



**ORICA KOORAGANG ISLAND
EXISTING OPERATIONS – NOISE VERIFICATION PROGRAM
FEBRUARY 2010**



Revision	Date	Description	Author	Reviewer	Approver
0	5/02/2010		S Woodroffe Environmental Manager	C Gent Project Owner	S Newman Site Manager

TABLE OF CONTENTS

1	INTRODUCTION.....	2
1.1	PROJECT BACKGROUND.....	2
1.2	PURPOSE.....	2
2	NOISE VERIFICATION PROGRAM.....	4
2.1	MONITORING PROGRAM.....	4
2.2	REPORTING.....	5
3	REFERENCES.....	6

1 INTRODUCTION

1.1 Project Background

Orica Australia Pty Ltd (Orica) obtained approval from the NSW Minister for Planning for the expansion of its existing Ammonium Nitrate Production Facility. The Facility is located on the south-eastern most part of Kooragang Island, within the Port of Newcastle. The surrounding area is industrial. The nearest residential premises are located at Stockton, approximately 800m to the east of the facility.



Figure 1 Orica Kooragang Island Facility (AECOM, 2009)

The proposed expansion of the ammonium nitrate facility would primarily require:

- An additional Nitric Acid Plant (NAP4).
- An additional Ammonium Nitrate Plant (ANP3).
- Modification of the existing Ammonia Plant.
- Additional storages for nitric acid, solid ammonium nitrate and ammonium nitrate solution.
- Upgrading of existing infrastructure such as cooling towers, air compressors, loading facilities, electrical systems, effluent treatment systems and the steam system.

1.2 Purpose

In 2008 Orica undertook a program to assess noise emissions from the Kooragang Island facility. This program involved onsite and ambient monitoring and the development of a noise model to predict Orica's contribution to ambient noise levels. Prior to the completion of the proposed expansion project (Project) it is proposed to undertake additional monitoring to assist in the determination of the following:

- ▶ Confirm the noise emissions from the facility prior to the operation of the first stage of the expansion project and assess the impact of seasonal meteorological conditions on ambient noise levels.

- ▶ Establishing reference points to enable the facility to demonstrate compliance with the project approval.

The program shall be undertaken in accordance with the requirements of Condition 31 of the project approval (08-0129) as detailed in Table 2-1. The results of the program shall assist in the design of the detailed monitoring program required to assess ongoing compliance required by Condition 32, with the relevant section of the condition detailed in Table 2-1. The program is designed to enable Orica to assess compliance with Condition 30.

Table 2-1 Condition of Approval

<p>Condition 30:</p> <p>The Proponent shall ensure that noise levels from the operation of the Project are at least 10dB(A) below noise levels from Orica's Existing Operations as specified by conditions 31 & 32 below.</p>
<p>Condition 31:</p> <p>Prior to the commencement of construction the Proponent shall prepare and implement an Existing Operations Noise Verification Program to the satisfaction of the Director-General. The Program shall:</p> <ul style="list-style-type: none"> (a) be undertaken by a suitably qualified and experienced person; (b) identify future reference points that will be used to demonstrate compliance; (c) collect new or review existing data, and report on the seasonal background levels for the noise catchment; and (d) confirm the noise levels from Orica's Existing Operations. <p><i>Note: Some construction activities may occur under the Project Approval provided that such activity are not undertaken during the monitoring period or that Orica can demonstrate that the activity would not contribute to the background noise level, to the satisfaction of the Director-General.</i></p>
<p>Condition 32:</p> <p>Prior to the commencement of operations of the Project, the Proponent shall prepare and implement a Noise Management Plan in consultation with DECCW and to the satisfaction of the Director-General. The Plan shall:</p> <p>....</p> <ul style="list-style-type: none"> (c) include a detailed monitoring program for reporting on ongoing compliance. The monitoring program shall: <ul style="list-style-type: none"> • outline the proposed receiver sites at Stockton and sites on Kooragang Island that would be monitored; • include both attended and unattended noise monitoring; • verify that actual noise levels from the Project are consistent with the predictions made in the EA; and • verify that noise levels from the Project are 10dB(A) below the noise levels identified in condition 31 for Orica's Existing Operations; <p>....</p>

2 Noise Verification Program

The Existing Operations Noise Verification Program shall involve the following activities:

- ▶ Monitoring program to assess current ambient noise levels and the impact of seasonal meteorological conditions on noise levels. Review of previous monitoring results and noise model findings.
- ▶ Preparation of a report detailing the findings of the program and recommendations for future monitoring to assess compliance with the project approval conditions.

2.1 Monitoring Program

A review of the previous monitoring locations and results, and the findings of the noise model for the site, has been undertaken to assist in identifying the locations for the additional monitoring proposed for the noise verification program.

Monitoring Locations

This review has identified that the testing should be undertaken in the following areas:

- ▶ Fullerton Street, Stockton. This street is the location of the closest residential premises to the facility. It is proposed to identify up to three premises along Fullerton Street, directly to the east of the Orica site, to be used for the monitoring program.
- ▶ Greenleaf Road, Kooragang Island. It is proposed to identify up to three locations along the vacant land between Greenleaf Road and the North Arm of the Hunter River to be used for the monitoring program. This location will provide information on Orica's noise contribution without the influence of factors such as meteorological conditions and urban activities. Where possible these near field monitoring locations will be sited towards the eastern boundary of the land to reduce issues associated with the variable nature of noise levels along the site boundary.

The proposed locations of the monitoring points are detailed in Figure 2.



Figure 2: Proposed Monitoring Locations

Monitoring Periods

To assess the influence of seasonal meteorological conditions on the ambient noise levels it is proposed to undertake monitoring over periods during the four seasons. The first monitoring period will be undertaken in February 2010 and it is expected that the monitoring shall be completed in November 2010, although this is dependent upon obtaining valid data during the February 2010 summer monitoring. The monitoring will involve continuous sampling over a period of at least one week, in accordance with the requirements of the Department of Environment, Climate Change and Water's (DECCW) *Industrial Noise Policy* (EPA, 2000).

In addition, operator attended monitoring shall be undertaken on four nights during the period that the continuous monitoring is undertaken to confirm the results of the continuous monitoring and to assist in the interpretation of the data.

Meteorological Data

Meteorological data from the Orica Kooragang Island weather station and the Port Waratah Coal Service's weather station located on Curlew St, Kooragang Island, will be used to assist in identifying periods of invalid data during the monitoring (eg. high wind speed, rainfall). The weather station information shall also assist in assessing the affect of meteorological conditions on ambient noise levels.

Program Implementation

Orica has engaged Atkins Acoustics to undertake the works detailed in the Existing Operations – Noise Verification Program. Atkins Acoustics personnel are suitably qualified and experienced to undertake this program of works and are familiar with the Orica Kooragang Island facility having undertaken previous monitoring programs at the site. They also prepared the Noise Impact Assessment for the Environmental Assessment of the proposed expansion project (AECOM, 2009).

Construction Program

Where possible, the monitoring shall be undertaken outside periods of construction, however, where this is unavoidable, an assessment shall be undertaken to ensure that the activities will not contribute to the background noise levels.

2.2 Reporting

An Existing Operations – Noise Verification Program Report shall be prepared following completion of the four monitoring periods. The report shall include:

- ▶ Information on the existing noise levels at the monitoring locations on Kooragang Island and Fullerton St, Stockton.
- ▶ Identify the future reference monitoring points that shall be used to demonstrate compliance with the noise limits in the project approval.
- ▶ Discuss the influence of meteorological conditions on measured ambient noise levels.
- ▶ Review of the existing site noise model and refining of the noise model if required.
- ▶ Make recommendations in relation to future monitoring locations to demonstrate compliance.

It is expected that this report would be completed by the 31 December 2010, although this is dependent upon obtaining valid data during the summer monitoring period in February 2010.

3 References

AECOM, 2009. *Proposed Ammonium Nitrate Facility Expansion – Environmental Assessment, Vol 1 and 2*, AECOM, June 2009

EPA, 2000. *Industrial Noise Policy*, NSW EPA, January 2000