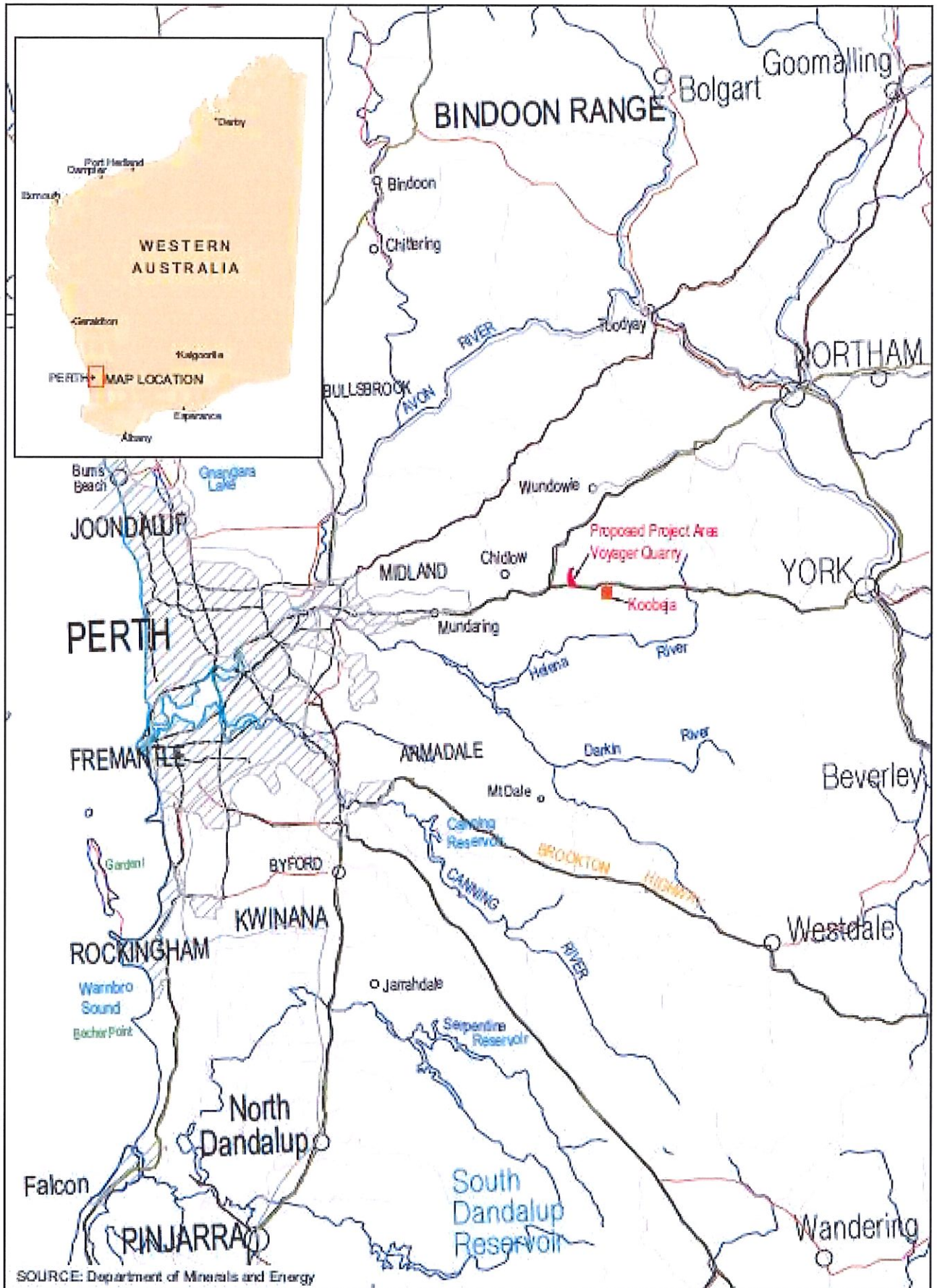


Figure 2.1: Regional Location Map

3. Mine Management Plan

3.1 Pit Design

The Voyager II quarry pit was designed according to results of site-specific geotechnical and hydrogeological investigations. The design took into consideration the slope, stability and the operation of surface machinery. The pit is being developed in stages (figure 3.1) to access the fresh granite and to ensure the pit is mined in a safe, effective and efficient manner. Currently only stage 6 has not been developed.

3.2 Process Description

The Voyager II Quarry uses a conventional three-phase process to produce crushed rock aggregate, as follows:

- Drill and blast;
- Load and haul; and
- Crush and screen.

A process flow chart is provided as Figure 3.2.

3.2.1 Drilling and Blasting

The drill and blast phase commences with the marking out of a predetermined drill pattern on a selected area within the quarry. An average-sized blast consists of approximately 80 to 100 holes. The holes are 102 mm in diameter and are generally 15 m deep (to allow for a 14 m bench height and 1 m for sub-drilling into the floor to provide an even finish on the quarry floor).

A hydraulic drill rig is used to drill the blast holes, which are drilled at a rate of approximately 20 holes per ten-hour shift. On completion of drilling, the depth of the holes is checked and the holes are loaded with explosives. After the safety checks have been completed, the blast is initiated by a shot-firer. The explosives are purchased in bulk from a supplier and delivered to the site on a designated day.

Blasting is conducted approximately once a week. Blasting generally occurs in the middle of the day (1300 hours) and is preceded by a ten minute long siren blast.

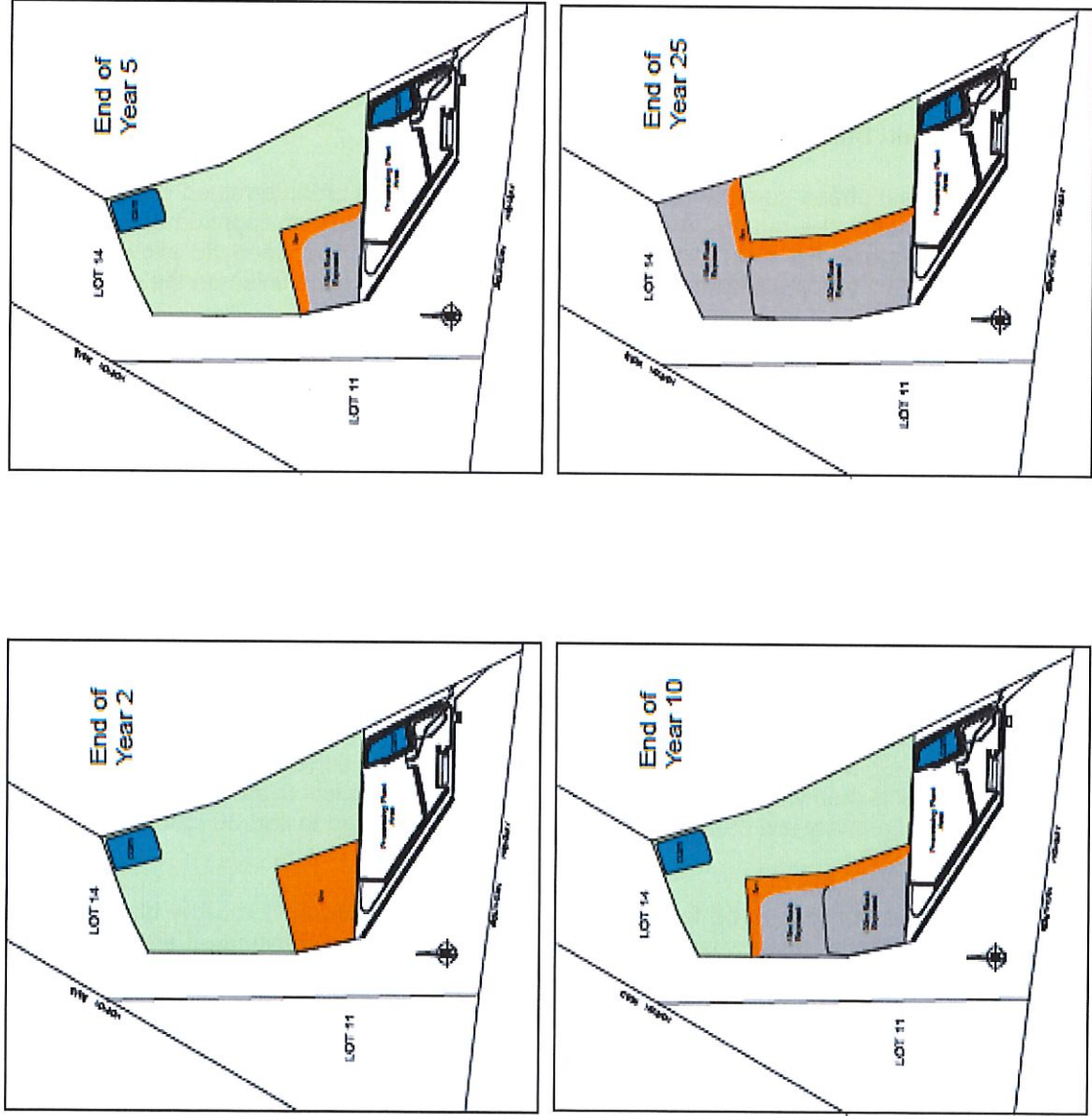
BGC operates a Blast Notification Service for residents within a 3 km radius of the Voyager Quarry. Landowners registered for the services are notified by BGC in advance of upcoming blasting activities.

3.2.2 Loading and Hauling

Following blasting, the blast area is inspected to ensure that all explosives have been fired. The blasted material is then loaded onto 85 tonne dump trucks by an excavator and hauled from the quarry pit to the primary jaw crusher. Three dump trucks are used to cart 30 loads each during a ten-hour shift.

The optimum size of rock to be fed into the primary jaw crusher is <1 m. Any blasted material that is too large for the primary jaw crusher is carted to a separate designated area within the pit to be further broken down by a hydraulic rock breaker. When the oversized rock has been broken down, it is reloaded and carted back to the primary jaw crusher for crushing.

Figure 3.1
Voyager II
Development Plan



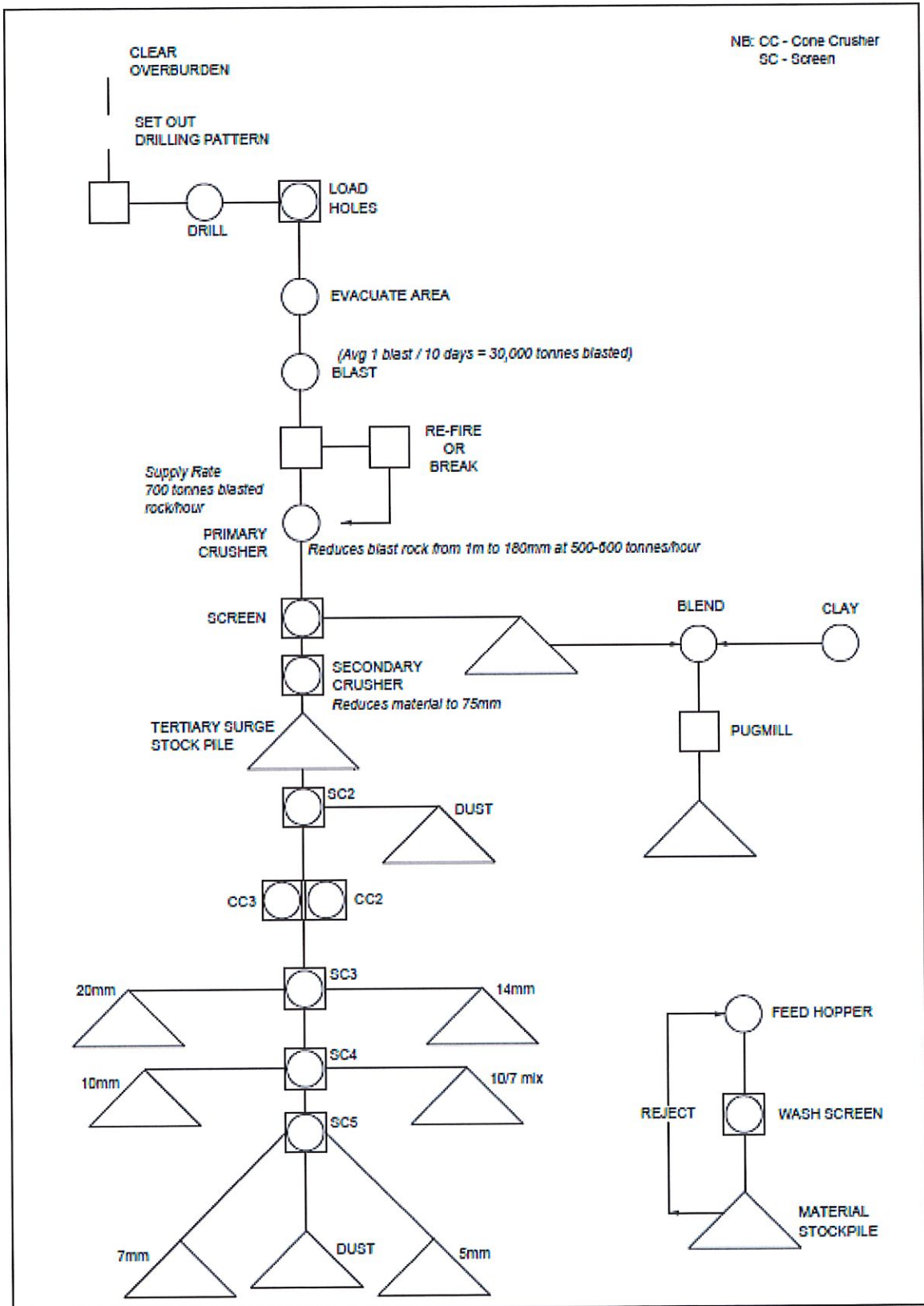


Figure 3.2: Process flow chart

3.2.3 Crushing and Screening

The crushing operation commences at the primary jaw crusher, where the blasted rock is broken down from <1 m to <200 mm at a rate of approximately 1800-2000 tonnes per hour. The crushed rock is then screened to separate out any <20 mm material. This material is stacked for use in making road base product.

Material larger than 20 mm in diameter is passed through a gyratory cone crusher and stacked on a tertiary crushing plant stockpile. This stockpile of material is then fed into a tertiary circuit comprising four gyratory crushers and four sets of vibrating screens. After passing through the four crushers, the material is screened into eight products, as listed below:

- 40 mm ballast – railways foundations;
- 20 mm – concrete and blocks;
- 14 mm – concrete, blocks, asphalt and road sealing;
- 10 mm - concrete, blocks, asphalt and road sealing;
- 7 mm - concrete, blocks, asphalt and road sealing;
- 5 mm - concrete, blocks, asphalt and road sealing;
- Dust - concrete, blocks, asphalt and road sealing; and
- Roadbase – road construction and other foundations.

The rate of end-product production is between 1200 tonnes and 1500 tonnes per hour. When the stockpile areas under the product stackers are full, it is carted to the product stockpile areas using a front-end loader and dump trucks. The products are then transported from site using various road truck configurations.

4. Environment

- All details of drainage conditions applicable to the land are shown in the Voyager II Surface Water Management Plan (see attachment 10).
- Rehabilitation and decommissioning of the void and surrounding area is discussed in the Voyager Closure Management Plan (see attachment 11).
- Measures to be taken to prevent dust lift off and erosion is shown in the Operational Dust Management Plan (see attachment 12).
- A description of measures taken to comply with the *Environmental Protection (Noise) Regulations 1997* is shown in the Noise Management Plan (see attached 13).
- A description of measures to be taken in screening the excavation site and minimising adverse environmental impacts is discussed in the relevant management plans listed above.
- All existing flora and fauna have been cleared from the operational area. Flora and fauna outside the operational area is protected under condition 7 of Ministerial Statement 706.

The rehabilitation and decommissioning of the void and surrounding area is discussed in the attached Voyager Closure and Rehabilitation Strategy Management Plan. Due to the length of the life of the quarry, a final Voyager Closure and Rehabilitation Strategy Management Plan will be submitted 5 years before the closure of the quarry which will finalise the plans for the decommissioning, rehabilitation and potential use of the void.

4.1 Environmental Reporting

Environmental, occupational health and safety reporting occur to meet all EPA, DWER, DMIRS (Department of Mines, Industry Regulations and Safety) and legislative requirements.

4.2 Incidents and Complaints

All incidents are recorded and investigated where appropriate. Corrective and preventative actions are implemented and depending on the severity of the incident, external regulatory authorities will be notified.

During operation of the Voyager II Quarry, BGC has received complaints directly from the local community and indirectly through the Shire of Northam and the DWER. All external complaints are recorded and actioned in an appropriate manner.

Appendix A - Ministerial Statement 706



Statement No.

MINISTER FOR THE ENVIRONMENT; SCIENCE

000798

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

VOYAGER QUARRY
LOTS 11 & 14, HORTON ROAD, THE LAKES
AVON LOCATION 1881
SHIRE OF NORTHAM

Proposal: The development and operation of a quarry incorporating excavation of approximately 60 million tonnes of hard rock, approximately 2 million tonnes of gravel and approximately 12 million tonnes of clay from the quarry footprint. The total area of disturbance will be up to 85 hectares, as documented in schedule 1 of this statement.

Proponent: BGC (Australia) Pty Ltd

Proponent Addresses:
BGC (Australia) Pty Ltd
ABN 62005736005
Lot 4 Stirling Crescent
HAZELMERE WA 6055

Assessment Number: 1413

Report of the Environmental Protection Authority: Bulletin 1169

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions and procedures of this statement.

Published on

16 DEC 2005

2 Proponent Commitments

- 2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

3 Proponent Nomination and Contact Details

- 3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

- 4-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

1. the environmental factors of the proposal have not changed significantly;
2. new, significant, environmental issues have not arisen; and
3. all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit and Performance Review

5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;
2. evidence of compliance with the conditions and commitments; and
3. the performance of the environmental management plans and programmes.

5-2 The proponent shall prepare a performance review program and submit annual performance review reports to the Department of Environment which address:

1. the major environmental issues associated with the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives;
2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology;
3. significant improvements gained in environmental management, including the use of external peer reviews; and
4. the proposed environmental objectives for the operations, including improvements in technology and management processes.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance and performance review documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

6 Operating Hours

6-1 Activities relating to quarrying, crushing and screening shall only be undertaken between the hours of 0700 and 1900 on weekdays which are not public holidays and between the hours of 0700 and 1330 on Saturdays. Activities relating to quarrying, crushing and screening must not be carried out on Sundays, public holidays or outside the permitted hours of operation required by this condition.

7 Protection of Bushland

- 7-1 The proponent shall not clear or otherwise disturb native bushland on Lot 11 Horton Road, nor clear or otherwise disturb native bushland on Lot 14 Horton Road outside the 85 hectare operational boundary marked on Figure 2.
- 7-2 The proponent shall fence the perimeter of Lot 11 and Lot 14 Horton Road, and the perimeter of the operational boundary shown on Figure 3, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management.
- 7-3 Throughout the entire life of the quarry, the proponent shall maintain the fencing referred to in condition 7-2 in good condition, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management.

8 Fauna Relocation and Habitat

- 8-1 Prior to clearing of vegetation or excavation of soil or rock in any area, whichever is the sooner, the proponent shall prepare a Fauna Relocation and Habitat Plan in consultation with the Department of Conservation and Land Management, to the requirements of the Minister for the Environment.

This Plan shall detail actions to relocate fauna to a place which reasonably approximates their existing habitat, and shall address relocation of the following fauna species:

- Brush-tailed Phascogale (*Phascogale tapoatafa*);
- Western Brush Wallaby (*Macropus irma*);
- Carpet Python (*Morelia spilota imbricata*);
- Dell's Skink (*Ctenotus delli*);
- Echidna (*Tachyglossus aculeatus*);
- Chuditch (*Dasyurus geoffroi*);
- Possums of any species; and
- Western Grey Kangaroo (*Macropus fuliginosus*).

This plan shall also address the salvage and relocation of tree hollows and habitat logs to provide habitats for fauna species.

- 8-2 The proponent shall implement the Fauna Relocation and Habitat Plan, required by condition 8-1, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management.
- 8-3 The proponent shall make the Fauna Relocation and Habitat Plan, required by condition 8-1, publicly available.

9 Restricted Area and Management of Trapdoor Spiders

- 9-1 Subject to condition 9-2, no ground-disturbing activity shall occur in the area designated A on Figure 2.
- 9-2 Where the proponent demonstrates to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority that:
- a) a similar sized population of the trapdoor spider present on Lots 11 and 14 Horton Road is present on other land; or
 - b) the remaining population of trapdoor spiders located on Lot 11 Horton Road and the portions of Lot 14 Horton Road to remain undisturbed will remain viable if the individuals located within Area A are removed; or
 - c) the population can be successfully translocated to the wild,
- then ground-disturbing activity may occur in Area A.
- 9-3 Prior to clearing of vegetation or excavation of soil or rock, the proponent shall prepare an Interim Trapdoor Spider Management Plan to ensure the protection of trapdoor spiders located within Area A from indirect impacts from quarrying activities.

10 Closure and Rehabilitation

- 10-1 Prior to clearing of vegetation or excavation of soil or rock, whichever is the sooner, the proponent shall prepare a Closure and Rehabilitation Strategy, to the requirements of the Minister for the Environment.

The objective of this Strategy is to ensure that closure planning and rehabilitation are carried out as an integral part of quarry planning, development and operation.

The Strategy shall be consistent with the "Strategic Framework for Mine Closure (2000)" produced by the Minerals Council of Australia and the Australian and New Zealand Minerals and Energy Council, and shall:

1. detail the rehabilitation practices and timing of rehabilitation of all disturbed areas including stockpiles, overburden disposal areas, access roads, quarry pits and sumps;
2. detail the rehabilitation work to be undertaken in conjunction with site operations;
3. address rehabilitation of areas already cleared which do not form part of the operational footprint; and
4. incorporate a Visual Impact Strategy formulated to manage, ameliorate and screen visual impacts of the operations, including impacts from artificial lighting.

- 10-2 The proponent shall implement the Closure and Rehabilitation Strategy required by condition 10-1 and any subsequent updates as required by condition 10-3, to the requirements of the Minister for the Environment.
- 10-3 The proponent shall review and update the Closure and Rehabilitation Strategy required by condition 10-1 every five years, and shall include the outcomes of consultation with the owners and residents of land surrounding the project area to the requirements of the Minister for the Environment.
- 10-4 The proponent shall make the Closure and Rehabilitation Strategy required by condition 10-1 publicly available.

11 Ambient Dust Standard

- 11-1 The proponent shall ensure that dust emissions from Lot 14 do not exceed an ambient PM₁₀ level of 50 micrograms per cubic metre averaged over a 24 hour period when measured at the property boundary.

12 Dust Monitoring and Remedial Action

- 12-1 Prior to clearing of vegetation or excavation of soil or rock, whichever is the sooner, the proponent shall prepare a Dust Monitoring and Remedial Action Programme, to the requirements of the Minister for the Environment.

The objective of this Programme is, by monitoring dust concentrations, to ensure that dust associated with all operations (including land clearing, excavation, blasting, dust lift-off from stockpiles and general operational activities such as screening, crushing and transport) which emanates from and leaves the site complies with the standard prescribed in condition 11-1.

This Programme shall include but not be limited to:

1. continuous dust and meteorological monitoring;
 2. ambient dust monitoring at two or more Sensitive Sites in the vicinity of the quarry (See note 1, condition 17.);
 3. a reporting schedule for monitoring data and results;
 4. improvements to monitoring and reporting; and
 5. remedial action to be undertaken to prevent exceedances if the dust source is within the proposal area, or the dust arises from operational activities (including vehicular movements).
- 12-2 The proponent shall implement the Dust Monitoring and Remedial Action Programme required by condition 12-1 and any subsequent updates as required by condition 12-3.

- 12-3 The proponent shall review and update the Dust Monitoring and Remedial Action Programme required by condition 12-1 annually.
- 12-4 The proponent shall report to the Department of Environment any exceedances of the standard prescribed in condition 11-1.
- 12-5 The proponent shall provide a report to the Department of Environment relating to the exceedances referred to in condition 11-1 within seven days of being recorded, identifying the sources of the dust, and, if the source is within the proposal area, or from operational activities (including vehicular movements) and indicating remedial action undertaken to prevent further such exceedances.
- 12-6 The proponent shall make the Dust Monitoring and Remedial Action Programme required by condition 12-1 publicly available.

13 Ground and Surface Water

- 13-1 Prior to clearing of vegetation or excavation of soil or rock, whichever is the sooner, the proponent shall prepare a Ground and Surface Water Monitoring and Remedial Programme, to the requirements of the Minister for the Environment.

The objective of this Programme is to monitor groundwater levels adjacent to the quarry, and the quantity and quality of surface water leaving the site to ensure that the operations are not resulting in a reduction of water levels of existing bores of neighbours or any significant decline in the quality of waters downstream of the quarry, and to define management actions and contingency measures to be implemented in the event of adverse impacts on the water levels of bores or salinity in downstream waters caused by quarry and associated operations.

This Programme shall:

1. be designed and implemented in a manner which is capable of identifying any adverse impacts from quarrying and associated activities on surface and groundwater in the vicinity of the proposal;
2. incorporate separate monitoring for surface water and groundwater;
3. identify key monitoring locations;
4. identify water quality criteria and limits to be met;
5. identify baseline levels for groundwater supplies on adjacent properties;
6. include a monitoring schedule;
7. include a reporting schedule; and

8. define management actions and contingency measures to be implemented in the event of adverse impacts on the water levels of bores or water quality in downstream waters caused by quarry and associated operations.
- 13-2 The proponent shall implement the Ground and Surface Water Monitoring and Remedial Programme required by condition 13-1 and any subsequent updates as required by condition 13-6.
- 13-3 The proponent shall ensure that water quality criteria and limits identified within the Ground and Surface Water Monitoring and Remedial Programme are not exceeded.
- 13-4 The proponent shall report any exceedance of the limits identified within the Ground and Surface Water Monitoring and Remedial Programme to the Department of Environment within 24 hours of being observed.
- 13-5 The proponent shall provide a report to the Department of Environment relating to the exceedances referred to in condition 13-4 within seven days of being recorded, identifying the sources of the exceedance within the proposal area and indicating remedial action undertaken to prevent further such exceedances.
- 13-6 The proponent shall review and update the Ground and Surface Water Monitoring and Remedial Programme required by condition 13-1 annually.
- 13-7 The proponent shall make the Ground and Surface Water Monitoring and Remedial Programme required by condition 13-1 publicly available.

14 Management of Topsoil

- 14-1 The proponent shall not stockpile overburden and topsoil onsite except in exceptional circumstances.

Note: "Stockpiling" means placement and storage of materials for periods of two weeks or more. Exceptional circumstances may include instances where vehicles and plant are not available to relocate stored material, or instances when inclement weather prevents the handling and/or transport of stored material.

15 Noise from Vegetation Clearing and Site Preparation

- 15-1 Prior to clearing of vegetation or excavation of soil or rock from any area (to a maximum depth of five metres), whichever is the sooner, the proponent shall prepare an Area-Specific Noise Management Plan to the requirements of the Minister for the Environment.
- 15-2 The proponent shall implement Area-Specific Noise Management Plans required by condition 15-1 and any subsequent updates as required by condition 15-3.

15-3 The proponent shall review and update the Area-Specific Noise Management Plans required by condition 15-1 annually, until completion of the particular area referred to in condition 15-1.

15-4 The proponent shall only carry out clearing of vegetation and excavation activities between 0700 hours and 1900 hours on any day which is not a Saturday, Sunday or a public holiday. The proponent may not carry out clearing of vegetation or excavation on Saturdays, Sundays, or public holidays or between the hours of 19:00 hours and 07:00 hours.

15-5 The proponent shall undertake a programme of noise quantification (incorporating modelling of predicted noise levels prior to commencement of clearing of vegetation and excavation of soil) and verification through noise monitoring for each stage of vegetation clearing and excavation activities, to the requirements of the Minister for the Environment.

15-6 The proponent shall ensure that the level of noise emissions associated with clearing of vegetation or excavation of soil or rock from any area to a maximum depth of five metres, when determined at any point that is within 15 metres of a residence on a noise-sensitive premises in accordance with regulation 7(3) of the *Environmental Protection (Noise) Regulations 1997*, does not exceed the following noise limits:

- 55dB(A) for more than 10 per cent of any one-hour period; and
- 70dB(A) at any time,

when measured as $L_{A \text{ slow}}$ values in accordance with Part 3 of the *Environmental Protection (Noise) Regulations 1997*.

15-7 During clearing of vegetation or excavation of soil or rock from any area to a maximum depth of five metres, whichever is the sooner, the proponent shall report to the Department of Environment within 24 hours of the recording of any exceedances of the noise limits specified in condition 15-6.

15-8 During clearing of vegetation or excavation of soil or rock from any area to a maximum depth of five metres, whichever is the sooner, upon identifying any exceedances of the noise limits specified in condition 15-6, the proponent shall provide a report within seven days of exceedances being recorded to the Department of Environment on the source/reason for the exceedance, remedial actions undertaken or intended to prevent further such exceedances.

15-9 The proponent shall make the Area-Specific Noise Management Plans required by condition 15-1 publicly available.

16 Operational Noise

16-1 Prior to any excavation works below five metres depth from the surface, the proponent shall prepare an Operational Noise Measurement Programme to ensure that all noise

from the quarry is measured in accordance with Part 3 of the *Environmental Protection (Noise) Regulations 1997*.

- 16-2 The proponent shall implement the Operational Noise Measurement Programme required by condition 16-1 and any subsequent updates as required by condition 16-3.
- 16-3 The proponent shall review and update the Operational Noise Measurement Programme required by condition 16-1 annually.
- 16-4 The proponent shall utilise that form of safety alarm on items of equipment which produces the least noise whilst complying with all statutory requirements, particularly safety requirements.
- 16-5 The proponent shall report any exceedances of the *Environmental Protection (Noise) Regulations 1997*, aside from those which meet the requirements of condition 15-6, to the Department of Environment within 24 hours of exceedances being recorded.
- 16-6 Upon identifying any exceedances of the *Environmental Protection (Noise) Regulations 1997*, aside from those which meet the requirements of condition 15-6, the proponent shall provide a report, within seven days of exceedances being recorded, to the Department of Environment on the source/reason for the exceedance, remedial actions undertaken or intended to prevent further such exceedances.
- 16-7 The proponent shall make the Noise Measurement Programme required by condition 16-1 publicly available.

17 Ground Vibration Levels

- 17-1 The proponent shall measure for each blast, the peak particle velocity (in millimetres per second) in the ground at a measurement point on two or more "Sensitive Sites", to the requirements of the Minister for the Environment (See Note 1 below).

Measurements of ground vibration levels shall be undertaken at points which are at a distance of at least the longest dimension of the foundations of a building or structure away from the building or structure, and between that building or structure and the blasting site.

- 17-2 The proponent shall ensure that the ground vibration generated by any blast does not exceed 10 millimetres per second peak particle velocity at any sensitive premises.
- 17-3 The proponent shall ensure that not more than one blast in any ten consecutive blasts (regardless of the interval between each blast) generates ground vibration which exceeds 5 millimetres per second peak particle velocity at any sensitive premises.
- 17-4 In the event that ground vibration levels in excess of the levels referred to in conditions 17-2 or 17-3 are recorded, the proponent shall notify the Department of Environment within six hours of the exceedance being recorded.

17-5 Within seven days following the levels referred to in conditions 17-2 or 17-3 being recorded, the proponent shall submit a report to the Department of Environment outlining the reasons for the levels being exceeded, and what steps are proposed to prevent recurrence.

Notes:

1. A "Sensitive Site" is defined as including any land within 10 metres of a residence, hospital, school or other premises in which people could reasonably be expected to be free from undue annoyance and nuisance caused by blasting.
2. The transducer is to be attached to the surface in accordance with AS2187.2.
3. "Peak Particle Velocity" is the instantaneous sum of the velocity vectors (measured in millimetres per second) of the ground movement caused by the passage of vibration from blasting.

18 Blast and Vibration Management Plan

18-1 Prior to clearing of vegetation or excavation of soil or rock, whichever is the sooner, the proponent shall prepare a Blast and Vibration Management Plan to the requirements of the Minister for the Environment.

The objective of this Plan is to manage blasting activities to prevent unacceptable impacts on the amenity of nearby residents.

The Plan shall:

1. detail blast management and monitoring procedures at the quarry; and
2. identify communication procedures with local residents with respect to blasting.

18-2 The proponent shall implement the Blast and Vibration Management Plan required by condition 18-1 and any subsequent updates as required by condition 18-3.

18-3 The proponent shall review and update the Blast and Vibration Management Plan required by condition 18-1 annually and include the outcomes of consultation with the owners and residents of land surrounding the project area.

18-4 The proponent shall make the Blast and Vibration Management Plan required by condition 18-1 publicly available.

19 Community Liaison Group

19-1 Prior to the finalisation of plans, strategies and programmes required by conditions 8-1, 9-3, 10-1, 12-1, 13-1, 15-1, 16-1 and 18-1, the proponent shall make reasonable endeavours to establish a Community Liaison Group to the requirements of the Minister for the Environment.

- 19-2 The objective of the Community Liaison Group is to provide a forum for consultation on matters relating to the planning, construction and operation of the proposal.
- 19-3 The Community Liaison Group shall be chaired by an independent person approved by the Minister for the Environment.
- 19-4 The proponent shall provide funding to cover the cost of work carried out by the approved chairperson as part of his/her role as chair of the Community Liaison Group.
- 19-5 Membership of the Community Liaison Group shall include representatives of:
- Local residents and landowners;
 - Local government authorities; and
 - Government agencies, including the Department of Environment.

Procedures

- 1 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.
- 2 Where a condition lists advisory bodies, it is expected that the proponent will request the advice of those listed as part of its compliance reporting to the Department of Environment.
- 3 During the course of the operation of the project, in conjunction with the preparation of any plans, programmes, strategies or reports required under this statement, the proponent shall enquire of the local authority as to any matters raised by third parties with the local authority to the effect that the operation of the project has caused harm to the environment which exceeds any of the levels or standards required to be met under the conditions of this statement, and shall demonstrate in the relevant plan, program strategy or report that the proponent has responded reasonably to such matters.

Notes

1. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.
2. The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT; SCIENCE

16 DEC 2005

Schedule 1

The Proposal (Assessment No. 1413)

The proposal is to undertake the development and operation of the Voyager Quarry in The Lakes, covering an area of approximately 85 hectares in the Shire of Northam. This proposal is also essentially a relocation to the west of the proponent's existing quarry at The Lakes, located on Great Southern Highway, to Lot 14 Horton Road (Avon Location 1881).

The development and operation of a quarry incorporating excavation of approximately 16 million tonnes of hard rock, approximately 2 million tonnes of gravel and approximately 12 million tonnes of clay from the quarry footprint. This will allow for approximately 50 million tonnes of granite to be excavated from the site over a 50-year period. The quarry footprint itself covers an area of approximately 59 hectares. Conventional drilling and blasting, loading and hauling, crushing and screening methods will be employed.

It is expected that the project's development will occur in six stages over the life of mine, with Stage 1 and Stage 2 being initially developed to provide room for the new below-ground facilities and infrastructure. Subsequent stages will then be developed as the need to access granite resources arises. The staged approach will ensure that excavation of the topsoil and subsoil (gravel and clay) will only occur on six occasions during the life of the mine, thereby enabling progressive rehabilitation. All infrastructure, crushing and screening plants and product stockpiles will be housed below ground level, and the site will be surrounded by a buffer of trees and vegetation.

A package of environmental offsets has been developed which seeks to permit revegetation and protection of approximately 170 hectares of land, as well as provide protection for further remnant vegetation managed by the Department of Justice.

The offsets package includes:

- The covenanting of approximately 120 hectares of native vegetation in good condition, held as freehold by the proponent. This should include the rehabilitation of the areas of native vegetation on the freehold land outside the proposed operational footprint, previously cleared by the proponent;
- The provision of up to 15 kilometres of fencing materials to the Department of Justice, to protect remnant vegetation and the Wooroloo Brook on land managed as prison farms; and
- The rehabilitation of approximately 60 hectares of gravel pits and other degraded lands within the region, managed by Local and State Government agencies to a standard agreed with the Department of Conservation and Land Management and the Department of Environment.

The key characteristics of the proposal are listed in Table 1 below.

Table 1 - Key Proposal Characteristics (Assessment No. 1413)

Element	Description
Type of Project	Hard rock quarry
Project Life	Approximately 50 years
Rate of Extraction	6,000 to 10,000 tonnes per day
Extraction Method	Conventional drilling, blasting, loading and hauling techniques
Location of Crushing and Screening Operations	Within the quarry pit, approximately 30 metres below the ground surface
Crushing and Screening Equipment	New equipment to be utilised onsite, incorporating improved pollution controls. Primary crusher will be housed within a noise reduction structure.
Final Quarry Dimensions	Length approximately 900 metres Width approximately 450 metres Depth approximately 50 metres
Footprint of Quarry pit	Approximately 59 hectares
Footprint of all Disturbances	Approximately 85 hectares
Quarry Operating Hours	0700 hours to 1900 hours during land clearing and excavation activities on any day which is not a Saturday, Sunday or Public Holiday <u>Normal Operating Times</u> 0700 hours to 1900 hours Monday to Friday 0700 hours to 1330 hours Saturday Note: No quarrying activities will be carried out on Sundays, public holidays or outside the permitted hours of operation as outlined above.
Major Components	Quarry Product Stockpiles Water Storage Dam Infrastructure (including processing plant, administration buildings, workshop and roads)
Water Storage Dam Capacity	150,000 kilolitres (kL)
Water Supply Source	Surface runoff and groundwater seepage
Average Daily Water Requirements	Summer - Approximately 380 kilolitres Winter - Approximately 780 kilolitres
Maximum Annual Water Requirements	Approximately 95,000 kL
Anticipated Quarry Yield	Gravel 1 to 2 million tonnes Clay 12 million tonnes approximately Hard rock 60 million tonnes approximately
Offsets Package	<ul style="list-style-type: none"> The covenanting of approximately 120 hectares of native vegetation in good condition, held as freehold by the proponent, including the rehabilitation of the areas of native vegetation on the freehold land outside the proposed operational footprint, previously cleared by the proponent. Provision of not less than 15 kilometres of fencing to protect remnant vegetation on land managed by the Department of Justice. Rehabilitation of approximately 60 hectares of gravel pits and other degraded lands.

Figures (attached)

Figure 1 – Regional setting

Figure 2 – Proposed Relocation of the Voyager Quarry.

Figure 3 – Areas of Lot 11 and Lot 14 Horton Road to be fenced.

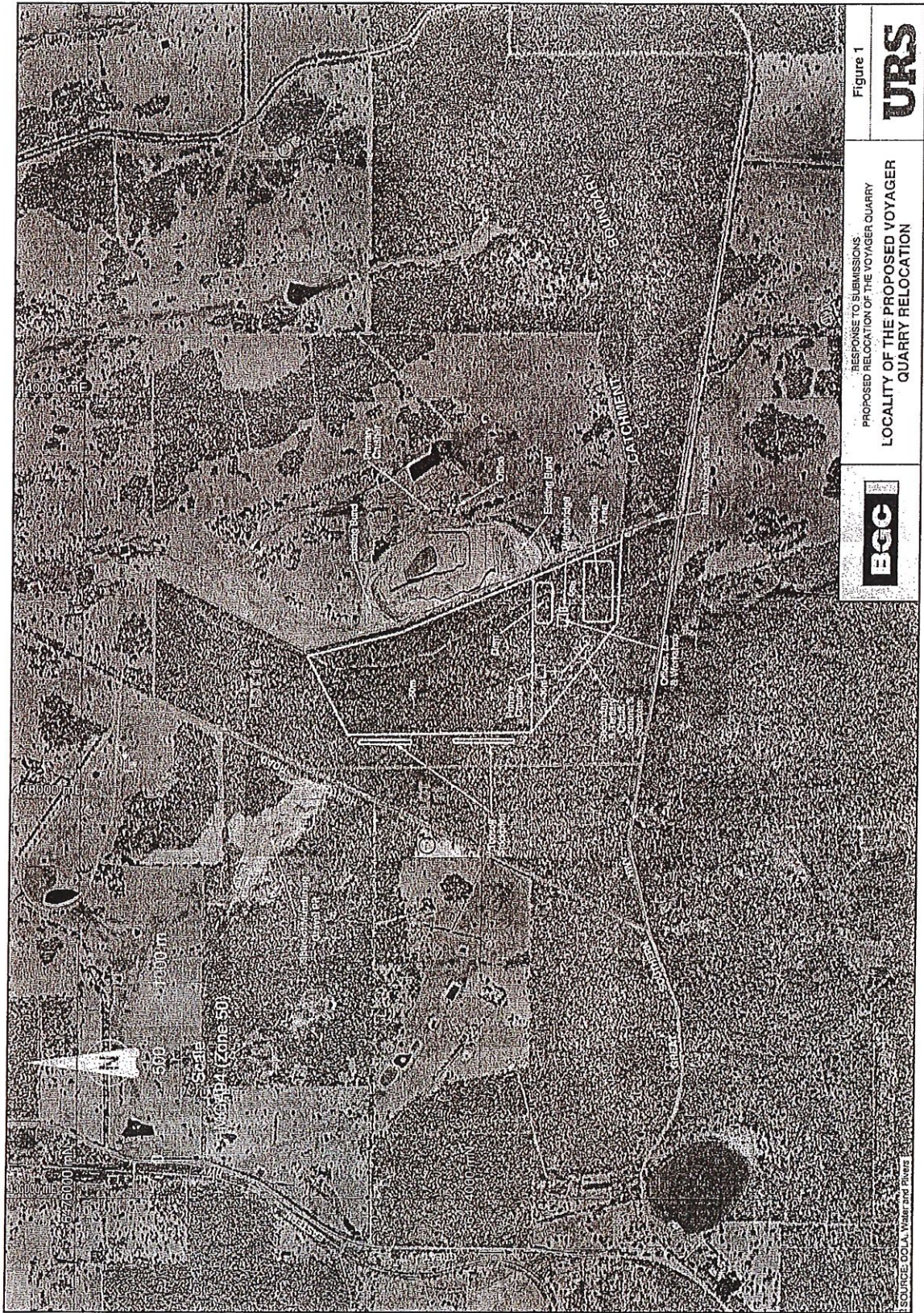
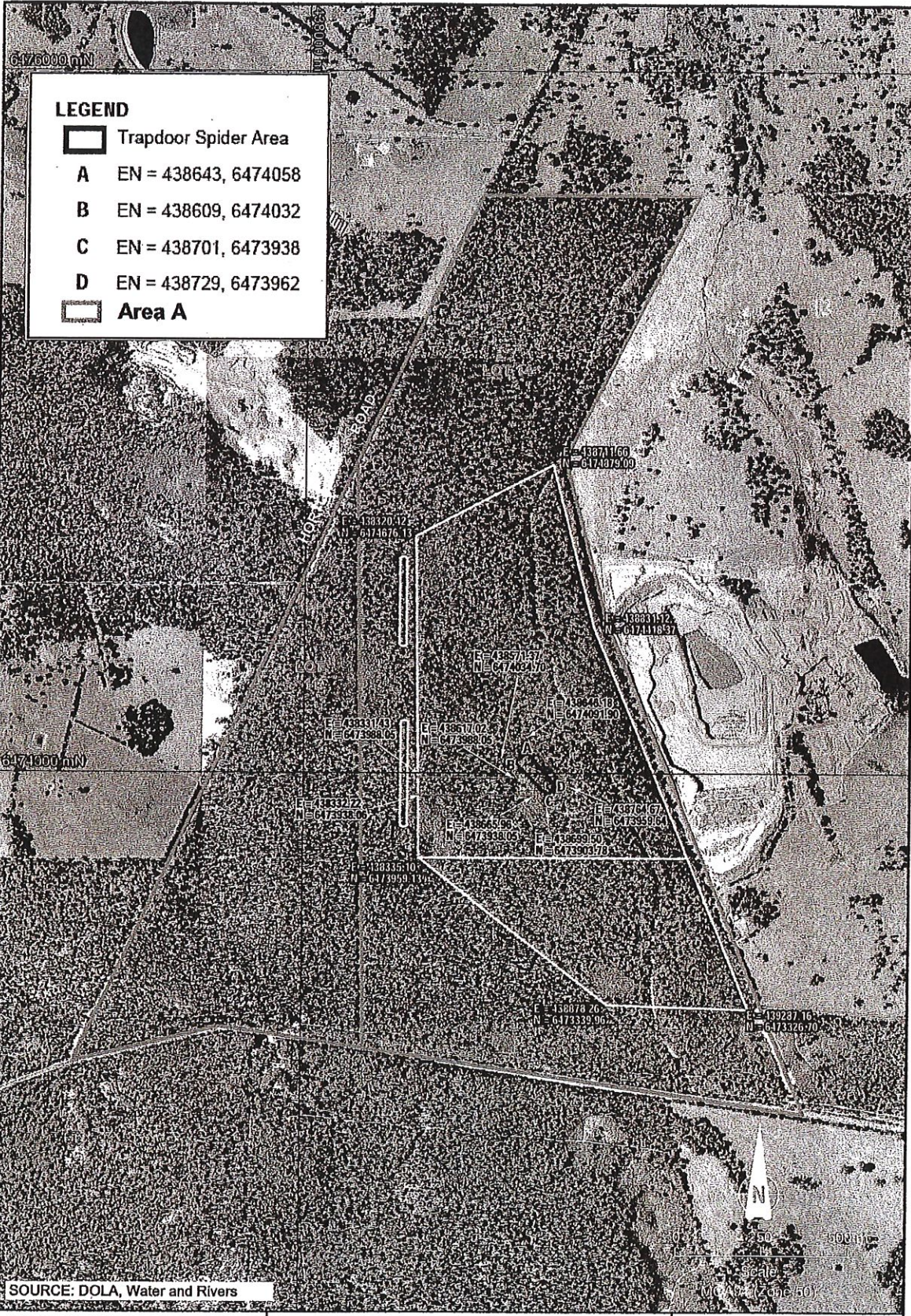


Figure 1 Regional setting



LEGEND

- Trapdoor Spider Area
- A** EN = 438643, 6474058
- B** EN = 438609, 6474032
- C** EN = 438701, 6473938
- D** EN = 438729, 6473962
- Area A**

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SOURCE: DOLA, Water and Rivers



PROPOSED RELOCATION OF THE VOYAGER QUARRY

Figure 2

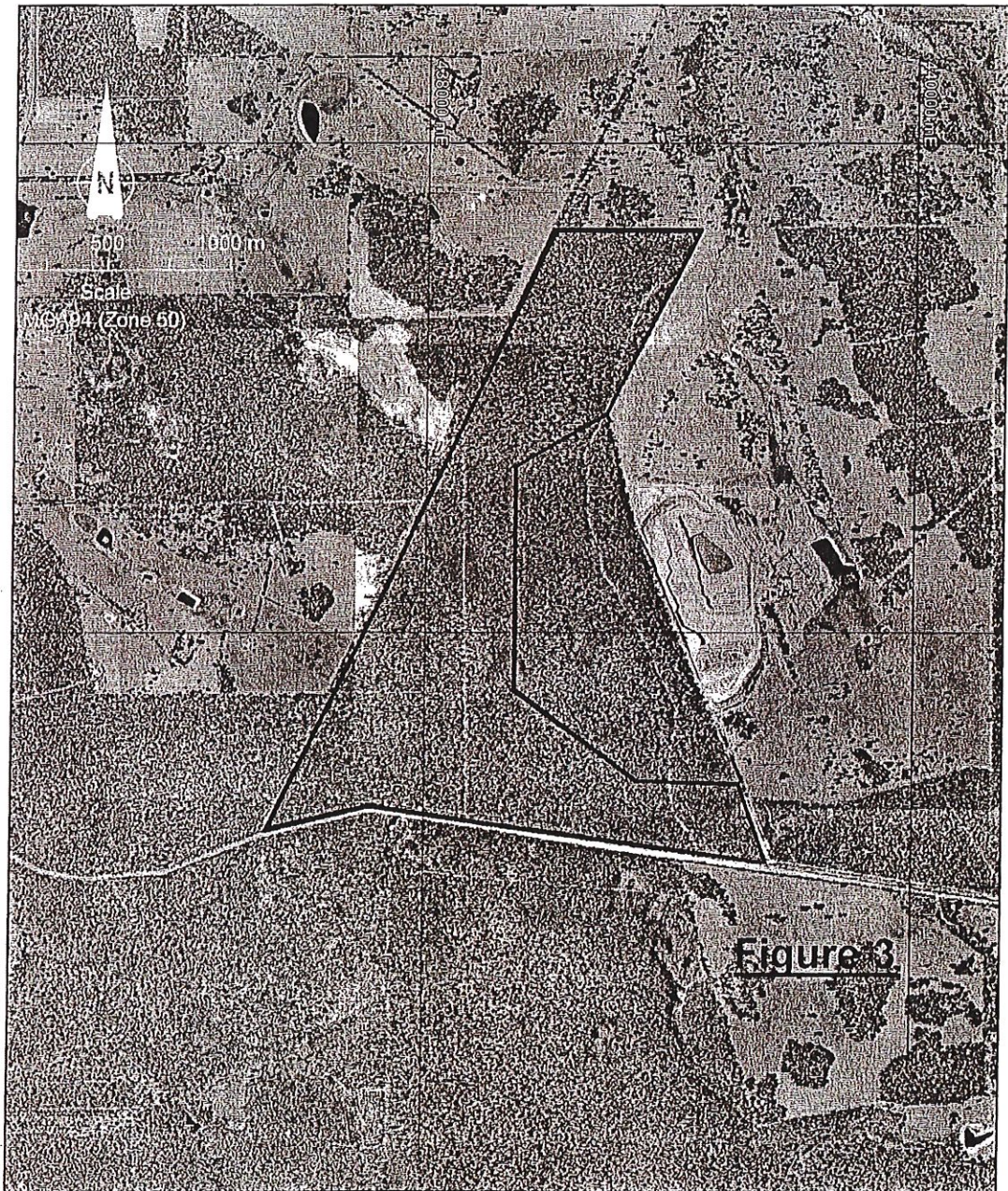


Figure 3: Areas of Lot 11 and Lot 14 Horton Road to be fenced

Proponent's Environmental Management Commitments

May 2005

VOYAGER QUARRY
LOTS 11 & 14, HORTON ROAD, THE LAKES
AVON LOCATION 1881
SHIRE OF NORTHAM

(Assessment No. 1413)

BGC (Australia) Pty Ltd

Proponent's Environmental Management Commitments – May 2005

Voyager Quarry, Lots 11 & 14 Horton Road, The Lakes, Avon Location 1881, Shire of Northam (Assessment No. 1413)

Note: The term "commitment" as used in this schedule includes the entire row of the table and its separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

No.	Topic	Objective	Action	Timing	Advice
1.	Protection and revegetation of areas of remnant vegetation	To increase the area of remnant vegetation within conservation reserves, and to provide suitable rehabilitation for areas of land already subject to disturbance	<p>1. The covenantee of approximately 120 hectares of native vegetation in "good" condition, held as freehold by the proponent, including the rehabilitation of the areas of native vegetation on the freehold land outside the proposed operational footprint, previously cleared by the proponent</p> <p>2. The provision of not less than 15 kilometres of fencing to the Department of Justice (DOJ), to protect 100 to 150 hectares of remnant vegetation and the Woolooloo Brook on land managed by DOJ as prison farms.</p> <p>3. The rehabilitation of approximately 60 hectares of gravel pits and other degraded lands managed by Local and State Government agencies.</p>	<p>Prior to clearing vegetation or excavating soil or rock from any area, whichever is sooner.</p> <p>Programmes of work to address the revegetation of the remaining areas of land should commence within 12 months after approval for the Voyager Quarry is given.</p> <p>Programmes of work to address the revegetation of the remaining areas of land should commence within 12 months after approval for the Voyager Quarry is given.</p>	<p>CALM</p> <p>CALM DOJ</p> <p>CALM</p>

Abbreviations:

- CALM = Department of Conservation & Land Management
- DOJ = Department of Justice
- DRF = Declared Rare Flora
- PER = Public Environmental Review

Appendix B – Ministerial Statement 934

THIS DOCUMENT

This document has been produced by the Office of the Appeals Convenor as an electronic version of the original Statement for the proposal listed below as signed by the Minister and held by this Office. Whilst every effort is made to ensure its accuracy, no warranty is given as to the accuracy or completeness of this document.

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Published on: 29 April 2013

Statement No: 934

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

**VOYAGER QUARRY, LOTS 11 AND 14 HORTON ROAD, THE LAKES,
AVON LOCATION 1881, SHIRE OF NORTHAM**

Proposal: The development and operation of a quarry incorporating excavation of approximately 60 million tonnes of hard rock, approximately 2 million tonnes of gravel and approximately 12 million tonnes of clay from the quarry footprint. The total area of disturbance will be up to 85 hectares, documented in Schedule 1 of Statement 706.

Proponent: BGC (Australia) Pty Ltd

Proponent Address: BGC Corporate, PO Box 7223, Cloisters Square WA 6850

Assessment Number: 1931

Previous Assessment Numbers: 1413, 1863

Report of the Environmental Protection Authority: 1466

Previous Reports of the Environmental Protection Authority: 1169, 1406

Previous Statement Number: 706, 872

The implementation of the proposal to which the above report of the Environmental Protection Authority relates is subject to the conditions and procedures contained in Ministerial Statement No. 706, as amended by the following:

1. Condition 6 of Statement 706 is deleted.
2. Condition 11 of Statement 706 is deleted.

3. Condition 12 of Statement 706 is deleted, and replaced with:

12-1 Within six months of the date of this statement, the proponent shall prepare a Dust Monitoring and Remedial Action Programme, to the requirements of the CEO*.

The objective of this Programme is to minimise and manage dust emissions emanating from and leaving the proposal site associated with all operations including land clearing, excavation, blasting, stockpiles and general operational activities such as screening, crushing and transport.

12-2 The proponent shall implement the Dust Monitoring and Remedial Action Programme required by Condition 12-1, and any subsequent updates as required by Condition 12-3.

12-3 The proponent shall review and revise the Dust Monitoring and Remedial Action Programme required by Condition 12-1 as required by, or with the approval of, the CEO*.

12-4 The proponent shall make the Dust Monitoring and Remedial Action Programme required by Condition 12-1 publicly available in a manner approved by the CEO*.

4. Condition 17 of Statement 706 is deleted.

5. General Amendments

This Statement supersedes Statement 872.

* The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act* 1986, or his delegate.

[Signed 29 April 2013]

Albert Jacob MLA
MINISTER FOR ENVIRONMENT; HERITAGE