



## ORICA KURRI KURRI ANE PLANT

# ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

JULY 2015



Revision	Date	Description	Author	Approver
0		2015 Annual Environmental Report	D Horne Manufacturing Superintendent Kurri	R Powell Field Manufacturing Manager

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Attachments : Biodiversity Management Plan 2015.16

**ABBREVIATIONS**

ANE	Ammonium Nitrate Emulsion
ANS	Ammonium Nitrate Solution
CEMP	Construction Environmental Management Plan
CSS	Construction Safety Study
DPI	Department of Planning and Infrastructure
EA	Environmental Approval
EMSO	Environmental Management Strategy Operations
EPL	Environment Protection Licence
FHA	Final Hazard Analysis
FSS	Fire Safety Study
HAZOP	Hazard and Operability Study
ktpa	kilo tonnes per annum
OEH	Office of Environment and Heritage
SHEC	Safety, Health, Environment and Community

## 1 Introduction

In October 2010 Orica Australia Pty Ltd commenced construction of an Ammonium Nitrate Emulsion (ANE) manufacturing facility located at its Kurri Kurri Technical Centre, NSW. The facility will produce a maximum of 250,000 tonnes of ANE per annum once in full production (**Figure 1**). This plant has been developed to meet an increasing demand for ANE product and projected growth in the mining and quarry / construction sectors in South Eastern Australia. Approval for this project was granted in July 2010 by the Minister for Planning.

The facility began the commissioning process in October, 2011 and began production in February 2012.

This document has been prepared to comply with the requirement of the Project Approval (09\_0090) that an Annual Environmental Management Report be prepared for the project and relates to August 2014 – July 2015.



**Figure 1: ANE Plant layout**

## **1.1 Facility Description**

The facility activities include the following:

- ANE production of up to 250,000 tonnes of product per annum;
- Maintenance of access roads and relevant services infrastructure;

- Operation of storage for raw materials used in the manufacturing process including ammonium nitrate solution (ANS), solid ammonium nitrate, fuel blend ingredients such as palm olein, paraffin and diesel oil, thiourea, urea, acetic acid, caustic soda and water;
- Transport truck weighing, loading and unloading facilities and management;
- Management of the facility office, control room, switch room and quality control laboratory;
- Management of contractors and visitors.

## **2 Facility Requirement**

As a condition of the project consent, this facility is required to prepare an Annual Environmental Management Report.

This report includes the following:

1. *This facility Annual Environmental Report (AEMR) will include the following;*
  - a) *identify the standards and performance measures for the facility;*
  - b) *describe the works carried out in the past 12 months and the works to be carried out in the next 12 months;*
  - c) *include a summary of complaints received in the past year and provide comparison with previous years;*
  - d) *report results of monitoring required by the approval and EPL for this facility;*
  - e) *provide analysis of monitoring results in the context of relevant criteria and limits, previous monitoring results and the predictions made in the EA;*
  - f) *identify any trends in monitoring results over the life of the facility; and*
  - g) *report on compliance with the project approval, summarise non-compliances in the previous 12 months and report on actions taken to rectify non-compliances.*

## **3 Facility Standards and Performance Measures**

This facility meets the standards and conditions detailed in the following documents:

- Project Approval 09-0090 dated 26 July 2010;
- Modification Application MP 09\_0090 MOD 1;
- Schedules 2 to 4 of Project Approval;
- Environmental Approval dated December 2009;
- Response to Submissions report dated March 2010;
- Independent Environmental Audit March 2014.

The key standards and performance measures for the operating facility include:

	<b>Standard</b>	<b>Performance Measure</b>	<b>Comment</b>
Noise Management	Noise generated from the operation of the facility does not exceed 35dB(A) at nearest residential receptor at any time.	Proponent shall conduct a Noise Audit for the premises within 3 months of the commencement of operation of the ANE Facility or as otherwise agreed by the Director-General.	Large buffer area around plant. Noise controls have been incorporated into design and equipment selection. The Noise Audit has been completed and submitted to the DPI, no actions were required from the audit.
Air Quality	Dust	All trucks leaving or entering the facility with loads have their loads covered;  Trucks movements associated with the facility do not track dirt onto the public road network.	Requirement incorporated into the Environmental Management Plan.
Soil and Water Discharges	Section 120 of the <i>Protection of the Environment Operations Act 1997</i>	Bunding to comply with all relevant Australian Standards and the OEH's Storing and Handling Liquids: Environmental Protection, Participants Manual.	Facility is designed to meet bunding requirements.
Lighting	Australian Standard AS4282(INT)-Control of Obtrusive Effects of Outdoor Lighting	Facility Lighting complies with the requirements of the standard.	Lighting compliance has been assessed during the design phase.
Production Limits	Production not to exceed prescribed levels.	ANE – 250ktpa	Production limits are monitored and documented weekly.  Limits not exceeded.

## 4 Facility Status

### 4.1 Facility Progress Review

During the previous 12 months covered by this report normal production activities have been undertaken and include:

- 1% production increase over reporting year;
- Plant operating at 46.8% of Licence Limit of 250,000 T/pa;
- Traffic management and site access;
- Production of ANE, and Companion Solution.
- Unloading of raw materials;
- Loading tankers with ANE;
- Maintenance management and associated activities;
- Contractor & Visitor Induction and Management;

- Production of Ammonium Nitrate Solution from dissolved solid Ammonium Nitrate
- Minor changes of raw materials;
- Significant reduction of vehicle movements on George Booth Drive with the opening of the freeway extension M15.

## 4.2 Planned Facility Progress

- Static ANE production tonnage as per EA document;
- As per RTP proportional heavy vehicle movements to support raw materials and production schedule.

## 5 Environmental Monitoring and Complaints Summary

### 5.1 Environmental Monitoring

Following the commissioning of the ANE Plant, monitoring is undertaken to assess compliance with relevant conditions as outlined in the Project Approval and the EPL.

### 5.2 Community Complaints

27.07.2010 – 26.07.2011	27.07.2011 – 26.07.2012	27.07.2012 – 26.07.2013
No Complaints	One unsubstantiated complaint	No Complaints
27.07.2013 – 26.07.2014	27.07.2014 – 26.07.2015	
No Complaints	No Complaints	



## 6 Facility Compliance

A review of the status of compliance with the operation of this facility is detailed in the table below.

### SUMMARY OF KEY FACILITY COMPLIANCE ACTIVITIES

Issue	Condition	Requirement	Compliance Status
<b>Schedule 3: Specific Environmental Conditions</b>	1	Undertake the following studies and submit to DPI Director-General for approval:	
		a) • Fire Safety Study (FSS)	Complied. The FSS was submitted on 9 February 2011 and a response was received from Fire Rescue NSW (FRNSW) on 3 May 2011. Further information is currently being prepared for FRNSW.
		b) • Hazard & Operability Study	Complied. The HAZOP was submitted to the DPI 15 February 2011. DPI approved the study on 18 February 2011. Hazop Actions completed.
		c) • Final Hazard Analysis	Complied. The Phase 1 FHA was submitted to the DPI on 8 February 2011. DPI approved the study on 18 March 2011.
	d) • Construction Safety Study	Complied. The Construction Safety Study was submitted to DPI on 8 February 2011. Approval was obtained from DPI on 18 February 2011.	
	2	Undertake the following studies and submit to DPI Director-General for approval: <ul style="list-style-type: none"> <li>• Emergency Plan (update)</li> <li>• Safety Management Plan</li> </ul>	Completed
	6	Comply with the requirements of the Director-General in relation to conditions 1-5.	Complied
	10	Prepare a Road Transport Protocol prior to the commencement of construction and operation.	Complied. A Road Transport Protocol was included in the EMSO. RTP revised and updated with Maps

Issue	Condition	Requirement	Compliance Status
			showing M15 freeway extension. Nil NON compliances
	12	Within 6 months of approval implement the offset strategy to the satisfaction of the director general	Complied An application was submitted to OEH to enter into a Voluntary Conservation Agreement. Biodiversity Report attached.
	15	Implement Vegetation Clearing Protocol	Complied Vegetation Clearing Protocol was included in the EMSO and followed for clearing of the site prior to the commencement of construction.
	16	Carry out all reasonable and feasible measures to minimise dust generated by the Project / Facility	Complied EMSO included measures to control dust. All road surfaces sealed for permanent operation.
	17	Trucks entering or leaving the Project site must have their loads covered and must not track dirt onto public roads	Complied. Measures for the control of dust were included in the CEMP.
	18	Noise generated from the construction and operation of the project shall not exceed 35dB(A) at nearest residential receptor	Complied. Post start up Noise Audit completed
	20	Implement the recommendations of the 'Bushfire Threat Assessment' included with the EA and also any additional bushfire hazard reduction measures outlines in the Submissions Report	Complied Requirements included in the design.
	21	Compliance with section 120 of Protection of the Environment Operation Act 1997	Annual Environmental Return submitted to EPA currently in discussions with EPA regarding Licence conditions.
	22	Ensure that all chemicals are stored in appropriately bunded areas	Complied. EMSO included requirements for management of materials. Design incorporates bunding requirements. Emulsifier bund joint seal failure , interim fix in place with Engineer engaged to propose long term fix. Permanent repair effected. Oxidiser bund recoated. Daily shift Housekeeping checks completed and documented.

Issue	Condition	Requirement	Compliance Status
	23	Prepare a Soil and Water Management Plan	Complied. Measures for the control of erosion and sediment were included in the Construction Environmental Management Plan.
	24	A Stormwater Management Plan must be included in the design	Complied. CEMP included these requirements, where applicable to construction.
	25	An Erosion and Sediment Control Plan is to be prepared	Complied. EMSO included an Erosion and Sediment Control Plan.
	26	Ensure that lighting associated with the Project complies with the latest version of <i>Australian Standard AS 4282 (INT)-Control of Obtrusive Effects of Outdoor Lighting</i>	Complied A consultant was engaged to provide a report on external lighting to ensure compliance.
	27	Waste to be classified in accordance with <i>DECCW Guidelines 2008</i> and disposed of to approved premises	Complied. Measures for the control of waste were included in the EMSO. Registered Waste disposal provider engaged for production operations
	28	In the event that skeletal remains, or an Aboriginal object is identified, all construction activities that will or would have the potential to impact on indigenous heritage item(s), shall cease until the DECCW is consulted and their directions complied with	Complied. CEMP and EMSO included requirements. Aboriginal groups were consulted during the construction period.
<b>Schedule 4: Environmental Management, Reporting and Auditing</b>	1	Prepare and implement an Environmental Management Strategy for the Facility to the satisfaction of the Director-General.	The Facility Environmental Management Strategy was submitted on 24 February 2012.
	2	Prepare an Annual Environmental Management Report and submit to the DPI Director-General <ul style="list-style-type: none"> <li>a. Identify the standards &amp; performance measures for the Facility</li> <li>b. Describe the works carried out in the past 12 months and the works to be carried out in the next 12 months</li> <li>c. Include a summary of complaints received in the past year and provide comparison with previous years</li> <li>d. Report results of all monitoring required by this approval and an EPL for the Facility</li> <li>e. Provide analysis of monitoring results in the context of relevant criteria and limits, previous monitoring results and the predictions made in the EA</li> <li>f. Identify any trends in monitoring results over the life of the Facility</li> </ul>	Submission of this document is the fourth annual report <ul style="list-style-type: none"> <li>a. See section 3 this report</li> <li>b. See section 4 above</li> <li>c. See section 5 this report</li> <li>d. See Appendix 1</li> <li>e. See Appendix 2</li> <li>f. Monitoring Point 2. Results have shown a</li> </ul>

Issue	Condition	Requirement	Compliance Status
		g. Report on compliance with the facility approval, summarise non-compliances in the previous 12 months and report on actions taken to rectify non-compliances	downward trend compared to previous reporting period. g. See Appendix 3
	3	Notify the Director-General and any other relevant agencies of any incident with actual or potential significant off-site impacts	There were no significant incidents relating to the facility during this reporting period that required reporting to the Director General
	4	An independent Environmental Audit within two years of commencement of operations at the ANE Facility and every 3 years thereafter. The audit will; <ul style="list-style-type: none"> <li>a. Be conducted by a suitable, experienced and independent expert whose appointment has been endorsed by the Director General</li> <li>b. Assess the environmental performance of the Facility and its effect on the surrounding environment</li> <li>c. Assess whether the Facility is complying with the relevant standards, performance measures and statutory requirements</li> <li>d. Review the adequacy of any strategy / plan / program required under the approval; and if necessary,</li> <li>e. Recommend measures or actions to improve the environmental performance of the Facility and / or any strategy / plan / program required under the approval</li> </ul>	Auditor appointed and endorsed by Director General to carry out audit in last quarter of 2013 Independent Audit completed by Environment and Planning Pty Ltd published on Orica Website , Thirty two non-compliances identified the majority being administrative oversights(62.5%), followed by training commitments (15.5%), actions not completed (12.5%), and an environmental incident (9.5%) Thirteen detailed recommendations were made from the report and actions raised to address.
	5	The following information regarding the Facility is included on the website: <ul style="list-style-type: none"> <li>• Copy of all current statutory approvals;</li> <li>• Copy of the current environmental management strategy and associated plans and programs;</li> <li>• Copy of any Annual Reports (over the last 5 years);</li> <li>• Copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and</li> </ul> Any other matter required by the Director-General	Copies of information relating to the facility are included on the Orica Mining Services website ( <a href="http://www.oricaminingservices.com">www.oricaminingservices.com</a> )

## Appendix 1

### **DISCHARGE & MONITORING POINT 1 as at 27.07.2012 -- 26.07.2013**

Discharge to Utilisation Area.

Low	Average	High
5250L/day	6875L/day	8500L/day

Max Limit 16800L/day

### **DISCHARGE & MONITORING POINT 1 as at 27.07.2013 – 26.07.2014**

Discharge to Utilisation Area.

Low	Average	High
4500L/day	6350L/day	8500L/day

Max Limit 16800L/day

### **DISCHARGE & MONITORING POINT 1 as at 27.07.2014 – 26.07.2015**

Discharge to Utilisation Area.

Low	Average	High
4625L/day	6063L/day	7500L/day

Max Limit 16800L/day

**Appendix 1(cont)****DISCHARGE & MONITORING POINT 2 as at 27.07.2014 – 26.07.2015**

Wet weather discharge, overflow pipe from water treatment systems ' Stormceptre System' (Pit 17) located at the south-eastern corner of the Ammonium Nitrate Emulsion Production Facility.

<b>POLLUTANT</b>	<b>UNIT OF MEASURE</b>	<b>NO. OF SAMPLES REQUIRED BY LICENCE</b>	<b>NO. OF SAMPLES YOU COLLECTED AND ANALYSED</b>	<b>LOWEST SAMPLE VALUE</b>	<b>MEAN OF SAMPLE</b>	<b>HIGHEST SAMPLE VALUE</b>
AMMONIA	Milligrams per litre	<b>54</b>	<b>54</b>	<b>0.11</b>	<b>0.61</b>	<b>3.97</b>
CONDUCTIVITY	Microsiemens per centimetre	<b>54</b>	<b>54</b>	<b>18</b>	<b>99.33</b>	<b>780</b>
NITROGEN (TOTAL)	Milligrams per litre	<b>54</b>	<b>54</b>	<b>0.4</b>	<b>2.37</b>	<b>11.7</b>
OIL & GREASE	Visible	<b>54</b>	<b>54</b>	<b>Nil Visible</b>	<b>Nil Visible</b>	<b>Nil Visible</b>
PH	PH	<b>54</b>	<b>54</b>	<b>6.29</b>	<b>7.89</b>	<b>9.51</b>
TOTAL DISSOLVED SOLIDS	Milligrams per litre	<b>54</b>	<b>54</b>	<b>&lt;10</b>	<b>66.07</b>	<b>382</b>
TOTAL SUSPENDED SOLIDS	Milligrams per litre	<b>54</b>	<b>54</b>	<b>&lt;5</b>	<b>55.5</b>	<b>348</b>

## Appendix 2

### EXTRACTS from QUALITY ASSURANCE DOCUMENT within the EPL

#### L2 Volume and Mass Limits

The Orica Australia Technical Centre is compliant with condition L2 and its subsection.

To ensure condition L2 of the sites licence is conformed with, quarterly assessments on the sites treatment plant by a NATA accredited company are undertaken. Part of this quarterly assessment includes the review on the quantity of discharge. From this review an average daily output is identified of which is approximately 50% below the current daily licence limit.

Quantity of discharge amount was consistent with previous year.

These analysis reports are readily accessible if an authorised officer of the EPA requests them.

### **L3 Noise Limits**

The Orica Australia Technical Centre is compliant with condition L3 and all of its subsections.

A noise survey conducted on April 2012 by independent consult Umwelt during production phase identified compliance with condition L3. No complaints have been received relating to noise generated by the site.

For the period of this report there have been no breach of noise limits and no complaints received.

This survey is readily accessible if an authorised officer of the EPA requests it.

### **L4 Potentially Offensive Odour**

The Orica Australia Technical Centre is compliant with condition L4 and its subsection.

No potentially offensive odours were identified at the site.



**Appendix 3 - Projected ANE Annual Tonnages between 2011 and 2023 with total daily truck movements**

<b>Year</b>	<b>Total Truck Movements - Projected</b>	<b>Total Truck Movements - Actual Average / day</b>	<b>Total Tonnes - Projected</b>	<b>Total Tonnes - Actual</b>
2011	50	1	125,000	0
2012	55	26	137,500	40,657
2013	60	34	150,000	111,310
2018	80		200,000	
2023	100		250,000	