

ENVIRONMENTAL MANAGEMENT
PLAN
Area Specific Noise Management Plan

Overburden Removal
Areas 5 and 6
Specific Acoustic Details

VOYAGER QUARRY
THE LAKES WESTERN AUSTRALIA

Prepared for

BGC (AUSTRALIA) PTY LTD
18 MOUNT STREET
PERTH WA 6000

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MINISTERIAL CONDITIONS: RELOCATION OF VOYGER QUARRY

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Noise Management Plan
Specific Area Clearing
Areas 1&2

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1.0 Introduction

Noise emission levels associated with removal of topsoil and overburden at the expanding Voyager Quarry, are the subject of an Area Specific Noise Management Plan (ASNMP) Reference HAS 6556-2-06144, September 2006.

This report addresses Section 7.0 of the ASNMP, for the implementation of clearing for specific Areas 5 and 6 and the pre-clearing Key Management Action Table (KMAT) 14.1 of the ASNMP.

2.0 Mining Plan

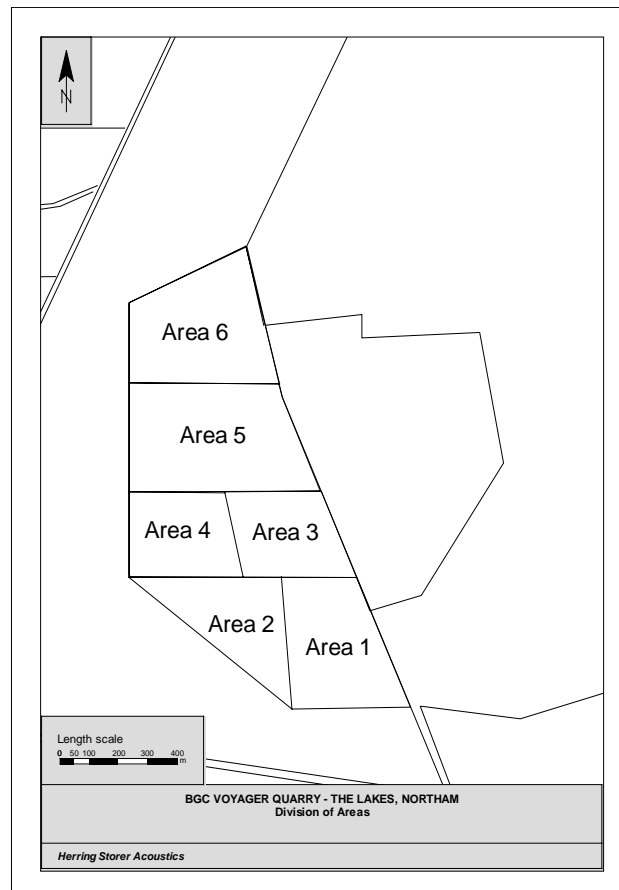
The procedure and equipment usage required for vegetation clearing and topsoil and overburden removal, were obtained from BGC mine planning personnel.

Both of the specific Areas 5 and 6 will be cleared as one area in this plan – refer to area plan in Figure 2.1.

Vegetation clearing will be implemented in an east to west direction using 2 Cat D10 dozers. This is considered an insignificant short-term acoustic event compared to overburden removal, and is not specifically addressed.

Overburden removal will be implemented in an area wide format using 3 x Cat 631 Scrapers and 2 x Cat D10 Dozers. Topsoil will be stockpiled up to a height of 3 metres on the western side of Area 5 and 6. Overburden material not removed from site will be stockpiled to the south of Area 2.

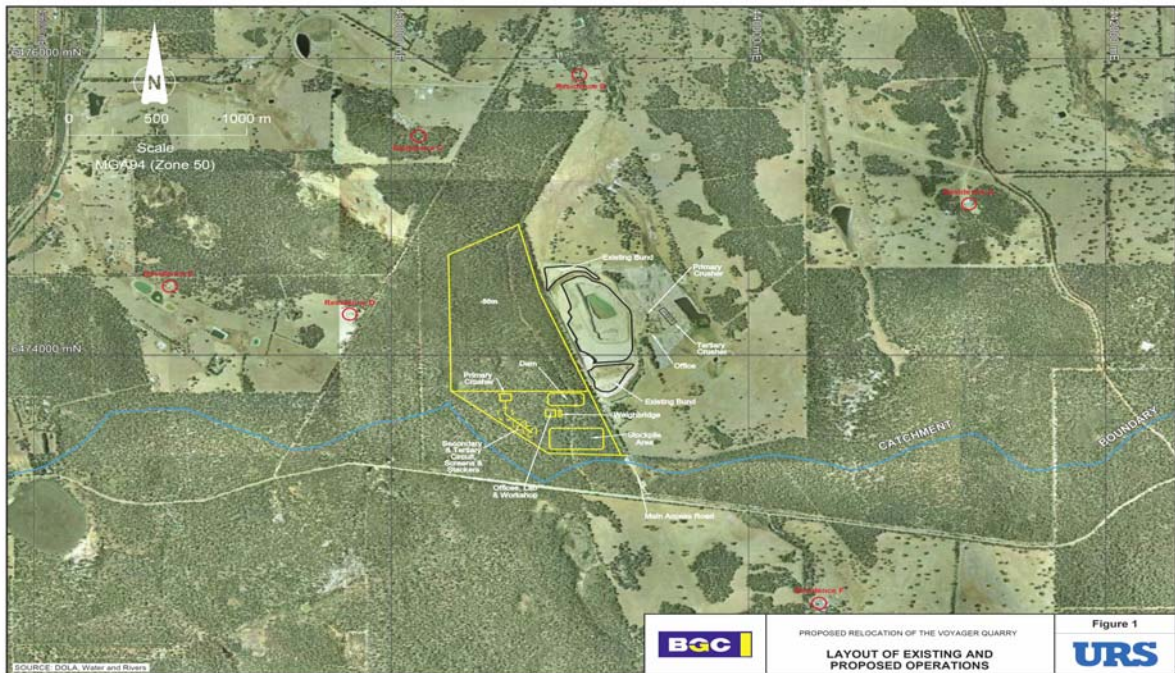
Figure 2.1 Overburden Removal – Specific Area Locations



3.0 Noise Propagation Modelling

The prediction of noise levels at noise sensitive premises has been made using the computer modelling program SoundPlan 6. There are six designated residential locations (A to F), which are shown on the area plan in Figure 3.1.

Figure 3.1 Layout of Existing & Proposed Operations & Residential Locations



Based on the maximum equipment usage scenario of three scrapers and two dozers, the maximum down wind predicted noise levels are shown in Table 3.1 for each of the residential locations.

Table 3.1 – Area 5 & 6 Noise Level Predictors

Locations	Overall Noise Level dB(A)
A	41.4
B	49.5
C	54.1
D	41.9
E	35.5
F	40.8



4.0 ENVIRONMENTAL OBJECTIVES

The principle environmental objective is to minimise noise emission levels at residential location and to not exceed the stipulated criteria of Ministerial Statement 706. Specific noise level criteria is set down in Condition 15-6 of Statement 706 as follows:

"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 (Noise) Regulations 1997."

5.0 IMPLEMENTATION STRATEGY

Predicted levels at residential locations, as a result of overburden removal, are predicted to be well within the environmental noise criteria objectives.

Accordingly there are no specific strategies to be adopted as no excursions are foreseen.

6.0 MONITORING

Noise level monitors are already operational at the Voyager Quarry site. One is a fixed installation to the west of the site near residential locations in Horton Road. The other monitor is a portable unit that can be deployed at any desirable location. It is intended that the mobile unit will be located to the north of the existing mining area at a location where the overburden removal noise will be dominant, and act as a control monitor.

Specific noise level measurements and observations during the first day of overburden removal have been scheduled. Observations and measurements will be made by an experienced acoustician and directional noise monitoring equipment will be used to log data over a representative period, as deemed by the tester.

7.0 CONTINGENCIES

Management of noise emissions from the overburden removal will be reactive; in that any non-conformance indicated by the initial noise level monitoring will result in immediate modification of the mining process. If non conformance is indicated then a review of the predictive modeling will be triggered.

Initial staged of overburden removal will be subject to detailed monitoring to allow consideration of modifying the process should noise exceedances occur. Modifications that can be considered are, reducing the number of items of equipment or varying the type of equipment or considering restricting operations to certain wind direction and strength conditions.



8.0 KEY MANAGEMENT ACTION TABLE

The pre-clearing section of this table is to be completed prior to initiating work in any specific area.

Areas 5 & 6 Overburden Clearing – Environmental Noise

Objective Noise Level Limits

Residential Locations

- L_{A10} 1 hour 55dB
- L_{Amax} 70dB

**Table 8.1 Key Management Action Table
(Table 14.1 of ASNMP)**

Issue	Management Action	Responsibility	Reporting	Status
Pre-clearing	<u>Mine Plan including:</u> <ul style="list-style-type: none"> • Equipment Numbers • Equipment Types • Equipment Locations • Area Topography <u>Noise Modelling</u> Prediction of resultant noise levels at nominated residential locations for various weather condition scenarios.	BGC Planners	Internal	Completed 22 /9/06
	<u>Schedule Monitoring</u>	BGC Environmental	Internal DEC	HSA Report 6640 25/9/06
Start of Clearing	Monitor resulting noise levels, as near as practicable, at residential locations, log wind conditions	BGC Environmental	DEC	
During Clearing	If initial monitoring indicates potential exceedances, conduct further monitoring during operations	BGC Environmental	DEC	
Post Clearing	Analysis of monitoring data and assessment of conformance	BGC Environmental	DEC	

